

Housing, the 'Great Income Tax Experiment', and the intergenerational consequences of the lease.

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A screenshot of the Inland Revenue Individual tax return form (IR 3 2016) for Tami Taylor. The form is titled "Individual tax return" and "IR 3 2016" with the dates "1 April 2015 to 31 March 2016". It includes fields for Name, Address, and various tax-related information. The form is partially filled out with red text and numbers. The Inland Revenue logo is in the top left corner. The form is titled "Individual tax return" and "IR 3 2016" with the dates "1 April 2015 to 31 March 2016". It includes fields for Name, Address, and various tax-related information. The form is partially filled out with red text and numbers. The Inland Revenue logo is in the top left corner.

To start with.....a tax exam

Suppose the government introduced a new petrol tax of 50 cents per litre, but only applied it to two wheel drive cars.

1.3L 2-wheel drive



4L 4-wheel drive



Tax Exam

- Q1 What will happen to fraction of new cars that are 4 wheel drive? (up, down, stay-the-same)
- Q2 What will happen to the second-hand price of 4 wheel drive cars? (up, down, stay-the-same)
- Q3 Name two ways you could make the tax on 2-wheel drive and 4-wheel drive cars the same.
- Q4 If the tax raised \$500m, would you be prepared to increase other taxes instead of raising the petrol tax?

Tax and housing

It is often said that housing is favourably taxed in New Zealand

- the OECD
- The 2001 McLeod Tax Review
- The 2010 Tax Working Group
- The 2011 Saving Working Group

Yet nothing is done about it because

- it is politically difficult.
- most countries tax housing in a similar fashion.

Nonetheless, this paper claims

- New Zealand has one of the most distortionary tax environments for housing markets of any country in the OECD.
- The root cause is the tax changes made to retirement savings in 1989
- It *may* explain why NZ has experienced the fastest real increase in house prices in the OECD since 1990
(but I can't prove this.)
- It may explain why NZ has the third largest new houses in the OECD and why house sizes have increased faster here than elsewhere since 1989.
(but I can't prove this either)

Key Message

- New Zealand's tax treatment of housing is so distortionary not because of the way we tax housing but because of the differences between how we tax housing and how we tax other assets.
- If we can't tax housing more for political reasons, we could reform the way we tax other assets.
- If we don't reform our tax system, the tax system will keep imposing large costs on new generations of young people.

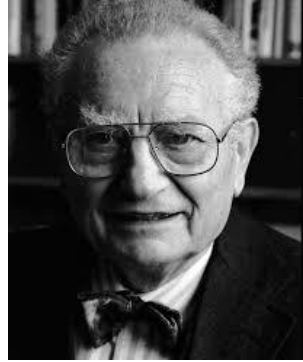
Two tax philosophies

Income Tax

- Income is taxed when it is earned
- Broad coverage allows low rates
- Distorts saving choices
- Distorts investment choices unless there is an accrual-based capital gains tax.
- Distorts investment choices if some assets are exempt.

Expenditure tax

Samuelson 1964



- An income tax without an accrual based capital gains tax is distortionary because it taxes investments that provide a cash return each year (and then are compounded) more than investments whose returns are delayed.
- Unless capital gains are taxed on an accrual basis, this provides an incentive to invest in low yielding long horizon assets (such as land) rather than higher yielding short term investments.

Two tax philosophies

Income Tax

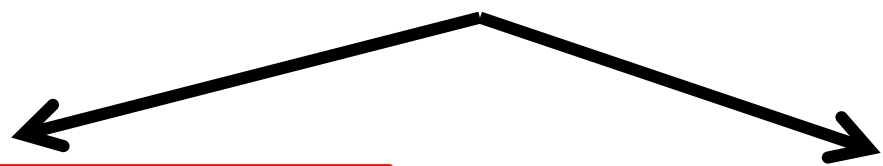
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- Distorts saving choices
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Expenditure tax

- Income is taxed when it is spent
- Requires higher rates when there is saving
- Does not distort saving
- Does not distort investment unless some asset classes are exempt.

- Many early economists favoured expenditure taxes but said they were too difficult to implement.
- In recent years OECD countries have increasingly shifted to expenditure taxes as they became easier to implement and are considered less distortionary.
- NZ adopted a GST in 1986 and raised it in 1992, 2010.

Many varieties of expenditure taxes



Retail and wholesale taxes
GST

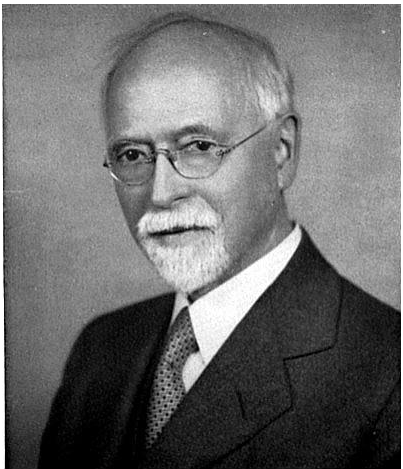
General consumption taxes
(Fisher, 1937)



Tax applied to
income + net asset sales

- If you earn \$100,000 and save \$20,000, pay tax on \$80,000.
- If you earn \$100,000 and sell \$20,000 assets, pay tax on \$120,000.
- Tax rates can be progressive.

EET (Exempt Exempt Taxed)



- In practice, a Fisher Expenditure tax is hard to implement comprehensively as you need to track all asset sales and purchases.
 - Sadly not all people are honest and don't declare when they have sold an asset!
- As a compromise, some OECD countries apply have an expenditure tax treatment to savings placed in sanctioned retirement saving schemes.
 - No tax is paid on income placed in these schemes when it is earned (E)
 - No tax is paid on the earnings of these savings as they accumulate (E)
 - Tax is paid on the whole sum when it is withdrawn (T)
- Other savings are not treated like this and so are effectively taxed on a TTE income basis

Some countries that have an EET Retirement Saving scheme



Some countries that have an EET Retirement Saving scheme



Some countries that have an EET Retirement Saving scheme



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Denmark, Italy, Sweden have ETT

Some countries that have an EET Retirement Saving scheme



And so did NZ until we swapped to TTE in 1989

The Great New Zealand Income Tax experiment

- In 1989, the Labour Government decided to scrap the EET treatment of retirement saving and replace it with an income tax treatment.
 - It was done so that retirement savings and other forms of savings would be treated on an equal basis (**but not owner-occupied housing**).
 - It brings forward revenue.
 - Capital gains were not taxed so it is a distortionary income tax.
 - Meanwhile the introduction of GST moved the rest of the tax more towards an expenditure system.

What about housing?



- It is possible to have a *prepayment* form of an expenditure tax for certain asset classes
- Instead of EET where purchases and sales of assets are deducted or added to income, no deductions are allowed when the asset is purchased but the asset is not taxed when it is sold.
- Earnings from the asset are exempt, so a TEE system
- This is how owner-occupied housing is taxed in NZ and in many countries around the world
- A TEE system for housing is consistent with expenditure tax treatment

What about housing?



- In most OECD countries, retirement saving and housing are both taxed on an expenditure equivalent basis
- In NZ until 1989, retirement saving and housing are both taxed on an expenditure equivalent basis
- After 1989, housing is taxed on an expenditure basis (TEE) while other assets are taxed on an income basis.
-
- This is why NZ has one of the most distortionary taxes for housing in the OECD: most other countries tax all other assets placed in sanctioned retirement saving schemes in the same way as housing, but NZ does not.

Figure 1: Schematic description of taxes on capital income

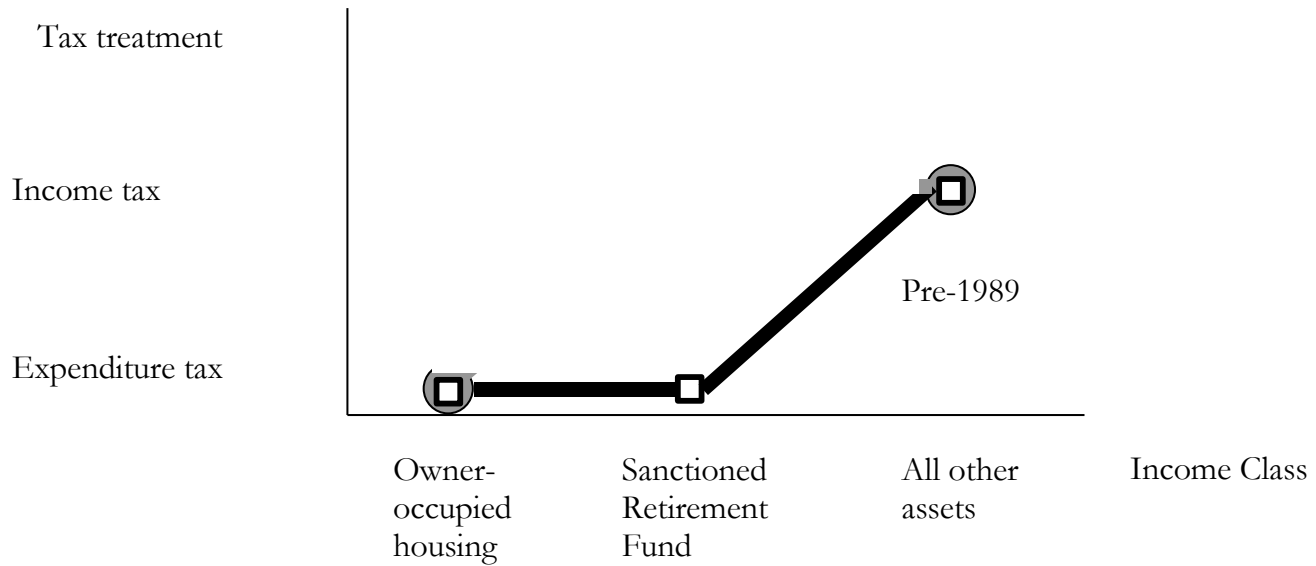


Figure 1: Schematic description of taxes on capital income

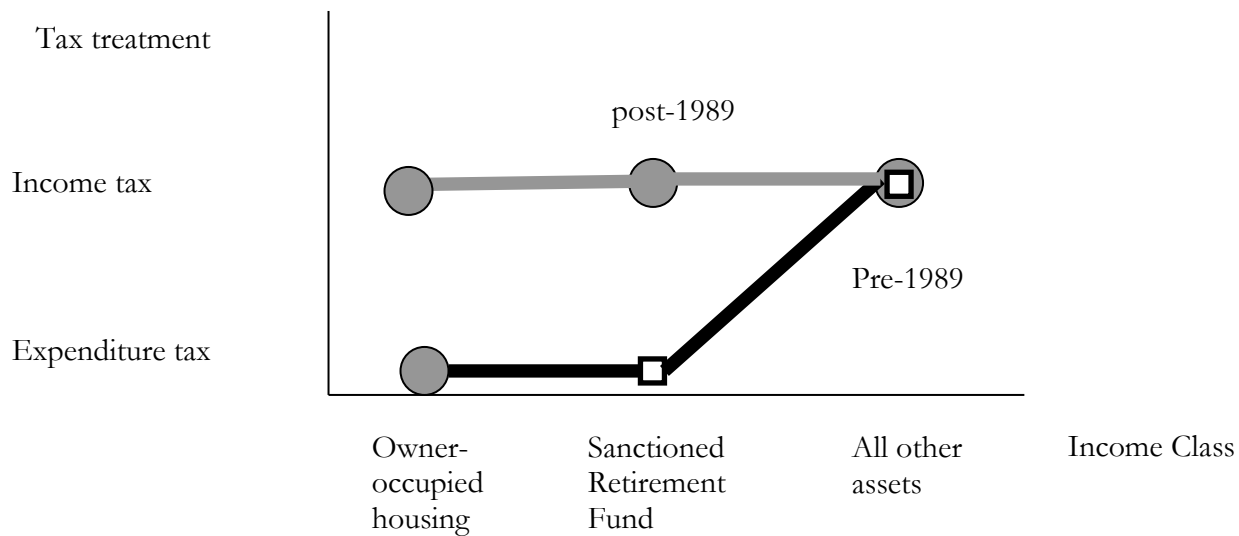
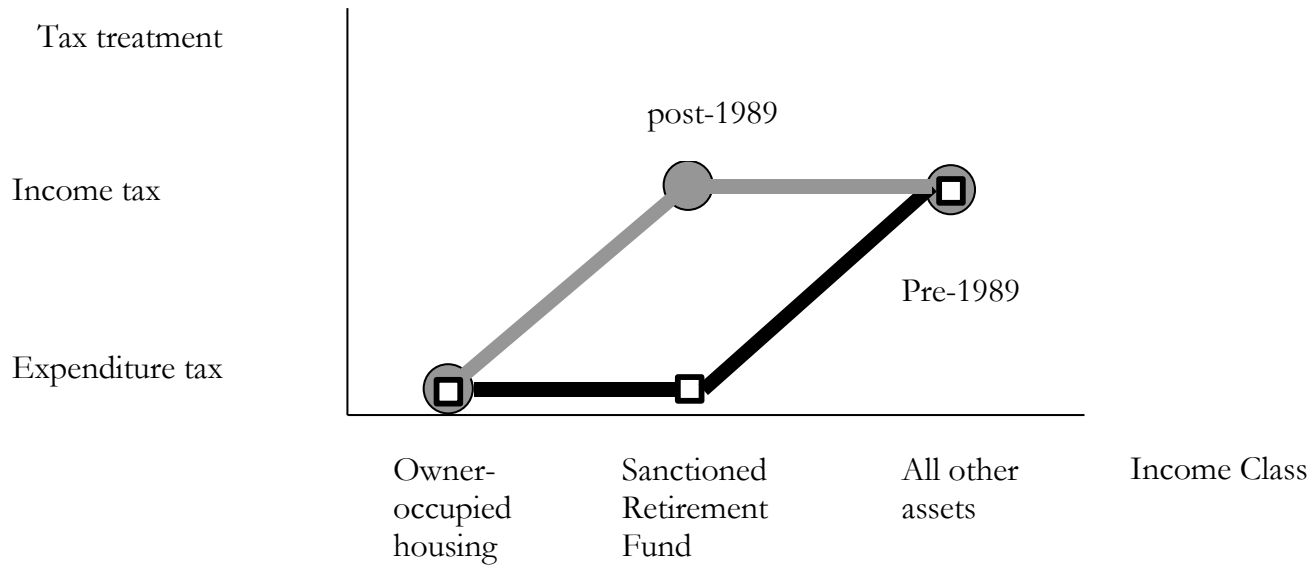


Figure 1: Schematic description of taxes on capital income



So what does this paper do?

- It discusses the implications of the current tax system for the size of houses and the price of land
- It examines some data to ascertain if the a change in the size of houses or the price of land can be traced back to 1989
- It looks at the likely distributional consequences of the change
- It argues that it may be possible to reduces the distortions, not by raising taxes on housing, but by lowering them on retirement savings.
- (Actually, not much other than apply standard tax theory.)

The theoretical effects of taxes on housing markets

- Land price
- House quality
- Landlords

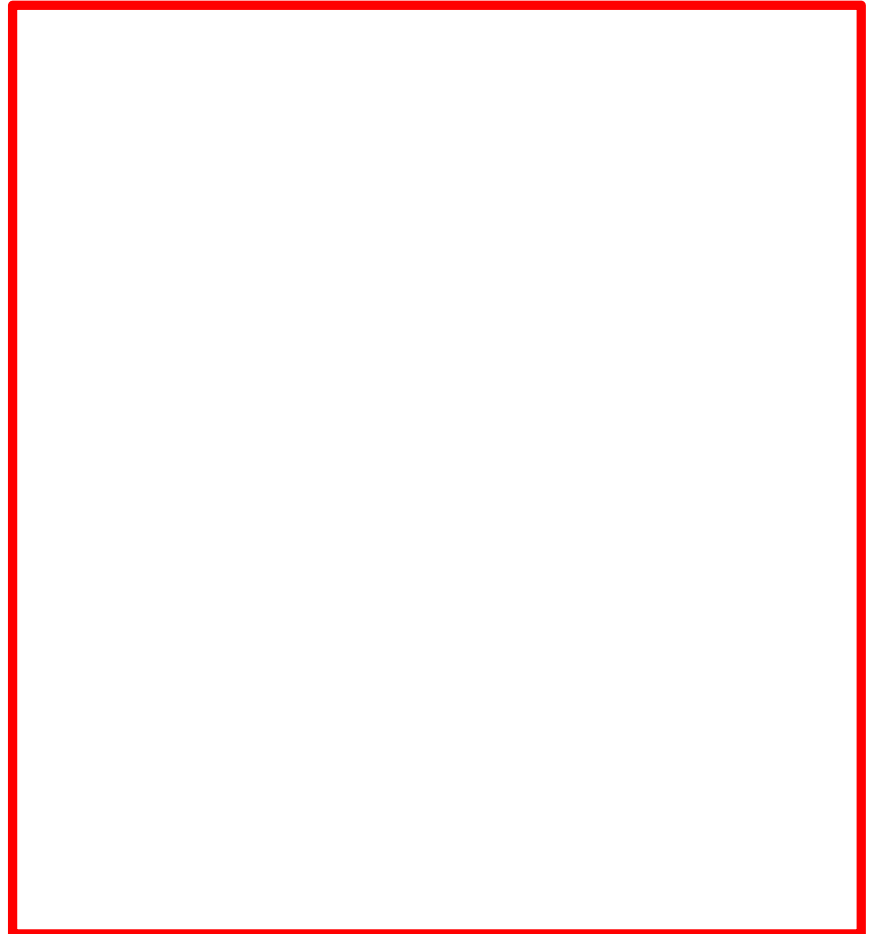


Compare two tax systems

Income tax basis, with exemptions for housing.

- Incentive to increase house size
- Incentive to increase land price
- Incentive to become a landlord rather than lend money and thus incentive to increase price/rent ratio
- Artificially high land prices impose costs on all generations except first land owning generation.
- Tax laws favour owning over renting...but ownership is difficult because prices are artificially high

Expenditure tax basis for retirement savings and housing



Compare two tax systems

Income tax basis, with exemptions for housing.

- Incentive to increase house size
- Incentive to increase land price
- Incentive to become a landlord rather than lend money and thus incentive to increase price/rent ratio

- Artificially high land prices impose costs on all generations except first land owning generation.

- Tax laws favour owning over renting...but ownership is difficult because prices are artificially high

Expenditure tax basis for retirement savings and housing

- Neutral towards house size
- Neutral towards land price
- Incentive to lend money rather than become a landlord and thus incentive to reduce price/rent

- Little tax incentive to increase house prices.

- Tax laws moderately favour owning over renting without providing incentive to have artificially high prices.

House quality under current tax system

- The paper derives formula examining how the tax system changes the incentives to buy different quality houses
- If the tax system is neutral, it does not change choices.
- To get a neutral income tax, the “capital income” earned from your own house should be taxed in the same way as income earned from other assets
- To have a neutral *income* tax
 - tax imputed rent at normal income tax rates
 - Have an accrual based capital gains system.
 - Make an allowance for depreciation and interest payments
 - Take into account local property taxes.

House quality

- The following table calculates the difference between the tax system we have and a neutral tax system.
- Because we tax interest income but not imputed rent or the capital gains on owner-occupied housing, there is an incentive to buy better quality houses.
- The incentive depends on the inflation rate, the interest rate, and the depreciation rate.
- The tables calculate the incentive for the 1990s, the 2000s, and the 2010s.

House quality

- The table calculates the extra benefit you should get from a better house to be equal to the benefit of lending the money.
- eg in 2010s, if the tax system was neutral and you spent \$10000 on a bigger house, you would need benefits of \$550 each year (5.5%) to be better off than lending the money.
- With NZ's distortionary tax system is distortionary, you only need benefits of \$460 (4.6%) to be better off than lending money.
- This means you may be tempted to get an extra bathroom that is not often used, or a triple garage, or more closet space.....

Table 1: the effect of taxes on the housing marginal utility/price ratio.

	$\frac{dH(\theta)/d(\theta)}{dP^H(\theta)/d(\theta)}$	1991-2000 $\pi = 1.8\%$ $i = 7.0\%$	2001-2010 $\pi = 2.7\%$ $i = 5.9\%$	2011-2015 $\pi = 1.1\%$ $i = 4.0\%$
(1) Neutral taxes	$i + \delta + \delta\pi - \pi$	7.8%	5.8%	5.5%
(2) Neutral taxes +property tax	$i + \delta + \delta\pi - \pi + \tau_L$	8.3%	6.3%	6.0%
(3) Current income taxes	$(1 - \tau)i + \delta + \delta\pi - \pi + \tau_L$	6.0%	4.3%	4.6%
(4) Ratio (3)/(2)		72%	69%	78%
(5) Current taxes + CGT	$(1 - \tau)(i + \delta + \delta\pi - \pi) + \tau_L$	5.7%	4.4%	4.2%
(6) Current taxes + imputed rent tax	$\frac{(1 - \tau)i + \delta + \delta\pi - \pi}{1 - \tau} + \tau_L$	8.7%	6.2%	6.7%

Source: Author's calculations.

- The current tax system provides an incentive to accept a return from housing 20- 25% lower than it would be if the tax system was neutral.
- Could suggest the tax incentive leads to a 20-25% increase in the size of houses.
- Could largely be fixed by a tax on imputed rent when inflation rate = depreciation rate

Land price

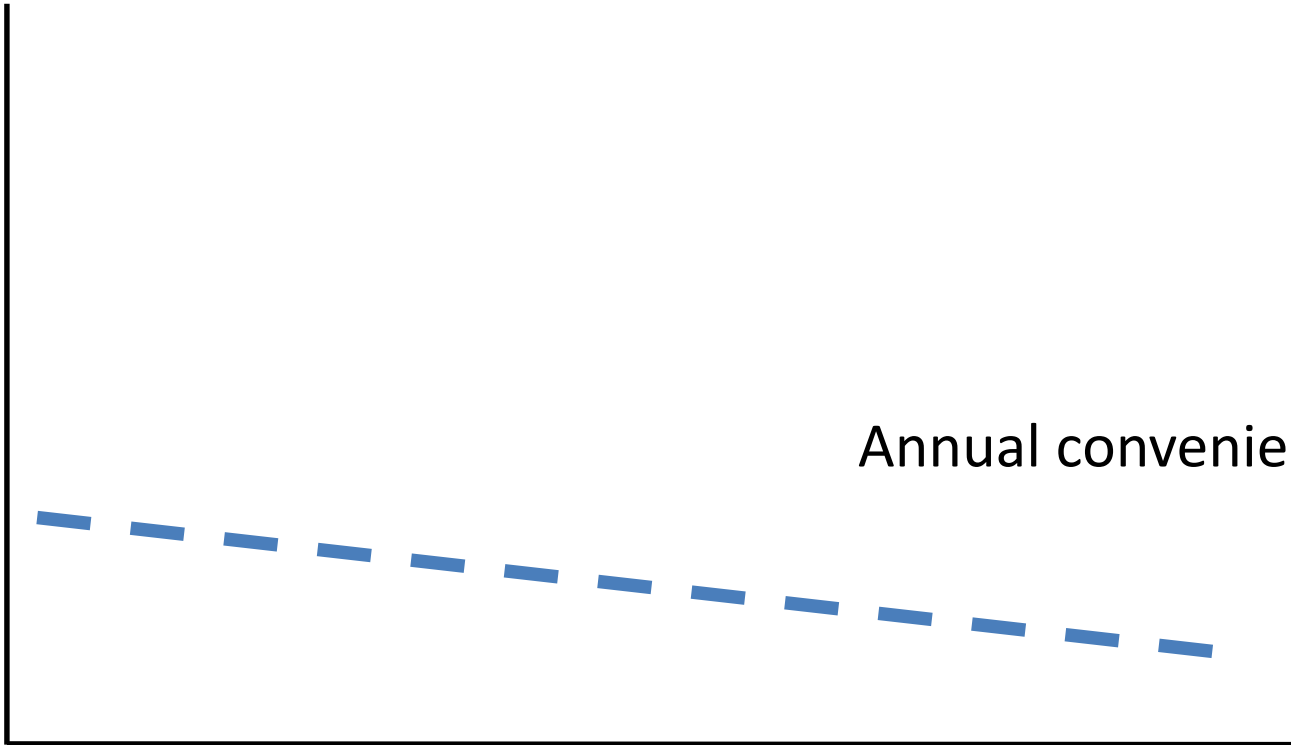
- The paper derives formula examining how the tax system changes the incentives to buy better located land
- If the tax system is neutral, it does not change choices.
- To get a neutral income tax, the “convenience yield” or capital income earned from being better located should be taxed in the same way as income earned from other assets

- Convenience yield is the annual benefit from being closely located to desirable amenities, or jobs.
- For example, you may be willing to pay \$10000 per year extra to live in Oriental Parade rather than Upper Hutt, as it is closer to the things you like to do
- It will depend
 - on transport costs to amenities;
 - how good the amenities are.



Effect of taxes on marginal convenience yield/ land rent gradient

price



Annual convenience yield

Downtown

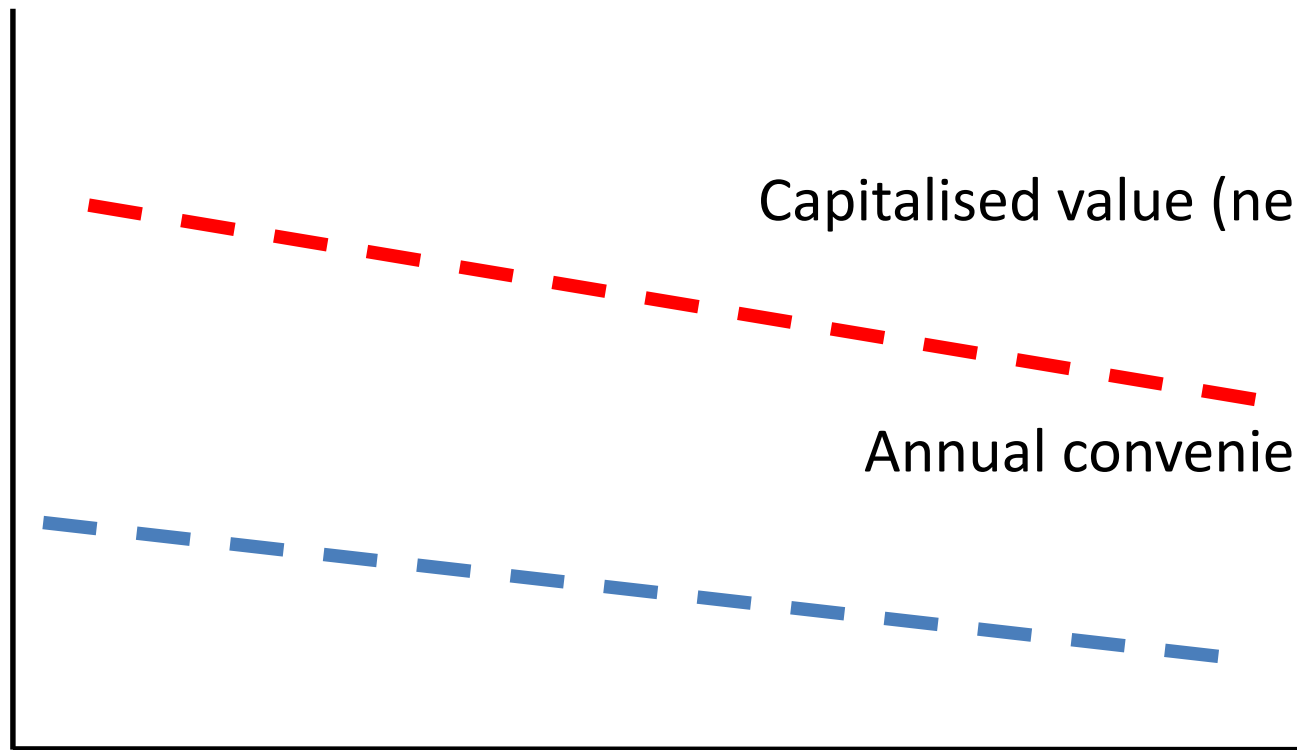


Distance

- How much more will you pay to buy an “equal” house in Oriental Parade and Upper Hutt that provides an annual marginal convenience yield of \$10000 when the tax system is neutral.
- It is inversely related to interest rates: if the interest rate was 5% you might pay $20 * \$10,000 = \$200,000$ extra so you could live in Oriental Parade rather than Upper Hutt.

Effect of taxes on marginal convenience yield/ land rent gradient

price



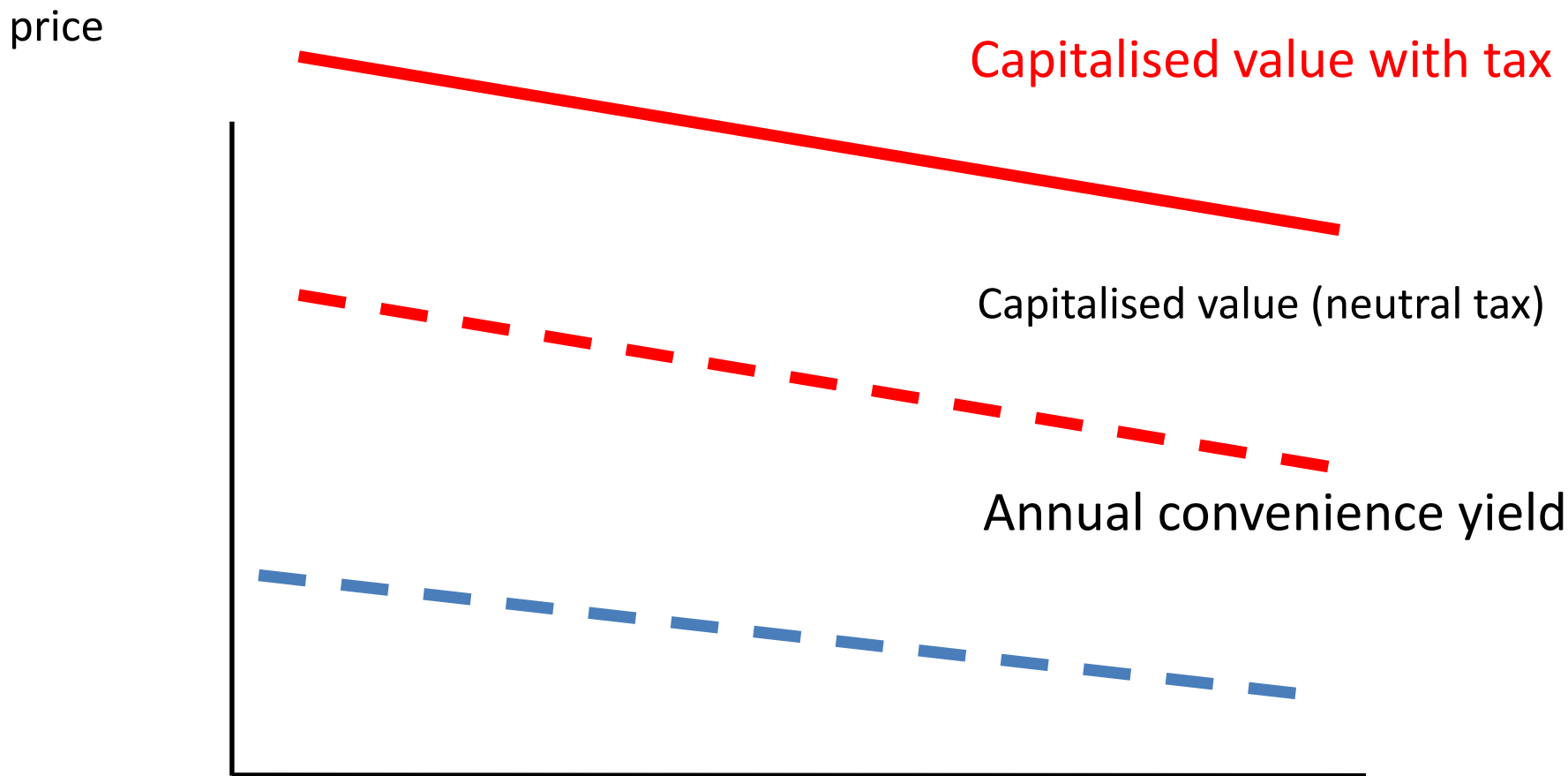
Downtown



Distance

- Because interest income is taxed, when the tax system is not neutral people should be willing to pay much higher multiples to live in convenient locations.
- A non-neutral tax system will be capitalised into land prices.
- The amount it is capitalised depends on
 - Interest rates;
 - The tax system.
 - The normal rate of appreciation of land prices
- **To have a neutral *income* tax**
 - tax imputed rent at normal income tax rates
 - Have an accrual based capital gains system.
 - Make an allowance for interest payments
 - Take into account local property taxes.

Effect of taxes on marginal convenience yield/ land rent gradient



Downtown



Distance

Table 2a: the effect of taxes on the marginal land price/ convenience yield ratio ($g = 0$).

	$\frac{dP^L(\lambda)/d(\lambda)}{dC(\lambda)/d(\lambda)}$	1991-2000 $\pi = 1.8\%$ $i = 7.0\%$	2001-2010 $\pi = 2.7\%$ $i = 5.9\%$	2011-2015 $\pi = 1.1\%$ $i = 4.0\%$
(1) Neutral taxes	$\frac{1}{i - (g + g\pi + \pi)}$	19.0	31.1	34.0
(2) Neutral taxes +property tax	$\frac{1}{i - (g + g\pi + \pi) + \tau_L}$	17.3	26.9	29.1
(3) Current taxes	$\frac{1}{(1 - \tau)i - (g + g\pi + \pi) + \tau_L}$	29.0	56.8	47.1
(4) Ratio (3)/(2)		1.6	2.1	1.6
(5) Current taxes + CGT	$\frac{1}{(1 - \tau)(i - g + g\pi + \pi) + \tau_L}$	24.8	37.7	40.5
(6) Current taxes + imputed rent tax	$\frac{1 - \tau}{(1 - \tau)(i + \tau_L) - (g + g\pi + \pi)}$	20.4	42.0	34.2

Table 2b: the effect of taxes on the marginal land price/ convenience yield ratio ($g = 1$).

	$\frac{dP^L(\lambda)/d(\lambda)}{dC(\lambda)/d(\lambda)}$	1991-2000 $\pi = 1.8\%$ $i = 7.0\%$	2001-2010 $\pi = 2.7\%$ $i = 5.9\%$	2011-2015 $\pi = 1.1\%$ $i = 4.0\%$
(1) Neutral taxes	$\frac{1}{i - (g + g\pi + \pi)}$	23.5	45.7	51.8
(2) Neutral taxes +property tax	$\frac{1}{i - (g + g\pi + \pi) + \tau_L}$	21.1	37.2	41.2
(3) Current taxes	$\frac{1}{(1 - \tau)i - (g + g\pi + \pi) + \tau_L}$	41.2	136.4	89.9
(4) Ratio (3)/(2)		2.0	3.7	2.1
(5) Current taxes + CGT	$\frac{1}{(1 - \tau)(i - g + g\pi + \pi) + \tau_L}$	29.9	50.8	55.8
(6) Current taxes + imputed rent tax	$\frac{1 - \tau}{(1 - \tau)(i + \tau_L) - (g + g\pi + \pi)}$	29.6	117.9	70.7

Source: Author's calculations.

- Taxes increase the premium you pay to buy conveniently located land by a factor of 1.6 (if $g = 0$) or 2 (if $g = 1$)
- This premium will exist even if we build lots of new houses: it affects the slope of the land gradient as well as the level.
- The current tax system has incentives to bid a lot more for conveniently located land.
- Could be partially fixed by a capital gains tax not an imputed rent tax

House price/ rent ratio

- The paper derives formula examining how the tax system changes the incentives to become a landlord rather than lend money
- The key issue is that we have a distortionary income tax system even though rent is taxed because capital gains are not taxed.
- This provides an incentive for landlords to reduce the rent/ house price ratio.

- The ratio can fall either because rents fall or because house prices increase.
- (Coleman 2008 shows that lifetime utility of low income people can increase if rents decrease, but will decrease if house prices increase.)
- The problem is entirely fixed by an accrual capital gains tax on nominal capital gains

Summary

If you move from an expenditure tax basis to an income tax basis without taxing imputed rent or capital gains:

1. New houses should get bigger/ better quality
 2. Land prices should rise
 3. Rent/ price ratios should fall.
- Other factors such as low interest rates will also cause these changes; but the post-1989 tax system will accentuate all of the changes caused by low interest rates.

Empirical Evidence

- Can we detect evidence of the great income tax experiment?
 - Some historic and cross country data
 - Rent/price regressions
 - New building size regressions

Basic Facts

- New Zealand house prices increased much faster after 1990 than before 1990
- Rent/price ratio declined rapidly, particularly after 2000
- New building size increased sharply after 1989
- Largest increase in house prices in OECD, 1990 – 2016
- Faster increase in new house sizes than Australia or the U.S.

Figure 2: Real Property Prices in New Zealand, 1923 – 2014

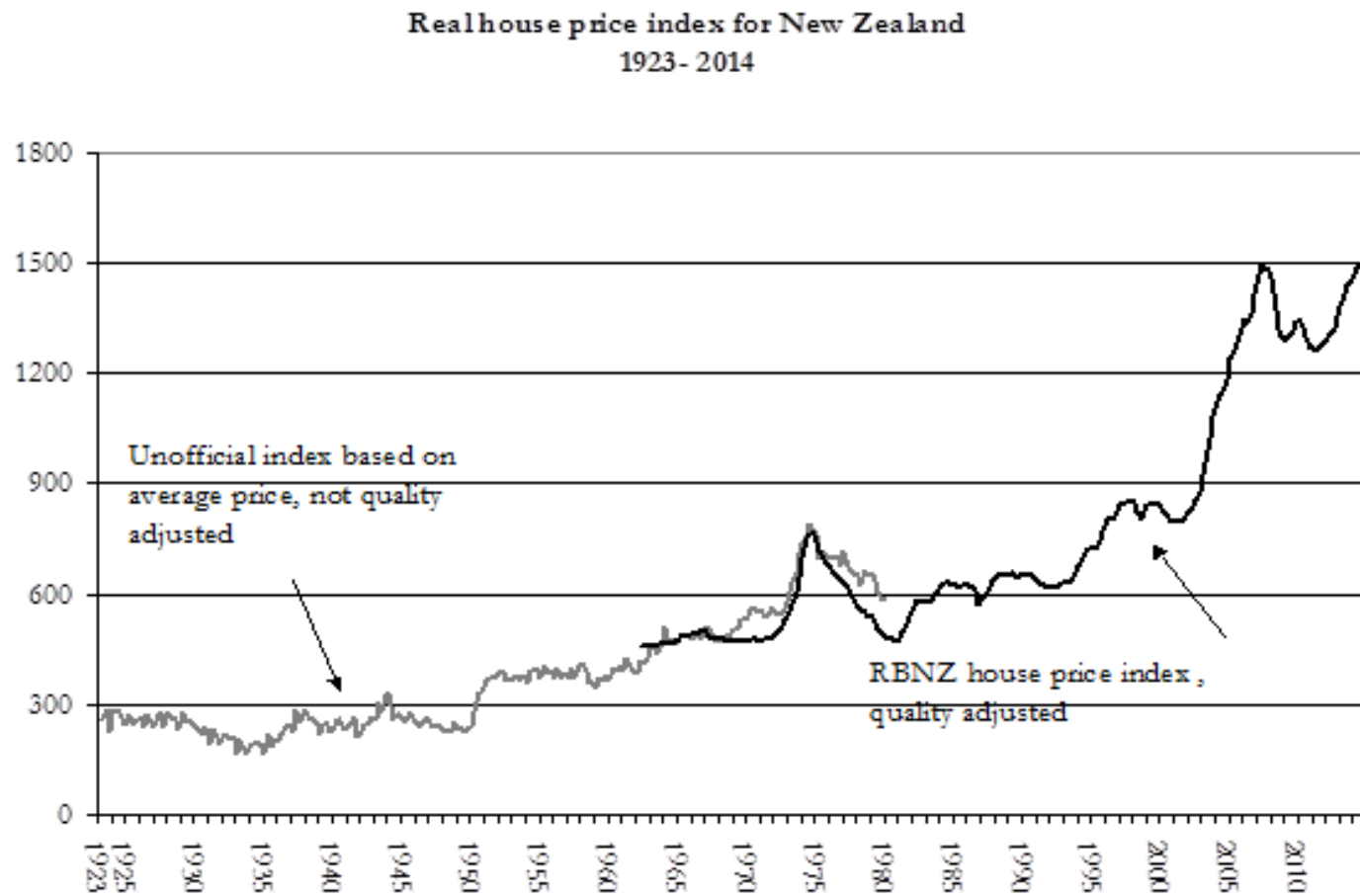


Table 5: Annual average property price increases in New Zealand, 1923 – 2014

	House prices 1923 – 2014		
	Nominal increase	Inflation	Real increase
1923:2 – 1963:2	3.7%	2.2%	1.5%
1962:2 – 1990:2	11.1%	9.7%	1.3%
1990:2 – 2014:4	5.7%	2.1%	3.5%
1975:1 – 1990:2	11.3%	12.2%	-0.8%
1990:2 – 2000:1	4.3%	1.7%	2.5%
2000:1 – 2014:4	6.7%	2.4%	4.2%
	Rents, 1975 – 2014		
	Nominal increase	Inflation	Real increase
1975:1 – 1990:2	13.2%	12.2%	0.9%
1990:2 – 2000:1	4.0%	1.7%	2.3%
2000:1 – 2014:4	1.4%	2.4%	-1.0%

Table 4: Selected measures of Household Wealth, 1998- 2015.

	1998	2007	2015
Population	3,846,100	4,240,000	4,633,900
Nominal GDP	\$111,157m	\$183,333m	\$247,436m
Housing and Land Value	\$221,000m	\$613,678m	\$873,190m
- Ratio to GDP	1.99	3.35	3.53
Value of equity in businesses (includes equity in rental property)	\$123,618m	\$303,577m	\$372,844m
Equity in Superannuation and insurance funds	\$42,804m	\$41,142m	\$75,272m
Deposits	\$44,941m	\$95,079m	\$151,755m
Liabilities	\$44,991m	\$121,320m	\$163,166m
Net Financial Wealth (includes equity in rental property)	\$172,745m	\$340,753m	\$461,249m
Total Net Wealth	\$349,149m	\$817,690m	\$1,118,487m
- Ratio to GDP	3.14	4.46	4.52
Net Wealth excluding value of land	\$128,149m	\$204,012m	\$245,297m
- Ratio to GDP	1.15	1.11	0.99

Table 6: International House Price changes, 1975 – 2016

	Percentage change in real house prices			
	1975:1 – 1990:1	1990:1- 1997:1	1990:1 – 2000:1	1990:1 – 2016:3
Australia	46%	-3%	16%	157%
Belgium	24%	22%	41%	120%
Canada	46%	-20%	-15%	106%
Croatia	1%	28%	26%	23%
Denmark	-10%	22%	42%	97%
Finland	61%	-37%	-18%	21%
France	35%	-10%	4%	82%
Germany	1%	1%	-1%	1%
Ireland	24%	31%	128%	176%
Israel	14%	79%	66%	159%
Italy	3%	-16%	-13%	-8%
Japan	51%	-11%	-17%	-47%
Luxembourg	115%	12%	21%	145%
Netherlands	11%	41%	96%	111%
New Zealand	-14%	32%	30%	221%
Norway	12%	3%	25%	138%
South Korea	79%	-37%	-50%	-35%
South Africa	-35%	-21%	-12%	87%
Spain	-35%	-12%	0%	24%
Sweden	-1%	-27%	-7%	112%
Switzerland	51%	-34%	-36%	-2%
U.K.	69%	-19%	8%	104%
U.S.A.	23%	1%	12%	39%

Figure 5: Average new house size, Australia, New Zealand and the United States, 1974-2014. Square metres.

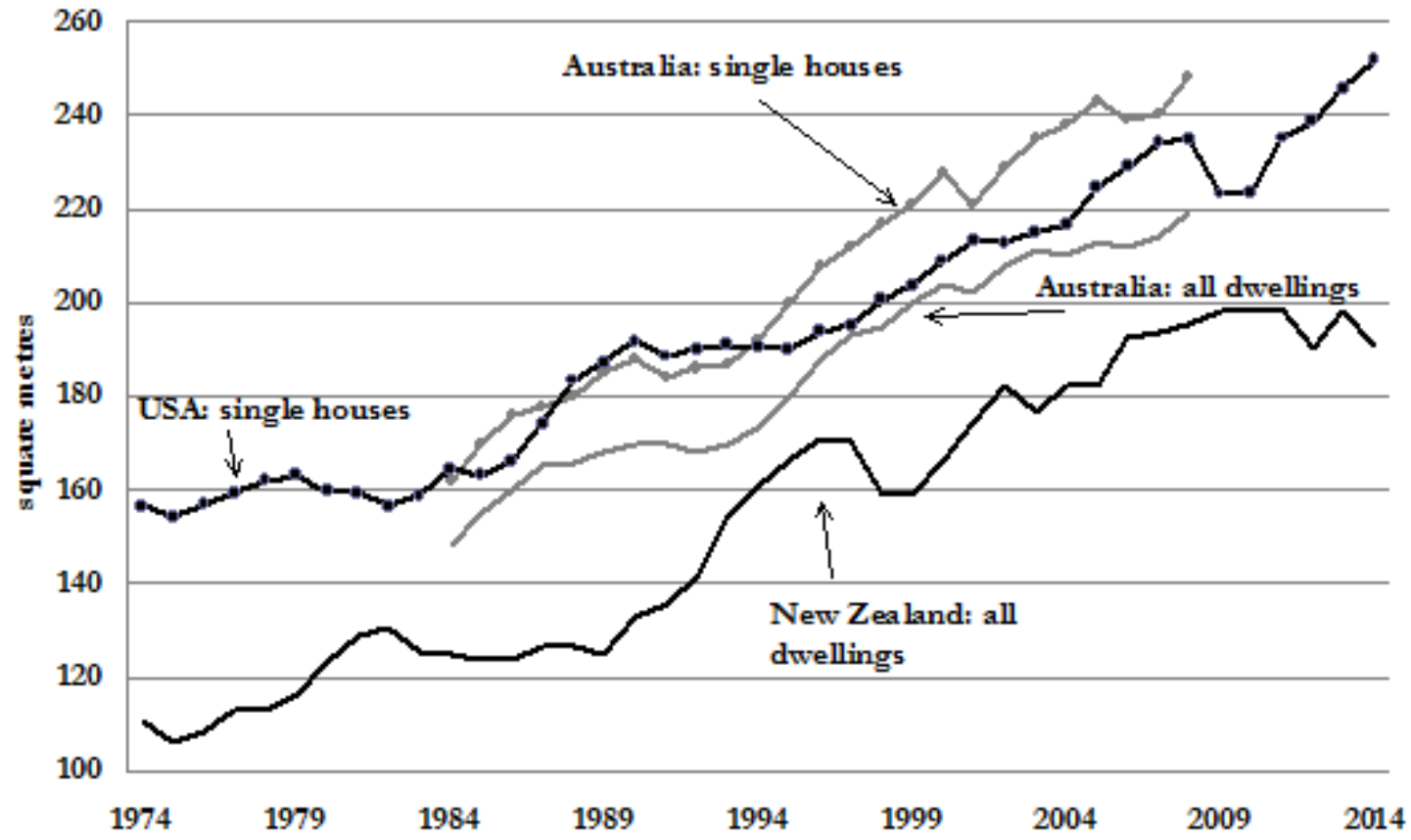
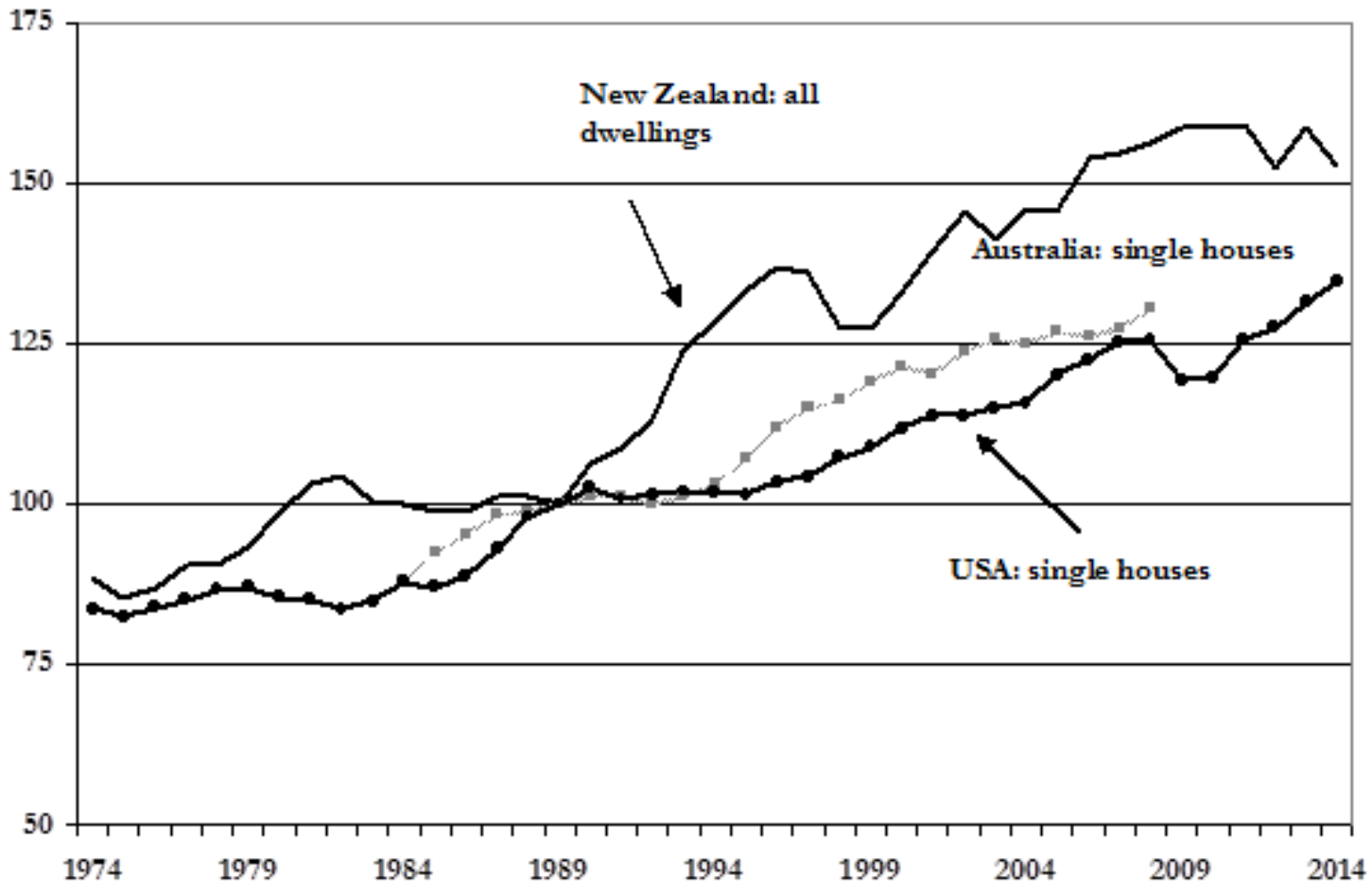


Figure 6: Average new house size, Australia, NZ and the US 1974-2014. Indices normalized with 1989 = 100



Empirical Summary

- All the effects are in the direction of theoretical predictions
- The decline in real interest rates is a major confounding factor
- Can't prove anything with short time series
- NZ has world leading changes in prices and house sizes since the tax changes were introduced.

Welfare analysis

- What are the likely welfare effects of the tax change?
- The key insight was made by Feldstein (1978) and has been followed by Chamley and Wright (1986), Skinner, and others.

Tax and Land price

- If you tax land at concessional rates, the price of land is likely to become artificially high.
- There is an intergenerational transfer to existing land owners from all future generations.
- Future generations who pay artificially high prices for their land and will be worse off by the real interest cost of the higher land prices
- This is likely to reduce local ownership of capital stock and cause lower wages and productivity or an ongoing current account deficit
- Collectively, future generations are worse off than they otherwise would be.

- The paper does not do a full analysis but compares the current tax rate on housing with
- (a) a neutral income tax system which has an accruals based capital gains tax and a tax on imputed rent
- (b) the current housing tax system with an EET retirement income scheme.

Compared to either...

- The current scheme leads to high land prices
- It reduces the welfare of current young and all future generations because of the higher price people pay for land
- 100% equity owner-occupiers are least worst off, and may be better off.
- Renters and low equity owner-occupiers are worst off.
- *Hardly a scheme you would willingly introduce if you could avoid it.*

Discussion

- The Great Income Tax Experiment created incentives to increase the size of new houses and to bid up the price of land
- New house sizes and land prices have increased substantially, but it is not possible to prove it was the tax increase.
- there were 62000 landlords in 1990 vs 276000 now
- The reforms should have cause an intergenerational transfer, making new generations collectively worse off and being particularly hard on low equity owner-occupiers.
- Big beneficiaries are the baby-boom generation

Discussion

- The problem is that housing has been taxed differently to other assets.
- This is more extreme in NZ than in most other countries because other countries tax housing and retirement saving accounts on an expenditure basis.
- NZ has three possible solutions

Three options

- Do nothing, and keep a tax system that is particularly distortionary on housing markets
- Create the political consensus to tax imputed rent and capital gains on owner-occupied housing – an extremely difficult task to introduce and sustain.
- Move back to an EET retirement tax system, like the rest of the world.



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- Unfortunately, neither of the two latter options are easy.
- The third option has proven international durability and is the recommended option of the 2010 Mirrlees Tax Review.
- Perhaps it is time NZ reconsidered the Great Income Tax experiment
- The adverse consequences on land markets maybe worse than the problems of having different tax rates for retirement accounts and other assets.



Final image



This man can't run 1km in 4 minutes for two reasons.
Even if you fix the immediate wound, the cigarette will slow him down.
Even if we fix up land supply, the tax system will still create artificially high land prices and impose costs on young people and future generations