

First Prize in the 2025/6 research translation competition

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Automated Valuation Models for Smarter and Fairer Office Rent Reviews

Market rent reviews are a core feature of commercial office leasing, yet the current process is often slow, adversarial and resource intensive. Landlords and tenants frequently commission separate valuations, and disagreements escalate to senior valuers, creating delay and uncertainty. Meanwhile, the broader property sector is becoming increasingly data driven. Automated valuation models (AVMs) already support residential mortgage lending and rating valuations. Our research asks whether similar automated methods could help streamline the commercial rent review process by providing faster and more transparent estimates of market rent.

We examined 676 office leases from the Sydney CBD, one of the few markets where detailed commercial lease contracts are publicly accessible. Each lease contained information on building characteristics, floor level, submarket location, lease structure, tenancy size, operating expenses and commencement dates. Using hedonic regression modelling, we estimated both contract rent and total occupancy cost (TOC), the latter being particularly informative because tenants compete for space based on total cost rather than headline rent alone.

The model performs strongly. It explains a large share of variation in rents and produces accuracy consistent with international mass appraisal standards. The TOC model performs especially well, capturing the way tenants compare premises. The patterns that emerge are intuitive and align with accepted theory and practice: higher quality buildings attract rent premiums, rents rise with floor level, and submarket differences follow familiar market hierarchies. The AVM also outperforms a benchmark model that uses only basic building and location attributes, demonstrating that incorporating richer lease information provides meaningful gains in predictive accuracy.

Although the dataset comes from Sydney, the findings are highly relevant to New Zealand. Sydney was selected because New Zealand lacks a publicly accessible commercial leases, a gap mirrored in the academic literature, where office rent studies are limited internationally. Despite this, the fundamental drivers of office rent including location, building quality, lease structure, floor level and total occupancy cost are universal and reflect the same factors used by New Zealand valuers and leasing professionals. In this way, the model provides insights into general market behaviour, even though the empirical observations are Australian.

Relevance to New Zealand is further strengthened by the structure of the local leasing market. Many New Zealand commercial leases are set using indexed reviews (such as CPI) or fixed annual increases, because these mechanisms avoid the delay and perceived cost of open market rent reviews. However, fixed and indexed methods often diverge from actual market conditions, particularly in periods of rapid economic change. Market rent reviews remain the method best aligned with underlying value, yet their complexity discourages widespread use.

AVMs offer a practical way to reduce these frictions. By providing timely, consistent and impartial estimates of market rent, automated tools make market-based adjustments more accessible and less adversarial. They have the potential to support negotiations, improve pricing transparency and reduce reliance on multiple rounds of manual evidence-gathering. For asset managers, AVMs can also assist with strategic planning, benchmarking and forecasting rent review outcomes across portfolios. In short, AVMs do not replace the professional judgement required in valuation practice; rather, they help create conditions that make market rent reviews easier to adopt.

Beyond industry practice, this work also highlights the broader role of academia in supporting innovation in the New Zealand property sector. As the market becomes more data-intensive, universities need to equip students with foundational skills in data literacy, statistical reasoning, and critical evaluation of automated tools. Embedding these capabilities in teaching ensures graduates can use technology responsibly and understand its limitations.

At the same time, improved access to local commercial lease data would enable researchers to conduct more extensive and locally grounded analysis. Platforms such as New Zealand-born Re-Leased, which is expanding globally and consolidating building- and lease-level information, demonstrate that the infrastructure for such datasets is beginning to emerge. As more New Zealand organisations adopt structured data systems, the research community will be better positioned to study the local market, inform best practice, and promote New Zealand's leadership in property research and innovation.

In summary, AVMs represent a practical and commercially realistic opportunity to modernise rent review processes in New Zealand. By reducing the frictions that discourage the adoption of market rent reviews, AVMs can support more accurate pricing, greater transparency and more efficient negotiations. As local data availability improves and universities continue to prepare future professionals for a data-enabled industry, the conditions for implementing AVM-supported rent reviews will continue to strengthen benefitting landlords, tenants and the wider property sector.

Click below for a link for the peer-reviewed and published research paper:

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