BRIEF | Intelligent Investment

New Zealand Cap Rate Drivers and Outlook Study

By Shang Du, Zoltan Moricz, Dr Neil Blake - April 2024

Insights

- Bond rates and rent growth are significant variables shaping cap rates, but the nuances in which they influence cap rate outcomes are most important.
- There isn't a 1 for 1 relationship between bond rate and cap rate movements, a result that aligns with behavioural finance and economic concepts, and reflects the complexity of market mechanisms. This means for example that when bond rates fall, their spread to cap rates tends to widen which helps explain the high bond to cap rate spread during the low interest rate era post-GFC.
- We have produced optimistic and pessimistic scenario cap rate forecasts based on plausible ranges for bond and rent movements to the end of 2025. Our model indicates a difference of 38 bps in cap rate outcomes. In the pessimistic scenario, the Prime cap rate will stand at 6.77% in December 2024, 3 bps higher than in December 2023, and firm by 26 bps in 2025. The optimistic scenario suggests cap rates will firm by 19 bps in 2024 and by another 43 bps to 6.12% in 2025.
- Beyond 2025 and the cyclical adjustments to interest rates, a range of structural factors whose impacts still need to be fully understood will influence cap rates. One argument is that the structural shifts that have caused declining and low interest rates over the past 30 years remain in place and that interest rates will head back down to levels prevailing in the lead up to Covid. This suggests ongoing medium term cap rate firming beyond 2025.
- On the other hand, it is likely that we will see higher demand for capital due to the transitional and mitigation costs of decarbonisation which may push up equilibrium long term interest rates. Accelerated depreciation and elevated capex requirements for real estate, in response to ESG and seismic requirements, may also require higher yields.

New Zealand commercial cap rates have softened materially since Q4 2021, leading to varying perspectives on their future trajectory within the market. We explored historic interest rate to yield margins in a report we released earlier this year. The objective of this paper is a deeper exploration of the variables that play a pivotal role in shaping cap rates and the ways in which they exert their influence. We also seek insights into the potential direction of cap rates moving forward.

Risk-free rates (government bond rates) and rental growth have consistently shown a statistically significant relationship with cap rates in studies across various global property markets and asset classes. Additionally, cap rates can be influenced to varying degrees by other factors such as inflation, GDP growth, quantitative easing, debt market liquidity, exchange rates, and risk premiums. A report from CBRE Global Research explores these in some depth.

Working with our global head of forecasting and analytics, CBRE NZ Research has revised its cap rate model, taking some of its recent work into account but specifically tailoring it to the New Zealand market, and the availability of robust data for the independent variables. For the more technically minded, we outline the model in more detail in the Appendix, but the essence of the model is outlined below:

$$Y = a * G + b * R + c$$

Figure 1 overleaf expands on these variables with some explanatory notes.

FIGURE 1: New Zealand Cap Rate Model Variables

Variable	Description
Y	Prime Commercial Property Cap Rate or yield. It is the average of Prime CBD office, Prime industrial and Prime shopping centre yields.
G	New Zealand government 10-year Bond Rate
R	Auckland Prime Market Annual Rent Growth (includes CBD Premium and Grade A Office, Prime industrial and regional shopping centres)
a	Coefficient of Government 10-year Bond Rate. a=0.61
b	Coefficient of Prime market Annual Rent Growth. b= -0.08
c	Intercept. c=4.72% based on the model

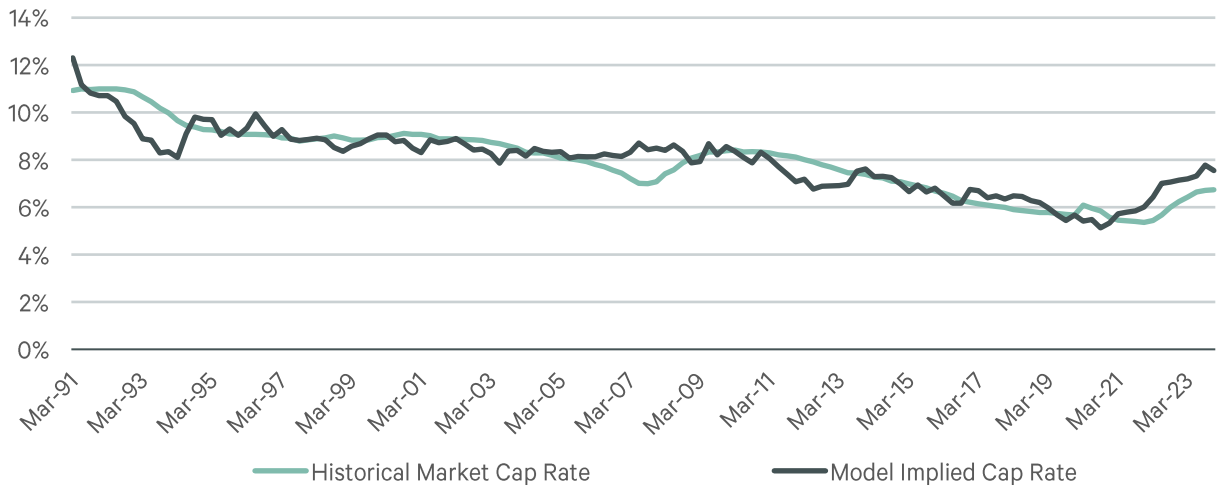
All the variables in the model are statistically significant,[1] providing evidence that bond rates and rent growth do influence cap rate. Coefficients in the model are also important as they determine the degree and direction of the influence. In the model, the bond rate's coefficient is 0.6. This means when incorporating the intercept and bond rates, cap rate is expected to go up by 60 basis points when bond rate goes up by 100 basis points. Similarly, when considering the intercept and rent growth, the model expects cap rate will go down by 8 basis points when rent goes up by 1%.

Modelling and Analysing Historic Cap Rate Movements

Figure 2 displays both the model-implied and the actual historical cap rates. Overall, the model-implied cap rates closely align with the real observed cap rates. However, cap rates for some periods, especially the 2005-2007 pre-GFC era, are challenging to explain with the model's underlying rationality.

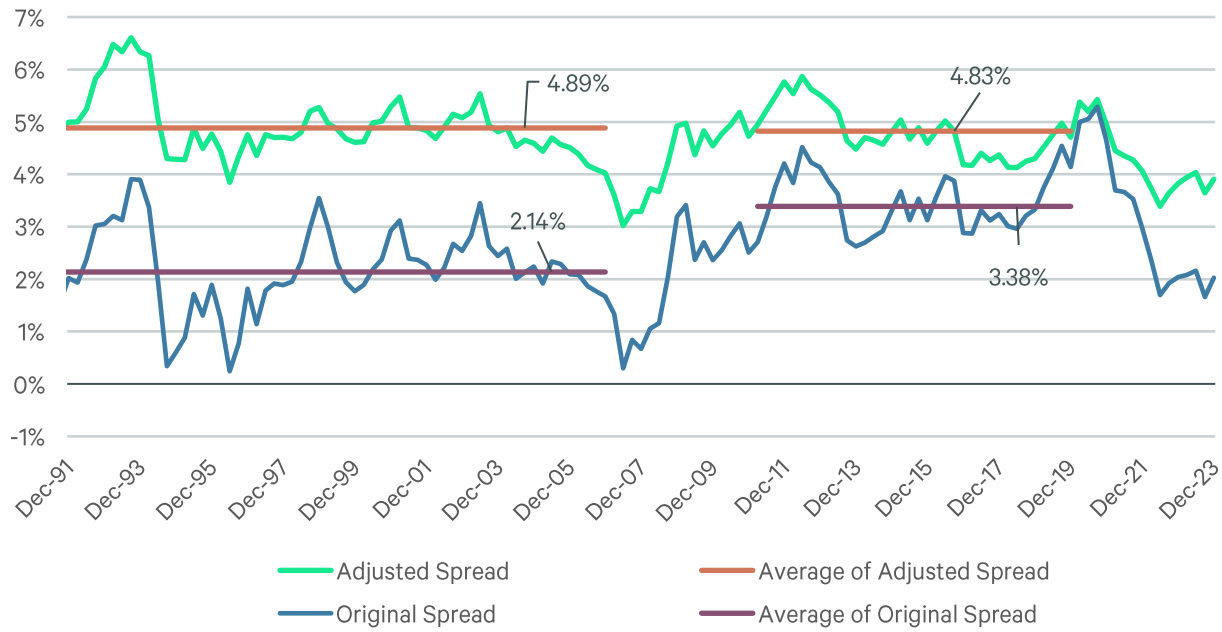
Lagged adjustments that are inconsistent over time in response to underlying conditions can also create real world complexity – whereby cap rates' sensitivity to bond yields increases over time as market participants adjust their expectations (i.e. the longer that bond yields are low, the more likely are market participants to adjust their expectations downwards). This might explain why our model predicts cap rates running ahead of the actual data over the last couple of years in Figure 2. The potential role of capital constraints (ICRs in particular) over the last two years could also make cap rates more sensitive to bond yields than they were. That said, Figure 2 does not suggest that it's a problem.

FIGURE 2: Actual Historical and Model Implied Cap Rates



In our March report, "Interest rate outlook and its property yield implications", we raised the question of the substantial margin that arose between interest rates and cap rates post-GFC. By incorporating bond rates, rent growth, and their respective coefficients in our model, the average of adjusted spreads pre and post-GFC are nearly identical. Figure 3 contrasts the model normalised cap rate spread to the actual. It is encouraging that the model successfully explains this large observed yield gap, presenting a deeper understanding of the underlying dynamic and rationale for the market's response to interest rate and rent movements.

FIGURE 3: Actual and Model Adjusted Prime Cap Rate Spread to Interest Rate



Source: CBRE, RBNZ

Drawing from the field of behavioural finance, we find that anchoring bias[3] can be a contributing factor to the relationship between cap rates and interest rates. In the context of commercial property cap rates and interest rates, investors may base their cap rate expectations on past interest rate levels. When interest rates decline, investors appear to anchor their cap rate expectations to higher historical interest rates, leading to a slower adjustment of cap rates and vice versa.

In the current real scenario, interest rates have been increasing dramatically from their all-time lows; however, there has not been a one-for-one change in cap rates. For example, 10-year bond rate surged from 0.56% to 5.05% between September 2020 and September 2023, albeit with some volatility. This 449-bps rate increase only resulted in a 138-bps cap rate increase. Anchoring bias looks to account for this discrepancy partially.

Moreover, the practical implications of Keynes' theories on speculative demand for money[4] are worth noting. These theories suggest that when interest rates are high, investors are likely to shift from cash to bonds in anticipation of capital gains when interest rates decrease. This concept, applicable to the property market as well, implies that when interest rates rise, the impact on cap rates is offset by the expectation of a future capital gain when interest rates fall and cap rates decrease. In essence, the anticipation of future capital gains acts as a mitigating factor, influencing investors' decisions and lessening the immediate and full impact of rising interest rates on property cap rates.

Rent growth also plays a key role in cap rate movement, as indicated by its negative coefficient of 8%. This implies that when rents go up, signalling high demand relative to availability, then the cap rate tends to fall, and capital value or property price tends to increase. Conversely, when rents decline, it suggests either a surplus of available properties or a wave of new completions, creating upward pressure on cap rates. Furthermore, macroeconomic factors are also involved in cap rate movements, but most of them can be captured within the rent growth variable, and hence, rent growth in the model can reflect both a property market perspective, such as demand relative to availability, and a macroeconomic perspective, such as a weakening economy resulting in lower or negative demand.

In summary, there is one primary reason for the wider interest rate to Prime property cap rate spread post-GFC than pre-GFC. Only 60% of the fall in interest/bond rates converts into cap rate firming. This means that when bond rates fall, their spread to cap rates tends to widen [5]. Mainly driven by significant bond rate falls post-GFC, the spread generally remained wider than pre-GFC until the era of historically low interest rates came to an end.

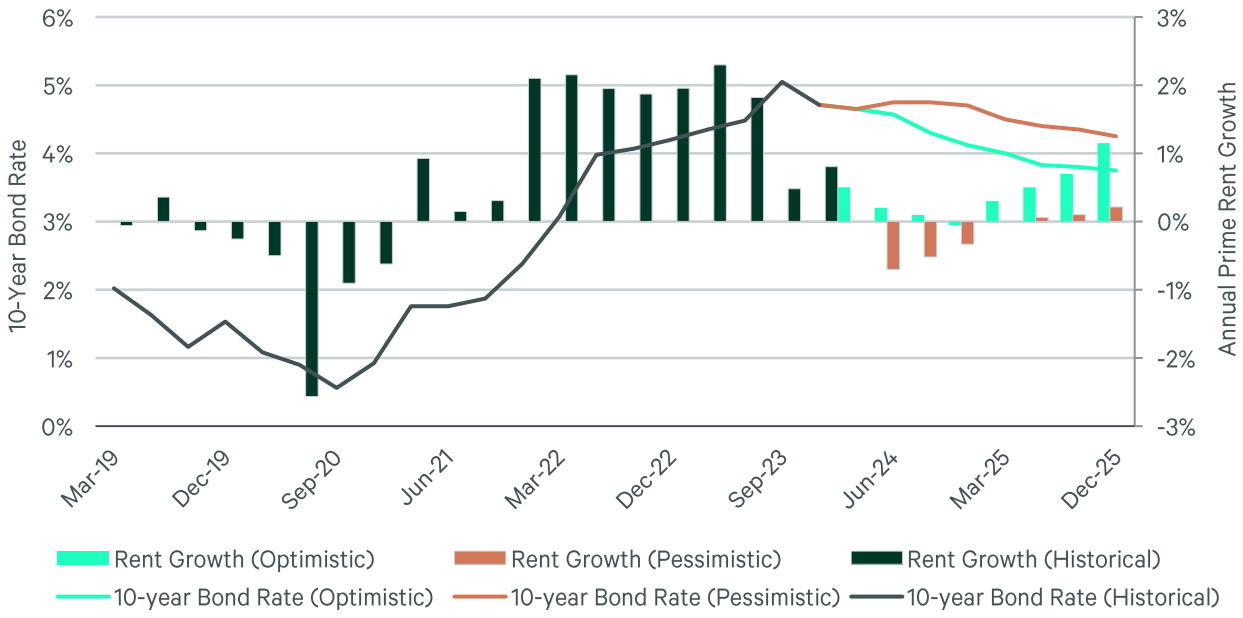
It is important to note that the model's output is for the average of Prime office, industrial and shopping centre cap rates. We have also calibrated our model for the individual asset classes and submarkets. It produces statistically significant results, highlighting the basic correctness and validity of our model, but the coefficients vary significantly across the different property sectors. The relationship between yields and bond rates is always positive but lower than one, within the range of 0.4 to 0.8, and the relationship between rents and yields is always negative, within the range of -0.08 to -0.18.

New Zealand Property Cap Rate Outlook

In our March report, we presented our base outlook scenario, in which Prime cap rates are forecast to firm from their cyclical peak of 6.80% in mid-2024 to 6.40% by December 2025. This outcome is supported by our model when we consider current baseline forecasts for the 10-year bond rate, rent growth, and their coefficients. Thus this 40 bps cap rate firming scenario remains our central outlook.

However, for this report we also wanted to test the impact of different scenarios for bond rates and rent growth. Figure 4 and Table 1 show the range of forecasts for our cap rate model's independent variables of 10-year bond rate and rent growth that we have incorporated into testing an optimistic and pessimistic scenario outcome for cap rate movements to the end of 2025.

FIGURE 4: Prime Rent Growth and 10-year Government Bond Rate (6)



Source: CBRE, RBNZ

TABLE 1: Prime Rent Growth and 10-year Government Bond Rate Forecasts

	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25
Rent Growth--Pessimistic	0.4%	-0.7%	-0.5%	-0.3%	0.0%	0.1%	0.1%	0.2%
10-Yr Govt Bond--Pessimistic	4.65%	4.75%	4.75%	4.70%	4.50%	4.40%	4.35%	4.25%
Rent Growth--Optimistic	0.4%	0.2%	0.1%	0.1%	0.3%	0.5%	0.7%	1.2%
10-Yr Govt Bond--Optimistic	4.65%	4.57%	4.30%	4.12%	4.00%	3.83%	3.80%	3.75%

Source: CBRE, RBNZ

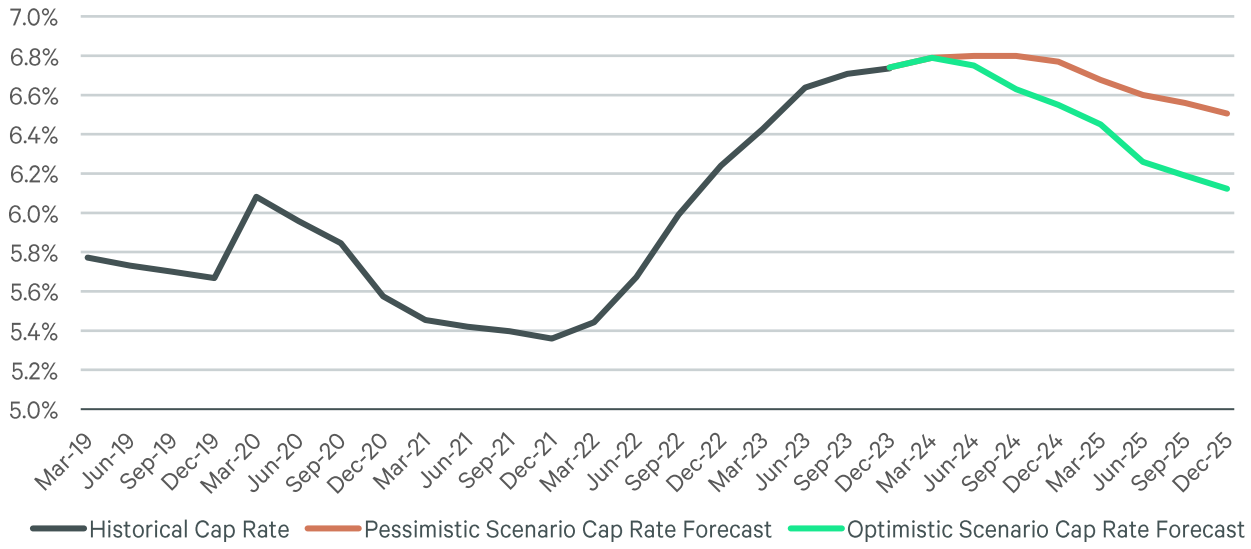
In the current New Zealand context, bond rates remaining high throughout 2024 are more likely to be associated with a pessimistic scenario, while lower rates due to favourable inflation developments feature under an optimistic scenario. If inflation remains high while GDP growth is likely to remains subdued, it raises concerns about stagflation remaining in the economy in 2024 [7]. In such a scenario, interest rates are unlikely to drop quickly even if the economy worsens, given the number one priority of cooling inflation behind RBNZ's current policies.

In this pessimistic scenario, we assume that bond rates [8] will decrease only marginally, reaching 4.60% in December 2024 compared to 4.71% in December 2023, and then drop to 4.25% by the end of 2025. For rents our pessimistic scenario forecasts are a -1.6% contraction of average Prime rents in 2024 followed by a small 0.4% increase in 2025. Although in the pessimistic scenario each Prime sector (office, industrial and regional retail centres) will experience falling net effective rents, this is mainly driven by higher incentives with face rents keeping relatively stable.

In contrast, a more substantial decline in bond rates is assumed in the optimistic scenario, indicating a faster reduction in inflation towards a sustainable level of 1%~3%. This will enable the RBNZ to lower interest rates sooner and more substantially than in the pessimistic scenario. Although GDP growth is still forecast to be subdued in the optimistic scenario in 2024, lower interest rates will support a more rapid bounce back and stronger growth from late 2024 through 2025. A more rapid decrease in inflation is seen as a positive sign for both the economy and the property market, as it suggests a quicker recovery. We forecast 10-year bond rate dropping to 4.12% by the end of 2024 and then to 3.75% by the end of 2025 in the optimistic scenario. This scenario also carries higher annual Prime rent growth of 1.2% in 2024 and then 2.7% in 2025.

Figure 5 and Table 2 show the cap rate forecasts produced by our model under the two scenarios. These indicate a difference of 38 bps in cap rate outcomes between now and the end of 2025. In summary, at the end of 2024, the Prime cap rate will stand at 6.77%, 3 bps higher than in December 2023, and firm by 26 bps in 2025 in the pessimistic scenario. The optimistic scenario suggests cap rates will firm by 19 bps to 6.55% in 2024 and by another 43 bps to 6.12% in 2025.

FIGURE 5: Prime Cap Rate Outlook



Source: CBRE

TABLE 2: Prime Cap Rate Outlook

	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25
Cap Rate Outlook (Pessimistic)	6.79%	6.80%	6.80%	6.74%	6.68%	6.60%	6.56%	6.51%
Cap Rate Outlook (Optimistic)	6.79%	6.75%	6.63%	6.55%	6.45%	6.26%	6.19%	6.12%

Source: CBRE

Over the next year some market factors may influence the transmission of bond rate movements to cap rates differently than suggested by our model. The speed of cap rate adjustments to bond rates can be inconsistent over different periods – cap rates' sensitivity to bond yields tends to increase as market participants adjust their expectations to a "new normal." In 2021 - 2022 for instance, after the prolonged low interest rate period, the cap rate response lagged the rapid increase in interest rates by circa nine months.

Looking forward, the longer that bond yields remain high, the more likely that market participants will adjust their cap rate expectations upwards. This could result in a pessimistic scenario where cap rates remain more elevated in 2025. The potential role of capital constraints (Interest Coverage Ratios in particular) could also make cap rates stickier at current levels than the model suggests.

Longer Term Interest Rate and Cap Rate Drivers

Beyond 2025 and the cyclical adjustments to interest rates, a range of structural factors whose impacts still need to be fully understood will influence cap rates.

One argument is that the structural shifts that have caused declining and low interest rates over the past 30 years remain in place (aging populations, savings glut etc) and that interest rates will head back down to levels prevailing in the lead up to Covid. This suggests ongoing medium term cap rate firming beyond 2025.

On the other hand, central banks may aim to stabilise inflation at slightly higher levels than in the past – in part because it supports policy objectives of raising low and lower middle incomes. It is also possible that we will see higher demand for capital due to the transitional and mitigation costs of climate change and decarbonisation, which may push up equilibrium long term interest rates. These two factors (and possibly the shifts towards higher government debts post-Covid and the financing of this debt) might push equilibrium long-term interest rates up. Accelerated depreciation and elevated capex requirements for real estate, in response to ESG and seismic requirements, may also require higher yields.

Appendix (technical notes and references)

(1) Our model's result shows all the variables' P values are smaller than 0.004. A P-value of 0.05 or lower is generally considered statistically significant. Therefore, the model can predict the future cap rates in a meaningful way.

(2) This new formula is re-arranged by the original forecasting model:

CAP RATE = a * BOND $RATE_R$ - b * RENT GROWTH + INTERCEPT (the original forecasting model)

SPREAD [(2)] = CAP $RATE_R$ - a * BOND $RATE_R$ - b * RENT $GROWTH_R$ (the new formula)

Based on the statistically significant result, the idea stems from calculating the intercept by using real cap rates, bond rates, and rental growth. Given its significance, the calculated intercept is also expected to be relatively stable. The result aligns with the expectation. The average of the adjusted spread pre-GFC and post-GFC (until end of 2019) are close to 4.72% as indicated by the model. This intercept value (4.72%) equals to the average of all the calculated intercepts based on the above new formula throughout the entire time series.

(3) Anchor bias is a cognitive bias in which individuals rely too heavily on pre-existing information (the anchor) when making judgments or decisions, as described in the field of behavioural economics by Tversky and Kahneman (1974) and subsequent studies. An example is if someone were to ask you where you think company A's stock will be in three months, a popular approach is to check where the A's stock is today and based on today's performance, you will make an assumption about where it is going to be in three months. It's a form of anchoring bias (Anchoring Bias - Overview and Examples (corporatefinanceinstitute.com).

(4) Keynes' speculative demand (The General Theory of Employment, Interest and Money. Chapter 15) explains that rather than holding money with zero return but lowering its value due to inflation, the opportunity cost is to invest or lend your money. Therefore, your speculative demand for holding money or other assets is driven by your future expectations of inflation, interest rates and market returns (Speculative demand definition | Capital.com). Future expectations mean when interest rates are going up, you would expect rates will go down soon, and vice versa. Currently, the market expects that we are on the top of the interest rate cycle and rate will drop later this year. This means even if interest rates didn't drop, cap rates will have downward pressures given the expectations.

(5) The conclusion of "when bond rates fall, the spread increases" also comes from the model shown in point 2, and the original yield spread formula:

Spread = Cap Rate – Bond Rate

When we replace Cap Rate with the one shown in the original model, the spread formula will be:

Spread = a * BOND RATE - b * RENT GROWTH + INTERCEPT – BOND RATE

If we also use the real coefficient values and tidy the formula up, the formula will be:

Spread = (a-1) * BOND RATE – b * RENT GROWTH + INTERCEPT

Spread = -0.39 * BOND RATE - 0.08 * RENT GROWTH + 4.72%

This means, if bond rates go up and we assume no rent growth in the market, then due to its negative coefficient, the spread will become narrower, and if bond rates go down, the spread will become wider, exactly what we have seen post-GFC (2012~2019) and post-Covid (2021 until current). Of note, the points 2 & 5 are all generated from our forecasting model.

Appendix (technical notes and references)

(6) CBRE conducted a straightforward analysis to examine the relationship between bond rate and OCR. The result indicates that both the coefficient and intercept are statistically significant, with t-stats all above 18 and P-values close to zero. The adjusted R Squared value of over 0.6 suggests a strong linear relationship. The relationship can be expressed in the formula:

Bond Rate = 0.63 * OCR + 2.13%

However, this result is not accurate enough for direct implementation into bond rate forecasting. For example, between September 2013 and May 2014, despite OCR increased from 2.50% to 3.00%, bond rates dropped from 4.70% to 4.29%, albeit with some volatility, Also, when OCR reached the same level, bond rates could vary significantly. For instance, in December 2019 and March 2022 when OCR was 1.00%, the monthly end bond rates were 1.53% and 3.07%, respectively. This is consistent with Infometrics' analysis that "there are times when OCR increases can lead to lower long-term bond rates, if financial markets believe the Reserve Bank is overdoing its tightening now and will need to cut the OCR further in future". Currently, OCR has remained unchanged at 5.5% since May 2023. However, 10-year bond rates had increased dramatically in May from around 4.00% to 5.57% in October, and then decreased dramatically to 4.35% in December 2023. This is another example of significant volatility of bond market even OCR does not change, due to both market inflation and OCR expectations as well as other global market influences.

Adding more variables is one of the methods to improve the bond rate outlook model. Therefore, a 100-bps OCR drop resulting in a 63-bps bond rate drop can only give us some thought on what will happen when OCR starts dropping, but more variables in the global bond market are influencing the slope.

(7) Some economists and commentators have declared that New Zealand's economy entered stagflation in 2023 given a 0.6% annual average GDP increase with a 4.7% annual CPI increase. The economy in 2024 is likely to be subdued with annual average GDP growth lower than 1%. Hence, if CPI cannot drop to the sustainable level of 1~3%, we might have another year with stagflation.

(8) Bond rates presented in the report refer to monthly government bond yields (% pa) from RBNZ.

Author information

Dr. Neil Blake is Global Head of Forecasting and Analytics at CBRE. His responsibilities include developing CBRE's globally consistent economic and real estate view. He also leads the development of CBRE's view on global real estate investment performance. An economist by background, with over 30 years' experience in economic modelling and forecasting; Neil joined CBRE from Oxford Economics, the economic forecasting consultancy, in 2012. At Oxford Economics, he was Director of Economic Analysis and had primary responsibility for the analysis of international cities and regional services, commercial property, housing and retail markets, as well as global macroeconomic and financial sector analysis.

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