An Inquiry into Government Taxation Policies and their effect on Affordable Housing Financing in New South Wales

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CERTIFICATE OF ORIGINALITY

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at University of Sydney or at any other educational institution, except where due acknowledgement is made in the thesis.

Any contribution made to the research by others, with whom I have worked at University of Sydney or elsewhere, is explicitly acknowledged in the thesis.

I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

Signature of Candidate

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Nicholas Underwood

25 January 2024

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There has never been a better moment to provide support for those professionals who choose a life of service in place of personal enrichment. COVID has reminded all of us that financial reward has little connection with societal contribution, and I hope this Dissertation will go some way to support those who keep us safe at night and in times of need. They suffer personally and financially for their service.

I return to the words of my Honours Acknowledgement. My mother has always quoted Benjamin Franklin in saying “an investment in knowledge always pays the best interest” (humorously attributed to her father). There has never been a moment when personal development has not been the best investment an individual can make. I embark on this academic journey in the hope of bettering myself and building a better world. From everyone who has been given much, much will be demanded (Luke 12:48), and I can think of few who has been given more by one’s parents, and society, than I.

I genuinely mean that. This is my first step.

ABSTRACT

This Dissertation inquiries into the history, cause, and potential solutions for housing affordability in Australia through the lens of tax policy and investment structuring, using a Build to Rent case-study in Sydney. Through first determining affordability from first principles, and assessing the academic basis and history for affordability, current investment conditions are assessed. Given the recent growth in Private Rental Sector investment in Australia and globally, and the focus of State and Federal governments in supporting this limb of increased housing supply, the Dissertation seeks to analyse the investment setting which justify investment into the sector in Australia. This is done to better understand the paradox of limited domestic growth of the asset class funds under management, despite significant tax reform and public discourse.

The research conducted within the Dissertation utilises a Discounted Cash Flow (DCF) Model to assess the projected returns from the Miranda Meridian project in South Sydney. This is done to assess both the underlying project profitability, and subsequently the key drivers of investment returns for institutional investors. All data is obtained from publicly available macroeconomic and private market sources, providing a genuine empirical case study of projected investment returns.

The model creation and utilisation offers a novel approach of assessing investments from a private market investors perspective, thereby offering an overview of the reasons for limited investment in the sector. The research empirically demonstrates that investment is not currently justified, as noted by investment managers. It subsequently determines that the drivers of low returns are tax, investment risk and leverage. This is predominantly driven by the low yielding nature of the asset class.

The results strongly support the case for more significant tax and investment reform to achieve a justified marketplace for affordable rental projects in Australia. The current tax policies are supportive of investment, but fail to generate the required rates of return which are expressly sought by superannuation funds, and empirically proven within this paper.

The explanatory power of the research is to quantify the impact of government policies on an indicative investment in market rent and affordable housing in Sydney for private market participants. It provides support for private market investors, guidance for government policy makers, and seeks to lay the groundwork for significant expected future growth in the structured DMR and PRS investment marketplace in Australia.

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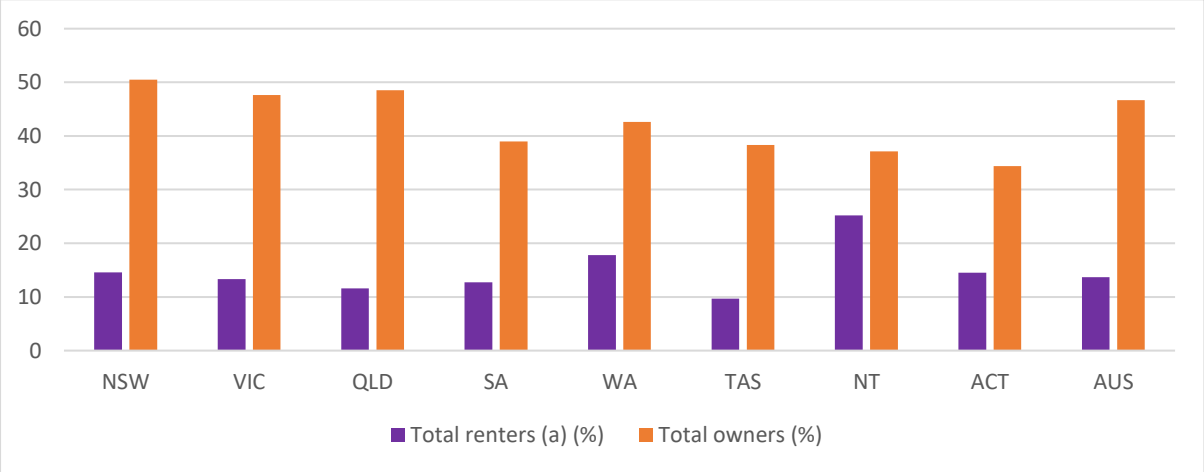
Chapter 1. Introduction

1.1. Opening and Contextualization

Within households, workplaces and social circles around Australia, housing affordability has become a highly contentious issue, both between generations, and as an issue of public policy[1]. Rising residential dwelling prices combined with stagnant wages have made housing more expensive on an income multiple basis (Australian Bureau of Statistics, hereafter, "ABS", 2020, analysed within the Background Chapter). Capital cities, particularly that of Sydney, have experienced greater price growth. This has resulted in the highest income multiples being contained within this city, indicating the worst housing purchase affordability in the country (ABS, 2022). Ironically, this relative unaffordability exacerbates inequality in regions of relative affluence.

While debate of the relative affordability of housing in Australia continues, financial and macroeconomic data is comprehensive. ABS data (2022) Demonstrates Australian dwelling prices have increased 63.4% between December 2003 and December 2020[2]. Within Sydney, prices have grown 91.9% over this same period. Further, as detailed in Figure 1, Low Income housing purchase affordability is worse in NSW than any other state, and NSW ranks among the worst outcomes for renters in Australia. Given the affordability debate, this Dissertation undertakes a full analysis of the current market, and historical trends from first principles within the Background Chapter. This analysis provides a detailed overview of the current climate with a goal of validating policy intervention by Governments and underpinning research context and justification.

Figure 1: Housing Affordability (% of Income)



Source: ABS, Housing and Occupancy Costs, State Aggregate Data, 2019-2020, released 25 May 2022.
Note: Aggregate data includes rents with access to social or affordable housing, and housing costs which includes unmortgaged occupiers. As such, these figures are downward biased.

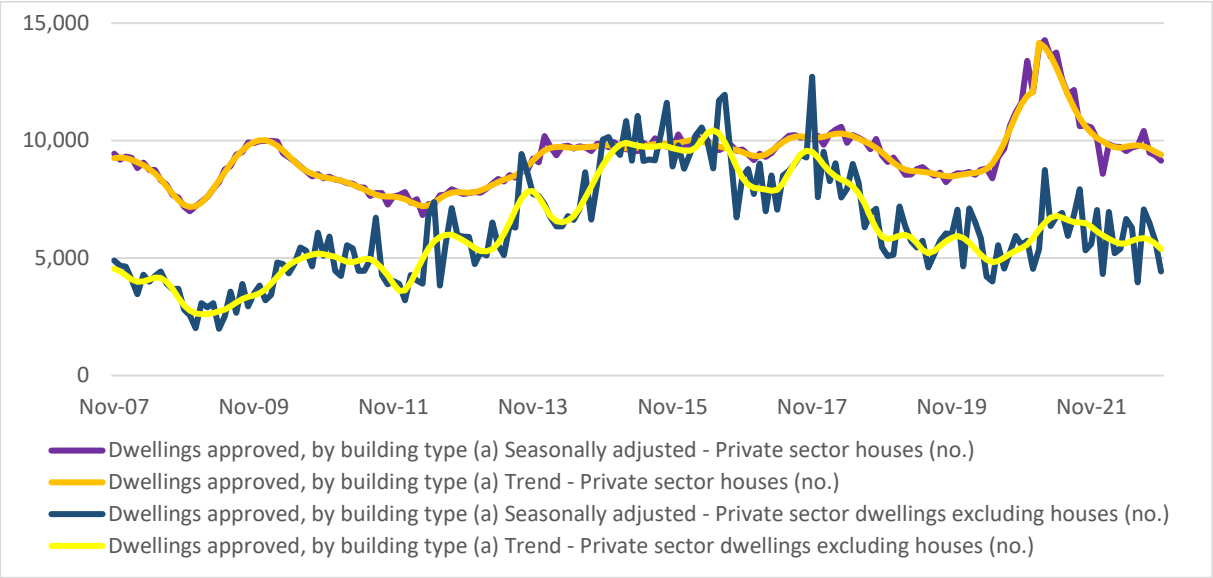
As an indication of the scale of the problem, the data below demonstrates that dwelling approvals have deteriorated on a relative measure from 6.9 (per 1,000 individuals) in 2003 to 4.9 in 2020. Further, dwelling approvals have remained low over the medium term, with nominal approvals

[1] While debate is personal between individuals and groups, there is a long running theme of "it was always hard (to buy property)" which has been widely stated as a core nationwide discussion point. A single topical example of this ongoing debate was by then Prime Minister Scott Morrison on 29 March 2022. This comment resulted in a number of contentious opinion pieces published by the Sydney Morning Herald, News.com.au, Al Jazeera and LinkedIn (all published on 29 March 2022).

[2] Relevant discussion and analysis of ABS Data (including publication dates and delay in publication) on housing costs and affordability detailed in the Background Chapter. Data typically released 24-48 months after the date in question, resulting in a data lag detailed above.

broadly unchanged inclusive of houses, and declining from the early 2010's for housing excluding detached houses (a proxy for apartments and a general measure of higher density approvals requiring local council explicit support, in addition to planning approval).

Figure 2: Dwelling Approvals - Nominal and Trend



Source: ABS, Dwelling Approvals, released 25 May 2022.

There exists a comprehensive academic and public debate as to why and how this economic and policy environment has eventuated. While debate continues, a key driver of the nature of house prices is the impact of historical government policy amendments generating Neo-Capitalist policy approaches. This approach has resulted in housing becoming a financial asset class. Additionally, competing factors have complemented the current policy mix to reduce affordability, including macroeconomic factors such as interest rates and planning policy. More specifically, the current taxation regime results in an asset class which generates tax deductions for private investors, despite the highly taxed nature of housing for institutional investors. This debate is comprehensively analysed within the Literature Review Chapter, with a clear focus on the impact of taxation on both social outcomes and investment returns.

Given the reduction in housing supply, a debate has commenced as to the relative merits of Build to Rent ("BTR") and Discounted Market Rent ("DMR") projects within the Private Rental Sector ("PRS")[3]. Despite this debate, market participants have noted that Taxation alone, or in combination with other policies, disincentivises investment in the sector and precludes investment in affordable housing in its entirety (given discounted rents are not adequately compensated or incentivised). This has remained an open debate in both public and academic research, and warrants investigation. Additionally, the impact of alternative government policy decisions, including incremental debt funding from Housing Australia and policies undertaken to reduce the risk of affordable housing investments have been debated, with an unknown impact on project profitability.

[3] Hereafter, these acronyms will be used throughout the paper. This Dissertation will take PRS to include all housing stock rented, irrespective of the market or discounted nature of the stock. Discounted will include the traditional definition of 15-20%, whereas 'Social' rents will refer to a higher discount of 20-40%. BTR will refer to housing stock which is specifically built for the purpose of renting to the private sector at market, or discounted rates. The definition and history of these discounted figures is included in the Background Chapter, but is generally considered Arbitrary.

Consequently, from the perspective of institutional investment in affordable housing, this research seeks to first assess and quantify the size and trend in housing affordability in the Australian and specifically, the Sydney market. Subsequently, it provides an overview of the policy and economic reasons for the creation of this affordability crisis through a detailed analysis of the international and domestic academic literature, with a focus on taxation. Lastly, throughout the research, the institutional residential real estate investment market in Australia and globally is defined and analysed. This provides a consideration the hurdle rates and returns requirements of institutional investors, driving investment decision making.

This setting supports a detailed analysis into the financial implications of the current Australia State and Federal Government policy framework, with reference to the Sydney market. It allows a quantifying of the returns required for investors, which can be utilised in order to determine if the Sydney market justifies investment into residential property, and if not, what policies can be changed to generate the required rates of return for both Market Rate residential projects, and DMR projects.

1.2. Research and Policy Intervention Justification

1.2.1. Underlying Research Rationale

The research within this Dissertation seeks to address the market conditions under which investment into Sydney affordable housing can be made by profit maximising fund managers. It is being undertaken to academically determine the validity of the argument by Australian fund managers (both superannuation funds and institutional asset managers, detailed within the results) that the returns from investing in residential housing are too low to warrant the use of investor's capital.

In doing so, it will determine the government policies which require amending to improve project profitability. It will then subsequently consider the key drivers of investment returns between taxation, investment risk and leverage, along with the impact of other market assumptions on project profitability. This will be undertaken in order to achieve more comprehensive and detailed results and provide a more nuanced research conclusion.

This investment analysis is key to analysing recent Federal and State Government policies aimed at incentivising BTR investment to increase the supply of housing in the Australian market. This is done by financially assessing the impact of recently implemented and currently proposed policies. Thereafter, the research demonstrates a more comprehensive policy solution is required than those currently proposed and implemented by State and Federal Governments to achieve meaningful housing investment change.

The justification for this research is underpinned by the inequality detailed within the Background Chapter, with an overview contained within 1.2.2. Affordable housing investment policies have been ineffective at achieving growth in low-cost housing in Australia, as has been the case in other international markets. As such, there is a need to determine the factors which are driving low investment appetite from fund managers, to achieve a greater aggregate quantum and relative frequency of investment in the Australian market.

Additionally, given housing affordability is particularly poor in Sydney, it forms an appropriate market to determine the conditions which are stopping investment. Further, as "Key Workers" (the subject of affordable housing projects in many international markets)[4] are paid similar salaries in Sydney as they are in other states, these workers are at a disproportionate disadvantage to other workers in achieving acceptable housing outcomes in Sydney. Thus, for institutional investors in social and affordable housing there is a strong rationale for commencing research within this market.

1.2.2. Social Research Justification

The importance of this research rests on the value to society of increasing supply of homes for key workers to reduce the financial housing burden for Australian households. This motivation is driven by the social value of improved housing expense outcomes, briefly detailed below.

While rental costs are lower than mortgage repayment costs in Australia (as detailed in the Background Chapter and highlighted in Figure 1), housing affordability proportionally impacts all households, while rental affordability drives inequality for lower income households (Yates, 2011). Additionally, renting a home includes implicit social or financial costs to tenants, including instability caused by the short-term nature of rental agreements (with the vast majority of rental tenancies being for less than 12 months in Australia (ABS, 2022). This in turn, results in higher short-term mobility, leading to increased scenarios of substandard rental acceptance, moving costs and over the medium

[4] Key workers are hereby defined in line with Gilbert (2021) as frontline government staff delivering primary services to NSW residents.

term, increased unforced mobility, as tenants accept the burden of continuous movement (Desmond Et Al, 2015).

Additionally, the nature of the Australian rental market has resulted in other social issues such as regressive transport burdens placed on low and middle income families (PWC, 2017). As the stock of housing has remained undersupplied (as detailed in Figure 2), the proportion of low income renters experiencing rental stress (typically defined as spending more than 30% of their gross income for rental expenses (OECD, 2021[5]) has increased from 37% in 2003 to 44% in 2020 (ABS, 2022). The increased cost of acquiring a home has also resulted in a greater proportion of the population being financially unable to enter the market. Accordingly, renters as a proportion of the total housing market have increased from 30% in 1994 to 32% in 2020 (ABS, 2022).

The impact of this higher cost of renting is significant, and widely researched by Australian Government bodies including the Productivity Commission ("PC"). The most recent PC report (2017) notes the high cost of housing increases financial stress and reduces access to quality education (through reduced disposable income, and more importantly through reduced geographic mobility to access Australian public schools). On a macroeconomic scale, this cost also limits employment opportunities and reduces social and community connections. These impacts are complimented by macroeconomic inefficiencies such as labour mobility and reduced productivity.

As Federal and State governments have attempted to implement a number of policies in order to improve the affordability of housing acquisition and rents, the continued deterioration of the market warrants investigation. While only a small portion of the market, the opportunity for BTR investments to create improved supply and increased affordability is key to this investigation. This is particularly the case as while many policies have been considered or implemented by Governments (as detailed within the Literature Review), these policies have had limited or no impact on housing affordability (the most widely cited article, among others, being Gurran and Phibbs, 2015). As such, there appears clear motivation for improving the policy mix, incentivising investment, and improving housing outcomes.

[5] It is noteworthy that a number of markets within the OECD countries group define housing affordability utilising a more acute measure of "overburden", a benchmark of 40% rent/income. This figure is more closely aligned with the Australia methodology of "severe rental stress". With this in mind, the OECD effectively measures the benchmark for unaffordable housing at 30%, and deeply unaffordable housing at 40%.

1.3. Research Objectives, Question and Structure of Dissertation

The main objective of the research undertaken within this Dissertation is the determination, quantifying and sensitising[6] of the key policy and economic assumptions that disincentivise investment in Australian housing projects. The research will be utilising a Neo-Capitalist framework to assess policies aimed at incentivising project acceptance. As such, government incentives of preferential taxation, lower cost debt, and project risk reduction will be the key focus of the research. Therefore, the underlying Dissertation research question is:

Under what taxation policy conditions can investment in affordable housing be justified for private sector investors in Sydney. Specifically, do taxation policies alone incentivise investment, or does the sector require comprehensive investment reform to incentivise private sector supply?

This research question will be undertaken through a structured approach of determining the current and historical affordability of housing in Australia, and the reasons for these market conditions. Thereafter, the Research Methodology will be defined, described and critiqued, before a review of the results will be undertaken. Subsequently, the research will be concluded.

Chapter 2: Background

The research will commence with a review of the affordability of the Australian and specifically, the Sydney housing market, from first principles. The underlying affordability of housing for both renting and ownership will be considered, along with an analysis of the trend in affordability over recent history. This provides an introduction into the factors influencing affordability, and the justification for research into the asset class, and for policy intervention by Governments.

Chapter 3: Literature Review

Thereafter, the theoretical framework for research within this Dissertation will be undertaken by first determining the philosophical approach of government. Thereafter, the academic overview of government housing objectives will be defined and critiqued. This will provide an opportunity to review the academic debate into taxation and housing objectives of State and Federal Governments, the policies implemented, and their impact on housing affordability. The impact of other factors will then be considered, along with the influence of these factors on housing outcomes. Lastly, the specific impact of Institutional Capital and Public Private Partnerships will be made in order to introduce the debate into the influence of structured investment projects on project profitability.

Chapter 4: Methodology

The Methodology will be undertaken using a DCF model. Initially the theoretical foundation and empirical evidence for the model will be undertaken, along with an analysis of the use of DCF models in financial markets.

The methodology will include the identification, definition, description and calculation of each of the inputs required within the financial model. To this end, the methodology will include both the theoretical framework and overview of how the model calculates investment returns, along with the

[6] Throughout the paper, “sensitise”, “sensitivity” and “sensitivity analysis” will generically refer to the practise of Financial Sensitivity Analysis. This is the process whereby variables and inputs are changed in a financial model to determine the relative influence of variables, and the impact of multiple variables which are changed simultaneously. In effect, it refers to the adjustment of variables to determine the impact on the results, in this case, project profitability and subsequently, viability (Corporate Finance Institute, 2024).

inputs used in the model. As such, the Results Chapter will be focused on the outputs from the model, and sensitivities of these outputs.

Chapter 5: Results

The Results Chapter is a structured investigation into a number of key questions of the Dissertation, providing a breakdown of the major factors and inputs which contribute to these outputs. As such, the Results Chapter seeks to undertake the following:

- Determine if investment into BTR projects across either DMR or standard PRS projects is justified in the Sydney market. In essence, it will seek to determine from an academic perspective, if Australian fund managers are correct in determining that the returns to investment are too low to undertake housing BTR projects.
- Assess the required returns for investment into BTR projects, seeking to determine if there is a differential between projected returns and required returns.
- Assess if any tax investor class is able to profitably invest in either PRS or DMR projects in the Sydney marketplace. In doing so, it will seek to determine what tax rate is required to achieve project acceptance.
- Consequently, the research will seek to determine what conditions elucidate project acceptance. Specifically, what factors and inputs require adjusting to reach project viability.
- Alternatively, it will determine if a structured PPP investment achieves the required rates of return to incentivise investment into low-cost housing in Australia.
- Lastly, it will assess what factors improve investment profitability, and how can this analysis be used to create the market conditions required to achieve investment into reduced cost housing in the Australian market.

Chapter 6: Conclusion

Finally, the results of this research are discussed and analysed. The key findings of the Dissertation are reviewed and considered, with a specific focus on influential inputs to project profitability. Thereafter, the implications for private practice and Government policy proposals are made. Project limitations and further research is defined, before the research is concluded with final thoughts.

1.4. Scope and Limitations

The scope of the research conducted within this Dissertation is limited to a single case study for the Miranda Meridian BTR project in Sydney. The single case study is utilised due to the heterogenous nature of residential real estate projects, whereby two similar projects may not be the same, and as such a generic investment within a local or regional area cannot be determined.

Further, this case study will be indicative of a Sydney BTR project utilised for either PRS or DMR investment purposes. The rationale for focusing within the Sydney investment marketplace is due to the rent and yield nature of this asset, making more general assumptions of returns across Australia difficult to assume. Further, the utilisation of the Sydney marketplace is consistent with the only large scale investment market in NSW, which forms a key component to the taxation marketplace which is assessed within the research.

The type of asset class will remain residential (both affordable, and market rent) throughout the project, and no consideration will be made of retail or office investments. This is due to the narrow nature of inquiry proposed within this Dissertation, focusing on the Residential marketplace in Sydney, and more generally across Australia.

Lastly, the investor type will be considered to be a profit maximising fund manager. Social or charitable investors not seeking to maximise invested capital returns will not be considered beyond limited taxation treatment analysis. While the project has an underlying assumption of social value, the assumption of a rational economic individual will be required to create a comprehensive understanding of the impact of taxation on project acceptance. As such, this case study will assess the required policy setting for private investors to undertake investment, rather than the impact of such policy on individuals, government or charitable investors.

Importantly, this approach to investment analysis has a significant limitation in the inability to assess private market participants expectations of investment returns. As private market participants are inherently unwilling to provide any information of expected returns to the market (as this would undermine bids for investments across all asset classes), all assumptions must be determined with reference to public information. Such research is undertaken at a distinct disadvantage, as private market participants may adopt assumptions which differ materially from historical averages, or implied market variables (such as the cost of debt, or market yields).

As such, the research conducted within this Dissertation will effectively be an empirical assessment of the asset class from a purely public perspective. No private market assumptions will be sought, identified, or utilised. As such, the results of the Dissertation will be constrained to the expected investment marketplace, rather than the actual investment marketplace.

1.5. Overview of Methodology

The methodology utilised within this Dissertation will be undertaken by way of a DCF model. As detailed within the Methodology chapter, with extensive reference to Damodaran (2012), a DCF Model is utilised to value an asset, business of project in order to determine the returns generated by such a project, and as such if a project should be undertaken. This type of model is widely used in financial markets, and is the common practice and standard method of assessing projects and valuing assets.

The model itself has three key components, as follows:

1. Forecasting project cash flows – determining the costs of a project, and the projected revenues and cash profits that a project will generate over its lifetime;
2. Determining the Terminal Value – the estimation of the final value of a project at the end of the ownership period, typically undertaken through estimating the value of the project when the investor sells, or otherwise liquidates the asset; and finally
3. Determination of the Discount Rate – the required rate of return for investors within the asset class must be determined, in order to discount the asset back to the present day.

While the full extent of the assumptions required within the model are detailed extensively within the Methodology Chapter, the project will require current market prices to buy and rent residential property in Sydney. Subsequently, it will require estimates of the revenues (net rents) and operating expenses of residential investments, before determining the cost of debt, and the tax incurred for the project. Once undertaken, these assumptions can be used to determine the cash flows over the forecast period, through capitalising the final period Net Operating Income ("NOI"), a final valuation can be undertaken.

1.6. Conclusion of the Introduction

As will be subsequently detailed within this Dissertation, planning constraints, taxation policy and rising income inequality are resulting in deteriorating housing affordability outcomes for Australia's citizens. This is particularly the case in Sydney, where government policy benefits ownership of housing by a small number of wealthy individuals. Despite property price growth and limited supply, these investment conditions continue to fail to incentivise supply of new housing by institutional fund managers. To this end, these funds have publicly detailed the lack of investment as being driven by the low returning asset characteristics of PRS investments.

This marketplace has exacerbated inequality problems in Sydney, whereby workers critical to Sydney's operation are unable to afford to live near their place of work. However, such an economic scenario creates an opportunity for detailed analysis which is contained within the Dissertation. This inquiry is required in order to find an innovative solution to a continuing social and economic issue. Though adjusting the nation's taxation and investment framework, this Dissertation will seek to find a pathway towards meeting the financial and ethical obligations of society by increasing the supply of new housing for its citizens. Such a policy review will seek to find the conditions under which governments can improve the profitability of PRS investment, institutional investors can increase housing supply for the benefit of renters, and in doing so, supply can increase to reduce the burden on first homebuyers.

Accordingly, this Dissertation will initially assess and quantify the scale of the housing problem in Australia from first principles. This is critical, as the nature, scale and impact of housing affordability in Australia has become both highly politicised and significantly influenced by Government bodies, private sector investors and think-tanks.

Within the Background Chapter, the historical trajectory of housing affordability, across both renting and house ownership will be undertaken from first principles. This will provide a setting and historical context for the literature review and research to follow, and justify the rationale for the underlying research conducted within this Dissertation.

Chapter 2. Background

2.1. Background Overview

Real Estate is defined as an asset class of all land and buildings, irrespective of their use, and geography. Property used for long term occupation by individuals or groups for the purpose of habitation, referred to hereafter as Residential Real Estate or Housing, is a specialty sub-sector of this asset class (CFA Institute, 2023). While all Real Estate can be used for investment purposes, housing has a dual role, as both a potential investment, along with a primary place of residence for members of the public. While this Chapter will focus on housing as it relates to individuals and affordability (a social issue), the nature of the sector as an asset class will be implicitly considered hereafter (as an economic investment). Broader consideration of Real Estate will be lightly referenced, as although it has general similarities, the wider market is not relevant to this Dissertation.

Housing affordability in Australia has deteriorated over time, with government policy and rational financial investment resulting in a changing marketplace for housing. Affordability is deteriorating across a number of measures (including price to income, and income expenditure measures, defined within this chapter), increasing rental stress. At the same time, housing supply is insufficient to keep up with the demands of a growing population. This introduction highlights each of these issues, prior to proposing a structure for the background chapter of this research.

As often noted in the Australian financial media, housing in Australia has transitioned from a social and ethical societal responsibility to a wealth creation tool[7]. Government policies and macroeconomic conditions have transitioned housing from a basic good, required in order to support a functioning society, to a financial asset class, sought after for its long dated, stable and relatively low volatility asset characteristics and cash flows. In line with this transition, affordability for property in Sydney has fallen, as prices have risen, while wages have remained relatively static. This is particularly true for the proposed beneficiaries of this research, as jobs in frontline sectors exist throughout Sydney's metropolitan basin, with varying levels of unaffordable property values and rental costs. This leads to not only reduced macro-level affordability metrics across the city, but deteriorating affordability for these front-line workers.

The income required for a 20% deposit on the median Sydney house has grown as a proportion of Sydney average annual household income from 116.8% in 2001, to 185.1% in 2018 (ABS, 2020). Headline property ownership inequality is further intensified by high rents in the city, relative to other Australian cities and States. Key workers in Sydney face the least affordable rental market in Australia, with 27% of key worker household income required to pay Sydney rental outgoings (SGS Economics, 2020), the equal highest in Australia. In addition, there is no viable plan for improved supply of key worker accommodation, as demonstrated by the most recent (albeit, dated) Sydney City LGA council (Morris and Hanckel, 2016) estimate that in there were only 750 affordable homes available in 2011, despite 47,000 frontline staff working in the city of Sydney LGA. While highly unaffordable by local standards, aggregate rental markets remain more affordable than both the alternatives of home ownership in Sydney, and rental markets in other global cities. Thus, affordability must be considered in a more holistic context, as being highly unaffordable by Australian rental standards, and deteriorating over time, yet less severe than ownership or when living in lower wage markets.

[7] An example of this ongoing debate within the financial media was the overview of the housing market in the Australian Financial Review ("AFR") podcast "The Fin", where Michael Bleby, the AFR Property Editor posited that there is an ongoing discussion as to whether housing is a "basic service, something that everybody needs to access cheaply, easily and securely, or is housing a wealth creation instrument" (The Fin Podcast, 21 December 2022).

Importantly, this chapter comprehensively concludes that housing *ownership* affordability is significantly worse than *renting* affordability when compared across percentage of income measures. Despite this, renters suffer from significant inequality, as frontline jobs remain geographically dispersed across both low and high income (and as such, affordability) regions.

As a result of this deteriorating affordability, the average proportion of income used to pay for rent is only just short of the definition of rental stress typically used in the Australian market[8]. While somewhat self-evident, rental stress is particularly acute for low and middle income households, with the average low-income household considered highly stressed along every timeframe since 1995 (averaging over 40% of household income to pay for rent), and medium income household rents averaging close to the definition of rental stress (around 28%-29% of income) during the same period (Productivity Commission, 2019). As a result, there is a clear relationship between rental stress levels and nominal or relative income levels.

Not only is affordability poor, but it is also expected to deteriorate. The Greater Sydney Commission (2019) forecasts that Sydney will require an additional 725,000 households to meet population growth targets in the coming 20 years from 2017, with no realistic plans to meet these required homes. Further there is a substantial undersupply of homes for low and moderate income householders. For low income households the NSW Department of Communities and Justice (2023) estimates that the social housing waitlist sits at 51,000 homes, and expects that this waitlist with grow over time given limited investment. Similarly, currently only 4% of housing in Sydney is considered 'Affordable' by the Greater Sydney Commission (2022), and despite policy lobbying to increase this figure to 10% of new and existing stock, the proportion has fallen over the past 10 years.

In evaluating the Historical context of the current Housing market, there is a need to determine measures of affordability, calculate the trend or changes in this affordability, and analyse the results which provide a background to the current housing affordability market dynamics. This will subsequently be followed by a social and economic context for improving housing affordability, providing both a fundamental measure of the market as it stands, along with an ethical justification for research into the area, and policy amendments to improve the marketplace going forward. Lastly, a comparison will be made between renting and home ownership, given both personal finance options are considered in proposed policy reform contained within this Dissertation.

[8] Defined both by the OECD and the ABS as 'a household spending more than 30% of gross household income to pay weekly rent'.

2.2. Measures

Housing affordability can be viewed through the lens of renting affordability and home ownership affordability. Ownership of a home allows for the financial control of a stable asset, which can be repaid over a longer period of time, whereas renting provides flexibility for the tenant to move at relatively short notice with limited transaction costs (Aaronson, 2000, among others). The financial trade-off between these two forms of housing is indicated by the yield of residential property (as the yield of a property is a relative measure which is determined by both the rent achieved, and the cost of acquisition), along with the value of the opportunity cost of renting. This yield differs in different international and domestic markets, driven by a variety of factors, including taxation law, demand and supply constraints, planning and development policy and societal preference.

This trade-off between rental costs and upfront capital costs occurs in a rational marketplace, with willing buyers and sellers. Yield adjustments support the proposition that housing may be unaffordable for individuals, yet it remains a rational investment (detailed further in this Chapter in an overview of Meen and Whitehead, 2020). Housing cannot be unaffordable on aggregate (i.e. irrational as a marketplace), as if prices were too high for all individuals, the market would simply adjust and housing purchase costs would reduce[9]. Thus, the effective measure of affordability is through a question of whether specific strata of an economy can purchase or rent property, rather than macroeconomic disagreements about what the effective yield "should be". Put simplistically, the measure of housing cost is one of stress and income contribution, rather than nominal house prices (Meen and Whitehead, 2021). In considering measures of affordability and recent analysis, it is noted that the preeminent research in the calculation and analysis of measures of housing affordability has been undertaken by the 2021 book on housing affordability by these two researchers. As such, a significant number of references throughout this section of the Background chapter are made to Meen and Whitehead.

There is a number of measures of affordability globally, of which the least complex and most flawed measure is the price to income (sometimes known as the price to earnings). This ratio is the most typical and commonly used in both financial and traditional media (Meen and Whitehead, 2021). Additional measures exist, with varying degrees of improved relative usefulness. Meen and Whitehead (2021) analyse the common affordability measures as:

$$Price\ to\ Income\ Ratio = \frac{\text{Price of the Median Household in a region}}{\text{Median household income within that region}}$$

- Price to Earnings Ratio – utilising aggregate (typically median or mean) measures of housing costs for a region or country relative to a similar aggregate measure of earnings across the economy. This measure is the most commonly utilised measure globally; however, it reflects the flaws of utilising a median or mean measures to provide a snapshot of the wider distribution (i.e. it seeks to obtain a 'middle' or 'average'). Additionally, it provides no underlying measure of distribution within the marketplace, and as such is a fairly limited usefulness measure.

$$\text{Expenditure to Income Ratio } (\%) = \frac{\text{Cost of housing occupation (ownership or rentership)}}{\text{A measure of household income}}$$

[9]This is a truism, as if all individuals within the economy could not afford to rent, occupancy rates would fall, and costs would adjust to reduce the cost of housing. This is as true for ownership as it is for renting, and is noted extensively in literature, a recent example being Meen and Whitehead, 2021.

- Expenditure to Income Ratio – measuring the cost of housing ownership or renting relative to income, resulting in a percentage of income consumed by housing expenses. This provides a measure of rental stress, but again is typically utilised for 'average' economic agents, and as such aggregates an inherently distributional issue[10]. The difference between this measure and the first price to earnings measure, is that the inflows of income are better measured against the outflows of expenditure, rather than the aforementioned measurement of a value to an income flow.
- Housing Supply – Analysing and calculating the number of homes within an economy, and determining the gap in supply relative to societal needs.

Additional measures frequently utilised within the Australian marketplace (all equations obtained from the ABS, 2021) often measure the difficulty to first become a home owner for new entrants to the housing market. These are as follows:

$$\text{Time to save for a deposit (in years)} = \frac{\text{Median Household Price} * 20\%}{\text{Median disposable income for first home buyers}}$$

- Time to save for a deposit – this is the number of years to save the required 20% deposit for a mortgage without the associated Lenders Mortgage Insurance which is typically incurred for deposits less than 20%.

$$Price\ to\ Income\ Ratio\ for\ first\ Home\ Buyers = \frac{\text{Price of the Median Household}}{\text{Median first home buyer household income}}$$

- Median price to income for a first home buyer – this measure calculates the average price to income for the median first home buyer, rather than the aggregate population. It is a better reflection of cost of home ownership for a new home buyer, rather than the average home owner, who has likely built up equity over periods of prior home ownership (ABS, 2021).

While first home buyers' affordability is an inherent issue, it forms only a component of broader affordability within a marketplace. There are inherent challenges for first home buyers in the first years of ownership, as wage growth, inflation, mortgage reductions through repayments and the prevailing relatively low interest rate environment improve affordability relatively rapidly ('rapidly' is considered relative to home ownership lifecycles, i.e. within 10 years) following property acquisition (Mean and Whitehead, 2021). Thus, the issues for first home buyers are often short lived, and improve once home ownership is obtained. Despite this, the research conducted within this Dissertation will focus on macroeconomic issues related to housing affordability, and not on first home buyers affordability, and as such these measures are noted, yet not addressed in detail.

The limitations of these measures are detailed extensively by Meen and Whitehead (2021), as being a failure to measure both differences between different income stratas within an economy. Additionally, these measures fail to measure the differences within income stratas, which can also be

[10] While residual income measures are not typically referred to in the financial press for the Australian housing market, the household expenditure measure is commonly utilised by banks in order to determine the ability of potential mortgagees to pay mortgage repayments in the event of a higher interest rate environment. This is commonly referred to in the financial press as the "mortgage buffer", and as at 2023, APRA requires that mortgage applications be assessed relative to 3% increase in the base rate relative to the prevailing interest rate (APRA, 2021).

significant, due to location of home ownership, personal expenditure factors and personal income elasticity of demand.

Despite the significant, and well documented, shortcomings of aggregate measures of affordability within an economy utilising income or expenditure models relative to the cost of housing, there are benefits of utilising these measures. These benefits are well documented by David Hulchanski (1995), as being:

- Description of household expenditures – providing an aggregate descriptive statistic of the shape and measure of housing on an aggregate scale.
- Analysis of Trends – comparing housing affordability relative to historical measures to provide a general trend of aggregate affordability.
- Administration of public housing criteria and subsidy – determining measures of who can access housing subsidies.
- Definition of housing need for policy – determining housing need for public policy purposes.
- Prediction of the households ability to pay rent or mortgages – utilising these measures to forecast housing affordability in the future for a portion of the economy.
- Selection criteria in the decision to provide a rental or mortgage – determining if a household can afford rental units or mortgages.

Within the 1995 paper, Hulchanski noted that the first three measures (descriptive power, trend analysis and public housing criteria) have a degree of validity, while the latter three (definition of housing need, predictive power and selection criteria) have limited usefulness. This view is concurred with by Meen and Whitehouse (2021). In summation, there is general agreement that trend analysis can be useful in determining affordability, however public policy relating to the allocation of social housing should be determined based on cross-sectional data across society to ensure that those who have the greatest need are provided for more effectively.

Given the above considerations, this background chapter will utilise aggregate macroeconomic data as a way to form opinions of macroeconomic trend, rather than to determine specific need. Such trend analysis of housing affordability is core to the premise of this Dissertation, and as such, it will form a key component of the background. In short, this background determines that affordability has deteriorated, but does not provide a cross-sectional review of which groups have suffered the most, as this is not relevant for policy proposals with a stated goal of boosting housing supply.

In considering the affordability of housing, it is worth nothing the benchmark of 'unaffordability' when considered through a rental stress or mortgage repayment measure. The UN determines that the benchmark of unaffordability is 25% of income consumed by housing costs, whereas predominant Australian research concludes a higher figure of 30% (including APRA, the ABS and the Parliamentary inquiry into housing across both NSW and Federal Governments). Higher figures exist in other marketplaces, with a prevailing rate of 40% in both Europe and the US. In effect, the figures are always explicitly arbitrary (Meen and Whitehead, 2021). These figures determine a degree of housing stress, however the impact of mortgage stress and the willingness of buyers and renters to devote significant portions of their income to mortgages is inherently society specific.

There is an additional consideration in housing affordability, which is of importance, yet infrequently noted in the financial press and mainstream media. There is an automatic assumption that a rise in the price to income ratio is a negative outcome, when in fact it may be due to a fall in interest rates and a reduction in the actual cost of housing for owners, along with a higher disposable income for those with other forms of leverage (including 'rent-vesters', along with those with personal and

consumer loans). The same is true in reverse: a rise in interest rates may be perceived to 'improve' the price to income ratio, however this may be due to higher interest rates, inducing significant mortgage stress, which reduces economic welfare (Meen and Whitehead, 2021). There is clearly a need for a more comprehensive measure of mortgages, particularly for moderate income households in a volatile interest rate environment.

2.3. Overview of the trajectory of Housing Affordability in Australia

Housing affordability is a deeply divisive issue in Australian society. The movements in wages, nominal housing and rental prices and borrowing costs have resulted in disagreement relating to the effective costs of purchasing housing now, relative to the costs in the 1980's and 1990's, when interest rates were between 15-22%. Disagreement is comprehensive, and within households, families and local communities there is limited consensus about the degree of effective housing policy, and if housing is actually less affordable now than previously.

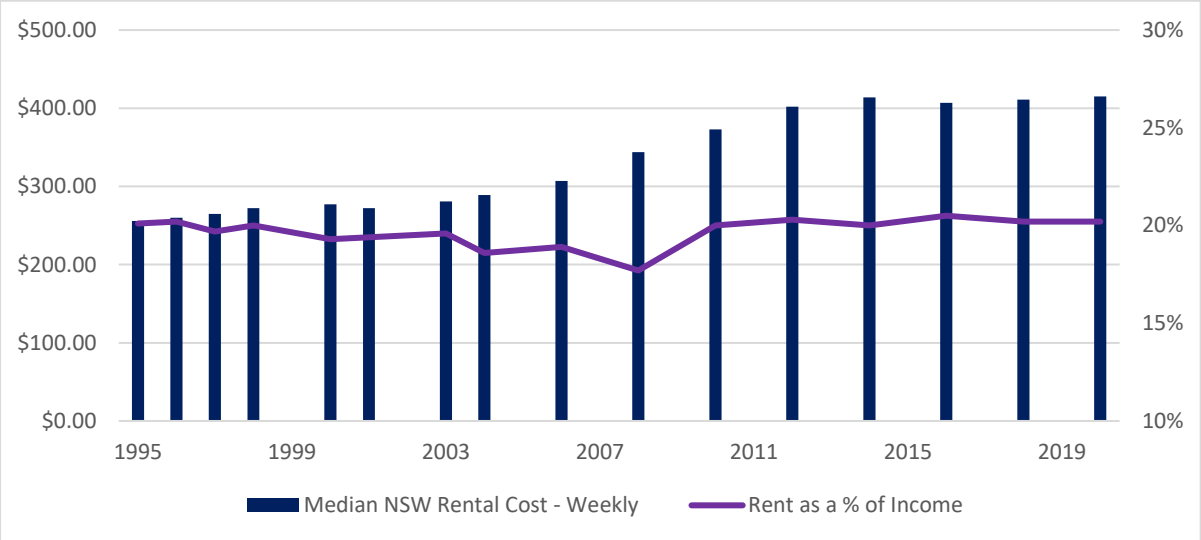
As previously mentioned, there are reasonable and supported arguments to resist using cost of housing relative to income or disposable income measures to determine macroeconomic housing affordability. However this research requires an overview of the trend in affordability in the Australian housing market in order to assess the rationale for policy reform (a use of such policy, which is supported by Hulchanski (1995)). As a result, this chapter will seek to both determine the relative cost of renting and ownership, and also determine the cost of housing ownership relative to historic periods, in order to determine if policy reform is justified.

The key measures of housing affordability are rental costs, borrowing costs, nominal house prices, and incomes. As such, this chapter will quantify and assess the changes in each of these components, and subsequently determine the relative changes in these factors. It will subsequently calculate, from first principles, the affordability of renting and ownership in the Australian market over the past 30 years. This chapter will conclude by proposing a new measure of housing affordability to better measure changes in housing purchase costs, housing rental costs and macroeconomic affordability.

2.3.1. Macroeconomic Rental Costs

Rental costs have displayed a close link with inflation and wage growth over the past 20 years in Australia. As is displayed in the figure below, the cost of rentership has remained relatively stable at 20% of income since 1995. This is due to rental costs growing in line with wage growth over the same period. Accordingly, the average rental cost of housing in Sydney has increased from $256 a week in 1995 to $415 in 2020 (the last date of ABS data publication).

Figure 3: Rental Costs – Nominal and as a Proportion to Income



Note: ABS Data is not calculated annually, and figures are included for all ad-hoc years in which historical housing cost data is provided by the ABS.

In effect, the figure above demonstrates effectively that the relationship between incomes and rents is relatively strong, and that over the medium term there has been limited growth in rental prices over and above wage growth in the Australian economy. Additionally, Wulff et al (2011) has noted that the longer term relationship between rents and income is stable, and there is a striking lack of real rental growth over the longer period from 1971 to 2006, in addition to the last 20 years, as noted above.

Given the limited growth in rents relative to incomes since the 1970's, it can be determined that the rental housing 'crisis' is not one which has deteriorated over the past 50 years in Australia. In this regard, the figures above display evidence that housing affordability is an issue of rental distribution, rather than macroeconomic deterioration, a concept which is detailed extensively by Meen and Whitehouse (2021) in other international marketplaces, including the US and UK.

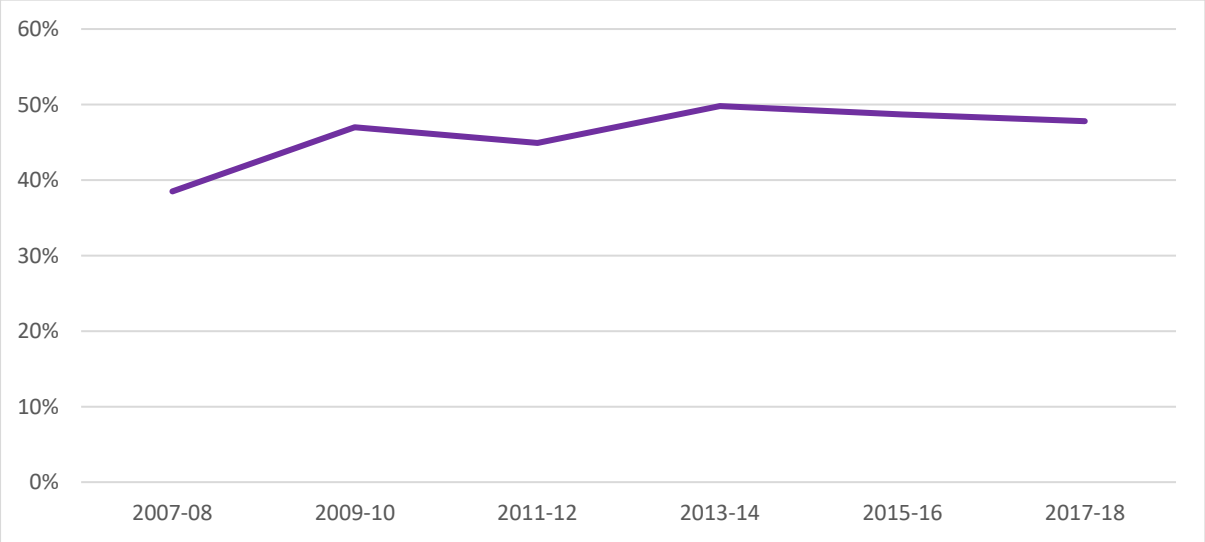
On a cross-sectional basis, it is worth noting that the cost of residential PRS housing in the Australian markets is lower than other international cities including London at 33% (Greater London Authority, 2020) and New York (ranging from 30-40% based on borough in the Greater New York area, Office of State Controller, New York, and presented by DiNapoli, 2021).

2.3.2. Housing Affordability Inequality

While on a macroeconomic level rental affordability is better than other countries, the market has deteriorated over the past decade when measured by cross-sectional income and housing inequality (ABS, 2021 and Meen and Whitehead, 2021, along with research conducted hereafter). At its core, affordability is measured relative to income generation, which supports the savings and wealth accumulation goals of higher income households, and those households with dual incomes. In contrast, this affordability gap impacts households on lower incomes, and households with income earners working in areas of public interest, rather than financial enrichment.

As detailed in the figure below, over the past 10 years to 2018 (the most recent data as at the date of writing), rental stress has risen across the country from less than 40% to around 50% of income for low income households (AIHW, 2022). This trend reflects a number of competing issues, including reduced access to social and affordable housing, along with low wage growth for this portion of the workforce combined with rental costs in the private sector increasing with inflation.

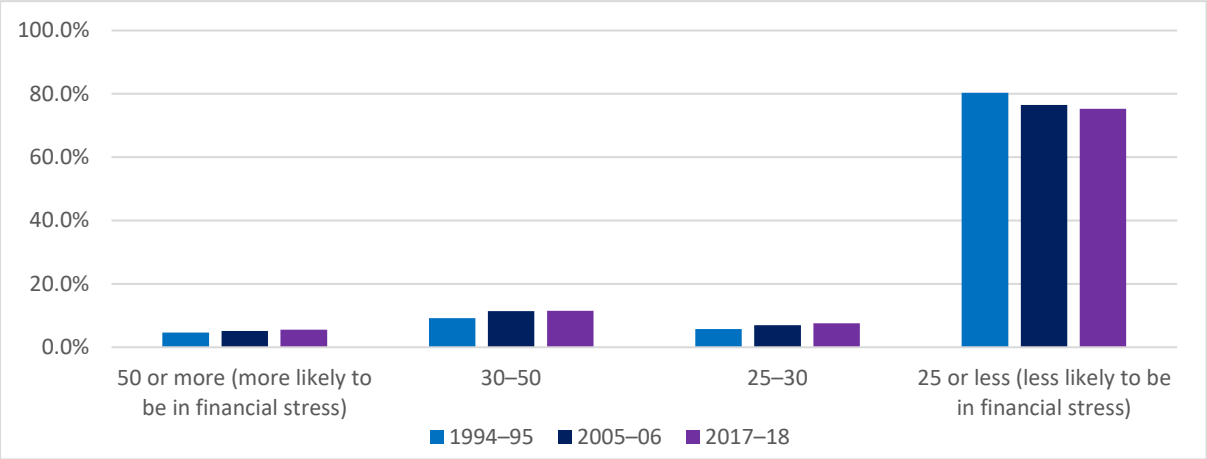
Figure 4: Proportion of Homes in Rental Stress – Australian Capital Cities



Note: AIHW data is published on every two years.
Source: AIHW, 2022.

The trend of decreasing housing affordability can be viewed in more detail for NSW households in aggregate. Individuals spending less than 25% of incomes on housing (reflecting both domestic and international measures of affordability) account for 75% of households in Greater Sydney. Despite this, housing affordability has fallen from over 80% to less than 75% of households being considered affordable between 1995 and 2018. This decline has resulted in a greater number of households being considered unaffordable, and accordingly an increase in the number of severely unaffordable households.

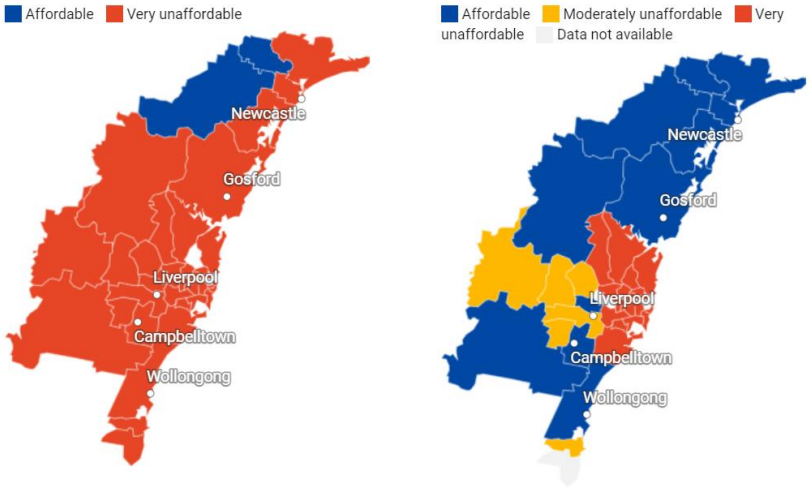
Figure 5: % of Housholds in Housing Stress - Decade baskets



Source: AIHW, 2022.

Housing affordability for key workers is of particular concern, as rental stress is geographic in nature. Metropolitan regions, particularly central regions with large residential populations and a significant flow of day workers (who do not live in the area) require large numbers of key workers in order to function. This results in the largest demand for key workers occurring in metropolitan or highly populated regions, which typically create the highest demand for housing, and as such, the least affordable environments (Gilbert, et al, 2022). Gilbert's (2022) figure, below, determines affordability utilising AHURI data sets on income and housing cost distribution across council regions. It demonstrates purchase affordability (on the left) and rental affordability (on the right) for key workers. In effect, the graph displays that purchasing affordability is virtually non-existent for key workers in the Greater Sydney area, while rental affordability is significant stressed in central Sydney areas, where workers are in greatest demand.

Figure 6: Rental and Houisng Affordability in the Greater Sydney Basin



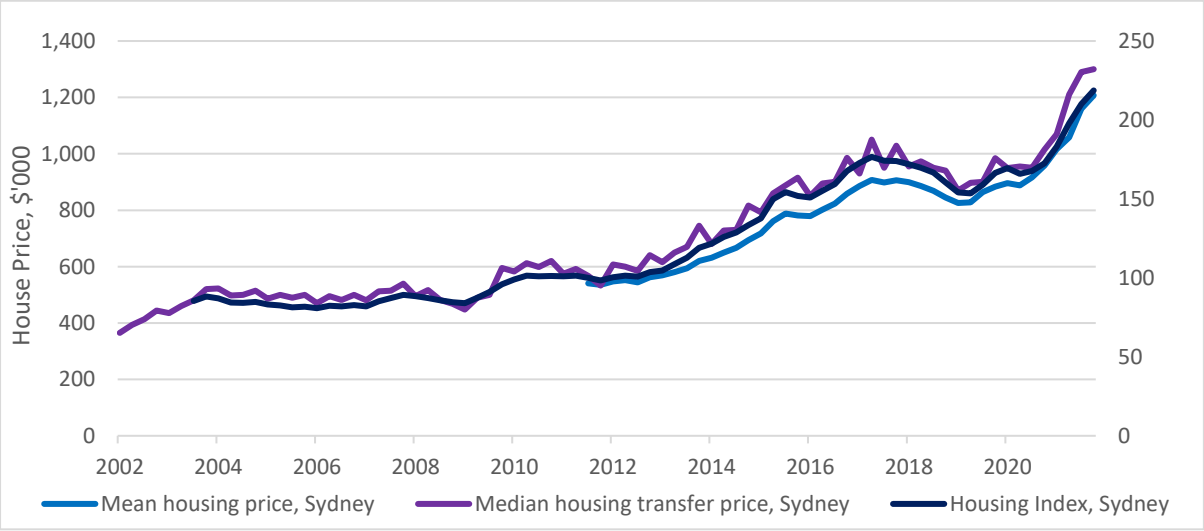
Source: ABS, AHURI datasets, figures created by Catherine Gilbert, et al, released 25 May 2022. Published on Sydney Business Insights, "Essential Workers a long way from home".

In effect, rental affordability in Australia is an issue of distribution of outcomes, rather than average outcomes. Low income households, and those individuals who live and work in affluent areas (including key workers) are more exposed to severe rental stress than higher income households. Additionally, this rental stress is increasing over time, both in terms of the declining portion of affordable rental homes, and the increased prevalence of highly stressed households.

2.3.3. Housing Prices

In stark contrast to the low nominal growth rate of rents over the past 20 years, across a number of measures the value of Sydney home prices has increased materially over the past 20 years. The figure below displays the cost of housing in Sydney across measures of mean housing cost, median housing cost and capital city housing index cost. The figures are comprehensive in displaying a clear growth in housing process over this period. Specifically, the median housing transfer has increased from less than $400,000 in 2002 to greater than $1,200,000 in 2021 (the latest available data compiled by the Australian Bureau of Statistics, published in March 2023).

Figure 7: Nominal and Relative Housing Prices - Greater Sydney

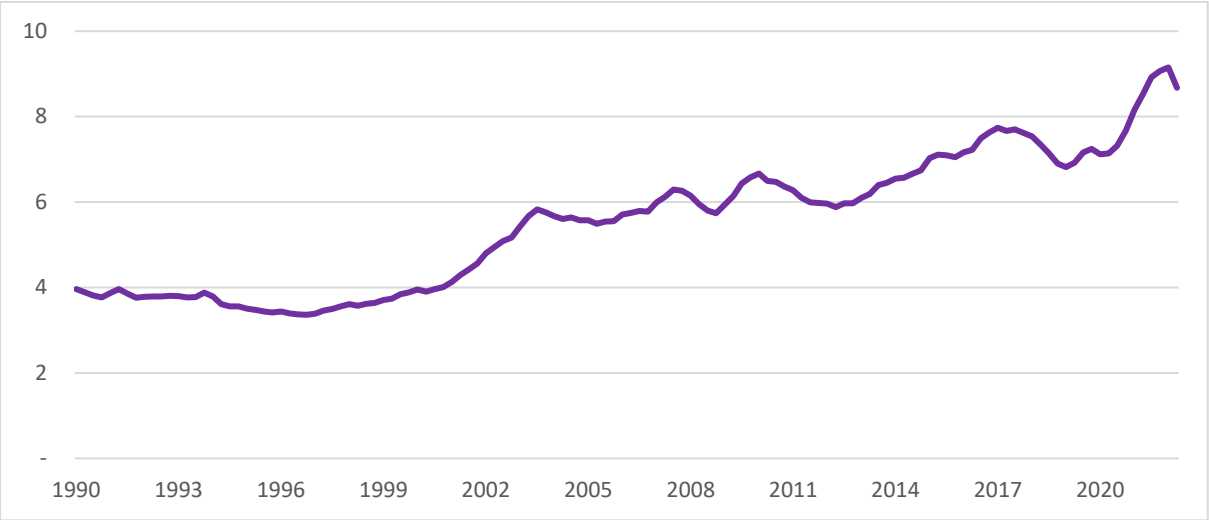


Note: Mean house prices figures originally published from 2011 onwards. Median housing transfer prices published from March 2022. House Prices in AUD'000 on the left axis, and Index figures on the right axis. Index base year is 2011.
Source: ABS, AIHW, NSW Treasury, March 2023.

During this period, inflation has continued to be significantly below the rate of property price growth in Australia, and particularly in Sydney. Even adjusting for inflation, the price of the median Sydney dwelling has increased from $365,000 in 2002, to a high of $815,000 in December 2021.

Economists have noted that this low rental growth (in real terms) has demonstrated a limited relationship with property prices, which has led to a significant increase in the price to income ratio of housing (Fox and Finlay, RBA, 2012), along with a decrease in property valuations yields.

Figure 8: Three Decades of Relative House Prices in NSW - Price to Income Ratio



Note: Household income figures for NSW were published from July 1997. Prior to this, individual income data was published for males and females, and a household salary earner ratio of 1.25x the average male income was used to determine the underlying household income for the period.

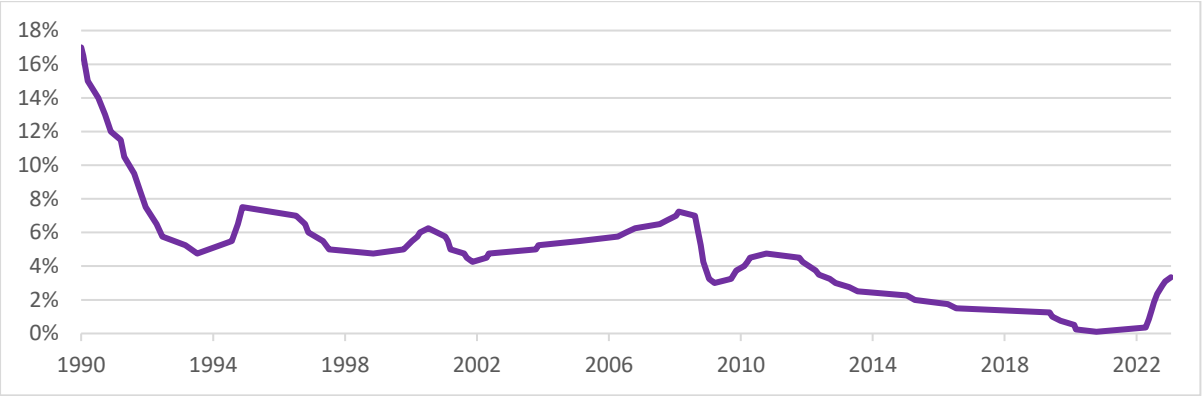
Source: ABS, RBA, March 2023.

Therefore, even when accounting for income growth and inflation, the price of housing has increased materially over and above affordable measures. This has led to a relatively unchanged rental market, with stable rents and geographic and distributional rental inequality. Simultaneously, property prices have grown materially relative to both rents and incomes.

2.3.4. Borrowing Costs

As is detailed extensively in the literature review, one of the key contributing factors to increasing nominal and real housing prices in both Australia and globally, has been the reduction in borrowing costs over the past 35 years. Since the late 1980's, interest rates in Australia have fallen from highs of 17.5% in the 1990's a low of 0.1% in 2020 (RBA, 2023). The chart below details the decline in interest rates from the 1980's to the early 2020's. While there has been an increase in interest rates in the period from early 2022 to 2023, the increase in the RBA's central cash rate has been relatively unsustained, with CoreLogic estimating the impact of these rises being limited to 10-15% in the year ended 2023 (CoreLogic, 2023). As a result, while property prices have commenced declining, the impact on affordability has been limited.

Figure 9: RBA Overnight Cash Rate – 1990 to 2023



Note: While the RBA controlled central banking overnight cash rates prior to the early 1990's, the organisation was not previously independent from the Federal Government, and as such the rationale and method for changing rates was incomparable prior to the 1990's. Future reference to the decline in the Overnight Cash Rate will be referred to generally as a "Low Rate Environment". In effect, this is referring to the reduction in interest rates to near-nil in the period from the 1990's to the mid-2010's.

Source: RBA, 11 March 2023.

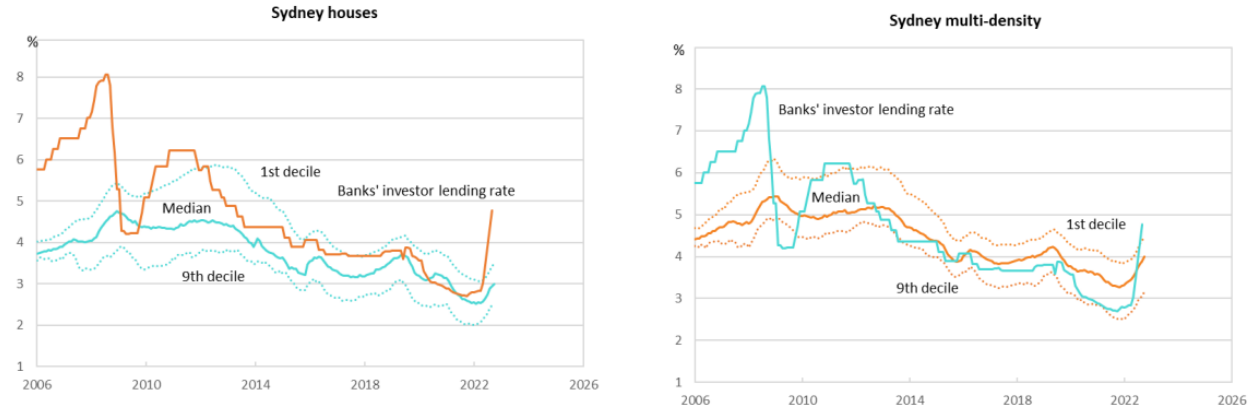
The decline in the interest rate environment can be viewed in two competing economic theories. The super-cycle argument is that the interest rate environment is currently in the historic low of a multi-decade 'super-cycle'. Alternatively, a number of economists have supported the secular stagnation argument.

The interest rate super-cycle argument, recently detailed by Rogoff (2015) (as an example of a comprehensive long term research), notes that the deleveraging of the financial system following the Global Financial Crisis has resulted in a reduction in debt, and a commensurate reduction in the demand for money relative to increasing global savings (through the global pension system, as an example). This savings glut has resulted in a 10 year reduction in interest rates following the Global Financial Crisis, undermining global central bank rates from 2008 until today.

In contrast, the argument of secular stagnation, first coined by Alvin Hansen in the 1930's, noted a theoretical potential that interest rates at equilibrium may be negative. This argument (at this stage an unproven economic concept) was subsequently reignited by Laurence ("Larry") Summers (2016), and became a pervasive economic rationale for the prevailing low interest rate environment following the Global Financial Crisis. Fundamentally, the argument related to the interaction of savings and investment opportunities in the global economy, which creates a period of low growth, as individuals choose to save their earnings, constraining economic growth (Krugman, 2013). Such an economic environment would result in the natural rate of interest being negative, and given that central banks cannot charge individuals for holding cash in transaction banking accounts (i.e. the effective minimum interest rate is nil, or individuals would withdraw cash and hold outside the banking system), a prevailing disconnect between rates and the real economy exists.

Irrespective of the rationale for low interest rates, the impact on asset prices has been profound. As borrowing costs have fallen in the global economy, the capital price of low volatility assets such as bonds, real estate and infrastructure assets has grown significantly. As detailed in the figures below (created by the National Housing Finance Investment Commission ("NHFIC"), (2022)), Sydney housing prices have been closely aligned with the cost of investment property borrowing in the Australian market in the period following the Global Financial Crisis. This has resulted in lower borrowing costs (particularly for investment loans) to be closely aligned with lower yields on residential property, increasing the price of housing as an asset class.

Figure 10: Sydney House and Apartment Prices Yield, with Headline Mortgage Borrowing Costs



Note: Given a lack of access to Core Logic and NHFIC data, the original graphics included in the NHFIC and RBA presentation have been included in this research.

Source: Information sourced by RBA from Core Logic, HIA, NHFIC, RBA, 2022. Source included within the Bibliography refers to Fox and Finlay (2012).

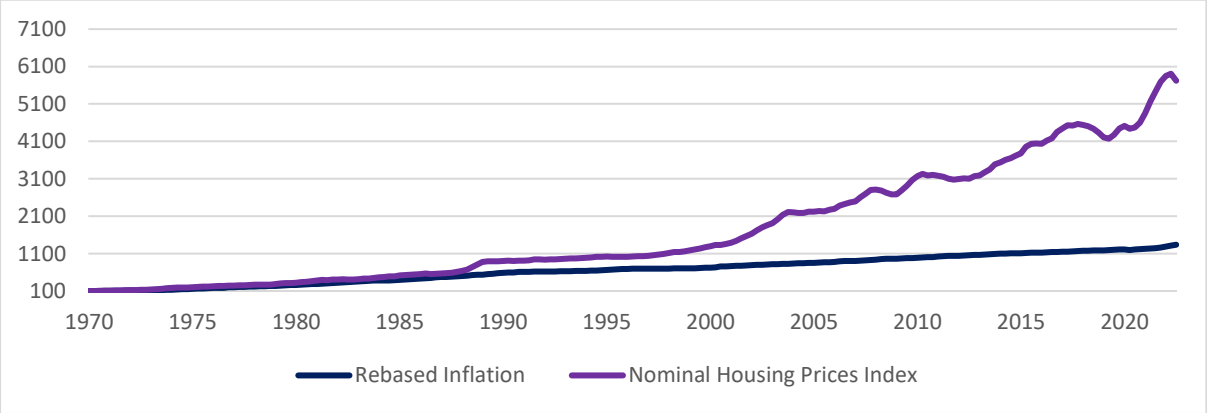
2.4. Proposed affordability index measure

2.4.1. Overview

Macroeconomically, affordability of rents has remained the same on a percentage of income basis as detailed in figure 10. However, this high level view of affordability fails to account for widening inequality of renting across low and middle income households. In contrast, while housing has become significantly more unaffordable in nominal purchase price terms, this has been partially offset by the reduction in interest rates over the past 15 years (to early 2022), which has reduced mortgage expenditure as a percentage of income. While these factors are directly comparable when utilising relative measures (for example a percentage of income outlay), there is an inability to compare rental burden with housing affordability in terms of monthly capital outlay, as mortgages include a capital repayment component. This inability has resulted in a reluctance to hold a coherent national discussion around the affordability of housing in the Australian marketplace, as two competing metrics are often incorrectly compared.

This inability to determine a relative measure for housing affordability which incorporates or contrasts ownership and renting is driven by the underlying difference in consumption. Home ownership is the purchase of an asset, while rentership is the payment of an expense (ABS, 2021). This is reflected in the differential between inflation and the Australian housing index detailed in the figure below. In effect, rental prices are aligned with inflation (or more recently, with wage growth), which has increased at a rate materially below housing prices (RBA, 2023).

Figure 11: Housing and Consumer Inflation - Rebased to 1970



Note: Inflation and housing prices are based off a 1 January 1970 base year (index=100 in 1970), and grown through a historical price analysis.

Source: RBA, 2023, raw RBA data sourced from the St. Louis Federal Reserve (2022).

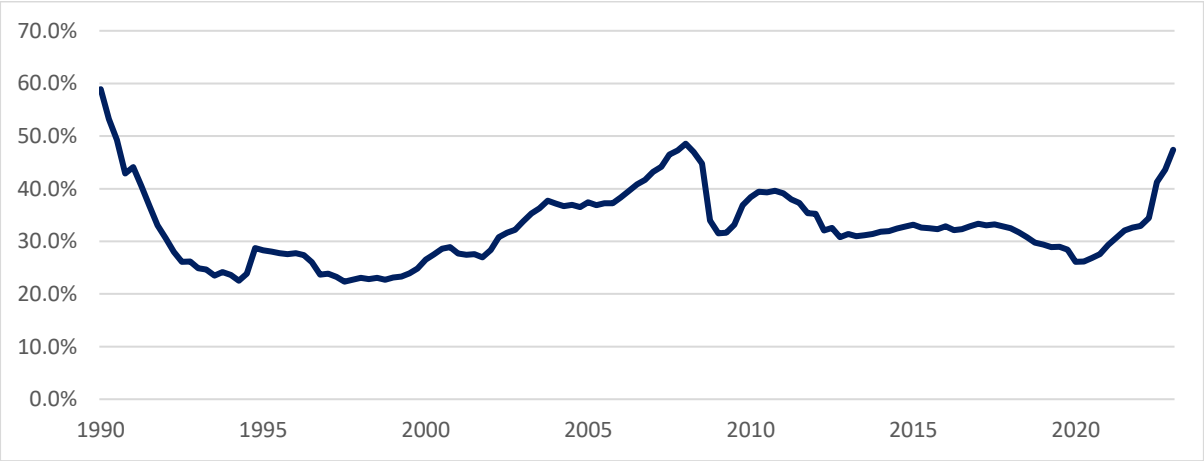
Despite the inability to compare nominal asset and expenses in a changing investment yield and borrowing cost environment, there is an ability to compare mortgage repayments and rental costs. This reflection has been made by a number of international academics, and most recently by Meen and Whitehouse (2021), in noting that nominal housing prices are effectively irrelevant. In contrast, they argue that the most important factor in housing affordability across both renting and ownership is the proportion of household income which is devoted to paying mortgage or rental payments on a monthly basis. This is to say that, given few people buy houses outright, the only meaningful comparison is of the monthly outlay on housing costs rather than the nominal price of a property. This figure incorporates both the yield of the property, and the cost of borrowing.

This argument has become particularly important, in light of the changing economic conditions in the Australian housing market, as in 2022-2023, interest rates have encountered their first period of sustained rises since the Global Financial Crisis. This has resulted in highly leveraged households

incurring significantly higher nominal mortgage borrowing costs. As has been detailed in figure 5, borrowing costs have increased from 0.1% throughout the COVID pandemic, to now reach a high of 3.6% in July 2023 (RBA, 2023).

In reflection of this changing economic environment, a new measure of housing affordability is proposed within this thesis. The goal of this measure is to better compare the burden of housing costs for renters and mortgage holders. This method will determine the opening mortgage repayment for the median 80% loan to value mortgage (the most common new mortgage in the Australian market (RBA, 2022)), and compare against the median household income in a given market. The resulting mortgage graph of home ownership burden can be determined over the past 30 years, as is detailed in the figure below.

Figure 12: Mortgage Burden in Greater Sydney as a percentage of Household Income



Note: 'Mortgage Burden' is the proportion of the median income devoted to the median dwelling after tax, including interest and principal repayments.

Source: Independent Financial Analysis. Interest rate information sourced from the RBA, 30 June 2023.

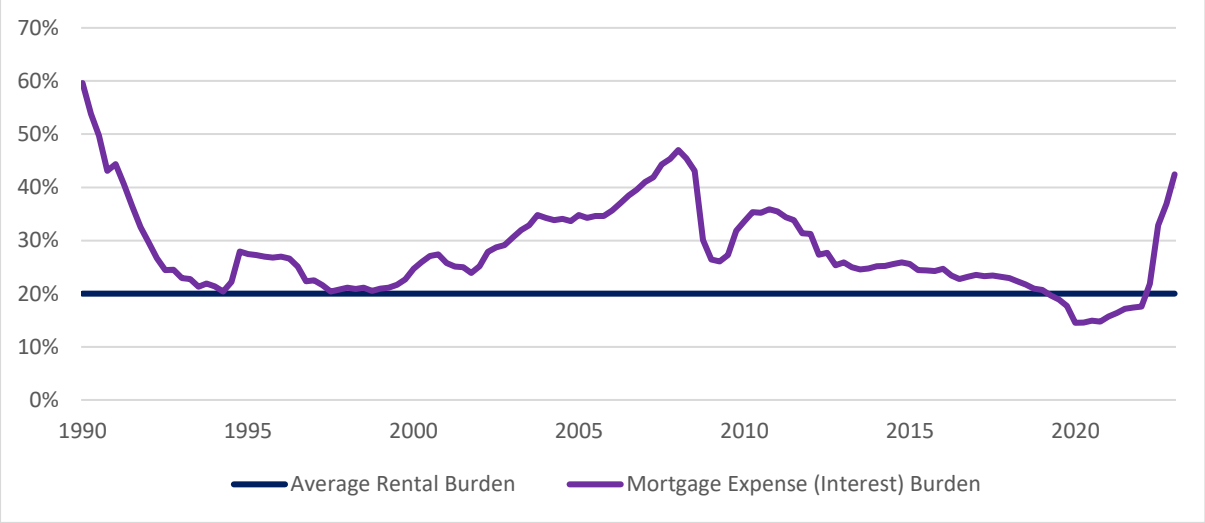
This figure is calculated based on the below assumptions:

- The opening mortgage repayment on a 30-year Mortgage, which is the most commonly utilised opening mortgage estimates in Australia (RBA, 2022). This incorporates an 80% Loan to Value ratio, assuming a 20% deposit on a home.
- The median price of a Sydney home, including both apartments and houses, $1.087m as at July 2022, and rebased using the median housing index over the prior 30 years.
- The RBA cash rate has been used as the base rate from the period following the date of RBA independence.
- The opening mortgage (i.e. at loan commencement) variable rate 30-year mortgage margin over the RBA cash rate, averaged over a 5-year period has been utilised to estimate the margin over the cash rate (this margin is averaged to 2.3% (rounded to 10 basis points), sourced from RBA data obtained by APRA, released in March 2023).
- The median Sydney household income has been used from 1998 to 2022, prior to this the figure was not reported by the ABS, and as such a median male income in Sydney was utilised, and increased by 20% to account for the proportion of duel income households in the market to generate a 1.2x multiple of this income (ABS, 2022).

The calculation of an opening mortgage burden (as a percentage of income) above includes both mortgage repayment and interest burden portions of a monthly mortgage cash outflow. The loan reduction portion of the total mortgage cash outflow can be removed to estimate the expense portion of the monthly mortgage cost (i.e. the interest incurred). By comparing interest payments with rental

expense, a clear comparison of the expense of home ownership can be made relative to renting. As detailed in the bar graph below, the interest burden can clearly be compared with historical rental costs and movements in monetary policy and property prices over the past 30 years.

Figure 13: Rental and Mortgage Burden – Comparable Analysis



Note: While the actual rental burden figure has been displayed earlier within this chapter, given the general trend in rents equating to roughly 20% of incomes over the past 50 years, this benchmark figure has been used as a comparison. The historic trend of rents as a percentage of income being between 17-21%, with long-term averages closer to 20%. As such, the impact of small variations is marginal and visually insignificant given the time-scale of the above graph.

Source: RBA, 11 March 2023.

This analysis results in a clear comparison between renting, averaging 20% of gross income over the past 30 years, and home ownership. These figures align with prior references to anecdotal discussions from both politicians and *'parents'* across the country – it was, in fact, harder to meet mortgage costs historically[11], than it is in the current time period. However, given the recent onset of a higher interest rate environment, combined with higher property prices, this period of lower mortgage burdens has ended. Since the early 1990's, there has only been a brief period of 12 months prior to the Global Financial Crisis where housing costs have been as high as they are as at September 2023. In short, while it may have been harder to buy a house in the 1990's than the 2010's, the same can no longer be said in 2023.

Interestingly, Meen and Whitehouse (2021) note that rental stress and price to income measures of housing affordability are poor predictors of future performance. Despite this, they do provide a strong measure of mean convergence. This is to say that during periods of poor affordability due to interest rates or property prices, the index does revert to historical norms. However, the timing of this convergence with historical averages is difficult to predict with certainty, and as such the higher measures displayed above may continue to grow, or remain stable before any future return to lower historical mortgage burdens.

[11] Notwithstanding significantly higher wage growth and inflation which existed during the 1990's relative to the 2010's and even the early 2020's.

2.4.2. Analysis

In assessing the trajectory of housing affordability in the Australian marketplace over the past 30 years, it is clear that the difficulty in housing is one of housing ownership affordability rather then rental affordability when viewing affordability on a macroeconomic scale. While rents have increased in nominal terms, they have not increased in wage-adjusted terms, and have remained stable as a proportion of worker income over the past 10-20 years, at around 20% of household income. Despite this, the value of Australian households have increased materially, growing from around 400% of the value of household incomes in the 1980's to over 1,000% of the value of a household income in the early 2020's.

Rental affordability is an inherently cross sectional issue, reflecting distribution of income, rather than average incomes. As noted by Meen and Whitehead (2021), the argument that housing is 'unaffordable' on a macroeconomic level is inherently unreasonable, as if this were the case, prices would adjust to create a stable market where individuals could participate. In effect, the issue of rental affordability is one of rental stress for low income households, and one of relative affordability for higher income households. This market can be improved through either increasing supply of housing to reduce competition for housing for all market participants, or through encouraging financial markets to reduce the cost of housing for more at risk and higher stressed strata of the economy. In effect, this Dissertation seeks to find a policy arbitrage, whereby policy settings can be transitioned to encourage the marketplace to resolve the underlying cross-sectional disparity between income groups and professions[12].

The reduction in the yield on residential property reflects the impact of this transition, as rents have remained stable, and property prices have increased significantly, reducing the yield on residential properties (in this case, houses) in Sydney from 4.5-5.0% in the mid 2000's, to less than 3% in the market today (CoreLogic, 2022). This increase in prices has been driven, in small or large part (discussed in the literature review), by the reduction in borrowing costs, along with favourable taxation policy which have justified private investment in housing in the Australian marketplace by onshore individual investors. Despite disagreement about the impact of taxation and borrowing costs, the fact remains that these factors both contribute to poor housing affordability in the Australian marketplace. While housing supply is also a contributing factor, it does not reflect the financial motivations of investment, and cannot account for the increase in yield and lower return expectations that investors are willing to accept when investing in Australian housing. While many investors perceive housing to be a growth asset, this cannot be the case, as if prices continued to grow faster than rents, the yield would eventually effectively fall to nil, an untenable proposition for investors.

Thus, there is a clear policy need to both increase the supply of housing in an attempt to reduce costs for low income renters, while also aiming to reduce price/income multiples for 'at risk' households. Additionally, there is a clear distortion in the housing market, which has resulted in lower investor return requirements, and associated yields on residential property. Lastly, there is a cross-sectional

[12] It is worth comparing this policy ambition with the "values based capitalism", a premise promoted by the Federal Treasurer, Jim Chalmers, in an essay published in the Monthly on 13 February 2022, a core alterantive thesis to the dissertation proposed at the time of writing this dissertation. Values based capitalism has been defined by the Treasurer as capitalism which also generates positive social outcomes. This differs from the underlying ethical rationale of this paper, in that policy change is sought in order to support rational economic agents to generate positive externalities, irrespective of their ethical or moral intentions. The policy is the catalyst for change, rather than the moral inclination of the economic agents themselves. In a sense, this is a core economic value system which exists throughout the dissertation, and is a framework for policy reform proposed.

income distribution issue, whereby at risk households need special consideration by governments (detailed extensively in the literature review). In effect, this forms the ethical and financial basis for the Dissertation. The policies proposed can increase the supply of housing, while reducing the cost of housing for the most 'at risk' or stressed households, and reduce the overall price of housing in the Australian marketplace. Such a policy would meet all financial objectives of successful economic reform. This Dissertation seeks to determine a policy which will undertake an analysis into exactly these three objectives.

2.5. Social Context and Ethical Policy Justification

There exists an implicitly regressive nature of the burden of housing affordability on lower income households, whereby growth in international housing costs in the past 20 years has not been offset by commensurate wage growth (Dewilde, 2017). This affordability burden is a particular focus of government for key government worker roles (often referred to as "frontline" worker roles). This is driven by the tendency for such lower income workers to provide an important community service, resulting in a deemed specific need. In effect, governments place special focus on these groups, as such individuals contribute to society, yet cannot afford to live in that same society which requires their community service.

Given this imbalance, government policies have historically existed which aim to reduce the burden of housing affordability for such individuals and families[13]. Given the inherent focus on housing affordability solutions for frontline workers contained within this Dissertation, there is a need to detail the rationale for solving this issue by providing an overview of the underlying problem. As such, we consider the societal challenge through the lens of ethical responsibility, financial outcomes, non-financial outcomes and finally economic productivity outcomes.

2.5.1. Ethical Obligation

Ethically, there are a number of reasons why governments have an obligation to provide affordable housing for key workers. On a global basis, the right to housing is a freestanding right in international human rights law, frequently referred to through Article 25 of the Universal Declaration of Human Rights. This right includes the right to 'adequate housing', recognising housing as inclusive of location, quality, and maintenance of a reasonable standard of living (Edgar et al, 2002).

Key workers also provide a critical service for the community, and as such there is an implicit ethical obligation to create affordable housing in recognition of community services rendered. Essential workers, including those operating in emergency services, healthcare and policing are critical to the broader maintenance of civil society as a whole. These workers typically earn below average incomes (NSW Treasury, 2022), and as such ensuring that they have appropriate housing near their respective place of work is an ethical responsibility of society in recognition of the work undertaken. Given the work required by key worker roles can be both physically and mentally taxing, there exists a clear obligation to support the quality of life of these workers through improved housing outcomes.

The underlying challenge between the ethical and financial uses for housing are reviewed in detail by Iglasias (2014), in the article *Our Pluralist Housing Ethics and the Struggle for Affordability.* In effect, housing markets are inherently in flux between the economic, ethical and legal obligations of different parties, including occupiers, investors and governments. There are few (if any) moments in which these differing parties operate in harmony, as they each have inherently unique motivations. This results in a challenging ethical dilemma, whereby the increased financialisation of housing has resulted in fewer affordable houses for both low income households, and those who perform critical government services.

[13] Recent examples of affordable housing policies aimed at key workers date back to 2006 (UK Department of Communities and Local Government, 2006). However, the concept of community housing has existed well prior to this period, and many consider affordable housing to have originated in London in 1890 in the construction of Boundary Estate in Bethnal Green. While often considered social housing, the stock was built to support the working poor in roles required for the city of London, which is directly aligned to the subsequently developed concept of key worker housing (Steffel, 1976).

2.5.2. Financial Outcomes

As a profession, frontline workers are disproportionately impacted by housing and income inequality, with 60% of essential workers earning less than the median NSW income (PwC, 2017). In addition to this inequitable income dynamic, the supply of affordable housing for these workers is declining in nominal and per capita terms despite the growth of Sydney's population. Miller and Hobbs, working with SGS Economics and Planning (2022), estimates that the supply of affordable housing has reduced by 2.5% in Sydney between 2001 and 2016 (the most recent period of affordable housing stock calculation), in the same period that the population grew by 25%.

The majority of low cost housing stock (including both affordable and social housing) continues to be government provided housing. Of this housing in NSW, the majority is social housing, and over 40% (41,000 dwellings) of stock is located in concentrated housing estates (Department of Communities and Justice, 2016). Such estates are poorly aligned with the governments goals of reducing inequality and encouraging community participation. In addition, these sites are poorly located and suffer from commuting inefficiencies which are particularly acute for Sydney's key workers. Both by design, and through ineffective planning, these estates only cater to the most acute needs of society, rather than the broader community requirements for affordable housing.

This has resulted in significant rental stress for key workers in Australia. AHURI research (Gilbert et al, 2021) concluded that over 20% of key workers in Sydney are paying rents which would constitute rental stress. Additionally, some key workers are considerably more likely to encounter higher levels of stress, including enrolled nurses, cleaners, aged care and disability care workers. Of these lower income groups, 40% are paying rents which constitute rental stress. This has resulted in over 31,000 key workers in Sydney living in housing situations which would constitute 'overcrowding'. In effect, the impact of reduced supply and below average incomes has resulted in a disproportionate number of key workers encountering rental stress in Sydney.

There is a clear relationship between housing stress and other measures of financial stress for individuals and communities. Bramley (2012) noted that while this relationship is weaker in Australia relative to higher rental cost markets (such as London and New York), the relationship between housing outcomes and financial outcomes is not in doubt.

2.5.3. Non-Financial Outcomes

It is widely accepted that location, and particularly proximity to a city's CBD, is the primary determining factor in housing prices and affordability (Chen and Hao, 2008). This is particularly the case in Sydney, where Sydney's inner suburbs (including the Northern, Inner West and Eastern suburbs) contain some of the most expensive real estate values both in the metropolitan basin, and across the the country. Poor affordable housing conditions in Sydney's inner suburbs has led to increased numbers of Sydney's key workers undertaking longer commutes to reach jobs which are available in both the city's CBD and other, more affluent, regions. This lack of affordability is particularly challenging for key workers, as key worker professions such as nursing, policing, aged care and firefighting roles are located throughout Sydney's suburbs, both in affluent areas with particularly poor housing affordability, along with more affordable areas.

Key workers who live in suburbs with higher concentration of moderate-income workers spend 50% more time travelling to work compared with workers in other suburbs (PwC, 2017). Psychologically, the impact on individuals is profound, with research suggesting that longer commute times results in higher blood pressure, greater stress and mental health impacts, physical posture, back and neck issues, along with decreased workplace performance (Lyons & Chatterjee, 2008). Additionally, individual wellbeing declines further with longer commute times (Sandow, 2011), resulting in

deteriorated outcomes for key workers with greater than average (as determined through a median) commute times.

2.5.4. Productivity Implications

On a macroeconomic level, the inability of low income and key government workers to afford housing in close proximity to their places of work has a broader productivity cost to Australian society. Longer commutes and increased inequality results in increased absenteeism for both logistical and health reasons. Additionally, communities with greater inequality have weaker community connections, and poorer social outcomes (Productivity Commission, 2017).

Modelling undertaken by Household, Income and Labour Dynamics in Australia ("HILDA") in 2017 placed a macroeconomic financial cost of such inequality (Wilkins, Butterworth, & Vera-Toscano, on behalf of the Melbourne Institute (2017)). Widespread spatial inequality of housing for lower income Australians across the Sydney basin resulted in Sydney's average commute growing to 71.1 minutes a day, or 5.925 hours a week in 2017. Economically, every incremental 30 minute increase to key workers commute times, generated AUD815,000 of economic cost per trip (for all of Sydney's aggregate key workers), or AUD16 billion in foregone economic output over the average working life of Sydney's aggregate key workers.

In effect, housing affordability has disproportionate impacts across a range of outcomes. Given society has a requirement to employ key workers for critical government and community services, there exists a key ethical dilemma to house these workers in appropriate dwellings. Across the measures of financial, non-financial and macroeconomic measures, there exists a clear and obvious need to improve the quality, quantity and location of housing for Sydney's key workers.

2.6. Ethics of Buying relative to Renting

As an addendum to the ethical justification for policy intervention in the Australian housing market, there exists an ethical comparison between owning and renting housing which requires consideration within this background. The differences between home ownership, and home rentership relate to the costs and benefits which occupiers are able to obtain through either choosing to buy housing, or through abstaining from the property ownership market, and renting. Given the policy recommendation contained within this thesis includes both renting and housing supply (and thus, ownership price) implications, there is a need to include a comparison of these two financial decisions by individuals. This section will include both utility (in an economic sense, effectively 'happiness') and financial considerations of both decisions.

Fundamentally, contrary to popular opinions, home ownership does not increase happiness. There exists substantial evidence that renters who devote savings to experiential activities have higher quality of life outcomes relative to home owners. Odermatt and Stutzer (2020) conclude that individuals overestimate the gains from moving from a rented property to a privately owned property. This aligns with research from Sheldon et al (2004), which concludes that financially motivated people (referred to as 'extrinsically motivated') typically have lower happiness than intrinsically (or values and experience based) individually. Further support is found by Bucchianeri's 2011 paper, which concludes that after adjusting for income, housing quality and health, home owners are not better off then renters, and associate more pain from their home. In effect, renters derive less happiness from their home, and have fewer responsibilities associated with this decision.

However, home ownership is not without its perceived utility merits, as Hofmann and Umbricht (2019) conclude that owners have more reflective happiness relative to renters. These owners still feel less intense feelings of happiness than renters, however they hold greater retrospective happiness about their decisions.

Despite this reflected happiness, the link between happiness and financial outcomes is one of hedonic perceptions which impact decision marking. Individuals assume that they will have greater happiness from their home purchasing decisions, however the financial implications of their purchase include long tailed tenors of debt repayment, which causes financial difficulty and stress. Carter and Gilovich (2010) note that material purchases tend to lead to buyers remorse, an example of which being that once home owners have agreed to a long period of debt repayment, they look at alternative options and retain a degree of regret.

Financially, it is of note that renters typically have lower financial burdens relative to home buyers, as is detailed in the prior sections of this research. During the past 30 years, the rental burden in Sydney has been less than the ownership burden (purely calculated as interest costs) for over three-quarters of time periods. Additionally, house prices typically underperform productive asset values, represented by equity market total return performance[14]. Thus, the burden of housing ownership is higher than renting, even when excluding costs of maintenance, and the total return from this investment is lower than alternative available investments.

[14] A widely noted example of this is the comparison between residential real estate returns and share market returns which is included in Robert Shiller's 2000 book "Irrational Exuberance". This notes that real estate typically returns around 1% per annum over inflation over the long term (100-year time period reviewed), which is materially below the return of shares over the same period, which returned around 4.6% over inflation. The important implication here is that returns to housing ownership are not higher than investments in the share market, and that the costs of ownership are financially higher than the alternative of renting.

If the choice between purchasing housing and renting is a personal choice, the utilitarian and financial benefits of renting are greater than those of buying. However, there are a number of intrinsic benefits of ownership which individuals may value as being greater than renting, including stability, personal satisfaction, social standing, or even the financial implication of greater access to leverage (RBA, 2017). Additionally, home ownership provides a hedge against future inflation in rental prices, as the purchase price is fixed. While this benefit is partially offset by the created significant exposure to interest rates, this exposure can be hedged by individuals and households in Australia for up to 5 years through applying for a fixed rate mortgage (noting that there are few fixed rate mortgages longer than this period, and none which are available for unsophisticated investors, (APRA, 2022)). Thus, on an economic basis, there is no discernible benefit to owning relative to renting, as forced savings can be invested in higher returning asset classes, however individuals may have non-wealth maximising perspectives.

Thus, the decision between these two choices of renting and home ownership is inherently personal, however government policy should remain impartial between these options. Fundamentally, both these forms of housing provide shelter to individuals. As such, policy should be aimed at increasing the supply of new housing, which reduces both renting costs and ownership purchase prices. The policy recommendations contained within this research include both benefits and remain inherently agnostic between the personal decisions of individuals between these two choices.

2.7. Conclusion

"…. Go toward helping forward the time when life's Bread, which is home, shelter and security, and the Roses of life, music, education, nature and books, shall be the heritage of every child that is born in the country…" – Helen Todd, 1910.

While an argument can be made that housing affordability has not deteriorated on a rental basis, this is an inadequate measure of affordability in Australia. Rental stress is inherently distributional, and geographic, and purchase affordability is now at a level which is equal to, or worse than any point in the past 30 years. Rental stress deteriorated further in the past 10 years, driving workers to live away from their places of work. Additionally, while there is a rational argument that "it has always been hard to buy your first house", this chapter has demonstrated comprehensively from first principles that the current market is close to the generational peak of unaffordability point in the 1990's. Despite mortgage rates being materially lower than the early 1990's, this 'improvement' has been fully offset by price appreciation.

Financial resources spent on direct occupancy costs, or indirect geographic occupancy decisions drive individuals away from their places of work and reduce their quality of life. These factors have a significant impact on the quality of life of Sydney's citizens. The impact can be seen across productivity losses, financial stress, and social outcomes.

There is a clear need for policy intervention or improvement, and given the scale of investment required, a capital market involvement is clearly more effective than direct market intervention. This is particularly true given that prior policy decisions have had little, or directly negative, impacts on affordability since the early 1990's.

While "values based capitalism" promoted by the current Federal Treasurer is a possible solution, it is unlikely to generate meaningful long-term change on its own, given a limited theoretical background and non-existent track record. Policy and taxation reform are required in order to improve the quality of life of Sydney's citizens.

Shelter ownership or rentership is in many ways, irrelevant. Policies should instead be focused on improving the supply of housing, and reducing the financial burden of such housing. If individuals seek to buy housing, this is their prerogative, and reducing the cost of renting through increased supply will go some way to reducing the time taken for individuals to save for their home, irrespective of the cost of purchasing.

Fundamentally, housing forms the "bread of life". It is a requirement for living in Australian (and any) society. If we seek to work within a capitalist system of government and markets, taxation policy must be adopted to improve the financial incentives for investment, both reducing the cost of renting and increasing the supply of housing. Once this structural deficit of housing is removed, individuals can live with greater exposure to the "roses of personal development", financial freedom and cultural ingratiation. This is the basis, and objective, of this Dissertation.

Chapter 3. Literature Review

3.1. Literature review Introduction

This literature review contains academic research which relates to the cause, present policy mix and potential policy solutions for Australia's housing affordability imbalance. Such research includes analysis of economic theory, critique of implemented and proposed public policy, and finally a brief analysis into the incentives and objectives of private sector financial investment into housing. This results in the inclusion of wide-ranging literature within the fields of taxation, Government policy, finance and economics, together with how each field relates to housing. Housing as an asset class and a policy focus is researched significantly within each of these fields, resulting in ample relevant research contained within this literature review.

In determining the relevant academic research conducted into housing policy, and better understanding the financial objectives of investors, a course must be chartered through each of the aforementioned fields of academia. The following theoretical analysis pathway is proposed:

- Government theory is focused on the use of Government policy within the public and private sectors to achieve social outcomes. Once assuming a Neo-Capitalist approach towards housing policy, Government objectives must be defined, interventionalist policies can be reviewed, and thereafter a critique of the effectiveness of these policies can be made.
- Subsequently, analysis of Australian Government policies in support of housing objectives are considered. This is undertaken through a 'top-down' approach, whereby consideration is given to:
    - The theoretical objectives of Government policy, both stated and unstated, in the housing market. This section provides an overview of what the Government seeks to achieve in the housing market, rather than policies used to achieve a more equitable housing market.
    - Policies undertaken by the Government used to intervene in the housing market. Through using a Neo-Capitalist approach, the macroeconomic objectives of Government policy are reviewed and critiques, along with the tools and policies utilised to achieve these goals.
    - Finally, a critique of specific policies used in the housing market is undertaken. This provides an overview of the current 'state of play' in the market, along with academic debate around the cause, effect and impact of the current federal and state policy mix.
- Given housing investment operates within the broader economic and investment environment of the Australian economy, Government policies must be considered in line with other external factors. As such, the literature review provides an overview of other macroeconomic considerations of housing demand, supply and investment. This provides an overview into other macroeconomic considerations in the Australian housing market, which have impacted housing affordability. In advance, it is noted that the macroeconomic considerations should be reviewed in light of the Background Chapter of this Dissertation, which provide an historical review of how affordability has changed in recent history.
- In consideration that the methodology and results of this research are focused on the competing objectives of maximising financial returns to private sector investors while also maximising public benefit to society, theory relating to institutional capital within a social benefit framework is relevant. Given there is an inherent divergence of objectives between Government goals and private investor incentives, such analysis into the use of institutional capital supports conclusions relating to financial incentives and economic outcomes.

- A final consideration will be the academic analysis relating to Public Private Partnerships (PPPs). While PPPs are a single investment policy option available to Governments, the use of PPPs is highly critiqued within academic literature, and as such their use in international markets is considered. Once PPP research from a global and housing specific perspective is completed, a local analysis of PPPs and their ability to achieve policy objectives can be undertaken. The debate around what constitutes a PPP is also undertaken, as all Government intervention may be considered through this framework, providing an alternative perspective of Government policy to influence the market.

Thus, the analysis conducted within this literature review commences with a high level analysis of the philosophy of Government policies and economic intervention, subsequently analysing other economic factors impacting the market, and concludes in a review of private market investment. This approach is undertaken given the broad nature of the research undertaken within this Dissertation. While the parameters of the proposed research are broad in scope, this structured "top-down" approach provides a theoretical framework to analyse financial impacts of Government intervention as they relate to private sector investment. This creates a theoretical background to a hotly debated housing market, and provides the framework to continue further research into the financial impact of current and proposed Government taxation policy.

3.2. Government Intervention, Theory and Philosophy

3.2.1. Theoretical Overview

The research conducted within this literature review is Neo-Capitalist in nature. There is an inherent underlying assumption that the Government's core policy goals is not just stable economic growth, unemployment and price stability, but also the inclusion of improved social cohesion and economic welfare. In seeking to achieve these goals, the methodology contained within this research analyses policies using both direct market intervention and financial incentivisation within the private sector (through a broad range of policies, including Public Private Partnerships).

Such an approach to achieving these Government objectives is fundamentally Neo-Capitalist. Thus, while the research does not seek to contribute to philosophical debate about Neo-Capitalism (or Neo-Liberalism), the underlying assumed theoretical approach utilised in this thesis must be considered. As such, this literature review considers the history, and provides an overview, of both Neo-Capitalism and Neo-Liberalism.

Neo-Capitalism was first introduced as a term (independently) by Gorz (1969) and Michielson (1970) to define a system of Government which included comprehensive social welfare, specific Government intervention in the private sector, and an economy predominantly driven by private markets. This work coincided with the work of French economist François Perroux, in analysing a 'third way', in which Governments could create and assess policies based on the needs of society, while minimising economic volatility, being a more interventionist theory to Liberal Capitalism, yet more free-market than traditional communism (Crunha, 2021).

In this regard, the concepts of Neo-Capitalism and the 'Third-Way' both similarly combined elements of capitalism and socialism. By doing so, they provided a theoretical basis for the economic system which existed in Europe in the post-war period, with limited direct market intervention (Crunha, 2021). The benefits of such an approach was perceived to include a more humane and inclusive market relative to a pure free capitalist market. In the 2009 book, *The Predator State: How Conservatives Abandoned the Free Market and Why Liberals Should Too*, Galbraith notes that these policies are neither revolutionary, nor particularly reformist. Rather it is a broad reflection of the society which prevailed in developed markets (predominantly in Europe) post-World War 2. A society which incorporated prevailing welfare policies, redistributive taxation and labour rights to an otherwise relatively free market.

Within a capitalist economic framework, the obvious counter-theory to Neo-Capitalism is Neo-Liberalism. This latter theory supports the minimal role of Government in the operation of the free market, removing inefficiency and supporting the unhindered operation of free markets. While a somewhat obvious counter-theory to Neo-Capitalism, Neo-Liberalism developed later, as the global economic landscape shifted due to the period of stagflation, higher Government debt and a resurgence in free market ideologies (Friedman, 1962). Despite this, the concept of Neo-Liberalism had foundations in the Austrian School of Economics (best known for the works of Hayek (1944)), which occurred much earlier.

While Neo-Capitalism encourages direct market intervention where required, Neo-Liberalism supports a general philosophical lack of policy intervention by Governments (Haber, 2012). This limited intervention is aligned with the ideals of historical economists, most notably Keynes (1936), through the reduction of the textbook concept of 'Deadweight Loss', a perceived feature of Government taxation.

The status-quo of Neo-Capitalism is critiqued as not being influential enough by others, including the relatively reformist research conducted by Thomas Piketty in *Capital in the Twenty-First Century* (2014). This work questioned the fundamental economic systems in which society operated, and commenced as an academic article, but became a popular best-seller due to the social questions and broad based considerations contained within. Piketty argues that further reform is required, given the underlying perspective that labour earnings and contribution in the economy are falling relative to corporate earnings. This would justify further policy intervention, and a heavier handed Government relative to a lucrative and powerful private market.

Distributional criticism (across both wealth and income) of this economic system note that it encourages policy which entrenches economic benefits for elites, including both corporate entities and wealthy individuals (Harvey, 2019). Further, the current system of Government, be it Neo-Capitalist or Neo-Liberal provides a clear conflict of motivations between the public and private sector. Such a conflict can result in rising public debt, private indebtedness and the prevalence of bailouts (Streek, 2017). History has proven a degree of support for this latter theory, given Steek presented these findings (both in lectures, and subsequently a book) in advance of the 2023 banking crisis, which resulted in the forced mergers of a number of banks, including Credit Suisse, Silicon Valley Bank, First Republic, Silvergate and Signature Bank between January and July 2023 (as reported by Reyes and Johnson for Bloomberg, 2023).

Fundamentally, the current market intervention by the Australian Federal Government is broadly Neo-Capitalist in nature. The proposed Australian Housing Fund to build new housing by the Federal Government, together with State policies aimed at incentivising increases or declines in house prices through land leases and grants highlight such private market intervention (Chalmers, 2023). These policies are aligned with the historical perspective of creating improved income and wealth equality, and in doing so, promoting broad-based prosperity (Galbraith, 2008). Similarly, the analysis conducted within this Dissertation seeks to improve affordability of home ownership and rentership through direct Government intervention in the market, or alternatively through adjusting economic conditions to increase capital investment in the sector. In this regard, the policy review and recommendations contained within this Dissertation are undoubtedly Neo-Capitalism in nature.

3.2.2. Application to Housing

Within the housing market, there is debate about the effectiveness of Neo-Capitalist policies. As detailed herafter, intervention in the private housing markets has the stated goal of improving affordability, reducing the incidence of homelessness and supporting broader economic goals of social cohesion. Policies with these goals include both direct market intervention through investing in building private housing and social housing programs, along with financial incentive policies, including subsidies and tax deductions. Debate in relation to these policies generally relates to their effectiveness in addressing affordability and inequality.

Theses in support of a Neo-Capitalist approach towards housing markets include the argument that intervention supports broader Government policy objectives. Policies such as zoning, rent controls and the provision of public and affordable housing can directly improve affordability for low- and middle-income households. Taking a theoretical approach, Fainstein (2013) notes that these policies may support equity (rather than equality, which Fainstein deems unethical in a capitalist environment). This equity is created by improving the affordability of housing for lower income households close to places of work and creating income-diverse communities. Taking a more specific affordability approach, Hulchanski (1995) notes that these policies also Kemeny improve the metrics

of affordability, by reducing the expenditure on housing costs relative to incomes, increasing financial and social outcomes (as detailed in the ethical context of this Dissertation) for low-income households.

Within a Neo-Capitalist framework, further research conducted by Kemeny (1995) concludes that the global housing market has already transitioned to a 'social market'. This market, perceived to be superior by Kemeny, is an inherently Neo-Capitalist market where Governments have sold social housing assets. In their place, international Government bodies directly intervene predominantly through subsidies and taxation policies, but also in the creation of new supply through grants. In effect, such a 'social market' replaces direct ownership of housing by Governments with an indirect approach of financial incentives aimed at incentivising housing prices and rents, through supply and demand.

In contrast, critics of Neo-Capitalist Government policies note that a liberalist approach towards housing would reduce the barriers to construction and increased supply. Planning laws, which may be perceived to control rents, can have negative impacts on the supply of new homes. Such planning laws are widely opposed by economists including, for example, O'Sullivan & De Decker (2007), as they reduce social outcomes and mobility, artificially increase housing prices, and accordingly rental costs. This is done through a reduction in the supply of new housing, by restricting new construction.

Additionally, direct market intervention through zoning policies can result in relatively random financial benefits to individuals without generating the required associated supply benefit (Leunig and Overman, 2008). Lastly, direct market intervention can result in disproportionate benefits to specific or politically empowered developers, at the expense of the broader markets (Rolnik, 2013). As such, the benefits of such planning control by central or distributed Governments can provide a financial or power benefit to individuals against the broader need of the community.

While the method of Government intervention is directly contradictory, Neo-Liberal and Neo-Capitalist arguments both seek a well-functioning system of Government policy, with a focus on outcomes, rather than philosophy. Such a contradiction in philosophy seeking the same outcomes is demonstrated in a scenario where Government intervention may be required to support equitable housing outcomes, which is best supported through the removal of Government policies which stifle developments. In effect, both sides seek improved supply, but through policies in direct contradiction to one another. Further, Government policy which exists must clearly be monitored to ensure they do not result in inherently inequitable or corrupt outcomes, as is detailed under planning outcomes noted by Rolnik, 2013.

In this regard, the wider debate around the philosophy of Government intervention inherently encourages the implementation of policies which encourage affordability and increases supply, with the stated goals of achieving social and economic Government objectives outcomes. However, the method of incentivising housing investment involves direct intervention in the market, rather than reducing barriers to further private sector investment. As such, the policies proposed within this research are inherently Neo-Capitalist, however no contribution to the Neo-Capitalist debate is proposed within this Dissertation, as it is considered functionally out of scope.

3.3. Australian Government Policy Intervention – Objectives Overview

Given the proposed Neo-Capitalist approach of Government intervention in private markets proposed as a result of this Dissertation, there is a requirement to first define the policy objectives of the Australian Government, prior to analysing the methods in which policies are enacted. The overview of key Government objectives is contained below and subsequently followed by an overview of the economic methods of creating market conditions which improve affordability through both private market investment and direct market intervention.

Over the past 50 years, the Australian Government has pursued a range of policies aimed at improving housing equity nationwide (Yates, 1989, along with Yates and Yanotti, 2016). These policies have targeted improved housing affordability across three key measures of home ownership, rental housing and social and affordable housing. Irrespective of the purported goals of such policies, the impact on housing affordability (across acquisition costs and rental costs) have been mixed. As detailed in the Background Chapter, home ownership affordability has deteriorated throughout this period, while the cost of renting on an expenditure basis has remained relatively unchanged, resulting in mixed and uncertain academic debate around the success of Government efforts. Given the significant historical context provided in the Background Chapter, including comprehensive academic review of these changes, no further analysis of the changing cost of housing and renting is contained within this literature review, but rather an analysis of academic debate alone.

3.3.1. Home Ownership

Home ownership has been a primary goal of Government during the post-war period. While simplistic, this goal is purely focused on increasing the proportion of Australians who live in a home they own. It has historically been considered significant and important in achieving social harmony (Kemeny, 1995). Kemeny further argues that in recent years this goal has widely been considered to be the 'Australian Dream'. In addition to broader arguments around supporting social cohesion, it also provides significant financial support for individuals in retirement, offering both a place to live, and a sizable asset in support of the financial means required for a comfortable retirement (Yates and Bradbury, 2010). Despite the obvious financial benefits of home ownership in retirement, the cost of entry into the housing market have increased in the post-war period, which has resulted in a fall in home ownership from since the 1990's (Yates, 2011), as detailed in the Background Chapter. This has resulted in a number of successive home ownership policies by successive Federal Governments over the past 30 years.

Yates (2011) noted that a number of policies, including both the First Home Owners Grant and the First Home Loan Deposit Scheme, have been implemented in encouragement of ownership for first time buyers. These policies have had limited impact on the financial outcomes for first home buyers, as they have provided limited support in the face of significantly higher purchase prices. Additionally, these home buyer support policies have had limited impact on the propensity of first home buyers to buy their first home, and the proportion of homeowners in the Australian marketplace. As a result, retirement wealth from home ownership has declined for successive generations, as more individuals are priced out of the market.

Further research conducted by Wood & Ong (2010) has noted that this is likely due to these policies providing a significantly smaller incentive for home ownership relative to tax benefits provided to landlords. In contrast to the stated goals of improving home ownership, new buyers are all provided with similar financial benefits and incentives to acquire property at the same time, and as a result, the majority of bidders have increased financial resources to acquire their first home. As all bidders are given the same benefit, the prices of properties rise as individuals bid more for the same asset. This

results in the majority of the benefit from such policies transferring to existing property owners through higher sale prices (Doling and Ronald, 2013).

However, there is a degree of disagreement in relation to the impact of such policies relative to other tax advantages. Research submitted to Federal Parliament noted that the impact of both first home buyers schemes and tax deductions is questionable, relative to underlying supply and demand, along with improved housing quality (Eslake, 2013, published in the Australian Parliament House Housing Report, Part 1, 2013). The impact of supply and demand remain significant and important factors and are discussed as an alternative measure later in the literature review.

3.3.2. Rental Affordability

Additionally, the Federal Government has sought to address the cross-sectional inequality in housing affordability (detailed within the Background Chapter) by incentivising investment in rental properties. Rental affordability is broadly the degree to which rental housing is accessible and affordable for households across various income levels (Hulse et al, 2011).

As detailed in the Background Chapter, the issue of rental affordability is not a challenge for all households, as it is inherently income-regressive, resulting in worse affordability for lower income households relative to higher income households. The focus of Government policy is around ensuring the supply of new rental housing is adequate to support reduced rental burdens for low income households. As detailed within the Background Chapter of this Dissertation, the benchmark of affordability is typically considered to be 30% of gross income, although this figure is arbitrary. At this level of expenditure, rental costs are perceived to impact the degree to which households can acquire food, healthcare and transportation (Moris et al, 2018).

Policies focused on increasing the supply of rental housing in the Australian market have included the establishment of the negative gearing benefit for property in 1987 and the establishment of capital gains discounts in 1999. Burke Et Al (2007) note changes to taxation policy have disproportionately supported the acquisition of rental properties relative to acquiring a home to live in. Specifically, they note that both these policies only benefit landlords, as owner-occupied interest costs are not tax deductable, and are capital gains tax free, irrespective of location or acquisition date. However, while Burke Et Al note that these policies disproportionately benefit households with higher incomes (who place greater value on tax deductions and disproportionately own greater numbers of property assets), they are effective at encouraging the supply of new housing.

Additionally, Pawson Et Al (2016) note that the sale of social and affordable housing by the State Government of South Australia has supported the development of a more international grade private rental market. This is a base case for future development of PRS investments by institutional investors with the aim of improving the nominal supply of property in Australia. Since this time, and upon the election of the new Australian Federal Government, a number of additional policies have been implemented, including the halving of withholding tax for offshore investors in the PRS in May 2023 (ATO, 2023), however there is not yet any literature in relation to this proposal, given its recent announcement.

In contrast to the obvious clear benefits of encouraging financial investment in rental assets, Yates and Bradbury (2010) have noted that these policies have a negative social impact on retirement outcome. As individuals opt to rent properties due to the relatively lower cost of housing expenditure (relative to buying), they reduce access to equity in later life, reducing financial assets to rely on upon

their retirement[15]. It is restated that this view is countered in the Background Chapter, noting that investment in equities typically generate a higher rate of return over a lifetime than Australian housing.

3.3.3. Social and Affordable Housing

Despite statements of support in relation to the supply of social housing by successive Australian state and federal Governments, there have been limited policies to grow the quality and quantity of social and affordable housing supply. In effect, the Government has enacted an absence of policy, reducing the proportion of housing, through a lack of additional investment into new stock despite a material growth in the quantity of private homes in Australia. This has resulted in the social and affordable housing market being considered an 'Ambulance Service' (Yates, 2011), providing a limited resource for those in critical need.

Social housing is the subsidised accommodation provided by Governments and not for profit organisations to provide adequate housing to vulnerable groups of society, including the elderly and low-income households. Within the Australian marketplace, social housing encompasses community housing (run by not for profit organisations), State and Territory providers, along with other non-profit and for-profit organisations (Pawson et al, 2013). The stated policy of both Government and not for profit organisations in the provision of this housing relates to the creation of stable, secure and affordable housing for those with limited means to afford publicly or privately provided housing (AIHW, 2020).

The Australian Federal Government implemented the National Rental Affordability Scheme (NRAS) to incentivize private investment in affordable rental housing (Milligan et al., 2015). This was a policy aimed at achieving growth in affordable housing stock through subsidising the rents of new developments undertaken by private investors. The NRAS was launched in 2008 by the federal Government in order to increase the financial incentive to investors and developers to build and rent new properties at rental levels below the market rate for a period of 10 years (NRAS, 2012). With an initial goal of increasing the supply of affordable rental housing by 50,000 dwellings, it achieved its goal within 5 years, and was subsequently not extended. Since this period, existing stock exited the affordable housing marketplace, and was moved into the private market. Given the total number of new dwellings was limited at 50,000 units, it was relatively limited in scope, providing limited new housing supply for pensioners and low income households (Morris et al, 2018). There has been wider criticism that this policy has also been the only major financial incentive to develop new housing stock, resulting in insufficient new supply relative to increasing demand (Parsell et al, 2016).

The inadequate policy proposals to develop new housing have resulted in a significant reduction in the quantity of housing relative to demand. While the total stock of social and affordable housing has grown 4% in the 20 years to 2018, demand for housing stock has increased 36% over the same period (AIHW, 2020). This has resulted in a decline in the proportion of households obtaining social and affordable housing from 5.5% of total households to 4.2% over the same period. As a result, low-income households have been forced to endure significant waiting periods (including over 55,000 homes in NSW in 2022), and limited functional access (Burke et al, 2013). Burke et al (2013) note that

[15] Despite this conclusion, we note that the renting and owning economic comparison is undertaken in the background section to this paper. Given that social and financial outcomes are maximised by renting relative to buying a place of residence, the conclusions reached by Yates and Bradbury purely relate to the benefits of a forced savings mechanism (Herbert et al, 2014).

there is limited debate about the ineffectiveness of these policies, as they have proven limited in scope, and irrespective of scale, have been discontinued.

In addition to the functional undersupply of new social and affordable housing supply in Australia, the quality of aging housing stock has also come under significant pressure (Pawson & Herath, 2015). Not only has this lower quality housing resulted in significant spatial and economic disadvantage, but it has also resulted in negative social and health outcomes. Lastly, the low investment in social and affordable housing has resulted in social housing development occurring in concentrated disadvantaged communities, with neighbourhoods of low socio-economic outcomes exacerbating social exclusion and reducing opportunities (Arthurson, 2012).

3.3.4. Conclusion

While a number of policies have been implemented by successive Australian State and Federal Governments, the impact is clearly aligned with the research conducted within the Background Chapter of this Dissertation. Housing ownership policies have been ineffective, however the policy incentives for investment in rental supply has resulted in a stable marketplace for rental assets, with inequality limited to low-income households. This has resulted in particular need within these low-income households, as investment in new stock of housing has exacerbated pre-existing waiting lists.

3.4. Market Intervention and Influence

3.4.1. Overview

While the prior debate detailed within this literature review (Section 3) relates to the creation of objectives and academic debate relating to the success in achieving said Government housing objectives, it does not consider an alternative discussion relating to the macroeconomic impact of policies on housing affordability. While Federal and State Government policy may seek to achieve goals relating to new home buyers, social housing creation or rental affordability (among others), this may have limited or no impact on overall macroeconomic housing affordability measures. In this regard, the intervention of Government policy in housing markets (either supply or demand) can be considered as a macroeconomic or consequentialist approach towards housing policy, rather than a policy specific scorecard.

Given the significant analysis into the current 'state of play' detailed in the Background Chapter of this Dissertation, the literature review will discuss academic debate into supply and demand side intervention on a policy specific approach. Specifically, it will analyse the academic debate of policy outcomes on Australian housing affordability, while taking the actual outcomes as given.

The importance of this academic debate relates to the political use by successive Governments of focusing on "supply" or "demand" policies, rather than holistic affordability. This approach has provided a framework for differences between successive Governments, and political parties. Nonetheless, it has also provided an insufficient framework for policy outcomes, with both sides of politics blaming the counter-factual policy approach for outcome failure. Whilst academic literature critiques of the current policy mix are aligned with the prior section of this literature review, the assessment of policies using the supply and demand framework is useful in providing a different perspective to analyse the national housing debate. Additionally, it provides an economic framework to analyse macroeconomic goals of specific policy, as detailed within the Results Chapter of this Dissertation.

It is noted in advance, that similarities exist between the PPP framework identified in the final section of the literature review and the supply side interventions. This is further detailed in the PPP section of this Chapter. Additionally, such an approach can be subsequently juxtaposed relative to non-Government supply and demand considerations contained within the macroeconomic debate section of this literature review.

3.4.2. Supply-side interventions

Recent housing policy debate in Australia at both a State and Federal level has focused on the development of policies to increase the supply of newly built homes. The historical rationale for this focus has been that an increase in supply alone would reduce pressure on housing prices and rental costs as a portion of income, irrespective of movements in demand.

To this end, interventions by successive Governments has been focused on stimulating the production of housing units (Gurran and Whitehead, 2011), through a mix of planning regulations (across both land release and density increases), and partnerships between the public and private sector (Gurran et al, 2008). In both papers, there is consideration of supply side policies aimed at partnerships between the public and private sector, which are of particular relevance to the Dissertation given the policy recommendation included within the Results Chapter. As such, further PPP analysis is detailed in greater detail later in the literature review. Specifically, further analysis of the definition of a PPP is contained in the PPP section of this literature review.

The three key supply side policies undertaken by State and Federal Governments over the past 20 years have relate to zoning, affordable housing agreements and the National Rental Affordability Scheme ("NRAS") (Gurren et al, 2008). While Rowley Et Al (2016) highlight the failure of the National Rental Affordability Scheme (NRAS) to increase the supply of affordable rental housing, due to its reliance on market incentives and private sector participation, the NRAS will not be included within this section of the literature review, to avoid repetition from the prior literature review section.

This literature review section will focus on planning through the lens of inclusionary planning policies, however there is general agreement across States in Australia that holistic planning has failed to provide the market conditions for increased housing supply. Buxton and Goodman (2014) argues that the planning system in Victoria has failed to deliver the desired outcomes of urban consolidation, density, and sustainability, due to the lack of coordination between different levels of Government and the influence of powerful interest groups. Similarly, Murray (2020) suggest that the planning system in New South Wales has hindered the delivery of affordable housing and perpetuated the spatial segregation of low-income households.

More specifically, Inclusionary zoning is a planning tool that mandates or provides favourable planning outcomes for developers who create affordable housing as a component of a new residential development (Gurran & Bramley, 2017). Gurren et al (2008) add that while the utilisation of inclusionary zoning is particularly well established in offshore markets, such as the United Kingdom, the application of such policies is relatively limited in the Australian context. Despite this, they note that both New South Wales and South Australia has used the policy in limited circumstances to increase the supply of social and affordable housing. The debate around the utilisation of these policies is relatively limited, given the limited use of such policies in the marketplace. While substantial evidence exists in the UK marketplace (given the historical context of inclusionary zoning in Section 106 planning laws), the lack of historical context and frequency in the Australian marketplace reduces the relevance of such debate.

Ong et al (2017) note that the NSW affordable rental housing Environmental Planning Policy has objectives of increasing the supply of affordable housing through zoning benefits to developers, and while this has self-evidently achieved increased supply (as these are units which would otherwise not exist), in the absence of additional data, this policy has had mixed or unknown results. Additionally, Wood Et Al (2021) note that the Federal Governments National Housing Supply Council is well implemented by global standards yet has had a mixed result at encouraging coordinated land release and zoning benefits through the establishment of infrastructure provision to date. As such, while policies exist, the lack of comprehensive rollout, and length of policy implementation has reduced the impact and statistical significance of results related to such policies.

While debate continues, a comprehensive literature review and additional evidence reviewed by Hulse and Reynolds (2018) supports the argument that on balance, there is more comprehensive evidence that limited supply of affordable housing in Australia is due to a lack of Government intervention and regulation. Examples include the lack of zoning with minimum density requirements and the aforementioned inclusionary zoning policies.

Additionally, Milligan et al (2017) note that affordable housing agreements have been used in several Australian states to voluntarily increase the supply of housing. Differing to inclusionary zoning, these policies provide a voluntary agreement between local Governments and developers to provide affordable housing when seeking planning permission for new developments. In effect, these policies are used for planning concessions such as increased density. Again, debate has been limited in light of limited use of such planning policies historically.

When implemented, both these supply side policies undoubtedly increase the quantity of total housing in the marketplace, as they increase the density of new developments (Yates, 2013). Additionally, whether voluntary or legal requirements, inclusionary zoning increases the quantum of affordable housing through incentivising inclusive planning in new developments. Despite this, Hayward (1996) and Yates (2013) independently conclude that the impact of such policies is relatively limited in scale, irrespective of the timeframe chosen.

Not only is the implementation of these policies relatively small in scale compared with planned developments, but Gurran and Whitehead (2011) note that they have been insufficiently applied in planning requirements. Lastly, Troy Et Al (2018) note that they have not kept up with the aforementioned 36% growth in dwellings demanded in the Australian marketplace over 20 years to 2018, meaning that even if there was broad-scale rollout, it would have a limited impact on the undersupply of housing in the Australian marketplace.

In line with the debate around the use of Government policies to influence market-driven mechanics, Pawson et al (2012) note that the NRAS and other zoning restrictions place significant reliance on market driven mechanisms. Additionally, the use of such policies does not focus Government resources on the lowest income households, and as such inequitably fulfil the greatest need through focusing on macroeconomic demands. As a result, the impact of supply-side housing policies continues to be debated and critical perspectives of policy effectiveness have dominated the academic literature.

3.4.3. Demand-side interventions

Demand-side housing affordability policies are those policies which directly assist households in meeting the cost of accommodation to increase the availability of housing for households in need (Yates, 2008). Policies typically involve subsidies, direct financial transfers, and tax incentives to improve the affordability of housing costs. These policies are typically aimed at improving accessibility for low income, elderly or at-risk groups of the population (Wood and Ong, 2010). While the debate relating to this policy action acknowledges the immediate benefit of improving affordability for low income households, there is uncertainty around the impact on rental costs and housing prices. In effect, there is disagreement around the real beneficiaries of such policies, as they simultaneously increase affordability for tenants while also creating higher demand, which has the unintended consequence of increasing the final cost of housing by landlords, at the expense of renters.

The First Home Owners Grant was introduced in 2000, and is a one-time financial grant to assist with acquiring a first property. The value, introduction, repeal and means testing of this policy differs by state as these grants are made available by individual states and territories across the country (Seelig et al, 2008).

The First Home Owners Grant has attracted academic criticism, as the grant provides a significant financial benefit to households who are near , or already able, to acquire property. As a result, this policy disproportionately supports middle and upper income households (Berry et al, 2010). Consequently, Berry notes that these policies inflate housing prices while also provided limited or no assistance to those with limited means.

In assessing the factors which contribute to home ownership, Seelig et al (2008) provide additional compelling evidence that such policies disproportionately support higher income households, providing motivation for those with means, rather than support for those without means, to enter the market. This view is further encouraged by Eslake (2013) as he notes that while there is limited evidence of the impact of such policies, what evidence does exists supports the supposition that they

do encourage home ownership, and increase demand, but to an unknown extent, and to an unknown strata of the population.

A similar First Home Guarantee Scheme was announced in 2019, implemented in 2020 (previously known as the First Home Loan Deposit Scheme), and increased in 2022. This policy supported low income households in acquiring a first property. While there is limited academic debate given the relative recent implementation of this policy, the Grattan Institute (2019) notes that these policies are insufficient to encourage affordability for low income households. Additionally, they provide limited support for at risk households in expensive cities such as Sydney.

The Commonwealth Government also provides a non-taxable supplement to social welfare transfers for eligible low income households who are renting from a private landlord. The size and availability of the supplement is subject to means testing by the Department of Community Services (AIHW, 2020). There is little debate about the benefit of these supplements in supporting households to meet rental costs in the private market (due to the direct transfers involved). However, Yates (2013) notes that, as with other Government transfers, the supplement is not indexed to rental costs. Given rental costs increase over time due to inflation, these transfers do not keep pace with rising rents over time. Additionally, the impact of these policies in improving affordability is mixed, with significant debate around the quantum and incidence of demand-side benefits[16].

Additionally, Pawson et al (2018) note that the quantum of the rental assistance is inadequate to fully address rental stress for at risk households, thereby providing a partial benefit, but not resolving the issue of housing affordability in totality. Lastly, such policies also support a general increase in the cost of housing given higher demand for limited housing stock, thereby disproportionately benefiting private landlords, typically higher income households (Yates, 2013). In considering a holistic review of taxation in Australia through a private research, KPMG (2018), a large international tax and advisory consultancy, notes that these policies divert resources away from more targeted and effective taxation policy resolutions.

In effect, debate relating to the benefits and costs of demand-side policies includes analysis that, within a private market, the benefits of direct transfers to reduce the cost of housing are obtained by both tenants and landlords. While rental assistance is generally targeted, it must be used in conjunction with supply-side policies in order to support a more comprehensive affordability solution. Additionally, as these policies do not fully cover the cost of housing, and are not linked to specific individual need, they result in inequality among differing income levels.

3.4.4. Conclusion

Comprehensive research related to both supply and demand-side policies reach similar conclusions. The best approach to improving affordability for both at risk and low income households relate to a comprehensive, inclusive and targeted approach towards policy (Yates, 2013). Increasing supply of housing, while simultaneously reducing the burden to renters or new homeowners is critical to reaching a more comprehensive policy solution.

In this regard, the analysis contained within this Dissertation proposes a robust method for analysing policies through this lens, in undertaking a project that proposes to encompass both increased supply

[16] In the above analysis, Yates refers to 'quantum' as being the relative benefit for renters relative to landlords (i.e. if a renter receives an extra $50 per week, and rents rise $20 per week, the net benefit of the CRA is $30 per week. This aligns with the incidence of the benefit, as landlords may benefit as much as renters due to the impact of increased demand for housing and, more importantly, the increased ability to pay by lower income households.

of homes, and reduced cost housing to those who are at need. In doing so, this research seeks to provide a solution to a historical debate, by quantifying the value and merits of different Government policies under the same scenario for a private investor.

3.5. Specific Taxation Policy Issues

Lastly, while Government policy can be considered through the lens of achieving long-term affordability, equity and housing creation objectives, and through macroeconomic measures of supply and demand, there exists significant debate around individual tax policies levied by both the Federal Government and respective State Governments. Given the conclusions of this research are predominantly focused on taxation outcomes and individual equity (with a focus on incentives these policies create in the private market), special consideration has been made into specific taxes levied, and their impact on both affordability and housing equity.

A clear and significant omission exists from this literature review: the Housing Future Fund. At present, the nature of the fund is subject to significant debate, as this has not yet been implemented by the Federal Government. Given the time of submission of the Dissertation, it will not be included in the scope of this literature review, although it is noted that the fund is proposed to be highly significant. Additionally, no research exists into the nature of the fund, given policy uncertainty at the time of writing.

3.5.1. Capital Gains Discount and Negative Gearing

The most contentious component of the Australian housing taxation debate relates to the incidence and treatment of different types of income. Within the Australian market, the incidence of capital gains tax, together with negative gearing, provides a significantly generous taxation treatment relative to global markets (Davidson and Evans, 2015). As detailed in the Background to this research, Capital Gains tax is calculated on the increase in value of a property, with the taxation levied at the time of sale of the property. Additionally, when an investment is held for over a year, the capital gains is 'discounted' by 50%, reducing the tax burden for long-term investors (ATO, 2023). Additionally, income tax losses generated by an investment property are allowed to be deduced from the income generated from an individual who owns this property – a taxation treatment commonly referred to as Negative Gearing (ATO, 2023).

It is the combination of these two policies which generates significantly inequitable outcomes for individuals (Davidson and Evans, 2015). Davidson and Evans conclude that the combination of these policies results in investors able to artificially reduce their taxation burden during years of owning a property, before receiving an artificially low tax burden upon the sale of a property which is increasing over time. Cho et al (2021) note that these policies have combined to create a comprehensive financial benefit for investors, at the expense of renters. Similarly, Dawkins et al (2021) note that this specific set of policies have had a greater impact on housing prices than other policies, while still advocating for broader taxation and housing reform. This particular perspective is proposed to be reviewed within the research conducted in this Dissertation.

Supporting this evidence, Brown et al (2011) note that both capital gains and negative gearing are likely to have a similar magnitude of value to a private investor. Nonetheless, the taxation benefits obtained by investors in property from capital gains and negative gearing are likely to be limited relative to the more significant influence from interest rate policy (specifically the increase in housing prices as interest rates fall, discussed later within this literature review).

3.5.2. Stamp Duty

Stamp duty, also known as transfer duty in taxation legislation, is a state-based tax imposed on the acquisition of assets, and predominantly refers to the transfer of real estate from one party to another. It varies by state and territory, and the rates are typically progressive based on the value of the

property. The rate of imposition is also influenced by the type of property (residential or commercial) and the status of the buyer (first-time buyer or investor) (ATO, 2023).

There exists significant debate in relation to the imposition of a tax on the acquisition of an investment or owner-occupier home. Freebairn (2016) notes that this form of tax in inefficient, in distorting the ability of individuals to acquire a first home. This is due to first home buyers being unable to compete with more wealthy investors, who are less impacted by a fixed rate transfer duty.

Additionally, in viewing the imposition of taxation and its impact on state revenues, Eccleston et al. (2015) note that the revenue generated by these taxes are highly volatile, increasing during periods where there are higher property values (and more importantly, greater volumes of property transactions), and subsequently falling materially during real estate down-turns.

Many economists have recommended replacing stamp duty with a broad-based land tax, which would be levied on the unimproved value of land. This would reduce the distortionary impacts, provide a more stable revenue stream for States, and could be designed to be more equitable (Eccleston et al., 2015). Despite the generally agreed economic benefits, the recent efforts by NSW to undertake this form of policy reform proved politically unpopular and resulted in the loss of Government of the incumbent State Liberal Party (Samantha Hutchinson, on behalf of the AFR, 2023).

3.5.3. Foreign Investment Withholding Tax

Foreign investors are required to pay a rate of tax on “fund payments”, made to shareholders and fund unitholders. This structure, in effect, is a tax rate levied on international investors for all funds which are invested in Australia. As such, it represents an applicable tax rate on all international investors in Australia. Examples of Fund Payments include capital gains from the sale of an asset, or rental income generated over the course of a year, as detailed by professional law firm, Gilbert and Tobin (Cormack et al, 2023).

The firm notes that the rate on these investments has historically been 30% for all foreign resident investments, excluding certain preferential investments, which are taxed at a rate of 15% or 10% depending on the environmentally sustainable characteristics of the investment.

In the 2023 Annual Budget (released May 2023), this concession rate of 30% which applied to residential investments was subsequently reduced to 15% (ATO, 2023). This has been done to reduce a key taxation impediment to investment in sustainable investments in Australia’s Build-To-Rent sector. Additionally, this policy is subject to the following four criteria for any eligible investment:

- construction must have commenced after 7:30 PM on 9 May 2023;
- The development must contain at least 50 apartments or dwellings made for rent to the general public;
- The dwelling must be retained under ownership for 10 years, prior to disposal; and
- The owner must offer tenants the ability to lease units for up to 3 years.

As the policy has been implemented relatively recently, there is limited literature and debate in relation to the impact and incidence of this policy. However, a general overview provided by Swanzy-Impraim et al. (2023) noted that this policy has been undertaken to support investment demand for new Build-To-Rent projects, given the market has remained relatively dormant in Australia relative to more developed markets in the US, UK and Europe.

3.5.4. National Housing and Finance Investment Corporation (NKA. Housing Australia)

As detailed in the background section, a financing markets approach which has been created by the Federal Government is the National Housing and Finance Investment Corporation (now known as Housing Australia) (Housing Australia, 2023)[17]. This body provides lower cost financing to social and affordable housing developments, along with structured financing for projects which support social value and macroeconomic improvements in housing within Australia.

Additional project benefits include rental guarantees along with low cost debt provide financial incentives for private investors to invest in sub-market return projects. Importantly, these market interventions are relatively low cost for the federal Government, and have a proven track record in international markets such as the US and UK (Fotheringham et al. 2021). In providing a review of the nature of the NHFIC establishment by the federal Government, Fotheringham et al. notes that the development of the Government corporation was effectively driven by academic research and rigorous international comparison and cost-benefit analysis. As such, the body is generally perceived to be well structured, and with strong supporting academic research to justify its foundation.

That being said, debate continues, and Fotheringham et al. note that the funds used by NHFIC are limited, and subject to the Federal Government's Housing Future Fund, remains uncertain.

3.5.5. Conclusion

Overall, it is clear that Government taxation policy has a significant impact on the cost of housing in Australia, and subsequently the availability of affordable and social housing. While taxes have been introduced to support stable investment decisions, these taxes can also have unintended consequences for the cost of housing sector for first home buyers, or low income purchasers.

Importantly, the inclusion of the Housing Future Fund will have a significant impact on future research in this field. However the uncertainty of the funds deployment has rendered academic debate into the fund non-existent at the time of writing, resulting in no further analysis provided in this section.

[17] We note that the "National Housing Finance and Investment Corporation" (referred to as NHFIC) was rebranded to "Housing Australia" on 12 October 2023, following the conclusion of the majority of the dissertations writing. Given the time to submission, and the number of articles referring to NHFIC, the Government agency will be referred to as Housing Australia throughout the paper.

3.6. Macroeconomic market considerations

3.6.1. Overview

The Australian housing market does not exist in a vacuum; rather it is influenced by financial and economic markets, both within Australia, and internationally. Additionally, investment and supply dynamics are driven by factors which are not controlled by State or Federal bodies, but by broader market forces, including consumer demand, private sector investment and risk appetite. Government policy such as Central Bank base rates (both the Reserve Bank of Australia's Cash Rate, and global interest rates) are used to influence these financial market conditions. However, fundamentally these decisions are reactive, influencing but not controlling housing market conditions (RBA, 2023).

Given the significant analysis conducted into the objectives, impact and specific policies created by the Australian Government in order to influence housing markets, this section of the literature review provides analysis into external factors impacting the Australian housing market. Consideration is given to low investment into housing stock by private market participants, low systemic supply of new build housing and unfavourable economic conditions.

This Literature Review is complementary to the methodology and conclusions of this research. The underlying research question relates to specific taxation policies used to address housing investment, however the analysis hereafter provides a more generalised context. Such a context supports a broader contribution to the economic discussion of causes of housing affordability. In doing so, this analysis supports a more well-rounded context, and provides a deeper understanding of potential taxation solutions to Australia's housing affordability problem. The conclusion of this literature review indicates that all three theories are interrelated, and collectively account for the market failure evidenced in Sydney. In doing so, it provides a background to the market failure, for which taxation policies can provide a policy solution.

3.6.2. Financial market conditions (Demand)

While supply and investment policies and market dynamics (discussed hereafter) are influential in the housing market, they fail to account for the more recent financial market conditions which influence housing affordability: credit creation and borrowing capacity (through interest rate declines).

Through demonstrating the impact of the two major Government tax reforms impacting housing investment (negative gearing and capital gains tax discounts), Brown et al (2011) collectively conclude that both factors have limited impact on the user cost of housing. Consequently, they determine that the most significant impact on housing affordability (as measured through the user cost of housing metric) is rather interest rates, which impact borrowing costs and affordability directly. Similarly, Ryan-Collins concludes (2019) that the availability of credit in the global marketplace has altered the market. As banks are motivated to provide credit to investors with real estate collateral, global economies have witnessed increased investment in real estate debt, increasing capital prices. Both of these articles align with the analysis conducted within the Background Chapter of this research.

These articles express what is a widely held belief in both financial markets and academia, the influence of credit expansion and interest rates. Both articles analyse the increasing importance of financial markets, during the same time that Government policy has become ineffective. Despite the lack of support for present policy settings in this research, a significant gap exists to determine what policies would be more effective – a gap which is proposed to be filled through the research conducted in this Dissertation.

It is well established that population growth, immigration, and household formation are the major drivers of underlying demand for housing in the marketplace. For example, Gurran and Bramley (in

Bramley's Textbook, 2017) suggest that the demand for housing in Sydney is driven by both demographic and economic factors, such as the ageing population, the growth of dual income families, and the high cost of living. Similarly, Berry (2023) argue that the demand for housing in Melbourne is influenced by immigration and the diversity of housing preferences among different cultural groups.

This research is further supported by RBA research (2023), that a significant component of demand for housing has been the reduction in occupants in each dwelling. In conducting research for the RBA, Agarwal et al (2023) note that the average number of people has fallen from 2.9 per dwelling in the 1990's to less than 2.5 in the 2000's. This has contributed to a significant increase in demand for housing across the Australian housing marketplace.

3.6.3. Insufficient Supply of housing stock

While demand for housing through both financial capacity to pay and individuals per dwelling, has increased over the past 30 years, this factor does not account for all housing price movements. Keith Jacobs et al (2013) provides a counter-argument, in detailing the transition of affordable housing in the Australian market. Through reflecting that the public and affordable housing market in Australia is fundamentally focused on addressing market failure, the article concludes that the approach of Government to leverage further private sector investment is in essence counter-productive. This is due to market participants being unlikely to agree to below market returns (i.e. rents 20% below market) in a private competitive market. The study provides a theoretical basis to affordable housing from an economic perspective, but provides limited further study in relation to Australia's specific housing issues.

Through a comparable approach reviewing different markets of Australia, New Zealand and England, Austin et al (2013) further develops this argument through noting the inconstant and ineffective state and federal Government planning for Australian housing construction. Through analysing ineffective models to develop additional housing stock, and differences between Government approvals, Australia can be perceived as not lacking investment appetite, but discouraging supply relative to two other similar common law economies. While not discussing the impact of alternative policies, this research provides an opportunity for additional study into effective policies and their financial impact – something which is proposed in the key contribution to this study later in this research.

Perhaps the staunchest research in relation the ineffective supply contributing to affordability is undertaken by Morris (2019). Through researching at a local council level, and conducting in-depth qualitative research with individual researchers, the article concludes that the basis for poor housing affordability in the Australian market is related to poor housing zoning and construction policies. Such planning policy is considered the primary factor to housing affordability, with financialisation of housing also relevant but secondary.

There exist relative similarities between the supply and investment arguments (with investment arguments noted hereafter), as noted in foundational research conducted by Sharam et al (2018), which notes that the supply of stock is significantly impacted by financial performance. In effect, the article concludes that both investment and supply-side market intervention (detailed earlier) are closely interlinked. As such, the development of a financial market for new stock will increase development opportunities, irrespective of zoning policy settings.

3.6.4. Housing Stock Investment

Hall and Berry (2001) undertook the foundational research conducted on the Australian housing market imbalance. This research noted that in spite of increasing living standards and quality of life in

Australia, housing affordability was falling. While preliminary findings over a short period of time, the research effectively commenced the discussion around affordability and the impact of investment.

This work was subsequently supported by incremental research undertaken by Mike Berry (2003), a co-author of the Hall et al article, focusing on the development of private investment in the provision of affordable housing to support the bottom two quintiles of Australian housing residents. By supporting the case for increased private investment, a free market approach was proposed to standardise investment from large Australian institutional investors (particularly super funds).

The work of Hall and Berry is further developed by Julie Lawson et al. (2014) in a more contemporary setting for the Australian Housing and Urban Research Institute (AHURI). This report concludes that the most effective way to develop housing affordability and increase ownership and rental affordability in middle and low income households is to further develop investment through sophisticated financing models. Despite this conclusion, the research fails to discuss in detail what these models would consist of.

3.6.5. Macroeconomic Conclusion

While Government policy has been significant in influencing the Australian housing market, financial markets, supply constraints and investment conditions have also resulted in worsening affordability over time. The research conducted above provides an overview of major factors which have contributed towards housing affordability deterioration. In doing so, it provides a more wholesome context to the housing market in Australia over the past 40 years.

Fundamentally, housing has been significantly impacted by reducing interest rates since the 1990's, along with increased credit availability. This has been further impacted by reduced supply of new stock through limited re-zoning, the financial conditions of low cost housing (which result in limited supply of social and affordable housing), and result in a clear market failure. Lastly, investment has remained limited, as private investment into the Housing market has remained below required levels, driven by high costs of construction, and simple financing models. While many of the policies needed to resolve these issues are self-evidence, Government intervention is critical. Many of the articles note potential policy solutions, with a clear focus on sustained financing policies in order to achieve these goals.

3.7. Use of Institutional Capital for Social Outcomes

As detailed in the introduction and background to this Dissertation, the Australian Federal Treasurer has proposed a new capitalist theory, "Value Based Capitalism" (Chalmers, 2023)[18]. Fundamentally, the theory, which has been described as a new economic blueprint in the mainstream media (Kehoe, 2023), details a rejection of Neo-Liberalism, and a move towards a Neo-Capitalist structure of Government. Fundamental to this policy is the connection of ethical investment by large institutional fund managers (while super funds are not the only proposed investors, the proposal is effectively aimed towards such investors), in conjunction with Government policy and investments decisions. Nonetheless, there exists debate around the use of private funds for Government purposes, and the ultimate ownership of superannuation funds, as detailed in the Background Chapter to this Dissertation.

As such, the Federal Government has sought to propose a new system of financial markets, where private market participants invest in socially beneficial projects (with both renewable energy and social/affordable housing singled out). Given the relevance of these policies to the Dissertation methodology and results, a brief analysis of academic critiques of institutional capital in affordable housing is detailed below.

While discussion is ongoing, the use of retirement savings, or superannuation in an Australian context, for social infrastructure investment has been a topic of debate within the academic literature. On one hand, proponents argue that such investments can provide a means of addressing pressing social issues while also delivering financial returns to investors (Börsch-Supan et al, 2003, with Demographic Change in Germany, Hann L (2010); Donkor-Hyiaman Et Al, 2019). For example, Donkor-Hyiaman Et Al (2019) found that investments in affordable housing in the United States can provide an adequate return for pension funds, while also addressing the issue of housing affordability through providing additional investment capital. Despite this, the dataset was focused on lending policies and investments, rather than equity investment, and as such it did not note relevant risk and investment decisions for a pension investor building new housing stock. Similarly, Börsch-Supan et al (2003) argued that using pension savings for social infrastructure, including housing, can provide both financial returns and address the issue of an aging population, given the investment horizon and return characteristics.

Additionally, a comprehensive study undertaken by Inderst (2009) for the OECD noted that there are a number of unknowns in pension investment into both traditional infrastructure, along with other unlisted social investments (such as housing, through a broader real estate allocation). While the OECD report is an overview, rather than a comprehensive analysis and comparison of risk and return, several key risks exist in the market, including:

- Construction risk (both timing and cost overruns);
- Operational risk (relating to asset management and systems);
- Business risk (relating to the underlying demand, systems in place, competition and innovation);
- Gearing risk (given infrastructure assets are more leveraged than other investments, there is significant exposure to interest rate movements);
- Legal and ownership risk (litigation, planning and leases);

[18] While the article "Capitalism after the crises" first appeared in the Monthly in February 2023, it has subsequently been published on the Australian Federal Department of the Treasury website. This has been driven by the financial market impact of federal Government personal and policy decisions, best indicated by the policy document created by Dr. Chalmers.

- Regulatory risk (if regulators limit the return on investment of an underlying asset);
- Environmental risk (unforeseen hazards and community action); and,
- Political and social risk (corruption, political change and lobby groups).

Additionally, Inderst notes that there are significant gaps in market understanding of investment in the unlisted social infrastructure space, including a lack of common benchmarks (which are common, and even a market expectation in public equity and bond markets).

Further Croce and Yermo (2013) found that investments in social infrastructure, such as renewable energy projects, may not always provide the same level of returns as traditional investments. This may provide an inefficient outcome, whereby additional leverage is sought to increase investment returns, or pension fund members obtain sub-optimal investment returns.

Further to the financial debate, there exists a moral dilemma surrounding the use of retirement savings (saved by an individual) for social investment (on behalf of the community). This dilemma is a traditional moral hazard[19]. Some argue that retirement savings should be used solely for the benefit of the individual investor, rather than being directed towards addressing broader societal issues (Börsch-Supan, 2003; Donkor-Hyiaman, 2019). On the other hand, proponents argue that retirement savings can be used as a means of promoting the common good and addressing issues such as social inequality and environmental sustainability, however this may limit investment returns and reduce retirement financial outcomes for investors (Inderst, 2009; Croce et al, 2011). This secondary argument is closely aligned with the policy proposal included by Dr. Chalmers in early 2023.

Holistically, the return from individual private financial investments must be assessed on a case-by-case basis. Macroeconomic analysis of investment in unlisted asset classes (including both infrastructure and social infrastructure investments) fails to account for individual investment decisions and returns. In this regard, there exist significant investment opportunities in social infrastructure investment, and such policies require in-depth analysis, such as the housing policies proposed within this Dissertation.

[19] It is noted that in a traditional moral hazard, a single financial investor may make decisions which damage society, this is a reverse moral hazard, where societal benefit results in lower returns for an individual investor. None the less, the typical perception of a moral hazard (where financial incentives result in decisions by one group may have impacts on another group) remains true in this scenario.

3.8. Academic background on PPPs

3.8.1. Overview

PPPs are broadly perceived as a form of social infrastructure investment that holds lower risk than other investments in more returns volatile infrastructure asset classes (such as toll roads, or airports). This view is noted by a number of articles, with a comprehensive over provided by Inderst (2009), in a holistic overview of infrastructure investing and Government policy in developed nations, noted in the prior section and developed for the OECD. Despite the nature of PPPs as relatively well-known infrastructure investments, there is significant debate about these projects and their role in financial markets and Government policy. This section of the literature review provides a theoretical framework for such investments, before analysing the international and domestic debate that exists into the efficiency, benefits and risks common in PPPs.

3.8.2. PPPs and Critical Debate

PPPs were first introduced in the UK as the private finance initiative (PFI), by the then UK conservative Government in 1992. These structures were developed in order to achieve a desire of the (then) Conservative Government to transform public sector bodies from asset owners and operators, to purchasers of private sector services. Since this time, the PFI (known internationally as undertaking PPPs) has grown to become an international investment vehicle and infrastructure development structure, which has grown to become an asset class globally (Siddiquee, 2011).

PPPs have become a popular means of financing infrastructure projects, including those related to social and affordable housing. PPPs involve the collaboration between the public and private sectors in the financing, design, construction, operation and maintenance of a project (Farquharson et al. 2011). Farquharson et al notes that there are several benefits to using PPPs as a means of financing infrastructure projects. One major benefit is that PPPs allow for the transfer of risks from the public sector to the private sector, which can lead to more efficient project delivery. Additionally, Yescombe (2010) notes PPPs provide an opportunity for the private sector to bring its expertise and innovation to the project, which can lead to cost savings and improved construction quality. Given projects are subsequently operated by the private sector for a fee, there is no incentive to create reduced cost, inferior quality infrastructure assets, improving infrastructure quality outcomes.

However, in providing an overview of the PPP structure, Ehrhardt and Irwin (2004) notes significant debate exists around the use of PPPs in the market. The research notes that at its core, PPPs transfer financial risk from Governments to the private sector, resulting in reduced cost overruns to Government operators and builders, which is borne by the Government counterparty. This results in the provision of a service (previously provided by the Government) by a private sector participant. Debate predominantly relates to the method and impact of such a risk/provision transfer, as detailed below.

A common argument is that PPPs can lead to higher costs for the public sector in the long run, driven by poor contract design, and an inability of Governments to effectively price the cost of risk transfer to the private sector (resulting in higher costs) (Grimsey and Lewis, 2005). Such an approach is sympathetic to the cost savings generated by PPPs (in noting that prior to PPP implementation, 75% of UK projects were overtime and overbudget, and after their implementation, this measure fell to 25%), but notes the complexity of projects, and a difficulty to properly structure PPPs can create barriers to projects that simultaneously benefit both Government and private sector entities. In effect, poor structuring may result in increased Government costs, irrespective of cost savings generated by the private sector.

Additionally, Reeves and Ryan (2007) highlight an alternative critique of PPPs, which questions the use of private market participants in the provision of public goods, given the inherent conflict of interest between Government and private sector partners, the latter of whom are driven by profit maximising motives. Reeves and Ryan also note that there is an additional concern that PPPs may lead to a lack of accountability, as private sector partners are not subject to the same level of scrutiny as public sector organizations. In effect, this argument has been summarised by Ehrhardt and Irwin (2004) as a fundamental objection to the provision of public services by the private sector, which is unsurprisingly summarised by a PPP project in Irish public schools used as the Reeves and Ryan case study.

Despite such criticism levied at the relationship between Government and private sector counterparties, PPPs have a proven track record of delivering infrastructure in a number of markets for several decades. Despite significant academic criticism of these PPP structures, the number and value of PPPs has grown over the past 20 years, leading to the so-called "PPP Paradox" (Garg and Garg, 2017). Not only noting the growth of projects, Garg and Garg note that successful PPPs are likely to exist in smaller projects, where nimble, entrepreneurial solutions may provide improved risk and reward returns for both Government and the private sector. Through the use of an Indian highway PPP marketplace, this approach is supported by results that conclude PPP performance is driven by leveraging the capitalist incentive benefits of the private sector.

More recent support for the financial benefits of private sector partnerships is found by Verweij and Meerkerk (2021). Utilising recent PPP project data, they conclude a framework where Governments can, and do, obtain construction and development cost savings, with both lower quantum and frequency of cost overruns and project delays, through the utilisation of private sector partnership.

The research conducted within this Dissertation does not seek to add to the debate around PPPs. While private sector participants appear able to achieve cost savings in infrastructure and social infrastructure construction costs, the benefits to Government and society appear uncertain. This uncertainty is best noted through the fundamental resistance to private sector delivery of public goods and services noted by Ehrhardt and Irwin (2004) and indicated by Reeves and Ryan (2007). In determining the financial benefits of Government policies, a case study should include such PPPs, and as such it will form a component of the methodology and results.

3.8.3. Consideration of PPPs in Affordable and Social Housing

Fundamental research undertaken by Inglesias (2009) notes that affordable and social housing has been supported through a variety of forms and structures of PPPs over time. In taking a broad approach towards defining PPPs as being general agreements between private entities and public bodies, Inglesias notes that PPPs have been used as a method to develop, grow, and support housing as a social welfare tool for many decades.

Inglesias utilises the approach of Davidson (2006) in perceiving PPPs as policies used to reduce the cost of housing. This can be done through:

(1) Financial subsidies provided by Governments to incentivise developers to build social and affordable housing;
(2) Regulatory relief (including density bonuses, reduced Government costs or taxation benefits) for private housing developers if social and affordable housing is developed;
(3) The provision of infrastructure, subsidies, or land to private sector developers to redevelop or build new housing; and
(4) The sale of traditional housing by Governments which may be redeveloped in support of growing the stock of social and affordable housing.

This approach is considerably broader than that taken by the OECD, as it does not include the previously mentioned financing, design, construction, operation and maintenance of a project (which is viewed as a foundational definition by Ehrhardt and Irwin (2004)). Rather it perceives partnerships to include Government incentives to create new social and affordable housing by private sector developers.

Taking such an approach would also include current Australian Government policies of housing credits, tax deductions for the provision of rental housing and capital gains discounts as "PPPs". It is noted that all policies proposed and reviewed within this Dissertation are fundamentally within the scope of the Davidson (2006) definition of Social and Affordable Housing PPPs. As such, for the sake of clear delineation of approaches, such a definition will not be used within this Dissertation.

When taking a more traditional approach towards PPPs, there exists a continued degree of scepticism towards developing housing under a shared risk model. Nidugala and Shukla (2016), note that when comparing private sector investment in housing through a PPP approach, several major issues are presented, including:

1. The Government is better positioned and empowered to manage regulatory risks relating to land acquisition, clearances and litigation;
2. The Government can fund through borrowing at a lower interest rate than the private sector; and
3. The requirement for a profit margin may result in lower provision of housing once the development is concluded.

In effect, this third consideration reflects the underlying challenges in comparing public and private sector investment into housing, either directly, or through a PPP structure. Governments have an inherent goal of maximising social benefit for their citizens, however this creates a conflict of interest, summarised in the section above more generally for all PPPs.

Despite the literature noted above, PPPs are predominantly focused on the provision of infrastructure, rather than real estate investments. While literature exists into the nature of the market in some countries, this is generally not relevant to the Australian market. Examples include the provision of housing in Tanzania (Kavishe et al, 2019), general research into developing markets (Moskalyk, 2011), and a developed market case study in the UAE (Alteneiji et al, 2020), all foreign marketplaces. Thus, while there are a number of general conclusions which occur across these geographies, there is no research to link these policy solutions to the Australian housing market. None, the less, we conclude the following general considerations from Kivashe et al, Alteneiji et al, and Moskalyk:

1. Most existing research is focused on success factors, using small case studies as an example;
2. Several studies note challenges to successful PPPs, providing an alternative methodology;
3. While housing appears to be a relevant and logical market for further research, there exists limited research and comprehensive debate; and
4. A key role of Government in housing markets would be the provision of coherent and sustained policies, all of which have been lacking in broader housing policy in international markets.

In considering the broader definition of a PPP provided by Davidson (2006) and further discussed by Inglesias, this conflict of interest can be analysed. If Governments seek to maximise social benefit with set budgetary resources, there is a need to compare and analyse the impact of Government resources on social goals. None the less, the literature review contains limited directly linked policies which may be used to further analyse Australian housing, and as such is considered to have a significant research

gap. While not a stated objective of the research undertaken within this Dissertation, the model developed in this research seeks to provide a method of comparing Government expenditure with the provision of social housing, which supports the filling of a small portion of this gap.

3.8.4. PPPs in Australia

While PPPs first emerged in the UK in 1992, they have become a global investment asset class, with Australia being considered a large international investment destination (Siddiquee, 2011). The debate around their use and success continues to be debated in global marketplaces, however this section will consider the specific investment case study in Australia. To avoid repetition with ideas noted above, it will remain a brief overview and analysis within an Australian context.

Globally, Australian PPPs are perceived to be a well developed and stable investment asset class, with a set of laws and legal principles underpinning infrastructure investment through these vehicles. While investments exist throughout Australia, Victoria and NSW have more aggressively been involved in the development of these projects, establishing 31 out of 39 PPPs nationwide between 2000 and 2006 (Chan and Cheung, 2009). In doing so, they have created the foundational framework for infrastructure investment in the country.

Debate around the use of these PPPs includes the criticism that State Governments use these vehicles as a purchasing device, including the general dismissal that these investment vehicles create a 'mega credit card facility' (Hodge, 2004) for the Australian Government. Additionally, this research supports international analysis conducted above, which perceives PPPs as wasteful and expensive infrastructure investment vehicles.

Despite this, Cheung et al (2009) note that the Australian market provides a sensible investment marketplace, with stable Government policies by global standards. This is supported by evidence by Regan et al (2017), which notes that PPPs provide a method of supporting investment in infrastructure, and stabilising financing for large scale financing (through the use of a toll road case study).

Importantly, the research undertaken into the Australian marketplace notes an academic consistency with global debate around PPPs. However, it also provides supporting evidence for the use of concessions to support financing (specifically in Regan et al). This is a key to the findings contained within this Dissertation, and as such provides supporting evidence in utilising Government contracts to reduce the cost of financing for socially impactful private sector investments, a key proposed result of the research undertaken.

3.8.5. Conclusion

The findings in this literature as they relate to PPPs are important in providing supporting evidence for more general infrastructure investment and Government policy intervention. The creation of a Neo-Capitalist investment marketplace, proposed by the Australian Federal Treasurer as a new economic model is supported by aligning social goals and private investment (Chalmers, 2023).

While a specific PPP model may be used in order to achieve these goals, the more generalist approach taken by Davidson (2006) provides a significantly broader approach to consider the impact of Government policies. As such, the debate around PPPs can be likened to the debate around the cost, impact and consistency of Government taxation policies: significant academic critique, and a general degree of scepticism around policy effectiveness.

The research proposed in this research is focused on understanding improved Government policy setting in the current financial marketplace. In doing so, it takes into account the present gap in

Government policy, while taking full account of other Government policy settings and financial market conditions (including, capital gains taxation, negative gearing, credit creation and financialisation of housing, respectively). Further, it considers the impact of PPP planning policy and housing policy viability, while clearly showing the immature nature of the literature on PPPs in Australia. In doing so, it acknowledges much of the research above, while providing additional study into the impact of these individual factors on financial outcomes for projects.

3.9. Literature Review Conclusion

The 'top-down' framework applied in discussing the different fields of Government, finance, economics and taxation within this literature review reflects the broad nature of this Dissertation's research. Through first analysing philosophical debate around the nature of Government policy intervention, a policy framework has been utilised and critiqued given the current Australian Government policy mix. Thereafter, other macroeconomic factors influencing the market has been considered, providing a holistic view of the causes of Australia's housing prices and affordability. Thereafter, an overview of the role of institutional capital, and the relevance of PPPs, both traditional and 'broad in scope' has been considered.

While consistently analysing academic debate, this framework commences in the highly theoretical, before focusing on debate around the current policy mix, and external factors. This provides both context and a framework for subsequently discussion of the use of pension and institutional capital and PPPs in order to provide more nuanced insight. As such, while broad, this literature review provides a holistic overview into the comprehensive and broad-reaching debate of using private capital to achieve public good. Further economic analysis around what constitutes public good has been considered, but is functionally out of scope, given word limits to this Dissertation.

As evidenced in the above literature review, there is significant ongoing debate in each field. Each consideration has been analysed below, with consequential view held as follows.

Taking a philosophical approach, the research conducted within this Dissertation will utilise a Neo-Capitalist framework, in alignment with the framework proposed by the Federal Treasurer. Nonetheless, there exists ongoing debate around the Neo-Liberal and Neo-Capitalist approaches of Government. This Dissertation does not seek to participate in this debate, as it is functionally out of scope, but rather uses a foundational Neo-Capitalist approach as a theoretical framework, having considered the theoretical background and implications. Such a framework provides a structure to consider Government policy and intervention.

Utilising this framework, it can be determined that while Australian Government policy objectives have been successful in retaining low rents by global standards, the other objectives of social and affordable housing supply, and home ownership affordability can be considered unsuccessful. In effect, new supply has predominantly been acquired by investors, who have obtained lower rental growth in return for higher capital gains, disadvantaging first home buyers, and those in low income groups. This transition is best noted in Yates (2013) reference to both the "ambulance service" of social housing, together with the transition to a nation of renters, rather than owner occupiers, creating an opportunity to discuss the supply/demand framework utilised by successive Governments.

Economically, this debate continues around the impact and equity resulting from specific supply and demand side policies. While direct transfers improve the ability of low-income households to pay, they have a broad disadvantage of increasing the capacity to pay of a large portion of the market, thus being poorly targeted to those most at need. Additionally, although 'supply-side' policies have been implemented across the market, they are limited in scope, and lack the required scale to improve affordability outcomes. While the literature review subsequently provides a policy specific overview, it is this framework which is utilised throughout the Dissertation.

As such, while there is significant academic criticism of certain Government policies (including capital gains and negative gearing), other individual policies remain generally supported. The creation of NHFIC, together with the implementation of a lower Foreign Investor Withholding Tax is generally considered supportive of a stable investment platform for foreign investors to increase demand in

newly built BTR assets. NHIFIC also supports the increased supply for all investors in social and affordable housing developments, albeit with limited functional impact, thus creating a standard benchmark for limited (although widely supported) supply support policies. However, this individual policy debate remains premature given the lack of policy and academic analysis conducted in the Housing Future Fund.

Given the lack of Government funds for housing (at the time of writing), the discussion transitions to the use of private funds for social objectives. To this end, the use of private superannuation and institutional capital in social infrastructure projects, such as affordable and social housing investments has resulted in significant and incomplete debate. Inderst report for the OECD (2009) notes that infrastructure is a relatively novel and recent asset class. There are significant risks, and general informational gaps in the market, which may not exist in other asset classes. Additionally, the use of pension savings to achieve Government or social objectives results in a moral hazard, with limited agreement as to the ethics and general implications of such investments.

Specifically reviewing this structure through the PPP framework enters a significantly critiqued asset class used by both Government and international investors. In line with taxation policy debate; critics argue that the creation of Government services by private investors is inherently a conflict of interest. However, substantial evidence exists that PPPs can (and do) generate lower frequencies and quantities of both cost overruns and delays. In this regard, there is a general alignment with housing policy throughout the literature review: while the private sector may be more efficient at providing housing, it may also have incentives which reduce the quality of service provision, or create moral hazards.

Thus, across the entire literature review, debate is continuing, and remains comprehensive across different fields. However, the current 'state of play' is best analysed by Yates (2013). While rental costs in Australia have remained low by global standard, housing ownership affordability has deteriorated over the past 50 years. Effectively, Government policy has been both inconsistent in design and ineffectual in result. It has not achieved improved housing affordability and social/affordable housing outcomes. While there has been certain strengths to policies (including the creation of NHFIC and a market leading PPP framework), taxation policy remains hotly debated. In addition, the structure, framework and potential of the Housing Future Fund remains unknown.

While Governments continue to debate the Supply/Demand arguments, housing ownership has become as unaffordable as any period in the past 30 years. In addition, the social and affordable housing system has become an 'ambulance service' for those most in need. Fundamentally, policy critiques have significant supportive data to the first-principles Background Chapter of this research.

In this regard, there exists a number of extensive literature gaps. Different taxation policies require financial comparison and analysis for private investors. Additionally, the impact of supply and demand strategies must be quantified and considered. Lastly, the impact of recent Government policies bodies and specific policies must be analysed. While the Dissertation only seeks to partially fill some of these research gaps, it provides a comprehensive approach to undertake such analysis.

Chapter 4. Methodology

4.1. Introduction

This methodology will provide an overview of the DCF. Initially It will provide a background of the historical academic research supporting the time value of money, a foundation to the development of DCF models. From this basis, it will provide a detailed overview of the method of creating a DCF. The inputs used in real estate and housing investments will subsequently be reviewed. These assumptions will be determined, analysed and justified. Subsequently, a results methodology triangulation process will be evaluated to improve empirical conclusions. Further consideration will then be provided into model limitations, to analyse the shortcomings of this research.

The methodology provides an initial theoretical basis for the time value of money, and the concept of equities valuation. It analyses the core three pieces of literature in financial markets as:

- The time value of money;
- The valuation of investments by discounting dividends (as a proxy for cash flows to shareholders); and
- The irrelevance of capital structuring and the basis for expected returns.

Accordingly, the methodology provides a theoretical background to DCFs as the most commonly utilised valuation tool in financial markets.

This provides a theoretical basis for the selection of inputs in the investment thesis created within the Dissertation. Once inputs are defined and outlined, they can be assessed and estimated from academic and private market sources. This method provides a rigorous review of academic literature, and where literature does not exist, a review of grey literature in the private sector can be undertaken. It is noted that, given the inherent private sector utilisation of DCF models, the majority of inputs will include significant evidence or input from the private sector.

Subsequently, this methodology will analyse the results through different valuation methodologies and analyse the limitations to DCF valuation methodologies. In doing so, it provides a holistic overview of the benefits and limitations of the model and provides a basis for the results to be provided in the subsequent Chapter.

This methodology acknowledges that while DCFs are commonly used in private sector practise, they are not without limitations. However, DCFs remain highly effective and commonly utilised measure of investment analysis for the private sector, and forms a useful basis for subsequent results. Irrespective of social or public shortcomings detailed in this Chapter, they are influential in determining the impact of economic, financial or government policy on investment decision making, and support the underlying framework of this Dissertation.

4.2. Quantitative Research Design

The research conducted within this Dissertation will be done by way of a DCF Model, which will be used to assess the financial returns to investors under a number of different scenarios. These scenarios will subsequently be compared to determine the most efficient manner in which governments may support investment into both private housing and social/affordable housing.

The case study methodology will first create a baseline DCF which will include the current market conditions as assumptions, and subsequently compare the investment returns based on a number of different taxation policies and investment structures. The final comparison will be to the creation of a NSW Government PPP project, utilising a government revenue guarantee, and renting apartments at a 20% discount to prevailing market rates, to determine the cost efficiencies generated by entering into long-term offtake agreements with a state government body.

As the investment will be undertaken through a Build-to-Rent ("BTR") case study, the assumption of selling the property will not be done until the end of the DCF time horizon. A key component of this case study will be the recent affordable housing development undertaken in the private sector: the Altis Property Partners Miranda affordable housing development. As such, this project will form an indicative model by which further market-wide research will be undertaken[20].

The DCF will be structured as incorporating the initial cost of acquiring the BTR asset, followed by 20 years of operations (renting) of the property. Given that PPP investments are typically valued on a finite investment timeframe, the 20 years of cash flows will align with both the common timeframe for PPPs, and a medium-term investment horizon for residential apartments. Additionally, the discount rates will differ between PPP and non-PPP projects, and as a result, these projects will effectively compare cost of capital impact to investors and governments of two otherwise similar projects.

Once this DCF has been developed, a comparison between different government taxation policies can be made. Specifically, the utilisation of stamp duty exemptions, income tax relief, foreign investor withholding tax changes (past and future) and rental subsidies or negative gearing credits can be compared. This will provide a more comprehensive review of policies and provide more meaningful taxation conclusions.

The utilisation of a status-quo[21] project will create a true null hypothesis. As such, an alternative project feasibility will generate results (across both Internal Rate of Return ("IRR") and Net Present Value ("NPV") that are directly comparable. Lastly, results from comparing different financial metrics of NPV and IRR will support a more comprehensive research outcome, supporting more sound research conclusions.

4.2.1. Overview of the Discounted Cash Flow Model

The DCF forms the basis of asset valuation and investment decision making in international financial markets. The model is based on the "time value of money" principle, whereby a dollar is worth more today than a dollar in the future, due to the ability to invest to generate a rate of return (Brealey,

[20] It is noted that this scenario is used as a case study due to its pertinent project timing, and while Altis Property Partners staff have been contacted for general BTR market and investment conditions, no internal information has been used in this academic case study project.

[21] This refers to the status quo of the current investment marketplace, whereby there is much public discourse around the national tax agenda, but limited research into the financial impacts of existing policies.

Myers, & Allen, 2017). As such, the model forms a mathematical method commonly used in financial markets to compare investments over any time horizon.

The DCF model is based on the fundamental academic research undertaken by John Burr Williams in the 1938 book *The Theory of Investment Value*. The fundamental basis for the book was the principle that valuing listed equities (by way of valuing a company as a whole) required future dividends to be discounted back to the current period. This was based on the concept that financial (accounting) earnings were simply a "means to an end", and instead the dividends paid to shareholders were the financial benefit of investing in equities. Foundationally, using these dividends as an objective allows a method to determine the rate of return for an investment.

This research was subsequently supported by the work of Modigliani and Miller (1958) and William Sharpe (1964), both providing academic support and legitimacy for the theories of asset valuation and dividend discounting to obtain a current market value. In relation to this:

- Modigliani and Miller (1958) created the basis for capital structure irrelevance theory, the concept that a company's capital structure was not relevant to value. Instead the underlying ability of that company to generate a return to shareholders determined firm value. This principle was supportive of the use of DCF models, as higher levels of leverage (borrowing) reflected greater risk to shareholders, rather than generating a higher rate of return. As such, the model created a risk adjusted framework for assessing investments by way of altering the discount rate applied.
- Subsequently, William Sharpe (1964) proposed that rates of returns in equities were indicative of the volatility (as a proxy of risk) in which each company exhibited. As such, higher risk companies generated higher rates of return and vice versa. Additionally (although of limited relevance to this research) the model supported the proposition that the most efficient financial portfolio was a diversified portfolio of companies with a range of different returns and volatilities.

The work undertaken by Modigliani and Miller, and subsequently by Sharpe, supported both the academic foundation of the DCF model, and the popularisation of modelling as a form of asset valuation. This has resulted in the model becoming the most widely used financial valuation technique in modern finance and economics[22] (Brealey, Myers, & Allen, 2017).

While the model is highly popular, it is not without criticism. Damodaran (2012)[23] notes that the model is highly sensitive to individual variable inputs, resulting in a degree of subjectivity and bias in valuations calculated through this model. While all variables are influential in determining investment values, specific inputs such as the discount rate and growth rates can lead to significant variation in valuation outputs. This sensitivity is compounded by a reliance on forecasts of future earnings or dividends to shareholders, as valuers hold significant discretion in estimating future scenarios. Such discretion can result in speculation, particularly demonstrated in volatile markets or financial crashes, which can undermine the models results (Ball, 1978).

[22] It is noted that macroeconomic models infrequently utilise the DCF framework, however they are still essential in valuing companies and undertaking analysis into the underlying drivers of company valuations in financial markets by economists.

[23] Aswath Damodaran is The Stern School of Business (New York University) Professor of Finance. While his literary works are academic in nature, he is generally considered a global leader in valuing assets in both a private and academic market. Along with the foundational textbook by Brealey, Myers, & Allen (2017), these two pieces form the majority of academic and foundational work into the space and are referenced widely.

Additionally, the model itself does not account for all variation in financial returns to shareholders. Fama and French (1992) note that the discount rate utilised in William Sharpe's work accounts for only share price volatility in determining asset returns. A more accurate model (both proposed and subsequently tested by Farma and French) also includes the price-to-book factor as a measure for a "value" or "growth" nature of a company, and the size of the company, as smaller companies typically outperform larger companies. The Fama and French 3 factor model has proven effective in assessing the performance of equities since its inception, albeit the model does not have material implications for use of the DCF model. This is because the discount rate can be altered to account for both the value factor of the company (and the industry), along with the size of the company, both commonly undertaken in valuations. Irrespective, this holds no relevance for real estate development assessments.

Lastly, Penman (1997) notes that the majority of valuation undertaken using the DCF model assumes relatively linear growth (i.e., constant growth rates and risk profiles). This assumption is not representative of actual financial markets, where there is volatility in earnings, and general business cycles which are both unpredictable and anomalous in nature.

Holistically, the critiques of the model do not doubt the use of the DCF framework in valuing businesses, but rather provide a significant impetus and focus on the selection of sound and theoretically supported inputs. In this regard, the inputs utilised in the financial model will be a key focus of the research undertaken within this Dissertation.

4.2.2. DCF Model Construction

The analysis within this section outlines the construction of a DCF model. Considering the widespread adoption of the model, the approach taken by Brealey, Myers, & Allen (2017) will be used as the academic reference. Despite this, these formulae are common to nearly all finance textbooks, and the adoption of this reference is effectively due to widespread review and popularity of this textbook.

Present Value Methodology and Discounting

The fundamental basis of the DCF model is the concept that cash flows are worth more today, than they are in the future, as detailed below:

$$Present\ Value\ (\mathrm{PV}) = \frac{C^N}{(1+R)^N}$$

Where:

- C^N is the Cashflow at time N
- R is the Rate of Return expected by investors
- And N is the number of periods between today's date and that time, typically represented in years.

From this calculation, a Net Present Value ("NPV") can be generated, by first determining the cost of an investment, and applying this to the future value of the cash flows generated by making said investment.

$$Net\ Present\ Value\ (\mathrm{NPV}) = C^0 + \frac{C^N}{(1+R)^N}$$

Where:

- C^0 is the Cashflow at time N[24].

However, in DCF models, the assumption is that there would generally be more than one cashflow over the forecast period, resulting in the below equation.

$$Present\ Value\ (\text{PV}) = \frac{C^1}{(1+R)^1} + \frac{C^2}{(1+R)^2} + \frac{C^3}{(1+R)^3} + \cdots + \frac{C^N}{(1+R)^N}$$

Which would create a NPV calculation as such:

$$Net\ Present\ Value\ (\text{NPV}) = C^0 + \frac{C^1}{(1+R)^1} + \frac{C^2}{(1+R)^2} + \frac{C^3}{(1+R)^3} + \cdots + \frac{C^N}{(1+R)^N}$$

Lastly, in most investment opportunities, there will be a terminal value of said investment. As such, the NPV would include a value ascribed to this final value of the investment. It is implicitly assumed that the terminal value reflects the sale price of the investment at the end of the time horizon.

$$NPV = C^0 + \frac{C^1}{(1+R)^1} + \frac{C^2}{(1+R)^2} + \frac{C^3}{(1+R)^3} + \cdots + \frac{C^N}{(1+R)^N} + \frac{V^N}{(1+R)^N}$$

Where:

- V^N is the Terminal Value of the asset at time N.

4.2.3. Determining the Cash Flows for Discounting

Future cash flows must be determined by estimating quantum of each cash flow in each period. This is undertaken in real estate investments by estimating the revenues (rental income) and expenses (asset operating expenses) in each period, to determine the Net Operating Income ("NOI"). This NOI is subsequently adjusted by taxes and capital expenditure to determine the Free Cash Flows to the firm ("FCF"). Subsequently, interest expenses and loan amortisation are subtracted to determine the Free Cash flows to Equity ("FCFE") (Damodaran, 2012).

In this regard, the formula for generating the cash flows in the above formula is relatively straight forward in real estate investments, relative to other sectors. An indicative figure has been detailed below to determine the returns to equity as follows:

[24] It is noted that while this calculation is used in textbooks, it is generally assumed that C^0 would be a cash outflow used to acquire an asset. This is to say that this initial cash flow is generally negative in traditional investments, while the future cashflow would generally by positive.

Table 1: Free Cash Flow to Equity Derivation

Accounting Item	Indicative Figures ($)
Rental Income	100
Operating Expenses	25
Net Operating Income	**75**
Tax	8
Capital Expenditure	2
Free Cash Flows to the Firm	**65**
Interest Expense	25
Free Cash Flows to Equity	**40**

Note: Figures are indicative, calculations aligned with the financial model.

As detailed above, the discount rate must be applied to the cash flows in order to obtain the current value of a project. This is only relevant for the Net Present Value scenario, as the Internal Rate of Return (IRR) methodology fully accounts for this discount rate in its returns calculation (Brealey, Myers, & Allen, 2017).

In this regard, the expected rate of return within a dividend discount model is calculated as the cost of equity, as follows (Sharpe, 1964):

$$Cost\ of\ Equity = rf + \beta(r_m - rf)$$

Where:

- *rf* is the Risk Free Rate of return;
- β is the beta of the investment; and,
- r_m is the return expected of the market

Subsequently, the estimated free cash flows (including the terminal value) determined from the above calculation can then by discounted to the present value, using the cost of equity. This will create a functioning model whereby investment decisions can be analysed under differing taxation scenarios. Both the impact of changes to taxation policy and/or the required rate of return can be analysed to determine the most cost effective and efficient manner in which the Australian government can incentivise investment in Social and Affordable housing, relative to the status quote of investing in private markets.

4.2.4. Variables to be input into the model

An overview of the assumptions used in the model is provided below, along with the approach taken in obtaining each variable. Data variable and collection analysis will be undertaken in the subsequent section, which provides an overview of the numerical inputs determined for each variable.

Assumption	Method of Collection
Rental Income	Gross rental income (i.e. headline rents achieved for the property) can be observed from similar properties in similar suburbs. Quality and age of properties can be adjusted by using common real estate measurement metrics (including CoreLogic data in Australia). Additionally, focus can be placed on the closest comparable properties to triangulate the most accurate rental comparable evidence.
Rental Voids	Rental voids refer to the losses incurred by an investor due to vacancy. This is to say it is the difference between the gross rental income from 100% occupancy, and the actual observed occupancy of a site. This figure can be observed from historical occupancy across the Sydney market, along with market voids for similar projects in the Australian and international marketplace.

Rental Expenses	Rental expenses are reported in the marketplace, including the size and frequency of ownership costs such as rental agency fees, strata, maintenance and operation costs from 'wear and tear' of assets. These expenses can also be triangulated through similar costs in similar marketplaces. A global standard of net rental margin (typically between 20-30%) can be used as a comparison point.
Property Gearing	Industry Gearing can be assessed with reference to Australian and international peers' levels of leverage for comparable investments. While no publicly available Build-to-Rent assets exist in the Australian markets, there are comparable companies in international markets who publicly disclose their level of leverage, which can be used for comparison purposes.
Interest Expense Costs	Interest expense can be determined based on RBA data produced in relation to property financing costs (publicly available for a range of investment types and real estate sub-asset classes), together with traditional borrowing quantum's for PRS investments.
Capital Expenditure Costs	Capital expenditure on housing can be estimated based on the depreciation research which has been utilised by the Australian Tax Office. This research provides an overview of the annual cost of maintaining a property. This research supports anecdotal evidence in the market of the cost of running and maintaining a property. *It is noted that capital expenditure and rental expenses are interrelated and will be considered accordingly for this investment analysis.*
Discount Rate	Market standard methodology for discount rate triangulation includes the utilisation of the traditional CAPM (capital asset pricing methodology), along with observing market values and discount rates from recent transactions and listed real estate providers.
Risk Free Rate	The Risk-Free Rate can be obtained from the proxy of Australian Federal Government Treasuries. While varying time periods can be used to determine the appropriate risk-free rate, the appropriate risk free rate on a longer-term investment may be approximated by using a longer-term risk free rate, averaged over a historical 2 year timeframe (Brealey, Myers, & Allen, 2017).
Market Risk Premium	The Market Risk Premium is calculated with reference to the higher rate of return generated by investments in equities relative to the risk-free rate. This can be inferred from ASX 200 market data, with varying sources of empirical evidence used to provide a headline Market Risk Premium.
Beta	Significant research exists into the implied Beta of residential investments in international markets. While there is limited research into the Beta observable in the Australian market, research from international markets can be utilised, with reference to recently undertaken analysis in the Australian market.
Taxation Policies	Income Tax, Land Tax and Stamp Duty are publicly available, with all policies passed through the NSW and Federal Parliament and available through Hansard and AustLII.
Implied Rate of Return for PPP projects	The discount rate observed for PPP projects is considered commercial in confidence in the Australian market, with no evidence provided by either PPP investors (typically infrastructure funds), or government counterparties. Despite this, several listed funds in international markets (predominantly the UK) publicise the discount rates applied to PPP investments in a range of asset classes, thus providing a base assumption for the application of PPP discount rates and borrowing costs in the Australian market.
Yield Cross-Check	The yield of property in local areas and across cities and states in Australia is publicly available, as property acquisitions (including the date, location and price) are required to be provided to the Australian government upon the settlement of a property acquisition.

	As such, the yield of properties within a marketplace can be applied freely in suburbs and across the Sydney metropolitan region, providing a cross-check for results analysis. This yield will also operate as an exit multiple, which can be applied as a terminal value to the investment (Damodaran, 2012).

Once each of these inputs have been determined, the research can subsequently focus on sensitising variables in order to obtain analysis into the financial impact of each taxation and investment incentive policy on financial returns. This analysis is influential in both determining the relative influence of each input, and also supporting the final conclusions of the research conducted within this Dissertation (Benninga, 2014).

4.2.5. Conclusion

While the use of a DCF continues to be debated among academic researchers, it remains the most commonly used investment valuation tool in modern financial markets. Accordingly, this methodology provides analysis of the major considerations in investment decision making within capital markets and provides an overview of the two commonly utilised measures of project selection (in NPV and IRR).

4.3. Data Collection and Variable Determination

To form an effective DCF, based on current market data, the current market estimates of each input must be determined. The variable analysis below will provide a brief overview of each input, along with the current market data supporting an estimate, where academic research exists to provide supporting evidence, this has also been provided. Following this analysis, an estimate will be provided, which will be used within the DCF model.

4.3.1. Rental Income

The rental income for the investment property has been determined based on 80% of market rent, where the rental income has been publicly available in the marketplace. The nature of the publicity for the rental income is driven by the development manager (Altis Property Partners) publicly releasing the rental figures for the project in conjunction with the leasing manager Echo Realty (2023).

The rental figures incorporate an 20% discount to market rate, as the site is designated affordable. In this regard, we note that a comparison can still be made between affordable and market rents by adjusting the project rental by this 20% discount.

Table 2: Echo Realty Rental Quotes (2023)

Room Type	Number of Rooms	Rent Per Week ($)	Aggregate annual Rent
1-Bedroom	40	$380	$790,400
2-Bedroom	50	$460	$1,196,000
3-Bedroom	12	$680	$424,320
Total (Affordable)	**102**	**$455**	**$2,410,720**
Total (Market)	**102**	**$568**	**$3,013,400**

Source: Aggregate income has been determined based on publicly reported rental levels, including a 20% discount to maker rates. Rents based sourced from Echo Realty (2023), Room figures determined from the Planning Development Approval, Sutherland Shire Council, 2018.

The room numbers have been determined based on the planning approval submitted to the Sutherland Council Shire[25], and approved in 2018.

Based on the publicly available rents, together with the room split included in the original planning application (which aligns with global standards of room splits for Build-To-Rent projects), the aggregate possible (assuming 100% occupancy) rental income per annum is $2.411m for an affordable project, and $3.013m for a market rate project.

4.3.2. Rental Growth

Growth in rental income over a shorter time horizon is determined by measuring the relative growth of housing supply relative to housing demand, with significant variance due to the unpredictable nature of both housing supply and demand.

Housing supply in the short term is driven by housing starts (which are new housing developments commenced in a given period), which vary significantly due to planning, financial and economic conditions (RBA, 2022). Housing Demand is also difficult to calculate, as it is driven by the rate of housing formation (the creation of new housing groups to occupy a dwelling), in turn influenced by a number of factors, including both immigration, and Australian residents moving out of homes with parents, friends and housesharers (RBA, 2023), to form new dwellings.

Given this forecasting difficulty, long-term estimates are commonly used, estimating rental growth relative to inflation or wage growth. While wage growth is a more accurate measure of rental growth

[25] Refer Sutherland Shire DA Approval Number: 2018SSH036 – Sutherland – DA18/0084.

over the longer-term, this measure is difficult to forecast (Tulip and Wallace, for the RBA, 2012), and the RBA provides wide confidence intervals around forecast estimates (reflecting low confidence around estimates). Nonetheless, there exists relative stability of rental costs relative to wages on a macroeconomic level over historical time frames[26].

As a result, the most common estimate of rental growth is CPI, with an additional inflation figure added for the increase in rental costs over general inflation, consistent with historical trends in wage growth. In this regard, the following considerations are made:

- Rental Growth over the past 25 years (c.3.5%) has averaged c.1% above general CPI (at c.2.5%) (ABS, 2023). This 1% incremental rental inflation is also consistent with longer time periods to 1973 (the first date of published rental growth estimates in Australia (Trading Economics, data sourced from ABS, 2023)
- This research is consistent with rental inflation data released by the RBA (2023), which demonstrates that rental growth rates have averaged 0.7% above inflation over the past 10 years, although this figure is higher over a longer timeframe, and 'lumpy', where there can be consistent lower inflation, followed by significantly higher inflation in a single year.
- Lastly, considerable research exists in international markets. The most referred to relative measure is the UK governments social and affordable housing legislation, which caps rental growth at inflation +1% (Lloyd, 2024), a rate broadly consistent with long-term rental growth in the UK market (Wilson, 2012).

Consequently, the appropriate rate of rental growth is determined as inflation +1%, or 3.5%. This assumes inflation at the mid-point of the Reserve Bank of Australia's target band of 2-3%.

4.3.3. Rental Voids

Rental voids refer to the occupancy rate of a property in any period. Real Estate investments are determined based on the full occupancy, with voids considered an expense (i.e. a cost of non-full occupancy), subsequently used to determine the net rental income generated in each period (Chartered Institute of Housing, 2023).

SQM Research provides monthly occupancy data for individual regions and cities, including the broader residential market reflective of the wider City of Sydney metropolitan region. The most recently provided Vacancy rate is 1.1% as at September 2023, although this figure is a multi-decade low, driven by high demand for residential property, together with limited new supply of rental assets and net immigration figure of 1,000,000 people into Australia in the past 12 months (ABS, 2023). Given investment decisions in residential property are typically made for period of 10-20 years, the average vacancy rate of the past 20 years of 1.7% will be utilised for the DCF model.

4.3.4. Operating Expenses

Operating expense relates to the operating costs of a property, as a proportion of the gross income generated, or alternatively the value of a property in any given year. While the ABS Household Expenditure Survey does provide a range of figures across states to maintain a property in any given year, these figures are volatile across regions, and between cities where the cost of maintenance may differ due to the labour and material cost variances.

[26] This is a reference to the Background Chapter of the dissertation. There is no causation implied in this comment, rather a steady relationship between incomes and rents at c.20% of income spent on rental expenditure over the past 10, 20 and 70 years.

In international markets (particularly in the UK, where there is an established PRS), the Gross to Net ratio typically ranges from 1-2% of the value of the property, however these figures are provided by non-academic sources, and rely on general rules of thumb (Property Hawk, 2023). Research conducted on PPP investments in housing markets use the higher end of this rental estimate (2%), to determine the total cost of both maintenance and property operation (Jiangang et al., 2019). Lastly, data sourced from the aforementioned ABS Household Expenditure Survey provide a general range of 0.5% to 2% of total property value (Melser and Hill, 2018). Of this figure, Capital Expenditure required to maintain a property is around 0.5% of the property value.

Noting ABS Household Expenditure data is generally consistent with international and domestic sources, an expenditure cost excluding maintenance capital expenditure rate of 1% will be applied for apartments. This rate is higher than the rate applied by Melser and Hill (2018) for apartments, although the difference in analysis between the research conducted within this Dissertation and the research conducted by Melser and Hill (2018) relates to the quality of amenity. Purpose Built to Rent properties typically have higher levels of amenities (including Gyms and Pools), which are not available in typical PRS apartments for small landlords, generally resulting in higher operating costs. In reflection of the varying nature of the scenarios undertaken, this 1% will be converted into an expense ratio, which will become 1% of the 4.25% yield, a figure equal to 23.5% of the rental income obtained. Further analysis will be provided in the results to justify this figure.

Capital expenditure required to maintain the investment property will be applied at an additional 0.5% of the cost of the property, to align with the analysis above. This expense will be a different line item from the DCF model, as capital expenditure is generally not tax deductable in the year incurred (ATO, 2023).

4.3.5. Property Gearing

Leverage is the proportion of the value of a property portfolio which was funded by Debt. As there are no publicly listed residential REIT on the Australian Stock Market, there is no comprehensive evidence of the level of leverage undertaken by investors in institutionally managed residential investments. However, there is evidence of fund managers willingness to obtain debt in the current market evidenced from REITs across other sectors.

Analysis conducted by Jarden, an Australian/New Zeland investment Bank in January 2023 (Pirenc, 2023), notes REITs in the Australian market have leverage ranging from 20-35%, averaging 24.9%. This is lower than the average gearing policy of these REITs, which ranging from 30-40% (with the difference driven by the increasing interest rate environment). This is consistent with an interest cover of c.1.75-2.00x earnings, indicating the business has 1.75-2.00 times the amount of earnings before interest for every dollar of interest expense incurred (Pirenc, 2023).

However, residential investments are typically considered lower risk investments, which supports additional leverage (Pirenc, 2023). This was reflected by retirement listed REIT Lifestyle Communities holding leverage of c.35%. While this company is not considered an affordable housing REIT, it is indicative of the increased debt tolerance in residential (in this case, retirement) investments relative to other property sectors. These rates are consistent with historical analysis conducted by the ASX, which determined that leverage through the cycle was closer to 30-40% in 2014 (ASX, 2014).

To provide additional supporting evidence of the level of gearing indicative in residential REITs, consideration has been given to the only UK domiciled PRS investment trust, “PRS REIT”. This REIT listed on the UK Securities Exchange in 2020 and has subsequently maintained a leverage policy of 35-45% (45% being the board approved maximum leverage), with through the cycle leverage expected in

the range 35-40%. This implies an Interest Coverage Ratio of a minimum of 1.25x (PRS REIT, Listing Prospectus, 2017) as the lowest projected ICR which would be reasonable for an asset such as this used in the DCF.

Given the evidence of Australian and international PRS REITs, a leverage assumption of 35-40% is applied, with the point estimate of 37.5% leverage utilised for the financial model.

4.3.6. Interest Rate Applied

Interest costs can be determined with reference to the cost of funding for investment properties, multiplied by total fund borrowed. Accordingly, this section will focus on the cost of borrowing over the risk free rate.

The Reserve Bank of Australia provides substantial evidence of borrowing costs for businesses, property investment companies and REITs, and residential investment property providers. In this regard, the most recent data as at 5 November 2023 indicates the following:

Table 3: Indicative Mortgage Borrowing Costs

Measure	Period/Average	Total Borrowing interest rate	RBA Base Rate	Borrowing Margin over the Base Rate
Residential Owner Occupiers	Current	4.10	6.02	1.92
Residential Owner Occupiers	2 Year Average	1.89	4.07	2.18
Residential Owner Occupiers	4 Year Average	1.11	3.42	2.31
Residential Investment	Current	4.10	6.22	2.12
Residential Investment	2 Year Average	1.89	4.32	2.44
Residential Investment	4 Year Average	1.11	3.73	2.62
Large Company Lending	Current	4.10	7.21	3.11
Large Company Lending	2 Year Average	1.89	5.25	3.37
Large Company Lending	4 Year Average	1.11	4.54	3.44

Source: RBA Indicative Mortgage and Business Borrowing Costs as at 10 November 2023.

In relation to the above, it is noted that the following data set principles have been applied:

- All categories are for loans of greater than $1,000,000;
- Current margins are generally lower than historical margins, as higher interest rates have recently increased competition among banks;
- Large Company Lending is typically unsecured lending (increasing costs), whereas owner occupier and investment loans are collateralised with property assets (lowering costs); and,
- The base rate of the RBA Cash Rate target has been used, as this is a measure of spreads to the base rate by the RBA. In reality, each bank will have an individual base rate with which margins are applied. These rates are indicative of the base rate yet are arbitrary.

Based on the above analysis, the margin over the Australian risk free rate applied for investment loans used to acquire residential property in the Australian market is within the range of 1.92% and 3.44%. Collateralised loans and recent loans, both indicative of the proposed case study are at the lower end of this range. In order to triangulate the appropriate rate, an average of the first 6 scenarios has been applied (all collateralised investment loans), resulting in a margin of 2.26%, rounded to 2.25%. This margin is generally consistent with the cost of debt financing for investment grade REIT borrowers on the Australian Stock Exchange, although this information is generally considered less accurate in nature, as interest margins are commercial in confidence, and borrowing costs must be estimated from income statement interest expense line items.

4.3.7. Discount Rate

As detailed earlier within the methodology, the discount rate applied to determine the Net Present Value is referred to as the Cost of Equity. The foundational principle within this calculation is to apply the discount rate which corresponds to the cash flows, which would mean that Cash Flows to Equity would be discounted back to the present value by the Cost of Equity[27].

This cost of equity is calculated as follows (Brealey, Myers, & Allen, 2017):

$$Cost\ of\ Equity = rf + \beta(r_m - rf)$$

In this regard, the following assumptions will be utilised in order to determine the cost of equity.

4.3.7.1. Risk Free Rate

The risk free rate is the hypothetical rate of return an investor would receive for acquiring an investment with no risk. It reflects the base cost of funds in an investment marketplace, as no risk premium is applied to the investment.

Within the Australian marketplace, the risk free rate is approximated through the use of the rate of return on Australian government bonds. This is aligned with international markets, whereby the risk free rate is approximated by highly credit rated government bond securities (Damodaran, 2012). It is noteworthy that no investment is actually risk free, but rather the closest investment an individual can make to a risk free rate is this government security, as many (but not all) governments have the ability to print their own currency. The Risk Free Rate in Australia over different tenors is approximated over the past 2 years with the below data.

Table 4: Federal Borrowing Costs – Various Tenors

Average Rate over period:	2 Year Bond	3 Year Bond	5 Year Bond	10 Year Bond
Current Bond Yield	4.19	4.12	4.24	4.63
1 Year Average Bond Yield	3.55	3.51	3.57	3.82
2 Year Average Bond Yield	2.77	2.92	3.08	3.35

Source: RBA Government Borrowing Costs Data 10 November 2023.

Based on the above analysis, the average bond yields over longer periods are lower, due to the recent increase in interest rates discussed extensively in the Background Chapter.

The risk free rate applied to the investment should be aligned with the investment tenor, resulting in an appropriate tenor of 10 years for the proposed investment within this Dissertation. Given the recent volatility in rates, a 2 year average will be applied, to account for the 15-year high 10 year government bond rate in the current marketplace. As such, the risk free rate will be approximated using 3.35%.

4.3.7.2. Market Risk Premium

The market risk premium ("MRP") is the rate of return that investors receive as compensation for taking market risk over the risk-free rate. It is the rate generated by a broad market of equities, and is typically calculated with reference to an index of Australian equity investments, either the All Ordinaries, or the ASX 200 Market Capitalisation Weighted Index (RBA, 2019). It is calculated by

[27] An alternative method would be to apply the weighted average cost of capital (WACC) (Damodaran, 2012), however this has not been applied in this scenario for two reasons:

1. The cost of debt impacts the project return under different taxation scenarios, reducing the validity of the financial model; and,
2. A scenario tested in this methodology will also seek to alter the cost of debt capital, which would be impossible by utilising free cash flows to the firm ("FCF"), and discounting by the WACC.

several market participants, including research conducted by the RBA, Academic Scholars, Accounting Bodies and Professional Advisors.

In this regard it is calculated utilising the following formula:

$$MRP = r_m - rf$$

Academically, there are three bodies of research frequently utilised to determine this rate:

- NYU Professor Aswarth Damodaran (2023) provides an up to date benchmark of risk premia for most markets, including Australia. This figure generates a market risk premium of 5.00%.
- The RBA has produced a risk premia paper, Authored by Thomas Mathews (2019), which estimates the Market Risk Premium is likely lower than previously thought, at 4.00%. However, this research also includes a total market return of 10% over the 100 year timeframe, and notes significantly higher historical bond yields for government securities. This would imply a c.6-7% MRP based on the risk free rate included above.
- Lastly, a number of professional bodies and corporate advisors provide estimates of the Market Risk Premium. The most commonly cited source is the Chartered Accounting Australia and New Zealand Valuation Practice Survey, most recently released in 2022[28]. This survey implies a market risk premium for professional practitioners of between 6.0% and 6.9%.

Given there exists a negative relationship between the risk free rate and the market risk premium (Amadi, 2023), the current higher risk free rate utilised in the prior section would imply a lower market risk premium. For this reason a rate of 6% has been applied for the financial mode, at the lower end of the range of estimates utilised by a number of sources, and generally consistent with the total market return implied by the above sources.

4.3.7.3. Beta

The Beta "β" of an investment is a representation of the volatility of an asset relative to the market. In this way, it is an integral measure of risk within the capital asset pricing model, given a higher return requirement for more risky assets and vice versa (Miller and Modigliani, 1958). The Beta of Real Estate investments is typically considered to be lower than the market, as real estate investments have more stable earnings, and should thus be less volatile.

Academically, there is limited research into the Beta of residential real estate, or broader real estate. In this regard, there exists a significant gap in the research to determine the appropriate Beta for these assets. Nonetheless, some research exists in specific marketplaces, and across historical research.

A study by Wolski Et Al (2018) determined that a Beta for the Polish housing market was both statistically significant, and provided some predictive power. Despite this, the Polish property market is generally inconsistent with the Australian market, and a wide range of Beta estimates were calculated by Wolski. Similarly, Case, Cotter and Gabriel (2009) note that returns are highly statistically significant in the majority of US regional areas, with the Beta of residential property in the US ranging from 0.8 to 0.9, albeit during a period of heightened volatility of the US Sub-Prime market, as research was up to and including the 2009 sub-prime crisis. In this regard, the range determined by Case, Cotter and Gabriel reflects the high end of the Beta range.

[28] The Author notes that this survey was previously released by the KPMG Valuations Practise, a business line and direct team in which he was employed from 2014 to 2018. Despite the potential conflict of interest, the methodology is broadly consistent with both the RBA methodology and that of Aswarth Damodaran, and not considered a conflict of interest.

There are a number of private sector, higher estimates based on foreign markets. Mourouzi-Sivitanidou (2020), noted that apartments in the US have demonstrated a higher beta than other real estate asset classes over the period from 1989 to 2015, as there was substantial volatility in returns during the Global Financial Crisis. This resulted in an implied Beta of 0.88 in the US market. Additionally, residential Beta analysis conducted by NAREIT (2018) has calculated a 5-year beta of between 0.77 and 0.58, in a relatively normally distributed frequency. Importantly, this figure reduced from 2013 to 2018, as the impacts of the Global Financial Crisis abated in the US marketplace. Additionally, research conducted by all three authors note the combination of infrastructure style low revenue volatility with market returns reflects a middle ground between infrastructure investments (Betas between 0.4-0.5) and the market as a whole (Beta of 1.0).

Taking a broader approach towards real estate assets, Research conducted by the Institute for REITs (2021) found that the total real estate market generated a 0.75 beta across REITs including all sub-sectors of the S&P 500 REIT index.

Given the conclusions noted above, an unlevered Beta of 0.65 appears reasonable, reflecting both the reduction in Betas following the Global Financial Crisis, together with the lower volatility nature of Residential assets relative to other real estate asset classes. Despite this, further research into this field is required to reach more comprehensive research results.

Despite this, an additional step is required, to determine the levered beta, as per the below (Damodaran, 2012):

$$Levered\ Beta = \beta(1 + (1 - t)\ (\frac{Leverage\ (\%)}{1 - Leverage\ (\%)})$$

Where:

- β is the beta of the unlevered Beta of the investment;
- *t* is the tax rate for the applicable investor; and,
- Leverage is the percentage debt to total value of the investment.

Noting that each type of investor will have a different tax rate, the applied Beta will differ. Accordingly, the applied cost of equity will differ by investor type, as detailed in the results.

4.3.8. Taxation Policies

The assumed tax policies, both recently announced and historically implemented have been determined with reference to the current Australian Federal and State policies, and have been sourced accordingly from either the NSW Treasury (through Revenue NSW), or the Federal Treasury (through the Australian Tax Office). Where legal professional services firms have summarised the law for easy analysis, this analysis has been referenced.

4.3.8.1. Stamp Duty

As detailed previously, stamp duty is the tax applied on the acquisition of assets, most commonly real estate. It is levied by States, with the NSW Tax rate applied below (NSW Department of Finance, 2023):

Table 5: NSW Transfer Duty Table

Property value	Transfer duty rate
$0 to $16,000	$1.25 for every $100 (minimum $10)
$16,000 to $35,000	$200 plus $1.50 for every $100 over $16,000
$35,000 to $93,000	$485 plus $1.75 for every $100 over $35,000
$93,000 to $351,000	$1,500 plus $3.50 for every $100 over $93,000

$351,000 to $1,168,000	$10,530 plus $4.50 for every $100 over $351,000
$1,168,000 to $3,505,000	$47,295 plus $5.50 for every $100 over $1,168,000
Over $3,505,000	$175,830 plus $7.00 for every $100 over $3,505,000

Source: NSW Department of Revenue, Accessed 10 November 2023.

In addition to these rates, there exist additional duties on the purchase of property from foreign acquirers. As at 2023, the rate for NSW was an incremental 4% of the purchase price (DLA Piper, 2023). Despite this incremental rate for foreign investors, the current policy (announced in 2023) removed incremental foreign transfer duty in NSW for investments into BTR assets.

As a result, the applied as an assumption for Stamp Duty will be a figure of $175,830, plus $7 for every $100 of property value for over $3,505,000.

4.3.8.2. Land Tax

In addition to Stamp Duty, properties used for commercial and economic purposes have a land tax applied. Land tax is an annual tax levied at the end of the calendar year on property one owns that is above the land tax threshold (Revenue NSW, 2023).

Table 6: NSW Land Tax Applied to Economic Properties

Period	Property value	Premium rate
From 1 July 2023	Under $3,505,000	Over $3,505,000
Rate Applied	1.6%	2%

Source: NSW Department of Revenue, Accessed 10 November 2023.

Despite the table above, the notional value of land, to which the land tax is applied for BTR projects has been halved after 1 July 2020 (NSW Department of Revenue, 2022) as an incentive to develop and operate BTR assets in NSW. This concession is subject to the below caveats:

- The buildings on a parcel of land must contain at least 50 self-contained dwellings used specifically for the purpose of Build-To-Rent; and
- Developers that subdivide within 15 years of receiving the concessions will be required to repay the benefit.

Additionally, Foreign Land Tax Duty is not applied for investments in BTR assets. As such, the applied foreign land tax will be determined based on the value of the property, halved, and subject to the above land tax table.

4.3.9. Income Tax Rates Applied

Given there will be several tax entities investigated in the course of the scenario analysis, income tax rates will be based on personal income tax, along with corporate income tax, and foreign investment withholding tax. This will form a key consideration of the difference between investor type, and as such is applied based on investor type.

4.3.9.1. Personal Income Tax

The progressive income tax rates collected for the Financial Year between 1 July 2023 and 30 June 2024 are detailed in the table below:

Table 7: Progressive Personal Income Tax Rates

Income thresholds	Rate	Tax payable on this income
$0 – $18,200	0%	Nil
$18,201 – $45,000	19%	19c for each $1 over $18,200
$45,001 – $120,000	32.5%	$5,092 plus 32.5c for each $1 over $45,000
$120,001 – $180,000	37%	$29,467 plus 37c for each $1 over $120,000

$180,001 and over	45%	$51,667 plus 45c for each $1 over $180,000

Source: Australian Tax Office, Personal Income Tax Rates, Accessed November 2023.

4.3.9.2. Superannuation Income Tax

Additionally, the income tax rates applied for a superannuation investor are taxed at 15% concessional rate on all earnings generated by superannuation investments (Australian Parliamentary Budget Office, 2023). This figure is unrelated to total individual earnings (i.e. there is no progressive step-up), and is based on the net earnings of the fund or investment in any 12 month period.

4.3.9.3. Foreign Withholding Tax Rates

Investments made by foreign investors in Australian property are typically undertaken by way of an investment in Managed Investment Trusts. These investments are taxed under foreign withholding tax regulation, whereby a tax is applied on earnings from dividend, interest or royalties, and "fund payments". Fund Payments relate to earnings from other sources of income, and typically relate to capital gains income (ATO, 2023).

Withholding rates are applied at a rate of:

- 10% for interest payments; and,
- 30% for unfranked dividend and royalty payments.

Additionally, there is a concessional rate of withholding tax on Managed Investment Trusts investing in specific real estate developments such as student accommodation, and office real estate assets. This rate is a concessional 15% withholding tax for foreign investments. As at the 2023-2024 Federal Budget, the concessional rate was expanded to include Build-To-Rent investments which include the following characteristics (analysis sourced by Gilbert and Tobin, referencing the federal budget, Cormack et al, 2023):

- construction must commence after 7:30 PM (AEST) on 9 May 2023;
- the Build-To-Rent project must consist of 50 or more apartments or dwellings made available for rent to the general public;
- the dwellings must be retained under single ownership for at least 10 years before being able to be sold; and
- landlords must offer a lease term of at least 3 years for each dwelling.

Consequently, the applied rate on BTR assets as at the date of the Dissertation is 15% for the proposed investment.

4.3.9.4. Capital Gains

Capital Gains Tax is levied on the increase in the value of an investment and is incurred at the time of sale. Individuals are provided with a 50% discount in the rate of capital gains applied at the time of sale, subject to investments being held for over 12 months (ATO, 2023). This discount is not applicable to any other investor, including foreign investors, companies, or other legal entities. Superannuation funds have a reduced discount of 33%, instead of 50%.

4.3.10. Negative Gearing

This tax policy relates to the use of investment tax losses to reduce income tax paid on other investments or an individual or investor's income. In effect, it provides a tax shield for other income by the tax resident (Treasury, 2023). In relation to this, there are two key considerations for the DCF undertaken:

- Personal tax losses can be carried forward to future tax years, however the value is available for deduction against other income in the year the loss is incurred. In this regard, many investors will apply tax losses against other income in the year of incurrence.
- Corporate or fund tax losses on an individual investment can be carried forward to future years, and as such the benefit is deferred until future periods.

As such, the benefit of this negative gearing will occur in different time periods depending on the investor in question. The DCF undertaken will align with the above two considerations for different investors.

4.3.11.Depreciation Tax Deduction

Real Estate investors can obtain a tax deduction for the depreciation of the capital works incurred in construction of a residential asset over 40 years. The deduction for these works are calculated as 2.5% of the value of capital works over each year for 40 years (ATO, 2023).

For the DCF case study, the difference between the value of the land and the total value of the property will be used to estimate the capital works of the asset. Subsequently, the capital works will be depreciated at 2.5% per annum for the life of the project, up to 40 years.

The asset value of the property can be determined with reference to the difference between the market value, and the land value (which can be obtained from the NSW Government Website[29]). A depreciable value of $30,000,000 will be applied to the site, based on a land value of $20,000,000 and a total property value of $50,000,000 prior to development profits.

4.3.12.Implied Rate of Return for PPP projects

PPP projects are valued based on the discounting of contractual cash flows back to the present value, as is the case for a standard DCF model (Infrastructure Australia, 2013), and aligned with the proposed methodology within the research.

The discount rates applied for PPP investments are not publicly available, as Governments treat these rates as commercial in confidence. As such, these rates must be implied from publicly disclosed figures from large fund managers. There are no ASX listed PPP fund managers, however there are a number of international PPP investors listed on the UK Stock Market (the London Securities Exchange (LSE)).

Table 8: Publicly Available PPP Discount Rates

Company	Prior Reporting date	Financial Reporting Date	Prior Discount Rate	Discount Rate Applied
HICL Infrastructure	31 March 2022	31 March 2023	6.60%	7.20%
BBGI Infrastructure	31 December 2022	30 June 2023	6.90%	7.20%
INPP Infrastructure	31 December 2022	30 June 2023	7.51%	8.00%
Weighted Average			**7.00%**	**7.47%**

Source: Each respective company's most recent financial report as at 1 November 2023.

The discount rate applied is a combination of the risk free rate, along with an risk premium above the risk free rate. The average risk premium determined from the above table is between 3% and 4%, with an average of 3.5% (rounded to the nearest 0.5%). Accordingly, the discount rate applied will be the combination of the Risk Free Rate applied above, along with a 3.5% risk premium.

[29] 680 Kingsway, the Miranda Meridian property, has a value of $23,000,000 as at 30 June 2022 (the most recent date of valuation), under property title number: 4411220.

This yield is towards the higher end of the Australian discount rate applied by Duan and Zhang (2023), between 7.89% and 3.33% with a mean of 5.575%. This rate appears broadly consistent, given the higher risk free rate.

4.3.13.Yield Cross-Check

The Property Council of Australia (2023) defines the Yield of a property as:

> "The derived percentage return of a property assessed from the net income and the market value or price. It is calculated by dividing the net income by the opening market value or price."

In this regard, it is used as a benchmark to assess the value and cash flows of a property, often when comparing different properties in the same local area. Different types of apartments (with different amenities, number of bedrooms and locations) can be directly compared, with higher or lower rental generation accounted for in the value.

Within this Dissertation, the yield of the property will be used as a cross-check valuation methodology, to assess the reasonableness of the DCF output and final conclusions, in line with commonly used academic and financial market analysis (Damodaran, 2012).

The yield on property in the Australian marketplace differs by state, and within cities. While academic research is limited on the yield of specific regions (due to the frequent change in prices), a number of commercial data providers publish yield estimates. The yield figures as at November 2023 for an apartment in the Miranda region is detailed below:

Table 9: Publicly Available Sydney Rental Yields

Professional Source	Date	Yield
REA Group	November 2023	4.2%-4.4%
Real Estate InveStar	November 2023	4.16%
OnTheHouse	November 2023	4.30%
Average		**4.24%**

Note: REA Group, trading under RealEstate.Com provides yields by bedroom type, with yields of 4.2% for 2 bedrooms, and 4.4% for 1 and 3 bedroom apartments.
Source: All information for the month of November sourced on 16 November 2023, and based on historical transaction evidence.

Additionally, information exists on the rental yield of BTR assets in Sydney, detailed in the table below:

Table 10: BTR Rental Yields - Sydney

Professional Source	Date	Yield
SQM Research	November 2023	4.75%*
CBRE	October 2023	3.00-4.00%
JLL	April 2023	4.30%
Domain	June 2023	4.58%*
Weighted Average		**4.28%**

Note *: SQM Research and Domain Property data is calculated on the Gross rental income, prior to the payment of expenses, and as such is non comparable.
Source: All information for the month of November sourced on 16 November 2023, and based on historical transaction evidence.

Given there is a degree of judgement involved in applying a yield in a commercial valuation, an average of the local area yield will be used, which aligns with the macroeconomic research above, generating a 4.25% yield as at November 2023. Additionally, this is broadly consistent with the CBRE Yield Insights into other international markets, such as the London (UK) property market, demonstrating a 4.25% yield for BTR assets.

4.4. Model Validation

In order to ensure the accuracy and reliability of the analysis conducted within the proposed DCF model, results will be triangulated through the use of two different valuation methods (where possible). In this way, results expectations can be compared against historical results to provide a greater degree of consistency and accuracy in the financial analysis conducted. The two measures which will support reliable evidence will be the Net Present Value ("NPV") and Internal Rate of Return ("IRR") methodology.

When the project has a positive Net Present Value, this reflects a positive economic return, indicative of a project which will generate a rate of return greater than the risk associated with the project. This is indicative of a value creative investment opportunity. Alternatively, when a project has a negative NPV, the opposite is true, and the project is value destructive (Brealey, Myers, & Allen, 2017).

An alternative investment selection methodology is the Internal Rate of Return ("IRR"). This reflects the expected compound annual rate of return that a project will generate over its lifetime. The benefit of this approach is twofold. Firstly, it provides the ability to better select between projects, as higher IRR's reflect projects which are more accretive to shareholders. Additionally, the IRR can be utilised to accept projects which generate returns above the firm benchmark (or 'hurdle') rate of return, providing a decision level for future investments (Damodaran, 2012).

These two approaches provide a method of comparing calculations used to assess projects. They each provide a basis which aligns with the DCF methodology. Despite the similarities between methodologies, key differences exist between these two investment selection methods:

- Risk Assessment: the NPV accounts for the returns generated by lower risk opportunities by reducing the discount rate, resulting in reduced returns expectations. As such, it is more appropriate to assess different investments using the DCF methodology than the IRR methodology, as a lower risk investment will likely generate a lower IRR. Such a lower IRR would indicate that the investor should not undertake the project;
- Estimation Challenge: IRR's reduce the requirement to determine a key variable (the discount rate), as this is implied in the IRR. Consequently, NPV's require more inputs, which are subject to greater estimation error;
- Adoption of a Single Rate: the IRR applies a compound growth rate over the full investment period, and as such assumes that the rate of return can be generated in each period until project termination. This is both unrealistic, and differs from the NPV model, where discount rates can be adjusted over the forecast period;
- Multiple IRR's: the IRR methodology can generate multiple different conclusions if a project has alternating positive and negative cash flows. NPV's are not impacted by such cash flow timing impacts; and lastly
- Mutually exclusive projects: IRR's and NPV's can generate different investment decisions based on the total size of the project, and the timing of cash flows (along with other variation in inputs). Additionally, lower risk projects may appear more profitable using the NPV methodology, whereas IRR's would exclude the adoption of lower risk projects (as such projects would be deemed 'lower returning').

The last feature of this analysis provides a key issue in real estate investments. Where risks are not comparable across investment decisions, IRR's may imply that investors should seek the greatest returning (and potentially the greatest risk) projects. In this regard, the NPV may provide an alternative investment decision selection indication. Thus, the use of IRR's and NPV's will provide

differing methods of decision selection criteria, however if selection choice differs between these methodologies, there are grounds for further research.

4.5. Limitations of the Methodology

The model utilised within this methodology provides a method to assess different financing and taxation conditions upon an investment case study. In this regard, it is useful in determining the impact of different scenarios on investment returns, and as such, provide both a financial basis for these investment scenarios and a point of comparison between different taxation legislation options. Despite the obvious benefits, the model relies on the assumptions contained within the inputs of this methodology, does not consider societal benefits, and fails to account for a range of inputs which would be possible when using Monte Carlo analysis (Glasserman, 2003).

Firstly, DCF's utilise assumptions to determine the likely investment conditions contained within an investment decision. The inputs provided are predominantly based on past performance, which can provide a misleading indicator of future expectations in a changing business and taxation environment (Damodaran, 2012).

Additionally, these assumptions are triangulated to a point estimate, which is useful in providing a smaller range of outputs, but fails to account for variability in economic conditions. An alternative method to assess investment decisions would utilise Monte Carlo analysis, whereby a range of scenarios are inputed into the model to achieve a range of potential valuation outcomes. While this scenario analysis is useful in comparing outputs under varying conditions, it provides additional complexity which reduces the ability of the model to compare single taxation variables within a financial model.

While the model utilises yields to provide a cross-check of the valuation resulting from the model and as a measure of the original value of the property, the DCF fails to utilise the yield of the property as the cornerstone of investment analysis. This is a clear weakness, as property yields are the key measure of investment valuation in real estate globally (Damodaran, 2012). This lack of yield analysis is a requirement of the methodology, as taxation implications cannot be compared when looking at investment yields alone, and risk-return comparisons cannot be made using an investment yield.

Additionally, the market for real estate is highly heterogenous even withing Australian cities and asset classes (Melser and Hill, 2019), resulting in different yields for highly comparable asset within the same region and real estate sectors. This heterogeneity of the asset also creates an additional concentration risk which is not accounted for in DCF analysis.

Lastly, the comparison of social and affordable housing with traditional PRS investment fails to account for the societal benefit created by reducing the rental burden on medium and low-income households. The DCF framework only accounts for financial considerations, with additional community development and social welfare benefits not being fully accounted for as would be the case in using a traditional public sector cost-benefit analysis (Brealey, Myers, & Allen, 2017).

Despite these model limitations, the utilised DCF provides an ability to compare taxation changes on a single investment in a highly relevant investment asset class in Australia (as evidenced by Ross et al., 2010). This provides a point of comparison between various tax proposals (including financial tax incentives or subsidies), which can assess a single investment under differing scenarios. Thus, while limitations exist, the model fulfills the underlying requirement of this Dissertation to compare taxation conditions within a broader investment framework. As such, specific focus has been applied in input determination to account for each of the above limitations, in order to provide a more comprehensive and academically sound set of results.

4.6. Conclusion

This methodology has demonstrated the academic and practical application of a common investment valuation methodology. This has been done by initially providing an academic overview of the history of the model, along with the theory which supported its creation. Subsequently, the inputs have been defined and determined based on a mixture of academic and private practice analysis. Consequently, a review of results triangulation and model limitations have been provided.

As a result, the model has been defined, with inputs outlined and subsequently determined. This has provided an academically rigorous underlying basis for the creation of the model. It has also created a base scenario for interpretation and analysis of the current and prospective taxation climate on investment decisions.

It is noted that this research is not without limitation, as there are commonly cited shortcomings in private sector investment analysis and valuation. This is particularly the case as public benefit and social outcomes have not been considered in investment valuation, however these are government and societal implications for an inherently private sector valuation tool. As such, the model provides a basis for investment analysis alone, the stated goal of this Dissertation.

As such, while limitations exist, the methodology creates a foundational investment base case for the review of taxation on investment decisions in the results that follow. This allows for the next Chapter to provide an overview of base investment cashflows, followed by the impact of taxation on several investor types.

Chapter 5. Results

5.1. Introduction

The Results Chapter provides a holistic overview of the financial model created, before undertaking extensive sensitivities in order to determine the impact of specific tax and fiscal policies on project viability. In this regard, this Chapter includes analysis that constitutes both the initial project results, along with the discussion and analysis of the major influencing factors, sensitivities and considerations within these results. While analysis is initially focused on taxation reform, this focus is subsequently widened through the sensitising of other variables, to support the creation of a more comprehensive housing policy solution. Therefore, while initially determining the impact of tax on investment viability, the results subsequently conclude that the marketplace is influenced by tax, together with leverage, volatility/risk factors and the macroeconomic climate. This conclusion supports a policy response that includes all the aforementioned investment factors.

Chronologically, the Results Chapter is structured as:

- An overview of the financial model created using the variables determined in the Methodology Chapter, and the non-taxation results of this model;
- The creation of a null hypothesis of a Managed Investment Trust ("MIT") BTR investor in the Sydney residential property market by way of a case study of the Altus Miranda Meridian asset;
- A comprehensive analysis of project viability under different investor tax classes generating a direct point of comparison with the MIT structure;
- A discussion and sensitivity analysis of the results under a traditional residential housing investment structure, creating broader conclusions of the impact of tax, along with other policies and variables;
- The introduction of a PPP model is made, with results analysed as a comparison project structure;
- Additional analysis of the assumptions changed, to determine how taxation, capital structuring and risk reduction impacts project viability; and finally,
- The conclusion of a broader consideration given to the macroeconomic and investing environment. In doing so, these results analyse current taxation policies, and broader economic reforms which are detailed further within the Conclusion Chapter.

Holistically, these results reach a comprehensive conclusion that taxation policy is a major influence on project viability and investment decisions in the Sydney marketplace. The Conclusions note that the incidence of taxation is higher than other asset classes, and this reduces the return to a level which is below the required rate of return. As such, a clear conclusion of project unviability across both PRS and DMR is reached.

Far from definitively justifying a lack of investment in the sector, the results support the creation of a more comprehensive investment climate to justify investment in DMR housing. More comprehensive policy reform, including the ability to obtain greater leverage, reduce investment risk and increase cash flows to investors is the fundamental conclusion of this research. These policies are incremental to tax reductions and reflect wider fiscal policy tools.

Additionally, and as detailed within the subsequent Conclusions and Further Research Chapters, this research justifies the further investigation into each of the variables. In an inherently private and opaque marketplace, there is a clear requirement to undertake additional analysis to support investment into the sector.

5.2. Base Scenario Results

The foundational investment characteristics and financial forecasts are held unchanged for all the scenarios considered under different tax classes and rental discounts. As such, this section provides a general overview of the financial projections contained within the underlying DCF model, which remain unchanged for all future scenarios. Subsequent analysis focuses on the changing variables of taxation policy, discount rates and rental discounts. As such, the conditions outlined are constants, remaining unchanged for all scenarios considered within this Chapter. Where additional analysis or variable change is conducted within the PPP scenarios, the amendments are clearly outlined.

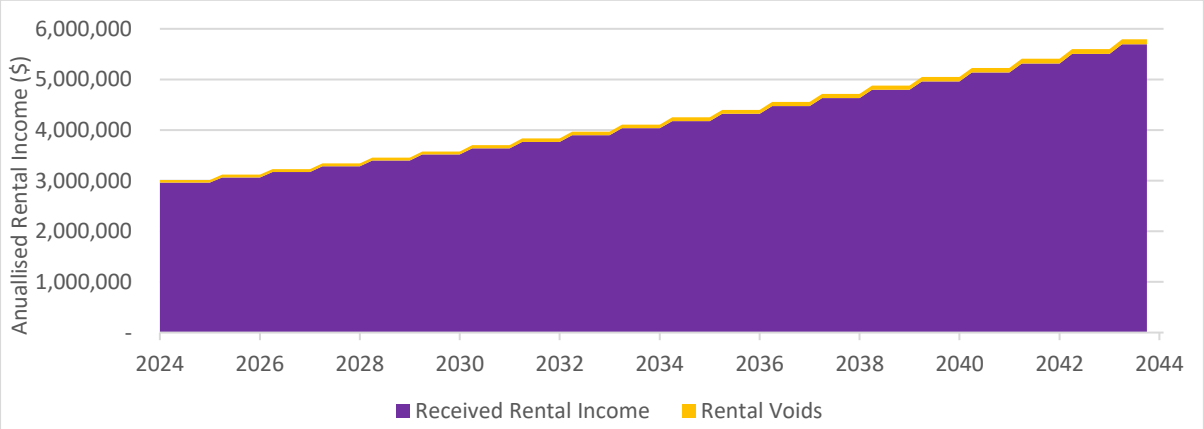
Income and expenditure estimates have been based on announcements at the Miranda Meridian project and general macroeconomic data, which has been used to derive a baseline PRS Net Operating Income ("NOI") figure. This has been used to determine the valuation of the asset (which is based on the market yield).

Similarly, borrowings and tax valuations of assets have been held constant for each scenario, irrespective of tax investor class. As such, these variables have been analysed below, and will remain unchanged for all future scenarios.

5.2.1. Revenue and Income Projection

Revenue has been defined as the total income generated in a year, assuming 98.3% occupancy (1.7% vacancy, or 'rental voids', representing the 20-year average vacancy rate as per the Methodology Chapter). Rental growth is expected to occur once a year, in the period ending 31 December. While the timing of rental increases is purely arbitrary, annual rental increases are generally consistent with the approach taken at large scale international PRS schemes.

Figure 14: Rental Growth and Voids Forecasts

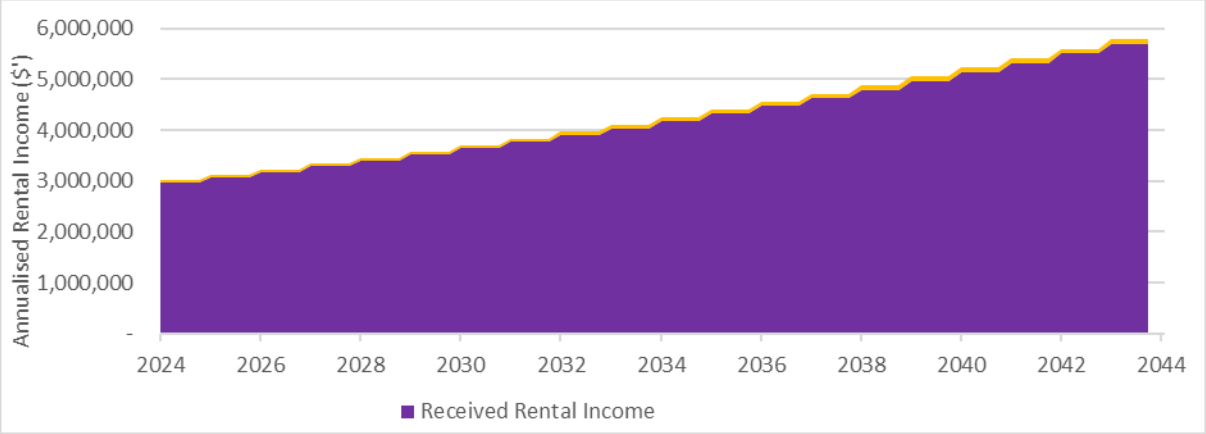


Source: Dissertation Financial Model.
Note: Income generated based on aggregating discounted rents at the Miranda Meridian project back to market levels (i.e. removing the discount).

Given the equal percentage rental increases occur over a 20-year time-period, there is a general compounding nature to the rents received. Similarly, while rental voids remain the same proportion of income, they also grow exponentially over the forecast period. As such, headline rental payments received grow by 92.25% over the forecast period, despite a 3.5% annual rental rate for 20 years (a period which includes 19 rental increase indexing dates).

Similarly, as the Gross to Net income ratio remains unchanged at 23.5% over the forecast period, the Net Operating Income increases by 3.5% per annum. As such, the NOI grows an aggregate of 92.25% over the forecast period.

Figure 15: NOI and Cost to Income Ratio



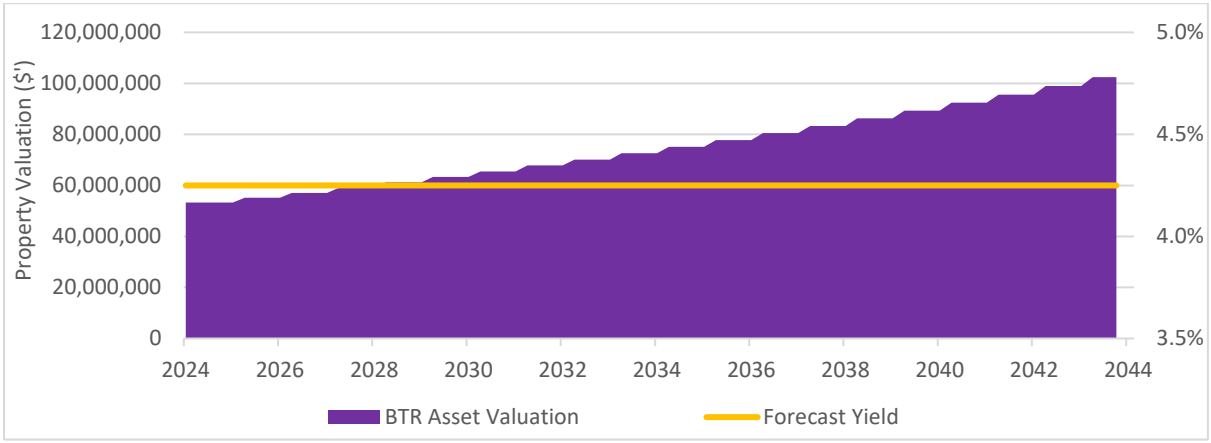
Source: Dissertation Financial Model.
Note: Net Operating Income is calculated as headline rental income, less rental voids, less operating expenditure.

5.2.2. Asset Valuation

The asset valuation is calculated as the NOI divided by the market yield. A market yield is determined by both macroeconomic and asset specific factors, including local supply and demand for property, interest rates, age of the asset, and relative desirability, among other factors.

Given no professional advisor or academic research supports the provision of long-term forecasts for real estate asset yields, this figure has been held constant over the forecast period.

Figure 16: Asset Valuation and Yield



Source: Dissertation Financial Model.
Note: Asset valuation increases are in line with NOI increase dates, which would imply an annual valuation at the same date as rental indexation. This assumption is for ease of modelling, although is not an unrealistic assumption for a book value of equity valuation, given the propensity of asset managers to revalue real estate assets annually.

As a result of the maintenance of a stable asset yield, the asset valuation is expected to increase directly in line with the NOI detailed above, at 3.5% per annum over the 20 years.

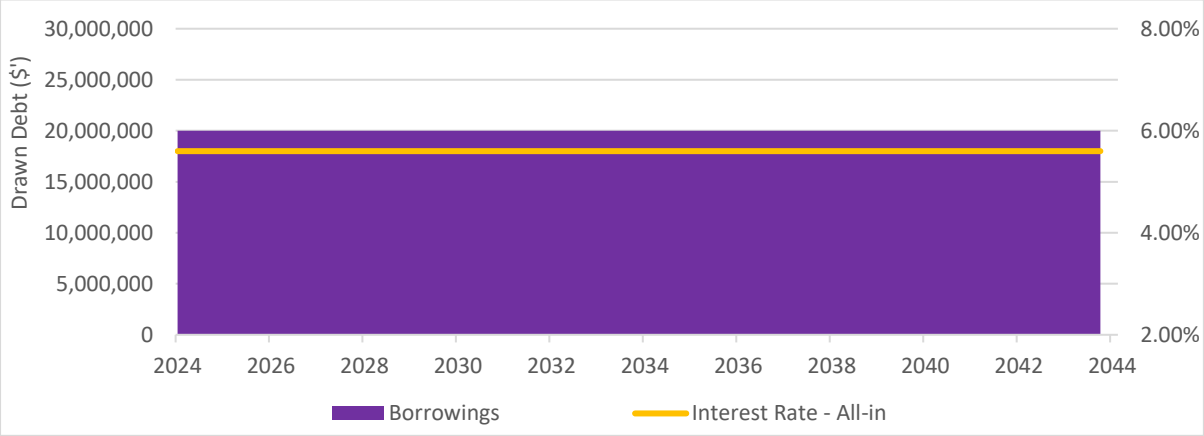
Noting the drawn debt remains unchanged over the investment horizon, the book value of equity (reflecting the difference between the market value of the asset and the total drawn debt, pre-tax) increases from $37m at deal origination, to $82m at sale, a 222% increase in value. The delta between the rate of asset value increase (92.25%) and the increase in equity (222%) is driven by impact of drawn debt, which remains unchanged over the investment horizon.

5.2.3. Borrowings and Interest

Both the leverage estimate and the interest rate applied to the asset are detailed in the methodology. To align the interest rate and leverage with the relatively low-risk investment characteristics of a long-term residential investment property, leverage at asset origination has been held constant.

Additionally, the interest rate applied relates to a theoretical medium-term interest rate (which is the medium term Risk Free Rate ("RFR"), together with the medium term margin). As such, this assumption is held unchanged over the investment horizon.

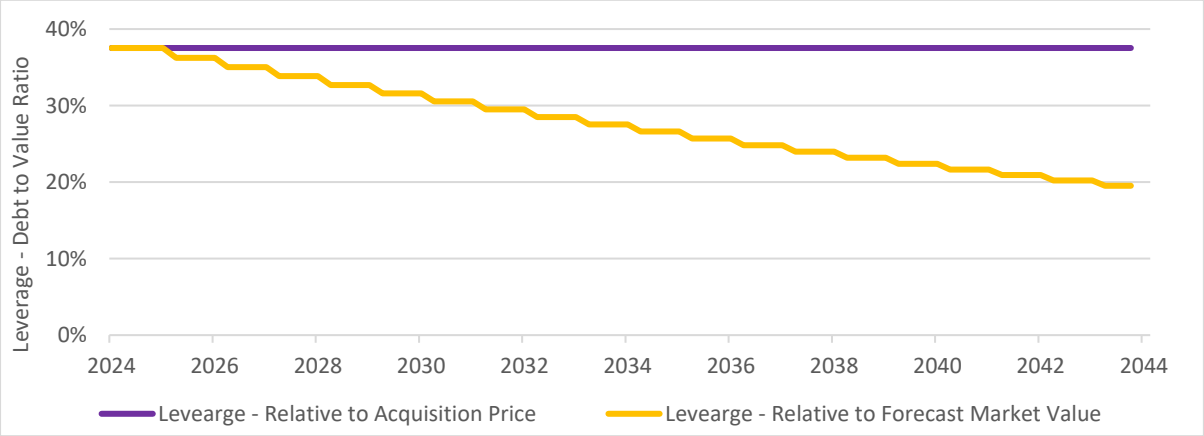
Figure 17: Borrowing Costs



Source: Dissertation Financial Model.
Note: As the asset is income producing, there is an expectation that drawn debt will partially fund acquisition costs (including stamp duty), and no negative cash periods will exist throughout the investment time horizon. As such, no additional borrowings will be required in any period.

The interest costs and nominal borrowings remains unchanged over the full investment period. Despite this, the leverage relative to asset value falls over the investment horizon, as the asset value increases, while the drawn borrowings remain unchanged in each period. As a result, the cash outflow in each period to pay interest costs will remain unchanged at $280,000 per quarter for the full investment period, despite a reduction in the leverage ratio. Additionally, every 5 years the facility is expected to be renewed, with a total upfront fee of 1% incurred (not included in the figure below).

Figure 18: Opening and Forecast Leverage



Source: Dissertation Financial Model.
Note: Forecast Market Value aligns with the previously noted asset valuation increase within this section.

As the Leverage on a forecast market value basis steadily declines over the forecast period, the average leverage relative to market value is 27.8% over the full 20-year period. Given the leverage

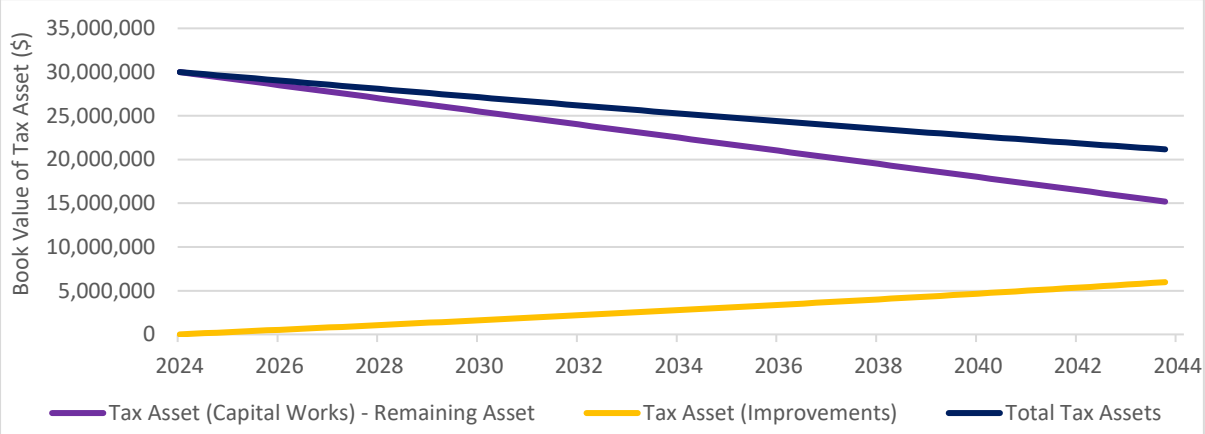
used in the CAPM model is aligned with the average investment period leverage, the rate applied in discount rate calculations is 27.8%, rather than the 37.5% discount rate applied at acquisition.

5.2.4. Tax Assets: Depreciation and Additional Capital Expenditure

The initial capital works (which relate to capitalised construction costs of the building) tax asset can be depreciated at a rate of 2.5% per annum over 40 years. Additionally, the capital expenditure incurred in each period can be depreciated at a rate of 2.5% per annum, or 0.63% per quarter. Resultantly, the depreciation is calculated as 2.5% of the original construction costs per annum, together with 2.5% of the accumulated capital expenditure incurred in each year.

As the capital works value declines each period, the accounting value of this asset falls over time. Additionally, while the capital works tax asset for building improvements increases in each year, this asset grows at a slower rate than the reduction in the original capitalised construction costs. This means that the tax asset of the building falls over time, as detailed in the figure below.

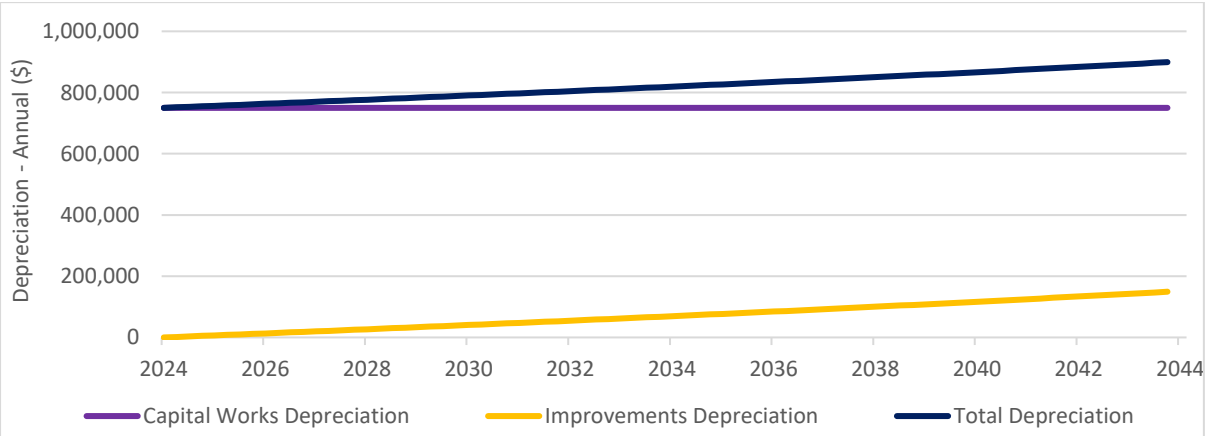
Figure 19: Depreciable Tax Asset



Source: Dissertation Financial Model.

Despite the reduction in the total tax asset value, the tax asset from asset improvements is depreciated based on the accumulated asset value, whereas the initial construction capital works tax asset is depreciated based on the original asset value. As such, the total depreciation accrued increases over time, while the total asset value decreases over time for a period of 40 years. This scenario would continue until year 40 (beyond the investment horizon), whereby the initial construction capital works would be reduced to nil.

Figure 20: Annual Depreciation Tax Shield



Source: Dissertation Financial Model.

This tax treatment is held unchanged for all scenarios and forms the basis of the accounting and taxable value of the BTR asset in each investment scenario[30].

[30] On 28 April 2023, the ATO in conjunction with the Federal Government announced it would increase the capital works tax deduction depreciation rate for build-to-rent projects from 2.5% to 4% per year. This policy will apply to projects where construction commences after the Budget (dated 9 May 2023), and these measures are not yet passed into law. As such the Miranda Meridian Case Study would not be an applicable investment. Further analysis will be conducted in the sensitivity section of this paper.

5.3. MIT PRS Investment – Developing a Null Hypothesis

The Managed Investment Trust ("MIT") will form the initial case study, and the null hypothesis to compare each subsequent investment scenario. The MIT has been selected to align with current government policy (specifically the recent announcement of lower income tax on MIT assets in the BTR sector (ATO, 2023)), and the common use of this legal structure in capital markets.

This section will provide an overview of the tax rates applied to the MIT, and the impact this has on the Discount Rate. Detail will be provided in the calculation of the discount rate, and not subsequently repeated thereafter in this Chapter. Similarly, an analysis of the Cash Flows during the investment period will be provided, with more concise analysis considered in the subsequent sections. Finally, an equity valuation will be calculated and reviewed.

The final valuation calculated within this section, which will allow discussion of the current investment landscape. Specifically, analysis will be undertaken around the returns relative to the required rate of return for an asset of this nature. This provides a comprehensive answer to one of the core underlying questions contained in this Dissertation – is further government support needed to incentivise investment into the BTR sector?

5.3.1. Tax Rates Applied

The ATO (2023) defines a MIT as: "a type of trust in which members of the public collectively invest in passive income activities, such as shares, property or fixed interest assets. A trust qualifies as a MIT if it meets certain requirements for the income year it is in operation". The MIT is subject to favourable taxation treatment, in order to incentivise investment into specific projects within the economy.

The taxes applicable to a MIT in the BTR sector in Australia are detailed in the table below:

Table 11: MIT Applicable Tax Rates

Tax Component	Tax Rate
Income Tax	10% or 15% - 15% Applied
Capital Gains Tax	As above – 15% Applied
Stamp Duty	$175,830 + 7% over $3,505,000 *No Foreign Investor Surcharge Applied
Land Tax	$79,396 + 2% over $5,925,000. * The value of the tax asset is halved for BTR investments.

Source: ATO, as outlined within the Methodology Chapter

Note: Asset assumed to not meet Green Criteria, resulting in a 15% tax rate. Capital Gains applied in line with income tax. Foreign Investor Stamp Duty Surcharge is not applicable to BTR investments. Land Tax is calculated as halving the notional value of the land in which Land Tax is calculated. As such, the land tax rate is effectively halved, with a slight reduction in the effective tax rate, as a smaller proportion of the value is at the premium land tax rate.

As a result of the application of land tax, stamp duty, capital gains and income tax on the value of the property, the effective income tax rate (total tax expense over the forecast period divided by the total income over the forecast period) is a higher rate of 25.5%. This will be considered further in the Conclusions chapter.

5.3.2. Discount Rate Applied

As detailed in the Methodology Chapter of this Dissertation, the discount rate is impacted by the level of gearing, and the applied tax rate for an investment. The higher the applied tax rate for an investment, the higher the tax savings which are generated from the tax shield of interest tax deductibility. As such, when tax rates applied are higher, the beta falls, and vice versa.

The formula used to determine the levered beta is restated from the methodology below:

$$Levered\ Beta = \beta(1 + (1 - t)\ (\frac{Leverage\ (\%)}{1 - Leverage\ (\%)})$$

As a result, while leverage and the asset beta is held unchanged for all investment scenarios, the levered beta will be impacted by the different income tax rates used. As such, the discount rates change under different scenarios, resulting in a unique discount rate for each investor tax class. Specifically, the tax rate will relate to the income tax applicable to each individual investor, and in the case of a MIT will be 15%.

Table 12: MIT Discount Rate

Discount Rate	
RFR	3.35%
Market Risk Premium	6.00%
Beta	**0.65**
Leverage	27.60%
Tax Rate	15.00%
Beta (Levered)	**0.861**
Cost of Equity	**8.51%**

Source: Dissertation Financial Model Calculations.
Note: The tax rate utilised in the discount rate calculation is the headline income tax rate and note the effective tax rate analysed elsewhere in this research.

This analysis will be replicated for all investor types in the subsequent section of the Results Chapter, with the applicable marginal income tax rate utilised in the levered beta calculation.

5.3.3. Cash Flow Analysis

The cash flows of the asset have two outlier periods, and otherwise grow in a stable manner over the forecast investment horizon. This section will provide an overview of the growth in equity cash flows, along with the equity cash flows and associated tax expense incurred in the first year of operation, and the final year of operation.

The first outlier period is the initial investment date, in which there is both the acquisition of the property, drawing of debt, and the incurrence of stamp duty charges by the MIT. These figures are outlined in the table below.

Table 13: Portfolio Cost of Acquisition

Initial Equity Cash Outflow	$
Asset Valuation	53,298,600
Less: Drawn Debt	(20,000,000)
Add: Stamp Duty Charge	3,661,382
Total Net Acquisition Cost	**36,959,982**

Source: Dissertation Financial Model.

In the final quarter of the investment period, the asset generates a single quarter of income, along with the sale proceeds of the asset. This results in a cash flow for the asset as detailed in the table below:

Table 14: Final Quarter Cash Flows

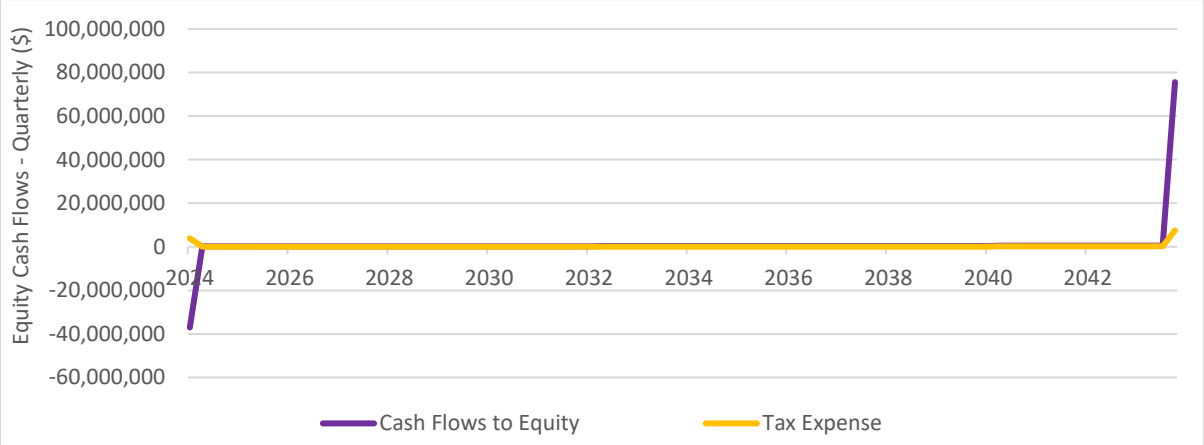
Equity Cash Proceeds	$
Asset Valuation	102,466,629
Less: Drawn Debt	(20,000,000)

Add: Final Quarter of Income	1,088,708
Less: Tax Paid	(7,643,905)
Total Net Proceeds from Asset Sale	**75,911,432**

Source: Dissertation Financial Model.

To provide an overview of the scale of the cash flow outliers, the graph below displays the cash flows to equity in each period.

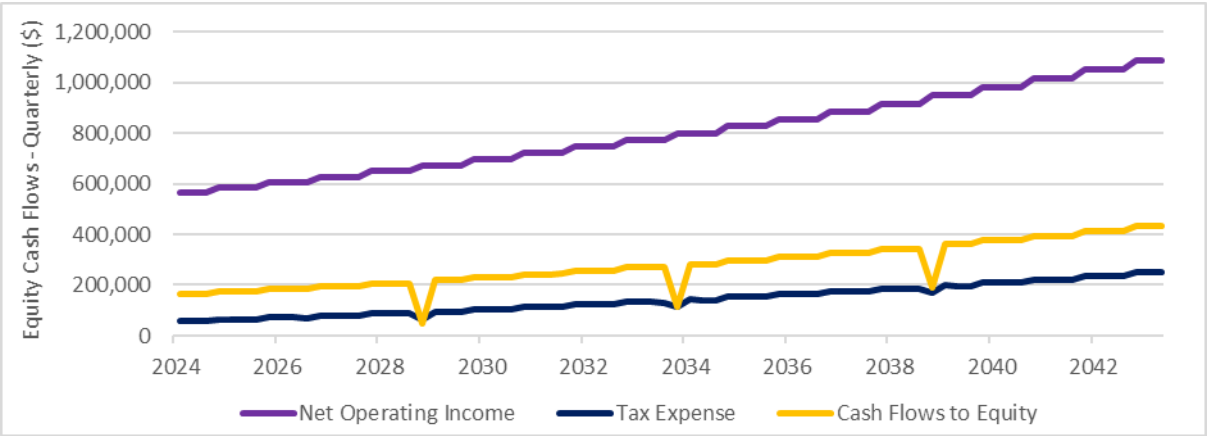
Figure 21: Quarterly Cash Flows Over Investment Period



Source: Dissertation Financial Model.

When excluding these outlier periods, and magnifying the vertical scale, the cash flows demonstrate a significantly less volatile profile, as follows. It is noted that the three dips in Cash Flows to Equity relate to the payment of an upfront fee to borrowers to refinance in year 5, 10 and 15.

Figure 22: Asset Underlying Operating Equity Cash Flows



Source: Dissertation Financial Model.

In effect, the cash flows generated by the business grow in a stable, compounding nature over the 20-year investment horizon. However, the impact of growing profitability against stable interest costs results in a disproportionate increase in Cash Flows to Equity. Specifically, interest expense remains unchanged and as a result, cash flows to equity increase 169% over the same period.

5.3.4. Valuation

Through undertaking a Discounting of the cash flows over the forecast period, a NPV is calculated as per the table below.

Table 15: MIT Valuation - PRS

Valuation – PRS	($)
Cumulative Cash Flows (Undiscounted)	95,699,129
Cumulative Cash Flows (Discounted)	23,739,473
Initial Investment	(36,393,685)
NPV	**(12,398,353)**
IRR	**5.70%**

Source: Dissertation Financial Model.

Noting the discount rate applied of 8.53%, the IRR is 5.70% and the NPV is negative, both valuations methodologies result in project rejection. This would indicative that the returns do not justify investment, and the project should not be undertaken. This would indicate that the investment is a poor use of investors capital and should not be undertaken. The Null Hypothesis provides credence to the perception that BTR investments are not rational investments in the current investment climate.

When re-assessing the financial model to account for a proposed 20% discount to market rent, the returns are recalculated.

Table 16: MIT Valuation - DMR

Valuation – DMR	($)
Cumulative Cash Flows (Undiscounted)	84,905,392
Cumulative Cash Flows (Discounted)	18,889,687
Initial Investment	(36,506,944)
NPV	**(17,261,050)**
IRR	**4.63%**

Source: Dissertation Financial Model.

It is noteworthy that the exit valuation of the asset assumes a sale of the property to a PRS investor, resulting in an unchanged final sale price (and capital gains burden) under both the scenario where the investment is held as an DMR investment, and when held as a PRS investment. This is reasonable, as there are no restrictions on what the property is used for. Specifically, there is no legal or contractual requirement to maintain the property at a rental level below market rates.

5.3.5. Conclusion – Viability of BTR Investments

The initial results of this DCF model demonstrate, from first principles, that the fundamental investment characteristics of a BTR model are unlikely to generate sufficient returns to justify investment into the sector.

As the required rate of return to justify investment is 8.53%, and the IRR is lower than this, the NPV of project is negative. This further justifies initial criticism of such investments by superannuation fund Australiansuper in stating that the returns “do not add up” for either affordable, or market rent investments (Bevan Towning, Head of Property, AustralianSuper, 8 September 2022). Specifically, the expected returns to investments do not meet hurdle requirements when rented at market rates, with any reduction in rents resulting in an even lower rate of return for investors.

Additionally, the stability of returns are fully accounted for in the discount rate derivation undertaken in this model. This provides justification for the underlying thesis in the CEO of AustralianSuper (Paul Schroader, 8 November 2022, published in the AFR, original article by Kehoe and Vickovich, 2012) stating that returns need to be in the range of 6-11% for any investment in residential housing, with the discount rate calculated in this research at a figure close to the mid-point of this range. Additionally, the lack of investment in DMR is further justified by even lower returns generated by the DMR investment scenario.

Given funds are required to invest in the best interest of individual members, the lower returns generated by these investments do not justify institutional investors utilising members funds to invest in such projects. As such, there exists an explicit rationale for taxation reform to encourage investment into a sector which does not currently justify further investment.

Thus, the first section of the results reaches a comprehensive conclusion that investment is not currently justified. Returns are not met on a headline basis, both underscoring and effectively outlining why there exists a lack of investment into the sector. As an initial finding, the research justifies government intervention in the sector by way of either tax reform, or financial, planning or structuring incentives. Prior to analysing such incentives, the wider tax community will be considered to ensure the results consider a comprehensive range of tax investor classes

5.4. Other PRS Tax Class Comparisons

There exists different tax treatment of different classes of investor, which justifies the comparison of project profitability relative to headline tax rates and policies on these different tax classes. In this regard, this section of the Results Chapter will provide a brief overview of the impact of taxation policies on different investors, leading to an overview of the resultant impact on project profitability. This will provide an ability to compare the tax treatment of each investor class to one-another, resulting in an overview of the most favourable and least favourable investor class.

Given the tax rates applied to each class of investor will also impact the levered beta and associated Cost of Equity used to value investments, this variable has also been outlined below. As the calculation and adoption of other variables remains unchanged from the prior analysis in the this Chapter, and the equations outlined in the Methodology Chapter, no further analysis has been provided of these other variables.

Table 17: Investor Class Applicable Tax Rates

	Private Investor	Superannuation Investor	Company	Charity/ Not for Profit
Income Tax	47%	15%	25%	0%
Capital Gains Tax Discount	50%	33%	0%	0%
Applied Capital Gains Tax Rate	23.5%	10%	25%	0%
Land Tax	Unchanged	Unchanged	Unchanged	0%
Stamp Duty	Unchanged	Unchanged	Unchanged	0%
Applied Tax Rate	47%	15%	25%	0%
Beta	0.781	0.861	0.836	0.898
Cost of Equity	8.04%	8.51%	8.36%	8.74%

Source: Dissertation Financial Model.

It is noteworthy that while a BTR asset can obtain reduced land tax in NSW in the scenario is provides "low-cost housing", this housing cost is c.30% below the DMR prices provided in the project, and as such the land tax reduction would be unviable. Further analysis of land tax is detailed in subsequent sections.

5.4.1. Personal/Individual Tax Class

Personal income tax in Australia is based on a progressive tax scale which is outlined in the Methodology Chapter. The top marginal tax rate is 45%, with an additional Medicare tax surcharge of 2% in the Financial Year 2023/2024 (ATO, 2023).

Given that any investor in a professional BTR scheme would require a minimum investment of c.$2m to $5m of capital, it would be reasonable to assume that such an investor had a gross income of over $180,000. Additionally, as investments in such a scheme would be marginal income, the applied tax rate would also be marginal to the investor. As such, this Dissertation will assume that all income will be assessed on the top margin tax rate.

A Capital Gains Discount of 50% of the tax incurred is applicable on all investments held for over a year (ATO, 2023). Noting that the investment proposed within this Dissertation is over a 20-year time-period, this capital gains discount will be applied. Accordingly, noting the applicable tax rate of the investment is significantly higher, the beta of the investment falls to 0.781, and the cost of equity falls to 8.04%.

The NPV and IRR impact of this investment on both a PRS and DMR basis are detailed below.

Table 18: Individual Valuation - PRS

Valuation – PRS	($)
Cumulative Cash Flows (Undiscounted)	83,667,637
Cumulative Cash Flows (Discounted)	21,336,938
Initial Investment	(36,393,685)
NPV	**(14,768,523)**
IRR	**4.72%**

Source: Dissertation Financial Model.

Table 19: Individual Valuation - DMR

Valuation – DMR	($)
Cumulative Cash Flows (Undiscounted)	76,937,425
Cumulative Cash Flows (Discounted)	18,197,160
Initial Investment	(36,506,944)
NPV	**(17,959,290)**
IRR	**4.02%**

Source: Dissertation Financial Model.

As the taxation of private individual investors in NSW is at a higher applicable rate than for MIT investors, the returns and NPV of this investment falls. Consequently, the reduction in beta is more than offset by the higher tax burden, which reduces the NPV and IRR to less commercial levels, implying project rejection.

5.4.2. Superannuation Investor

Superannuation investments in Australia are taxed at a marginal rate of 15% of all income generated by a superannuation investment, with capital gains receiving a 33% discount to this 15% tax rate, reducing the tax on capital gains to 10% (ATO, 2023). As tax is paid on contributions and withdrawals, there are additional taxes for individuals, however these rates do not impact investments once funds are held within the fund, and have no bearing on the BTR project contained within this Dissertation.

As the tax rate is lower, the calculated beta for this investment increase to 0.861, and the Cost of Equity rises to 8.51%. As such, The NPV and IRR impact of this investment on both a PRS and DMR basis are detailed below.

Table 20: Superannuation Valuation - PRS

Valuation – PRS	($)
Cumulative Cash Flows (Undiscounted)	98,157,528
Cumulative Cash Flows (Discounted)	24,229,066
Initial Investment	(36,393,685)
NPV	**(11,918,659)**
IRR	**5.84%**

Source: Dissertation Financial Model.

Table 21: Superannuation Valuation - DMR

Valuation – DMR	($)
Cumulative Cash Flows (Undiscounted)	87,363,791
Cumulative Cash Flows (Discounted)	19,379,279
Initial Investment	(36,506,944)
NPV	**(16,781,356)**
IRR	**4.78%**

Source: Dissertation Financial Model.

Consequently, the favourable treatment of superannuation investors results in an improved return profile for this tax class, however returns remain below the required rate of return, resulting in a negative NPV.

5.4.3. Private Company

Private companies in Australia pay a statutory tax rate of 25% in the FY24 financial year (ATO, 2023), and are offered no discount to capital gains tax. A key benefit of the statutory tax rate in Australia is the imputation of tax credits which are paid by corporate entities. In effect, the tax paid to corporate entities are refunded when paid to superannuation funds and private investors (subject to a zero floor).

While franked dividends are a major consideration in private investment by Australian individuals, it does not form a component of investment into this DCF analysis. This is because a private investor would still be required to pay the same marginal tax rate as detailed in the private individual section above, and as such would be impartial between receiving dividends and paying personal income tax, or alternatively just paying personal income tax on a wholly owned investment.

As detailed previously, the Tax rate applied are between a superannuation investor and a private individual high income earner, resulting in a beta of 0.836 and a Cost of Equity of 8.36%. The NPV and IRR impact of this investment on both a PRS and DMR basis are detailed below.

Table 22: Company Valuation - PRS

Valuation – PRS	($)
Cumulative Cash Flows (Undiscounted)	88,328,511
Cumulative Cash Flows (Discounted)	22,281,709
Initial Investment	(36,393,685)
NPV	**(13,831,382)**
IRR	**5.18%**

Source: Dissertation Financial Model.

Table 23: Company Valuation - DMR

Valuation – DMR	($)
Cumulative Cash Flows (Undiscounted)	78,804,625
Cumulative Cash Flows (Discounted)	17,952,296
Initial Investment	(36,506,944)
NPV	**(18,185,718)**
IRR	**4.20%**

Source: Dissertation Financial Model.

These figures remain in line with expectations for investment returns and profitability for projects under different tax classes.

5.4.4. Charity/Not for Profit

Charities and Not for Profits pay no income tax, capital gains (ATO, 2023), and are not required to pay land tax, or stamp duty on transfers in the event that they hold a blanket exemption under Section 275(3)(a) of the NSW Duties Act (1997).

The implications of the tax rates extend beyond charitable activities. They also relate to investments by charities into for-profit investments, which would be used to fund charitable activities. In this regard, charities are still able to operate a PRS investment at market rates, along with operating affordable or social investments.

As the tax rate is nil, the calculated beta for this investment increase to 0.898, and the cost of equity rises to 8.74%. The NPV and IRR impact of this investment on both a PRS and DMR basis are detailed below.

Table 24: Charity Valuation - PRS

Valuation – PRS	($)
Cumulative Cash Flows (Undiscounted)	115,769,484
Cumulative Cash Flows (Discounted)	29,532,888
Initial Investment	(32,732,303)
NPV	**(3,133,116)**
IRR	**7.99%**

Source: Dissertation Financial Model.

Table 25: Charity Valuation - DMR

Valuation – DMR	($)
Cumulative Cash Flows (Undiscounted)	103,070,970
Cumulative Cash Flows (Discounted)	23,925,404
Initial Investment	(32,845,562)
NPV	**(8,735,315)**
IRR	**6.69%**

Source: Dissertation Financial Model.

When undertaken by a Charitable entity, the PRS investment option still fails to generate a return above the hurdle Cost of Equity

5.4.5. Conclusion

The analysis conducted within this results section reaches a relatively simple conclusion – taxation has a significant impact on project viability. Higher taxed investor classes have a lower rate of return, and thus, generate more unfavourable NPV's relative to low tax investor classes.

The more nuanced implications of this research is the justification of the argument that taxation reform is required in order to incentivise investment into the PRS sector. Specifically, market rent projects that in their very nature increase the supply of housing, do not meet investment hurdle requirements required by empirical cost of capital research undertaken within this Dissertation.

Additionally, the rate of return required for DMR is unchanged relative to for-profit projects (in the absence of evidence that investors are willing to obtain a lower rate of return, which does not currently exist). As such, the reduced rent results in lower project profitability, and as such further justifies a lack of investment by private market participants in the absence of tax reform or financial incentives.

Table 26: Valuation Overview – All Tax Classes

	MIT	Personal Investor	Superannuation Investor	Company	Charity/ Not for Profit
Applied Tax Rate	15%	47%	15%	25%	0%
Beta	0.861	0.781	0.861	0.836	0.898
Cost of Equity	8.51%	8.04%	8.51%	8.36%	8.74%
Market Rent					
NPV	(12,398,353)	(14,768,523)	(11,918,659)	(13,831,382)	(3,133,116)
IRR	5.70%	4.72%	5.84%	5.18%	7.99%
Discounted Market Rent					
NPV	(17,261,050)	(17,959,290)	(16,781,356)	(18,185,718)	(8,735,315)
IRR	4.63%	4.02%	4.78%	4.20%	6.69%

Source: Dissertation Financial Model.

Despite this favourable tax treatment of some investor tax classes, the returns required of a nil-tax entity are not met on either a PRS or DMR investment. Such a research conclusion is important in noting that tax reform alone with not obtain the financial returns required to generate project viability.

In this regard, the conclusion of the tax analysis across different investor classes is comprehensive. PRS housing is not a justified investment for investors across any for-profit investor class. Additionally, the current tax and investment conditions do not support investment into DMR in the Sydney marketplace under any tax class, including a non-taxable entity.

Further analysis conducted within this Results Chapter includes an overview of the sensitivities to these investment variables across different investor classes. In doing so, it provides an overview of which individual investment variables require reform (and to what extent) in order to achieve a positive NPV. As such, the following Discussion Chapter provides an overview of proposed tax reform which would support investment into the sector.

A key consideration of this research will be analysis of the returns generated by a PPP project, which is detailed extensively thereafter. This forms an alternative investment justification for further analysis into how government policy can support reduced cost rental housing in the Australian marketplace, and particularly in the case of a lower yielding asset class.

5.5. PRS Sensitivity and Discussion

The sensitivity analysis conducted within this section adjusts key variables applied to the DCF model to compare results, in turn resulting in a deeper understanding of the variables and the relationship between variables. In doing so, this research provides the opportunity to assess the impact of variable shift over time, and to determine the impact of tax changes and reform relative to other conditions, including the macroeconomic environment, and risk investment decisions (capital structuring). As such, it provides an analysis of the taxation environment as part of a broader economic environment.

The analysis has been conducted on:

- headline income tax considerations, including both positive and negative tax rates (i.e. subsidies), along with reform to remove land tax and stamp duty, and replace with a standardised income tax rate. Further analysis is made into the recent tax depreciation reform, and the application of nil land tax for DMR projects, which is not applicable to this case study, but an investment factor for future projects;
- Analysis is subsequently undertaken into the underlying investment characteristics utilised within the model, including asset beta's, and the RFR; and,
- Finally, analysis around borrowings, including opening leverage, re-gearing and borrowing costs is undertaken to determine the impact of capital structuring on investment returns.

The sensitivities contained within the Results Chapter underscore the importance of taxation as a key driver of investment returns as a component of the broader economic environment. Through comparing asset characteristics and capital structuring assumptions, analysis can be made between these two measures, and further analysis can be conducted relative to tax policy reform.

In undertaking this analysis, tax reform is concluded to be a key driver of investment returns. Further, it is through this analysis that the importance of tax in a wider macroeconomic environment can be made. Specifically, Government policies which support leverage, reduce tax burdens, and require a lower rate of return can collectively provide the conditions which justify investment into the sector. This analysis is subsequently detailed further in the PPP considerations and analysis.

5.5.1. Taxation Considerations

The tax sensitivities contained within this analysis include holistic tax reform across income tax, land tax and stamp duty. Further, the implementation of subsidies to incentivise investment and analysis of the impact of asset depreciation proposed in the 2023 Federal Budget are considered. These considerations underscore the importance of tax reform, while also analysing current market conditions.

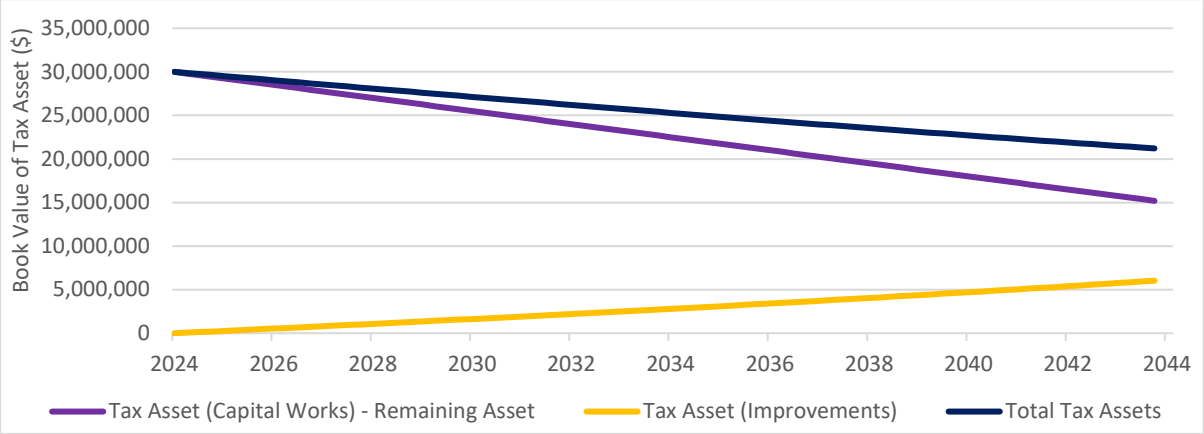
5.5.1.1. Capital Works Depreciation Reform – 2024 Federal Budget Analysis

In the 2024 Federal Budget, the Federal Treasury increased the deductable depreciation rate for eligible BTR projects where construction commenced after 9 May 2023. This policy increased the deductibility of new investments from 2.5% of capital works per annum for 40 years to 4% per annum for 25 years (ATO, 2023). The policy was implemented to increase the tax shield of new projects, thereby reducing the effective tax rate applicable for new investments in order to encourage investment.

This policy has no impact on the Altus Miranda Meridian affordable BTR project as the asset was completed at the date of policy implementation, and as such, is ineligible for improved tax depreciation treatment. As detailed in the figures below, the policy will improve investment returns, through reducing tax paid over the investment horizon.

The figure below reiterates the tax asset outlined earlier in the Results Chapter, with the new proposed tax depreciation rate of 4% per annum. The impact of this policy is to increase the rate of tax deduction, reducing the size of the tax asset by an incremental 30% (depreciating 80% of the asset value over 20 years instead of the modelled 50% over 20 years).

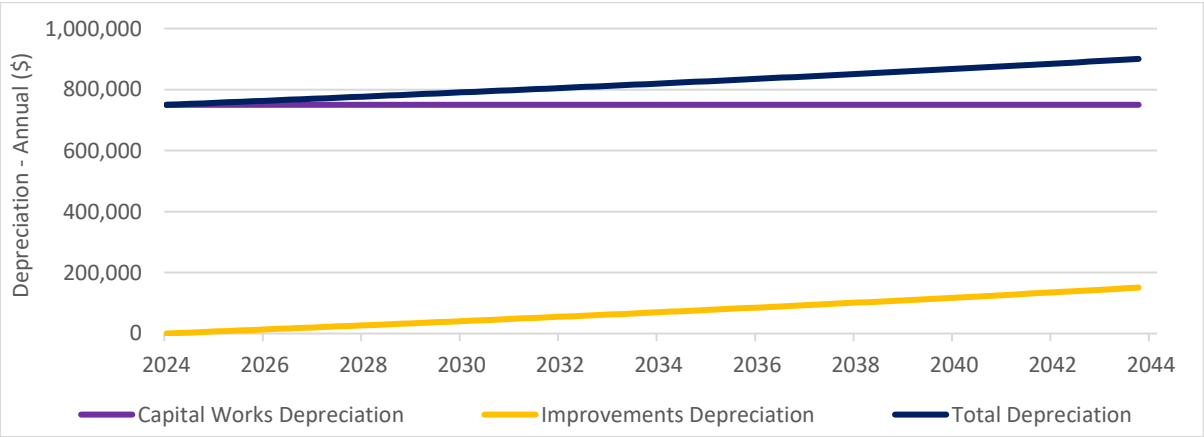
Figure 23: Sensitivity – Updated Tax Asset Analysis



Source: Dissertation Financial Model.

This policy has the impact of reducing the incremental taxable income by 30% of the asset value ($30m), or a cumulative $9m. At a tax rate of 15%, the impact is an increase in the undiscounted cash flows to equity holders by $1.35m.

Figure 24: Sensitivity – Updated Tax Depreciation Analysis



Source: Dissertation Financial Model.

The impact on the NPV and IRR on a MIT tax structure are detailed in the table below:

Table 27: Depreciation Tax Sensitivity Analysis – Relative Asset Valuation

	4.0% Depreciation over 25 years	2.5% Depreciation over 40 years
NPV	(11,719,844)	(12,398,353)
IRR	5.85%	5.70%

Source: Dissertation Financial Model.

As a result, the impact on investment returns is an incremental improvement in IRR by 15bps, from 5.70% to 5.85%. The impact on Net Present Value, after discounting of cash flows, is an incremental improvement in the discounted NPV by $678,509. While not relevant to the case study undertaken within this Dissertation, the tax advantage has a notable impact on investment returns.

5.5.1.2. Holistic Income Tax Reform

As a comparison of taxation policies, the removal of stamp duty and land tax is compared to a single, holistic income tax rate. In effect, this sensitivity analyses the impact of broad tax reform, and provides a holistic effective tax rate, undertaken on a weighted average basis.

Given the current tax rates utilised within the financial model do not justify investment into DMR, this analysis includes additional incentives by way of a negative tax rate to support investment into DMR. As a negative tax rate is (by definition) a subsidy, this analysis also demonstrates the IRR generated when a 10% subsidy is put in place to build a PRS investment.

As detailed in the table below, there is a c.65% relationship between the change in the effective tax rate and the effective income tax rate incurred. This relationship is due to the depreciation of the asset value, which is held constant, and effectively reduces headline income tax rates by 35% over the investment horizon.

Table 28: Effective Tax Rate IRR Analysis - PRS

Market Return							
Tax Rate	-10%	0%	10%	20%	30%	40%	50%
Effective Tax Rate	-6.50%	0.00%	6.50%	13.00%	19.50%	26.00%	32.50%
IRR	**8.44%**	**7.99%**	**7.53%**	**7.03%**	**6.51%**	**5.96%**	**5.37%**

Source: Dissertation Financial Model.

Similarly, the tax rate on a reduced income project is 61.8% of the headline tax rate due to depreciation of the underlying asset capital investment. This is driven by the treatment of income tax, which is impacted by the capital works depreciation, and capital gains, which is not impacted by this depreciation.

Table 29: Effective Tax Rate IRR Analysis - DMR

Market Return							
Tax Rate	-10%	0%	10%	20%	30%	40%	50%
Effective Tax Rate	-6.18%	0.00%	6.18%	12.35%	18.53%	24.70%	30.88%
IRR	**7.38%**	**7.01%**	**6.62%**	**6.21%**	**5.77%**	**5.30%**	**4.79%**

Source: Dissertation Financial Model.

The analysis above demonstrates that for all tax rates (including a negative tax rate), the IRR of the project does not meet the hurdle rate analysed in the MIT analysis within this Results Chapter. As such, the project does not meet investment criteria, even in the scenario of a 10% subsidy on Net Income.

5.5.1.3. Land Tax Reduction Analysis

The NSW government has legislated incentives for investors to reduce rental costs for housing within 5km's of the Sydney General Post Office, 1 Margin Place (Revenue NSW, 2023). The impact of this policy is to incentivise investment into DMR at defined rental levels[31]. Analysis below has been undertaken into the impact of land tax on rental returns, in line with this policy.

Specifically, this analysis compares the rental reduction which would be justified by a reduction in the 1% land tax rate to nil (2%, discounted by 50%), as detailed in the following table. No analysis has been made on Not-For-Profit entities, as they are not required to pay land tax.

[31] Detailed within the Methodology Chapter.

Table 30: Land Tax Sensitivity Analysis

	MIT	Personal Investor	Superannuation Investor	Company	PPP Investment
Land Tax Applied	1%	1%	1%	1%	1%
IRR	*5.70%*	*4.72%*	*5.85%*	*5.18%*	*6.64%*
Land Tax Relief					
Land Tax Applied	0%	0%	0%	0%	0%
Discount to Market Rate	*15.7%*	*25.1%*	*15.7%*	*17.84%*	*15.71%*
IRR	*5.70%*	*4.72%*	*5.85%*	*5.18%*	*6.64%*

Source: Dissertation Financial Model.

The analysis above indicates that there is a comprehensive basis for undertaking land tax reform to lower the cost of housing for low- and middle-income households. Specifically, the removal of land tax would justify the reduction in rent to levels which would constitute DMR for all investor classes (a minimum of 15% below market rates, although a more common DMR method applied in the research above reduces market rents by 20%).

Thus, while this policy is not widely adopted due to the 40-60% below market rents required in order to reach the NSW government rates, there is an underlying basis for this policy, which incentivises investment in reduced cost housing by investors.

5.5.2. Investment Characteristics

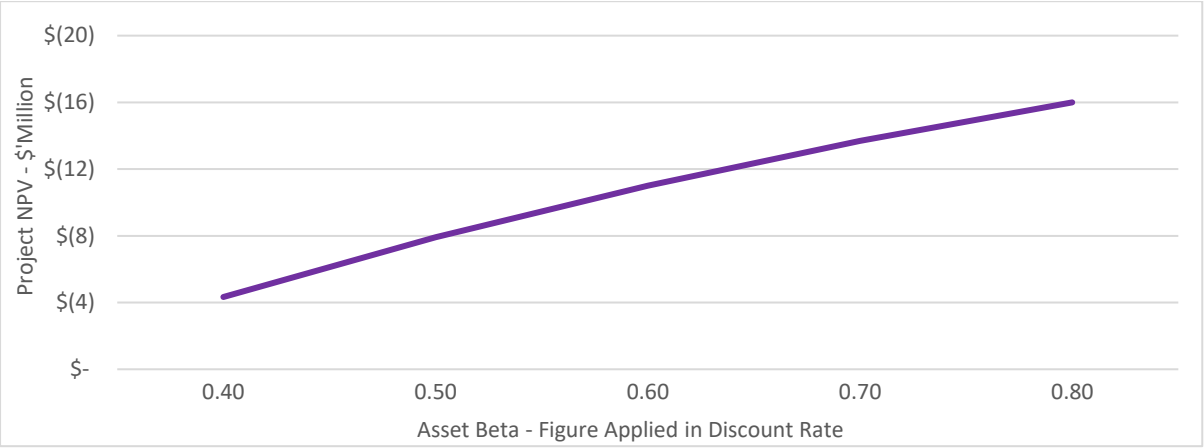
A consideration in the analysis conducted within this research is the impact of discount rates applied to residential housing projects, across both affordable and market rent assets. This analysis will consider the impact of different asset beta's and risk-free rates on project affordability.

5.5.2.1. Beta Sensitivity Analysis

When a lower beta is applied to an investment, the associated cost of equity falls, which results in a higher project value. Given the limited evidence of beta derivation conducted within the Methodology Chapter, the sensitivity of this assumption warrants analysis.

As detailed in the figure below, differing beta's between those applied to typical infrastructure investments (0.40) and other commercial property assets (0.8) do not, on their own, generate the conditions required to achieve a positive project NPV.

Figure 25: Beta Sensitivity Analysis



Source: Dissertation Financial Model.

The results justify a more comprehensive policy solution in order to improve housing affordability in NSW. Specifically, DMR is likely to generate lower risk attributes than traditional housing investments. Tenants would be expected to exhibit stable occupancy, as they are unlikely to move when paying below-market rents. Further, when vacancy exists it is expected to last for a short time due to the existence of waiting lists for social and DMR in NSW. Lastly, capital expenditure could be expected to be lower, as tenants are unlikely to jeopardise rental agreements by damaging their property.

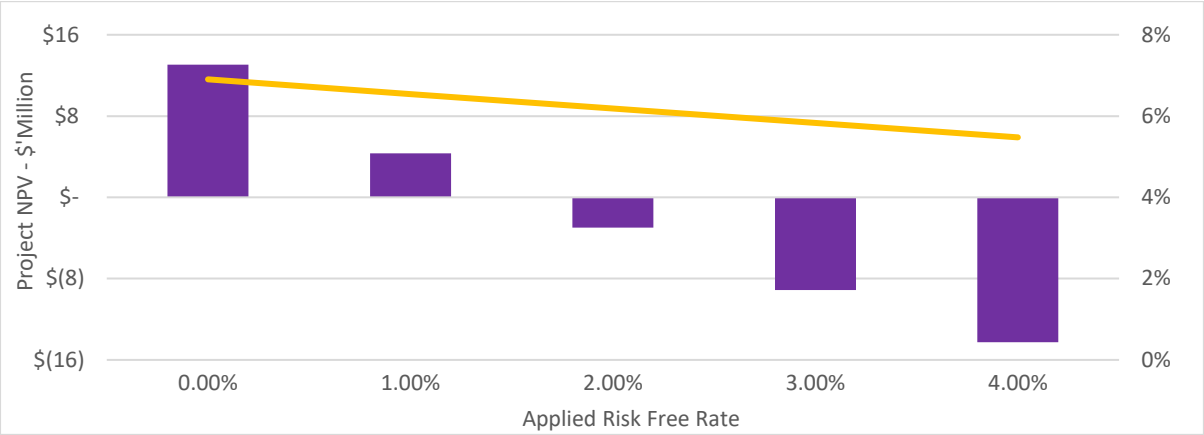
Despite this analysis, the lower beta possibly exhibited by social and DMR projects would not justify investment into the sector. The analysis conducted on variable beta's pertains to market rents, which does not demonstrate the required return to justify investment, and consequently discounted rental options would have lower NPV's.

5.5.2.2. Lower Risk-Free Rate Analysis

Within the last 10 years, residential housing investments have benefited from a significant reduction in the risk-free rate, as global central bank base rates have fallen in a generally low inflation environment. This lower RFR has the impact of reducing the required return by investors, while also reducing the cost of debt used to acquire investments. While this relationship has subsequently reversed in late 2022 and throughout 2023, the level and variability of the RFR justifies investigation.

As detailed in the table below, lower RFRs have a significant impact on project profitability. Both the NPV and IRR improve as the risk-free rate falls, with the project reaching NPV profitability at a RFR of around 1.50% (depending on tax investor class).

Figure 26: Risk Free Rate Sensitivity



Source: Dissertation Financial Model.

The analysis above demonstrates the low yielding nature of Residential Housing visually. In effect, the asset generates lower returns, and exhibits lower risk, which does not justify investment in a high yield environment. Alternatively, when interest rates are higher, portfolios are better invested in higher risk and return asset classes such as equities. Within the real estate sector, higher yields can be generated in office and commercial assets.[32]

While further analysed in the Conclusion chapter, the underlying conclusion of this research demonstrates the importance of discount rates on project profitability. Rather than demonstrating that the project is unprofitable at current interest rates, this analysis proves that there is ample justification for investment when the risk-free rate falls, as is indicated over the next 3-5 years across the Australian, US and UK respective base rate forward curves.

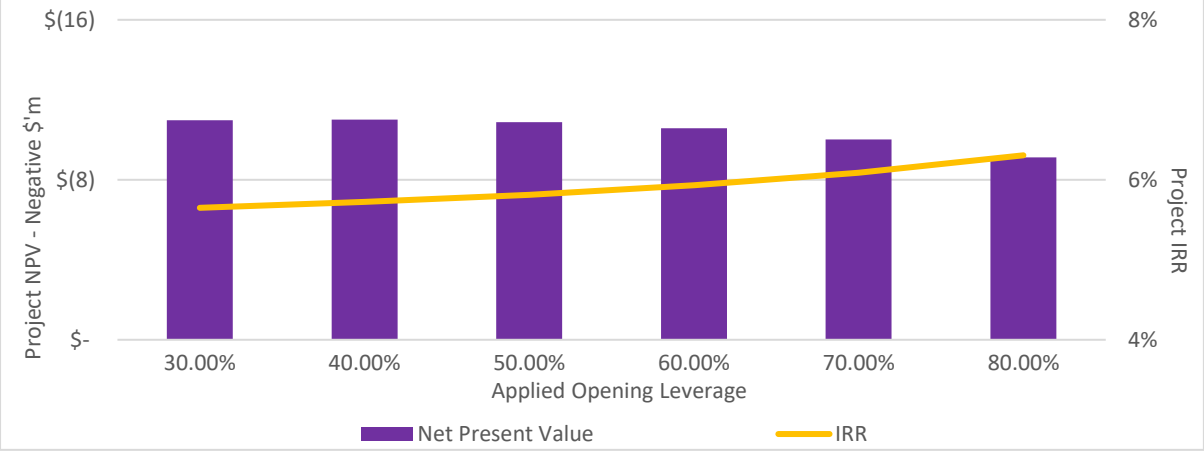
5.5.3. Capital Structuring Assumptions

The risk-free rate analysis conducted earlier includes analysis which influences both the return expectation of investors, along with the cost of debt and as result, the interest cost. The impact of these two factors cannot be sensitised individually as the RFR proxy in Australia is the RBA cash rate, which is used in debt interest cost calculations. Therefore, capital structuring must be considered on a leverage (or debt-to-value) measure, through an increase in the drawn debt undertaken to fund the project.

As detailed below, the relationship between leverage and asset return is positively correlated. As the cost of debt is lower than the cost of equity, greater use of Debt will increase the cash flows to equity increasing the NPV and IRR.

[32] This analysis assumes the market is not efficient in the short-term. Functionally, the analysis assumes that land values have not yet adjusted to the interest rate environment, which has resulted in low returning investment opportunities in an otherwise high yielding RFR environment. In the long-term, it is assumed that land and construction costs, as well as the final valuation) would adjust to justify investment, however this is yet to be seen.

Figure 27: Leverage Project Profitability Analysis



Source: Dissertation Financial Model.

Despite the relationship between leverage and project returns, the capital structuring of the project alone does not create the conditions to improve project profitability to a positive NPV. Rather, it decreases the size of the negative project IRR. This improvement in IRR and NPV is despite the increased discount rate applied, as the Cost of Equity increases in line with the drawn leverage.

5.5.4. Conclusion

The sensitivity and discussion included within these results support the public discourse that tax is a major contributing factor towards investment in social and DMR. In isolation, tax does not meet the returns requirements of a private sector investment into either private market, or DMR. However, it is a combination of returns expectations, asset characteristics, asset leverage decisions and underlying tax policy which can support the development of an investable marketplace for DMR.

The analysis above clearly demonstrates that housing is a generally lower returning asset class. The yield is lower than comparable commercial real estate investments, and the operating costs are generally higher. This creates an environment where independent, value maximising investment is uncommon, as indicated by the relatively limited existence of PRS and BTR schemes by institutional investors in Australia.

As noted above, the risk-free rate forms the most influential variable in the DCF model, however it is not a policy lever that the Federal Government will utilise for a specific and targeted policy such as housing. As a result, a combination of policy levers must be utilised by both state and federal government bodies in order to create a more lucrative private marketplace for such investment.

In this regard, the best solution to housing investment in the Sydney marketplace is a combination of each of the three factors outlined within this section. Projects that lower the initial cost of construction, or alternatively lower the risk profile of residential investments will partly bridge the gap between returns expectations and hurdle requirements. Further, government policies which support lower cost of debt, or increase the proportion of debt which can be obtained by investors will increase profitability.

These policies, when used in conjunction with tax deferments, reductions or eliminations will improve project returns to the point whereby they can justify investment by Australian institutional investors. In this regard, the comprehensive conclusion of private market research is that broader economic and financial market reform is required in order to justify investment into an otherwise low returning asset class. A single tax policy adjustment is insufficient, as is policy implemented by one of the state or federal governments in isolation.

5.6. PPP Investment Structure

As detailed extensively within the Introduction, Literature Review and Methodology Chapters, PPP's are a different style of investment in social and economic infrastructure. They allow a private investor to undertake a major infrastructure project, with the direct or indirect financial support of Government. These projects allow investors to obtain access to lower risk investment opportunities, while also obtaining returns which are above those typically associated with government investments (most notable, buying government bonds).

These projects offer a long-term source of distributions and returns to investors, backed by sovereign counterparties. PPP investments in the housing sector in Australia typically involve the government providing a combination of land, capital, planning support and/or rental guarantees in order to reduce the investment risk to a private sector investor. While uncommon in the market, examples of PPP's in the housing sector include social housing development PPP's undertaken by the Victorian Government. Alternatively, NSW PPP's predominantly involve transport infrastructure projects.

This section compares the returns generated by an DMR project, underpinned by a NSW Government supported PPP. The adjusted variables are:

- Investment assessment on IRR only (PPP projects are typically assessed based on an IRR being above a certain hurdle rate, so NPV's are not relevant);
- Lower rental voids;
- Lower Cost of Debt;
- Higher Leverage to account for the lower risk profile of the investment, and explicit government guarantee; and
- The utilisation of a MIT tax structure.

From these assumptions, rental discounts have been analysed to consider what form of rental discount would justify investment into an affordable or social housing PPP. In doing so, the analysis below provides an overview of the impact of discount rate reduction and investment structure adjustment on headline rental discounts. This provides a PPP investment comparison, which differs from tax reduction alternatives, and as such a truly differentiated method of investment proposal analysis.

5.6.1. Variable Adjustment

The underlying variables adjusted are detailed as follows:

- Rental Voids are reduced from 1.7% to 0.25% to account for rental churn. When apartments are rented below market value, there is no rational reason for unit vacancy. As such, the rental voids purely relate to the period between renters leaving a property, repairs being undertaken, and new tenants moving in (assumed at less than a week per 5 years);
- Cost of Debt has been reduced, with the margin over the risk-free rate decreased from 225bps to 125bps;
- Leverage has been increased from 37.5% of opening asset value to 60% of opening asset value, to account for the lower risk profile of the investment (as the debt is effectively underpinned by government rental guarantee contracts. This results in an average leverage of 44.56% over the forecast period[33]; and

[33] It is noted that while the leverage has been significantly increased, the asset still supports sustainable leverage throughout the investment period. The opening Interest Coverage Ratio is 135.9%, growing to a closing ICR of 261.3%, and averaging 190.6% over the forecast period. All figures are above the ICR covenant assumed of 125%.

- All tax rates are aligned with the MIT investment analysis conducted earlier in the Results Chapter.

The initial step of this results analysis has been the determination of an IRR under a PRS market rent (i.e. 0% rental discount) scenario, as follows:

Table 31: PPP Valuation - PRS

Valuation – PRS	($)
Rental Discount	0.00%
Cumulative Cash Flows (Undiscounted)	79,355,273
Cumulative Cash Flows (Discounted)	15,472,974
Initial Investment	(25,226,560)
IRR	**6.64%**

Source: Dissertation Financial Model.

In line with the methodology, this project generates an IRR towards to the top of the Australian IRR discount rate applied by Duan and Zhang (2023), between 7.89% and 3.33% with a mean of 5.575%. These figures indicate that a PPP into DMR would generate the required rates of return to justify further investment, based on an initial estimate, using a 0% market rental discount.

5.6.2. Application of Methodology Discount Rate

Within the methodology, the rate of return required to justify investment into PPP's was assumed to be a premium to the risk-free rate of 3.5%. Noting the risk-free rate utilised within this case study was 3.35%, the required rate of return was assumed to total 6.85%.

However, the IRR generated under a private sector PRS scheme is below the rate required for a PPP investment, resulting in project unviability. As such, the IRR generated under a 20% rental reduction is determined in the table below, to compare financial results.

Table 32: PPP Valuation - DMR

Valuation – DMR	($)
Rental Discount	20.00%
Cumulative Cash Flows (Undiscounted)	68,402,321
Cumulative Cash Flows (Discounted)	11,011,624
Initial Investment	(25,341,490)
IRR	**5.22%**

Source: Dissertation Financial Model.

In effect, the reduction in voids, lower cost of debt and higher leverage utilised in the investment (all sensitised within the following section, generate a rate of return which justifies investment towards the lower end of the PPP hurdle return range determined by Duan and Zhang (2023).

These initial results support the use of PPP's to encourage reduced market rate rental housing, although they are unlikely to justify investment in the current interest rate environment at the scale required to materially improve housing affordability. Despite this, such results are promising as the RBA Cash Rate falls, in line with the Australian BBSW yield curve.

5.7. PPP Sensitivity and Discussion

5.7.1. Rental Reduction Analysis

The baseline analysis conducted above provides early justification for the provision of investment into DMR. Initially, PRS market rent investment is supported, as returns are generated within the range of hurdle rates required in order to justify investment. However, noting that a government guarantor would not support the provision of government resources to private market rents (i.e. no discount or pubic benefit from the project), a secondary scenario has been undertaken to ascertain the rate of rental discount which would be justified using empirical PPP IRR's.

Noting the large number of variables which have been applied to derive the returns required for this investment, a limited sensitivity of these variables has been undertaken below. The following four conditions have been sensitised:

1. Leverage – Project returns are sensitive to the drawn debt over the investment horizon. As such, a range of leverage figures have been utilised in the analysis below to determine the resulting market rental discount rates which would be generated. This analysis has been undertaken on the empiric 6.85% IRR required in the model, as above;
2. Required IRR – As a range of estimates for the required IRR has been provided in the analysis conducted by Duan and Zhang (2023), the full range of IRR's and associated rental discounts have been assessed;
3. RFR – Both the Cost of Debt and the required IRR are impacted by the RFR environment. This is additionally important, as the current RFR in Australia is at a 10-year high. As such, the adoption of a range of risk-free rates has been applied to determine the impact on market rents required; and finally
4. Tax Rates – To align analysis with the former sections of this results, the tax rate applied in the model has been altered to compare relative to different investor tax classes. This supports a comparable set of results to the prior section of this Results Chapter.

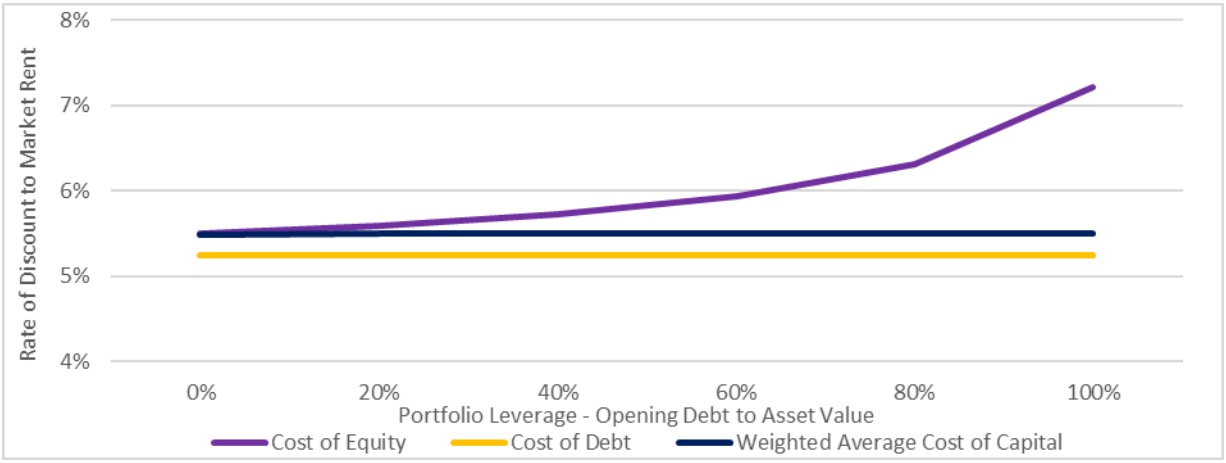
As is detailed below, the results further support the justification for this model of investment, as PPP's provide a measure of bridging the financial return required by investors, with the requirement to build and operate rent at affordable levels.

5.7.2. Leverage

The relationship between leverage and returns is positively correlated, as the cost of debt is lower than the cost of equity, resulting in a higher rate of return when more borrowings are undertaken. Despite this relationship, the WACC is very close to the cost of borrowing, resulting in a limited delta (rate of change) as the leverage is increased.

The relationship between Equity, Debt and the Weighted Average Cost of Capital ("WACC") is shown in the figure below. This relationship is inherently aligned with Modigliani and Miller, Proposition 1, detailed within the literature review. The context within this research is a specific relationship whereby when the cost of debt is lower than the WACC (6.85%), the cost of equity rises when borrowing increases.

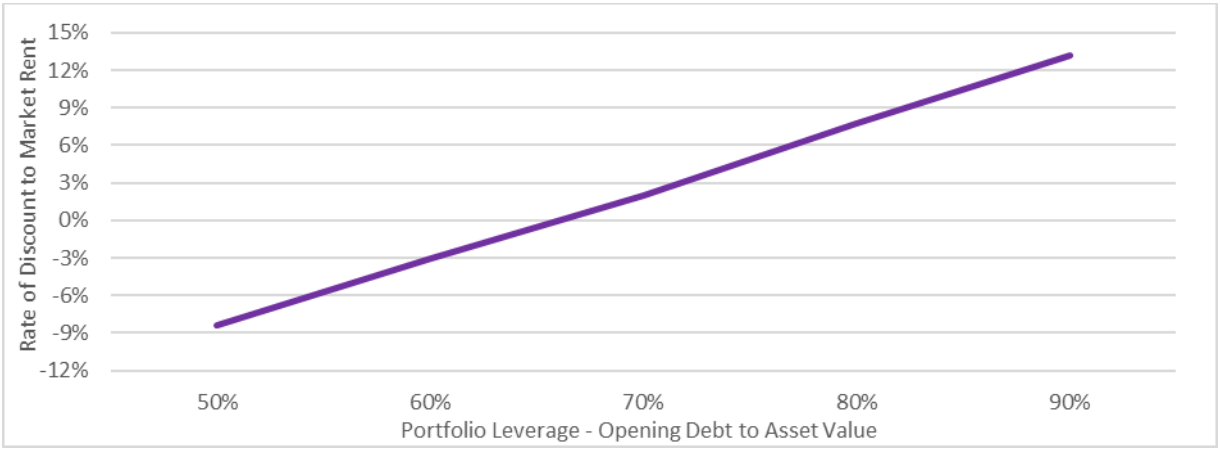
Figure 28: Capital Structuring and WACC Analysis



Source: Dissertation Financial Model.

As can be visually observed in the figure above, the hurdle rate of return is reached at 68% Leverage. Thereafter, greater excess returns are generated as leverage increases. Shown differently in the figure below, once the leverage reaches 68%, there are additional equity returns which can be reinvested in lower rental rates. As demonstrated in the figure below, 'back-solving' to determine the rental reduction which would generate a 6.85% rate of return under different leverage capital structures, there is a linear relationship whereby rents can be reduced to over 10% below market rates when the capital structure is leveraged at 90%.

Figure 29: PPP Opening Leverage Analysis



Source: Dissertation Financial Model.
Note: the figure above 'backsolves' for the discount generated in the portfolio, retaining the same cost of equity (PPP hurdle rate) of 6.85%. In effect, the higher weighted average return is reinvested into a larger discount, as the equity IRR is held unchanged.

5.7.3. Required IRR

An alternative measure of sensitivity is to utilise the base case study variables, while observing the rental reduction which can be tolerated under different discount rates. As such, this analysis compares the rents which would be required in order to achieve a range of IRR's.

These results are aligned with the leverage sensitivity, as when the PPP discount rate is widened to the range provided by Duan and Zhang (2023), there is a significant range in rental discounts which can be obtained while reaching the hurdle rate of return.

Figure 30: Market Rent Discount and PPP Hurdle Rate Analysis

Source: Dissertation Financial Model.

These figures effectively demonstrate that under a 3.33% discount rate, rents can be held at 50% below the market rate to achieve the required rate of return. Alternatively, at a 7.89% discount rate, rents are required at a rate higher than the current market rate in order to achieve the required return hurdle rate.

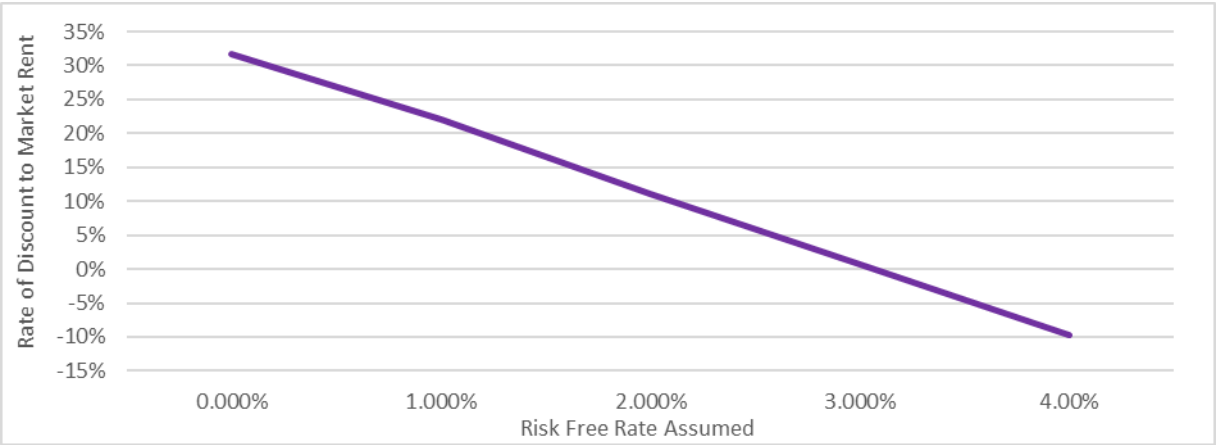
5.7.4. Risk Free Rate

This figure can also be shown relative to the base RFR utilised in the DCF model. This RFR impacts two different components of the model:

1. The base rate, utilised for the cost of borrowing – when this is lowered, the total interest rate incurred also reduces, with the margin kept unchanged; and
2. The PPP Hurdle Rate - When this rate falls, the required hurdle rate also reduces, as it is a combination of the base RFR, and a 3.5% margin over this rate.

When the risk-free rate falls, the project generates additional nominal and economic returns to shareholders, which can be reinvested into increasing the discount to market rent for the project. The relationship between the RFR and the discount to market rates is demonstrated in the figure below.

Figure 31: Risk Free Rate Sensitivity



Source: Dissertation Financial Model.

Of note, the relationship between the RFR and the applied discount to the project is both linear and of significant influence. Small changes in the RFR generate material movements in the discount which can be applied to such a PPP project. This relationship further demonstrates the importance of the base rate which is detailed in the PRS Sensitivity.

5.7.5. Tax Rates

Lastly, a comparison between the returns generated under different tax rates is demonstrated below. This utilises the IRR determined within the PPP case study and applies the same tax investor class characteristics included earlier in the Results Chapter.

This return can be considered in two ways:

- The after-tax IRR generated for each investor under different tax treatments; and
- The Discount to Market Rents which can be offered in order to achieve the required IRR of 6.85% in the scenario of a Not-for-Profit.

Both these measures are detailed in the table below.

Table 33: PPP Investor Tax Class Overview

	MIT	Personal Investor	Superannuation Investor	Company	Not-For-Profit
Applied Tax Rate	15%	47%	15%	25%	0%
Market Rent					
IRR	6.64%	5.68%	6.81%	6.08%	9.63%
Discounted Rent					
Discount to Market	N/A	N/A	N/A	N/A	31.4%

Source: Dissertation Financial Model.

The results included in the table above demonstrate that the project generates a rate of return close to the hurdle rate which justifies investment for the MIT, Superannuation Investor and Not for Profit. Further, these returns demonstrate that the discounts required to be considered either affordable or social housing investments (i.e. over 15% or 30% discount to market rent, respectively) are only achieved under a Not-For-Profit.

While this result demonstrates the only investor which justifies investment in a DMR project is a Not-For-Profit, the rates of return which justify investment for both a superannuation and MIT investor are broadly in line with those exhibited in this investment sceanrio.

5.7.6. Conclusion

The PPP analysis demonstrates the fundamental viability of PPP projects in the Housing market for social infrastructure investors. Through building the PPP scenario from first principles, the analysis demonstrates that returns required to meet PPP hurdle rates are broadly in line with the returns expected from a PRS investment. Further it demonstrates an alternative measure of project incentivisation for DMR housing projects which do not rely on tax cuts. This supports the proposition within this Dissertation that PPP's may form a viable investment pathway to increasing supply of housing, while reducing the cost of rent for vulnerable families.

The results contained within the PPP analysis reach several key conclusions:

- The returns required under a PPP investment market are achieved for PRS projects for the three most likely investors in PPP's: Superannuation Funds, offshore MIT investors, and Not-For-Profit investors;
- Subsequently, the returns generated for a Social Housing investment (at nil cost to Government) are achieved for a Not-For-Profit investor, at PPP hurdle rates;

- These returns are highly sensitive to the interest rate environment, supporting investment in a low rates environment, and discouraging investment when rates are rising as is currently the case; and finally
- Leverage and capital structuring are a key value creation tool in project viability. Leverage above 50% is required in order to achieve a hurdle rate of return for a market rate project, with higher rates required for a discounted market rate project, and 70% leverage required to achieve a rental discount associated with the market definition of DMR.

The most significant conclusion of this research is the foundational conclusion that returns for every investor class are higher under the PPP investment model than a traditional investment market. Further, these returns are lower risk, and support the ability of these investments to reduce market rents to low- and middle-income households.

5.8. Conclusion

The analysis conducted within this Dissertation concludes that returns do not justify investment under current economic conditions. As interest rates have risen, low yielding assets have become more exposed to negative returns. Thus, irrespective of the tax class of investor, there is an underlying lack of yield and capital accretion to justify investment into an otherwise safe and stable asset class. As an initial conclusion, this has justified the recent public debate and financial thesis that low yielding assets such as residential property do not meet the returns hurdles expected by institutional fund managers. Given the legal and ethical obligation of fund managers to maximise returns to investors (particularly with retirement savings), such investments are unlikely to be undertaken in the current investment marketplace.

While this research is comprehensive in concluding that hurdle returns are not met, it also provides additional analysis around the reasons for this lack of return. The conditions which result in below market returns are driven by the taxation environment, economic conditions, investment characteristics and leverage assumptions.

Firstly, taxation erodes investment returns at a significantly higher rate than is the case for bond and equities investments. Specifically, the inclusion of land tax is punitive, and results in a tax which is equivalent to around 35% of the total tax burden, eroding between 0.5% and 1% of total returns across the asset class. In a low yielding environment, this tax is particularly high and undermines investment into the sector. However, the inclusion of favourable tax treatment for superannuation investors, and the adjustment to depreciation of asset values results in a favourable treatment for certain investors.

Further, the asset has a relatively high-risk allocation (as reflected in the beta) relative to other social infrastructure asset classes. This has the impact of arbitrarily increasing the cost of equity, and generating a lower NPV. Concurrent with this beta treatment, the RFR environment is elevated from historical standards, which results in particularly punitive investment returns analysis for low yielding asset classes. This factor is the single most sensitive variable in the results and drives the greatest impact on valuation and returns expectations.

Lastly, leverage is assumed to be in line with comparable peers and the ASX REIT index as a broader market. This leverage assumption drives lower returns relative to a higher leverage assumption. Given the opening ICR is well in excess of the covenant levels, there is an ability to increase leverage significantly without resulting in higher cost of financing assumptions. While this research undermines the Modigliani and Miller (1958) capital irrelevance theory, it does so on the basis of an unchanged debt margin as leverage rises from 37.5% to 50-60% leverage, all of which would be considered broadly investment-grade.

Such analysis concludes in an overarching theme that government policy should be focused on taxation reform, along with a general change in investment conditions to reduce project risk and debt funding costs, while increasing available leverage. Such an investment criteria meets the underlying themes of a PPP investment marketplace, which is subsequently considered (among other investment options, which are not considered). As the interest rate, risk/return structure and underlying taxation treatment are all changed simultaneously, there is an ability to make meaningful comparisons between investment structures, using the same DCF model.

The analysis of a PPP investment conducted demonstrates that this structure meets the return levels required to undertake an investment into housing without a significant decrease in tax rates applied to investors. In effect, the analysis above demonstrates that there is a fundamental justification for investment into this marketplace under the right conditions, supporting an investment case to reduce

the rents required for low to middle income households. As such, when conditions are sensitised, there is a foundational basis for the creation of a true DMR product in Australia.

In demonstrating the viability of the investment characteristics, it is noteworthy that the results are highly susceptible to specific model variables, including the risk-free rate, hurdle rate and leverage. As such, the level of rental discount financially justified increases significantly under a number of market conditions.

Additionally, the results again demonstrate that taxation is influential to investment returns under a number of investment conditions, including a PPP model. Further, the rank of project profitability for investor tax class remains unchanged under these different investment scenarios. A favourable outcome of this analysis is that both Superannuation funds and MIT investors are also able to obtain the required rates of return under a PPP model which would justify investment into the sector, in addition to Not-For-Profit investors.

The conclusion of this PPP analysis is to provide initial justification for investment into housing PPP's on a first-principles basis. Given the low return dynamic demonstrated under market rental investment conditions, the returns generated for investors remain higher under all scenarios where a PPP model is utilised. While such a policy would require government rental guarantees to reduce the cost of debt from lenders and the required rate of return to investors, this guarantee would be at low, or no, fiscal cost. This is because below market rent projects are, by definition, the projects demonstrating the greatest demand. In the scenario where a charity undertook such a project, the rents sought would be more than 30% below market rates, benchmarking the investment as a social housing project.

In this regard, the conclusions of this research are two-fold. Firstly, investment dynamics are driven by a number of factors, and taxation reform must be undertaken in line with broader market condition reform and adjustment. Further, PPP's form an investment structure whereby these criteria can be adequately adjusted to reach the required rate of return for a rational institutional investor.

Chapter 6. Conclusion

6.1. Introduction

The research conducted within this Dissertation sought to answer the question:

Under what taxation policy conditions can investment in affordable housing be justified for private sector investors in Sydney? Specifically, do taxation policies alone incentivise investment, or does the sector require comprehensive investment reform to incentivise private sector supply?

The research commenced by determining and quantifying the current Australian housing affordability status quo. Thereafter, historic empirical research was reviewed to assess how this status quo originated. Subsequent research focused on the investment marketplace for PRS and DMR property investments by first analysing if such investments are warranted in the current marketplace. Thereafter, analysis was undertaken as to what tax investor class and investment structure would justify investment in the sector. Lastly, a sensitivity analysis was undertaken to assess the most influential tools and options that impact project profitability, using a PPP investment structure. This analysis has been conducted on a foundational BTR investment in Sydney, the already completed Miranda Meridian project.

This research has been undertaken from first principles at each stage, with no reliance on existing market perceptions of affordability or project profitability. Foundationally, the current housing affordability dynamic has been assessed based on macroeconomic data. This has resulted in a clear initial conclusion that macro-level affordability is predominantly a housing ownership issue. The alternative of renting remains relatively achievable for the median household, despite challenges for lower-income households.

The current marketplace is partially a reflection of the changing nature of domestic housing policy. State and Federal Governments have transitioned Housing from a public good (Yates, 2011), to a financial asset in line with other western democracies. While this transition may have supported reduced rental yields (lowering median rental burdens relative to acquisition costs (ABS, 2022)), it has also reduced the supply of affordable housing for those most in need.

Noting a capitalist theoretical framework utilised by successive Federal and State Governments, there have been continued effort to create private sector solutions to housing supply. To this end, the initial research finding of this Dissertation concludes the PRS sector fails to generate the required rates of return to justify investment by institutional fund managers. Using a DCF methodology, the research subsequently concludes project unprofitability conditions exist for all market rent projects across tax class and more severe unprofitability exists for DMR projects.

Further, tax policies alone do not justify investment, as reducing the tax rate to nil (as is the case for Not-For-Profit investors) only incentivises investment into structured market rate rental projects. It is only through supporting investment stability and increasing appetite for leverage (through a PPP model, as an example), that returns are justified for both PRS and DMR projects. The key conclusions of the results are that Tax policy must be used in conjunction with improved investment risk and increased leverage policies to justify investment in the sector. To this end, tax reform alone is unlikely to justify investment.

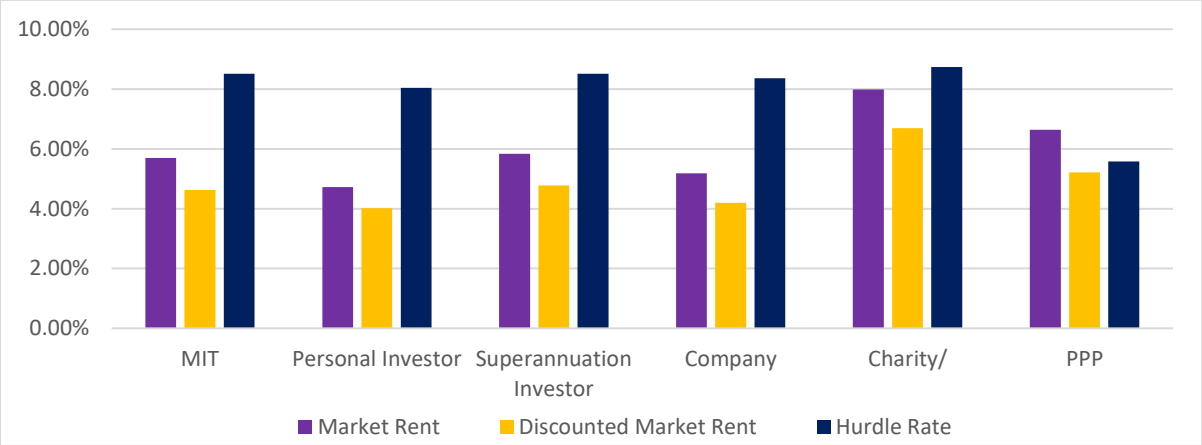
Ironically, the importance of these findings is the revelation that the Australian government has all the required tools to retain the current market conditions for small-scale investors, while improving housing affordability. However, such a policy would require tax, investment and leverage reform,

rather than tax reform alone. The policy proposed within this Chapter would support increasing supply of new-builds, while also providing assistance to low- and middle-income earners.

6.2. Summary and Discussion of Key Findings

The research findings contained within this research reach a comprehensive conclusion that private sector investment requirements are not met in the Sydney market. As detailed in the figure below, these conditions are not met on either PRS or DMR investment criteria, with PPP investments hurdle rates being met for a PRS investment, but not DMR investment.

Figure 32: Investment Returns and Hurdle Rates – Cross-Sectional Analysis

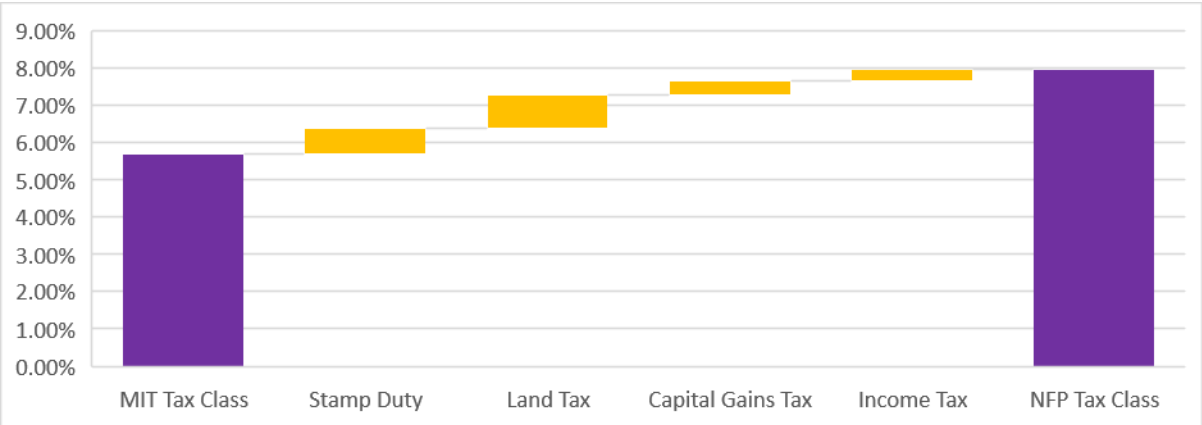


Source: Dissertation Financial Model.

Fundamentally, these conclusions are comprehensive in finding foundational empirical evidence for the lack of existing investment into the PRS and DMR sectors in the Sydney housing market. While these conditions are met for PPP investment, there are currently no housing PPP investment opportunities in existence in Sydney. As such, return requirements are either not met for traditional investments, or do not exist for PPP investments. This supports the comprehensive market commentary included in the 2023 AFR Housing Summit, whereby several investors noted the lack of returns generated by the sector given current market conditions.

To further compare the returns to investors, the difference between the MIT tax class and the Not-For-Profit investor can be compared visually. This analysis demonstrates the improvement in IRR as taxes decline. These results demonstrate that returns are significantly impacted by taxation policy, however these returns still fail to reach the required rates under the CAPM model.

Figure 33: IRR Bridge – Taxation Policy Removal

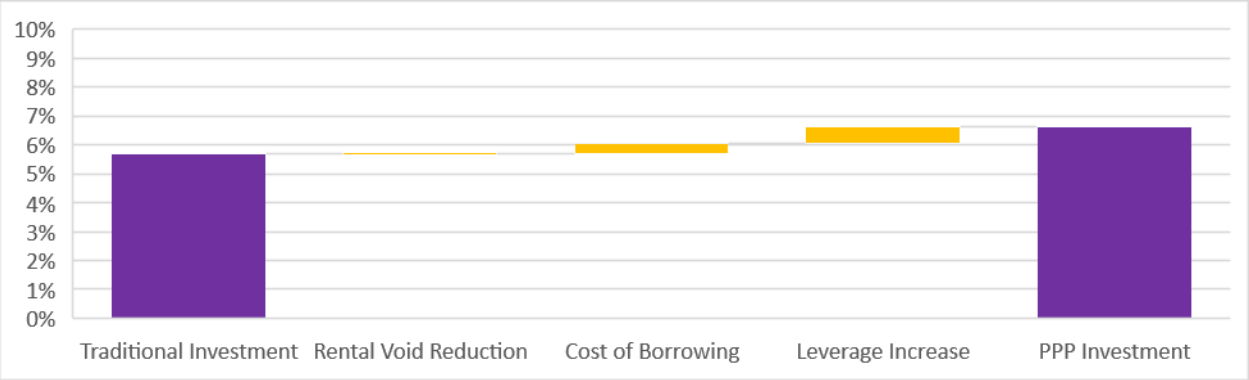


Source: Dissertation Financial Model.

While the above analysis directly compares taxation policies and investor tax class, the dominant rationale for investment under a PPP investment framework is driven by hurdle rate reductions, rather than improved returns. The impact of lower rental voids, leverage and borrowing costs are relatively

minimal compared to the reduction in the discount rate. This can be observed by comparing the MIT Investor with the PPP investor, both of which are MIT investor classes, and pay the same tax rates.

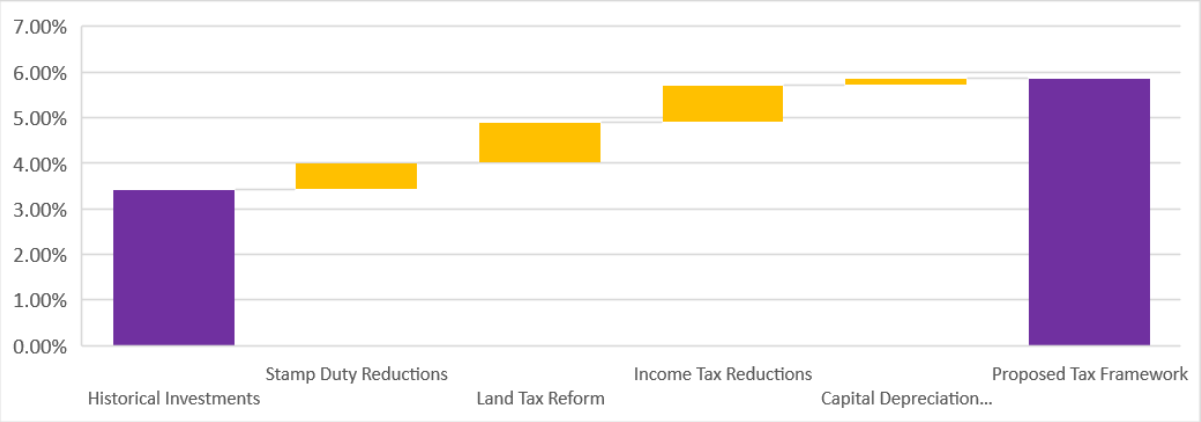
Figure 34: IRR Bridge – Traditional Investment to PPP Investment



Source: Dissertation Financial Model.

Further, recent tax reforms undertaken by successive Liberal and Labour governments to incentivise investment in PRS projects fails to significantly improve investment returns characteristics. As outlined in the figure below, the combination of improved stamp duty treatment, reduced income tax for MIT structures, lower land tax in the NSW marketplace and improved depreciation tax treatment all fail to improve investment returns to levels required by private sector investors, despite the significant improvement in projected IRR's. The figure below reflects both historical tax changes, along with the proposed depreciation adjustment (which is not included in the case study), as a result, the returns figures are not comparable with prior analysis undertaken in this Dissertation.

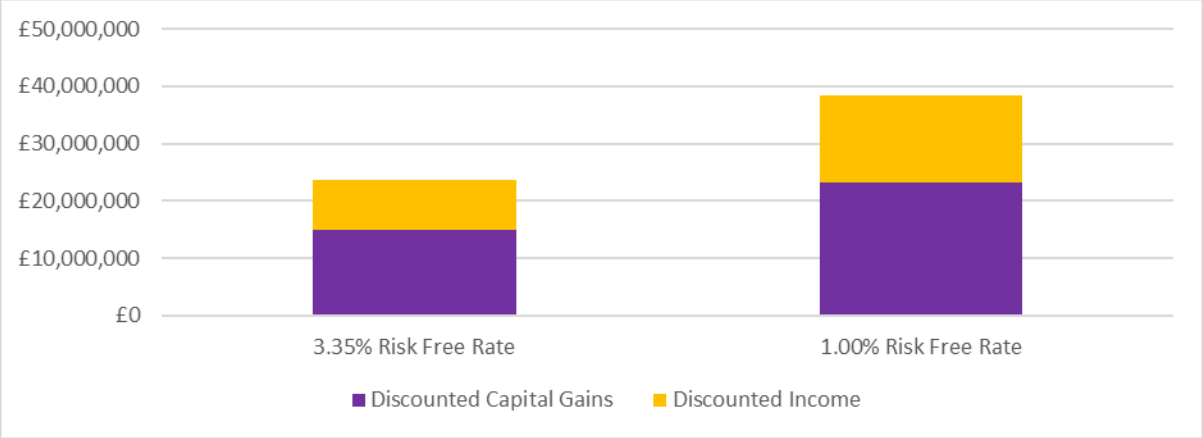
Figure 35: IRR Bridge – Historical and Proposed Tax Reform Analysis



Source: Dissertation Financial Model.

Additionally, as the returns to private sector investments are driven by cash flows, the low yielding nature of the asset disproportionately discourages investment. The figure below details the reliance on capital growth and income in the current RFR environment, along with the 1.00% rate environment. In this regard, it reflects the reliance on capital growth, as the majority of discounted earnings over the investment period are driven by the capital appreciation of the asset.

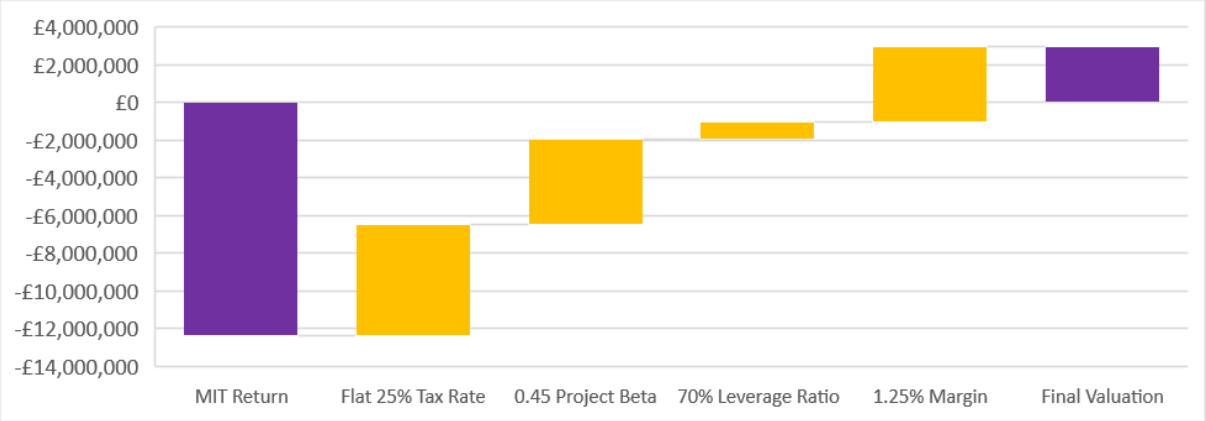
Figure 36: Valuation Analysis Under Different RFR Scenarios (excluding acquisition costs)



Source: Dissertation Financial Model.

The low returning nature of the asset class fails to incentivise investment on market rate projects with no deemed social value. Therefore, there is no ability to generate additional returns which would justify investment by profit maximising investors into social value generating DMR projects. As such, the key findings of this research are that housing projects require tax reform, risk reduction, and leverage support in order to justify investment.

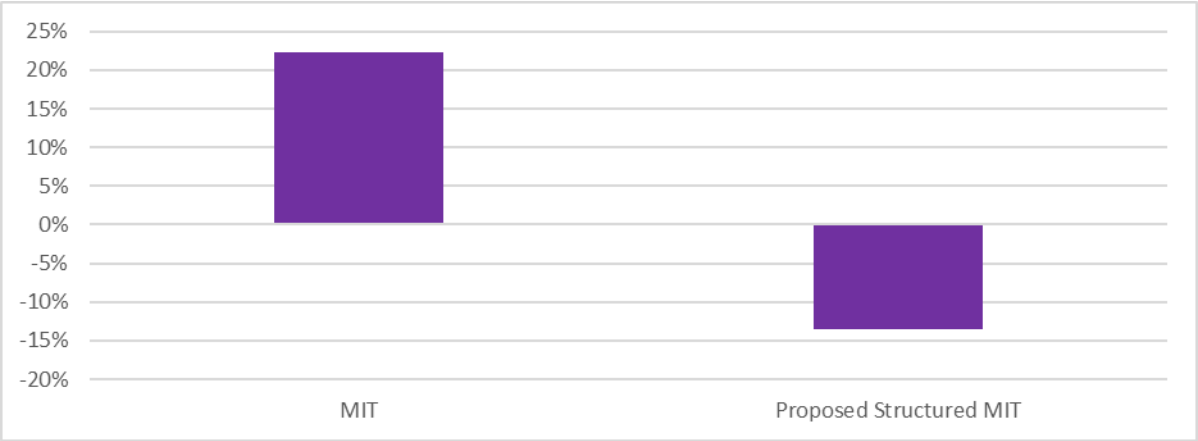
Figure 37: MIT Return Bridge – Current and Proposed Policy Settings (including acquisition costs)



Source: Dissertation Financial Model.

Such a policy proposal would not only increase project profitability, but it would create a possibility to reduce the rental return requirements of investors. Lower rental return requirements would in-turn create a possibility for DMR and Social Housing projects, increasing social value at an effective nil cost to Government.

Figure 38: Rent Change to Market to Achieve Hurdle Returns – MIT and Proposed MIT PPP



Source: Dissertation Financial Model.

As such, the major conclusion of this research is that tax policy must be undertaken simultaneously to rental reform, income guarantees, and leverage support. While a rental guarantee alone would reduce the required rate of return given the counterparty risk, providing mezzanine debt to DMR and Social investors would also provide an ability for the Government to share in returns generated above a hurdle rate, while also encouraging investment in the sector. Further analysis is provided in the policy recommendations section of this Chapter.

Given the above analysis, the conclusion to the Research Question is comprehensive. The conditions warranting investment in DMR and Social Housing investments in Australia require three core criteria to justify investment: tax reform, rental return stability and support for incremental leverage. As detailed hereafter, these conditions justify private sector investment, create an opportunity to reward government risk assumption, and encourage a private sector market which does not currently exist.

6.3. Implications for Practice and Policy

6.3.1. Implications for Practice

The results of this Dissertation provide fundamental support for the industry arguments made against investing in social, DMR and PRS investments in Australia. Specifically, the conclusion of this research supports the argument that the returns projected from such an investment are unlikely to meet the return hurdles of profit maximising private market investors, including superannuation funds or international institutional private investors.

Further to this initial justification for limited investment in the sector, this research provides a breakdown of the reasons for the low returning investment environment. This is done through analysis of the impact of taxation, interest rates and leverage. Such analysis is influential in providing a foundational view of the reasons for the low returning asset class, which remains debated in the market as at late 2023.

Such analysis is influential for the private sector in concluding that the status quo is a result of sound and rational investment decisions. While the results do not change the national discourse, they do prove academically (and from first principles) that the commentary noted from the investment community is both reasonable, and backed by market evidence (subsequently proven empirically within this Dissertation). This supports a more nuanced and sophisticated debate into the future of housing, and methods to increase supply in Australian financial markets.

Despite these findings, the results also conclude that the two greatest factors impacting investment on a forward looking basis are the interest rate environment and taxation policy. Both of these factors are outside the control of private market investors, and as such are of limited use to investment committees within residential investment in Australia.

The greatest potential for this research is the analysis that the project is highly profitable in a lower yielding environment. This supports the preparation of investment opportunities for an environment when interest rates fall. This is currently indicated by the BBSW forward curve, which indicates a market expectation that interest rates will fall over the coming 2-5 years. Such a rates environment would eventually justify investment on both PRS and DMR projects, supporting the industry. As such, the key result of this research is analysis into project timing, rather than a comprehensive dismissal of the asset class.

6.3.2. Policy Recommendations

The policy recommendations contained within this research are general in nature. Specifically, reform in the Housing market requires change across both state and federal tax policies. Such a change requires a comprehensive approach towards taxation rather than changing individual policies. In this regard the analysis conducted within this Dissertation concludes that single policy amendments are insufficient to incentivise investment. Further, effective reform requires policies which both reduce the tax burden on investment, while also increasing the stability of investment returns. As such, the policy recommendations contained hereafter are split into two different components: tax reform and investment risk reduction.

The tax reform proposed within this research is a removal of the levying of land tax, income tax and stamp duty, to replace with a single income tax. While not a major consideration of this research, there is clearly a distorting impact of stamp duty, through increasing the effective cost of acquisition, and disincentivising investment. Additionally, land tax is particularly distortionary on low yielding asset classes such as residential real estate. Lastly, the income tax rates applied on different classes of investor vary materially, across both headline income tax and capital gains tax. A leveling of the playing

field for different investor classes would support a more sustainable investment climate. Such investment reform would incentivise institutional investment, in place of the current cottage industry nature of residential investment in Australia, which artificially encourages investment in housing by small investors (who are not liable to pay land tax).

Secondly, policies must be undertaken to reduce the volatility of investment returns, thereby reducing the required rate of return for investors. Policies which provide greater assurance of rental income have the duel impact of reducing the cost of debt, and also reducing the required rate of return for investors, and would support additional investment in an otherwise low yielding asset class. The provision of affordable and social housing PPPs by way of a operational payment PPP structure would be an effective method of achieving this.

The key policy recommendation made within this research is to undertake comprehensive reform in the market. Individual policies have limited financial impact on project profitability, and commensurately do not have the required effect of incentivising investment for rational investors. Thus, the market must be significantly adjusted for private landlords to be motivated to invest in the sector.

6.4. Limitations of the Study

The limitations within this research are closely linked with the suggestions for further research contained in the next section. These limitations stem from the nature of the DCF methodology, the limited history of BTR investment in international and domestic markets, and the limited evidence of current market conditions which exists in Sydney.

Firstly, the methodology relies on discounting projected earnings to the present day. This methodology includes significant discretion and volatility in results which are dependant on variable selection (as detailed extensively by Damodaran, 2012). Such discretion in assumptions include an averaging effect, as long-term estimates are used over a 20-year horizon, where in reality financial and business markets typically exhibit volatility in the short term. Additionally, this methodology explicitly implies a homogonous asset for investment whereas in reality, there are many investors who would require different returns, and many projects with differing project payoffs.

Sensitivities such as the components of the discount rate, choice of rental and asset price growth and yield all have significant impacts on project valuations, and are subject to model/valuer discretion. In this regard, the choice of a long-term rental growth rate and stable property yields is influential in valuation outcomes. All projects would be valued significantly more favourably in the event yields were to decline, or rents increased at rates over the past 2 years to December 2023 (with Sydney rental growth averaging over 10% per annum during this period (REA Group, 2023)). Additionally, financial market indicators do not exhibit stable growth rates over the medium term, and are exposed to significant volatility over a 10-20 year period. The model assumes stable growth, when in reality rental growth (as an example) typically occurs at rates significantly higher than CPI for a short period, before falling into line with CPI over a longer period (while indicative, this relationship is detailed in the Background Chapter).

Secondly, the current state of the BTR industry in Australia reflects a very limited investment marketplace. The results provide a degree of analysis and financial consideration as to why this lack of investments exists. However, international market analysis has been utilised in order to achieve these results. These international conditions may differ from the Australian market if/when the investment product becomes more widespread. As a result, financial triangulation has been required in order to determine key variables, which requires a degree of assumption and may, in the future, be inconsistent with the Australian marketplace.

Lastly, specific variables utilised within the financial model have limited or no evidence within academic literature. An example of this (among others) is the beta utilised in the investment case study. Betas are typically based off longer-term returns which can be observed in public financial markets. Given no listed BTR investment exists in Australia, there is an absence of evidence of market returns. Additionally, the markets where this evidence does exist have a small sample size of investments (such as the London Securities Exchange containing a single listed PRS investment). This is true for a number of market evidence estimates, including the equity market risk premium, market yields, rental growth, affordability measures and historical analysis in the Australian market, and private sector hurdle rates.

Each of these individual factors have relatively limited impacts on project returns in the comprehensive model. However, they result in unknown impacts on project return expectations for individual investors, and further uncertainty on actual future returns (relative to projected returns). While these limitations are well known in financial markets, they warrant explicit analysis and consideration in further analysis. These limitations also form the basis for future research, given the

near-term RICS valuation proposal to include forward looking DCF assumptions in all future valuation reports, providing a clear rationale for further investigation.

6.5. Suggestions for Future Research

There are four broad future research directions which are created from the conclusions of this research, specifically: measures of housing affordability, assumption verification, real estate investment analysis and taxation reform analysis for both Governments and private sector participants. In this regard, the future research direction seeks to justify the background and results of this research through further analysis of the inputs utilised, creating a clear market standard for real estate investment and analysis. It thereafter seeks to understand the reasons for such investment, and the conditions in the Australian market. Finally, it seeks to further analyse how residential real estate is taxed relative to other asset classes, with a view to providing more comprehensive evidence in support of taxation reform.

6.5.1. Further Research on the History and Composition of Housing Affordability

The research conducted within this Dissertation included significant analysis of the history, trend and relationship between incomes, rental costs and home acquisition affordability. This analysis included the proposition of a new measure of housing affordability incorporating both rental expense costs, and rental interest (occupation) costs. A logical route of further research would analyse the relationship and history of rental costs and affordability in Australia, to determine a new measure of affordability, for use in both public and academic discussion on a forward-looking basis.

6.5.2. Empirical Evidence of Market Assumptions

The assumptions utilised within the financial model have been based of existing academic and grey literature. The 'grey' literature predominantly relates to industry reports which are not academically published and peer reviewed, but provide evidence of market trends and assumptions which impact investment markets.

The below list of assumptions requiring further research is not exhaustive, but rather provides a structure to the future research created by this Dissertation.

CAPM/Beta analysis: The beta used in this Dissertation was based on particularly limited academic research, which provides ripe grounds for future analysis. While the market standard for calculating and assessing betas is comprehensive (with limited scope for further investigation), the application in private markets, unlisted assets and residential markets in Australia and internationally is ripe for further research. In relation to this, a number of courses of future research are justified, including:

- What is the Beta for Residential Property in Australian markets? Does this differ between states, cities and regional areas? Is there evidence of volatility shift over time?
- Is there a difference between volatility and returns in Australia relative to other similar housing markets? Is this beta accounted for by incremental historical returns relative to other markets?
- Is there greater volatility in asset price returns in recent history as real estate leverage has increased, and households invest a greater portion of their income on housing expenses?
- How does this analysis align with other unlisted asset price returns, specifically in relation to private equity and infrastructure fund returns? Do unlisted residential assets provide an opportunity to reduce volatility as has been the case for other unlisted asset classes?
- Is there a returns 'Alpha' (excess returns) generated from investing in lower or higher yielding markets? Are higher yields a driver of lower capital appreciation returns expectations? Alternatively, are higher yield assets more volatile, which would indicate a "value premium", whereby higher yields generate higher long-term returns.

- Is there a statistically different beta for affordable and market-rate residential investments in international markets?
- Similarly, do DMR projects exhibit a lower yield to result in the same returns on a risk-adjusted basis as PRS investments? What is the interplay between risk and return for PRS and DMR projects?
- Do historical market conditions and valuations provide support for the aforementioned CAPM variables? When back testing, do these variables support investment decision making?

The course of research conducted above would constitute a general review of the conditions and returns expected in the residential housing marketplace. As a result, it would determine if the returns expectations from housing under a CAPM methodology are academically sound across both PRS and DMR projects. This is of particular relevance in a global marketplace whereby the RICS valuation methodology (and framework, as a valuation regulatory body) will include DCF valuation on a forward looking basis from 2024 (RICS, 2024).

Income, Expense and Net Income Analysis: While there is evidence that rental growth is generally consistent with wage growth, this evidence is both historic, and has limited evidence in the Australian market. Additionally, evidence of rental costs and capital expenditure is limited across both costs as a proportion of asset values and as a percentage of revenue. Generally, these raise a number of questions around the nature of revenues and expenses in residential property, as detailed below.

- Do BTR projects command a rental premium over traditional PRS projects? If so, does this exist in the Australian market, and to what extent?
- Does wage growth form an effective proxy for rental growth in the Australian market? Does this differ across states, regions and cities? Is this an effective measure of BTR rental growth across both PRS and DMR projects?
- Are forecast rental expenses better made through the proxy of either a proportion of rental income or a proportion of asset value? Do these expense ratios differ over time, between countries, and domestically, between cities within the Australian market?
- Are there operational efficiencies in operating BTR assets relative to private market investment by individual Australian investors? Specifically, are the operating costs of a institutionally owned investment lower than private individual residential investment.

In relation to these future sources of investigation, further analysis is predominantly focused on the operating environment of Residential Real Estate in the Australian marketplace. The investigation of each of these variables provides an academically sound and empirically proven basis for analysing future real estate projects, under a CAPM framework.

6.5.3. Empirical Evidence of Investment Characteristics

Investment Yields and Valuation Environment: given the recent establishment and proliferation of BTR investment in the global marketplace, there is now evidence of the valuation environment which was not previously available. To this end, there exist several additional sources of inquiry which have not yet been developed:

- Do Residential property yields exhibit greater stability relative to other forms of commercial property investment? Are they statistically different investments, or do they retain the same investment characteristics as other forms of commercial property?
- To what extent is the valuation and investment climate driven by the RFR environment? Does the RFR provide a credible indicator of forecast yields in residential markets?

- Are yields an effective property valuation metric given the heterogenous nature of the marketplace? Are there other indicators of property value which should be considered in the BTR asset class?
- To what extent have historical returns differed to the returns forecast under a CAPM model in prior historical time periods? Does this support, or discourage the use of a CAPM model to determine asset values for residential property?
- Why have historical returns differed to the projected returns from this Dissertation? Can yields continue to fall, as prices rise at a rate greater than wage growth?

In effect, the future course of research is driven by the recent establishment of the BTR asset class in Australia and globally. This forms the basis for future for-profit affordable housing investigation, which is not currently viable as per the results of this Dissertation. Such investigation will provide a more sophisticated academic environment to analyse property investments across both PRS and DMR investments.

6.5.4. Taxation Reform Analysis and Considerations

The analysis conducted within this research supports additional investigation into the nature, types and levels of taxation in the Australian residential investment environment. Specifically, the nature of taxation on residential investment (when compared to other forms of investment) warrants further investigation to determine the tax burden in the market, and the potential for reform of this marketplace. This extends to the benefit of the current taxation environment for governments, and the potential for future reform, while retaining or increasing taxation revenues. In this regard, the future opportunities for investigation are as follows:

- What is the financial impact on stamp duty tax reform for both Government and Private Investors? Is there an arbitrage whereby governments can increase tax revenue, while investors can obtain a higher rate of return due to the different returns expectations?
- How do taxes on investments in residential property compare to the taxes levied on other asset classes?
- What is the difference in investment returns for small investors in residential real estate relative to institutional investors? Are cottage industry investors disproportionately incentivised to buy residential real estate?
- Can governments increase taxation revenue by levying stamp duty on the sale of a property, rather than the purchase of a property? To what extent can this tax be amended?
- What is the taxation reduction which would support a 15-20% reduction in rents, equivalent to transitioning a project from a PRS investment to a DMR project? What are the required rents which would justify investment into DMR investment in the Sydney market? How do these compare to the headline rent levels which reduce land tax in the NSW market?
- What is the relative tax treatment for private individuals relative to institutional fund managers within residential investments in the Australian market? Does the improved tax treatment of private investors result in housing becoming a rational asset class for investment?
- Under what conditions can PPP investment opportunities provide an ability for Governments to increase taxation revenue, while providing lower cost housing for low- and middle-income households. In effect, is there an arbitrage whereby PPP's can create effective DMR investments while also incentivising investment where it would not currently be justified.
- To this end, can PPP's provide a "win-win", where projects can be undertaken at no cost, utilising government guarantees, in order to increase supply?

- How can policy be prepared for a lower RFR environment, and specifically, what policy can be implemented now for the future environment indicated by the forward BBSW curve?

In effect, the future course of taxation research relies on analysis of the distorting impact of taxes, and its impact on project profitability. Thereafter, analysis can be undertaken on potential opportunities for reform, and incentivisation of DMR projects in place of PRS projects. This includes both traditional and PPP investments.

6.5.5. Broader contribution and holistic theoretical framework design

Lastly, the research conducted within this Dissertation forms the foundation for analysing taxation, housing and market failure in Sydney (as a case study of Australia). limited specific analysis has been undertaken on the theoretical framework under which housing market failure has occurred in the Australian marketplace. This omission of research has been done to create the conditions required to focus on the nature of housing within the broader economic environment, the key focus of the research question. Despite the focus of the study, such an approach excluded key analysis of the theoretical framework and accordingly, presents a significant future pathway for research.

Such a framework will, once developed, form a key long-term contribution of future research in the causes and solutions to Australia's housing "Crisis". As such, further research, including the analysis detailed above, will contribute to a theoretical framework of analysing the actors, the roles of these actors, and the appropriate design theory for the current housing market failure dynamics.

Additionally, the conclusions of this paper assume an inherent similarity between residential real estate and other forms of real estate. In this regard, while aforementioned research directions propose to consider the risk and return relationship of housing, further analysis must be considered into the nature of housing relative to other sub-sectors of the real estate asset class. Such research contributes to the prospect for meaningful contributions to market design research.

6.6. Final Thoughts and Conclusion

The findings contained within this research concludes that Housing affordability is a critical issue in Australian society. Under current market conditions, investment is not justified by rational institutional investors, and as such significant reform is required to increase supply. This reform must be targeted, and include tax simplification and alleviation, along with risk reduction in support of a lower risk, higher leveraged asset class. Traditional investment options are unlikely to generate the required rate of return for rational investors, and as such Governments should consider more structured investment opportunities to increase the provision of affordable and social housing for the Australian public.

This research reasserts the public discourse around private market investment in housing. Change is required in order to improve housing affordability outcomes across both ownership and renting in Australia. Through undertaking these policies, there is a tangible opportunity to either reverse the trend of property price appreciation (relative to wages), and failing that, to stem the increase in order to ensure Australia does not become a national of financially stressed renters, as is the case in other international markets.

While institutional investment in housing is unlikely to be the silver bullet to improving housing affordability, it forms a cornerstone of housing supply policy. Given general social and economic unwillingness for housing prices to fall by the required 50% to revert to historical house price income multiples, such a policy can support the stemming of housing price growth rates, and at least provide a degree of stability in prices together with improving affordability of outcomes for low-income households.

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