The Behaviour of Residential Rental Property Investors in New Zealand: A Bounded Rationality Framework

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Abstract

This paper attempts to explain the motivations of residential rental property investors in New Zealand in terms of the behavioural assumption of bounded rationality. Investment in residential rental property holds prime place in the portfolio of many New Zealanders. This paper attempts to explain why this is so. Commencing with a rejection of the more standard neo-classical economics view of rationality to explain the behaviour of these investors, the paper sets out the bounded rationality notion. It seeks to both examine the extent to which this notion applies to the behaviour encountered and to elaborate on that behaviour. An intuitive bounded rationality framework is then set out and suggested as useful for examining individual behaviour in the area of residential rental property investment. The discussion is underpinned by the findings of a postal survey of a large nationwide sample of private residential rental property owners, but is more directly based on a study of a smaller sample of investors using in-depth interview techniques. Data collected has been analysed using the SPSS statistical programme and qualitative analysis of the interview data has been overlaid to more thoroughly explore the framework of constraints within which individual investors operate. This also provides an interesting opportunity for anecdotal evidence to be added.

Introduction

Rationality is the core behavioural assumption in orthodox neoclassical economics. Principles of maximisation, self-interest and consistent choice commonly underpin this view of the rational economic actor. There is broad consensus however, among several heterodox strands in economics that this mainstream notion of rational behaviour is an inadequate representation of both rationality and actuality. Instead, the bounded rationality rubric has increasingly been embraced. Simon a pioneer of bounded rationality, sees it as distinguishing between 'the perfect human rationality that is assumed in classical and neoclassical economic theory and the reality of human behaviour as it is observed in economic life' (Simon 1992: 3). This paper examines a large sample of

residential real estate rental property investors in New Zealand, to argue that what appears to be 'irrational' behaviour under the neoclassical economic notion of rationality, 'fits' within a bounded rationality framework.

The paper commences by outlining the key elements of bounded rationality, drawing attention also to difference from the neoclassical rationality interpretation. It then sets out selected findings of the study of residential rental property investors and interprets these from a rationality perspective. The intention of this paper is to put forward the bounded rationality perspective as an important complement to other theoretical approaches in behavioural real estate research, which is itself a relatively new area of study. In particular, we suggest it could be a useful supplement to the work that considers the role of heuristics[1] in affecting real estate decision-making (see for e.g. Diaz 1990a, 1990b, 1999).

Bounded Rationality

The behavioural assumption of bounded rationality embodies rejection of perfect knowledge and optimization on the part of economic actors, which characterises the treatment of rationality in the neoclassical orthodoxy and instead involves an element of being limited or bounded. Simon's definition of bounded rationality as '*intendedly* rational, but only *limitedly* so' (1961: xxiv), captures well the essence of this assumption. In the neoclassical state of 'perfect human rationality' constraints are all located in the external environment. By contrast, Simon's concept of bounded rationality sees constraints also arising from the cognitive limitations of individuals themselves, in particular their lack of ability to 'take account of all the available information, compile exhaustive lists of alternative courses of action, and ascertain the value and probability of each of the possible outcomes' (Hindess 1988: 69). Recognition of such cognitive constraints led Simon to substitute the orthodox notion of maximising behaviour with that of 'satisficing' behaviour (Simon 1957). By satisficing, Simon was referring to behaviour that would yield satisfactory outcomes, not necessarily according to the maximum of the perfect rationality model, but nevertheless outcomes beyond the minimal.

The bounded rationality perspective, shifts the emphasis from neoclassical 'homo economicus' who exhibits characteristics of maximisation and consistency based on perfect knowledge, to acknowledge imperfect knowledge and satisficing behaviour. Bounded rationality thus offers a more promising view of rationality to that accepted in mainstream economics. In particular, we observe that inherent in the notion of boundedness is an implicit recognition of the impacts of the wider social context on economic behaviour. We suggest this rationality view as a more meaningful interpretation of the investment behaviour observed in our empirical study of residential rental real estate property investors.

[1] Hardin explains this well: 'A heuristic is a cognitive short-cut that allows for a reduction in the amount of information processed. It, in essence, is a cognitive data reduction process. Cognitive process simplification can be based on data, as well as declarative and procedural knowledge.' (1999: 350).

Setting the Context

By world standards, New Zealand is a nation of homeowners, with a home ownership rate of 71% at the last 1996 Census of Population and Dwellings.[2] Given this high home ownership, it is not surprising therefore that equity in owner-occupied housing is the dominant wealth category, accounting for almost 50% of total assets among New Zealanders. Equity in rental property however, at around 6%, accounts for a relatively small proportion of the estimated total wealth (Equal Worth Report, 1999). There are nevertheless a significant number of property investors, with unofficial figures suggesting that there are approximately 80,000 people out of the nation's population of 3.8 million actively involved in investment in residential income producing properties.[3] Little in-depth empirical research on the motivations for investment in rental housing, however, had been carried out prior to our study of residential rental property investors in 2000.

The primary aim of our study[4] which comprised data collected through a postal survey with 967 responses and 35 in-depth interviews, was to examine the economic and social factors that impact on the decision to invest in residential rental property. Our research was particularly timely since the rationale for the preference for property in the investment portfolios of the household sector was increasingly being questioned. For instance, the Governor of New Zealand's Reserve Bank had pointed out that real estate investment is non-productive and insignificant in relation to increasing the nation's economic output (Reserve Bank, 1998:4). Moreover, in the face of New Zealand's current very low inflationary climate the capital gain potential of property investment, prominent during the high inflation 1970s and 1980s, had significantly diminished.

Selected Findings of Our Study

In this section of the paper we highlight relevant findings of our study, in relation to rationality interpretations.

a) Capital Gain and Wealth Accumulation

Economic reasons motivating the property investment decision provided in our questionnaire, included options that captured such motivations as expected return on investment, wealth accumulation through long term capital gain/growth and attitude to risk. We found that wealth accumulation and long-term capital gain was the most important consideration in the property investment decision. 43% of respondents ranked this as their first most important reason for engaging in rental investment. A further 17% indicated it as their second most important reason. The fact that capital gains features so

[2] Ethnic differences in home ownership rates are however, also a feature of New Zealand's housing scenario. Maori, the indigenous people of New Zealand, and Pacific Islanders make up 14.5% and 5.6% respectively of the country's 3.8 million population. These two ethnic groups have significantly lower home ownership rates than of non-Polynesian households who comprise 80% of total population. Thus the Maori rate of 53% and the 44% rate for Pacific Islanders contrasts with the 75% home ownership rate of non-Polynesians (Statistics NZ, 1998).

[3] Personal communication from the Secretary of the Auckland Property Investors' Association.

[4] For methodological and other details of this study, see de Bruin and Flint-Hartle 2000.

prominently as a reason for investment is not unsurprising in the light of a general trend of capital gains and wealth increase that has historically been afforded by urban residential property in New Zealand since the 1970s. Considerable and sustained capital gains and wealth increase particularly from housing in the Auckland region is a feature (Dupuis and Thorns, 1997; Dupuis, 1992).[5] The majority of our respondents were from this region. As the concept of 'real wealth increase'[6] (Dupuis, 1992) highlights, when measured in real terms, the smaller the outlay of the investor's own equity in the property, i.e. the size of the deposit, the greater is the wealth increase. Hence, 'it is even possible to make real wealth gains from nothing but the capacity to pay a mortgage, to the extent that if all of the purchase price of a house can be borrowed, upon resale all the relative increase accrues to the owner' (Dupuis, 1992). It would appear that this idea of real wealth increase receives implicit support in the interviews, with several commenting that it is possible to 'get rich because the tenant pays the mortgage'. With financial institutions increasingly willing to lend on smaller sized deposits, the scope for real wealth gain does however increase. Banks in New Zealand will lend up to 95% of the purchase price or the valuation, whichever is lower, if the purchaser's income will sustain repayments. In addition many people who already own property can use their equity to obtain 100% financing on new properties. However, in the interviews we detected a growing perception that negative gearing in the then current economic climate of uncertainty and upward movement in the interest rate, was more risky than in the past.

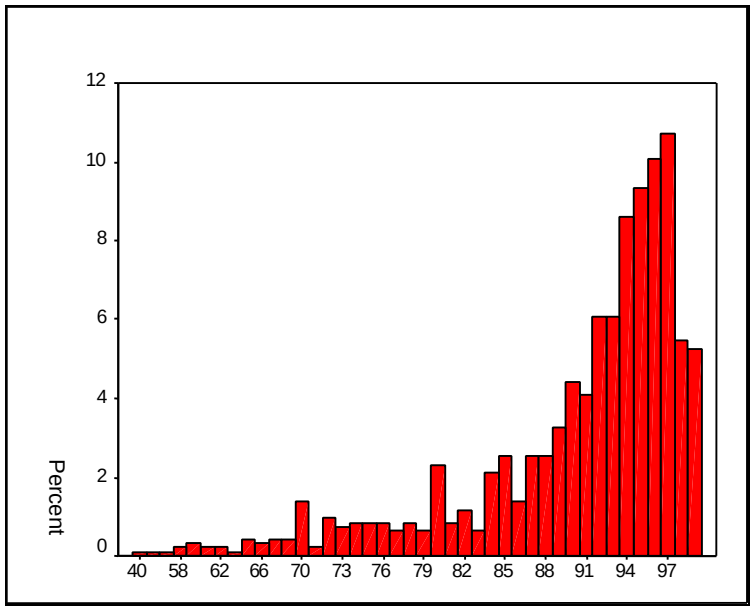
Contributing to the expectation by property investors that they will benefit from capital gain and wealth accumulation is the fact that New Zealand, unlike several other countries, does not have a capital gains tax on housing. Furthermore, in comparison with the other investment option of equities, over the last 10-15 years residential housing has outperformed the New Zealand sharemarket and local investors have not taken to the international sharemarket in large numbers. The barometer NZSE40 Capital Index increased by only 10.6% in the decade December 1989 to December 1999 in contrast to the 66% gain on residential housing (Gaynor, 2000). Moreover, the three listings: Brierley Investments, Fletcher Challenge and Robert Jones, which had the largest number of shareholders at the end of the 1980s, produced negative returns (Gaynor, 2000). NZ is unique globally in that house prices have outshone shares in the last 15 years (Gaynor, 1999). While pointing to the influence of timing of buying and selling of assets influencing outcomes, Bourassa and de Bruin (1998) show that in overall terms capital growth of the housing market outperformed the share market over the period 1965-97, with the exception of 1986 when the share market was at its peak. Graphing the real indexes of capital growth, they show that each of the housing market series has had generally better capital gain than the share market. The Auckland housing market shows a clearly spectacular performance from 1973-1997 and only marginally under-performed shares, again in 1986, which marked the zenith of the share market boom in New Zealand. Though less spectacular, the major urban areas of Christchurch and Wellington

[5] It should be noted here however that general calculations of financial gain could be problematic not only because the periods chosen affect calculations but also because there is no easy way of taking into account other factors such as improvements that have been made to the property. Dupuis, 1992 provides a good discussion.

[6] Calculated as the selling price less final mortgage debt, selling costs and the deposit. The real wealth increase is calculated by inflation adjusting the deposit.

also did well in comparison with the share market. The greater capital growth of housing when examined in five year holding periods provides mixed results for the three main centres and all New Zealand housing. Once again however, in the five-year periods since 1984 to 1997, the Auckland market produced real capital gain (Bourassa and de Bruin, 1998). This evidence supports superior performance of residential property in New Zealand and thus investor motivation driven by wealth accumulation and capital gain may be interpreted as optimising rational behaviour in terms of standard neoclassical notions. Nevertheless a closer look at the years in which our survey respondents had first begun to invest in rental property as shown in figure 1, reveals the majority of investors had first invested in this option after the low inflation climate had become entrenched in New Zealand. By the end of 1991 the Reserve Bank of New Zealand had been successful in bringing underlying inflation within the required 0-2% band and a low, relatively steady inflation climate now appears embedded in the economy. In such a low inflation climate the potential for capital gains is reduced. Yet as figure 1 shows many of our respondents commenced rental property investment in a low consumer price index inflation period after 1990, with rental property investment peaking in 1997. This would suggest that the investors were largely basing their investment decision on historical patterns of capital gain. It would be more appropriate to claim therefore that the investment decision was not optimising behaviour but one of bounded rationality, especially if it is argued that the implications of low inflation for capital gain had not been fully taken into account.

Figure 1: Year of Entry into Residential Rental Property Investment



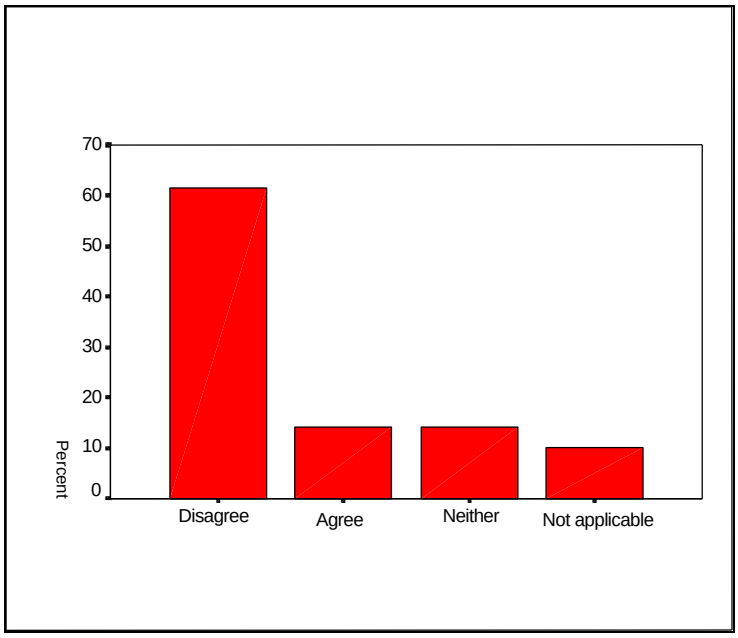
Offsetting the bounded rationality argument however is the consideration that capital gains can be made by individual investors if both location factors and the initial purchase price are regarded as a vital part of the investment decision and the maximisation of wealth accumulation. Thus, even if there is little or no overall house price inflation per

se, capital gain could eventuate on specific properties. For example, a 41-51 year old male investor, whose chief reason for investment in property was the expectation of capital gain, told us that he was aware of the low inflation climate eroding the possibility of high capital gain. His motivation for property investment resting on making capital gain, however, relied on bargain buying. Another interviewee expressed his determination to purchase wisely. He would make an offer and be prepared to 'walk away' if it was not accepted. Another couple of interviewees, who were professional licensees in real estate, believed that they should 'practice what they preach' and felt they were sufficiently knowledgeable and confident to 'buy well in given locations'. Evidence is therefore mixed. As already highlighted, this was a period of high house price inflation, particularly in Auckland. In fact as O'Donovan and Rae point out, in 1996 the house price boom impacted on the inflation itself, adding around 1% to the underlying inflation rate (1997: 176). The decision to invest in property at that time cannot be judged non-optimal for these individual investors, provided that they did indeed purchase at below market value and in locations with consistently high demand.

b) Assessing understanding of the implications of low inflation

The bounded rationality concept sees constraints arising from the cognitive limitations of individuals themselves, particularly their lack of ability to embrace all available information. It would be relevant therefore to delve deeper into the issue of whether investors who were so focused on capital gain, really understood the implications of the low inflation regime. The statement: 'I would not have bought a rental property if I knew that very low inflation was here to stay in New Zealand' was used to assess the impact of low inflation on the decision to invest. We asked that respondents agree or disagree on a five-point Likert type scale. The 'not-applicable' option was also included because we thought that some reasons for purchase such as family reasons would render this statement inapplicable. Figure 2 groups the strongly agree/disagree and agree/disagree responses into 2 categories and shows that over 60% would still have invested in property despite knowing that low inflation was entrenched.

Figure 2: Impact of low inflation



Examining the link between educational levels and agreement or disagreement with this statement, we found that education had probably influenced the result (Chi-Square value 29.753, 12 degrees of freedom and P value 0.003). It may be argued that more educated respondents, that is those with degree and postgraduate qualifications, would be more inclined to agree with the statement since they would have a better understanding of the implications of a low inflationary environment for lessening potential returns through capital gains. There was support for this argument when the $(O-E)^2/E$ (as used in chi-square testing) values were calculated. These values are presented in Table 1 below.

Table 1: Link with education level and investment in a low inflation environment

Education	Disagree	Agree	Neither	N/A
None	1.55	0.30	1.58	15.28
High-school	0.20	0.13	0.30	0.00
Diploma	0.11	0.00	2.60	1.19
Degree	0.05	2.15	0.14	0.53
Post-grad	1.13	2.16	0.30	0.07

From Table 1 it is seen that the values of 2.15 and 2.16 in the agree cells, for degree and post graduate qualified respondents respectively, are much higher than those with lower qualifications. Extending from this result, it may be suggested that those respondents with less education were more constrained by their cognitive capacity to understand that there could be a reversal of the historical trend in high capital gain from property. Nevertheless, the interview data confirmed that there was indeed an understanding that low inflation eroded the potential for capital gain. This did not generally alter the belief that the decision to invest in property was a sound one. None of the interviewees

however, conveyed a sense that they were after optimising their gains, rather there was an overwhelming sense of comfort with their investment, which leads us to interpret this as satisficing behaviour.

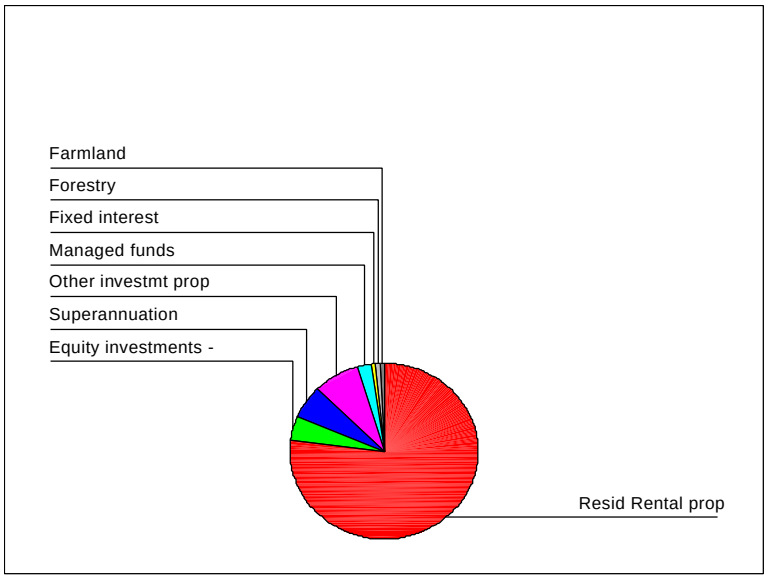
c) Portfolio diversification and attitude to risk

A diversified portfolio, so that risk may be spread, is a standard rule of investment. We may therefore interpret a non-diversified or poorly diversified investment portfolio as non-optimal. Our study sought to assess the degree of diversification of the investment portfolio of residential rental property owners. We asked respondents to rank their investment categories in order of importance. Six categories were specified: residential rental property, other investment property, equity investments - shares, managed funds, superannuation, fixed interest and 'other – please specify'. This latter category yielded forestry and farmland, which were also incorporated as separate categories as shown in figure 3. Residential rental property was the most important investment in the portfolios of 77% of respondents. Together with other investment property, property comprised the most important investment for 85% of respondents. Simply on the basis of the number of investment categories in a portfolio, 22% had a totally non-diversified investment portfolio, holding only property.

Our data appears to confirm that in general, rental property investors tend to concentrate their investment in property. This finding was not unexpected. As pointed out previously, there is a national predilection toward property. The savings portfolio allocation of New Zealanders is also heavily skewed toward housing with a higher proportion of savings in housing than their counterparts in most other OECD countries (Joint Working Group, 1999). This coupled with the general historically superior capital growth of housing, supports the inference that the investment decisions and portfolios of our respondents may indeed be satisficing, if not optimal, for them.

Interestingly, 19% of male respondents had only property in their investment portfolios, compared to 30% of women who had a completely non-diversified portfolio. Even if we are to interpret a non-diversified portfolio as more 'risky', it must be emphasised however, that 'in practice, risky financial decisions are inherently contextual' (Schubert et al., 1999). This was generally supported by our interview data. For example, two women interviewees were trying to build up a retirement 'nest-egg' after marriage break-ups and considered property a 'safe' way to do this. A couple of men interviewed had made losses in the share market. Another woman who only had property in her portfolio had acted purely on the advice of a financial planner whom she trusted and her investment fitted well with a projected long-term plan for retirement. Within their decision-making context therefore these investors may be said to be rational, abeit 'boundedly' rational.

Figure 3: Most Important Investment in Portfolio



We sought to capture attitudes to risk in the reasons for investing in residential property - 'It is a low risk investment'. While only 3% of valid responses ranked this as their most important reason, the proportion of respondents influenced by this factor in their decision to invest in property steadily increased down the ranking scale. Thus for 9% it was the 2nd, 12% the 3rd, 14% each the 4th and 5th important reason. It could be inferred from these results therefore that a preference for low risk investments significantly influences the portfolio-composition decisions of residential property investors. Whether or not residential rental property is in fact of low risk investment, however, is a matter of debate. As a study commissioned by the Reserve Bank of New Zealand warns, 'values can be pretty wobbly in the short term' and advises 'shed the lessons that were learnt in the 70s, like property is a bullet-proof asset' (Holm et al., 1998). Yet the respondents in our survey, with support from interview data, believed that they are in a low risk investment. Certainly the majority of respondents looked on their investment as long-term with 71% intending to hold their current rental property for over 10 years. This once again supports the idea that the degree of risk of their investment is indeed low, risk reducing with the length of time of intended holding.

If we are to set the low risk preference of these residential property investors within the context of rationality, we could argue along lines of 'lower the risk, lower the returns' and thus a non-optimal approach. Our interview data also showed that investors did not engage in any formal and comparative risk analyses. They did not use any risk analysis techniques and criteria. The investors did not effectively process risk and uncertainty to arrive at optimal, rational conclusions. They relied on intuitive risk evaluation of their investment. Rather than categorise this behaviour of failing to deal with the full complexity of risk evaluation as irrational, we suggest it demonstrates bounded rationality.

d) Calculation of Returns

The 'good investment return' reason for investing in residential rental property was only ranked first by 8% of respondents and was the second most important reason for 13%. Perhaps this lower percentage ranking is accounted for by the fact that it appeared from our interview data that the vast majority of property investors do not attempt to make detailed calculation of expected return on their investment. Of the 35 interviewees, only one made computer calculations of returns although three others worked closely to 5-7% projected returns. Others mostly had a 'gut feeling' that they were getting a good return. Nevertheless all of the interviewees had their own individual way of assessing returns and were confident that their investment was providing a 'reasonable return'. As table 1 below shows, over the longer-term, they were not wrong. Although it is seen that the effective annualised real return, which takes into consideration different variances of return, was better for shares than for housing, even if the returns on shares are higher, 'it is not immediately obvious that investing in housing is sub-optimal. This is because it is quite logical for an investor to accept the lower return on housing if they do not consider the extra return from the stock market to be sufficient to compensate for the additional risk and effort' (Joint Working Group, 1999). Moreover, a change of the time period to 1987-1997, shows the sharemarket outperformed by all of the other 3 asset categories in Table 2.

Table 2
Returns for New Zealand Asset Classes 1970 – 1998

Asset	**Effective Annualised Real Return (%)**
NZSE40	5.54
Housing	4.38
6 month deposit rate	0.72
10 Year Government Bonds	1.23

Source: Joint Working Group, 1999 Table 3

Despite the lack of mathematical calculation of expected returns leading to an inference of irrationality in terms of neoclassical economic criteria, the general 'feel' for the housing market that the investors had, conformed with the reality of superior returns to housing relative to other investment options, lending support to the bounded rationality thesis.

Concluding Comment

Evidence from our study of residential rental real estate investors in New Zealand gives credence to the behavioural assumption of bounded rationality. Certainly viewing property investor behaviour from this satisficing perspective gets around the perception of investors as 'irrational', implied if their behaviour is framed within rationality according to the economic orthodoxy. We believe that bounded rationality is a useful

supplement and complement to behavioural research in real estate that incorporates heuristics.

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