Research Consultancy Service

Literature review on the impact of demand-side housing subsidies on the housing market

authored by

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for

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AHURI
Australian Housing and Urban Research Institute

ABOUT AHURI

The Australian Housing and Urban Research Institute (AHURI) is a not-for-profit independent national research organisation. AHURI's mission is to deliver high quality, policy-relevant evidence for better housing and urban outcomes. AHURI conducts and disseminates high-quality research on housing and urban issues to inform the policies and practices of governments, industry and the community sector, and to stimulate debate in the broader Australian community.

AHURI's Research Consultancy Service provides concise and targeted analyses and explanations of research evidence, and offers innovative research and engagement processes to draw out local implications from the highest quality knowledge base. The Research Consultancy Service brings expertise in research, evaluation, and policy analysis with skills in consulting with a range of stakeholders.

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The AHURI Research Consultancy Service team brings together experience and expertise in the areas relevant to the project and skills in research synthesis and evaluation.

ABOUT THE AUTHORS

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Nicola is a research specialist with over 15 years' experience in a wide range of areas related to public policy, social justice and disadvantage. Nicola has expertise in the design, implementation and analysis of research in both academic and applied contexts, and has worked with a variety of stakeholders from the not-for-profit, government and community services sectors.

Prior to working at AHURI, Nicola was a Research Fellow at the Swinburne Institute for Social Research at Swinburne University. In this capacity she recently completed projects on the benefits of financial counselling and case management for people in financial stress; social innovation in the housing market; and housing security for older women.

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Ashton de Silva is an econometrician with particular expertise in modelling the housing market, including using hedonic approaches. He has an established profile as an academic property market analyst. He has written several academic papers in the area as well as posts for RMIT University's official blog outlining different aspects of the Melbourne Metropolitan housing market. In addition, Dr Ashton de Silva's expertise in the property sector is evidenced by his attainment of funding for various projects including *Who Started the Fire: Has Residential Mortgage Innovation Fuelled a Housing Affordability Crisis* and how ownership accessibility of households by income cohort has changed over the past two decades. He is also currently supervising PhD candidates in this project area.

Ashton's profile is not limited to the property market having published in various A and A* journals as well as working for various industry clients in public policy, the findings of which have also been published in academic mediums as well as the mainstream media.

Dr Michael Fotheringham, Deputy Executive Director and Head of Research Services Group, AHURI

With hands-on experience of the interplay and tension between research and policy development, much of Michael's career has focused on roles that have strong policy development components, including direct responsibility for formulating evidence-based policy and advocating for policy change. He is a highly experienced facilitator, with significant experience as a plenary speaker at international and national conferences; as a speaker for lay audiences and the media; and as an author.

Michael has expertise in building research programs and policy agendas for not-for-profit, government and academic organisations. He is a past President of the Australasian Society of Behavioural Health and Medicine. Michael has extensive experience in management of complex multi-site projects, and in quantitative analysis of complex datasets.

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ACRONYMS

AHURI	Australian Housing and Urban Research Institute
AL	Allocations Logement (*France*)
ALF	L'Allocation de Logement Familie (*France*)
ALS	L'Allocation de Logement Sociale (*France*)
APL	L'Aide Personnalisèe au Logement (*France*)
AS	Accommodation Supplement (*New Zealand*)
EHAP	Experimental Housing Allowance Program (*New Zealand*)
FIDS	Finnish Income Distribution Survey (*Finland*)
FNPS	Finnish National Pension Fund (*Finland*)
FRS	Family Resources Survey (*UK*)
HB	Housing Benefit (*UK*)
HNZC	Housing New Zealand Corporation
INSEE	Institut National de la Statistique et des Etudes Economiques (*France*)
MSD	Ministry of Social Development (*New Zealand*)
NZRHM	New Zealand Regional Housing Model
SOEH	Survey of English Housing (*UK*)
TLA	Territorial Land Authority (*New Zealand*)

1 EXECUTIVE SUMMARY

This report provides a systematic review of the empirical New Zealand and international research literature on the impact of demand-side housing subsidies on the housing market. Specifically the review sought to identify the extent to which housing allowances are 'captured' by landlords through rising rents versus improving the material living standards of subsidy recipients.

This review identified eight empirical papers from four countries (New Zealand, France, Finland and UK) that investigated the effect of demand-side housing subsidies on the housing market.

Key findings

- The literature review found strong evidence to support the contention that **a proportion of demand-side housing subsidies is capitalised into higher rents in the private rental market**.
- All studies noted that **elasticity of housing supply is the key factor** that impacts on the degree of landlord capture and that, at least in the short run, housing supply is relatively inelastic. That is the less (more) elasticity there is in the market, the greater (smaller) the proportion of landlord capture will be. However, none of the studies examined incorporate empirical data on housing supply elasticity into their modelling and analyses, rather housing supply elasticity is treated as an explanatory factor for their results.
- **Estimates of the magnitude of landlord capture vary** from 30 per cent to 78 per cent of the increase in subsidy. However, these estimates should be treated with caution as all papers make a large number of assumptions about the factors influencing demand and supply of housing. In many cases the method and modelling used are able to explain only a small part of the overall variation in rents.

Applicability of individual study findings to New Zealand

The comparability of the studies and their applicability to the New Zealand context is constrained as the conditions under which demand-side subsidies are capitalised into higher rents in the private rental market vary greatly between countries. These factors include size and design of the housing allowance program (e.g. eligibility, caps on allowance, etc.), the nature and size of the rental market in each country (supply elasticity), and country specific factors, such as rent controls.

- The two **New Zealand** specific studies reviewed for this report draw conflicting conclusions about the impact an increase of the Accommodation Supplement (AS) would have on rents. Stroombergen (2004) finds that there would be no discernible effect on rental prices, while Grimes and Hyland (2013) find that an increase in the AS would lead to an increase in rents, with approximately 35 per cent of the increase being captured by landlords.

  A detailed review of these studies highlights that they need to be treated with caution due to the nature of the data and modelling used. Both studies use macro data and assumption driven macro models to attempt to answer the research question. This type of data and modelling is not well suited to picking up changes in rents in housing sub-markets that are affected by the AS. Consequently, based

on the models' design and description, the reliability of findings would need to be tested further before making any judgements about their reliability.

- The three **French** studies reviewed may have limited applicability to the New Zealand context due to the research designs of the studies, the type of policy changes studied and the nature of the French housing and housing allowance systems.

  Two of the studies (Fack 2006; Laferrère 2004) concern a situation where there is an increase in the number of households receiving the allowance—a scenario that is qualitatively different from an increase in the amount of housing allowance to a stable eligible cohort. While the findings of these studies may not be directly applicable to the question under consideration here, they do give insight into the effects of a policy change that increases the number of households eligible for the allowance.

  The third study (Grislain-Letremy 2014) investigates the effect of changes to the housing allowance over a longer time frame and finds a positive effect of an increase in housing allowances on rents. The finding that an increase in housing allowances leads to an increase in rents has some applicability to New Zealand. A caveat is that the French system of rent controls means that the temporality of these impacts in France would be quite different in New Zealand.

- Both **Finnish** studies (Kangasharju 2010; Viren 2014) provide credible evidence that an increase in housing allowance leads to an increase in private rents. Despite the differences in the housing systems between Finland and New Zealand, it is likely that this finding is relevant for the New Zealand context. However, it should be noted that findings regarding the magnitude of the effect are not transferrable due to contextual differences between the countries. The studies disagree on whether changes to housing allowances affect recipient and non-recipient households differentially.

- The findings from the UK study (Gibbons 2006) have limited applicability to the New Zealand context due to the significant differences in the design of the housing allowance and the fact that the study examined the effects of a reduction in housing allowance (as opposed to an increase). However, as in the majority of the other studies reviewed here, Gibbons also finds that there is a relationship between the level of housing allowance paid and rents in the private sector, thereby lending further credibility to the contention that a proportion of any increase (or decrease) in housing allowance is borne by landlords.

Other findings

The studies reviewed were inconclusive on the question of whether demand-side housing subsidies contribute to an increase in the consumption and quality of housing.

- In France, Grislain-Letremy and Trevien (2014) found that there was no increase in the quality and quantity of housing consumed, while Fack (2006) points to a small increase in housing quality.

- In the UK, Gibbons and Manning (2006) found that a reduction in the incidence of subsidy did not affect housing consumption.

- In Finland, Viren (2013) concluded that the subsidy seems to have increased housing demand more than the subsidy-induced income effect might imply.

Summary

The types of differences in the design and application of housing supplements in the other countries reviewed are not significant enough to rule out the applicability of the studies' findings in the New Zealand context; it is highly likely that an increase in the AS will lead to a concomitant increase in private rental prices in New Zealand. The magnitude of this rental increase will depend on the supply elasticity of the New Zealand housing rental market.

Findings from the literature review suggest that rents are determined by house prices in the long run. It would therefore be incorrect to say that a housing supplement such as the AS drives rent increases or is a determinant of rent increases. However, it is clear from the evidence that an increase (decrease) in housing supplement is a factor in increased (decreased) rental prices.

In conclusion, there are empirical questions about housing supply elasticity conditions that need to be answered in order to estimate the degree of landlord capture of any alterations to the AS.

2 INTRODUCTION

2.1 Purpose and scope

This report provides a systematic review of the relevant literature on international research and evidence related to the impact of demand-side housing subsidies on the housing market, specifically the effect of such subsidies on rents. The review targeted high quality evidence-based publications.

2.2 Research question

The overall research question guiding this literature review is:

> *What is the impact of demand-side housing subsidies on the housing market, specifically the extent to which housing allowances are 'captured' by landlords[1] through rising rents versus improving the material living standards of subsidy recipients?*

The literature review also considered:

- the evidence on the conditions under which demand-side subsidies are capitalised into higher rents in the private rental market, such as:
  - design of demand side subsidies (e.g. eligibility, caps, geographic variations, link to income subsidies)
  - contextual factors such as size the rental market, competition in the rental market, quality, availability and location of affordable rental properties
- the impact of the demand side-subsidies on other housing outcomes, such as:
  - after-housing cost incomes of subsidy recipients
  - crowding out
  - household crowding
  - quality of housing
  - housing supply / supply of affordable rental properties.

2.3 Methodology

The literature review used a systematic methodology for searching and reviewing the empirical literature that is consistent with Cochrane and Campbell collaborations. The methodology is as follows:

- the national and international research literature was reiteratively searched using search terms derived from the policy objective

[1] Landlord capture refers to the phenomenon whereby a proportion of the demand side housing subsidy, such as the AS, is absorbed by private housing providers as they raise the rents in response to the availability of that subsidy (Murphy (2003) following Murphy & Kearns (1994) 'Housing New Zealand Ltd: privatisation by stealth', Environment and Planning, 26(4): 623 – 637).

- empirical studies were ranked according to the quality of the evidence (study design, methodology, robustness, etc.)
- for each high quality study, the nature of the housing subsidy that has been evaluated, the study design and the outcomes observed are described
- the overall findings in the context of the specific design of the Accommodation Supplement (AS) and the broader New Zealand housing market are discussed in terms of the degree to which marginal changes to AS payment levels could be expected to feed into higher rents, and the ways in which future changes to the AS could be designed to reduce the risk of landlord capture.

The search and selection process for this review targeted both peer-reviewed articles and publications, and commissioned research undertaken for government and non-government bodies. To find research, reiterated searching utilised the following tools:

- academic peer-reviewed publication databases in the housing, homelessness and related social science fields
- general internet searching of online policy communities and information clearinghouses (including Government departments)
- follow up of bibliographic references in found studies.

Search terms included combinations of the following words: *rent*, *housing allowance*, *housing supplement*, *accommodation supplement*, *rent subsidy*, *rental assistance*, *housing subsidy*, *housing benefit*, *rent increase*, *housing assistance*, *landlord capture*, *demand side subsidies*, *local housing allowance*, *rent increase*, *rental prices*, and *market rents*.

Article abstracts and report executive summaries were reviewed for an initial assessment of relevance and quality. Where abstracts were deemed to provide insufficient information to determine inclusion or exclusion in the review, the full publication was reviewed. On the basis of this information, a short list of publications for inclusion in the literature review was prepared.

In consultation with the client on 29 January 2015, the shortlist was then further refined based on the full content of the papers and eight studies were identified for inclusion in the final literature review.

2.4 Scope and quality of the evidence base

This is a review of empirical research studies on the impact of demand-side housing subsidies on the housing market, specifically the effect of such subsidies on rents. The review targeted evidence-based high quality studies and is confined to publications from 2004 onwards.

The reason this timeframe was chosen is that studies that are older than ten years are not likely to have sufficient currency to inform present day policy decisions. To guard against the possibility that any seminal studies prior to 2004 were missed, a review of selected secondary literature was undertaken. Relevant studies identified from this process are included in this report under the heading ‘Historical literature’.

The primary literature search identified 38 studies, of which 8 were deemed relevant for inclusion in the literature review.[2]

These comprise:

- 5 articles in peer reviewed academic journals
- 2 reports (Government, consultants, non-government organisations)
- 1 academic working paper

Table 1 Distribution of included research papers by country

Research source country	No. of studies
New Zealand	2
Canada	0
United States	0
Australia	0
United Kingdom	1
France	3
Finland	2
Total	**8**

Study quality and ranking of studies identified for inclusion

Studies identified for inclusion were ranked with reference to the strength and appropriateness of the method used to address the research question under consideration (relevance).

While randomised control trials may be considered the gold standard of scientific research, with the exception of a few US experiments, there have not been any recent attempts to assess the issue under consideration here using randomised trials.

The majority of the studies examined here use difference-in-difference and instrumental variable approaches in conjunction with regression analysis; some studies use modelling based on assumptions. The former approach will contribute to a higher ranking in our assessment than the latter (which is more assumption driven).

It should be noted, however, that a great variety of factors influence rent levels in the private market and that not all of these can be accounted for or controlled. This is reflected in the construction of many of the regressions used by the studies reviewed. Consequently, our evaluation of a study's findings makes reference to the r^2 (coefficient of determination) values of key results in order to assess not only their statistical significance, but also the likelihood that any observed effect is a function of the regression model (i.e. it provides a measure of how well observed outcomes are

[2] The following studies that had been included in the first round of assessments were excluded subsequent to the mid-point consultation with the Ministry of Social Development on 29 January 2015:
Sinai, T. & Waldfogel, J. (2004). Excluded as the paper addresses supply side elasticity and does not deal with the issue of rent increases.
Wang, H., Wilson, D. & Yates, J. (2004). Excluded after a close reading of the full paper as it was deemed not relevant.

replicated by the model as the proportion of total variation of outcomes explained by the model).

The studies are ranked according to relevance to the overall research question. Relevance takes into account the following factors:

- appropriateness of the method used to address the research question
- data used (including quality, sample size and applicability of the data source)
- measure of treatment effect (categorisation of treatment and control groups where relevant)
- number and quality of robust checks
- context (both econometrical and economical)

A three star rating system was used to rank the studies (Table 2)

Table 2 Rating system for ranking included studies

Rating	Attributes of the study
★★★	The study's research design facilitates a credible empirical estimation of causal impacts (e.g. difference-in-difference, instrumental variable, regression estimations/models), uses an appropriate methodology and data sources, applies a number of robustness checks and the observations made are explainable by the model used.
★★	The study's research design facilitates a credible empirical estimation of causal impacts and is generally robust, but there are questions about data sources/sampling frame, the degree to which findings can be explained by the approach/regressions used, or the modelling or methodology are not sufficiently well described to assess the validity of findings.
★	The study's research design models outcomes based on assumptions, the methodology, modelling or data used are not appropriate to addressing the research question; the study is flawed.

3 CONTEXT

Housing allowances are an important component of housing policies in many developed countries. They aim to facilitate a range of shelter and non-shelter outcomes, including reducing the proportion of income households spend on rent, changing the quality or quantity of housing consumed, and to provide housing security. Other objectives of housing allowances may include physical adequacy and appropriateness of housing and tenancy conditions; the supply of non-profit housing and public/private partnerships; the supply of private rental housing; and addressing regional variations in housing markets.

Housing allowances have the potential to affect not only the income of households receiving the subsidy, but also the income of landlords, rents, tax rates, labour supply, housing production and so on. Here we are particularly interested in the effect of demand-side housing subsidies on rents. A market framework can explain the mechanisms underpinning this.

Housing allowances, like all other subsidies and taxes, create allocative inefficiencies. The size of the inefficiency, in perfect competition, depends on the elasticities of the aggregate supply and demand curves. For example, if housing supply were perfectly inelastic and demand perfectly elastic, the housing subsidy would be shifted completely to rents (and thus go to landlords). By contrast, if the supply side were highly price elastic (and competitive) the housing subsidy simply increases tenants' income and would show up as increased demand for housing. Thus the incidence of the subsidy will depend on the elasticity of the demand and supply curves for housing—the higher the elasticity of the demand for, and the lower the elasticity of supply of, private-rental housing, the larger will be the impact of the subsidy on rents. Thus housing supply elasticity is a key determining factor in determining the proportion of the housing subsidy that is captured by landlords.

If the housing market is perfectly competitive there will be a single rent for a given quality of housing that does not vary according to whether the particular tenant receives a subsidy or not (the *law of one price*[3]). A reduction in the subsidy for some tenants will reduce rents for all tenants. The reduction in rents will be largest in markets where a higher fraction of tenants are affected by the subsidy reduction.[4]

There is some evidence that under certain conditions there can be a differential in the rents paid between subsidised and non-subsidised tenants, which could be attributed to factors such as bargaining between the landlord and the subsidised tenant. However, a comprehensive assessment of factors that contribute to this within the context of demand-side housing subsidies is beyond the scope of this paper.

A summary of subsidy designs, eligibility and contextual factors is presented in Table 3.

[3] An economic concept that holds that 'a good must sell for the same price in all locations'; the law of one price constitutes the basis of the theory of purchasing power parity.

[4] Compare Gibbons 2006.

Table 3 Contextual factors

Description	Eligibility	Subsidy design	Contextual factors
New Zealand	Accommodation Supplement (AS)		
The AS is a non-taxable benefit that provides assistance towards a client's accommodation costs.[5]	To be eligible, recipients must → meet a cash asset test → meet an income test → have accommodation costs above the threshold for their area → have difficulty meeting those costs from their regular income A person does not have to be receiving a benefit to qualify for AS.[6] The AS is available to private renters only. Tenants of Housing New Zealand Corporation (HNZC) properties receive a rental subsidy from HNZC and are not eligible for an AS.	The AS meets 70% of accommodation-related costs over a defined threshold, up to a maximum that varies according to region and household size. The amount of AS payable depends on a client's: → accommodation costs → income → assets → family status → residential region	The average proportion of rents paid (1996-2012) for those in receipt of AS was over 35% (Grimes and Hyland, 2013: 35). In 2012 there were approximately 200,000 renters (and over 40,000 homeowners) receiving AS. The average AS rental rate is reasonably stable over time. This means that it may be difficult to ascertain the effect of the AS rate on rents even if the supply of landlords is inelastic, in which case an AS change is expected to have had a material impact on rents.

[5] http://www.workandincome.govt.nz/manuals-and-procedures/income_support/extra_help/accommodation_supplement/accommodation_supplement.htm

[6] http://www.workandincome.govt.nz/manuals-and-procedures/income_support/extra_help/accommodation_supplement/accommodation_supplement.htm

Description	Eligibility	Subsidy design	Contextual factors
UK Housing Benefit (HB)[7]			
The HB is a benefit for people on a low income to help them pay their rent.	To be eligible for HB the claimant must: → pay rent (private and public sector tenants) → be on a low income or be claiming benefits → have savings below a certain level	The HB can cover up to 100% of rent. There is a cap on the maximum amount of HB that can be paid. HB is means tested and withdrawn at a taper rate of 65% once income exceeds the threshold level, which depends on household circumstances.	In 2001 housing benefit amounted to 1.2% of GDP.

[7] To be replaced by Universal Credit, phased in as of 2013.

Description	Eligibility	Subsidy design	Contextual factors
France	Allocation Logement (AL)		
The AL is a means tested benefit that is available to all persons below a certain income threshold.	All low income public and private renters are eligible for AL, as are some persons with a mortgage for a dwelling. France has a universal system for AL, i.e. every eligible household will receive the allowance if they claim it. Recipients can freely choose their accommodation.	The AL comprises three types of benefit: 1. l'Aide Personnalisée au Logement (APL) for public sector tenants 2. l'Allocation de Logement Familiale (ALF) aimed at helping low income families with children 3. l'Allocation de Logement Sociale (ALS) for other categories of low income households (e.g. people over 65, workers under 25, etc.). All three allowances are calculated using the same formula (though rent scales and income criteria differ). The amount of AL depends on the rent, household income and household size. AL is paid as a percentage of rent up to a ceiling rent, above which the allowance does not vary. The formula also defines a minimum amount to be paid by the household (function of income and family size), so the subsidy never covers 100% of the rent.	Public spending on housing was 45 billion euros in 2011 (2.2% of GDP). Subsidies to tenants in 2011 were 14.5 billion euros (0.7% of GDP), of which 6 billion euros were for the social rental sector. The French rental housing allowance is fairly similar to the New Zealand allowance in that is available to all persons below a certain income threshold. However, the French housing system has rent controls, which is not the case in New Zealand.

Description	Eligibility	Subsidy design	Contextual factors
Finland	Asumistuki		
The housing allowance (asumistuki) granted by the Social Insurance Institution of Finland, Kela, is meant for housing-related costs.	→ To be eligible for the housing allowance clients must be covered by Finnish social security. → Persons or households are eligible to receive housing allowance if they have low income and live in Finland permanently.[8]	→ Housing allowance is paid on the basis of housing expenditure, including monthly rent, water and heating costs. → There is a ceiling for acceptable housing expenditure per square metre. The ceiling depends on the size of the housing, location, construction year and heating system. Housing expenditure above the ceiling is paid by the tenant. → The programme compensates part of the acceptable housing expenditure with the remainder being paid by households as an out-of-pocket payment. → The programme compensates 80% of the acceptable expenditure exceeding the out-of-pocket payment. → The out-of-pocket payment consists of two parts. 1. “Copay”, depends on gross household income, size, and location; 2. the household pays the remaining 20% of the rent (plus any rent exceeding the ceiling). This 20% proportion is the second part of the out-of-pocket payment.	Total expenditure on housing allowances in 2008 was slightly over 1 billion euros, or roughly 0.5% of GDP. About 16% of households and 12% of individuals receive a housing allowance. Roughly one third of households in Finland live in rental housing.

[8] http://www.infopankki.fi/en/living-in-finland/housing/housing-allowance

4 LITERATURE REVIEW

This section provides a review of the literature on demand-side housing subsidies. The first part provides a short overview of the historical literature since the 1980s that has influenced policy for, and the design of, housing allowances in a number of countries.

This is followed by a detailed review of each study meeting the criteria for inclusion in this report. For ease of comparison, studies are grouped by country. Each section presents a summary of the study, its findings, an outline of the study design and comments on whether the study gives information about the impact of the subsidy on the housing market. For each country a contextual section precedes the review of the papers and assesses the studies' applicability to New Zealand.

4.1 Historical literature

An in depth review of the literature on housing allowances prior to 2004 is beyond the parameters of this report. However, a number of historical studies on housing allowances have had lasting impact on housing policy and design of housing allowances internationally. This section draws on previous AHURI research involving comparative reviews of demand subsidies for private renters (Hulse 2002a; 2002b).

There was little academic research on housing allowances in New Zealand until the 1990s, except as part of general work on the development of housing assistance (e.g. Ferguson 1994). The replacement of the accommodation benefit within the income support system by a more general accommodation supplement in July 1993, and its extension to public tenants in lieu of income-related rentals, was of interest to academic researchers (e.g. Murphy & Kearns 1994; Morrison 1995; Murphy 1997, 1999; Robinson 1998; Thorns 2000), most of whom were critical of the new accommodation supplement. The focus of much of this literature was on the impact of the reforms on public tenants, with some attention to the rising cost of the accommodation supplement and the way in which it worked in different housing markets.[9] Further academic research focused on the second wave of policy changes in 2000–01, which narrowed the scope of the supplement and returned to income-related rents in public housing.

There has also been a limited amount of work by non-government organisations on the effects of the accommodation supplement (e.g. Roberts & Robinson 1996; Waldegrave 2000).

In New Zealand, the introduction of the accommodation supplement in 1992 had been preceded by three internal government Working Reports on the then accommodation benefit (Lennon & Badcock 2001) and a consultant's report which largely reflected the conventional wisdom from the Experimental Housing Allowance Program (EHAP) findings (see below), suggesting that there would be low take-up rates for the new payment, a 2-to-4 per cent decrease in rental and considerable 'leakage' from housing assistance to other areas, as recipients spent the money on items other than housing (Infometrics 1991). These findings proved to be inaccurate. There is an extensive literature resulting from the Experimental Housing Allowance Program (EHAP) in the US, an eleven year study of assisted housing in two Midwest cities. Analysts reported that rents in the two experimental sites increased by about the same amount as rents

[9] Compare Hulse (2002a).

nationwide, along with landlords' costs (Lowry, 1983; Rydell et al., 1982). The findings from these studies had an important impact on debates about housing assistance policy in many countries, including New Zealand.

The Experimental Housing Allowance Program (EHAP) had three components. The demand experiment aimed at monitoring changes in housing consumption by low income households in receipt of housing allowances (Kennedy 1980). The supply experiment was designed to evaluate the market effects of what was intended as an intensive housing allowance program in two specific areas (Lowry 1983). The administrative agency experiment tested different models of program management (Hamilton 1983). EHAP was widely regarded as successful and generated much discussion in the early 1980s (e.g. Bradbury & Downs 1981; Friedman & Weinberg 1983), although there were some alternative voices (e.g. Hartman & Keating 1974; Hartman 1983, 1986). Its historical significance is considered in research on the development of housing assistance policy in the US (e.g. Winnick 1995; Orlebeke 2000; Dreier 2000; HUD 2000a).[10]

From the perspective of this research, the significance of the literature relating to the EHAP was that the findings subsequently assumed 'taken for granted' status, both in the literature and by policy makers. According to Hulse (2002a) three findings were of particular importance:

- Whilst housing allowances did improve affordability (percentage of income spent on rent), many households did not make substantial changes to their housing consumption and spent most of the money on items other than housing
- There was only a minor effect of housing allowances on improving the quality of existing rental housing and a negligible effect on increasing the supply of additional rental housing
- There was a negligible inflationary impact on private rent levels.

Hulse concludes that until recently there has been little attempt to evaluate whether findings from EHAP are applicable to other countries where contextual factors, housing allowance history and design differ considerably from the US. As the recent studies reviewed for this report show, indications are that findings from the EHAP study are far from universal.

Historically there have been few comparative studies that focus specifically on housing allowances. Kemp (1997) undertook research into housing allowances in seven countries for the UK Department of Social Security. The study included Australia, New Zealand and Canada and focussed on the role and context of housing allowances, eligibility and entitlement, payment formula, administration and policy issues. The renamed UK Department for Work and Pensions commissioned a further, internal review of social housing and housing allowances in ten countries (Ditch, Lewis & Wilcox 2001). The study addressed specific policy and administrative issues of concern to the department, including the role of housing allowances in work incentives and the interaction between housing allowances and housing supply.

More recently, the impact of housing allowances on rents has been studied in empirical papers finding significant price effects. Susin (2002) looks at rent vouchers in the United States and estimates the impact of the proportion of benefit recipients on the price of low income housing in the area. The study exploits the fact that only 10 per cent of eligible low income households actually receive benefit in the United States and that the proportion of recipients varies greatly over the different

[10] Compare Hulse (2002a).

metropolitan areas. Susin concludes that rent vouchers caused the rents to rise for all low income households (those receiving the subsidy and those who were not) by more than the amount of vouchers distributed, especially hurting eligible households who do not receive housing benefit and resulting in a transfer from low income households to landlords.

In summary, the findings of the EHAP experiments in the US, concluded twenty years ago, have had an enduring influence on the subsequent literature on housing allowances. The bulk of the literature on housing allowances still emanates from the US, with many studies finding that housing vouchers have advantages over supply subsidies in breaking up spatial concentrations of poor households, minimising work disincentives, targeting and cost control. There is also some literature from the US which finds that some low income households find it difficult to access housing with a housing voucher due to program administration requirements, discrimination by landlords and a lack of low rental housing. The applicability of these findings to New Zealand is limited by the small scale and diversity of local housing voucher programs in the US. In contrast, the housing allowance program in New Zealand is a large-scale national scheme based on entitlement to assistance.

4.2 Empirical studies of the effect of housing allowances on rents since 2004

This section presents a review of empirical studies, since 2004, on the impact of demand-side housing subsidies on rents.

4.2.1 New Zealand

In New Zealand housing allowances (the Accommodation Supplement [AS]) are available to those paying more than a prescribed percentage of their income on home purchase costs or private rental, regardless of whether or not they are receiving income support.

The AS is a non-taxable benefit that is paid directly to clients. It is available to private renters only; public tenants of the Housing New Zealand Corporation (HNZC) receive a rental subsidy from HNZC and are not eligible for AS. To be eligible, recipients must satisfy cash asset and income tests, have accommodation costs above the threshold for their area and have difficulty meeting those costs from their regular income.

The AS meets 70 per cent of accommodation-related costs over a defined threshold, and is capped at a maximum that varies according to region (New Zealand is divided into four 'areas', reflecting different tiers of market rent) and household size. For non-beneficiaries, the amount paid is reduced by 25 cents for every dollar earned over a set income threshold.[11]

The two New Zealand specific studies reviewed for this report draw opposite conclusions about the impact an increase of the AS would have on rents. Stroombergen (2004) finds that there would be no discernible effect on rental prices, while Grimes and Hyland (2013) find that an increase in the AS would lead to an

[11] For a detailed description of how the New Zealand housing allowance is structured refer to: OECD (2015) *OECD Policies and Data: Benefits and Wages: Country specific information*, http://www.oecd.org/els/soc/benefitsandwagescountryspecificinformation.htm (accessed 27/02/2015).

increase in rents, with approximately 35 per cent of the increase being captured by landlords.

However, as the detailed review of these studies (below) highlights, both need to be treated with caution due to the nature of the data and modelling used. Both studies use macro data and assumption driven macro models to attempt to answer the research question. This type of data and modelling is not well suited to picking up changes in rents in housing sub-markets that are affected by the AS. Consequently, based on the models' design and description, the reliability of findings would need to be tested further before making any judgements about their reliability.

Grimes & Hyland (2013)

Country

New Zealand

Citation

Grimes, A. & Hyland, S. (2013) *A New Zealand Regional Housing Model,* Motu Economic and Public Policy Research, Wellington.

Summary

The paper presents simulations based on the New Zealand Regional Housing Model (NZRHM) of the impacts of shocks to exogenous variables (population, credit restrictions, construction costs and farm prices) as well as shocks to policy variables (developer contributions, Accommodation Supplement (AS), and land availability) on key New Zealand housing market variables (house prices, housing supply, residential vacant land prices, average rents). It also simulates the consequences of the Christchurch earthquakes.

NZHRM is designed to be a whole of housing system model, where the four modelled (endogenous) variables interact with each other and are influenced by a range of exogenous influences.

This summary of the paper focuses on the model's treatment of changes to the AS and the subsequent impact on private rental prices.

Findings

The paper's over-arching conclusion across all simulations is that housing markets are very slow to adjust to disequilibria, such that exogenous shocks have very long lasting effects on housing system. In relation to the AS, the authors find that greater AS receipts lead to increased house, land and rental prices, which drive greater construction.

The authors find that:

- There is a high positive correlation in AS support for homeowners and renters, which means that it is better to analyse the scheme as a whole rather than analyse rental support and homeowner support separately.
- The AS is expected to have an effect on rents if the landlord supply is inelastic.
- Whilst statistically non-stationary, the average AS rate is fairly stable over the period investigated, making it hard to determine an effect on rents even if the landlord supply is inelastic.

- → AS for renters has a short run impact on rental yields, but in the long run the modelling found that AS did not affect rental yields. The authors explain that the higher rate of rent assistance puts short term pressure on rents, but that in the long run rents are governed by house prices and market returns, thus 'ownhome' assistance indirectly leads to higher rents by increasing house prices.
- → The mechanism through which AS affects rental yields is through the effect of AS on short run rental prices and long run house prices.
- → The AS for renters is estimated to have a short-run impact on rental yields:
  - A simulation of a 10 per cent ($7.60–8.10 per week) increase in both the average real AS receipt per 'ownhome' recipient as well as the proportion of a renter's accommodation bill that is met through AS, showed that this translated into an increase in the rate of between 3.48 and 3.79 percentage points, i.e. a 10 per cent increase in AS leads to a 3.48–3.79 per cent increase in rents/house prices. Landlord capture is about 35 per cent of the total AS.
  - However, the authors note that these estimates should be treated with caution as 'the simulated responses to the AS increases considerably overstate the impacts of an AS increase on house prices, rents and new housing supply, although the direction of the effect in each case is as expected.' (p. 49)

Study design

The NZRHM comprises four key relationships explaining house prices, housing supply (new dwelling consents), residential vacant land (lot) prices and average rents. The model is estimated across all 72 Territorial Land Authorities (TLAs) in mainland New Zealand (keeping the newly amalgamated Auckland TLAs as separate authorities, and incorporating the former Banks Peninsula TLA as part of Christchurch City). All modelling uses quarterly data extending from the early to mid-1990s to 2011Q2.

For modelling purposes, a single aggregate housing market is assumed to exist within each TLA—the model does not differentiate between housing of different quality within a TLA. The same housing market relationships (e.g. functional form and elasticities) are assumed to operate across all TLAs. Specific features of individual TLAs are included in the model through inclusion of TLA-specific values for exogenous influences (e.g. population) and through inclusion of TLA fixed effects, whilst we also test for the equality of a set of responses across sub-groups of TLAs.

Long run (cointegration) relationships and short run (error correction) relationships are estimated for each of the four key variables across 72 TLAs. The model is designed so that it can be used for short to medium term forecasting. It is also useful for simulating the effects of shocks to the housing market.

Each of the four modelled relationships has a long term (equilibrium) component that shows the value to which the modelled variable will tend given the values of the policy and exogenous variables in the system. The values of the policy and exogenous variables will alter over time, so the equilibrium path of each modelled variable will also change over time. Values of the exogenous variables differ across TLAs and so each TLA—while driven by the same underlying economic forces—will have differing housing market outcomes reflecting its own population and other developments.

In addition, the model is estimated with a dynamic component that shows how each endogenous variable moves on a quarterly basis towards the equilibrium. In doing so, recent changes in other variables may impact the dynamic adjustment path, potentially causing some initial movements away from equilibrium. Price expectations,

in particular, may cause housing market adjustments that lead to temporary deviations in outcomes away from equilibrium.

Modelling for the AS uses quarterly data (1996–2012) on the AS from the Ministry of Social Development (MSD) that was supplied by the Department of Building and Housing (DBH). The dataset contains the number of AS claimants per quarter at the national level, as well as the total supplement paid to all claimants weekly, and the sum of their declared accommodation costs. This is broken down by tenure type.

Study quality

The model itself is highly sophisticated. This is a robust study that uses traditional time series techniques which are accepted in the broader economic literature—these are typically macro / aggregate techniques.

There are, however, a number of limitations on the study that draw into question the utility of its findings about the impact of the AS on rents. Although the study uses 20 years of quarterly data, this constitutes at most 80 observations, which is a little on the small side given the elaborate nature of the model. The modelling is assumption driven and uses aggregate macro techniques that are not an appropriate method to estimate changes in rent in housing sub-markets. Consequently the study's conclusions are highly dependent on the assumptions underpinning the study, and should be interpreted with caution.

Stroombergen (2004)

Country

New Zealand

Citation

Stroombergen, A. (2004) *The Effects of the Accommodation Supplement on Market rents*, Working Paper 02/04, Centre for Social Research and Evaluation Te Pokapū Rangahau Arotaki Hapori.

Summary

This 2004 report for the Ministry of Social Development prepared by Infometrics assesses the effects of the Accommodation Supplement (AS) on market rents between 1993 and 2003.

Findings

The report finds that changes to the AS have no significant effect on market rents. This holds true for three scenarios: 1. within the Auckland region; 2. nationally; and 3. when applied only to the lower quartile of the rental market.

The authors conclude that the AS does not seem to have been subject to landlord capture, stating that it may be possible that the AS has contributed to a lift in market rents of about 1 per cent. Consequently, as a means of assisting low-income people with housing costs, the AS policy would have to be judged successful.

The authors advance a number of possible reasons for why the model finds no effect of the AS on private rents.

- The model is not specified in a manner that is consistent with picking up an effect on market rents, i.e. it is a macro model that does not account for micro factors.
- The AS by itself is an inadequate measure of the effect of government policies on market rents. A series combining the AS, income-related rents and the provision of state housing might show a stronger effect.
- The segment of the market that receives the AS may be quite distinct, and certain houses may not be offered to people who receive the AS—perhaps this reflects low inter-suburb substitution in demand.
- The price elasticity of the supply of rental housing may be quite high, so that a subsidy raises the quantity consumed with little impact on price. This does not mean that new rental accommodation is quickly constructed, merely that the existing stock of housing can shift quite readily at the margin between owner-occupation and renting.

Study design

In 1999, Infometrics (1999) produced an econometric model of market rentals for the Housing New Zealand Corporation (HNZC). Although it was designed to be a forecasting model, the approach taken was to develop a structural model that sought to explain the relative importance of various factors that influence market rents.

The model was updated in order to examine whether the AS is subject to provider capture, i.e. whether the AS is raising rents and thereby undermining its effectiveness as a housing subsidy to those on low incomes.

To include the AS in the model's regression, the model uses the total value of AS benefits paid to assess its overall weight or prevalence in the market. This was considered by the authors to be the best measure as it captures both the rate of benefit and the number of people who receive it, i.e. the overall weight of the AS in the market.

Study quality

The study uses a well-known time series technique, which is appropriate for the data used. However, while the technique used is relatively robust, the model construction is not convincing. This is a macro model, and an aggregated market is unlikely to pick up on what is happening in the lowest segment of the market. Elasticity of housing supply is not accounted for, nor are details such as household composition, eligible groups, etc.

The variables used by the model to address the effect of the AS are not sufficiently well described in the paper to draw any firm conclusions about the appropriateness and robustness of the modelling for the purpose of assessing the impact on changes in the AS on private rental prices.

Consequently, the data and method used are not suited to addressing the research question and there is doubt about the reliability of the findings.

4.2.2 France

In France, housing allowances target housing suppliers and consumers. Public spending on housing was 45 billion euros (2.2 per cent of GDP) in 2011. Of this, subsidies to tenants constituted 14.5 billion euros in 2011, of which 6 billion euros were for the social rental sector.

The French housing benefit, the Allocations Logement (AL; *housing allowance*), is a means tested benefit that is available to all persons below a certain income threshold—this includes private and public renters as well as some persons with a mortgage or owned house. The AL is a universal system of entitlement and every eligible household will receive the allowance if they claim it.

The amount of AL paid depends on the claimant's rent, household income, household size and geographical location. The allowance is paid as a percentage of rent up to a ceiling rent, above which the allowance does not vary. The formula also sets out a minimum amount to be paid by the household (a function of income and family size), so that the subsidy never covers 100 per cent of the rent.

Recipients of the AL are free to choose their accommodation. Private sector renters usually receive the benefit directly (unless they have signed an agreement with the landlord to deduct it directly from the rent). In the public sector, however, the benefit is usually directly deducted from the rent.[12]

In the beginning of the 1990s a reform extended the AL to every low income household in the private and public sectors. Two of the studies reviewed in this report (Fack 2006; Laferrere 2004) exploit this reform as a natural experiment to test whether changes in the housing benefit led to a concomitant increase in rents. The third study (Grislain-Letremy and Trevien, 2014) uses a different methodological approach and covers a longer time period, but comes to similar conclusions about the positive impact of housing allowances on rents.

The three studies reviewed here have limited applicability to the New Zealand context.

France has a system of rent controls, which limit rent increases on continuing tenancies. Consequently, it may take some time before changes in the housing allowance are fully felt in the market. This is not the case in New Zealand

Two of the studies (Fack 2006; Laferrère 2004) concern a situation where there is an increase in the number of households receiving the allowance—a scenario that is qualitatively different from an increase in the amount of housing allowance to a stable eligible cohort. While the findings of these studies may not be applicable to the question under consideration here, they do give insight into the effects of a policy change that increases the number of households eligible for the allowance.

The third study (Grislain-Letremy 2014) investigates the effect of changes to the housing allowance over a longer time frame and finds a positive effect of an increase in housing allowances on rents. The finding that an increase in housing allowances leads to an increase in rents has some applicability to New Zealand. A caveat is that the French system of rent controls means that the temporality of these impacts in France would be quite different in New Zealand. The different design of the French housing allowance and the contextual factors of the market mean that findings about the heterogeneity of the impact of subsidies and the amount and quality of housing consumed are not transferrable to New Zealand.

[12] For a detailed description of how the French housing allowance is structured refer to: OECD (2015) *OECD Policies and Data: Benefits and Wages: Country specific information*, http://www.oecd.org/els/soc/benefitsandwagescountryspecificinformation.htm (accessed 27/02/2015).

Grislain-Letremy & Trevien (2014)

Country

France

Citation

Grislain-Letremy, C. & Trevien, C. (2014) *The Impact of Housing Subsidies on the Rental Sector: The French Example*, Centre de Recherche en Economie et Statistique, Working Papers: 2014-24.

Summary

The study analyses the impact of housing subsidies on price, quality and quantity of rental housing supply in the private rental sector. The study extends the results of Laferrère (2004) and Fack (2006) and measures the potential of housing subsidies France between 1987 and 2012 to increase rents.

Findings

The authors find that housing subsidies led to an increase in rental prices in the 1990s and the 2000s, and show that rents are significantly higher in zones with higher housing subsidies. The impact of subsidies on rents is found to be heterogeneous: it is stronger for low-income households and for dwellings with two rooms or less.

Higher subsidies seem to have almost no effect on housing quality or on the number of rental dwellings available to low income private tenants.

The authors conclude that the absence of quality or quantity effect indicates that the impact of housing subsidies is to increase rents, pointing at a low elasticity of housing supply.

Study design

The study uses an instrumental variable method in a standard linear hedonic model based on a spatial discontinuity in the subsidy scheme. It measures the potential inflationist impact of housing subsidies in France between 1987 and 2012 using the quarterly Rents and Charges Survey to compute a rent index. The sample size is approximately 5,000 households.

The identification strategy is based on a fuzzy geographic discontinuity in the calculation of housing subsidies, which allows for comparison of geographic areas that have similar demographic and housing characteristics, but that differ in the magnitude of subsidy received, i.e. the amount of housing subsidy received depends on households' location in one of three zones, as well as household characteristics. Consequently this is not a randomised trial, but the discontinuity between the two zones is used as a proxy for the effect.

This allows comparison of agglomeration of similar households in areas with similar characteristics but that receive different amounts of subsidies. This allows for estimation of an average treatment effect of housing subsidy on rents in agglomerations close to the discontinuity that have between 50,000 and 200,000 inhabitants.

The study uses a number of hedonic controls for demand, though no household information is apparent. The findings that housing subsidy has a significant positive impact on rents in the private sector holds true for both, the instrumental variable method and ordinary least squares.

Study quality

This is a high quality paper and can be viewed as a more sophisticated version of Fack (2006). The method and regressions used for the study are appropriate. The study is robust as several different models (including instrumental variable and ordinary least squares) are applied and the effects seem to be consistent across different specifications. The model performs well and the sample size is adequate. This gives confidence in the results.

Fack (2006)

Country

France

Citation

Fack, G. (2006) 'Are housing benefit an effective way to redistribute income? Evidence from a natural experiment in France', *Labour Economics*, 13(6), 747-771.

Summary

The study examines whether changes to the French housing benefit program in the early 1990s had a significant impact on the level of rents. The reforms extended the housing benefit program to some groups of people that were not previously eligible (e.g. students) without affecting other households (i.e. the calculation of the subsidy did not change and assisted tenants received the same amounts before and after the reforms). The effect of the reforms was to extend the number of benefit recipients in the face of an inelastic housing supply.

Findings

The study found that one additional euro of housing benefit led to an increase of 78 cents in the rent paid per square metre by new benefit claimants, leaving only 22 cents available to reduce their net rent and increase their consumption. This means that 78 per cent of the benefit is crowded out by increased rents and only 22 per cent are available to assist low income households to reduce their housing costs.

This large impact of housing benefit on rents appears to be the result of very low housing supply elasticity. The reforms induced additional demand, not only from low income households but also from students who used the benefit to become independent. This increase in demand was unmatched by increased housing supply in the short and medium term.

The reforms led to a small increase in housing quality.

The authors conclude that the results raise questions about the use of in-kind transfers such as the housing benefit when the supply of the subsidized good is almost inelastic.

The study has limitations in terms of its applicability in assessing whether an increase in the housing supplement leads to a concomitant increase in market rents, as the primary effect of the French reforms seems to have been to increase demand for rental housing in the face of inelastic housing supply. This is different to an increase in the housing supplement in the face of constant demand for housing supply.

Study design

The study uses the housing benefit reforms passed in the early 1990s as a natural experiment to test whether changes in the housing benefit have a significant impact on the subsidised good.

The study's methodology analyses differences in mean rents and mean housing benefit per square meter between 1984 and 2001 for private renters.

The study uses difference-in-difference estimates and a difference in difference regression approach, which is appropriate for the data used.

The difference in difference method compares rents before and after the reform for group affected by the change (treatment group) with before and after rents among a group not affected by the reform (control group). In order to test for robustness of findings the study runs additional regressions, adding a dummy to test for a differential trend between the two groups over time (triple difference estimate).

Data was drawn from the French housing Survey Enquête Logement. This survey is conducted every four to five years by the French Institute of Statistique INSEE (Institut National de la Statistique et des Etudes Economiques).

The analysis used data for the past thirty years (1973; 1978; 1984–85; 1988–89; 1996–97; 2001–2002). Each survey gives specific information on housing conditions of the households, along with detailed characteristics of each household, including income.

Data from the Enquête Budget des Familles (the French Family Resources Survey) was used to check the robustness of the results, by running a basic regression of the model to check the validity of the results obtained with the French Housing Survey.

The study controlled for variables such as household size, geographical location and age group of head of household.

Study quality

The study appears sound, although a considerable amount of information that would allow a better consideration of its quality is missing. Regression outputs are not provided and consequently it is not possible to assess the robustness of the regression. The choice of control group is not ideal, as they should be identical to the recipients, which is not the case in this instance.

Laferrère and Le Blanc (2004)

Country

France

Citation

Laferrère, A. & Le Blanc, D. (2004) 'How do housing allowances affect rents? An empirical analysis of the French case', *Journal of Housing Economics*, 13(1), 36-67.

Summary

The study examines whether changes to French housing allowances, which during 1992–94 were extended to all low income households in France, affected the price of private rental and whether there were differences in the rent increases experienced by subsidised and non-subsidised renters.

Findings

Based on aggregate data on the short-term impact of the reforms the study found that there was a faster increase in the cost of rentals for dwellings occupied by subsidised renters compared to non-subsidised renters. This was mainly due to the compositional changes in the populations of assisted and unassisted tenants and there was a sizeable increase in the number of new households eligible for the housing benefit. Prior to the reforms in 1990 there were 1.9 million assisted private sector tenants; by 1997 there were 3.1 million. This represents an increase from one third of all private tenants before the reform, to half of all private tenants after the reforms.

Findings show that there was an overall increase in housing demand from subsidised renters.

Rent changes were higher for newly eligible renters than for those who were already receiving housing allowance. A rental price index type of analysis shows that, for example, between the fourth quarter of 1993 and the third quarter of 1995, the rents of non-subsidised dwellings rose by 2.6 per cent, whereas the rents of subsidised dwellings rose by 8.6 per cent. In the short term, this could be due to the rent controls effective in France, which limit rent increases for already established tenancies.

The authors emphasise that their non-structural approach to data analysis does not answer the questions ‘How much did subsidies increase rents?’ Data seems to indicate that the reforms caused a temporary disequilibrium in the market—after three to four years the rents of dwellings with non-subsidised renters seem to catch up to those with subsidised renters.

The authors conclude that the findings are consistent with the hypothesis that in the short term individual private landlords capture part of the subsidy.

Study design

The study uses evidence from aggregated time-series data and hedonic-type analysis. The first compares the change in the rent for tenants who started (or stopped) receiving housing benefit to renters who did not experience a change in benefit reception. The hedonic model of rent level is estimated using the logarithm of rent modelled as a function of the dwelling and landlord characteristics, which account for housing quality and length of tenure.

Data is drawn from a rotating panel sample of rental dwellings followed on a quarterly basis: the Quarterly Rent Survey (Enquête trimestrielle sur les Loyers et charges). The survey is conducted by the French Institute of Statistics (INSEE) to compute the official rent index for the French Consumer Price Index. The quarterly sample of

private sector dwellings for which the monthly rent is known and which was used in this study is approximately 2,000 to 3,500 dwellings. The entire sample consists of 40,989 observations between 1984 and 1992, and 66,353 observations between 1993 and 1999. These were used as repeated cross-sections, and data were controlled for dwelling characteristics and tenure length.

The authors conclude that a significant effect of housing benefit on rents is present, but their method does not provide a precise estimate of the effect.

Study quality

The regressions used in the study are acceptable but it is questionable whether splitting the sample is a good idea. The authors reference a change in survey design around the same time as the policy change, which is problematic for data interpretation. The robustness of the study is negatively impacted by the small number of observations in each quarter. The overall sample size is small for the method used.

In most cases the regressions explain less than 10 per cent of the changes in rent, indicating that they are not a good fit. The statement 'Due to the low number of changes of dwellers, the estimates based on the dwellings that have undergone at least one change of dweller are only significant at a 15 per cent level, but the estimated coefficient is quite large.' (p. 59) could be construed as misleading, as it is possible that even with a greater sample size the regression results would not be significant.

4.2.3 Finland

In Finland, the housing allowance (asumistuki) is available to clients who are covered by Finish social security, have an income below a certain threshold and live in Finland permanently. The allowance covers a proportion of reasonable housing costs for permanent dwellings, including rental, owner-occupied, right-of-occupancy and part-ownership dwellings.

The housing allowance usually compensates up to 80 per cent of acceptable housing expenditure up to a ceiling per square meter, with the remaining part being borne by households. The share of this 'basic deductible' depends on the household composition, combined household income and asset based income, the size of the housing, its location, construction year and heating system.

The amount of housing allowance paid is calculated on the basis of housing expenditure, which includes monthly rent, water and heating costs. Geographic variations apply depending on the municipality—in big towns higher housing costs are accepted than in smaller ones. [13]

An interesting point of difference between the Finnish and New Zealand systems is that in Finland, according to the register data on the housing allowance programme compiled by the Social Insurance Institution who administers the program, in November 2006, for example, the programme operator paid the monthly allowance of 53 per cent of assisted households directly to the private or public landlord. This has the benefit of reducing rent arrears. However, it also diminishes tenants bargaining

[13] For a detailed description of how the Finnish housing allowance is structured refer to: OECD (2015) *OECD Policies and Data: Benefits and Wages: Country specific information*, http://www.oecd.org/els/soc/benefitsandwagescountryspecificinformation.htm (accessed 27/02/2015).

power in relation to rents, as landlords are aware that they are receiving a benefit which increases tenants' ability to pay.

The impact of this on rental prices for allowance recipients is subject to debate. While Kangasharju (2010) indicates that it reduces tenants' bargaining power, Viren (2014) notes that this imbalance in bargaining power is ameliorated by the nature of the Finnish rental housing system, where most business is conducted by rental housing agencies. The agencies typically post fixed prices set by the landlord and there is seldom any direct bargaining between tenant and landlord.

Finland's total expenditure on housing allowances in 2008 was slightly over 1 billion euros, or roughly 0.5 per cent of GDP. Roughly one third of households in Finland live in rental housing and about 16 per cent of households and 12 per cent of individual receive a housing allowance. Rental housing markets in Finland have typically been biased to excess demand due to a shortage of supply.

Both Kangasharju (2010) and Viren (2014) are studies that provide credible evidence that an increase in housing allowance leads to an increase in private rents. Despite the differences in the housing systems between Finland and New Zealand, it is likely that this finding is relevant for the New Zealand context also. However, it should be noted, that findings regarding the magnitude of the effect are not transferrable due to contextual differences between the countries. The studies disagree on whether changes to housing allowances affect recipient and non-recipient households differentially; the conclusions each study draws in this regard should be considered with caution..

Kangasharju (2010)

Country

Finland

Citation

Kangasharju, A. (2010) 'Housing allowance and the rent of low-income households', *Scandinavian Journal of Economics*, 112(3), 595-617.

Summary

The study analyses the effect of a housing allowance programme on the rent paid by assisted low-income households in Finland. The reform increased the upper limits of rent per square meter that were acceptable for allowance.

Findings

The long-term results indicated that assisted households in the private rental sector paid higher rents than their non-assisted counterparts. The reforms had little effect on renters in the municipal sector as here rents are not tied to market rents, but are calculated in relation to housing costs. The study found that in the private rental sector one additional euro of allowance increased claimants' rent by 60–70 cents. The authors suggest that, in light of this finding, if the government aims to increase housing allowance to low-income households, it has to at least double the intended amount, as more than one-half is captured by landlords. A way of reducing landlord capture is not to pay the allowance directly to landlords, thereby keeping them

unaware of whether or not a household received rental assistance—though this may lead to an increase in rental defaults by tenants.

Another finding is that before the reform about 80 per cent of the assisted households were living in housing where the rent per square meter was higher than ceiling accepted for the housing allowance and were paying the part beyond the ceiling themselves. After the reform this proportion dropped to 50 per cent of assisted households.

Study design

The study compares the effects of changes in the housing allowance in 2002 on rental households in the free market and municipal sectors using difference-in-difference estimates and regression analysis. The reform increased the allowance of assisted households depending on housing characteristics, but had little effect on eligibility. Therefore it had little effect on the pool of eligible tenants.

This facilitates a comparison within assisted households facing different changes in the rent ceiling and between assisted and non-assisted households in housing units facing the same limit increase.

The method uses a number of approaches to investigate the effect:

1. Difference-in-difference estimates indicate how much rents changed due to the reform among assisted families compared with non-assisted families.
2. A second set of estimates is used to indicate how much rents of assisted households increased due to differing increases in the amount of allowance.
3. A similar approach shows how much rents changed following the reforms among assisted families living in a certain type of housing compared to non-assisted families who were living in housing where the limit would have changed exactly as much if they had received an allowance.

Data comprise a random sample from the Statistics of Income Distribution (compiled by Statistics Finland) of approximately 12,000 Finnish households located in the free-market or municipal rental sectors from 1994–2003. An allowance was received by 23 per cent of households during the period analysed. The main part of the analysis concentrated on the years 2000–2003.

Study quality

This is a high quality paper drawing on a unique dataset. The methods (difference-in-difference estimates and regressions) are sophisticated, appropriate and robust.

Viren (2013) criticises Kangasharju's finding that households receiving housing allowances pay higher rents than non-recipients on the grounds of the small sample size used. Viren argues that the small samples are dominated by outlier observations so that ordinary least squares estimation produces the (erroneous) results that market rents change in a different way for benefit receivers than other households. However, it is not possible to prove or disprove this assertion on the basis of the data and information supplied in the article. It is therefore not considered a valid criticism.

Viren (2013)

Country

Finland

Citation

Viren, M. (2013) 'Is the housing allowance shifted to rental prices?', *Empirical Economics*, 44(3), 1497-1518.

Summary

The study uses a combination of panel data and cross sectional data to estimate the effect of housing subsidies on rental prices in the private rental market.

Findings

The authors estimate that a proportion of an increase in housing allowance goes toward increased rental prices. They conservatively estimate this proportion to be one-third, but concede that it could be as high as 50 per cent, i.e. if the housing allowance is increased by 1 euro, rents will increase by 33 cents (or as much as 50 cents).

The study finds that the subsidy seems to have increased housing demand more than the subsidy-induced income effect could have implied (which is in line with the goal of the subsidy program).

Contrary to Kangasharju (2010), in testing the 'law of one price', the authors do not find a differential effect of the housing allowance on the rents of assisted and non-assisted households.

Study design

The study uses a combination of cross-sectional and panel data. The first dataset comprises panel data from the Finnish National Pension Fund (FNPS) which distributes the allowance. The sample comprises 50,000 households that received housing allowance during 2000–2008. The second dataset are repeated cross-sections of all Finnish households for 1989–2008 from the Finnish Income Distribution Survey (FIDS), the annual sample exceeding 10,000.

The study uses difference-in-difference estimates and regression analysis to test the law of one price, controlling with a number of approaches including instrumental variable, ordinary least squares and the Arellano-Bond GMM estimator, and in a number of scenarios such as different time periods and geographic locations. The results from these are largely consistent, pointing to the fact that there is no differential in rental prices between assisted and non-assisted households.

Estimation of the impact of housing allowances on rental prices is constrained by the fact that the study draws heavily on FNPS data, which includes only housing allowance recipients and not households that did not receive the allowance; consequently the data does not provide a control group. However, the cross section data from FIDS provided a measure of control and the authors state that on the basis

of the available data they are convinced that part of the housing allowance is shifted to rental prices.

Study quality

This is a reasonably good paper which uses an appropriate regression method and has an appropriate sample size. Several versions of the model as well as estimation procedures are used with broadly consistent results, attesting to the robustness of the approach. A drawback of the approach used is that it is not entirely clear how it distinguishes between treatment and control groups.

4.2.4 UK

The UK Housing Benefit (HB) is a benefit for people on low incomes. This system of housing subsidies for households renting public, community or private housing has a national formula, but is administered by local council housing departments.

The HB can cover up to 100 per cent of rent up to a maximum benefit that can be paid. To be eligible for the housing benefit, persons must be private or public sector tenants, be on a low income or have savings below a certain level. The HB can cover up to 100 per cent of rent and is paid up to a maximum amount. The HB is withdrawn at a taper rate of 65 per cent once income exceeds a threshold level, which depends on household circumstances.[14] In 2001 the housing benefit in the UK amounted to 1.2 per cent of GDP.

The findings and estimations from this study (Gibbons 2006) have limited applicability to the New Zealand context due to the significant differences in the design of the housing allowance and the fact that the study examined the effects of a reduction in housing allowance (as opposed to an increase). However, as in the majority of the other studies reviewed here, Gibbons also finds that there is a relationship between the level of housing allowance paid and rents in the private sector, thereby lending further credibility to the contention that a proportion of any increase (or decrease) in housing allowance is borne by landlords.

Gibbons & Manning (2006)

Country

UK

Citation

Gibbons, S. & Manning, A. (2006) 'The incidence of UK Housing Benefit: evidence from the 1990s reforms', *Journal of Public Economics*, 90(4), 799-822.

Summary

This paper estimates the impact of changes in 1996 and 1997 to the UK Housing Benefit (HB), which reduced the maximum subsidy payable to new claimants.

[14] For a detailed description of how the UK housing allowance is structured refer to: OECD (2015) *OECD Policies and Data: Benefits and Wages: Country specific information*, http://www.oecd.org/els/soc/benefitsandwagescountryspecificinformation.htm (accessed 27/02/2015).

Findings

The study found that the changes affected the level of housing subsidy with an estimated fall of 10–15 per cent in benefit receipt and a fall in rents for private subsidised renters of 6–11 per cent. There was no evidence of a fall in housing consumption by subsidised private renters. The authors estimate that between 60–66 per cent of the incidence of the subsidy reduction was borne by landlords.

The study shows that these results apply to private sector benefit claiming renters, but that the same effects are not observable for the control groups (social-sector housing benefit claimants and private-sector non-benefit claimants).

Study design

The research design is based in the fact that the changes to the UK HB in 1996 and 1997 only applied to new claimants and not to pre-existing claimants. The study uses a difference-in-differences methodology to estimate the size of the treatment effect.

To estimate the impact of the subsidy reduction on an outcome variable the study compares the outcome among new tenancies (who are affected by the reform) with that among continuing tenancies (who were not affected, the control group). As the reforms were 'grandfathered' and applied only to new claims, the study attempts to compensate for time-varying 'tenure discounts' (longer tenancies tend to enjoy lower rents than newly established tenancies) by also estimating models for groups of tenants who were not affected by the change to the HB regime. These groups are social-sector benefit claimants, who are not affected by the rent restrictions as their rents are typically 30–40 per cent below market levels, and private-sector non-claimants. The authors note that although these comparison groups are not perfect 'control groups', studying the impact of the changes on them can shed light on whether or not the study is picking up on true treatment effects.

A three step approach is used:

1. The study considers whether the reforms had any impact on housing benefit receipt
2. The study considers whether there is any evidence that this acted to bring down rents so that part of the incidence was borne by landlords, not tenants
3. The study considers whether there was any impact on the amount of housing consumption.

The study draws on two data sets, namely the Family Resources Survey (FRS) and the Survey of English Housing (SOEH). Both are annual, repeated cross-section surveys. In order to increase the sample size, the study pools data from these sources over the years for which they are both available and considered reliable, namely from April 1994 to March 2000.

Study quality

This is a reasonable study with an appropriate sample size. Several regressions are tested and appear broadly consistent. However, the regression models, whilst appropriate theoretically, do not explain much of the observed variation, i.e. some of the r^2 values (coefficients of determination) are very low; other r^2 values are still well

short of 50 per cent (0.5). A list of controls is provided, though the actual degree of influence of these controls is not listed (e.g. no coefficient for household income).

The authors themselves note:

> *'Our results come with one or two health warnings…the identification of the impact of the reforms essentially comes from the observation that the gap in rent and HB between tenants with short and long tenures fell after the reforms. It is conceivable that other factors can explain this though, at the very least, the reforms to HB are the most plausible explanation for the patterns we observe in the data' (p. 819).*

5 FINDINGS

This review identified eight empirical papers from four countries that investigated the effect of demand-side housing subsidies on the housing market.

There is only a small empirical literature on the impact of demand side housing subsidies on rents. This may be due to the fact that reliable data on this issue is frequently not available. A contributing factor is that housing is not a homogenous good and that rental prices are affected by a great variety of factors, not all of which can be captured and controlled for in empirical studies.

This is evidenced by the methods and modelling used by the studies examined in this literature review, all of which rely on 'best available' data and include dummy variables and proxies to control for factors for which data is unavailable or cannot be practically included in the analysis. Consequently, 'data used' is one of the key factors that distinguishes the investigations.

Overall, each of the papers considered conducted econometric analysis appropriate to the stated purpose of each piece of research and the data available. It should be noted, however, that the question in each paper does not necessarily correspond precisely to the overall research question guiding this literature review.

The comparability of the studies and their applicability to the New Zealand context is constrained as the conditions under which demand-side subsidies are capitalised into higher rents in the private rental market vary greatly between countries. These factors include size and design of the housing allowance program (e.g. eligibility, caps on allowance, etc.), the nature and size of the rental market in each country (supply elasticity), and country specific factors, such as rent controls.

Table 4 presents a summary of articles, their rankings and applicability to the New Zealand context.

Table 4 Quality ranking of studies

Rating	Study	Findings	Applicability
★★★	Grislain-Letremy & Trevien (2014)	→ An increase in housing allowances leads to an increase in rents → The impact of subsidies is heterogeneous; it is stronger for low-income households and for dwellings with two rooms or less → There is no increase in the quality or quantity of housing consumed by subsidy recipients → This points to a low elasticity of housing supply.	The finding that an increase in housing allowances leads to an increase in rents has some applicability to New Zealand. A caveat on the findings is that the French system of rent controls means that the temporality of these impacts in France would be quite different in New Zealand. The different designs of the French housing allowance and the contextual factors of the French housing market mean that findings about the heterogeneity of the impact of subsidies and the amount and quality of housing consumed are not transferrable to New Zealand.
★★★	Kangasharju (2010)	→ In the private rental sector each additional euro of allowance increased claimants' rent by 60-70 cents → Assisted households in the private rental sector paid higher rents than their non-assisted counterparts → Raising the ceiling for acceptable housing expenses led to fewer households living in dwellings where the rent was above the acceptable ceiling.	The study has some applicability to New Zealand, though it should be noted that unlike New Zealand, a proportion of private renters in Finland have their housing allowance paid directly to the landlord, which may diminish their bargaining power in the market, leading to higher rents. Despite the differences between the Finnish and New Zealand housing systems, it is likely that the observation that an increase in housing allowance leads to an increase in private rents is relevant for the New Zealand context also. However, findings about the magnitude of the effect are not transferrable due to contextual differences between the countries. Findings about the differential in rents between assisted and non-assisted households should be disregarded due to the difference in the countries' housing systems and contexts and the fact that the two Finnish studies reviewed have different findings in this respect.

Rating	Study	Findings	Applicability
★★★	Fack (2006)	→ One additional euro of housing benefit led to an increase of 78 cents in rent paid by square metre by new benefit claimants → The reforms led to a small increase in housing quality → The large impact of benefit seems to be the result of very low housing supply elasticity.	The study examines a different type of policy change, as the French reforms led to an increase in demand (eligible households) in addition to increase in amount of supplement. This is different to an increase in the housing supplement in the face of constant demand for housing supply. This may limit the applicability of this study to 's findings have limited applicability to the question of how an increase in housing allowance may affect rents.
★★	Grimes & Hyland (2013)	→ The AS contributes to a short and long term increase in rents → The AS impacts rental yields via an effect on short run rental prices and long run house prices → A simulation showed that a 10% increase in AS leads to a 3.48-3.79% increase in rents/house prices, i.e. landlord capture is about 35% of the total AS.	The reliability of the study's findings is constrained as it uses aggregate data and a macro model which, though internally sound, has limited applicability to answering the research question. Consequently the study's findings need to be interpreted with caution.
★★	Viren (2013)	→ Estimates that 33-50% of an increase in housing allowances is captured by landlords → The subsidy seems to have increased housing demand more than the subsidy-induced income effect could have implied → The study finds no differential in rents between assisted and unassisted households.	As with Kangasharju (2010), the study has some applicability to New Zealand, though it should be noted that, unlike New Zealand, a proportion of private renters in Finland have their housing allowance paid directly to the landlord, which may diminish their bargaining power in the market, leading to higher rents. Despite the differences between the Finnish and New Zealand housing systems, it is likely that the observation that an increase in housing allowance leads to an increase in private rents is relevant for the New Zealand context also. However, findings about the magnitude of the effect are not transferrable due to contextual differences between the countries. Findings about the differential in rents between assisted and non-assisted households should be disregarded due to the difference in the countries' housing systems and contexts and the fact that the two Finnish studies reviewed have different findings in this respect.

Rating	Study	Findings	Applicability
★★	Laferrère & Le Blanc (2004)	→ The reforms led to a sizeable increase in housing demand from newly subsidised renters → This is attributed mainly to the compositional changes in the populations assisted → In the short term there was a faster increase in the cost of rental for dwellings occupied by subsidised renters compared to non-subsidised renters.	As with Fack (2006) the study examines a different type of policy change, as the French reforms led to an increase in demand (eligible households) in addition to increase in amount of supplement. This is different to an increase in the housing supplement in the face of constant demand for housing supply. This may limit the applicability of this study to 's findings have limited applicability to the question of how an increase in housing allowance may affect rents.
★	Gibbons & Manning (2006)	→ The reforms led to an estimated fall in benefit receipt of 10–15% → There was no evidence of a fall in housing consumption by subsidised private renters → Estimates that 60–66% of the incidence of subsidy reduction was borne by landlords.	The findings and estimations from this study have limited applicability to the New Zealand context due to the significant differences in the design of the housing allowance and the fact that the study examined the effects of a reduction in housing allowance (as opposed to an increase). However, as in the majority of the other studies reviewed here, Gibbons also finds that there is a relationship between the level of housing allowance paid and rents in the private sector, thereby lending further credibility for the contention that a proportion of any increase (decrease) in housing allowance is borne by landlords.
★	Stroombergen (2004)	→ The AS has no effect on rents	Uses a macro-model and aggregate data, which are not well suited to answering the research question. Consequently there is doubt about the reliability of the findings.

5.1 Impact of demand-side housing subsidies on the private rental market

The literature review found strong evidence to support the contention that a proportion of demand-side housing subsidies is capitalised into higher rents in the private rental market.

With the exception of Stroombergen (2004), all of the studies reviewed here draw a similar overall picture of the effect of an increase in demand-side housing subsidies on rental prices, namely that landlords seem to be capturing a proportion of any increase of the housing subsidy. This holds true regardless of country specific and subsidy specific contextual factors.

Estimates of the magnitude of landlord capture vary from 30 per cent to 78 per cent of the increase in subsidy. However, estimates of the magnitude of landlord capture provided in the studies reviewed should be treated with caution as:

- All papers examined make a large number of assumptions about the factors influencing demand and supply of housing.
- Many factors that influence rents, not all of which can be accounted for in modelling. This is evident from the finding that in many cases r^2 (coefficient of determination) values show that variances are not sufficiently explained by the model.
- The contextual factors affecting housing supply and demand (policy context, rent setting, housing subsidy eligibility, design of housing subsidy, housing market elasticity, rent controls, caps on payments, etc.) vary significantly between the countries studied.

All studies noted that elasticity of housing supply is the key factor that impacts on the degree of landlord capture. They further note that, at least in the short run, housing supply is relatively inelastic. The less (or more) elasticity there is in the market, the greater (or smaller) the proportion of landlord capture will be. However, none of the studies examined incorporate empirical data on housing supply elasticity into their modelling and analyses, rather housing supply elasticity is treated as an explanatory factor for their results.

5.2 Impact of demand-side housing subsidies on housing consumption and housing quality

The studies reviewed were inconclusive on the question of whether demand-side housing subsidies contribute to an increase in the quantity and quality of housing consumed.

- In France, Grislain-Letremy and Trevien (2014) found that there was no increase in the quality and quantity of housing consumed, while Fack (2006) points to a small increase in housing quality
- In the UK, Gibbons and Manning (2006) found that a reduction in the rates of payment of subsidy did not affect housing consumption
- In Finland, Viren (2013) concluded that the subsidy seems to have increased housing demand more than the subsidy-induced income effect might imply.

5.3 **Applicability of findings to New Zealand**

While the contextual factors circumscribing the other studies reviewed vary considerably between countries and are generally different to the New Zealand situation, the consistent finding that in each case a proportion of the housing supplement is subject to landlord capture is convincing

The two New Zealand specific studies present contradictory findings. Stroombergen (2004) finds no effect of the Accommodation Supplement (AS) on private rental prices, while Grimes and Hyland (2013) detect that there is an effect, estimated to be around 35 per cent.

The findings from the New Zealand specific studies should be treated with caution, due to the data and modelling used. That is, both studies use a macro approach and rely on aggregate data, which are not appropriate to examining changes in small sub-segments of the rental market.

The types of differences in the design and application of housing supplements in the other countries reviewed are not significant enough to rule out the applicability of the studies' findings in the New Zealand context; it is highly likely that an increase in the AS will lead to a concomitant increase in private rental prices in New Zealand. The magnitude of this rental increase will depend on the supply elasticity of the New Zealand housing rental market.

In the long run rents are determined by house prices. It would therefore be incorrect to say that a housing supplement such as the AS drives rent increases or is a determinant of rent increases. However, it is clear from the evidence that an increase (decrease) housing supplement is a factor in increased (decreased) rental prices.

In conclusion, there are empirical questions about housing supply elasticity that need to be answered in order to estimate the degree of landlord capture of the AS.

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