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WHAT ARE WE DISCOUNTING FOR?
THINKING THROUGH CGT REFORM OPTIONS UTILISING PROPERTY DATA

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There are various proposals regarding how to reform capital gains taxation in Australia. Using data on realised capital gains in 2022 for a subset of housing investors (those holding for between one and nine years) we describe how different tax systems would have treated individuals differently.

The four tax systems we highlight are:

1. **50% CGT discount:** The current system in which half of the nominal gain is included in taxable income at realisation.
2. **33% CGT discount:** A modification of the current system where the discount is reduced to 33%.
3. **Cost base adjustment:** No discount and instead adjusts for inflation by indexing the cost base and removing the deductibility of the inflation component of interest.
4. **ILT-neutral system:** Adds income averaging to the cost base system. This treats the realised gain as if it was earned evenly over the holding period – making the system inflation, leverage, and timing (ILT) neutral.

The ILT-neutral system is used as a benchmark to reflect consistent taxation of capital gains income. However, other options may be preferred if they provide similar outcomes to this system but are easier to administer and comply with. This note highlights what is lost in equity and tax revenue from making these simplification choices.

In 2022, the current 50% discount would have been similar to the ILT-neutral system in a couple of key ways: it would have led to the same median tax rate being paid on capital gains, and it would have lead to a similar median tax rate among the bottom seven income deciles.

However, there were also significant differences. The median tax rate faced by the top three deciles was much lower than it would have been under the ILT-neutral system and tax revenue was only half the amount we estimate would be raised under the ILT-neutral approach. Importantly, an inflation incentive to borrow excessively to invest in capital gains generating assets also exists under the discount.

Furthermore, the ILT-neutral system would – among this group – have raised more revenue than the 33% discount, with lower median tax rates due to the ILT-neutral system capturing more of the income from those with high real returns.

For this group of taxpayers, the cost base adjustment system surprisingly has lower estimated tax paid than in the ILT-neutral case. This result is driven by significant strategic timing of capital gains by this group of taxpayers.

Overall, among this group of taxpayers reforming the capital gains tax would have raised more revenue in a more efficient and equitable way than simply reducing the discount.

Reforms to CGT through the lens of investment properties

Capital gains tax (CGT) forms a core part of the income tax system. In a coherent tax framework, income should be taxed consistently regardless of how it is earned. Capital gains reflect increases in economic resources for individuals and therefore belong in the income tax base.

Two practical features complicate their treatment:

1. **Nominal gains** partly reflect inflation rather than real increases in purchasing power.
2. **Gains typically accumulate over many years** but are taxed in full when the asset is sold. In a progressive tax system, this can push taxpayers into higher tax brackets in the year of realisation.

Australia's 50% CGT discount is intended to account for both features. However, inflation and holding periods vary across taxpayers, so a single discount cannot precisely adjust for either. The result is variation in effective tax rates across individuals with similar underlying economic income (Kaplan et al., 2025).

We study alternative CGT policy designs using investment property capital gains as an empirical setting. Housing is well suited to this purpose: gains are large, commonly realised, and observable in administrative data alongside income histories. The objective is not to evaluate housing policy or make welfare judgements about the appropriate level of taxation, but to compare how different CGT structures allocate tax burdens across taxpayers when applied to a common and measurable form of capital income.

We compare four approaches to taxing capital gains:

1. **50% CGT discount:** The current system in which half of the nominal gain is included in taxable income at realisation.
2. **33% CGT discount:** A modification of the current system where the discount is reduced to 33%.
3. **Cost base adjustment:** No discount and instead adjusts for inflation by indexing the cost base and removing the deductibility of the inflation component of interest.[1]
4. **ILT-neutral system:** Adds income averaging to the cost base system. This treats the realised gain as if it was earned evenly over the holding period – making the system inflation, leverage, and timing (ILT) neutral. This is the system recommended in Kaplan et al. (2025).

For general comparison removing the capital gains discount, therefore taxing capital gains at full rates, is also shown.

The **ILT-neutral system** reflects taxation of the real income of the asset in a way consistent with how other income is taxed. However, such a system may have compliance or administrative costs that make this impractical to implement.[2] Conversely, the **cost base adjustment** does not require calculations for income averaging, removing the requirement for detailed taxpayer records over the holding period of the asset – but requires itemised details of the assets cost base, when the cost is incurred, and an appropriate inflation adjustment to each item.

The current system – **the 50% discount** – represents a further simplification, removing the denial of deduction for mortgage interest and replacing the inflation calculation for the discount with a single number. There is some debate about whether this discount is overly generous to too many taxpayers. To help understand this we also consider a 33% discount.

Table 1: Key features of alternative CGT policy settings

Policy setting	Inflation-adjusted cost base	Income averaging	Disallow inflation on interest	Flat concession rate
50% discount (current)	✗	✗	✗	✓
33% discount	✗	✗	✗	✓
Cost base adjustment	✓	✗	✓	✗
ILT-neutral (real return + averaging)	✓	✓	✓	✗

Notes: A tick indicates the feature is present in the policy design.

1 The ILT-neutral system gives this allowance to all capital income. If the allowance was only given to capital gains and not all capital income then the deductibility of inflation on interest is less appropriate – as the full nominal interest return to the lender is taxed. However, the asymmetric treatment of income and deductions may still generate excess leverage, and the allowance would become more necessary with a general inflation allowance in capital income. There is more discussion of this in Appendix A.2.

2 For example, the cost of collecting and storing significant information about individuals tax affairs, the change in the practice and substance of information disposal rules given the long holding period of taxpayer information that would be required.

Box 1: Rental property administrative data

Our analysis uses linked administrative microdata accessed through the Australian Bureau of Statistics. De-identified individual income tax returns are linked to the Australian Tax Office client register to obtain demographic characteristics, and to the rental property schedule covering 2000–2023.

The income tax return records total taxable income and its components, including wage income and net capital gains reported in the year of disposal. Capital gains form part of assessable income in the year an asset is sold after applying relevant concessions such as the CGT discount.

The rental property schedule records financial flows associated with each investment property separately. For each property we observe rental income received and deductible expenses — including interest on borrowing and other property-related costs — which taxpayers must report when declaring rental income. The schedule also contains a property identifier based on address, allowing individual properties to be followed over time.

Together, these datasets allow us to observe both the annual returns earned while holding a property and the capital gain reported when it is disposed of, linking realised gains to the history of income and expenses generated by the same asset.

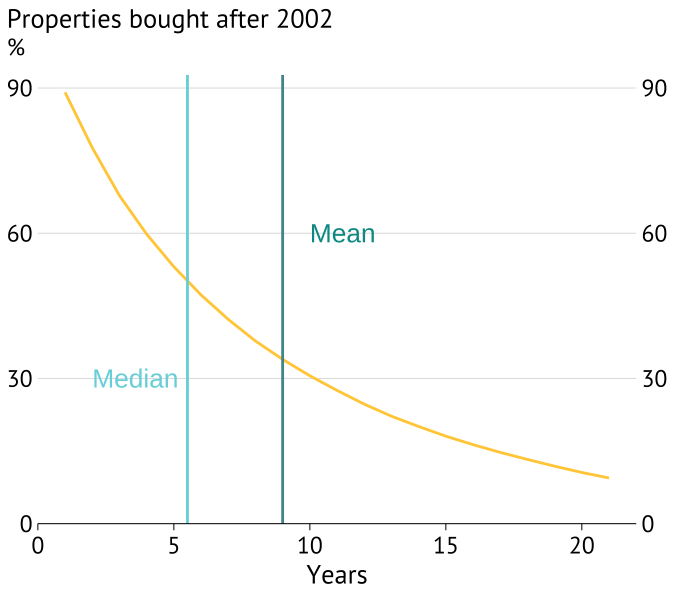
Table 2: Illustrative distributional effects of alternative capital gains tax treatments

Taxpayer cameo	Policy reform scenario	Who gains or loses, and why
Young high–income professional Large one-off gain relative to annual income.	Income averaging + inflation adjustment (ILT-neutral scenario)	**Gains.** Averaging spreads the gain across earlier lower-income years, reducing bracket spikes. Current system taxes the entire gain at peak earnings.
	Reduced discount (33%)	**Loses.** Pays more tax because they are already in a high marginal bracket and rely heavily on the discount.
Retiree landlord Long-held property sold after retirement, low current income	Income averaging + inflation adjustment	**Gains.** Much of the nominal gain reflects inflation accumulated over decades; removing inflation reduces taxable income. If property is held well into retirement, gains are largely smoothed over low-income years.
	Reduced discount (33%)	**Small loss.** Lower marginal tax rate softens the impact, but concession shrinks.
Highly leveraged landlord High interest deductions, negatively geared during ownership	Income averaging + inflation adjustment	**Loses.** Interest deductions are less valuable relative to real returns and the tax advantage of deferring gains is reduced.
	Reduced discount (33%)	**Small loss.** Smaller concession on inflation but retains financing asymmetry favours interest deductions.
Middle-income long-term landlord Stable earnings, holds property 7–10 years	Averaging + inflation adjustment + interest treatment	**Wins.** Avoids temporary jump into higher tax bracket at sale.
	Reduced discount (33%)	**Loses.** Pays more tax without correcting timing distortion.

Understanding the property environment for CGT policy evaluation

How do capital gains from investment properties arise? Based on our sample, properties are held for an average of 9 years before being sold, meaning a realised gain reflects income accumulated gradually rather than a single-year return. The distribution of holding periods shows most properties remain in the rental stock for many years prior to disposal. This makes the timing of taxation important: under a progressive tax schedule, compressing many years of returns into one tax year can materially affect the tax rate applied.

Figure 1: Share of investment properties still held after N years



Sources: ABS; e61

Realisation events are also not evenly distributed across taxpayers. Individuals at the top of the income distribution are nearly 8 times more likely to realise capital gains related to property in a given year than the bottom quartile. However, realisations do occur throughout the income distribution. Differences in CGT design will be relevant to a broad swathe of taxpayers, however they will be most relevant for the top end of the income distribution.

The timing of sales further follows a lifecycle pattern. The probability of realising a gain rises through working age and peaks around retirement age. This suggests investment properties are commonly accumulated during working life and sold later as households rebalance portfolios or draw down savings (Figure 2).

To analyse how alternative CGT designs treat these events, we link individual income tax returns with the rental property schedule, which records annual rental income and expenses for each investment property.[3]

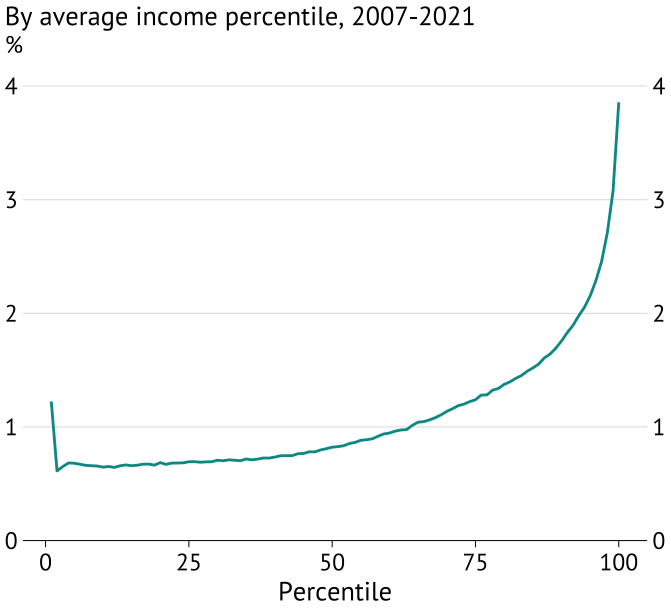
We only consider a limited subset of housing gains where we are confident we can measure an appropriate nominal gain and attribute it to an individual taxpayer.

For the main policy simulations, we restrict attention to taxpayers who stopped reporting rental income on a single property in 2022 and subsequently reported a capital gain exceeding $10,000 in either 2022 or 2023. Focusing on a single disposal in 2022 allows the gain to be linked clearly to one property and ensures a longer observed income history for the taxpayer.

To simplify the modelling of income averaging, we further require that the property is in the rental schedule for fewer than ten years prior to disposal – this is a meaningful restriction to the sample – as 50% of gains in the 2022 financial year were realised by those holding for more than a decade.[4]

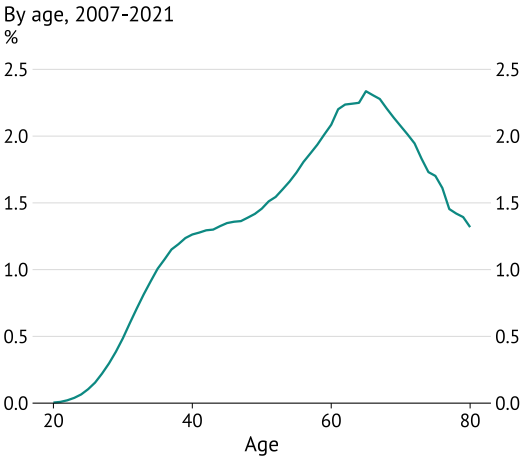
3 See Appendix A.3.
4 In an average year, a smaller proportion – 30% – of properties are held for more than 10 years, and these longer-term properties make up a larger portion of the CGT bill.

Figure 2: Annual proportion of taxpayers realising property capital gains



Sources: ABS; e61

Figure 3: Annual proportion of taxpayers realising property capital gains



Sources: ABS; e61

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Furthermore, the housing gains analysed reflect those for individual taxpayers – not those reported through trusts.

Given these restrictions, the sample analysed includes over 100,000 individuals and accounts for approximately 9% of individuals including trusts who report any capital gain in the 2022 financial year.

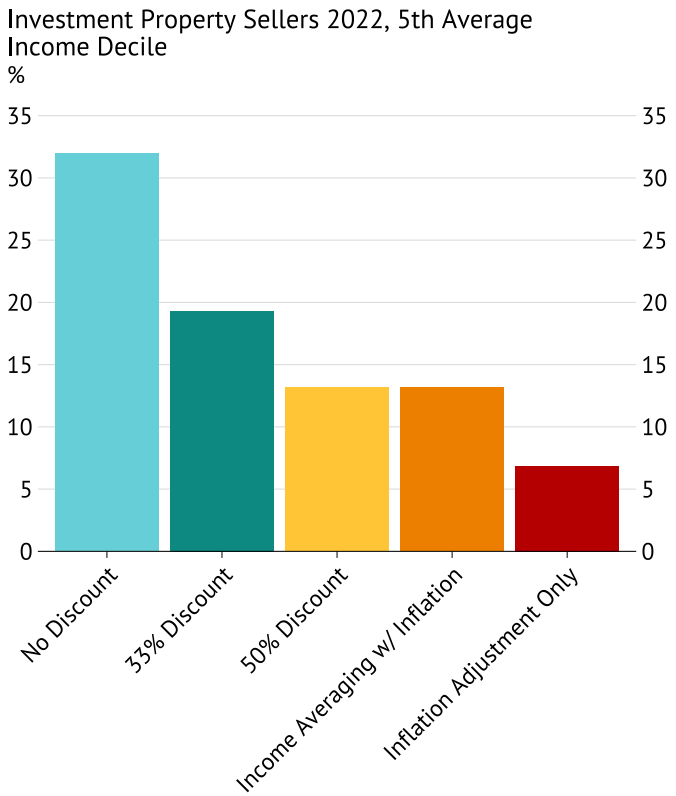
Additionally, this leads to a lower average holding period and capital gain than we would observe for housing gains as a whole. As a result, the gains being considered are relatively smaller than the large irregular gains that motivate the use of income averaging. If these larger, long-holding period, gains were included the relative effects of income averaging may change.

Determining how to tax these capital gains

A natural starting point for evaluating capital gains taxation is the design principle that the tax system should be coherent. For an income tax, this suggests that income from similar economic activities should be taxed on a consistent basis. Achieving this involves starting with an income tax base that reflects the real income of an individual — their purchasing power. Differences in tax outcomes should reflect differences in underlying economic resources, not the legal form of income or when it is observed.

Capital gains create challenges because they violate the annual accounting structure of the income tax system. Returns accrue continuously but are observed and taxed only at realisation, and nominal gains combine real appreciation with inflation. In practice, the timing issue is quantitatively important. Investment properties are typically held for many years rather than traded frequently, meaning the measured capital gain often reflects income accumulated over a long period.

Figure 4: Median tax paid on nominal capital gains



Taxing nominal gains in the year of sale therefore introduces two departures from consistent taxation: i) it taxes changes in the general price-level (inflation) as income; and ii) it applies progressive tax rates to income earned over many years in a single period. Both effects create arbitrary variation in tax burdens across otherwise similar taxpayers.

Our ILT-neutral system approximates how capital gains would be taxed under a consistent income tax. We measure gains in real terms by indexing the cost base, removing the inflation component of deductible interest expenses, and attributing

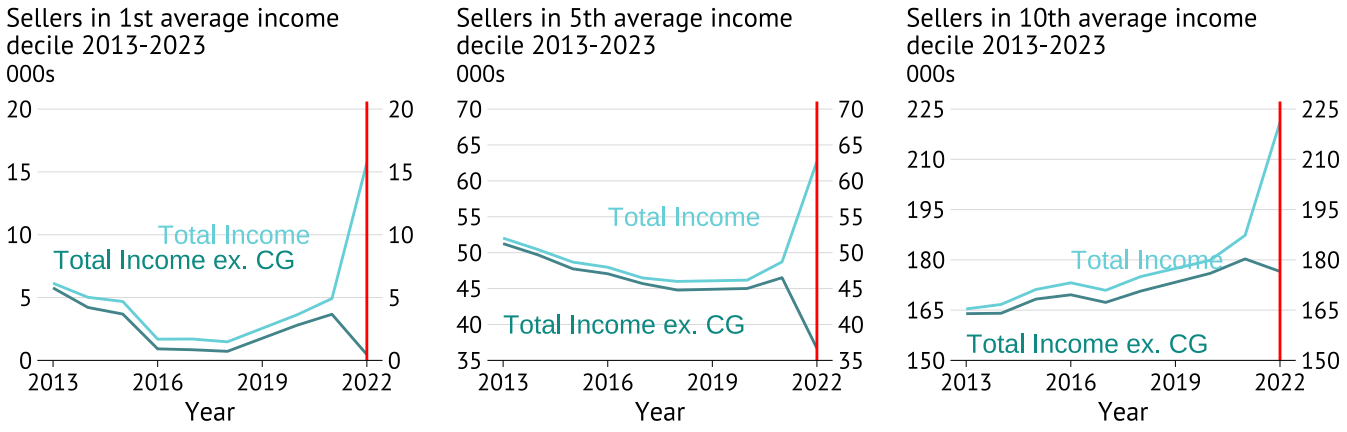
income to the period in which it accrued through averaging. This tax is still paid on realisation but is calculated retroactively to prevent higher tax rates due to tax lumpiness.[5]

The ILT-neutral scenario provides an ideal for considering the taxation of these gains, but may be seen as complex or impractical – violating the principle of simplicity. However, it does contextualise the tax rate on such assets, with consistent treatment of capital gains generating a median tax rate of 13% out of nominal income.

A first simplification would be to not apply income averaging, as this requires the collection and storage of many years of taxpayer records. Instead such a system would adjust the cost base of the asset by inflation and deny deductions for the inflation component of interest.[6] This simplification would reduce the median tax rate to 7%.

At face value a lower tax rate *without* averaging is surprising, given that income averaging allows individuals to make use of lower tax rates in low income years to pay tax. However, individuals in this sample appear to recognise gains strategically – especially those with relatively low ordinary incomes. What we mean by this is that under the current system, individuals will typically wait until they have a reduction in non-capital income - e.g. retirement to realise a large capital gain. Given the size of the gains in this sample, the shorter holding periods, and this strategic behaviour, averaging would actually increase the median tax rate. The relevance of this can be seen in Figure 5.[7]

Figure 5: Median income in lead-up to sale



Sources: ABS; e61

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The current taxation of capital gains – a 50% reduction in the capital gain that is taxed (the 50% discount) – is based on the view that adjusting the cost-base is itself too complex. As a result, the key advantage of the current discount is administrative simplicity. A single discount rate avoids the need to track holding-period inflation, reconstruct income histories, or attribute gains across years. However, the current discount attempts to compensate simultaneously for inflation and irregular income using a single parameter. Because neither varies uniformly across taxpayers, the system cannot target either precisely, and tax outcomes depend heavily on when gains are realised. This creates horizontal inequity in the tax treatment of individuals as highlighted in Kaplan et al. (2025). In this sample of taxpayers, the median tax paid is similar to our ILT-neutral scenario at 13%.

Going from the current policy settings of a 50% discount to a 33% discount changes only the level of taxation. It preserves the same departures from consistency but shifts tax liabilities upward – increasing the median tax rate to 19% for the 33% discount, well above the ILT-neutral rate of 13%.

5 The concept of a retroactive realisation based capital gains tax was raised in Auerbach (1991), and highlighted in Hourani and Perret (2025) as a means to mitigate the deferral benefit of capital gains. However, we believe the concept is also useful for evaluating lumpiness in the tax system.
6 It should be noted that if the inflation component of interest income is still taxed this will lead to double taxation of interest and an increase in the general cost of capital.
7 The effect for those with longer holding periods is unclear. Over a longer holding period the real gain will be larger, leading to a larger proportion of the gain being taxed at the top tax rate and increasing the value of averaging. However, the larger gain will also increase the incentive to strategically time. For large irregular gains, we would expect averaging to lead to lower average tax rates for most taxpayers.

Although the current discount appears to lead to a similar tax rate on capital gains as the ILT-neutral, there are three reasons why sacrificing simplicity to move closer to the ILT-neutral may be preferred.

- The discount is inequitable because it applies the same tax to individuals who earn very different incomes.
- The discount collects less revenue than the ILT-neutral tax system.
- The discount encourages individuals to borrow to purchase capital gains generating assets, while the ILT-neutral system does not.

This note discusses the evidence for the first two of these rationales from the housing data. The discussion of leverage is covered in more details in Appendix A.2.

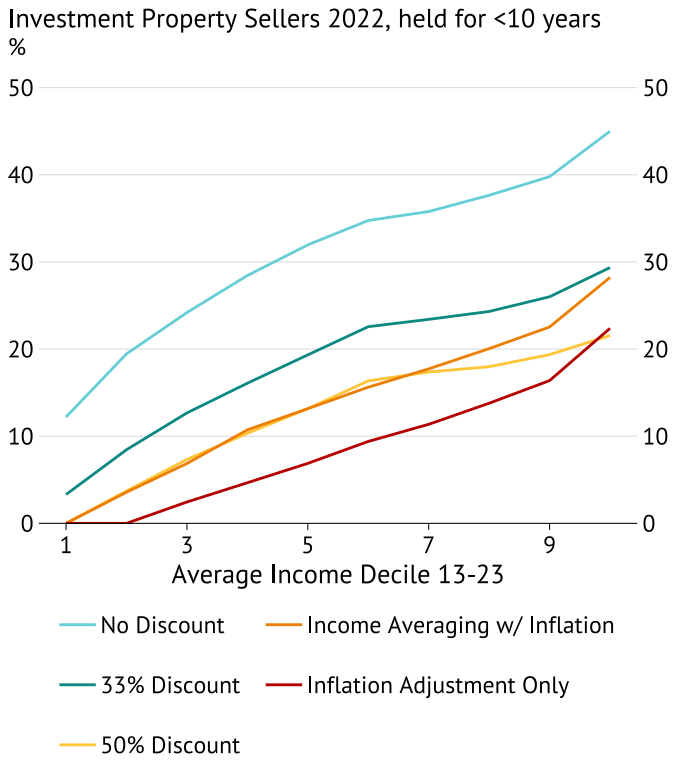
Equity across alternative capital gains tax treatments

So far we have compared systems using a coherency principle: whether similar types of economic income faces similar taxation. Equity is another consideration — is the burden of who pays the tax shared fairly?

Equity in taxation is commonly discussed along two dimensions. Vertical equity refers to the principle that higher-income individuals should pay proportionally more tax, while horizontal equity requires that individuals with similar economic resources face similar tax burdens. Modern tax design frameworks emphasise that both concepts depend on how income is defined: differences in tax liabilities should arise from differences in underlying economic capacity to contribute.

Here we consider vertical equity by examining median tax rates across the income distribution under each policy setting.

Figure 6: Median tax paid on nominal capital gains by income



Assessing whether a system satisfies vertical equity requires a reference point. If the progressive annual income tax schedule reflects society's intended degree of redistribution, then a consistent treatment of capital gains should apply that same progressivity to real income. Under this interpretation, the ILT-neutral system defines both the appropriate slope of tax rates across income levels (progressivity) and the appropriate level of tax.

Under the ILT-neutral framework, tax rates increase smoothly with income. Higher-income taxpayers face higher effective tax rates, and the increase in tax rates broadly reflects the progressivity embedded in the broader income tax schedule. Because

gains are attributed to the years in which they accrue, the progressive structure reflects the economic resources of individuals as the gains accrue.

The current system produces a different pattern. While higher-income individuals still tend to pay more tax, the relationship between income and tax rates becomes flatter, or less progressive. Realisation-based taxation can temporarily move taxpayers into higher tax brackets, producing tax rates that depend partly on timing.

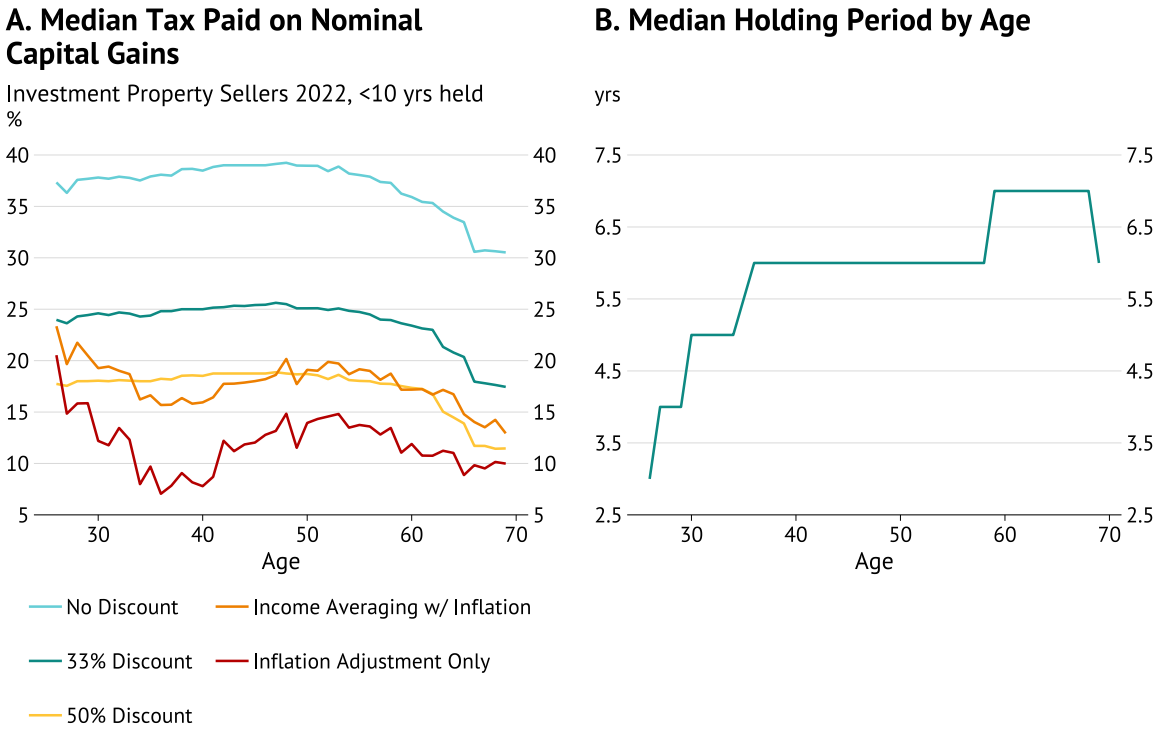
Reducing the discount to 33% increases tax rates across the distribution but largely preserves this pattern. The system remains less progressive, but has median tax rates on capital gains that are higher across the income distibution.

Cost base averaging is similarly progressive to the ILT-neutral system – suggesting the income averaging does little to change the underlying level of progressivity of the system in this sample. However, the level of tax paid is significantly lower when only the inflation adjustment is applied due to the strategic timing discussed earlier.

How CGT treatments vary across the lifecycle

Because capital gains are realised at specific points in the lifecycle, the distribution of tax burdens also varies by age.

Figure 7: Median tax paid by age



Sources: ABS; e61

Under the current system, tax rates vary substantially across age groups. Younger taxpayers who realise gains often face higher tax rates because gains coincide with peak earnings years. Older taxpayers tend to face lower rates due to lower taxable income at retirement.

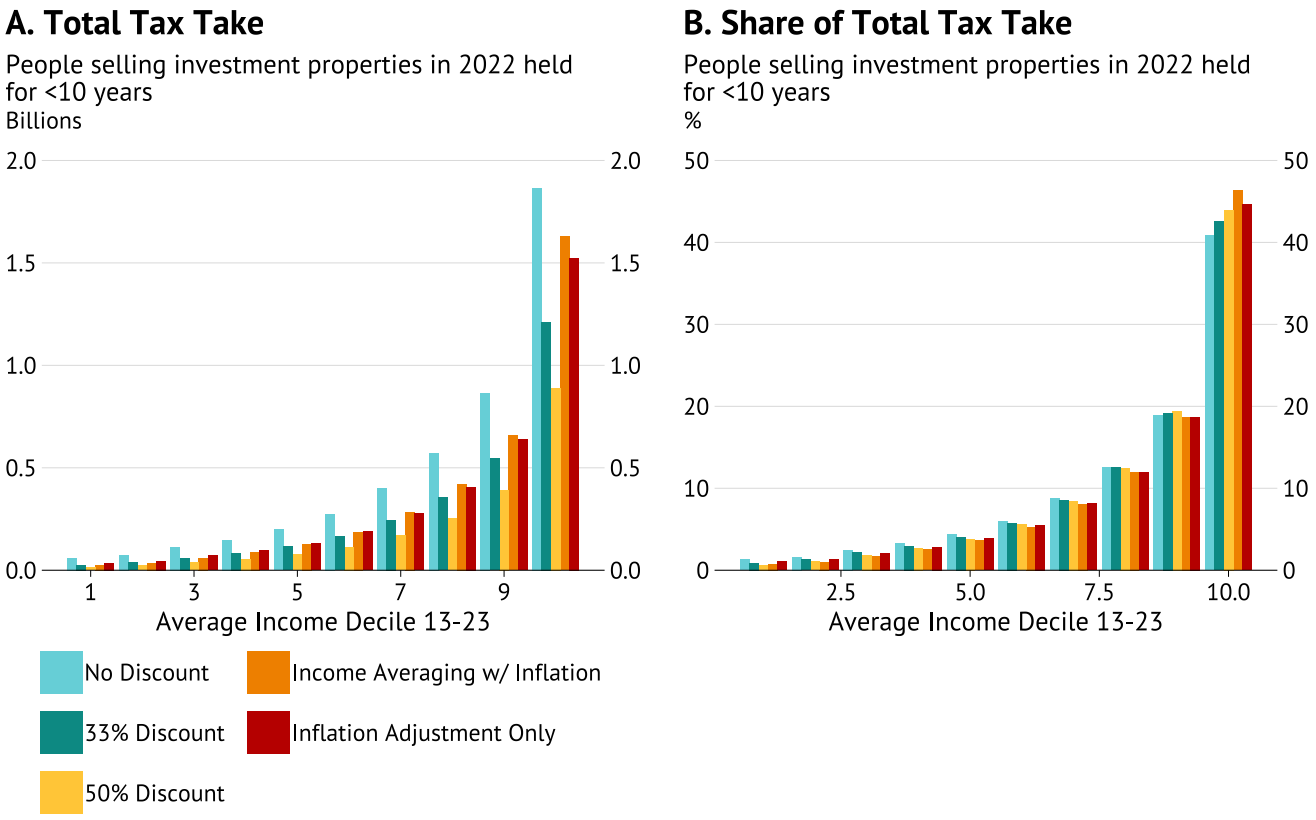
The ILT-neutral system allows for the complexity of individual affairs – capturing information about earnings history, interest costs, and inflation experienced. As a result, the difference between the median tax paid by age in the current system and the ILT-neutral system indicates that individuals in their 30s and early 40s have paid a higher tax rate than the ILT-neutral system, while retired Australian's have paid a lower rate.

Revenue implications

Changes in capital gains taxation affect the level of revenue collected both directly (by changing the effective tax rate paid on an income base) and indirectly (by influencing how people earn money and when they realise gains).

Reducing the discount increases revenue directly by raising the share of realised gains included in taxable income, thereby increasing the tax rate paid on total nominal income. Indexing the cost base has the opposite effect: removing inflation lowers measured gains and therefore reduces revenue and tax rates. Income averaging does not change the amount of income, but instead changes the tax period it is assigned too - and may therefore increase or decrease tax rates based on earnings histories. Furthermore, income averaging reduces the incentive to time realisations strategically which may indirectly change revenue. We do not allow for this in the estimates below.

Figure 8: Tax takes across different policy settings



The current system would cover revenue of around **$2 billion dollars** from our sample population. A move to income averaging with an inflation adjustment is estimated to raise this to **$3.5 billion dollars** (Table 3) - an increase largely financed from the top decile of earners in terms of persistent income (where income is averaged over the prior decade).

Small increases in the median rate of tax paid can generate these results - especially when there is a wider distribution of tax rates within each income decile (under the new ILT-neutral scenario). As cost base adjustments will increase tax rates on higher rates or return (relative to a discount), the effect on revenue is larger than the change in median tax rates.

The ILT-neutral system provides the most progressive increase in tax revenue in terms of average income. Relative to the inflation only adjustment, this raises less tax revenue from those with lower average income, but more revenue from those with high average income.

The latter effect stems from the strategic timing of realisation events, with generally high income earners realising capital gains in years when their income is lower, i.e. at retirement. (Figure 5)

Importantly, the change in tax rates and incentives around timing imply that there will be behavioural responses to any change in the tax system that is not captured in these estimates.

However, the full ILT-neutral system would treat all capital income consistently. This would mean no longer taxing the inflation component of other capital income (e.g. interest income) – which may make the overall income tax change revenue negative. Without making this adjustment other capital income would be overtaxed.

Table 3: Modelled total CGT tax take for analysis sample under alternative policy settings

Policy scenario	Total tax take ($m, annual)
Income Averaging w/ Inflation	3,516.6
Inflation Adjustment Only	3,414.8
33% Discount	2,845.0
50% Discount	2,020.9
No Discount	4,569.4

What does this mean for policymakers?

Tax policy involves trade-offs between tax principles with the objective being to design the tax system that will raise necessary government revenue at the lowest cost. Reforms to the capital gains tax may be driven by many other objectives which are not considered here. In this note we focus only on reforms that would make the treatment of capital gains consistent with other income (the principle of coherence).

The sample considered in this note is highly selected. It only looks at individuals who realised a housing capital gain in 2022, with a holding period of under ten years. Including gains from other assets, longer holding periods, or individuals who realised gains in other years will change the results. For example, the treatment of inflation will become more important for the amount of tax paid on longer-held assets.

These results are instructive about the relative implications of varying tax treatments of capital gains. However, as holding periods are shorter and the nominal capital gain is lower, it is likely that the sample tells us less about the effect of income averaging over all capital gains. Broader work on the strategic timing of gains, for both a wider set of asset classes and more time periods, will give us a better idea of whether averaging will increase or decrease average tax rates.

Treating income consistently irrespective of how it is earned (the coherence principle), we define an ILT-neutral capital gains tax as one that taxes the real capital gain from the asset smoothly over the time it is held. This ILT-neutral system solves concerns about inflationary gains, incentives for leverage, and the lumpiness of gains. Relative to the status quo, such a system would remove the bias towards debt finance for assets that generate capital gains, such as investor housing, raise a greater amount of revenue from capital gains, and increase the progressivity of tax paid. Furthermore, by treating these gains the same way as other income the distribution of tax paid will be equitable – although it does so specifically by increasing the tax paid by those with persistently higher income.

However, for consistency, other capital income should be treated the same way. Such an allowance for inflation in capital income would subtract from these revenue gains. In the absence of such an allowance, other forms of savings (i.e. bank interest) would be highly penalised.

Concerns about compliance and administrative costs of the ILT-neutral system may make it impractical. In this note we have outlined how other simplified approach may compare. For this sample of taxpayers, adjusting the cost base and expensing would reduce tax rates as individuals continue to benefit from strategic timing of realisations. Meanwhile, adjusting the discount alone would increase effective tax rates for the median taxpayer in the sample, while failing to mitigate concerns about excessive leverage and raising less revenue.

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A.1. "Ideal" income taxation

The tax principle of *coherence* reflects having a clear ideal that can be used to describe a tax instrument and its place in a broad tax system. As a CGT is part of an income tax a coherent CGT taxes income in the same way other elements of the income tax will.

The underlying ideal aims to tax *real* income that can be used for consumption. As a result, the increase in the price of shares or portion of interest that reflects the opportunity cost of not using savings for consumption should be excluded from this income measure. This is commonly called the *normal rate of return*. In this note we approximate the normal rate of return with the rate of inflation – although this will generally be an understatement of such returns.

Given this the ideal tax system would only tax the real capital gain, and it would do so by inflating the cost base by inflation. Such inflation requires itemising various items in the cost base and the time when they were paid, so that they can be increased with inflation through time. In this note the cost base is simplified to an estimated initial purchase price of the property – meaning that non-deductible costs associated with purchase, holding, and sale are excluded. This may lead to capital gains income being overstated. However, as the tax payment is simulated the general results are still directionally useful.

Inflating the cost base also requires that care is taken with expensing for the method of financing an asset. If the inflationary component of income is removed from taxation, then the inflationary component of expenses should also be disallowed. This implies that the interest expense that represents inflation should be disallowed as an expense.

This logic holds when applied to capital income generally. However, in the case where an inflation allowance is only given to capital gains a denial of deductions also leads to the general overtaxation of interest income and a higher cost of capital – as the interest rate will be higher due to the taxation of the lender.

As a result, there are two channels which may bias funding towards debt: i) excessive leverage due to differences in the treatment of income and expenses and ii) borrowing based on differences in the tax rate paid by the marginal lender and the value of the deduction received by the borrower.

To simplify this mechanism, we have simply assumed that the inflation component of interest is denied as a deduction in this exercise.

Finally, the time period that an asset is held over influences how we think about taxation. When a capital gain is realised it is taxed as if all the income is earned in that year. However, the capital gain accrued over the entire holding period of the asset. As a result of the progressive income tax scale this leads to capital gains being taxed at much higher rates than if they were earned over time. This lumpiness suggests using *income averaging* to treat the income as if it had accrued over the life of the asset.

A countervailing force to this is the *deferral benefit* of only paying tax once the gain is realised, since the income is *generated* in earlier periods as it is accrued. For this reason Auerbach (1991) adjusts the cost base of the asset to reflect the benefit of deferral – an opposite adjustment to the inflation adjustment discussed above. As it is debated whether this should be recognised as income as it accrued or when realised for timing purposes, we do not incorporate this in the discussion in our note.

The ILT-neutral we use in this note reflects the choices to adjust the cost base for inflation, and apply income averaging, in the way discussed above.

A.2. Leverage exercise

Consider a one-period rental property investment with purchase price normalised to 1. Furthermore the debt share (loan-to-value) is $b \in [0, 1]$.

Real returns are:

(1) y = real net rental yield

(2) a = real capital gain

The nominal interest rate is defined by the Fischer equation as the product of the real interest rate (r) and inflation (π):

$$i = r + \pi$$

The tax parameters set differential flat tax rates (the marginal rate applied to the investment):

(3) t = marginal tax rate (income and deductions)

(4) t_g = tax rate on capital gains

Furthermore, the total **real pre-tax return** from the asset is:

$$R = y + a$$

A.2.0.1 Regime A: Nominal capital gains taxation

In this example the nominal gain is taxed and nominal interest is deducted. However, the tax rate on the gain is at a discounted rate $t_g < t$.

The taxable gain in this case is:

$$a + \pi$$

With an after-tax real profit of:

(5) $$\Pi^{AT}_{\text{nom CG}}(b) = (1 - t)y + (1 - t_g)(a + \pi) - (1 - t)b(r + \pi)$$

Rearranging into real components gives:

(6) $$\Pi^{AT}_{\text{nom CG}}(b) = (1 - t)y + (1 - t_g)a - (1 - t)br - (t_g - t)b\pi - t_g\pi$$

Here we can look at the incentive for leverage by considering how after tax profits change as leverage is increased.

(7) $$\frac{\partial \Pi^{AT}_{\text{nom CG}}}{\partial b} = -(1 - t)r - (t_g - t)\pi$$

Here funding with an additional dollar of debt rather than equity has two cost components. The first represents the after tax payment to the debt holder $(1 - t)r$. If the outside option of equity financing was also equal to the same rate of return then this component does not bias the investor to choose either debt or equity financing.

In other words, in this example the choice of debt or equity financing is neutral if $\frac{\partial \Pi^{AT}_{\text{nom CG}}}{\partial b} = (1 - t)r$. Namely, this would mean that, given the same economic incentive to use a dollar of debt or equity financing, the post-tax incentive is the same.[8]

This implies that the taxation of inflation affects leverage incentives through the second component:

$$(t - t_g)\pi$$

Namely, if $t_g < t$, there is a tax benefit associated with using debt to fund inflationary gains. As a result, leverage is encouraged.

If capital gains were taxed at full tax rates, then this incentive would not exist. Here the bias is due to the discounted tax rate on the return of the asset, but full expensing of the nominal interest payment.

8 Distortions do appear if the marginal rates faced by the marginal lender and borrower differ due to the progressive tax scale, however this form of distortion is put to the side for this discussion.

A.2.0.2 Regime B: Real capital gains taxation (indexed cost base)

With inflation adjustments the taxable gain is simply a. As a result, after-tax real profits are:

$$\Pi^{AT}_{\text{real CG}}(b) = (1 - t)y + (1 - t)a - (1 - t)b(r + \pi) \tag{8}$$

Rearranging we have:

$$\Pi^{AT}_{\text{real CG}}(b) = (1 - t)(y + a - br) + tb\pi \tag{9}$$

We can again consider leverage by looking at how after tax profits change with leverage.

$$\frac{\partial \Pi^{AT}_{\text{real CG}}}{\partial b} = -(1 - t)r + t\pi \tag{10}$$

Inflation in this regime also generates a leverage benefit equal to the marginal tax rate times the rate of inflation, $t\pi$.

Once again, because inflation is excluded from gains but included in deductions, inflation creates an incentive to increase leverage.

A.2.0.3 Denying the inflation component of interest

In this case, deductible interest is limited to only the real component r, with leading to a smaller deduction of br for income tax.

In this case after-tax real profits are:

$$\Pi^{AT}_{\text{real base}}(b) = (1 - t)(y + a - br) \tag{11}$$

And in this case the cost of borrowing an additional dollar is only the after tax income given to the lender.

$$\frac{\partial \Pi^{AT}_{\text{real base}}}{\partial b} = -(1 - t)r \tag{12}$$

Under nominal gains taxation, inflation enters both gains and interest, and leverage effects depend on the rate differential $(t - t_g)$.

Under real gains taxation with nominal interest deductibility, inflation is removed from gains but retained in deductions, creating a leverage incentive proportional to $t\pi$.

Restricting deductions to real interest restores real-base neutrality.

A.3. Sample construction

Our analysis combines individual income tax returns with the rental property schedule, which records annual rental income and expenses for each investment property. We first identify property disposals by detecting when rental income associated with a specific property ceases to be reported after previously being observed.

A disposal is classified as a realised capital gain event if the taxpayer reports a capital gain in the tax return in the same year or the following year. This approach allows us to link realised gains to specific investment properties without requiring direct observation of transaction prices.

For the main policy simulations, we restrict the sample to taxpayers who stopped reporting rental income on a single property in 2022 and subsequently reported a capital gain exceeding $10,000 in either 2022 or 2023. This is so we can observe a larger history of rental properties.

For the simplicity of modelling income averaging, we require that the property was observed in the rental schedule for fewer than ten years prior to disposal and restrict attention to individuals aged 25–70. We also construct broader descriptive samples — including the full taxpaying population aged 20–80 between 2007 and 2021 and a one-million-observation random sample of rental investors from 2000–2023 — to estimate lifecycle realisation probabilities and holding period distributions.

A.4. Simulation model

Estimating the taxes paid by individuals under a variety of counterfactual scenarios requires a model of the Australian personal income tax system. To this end, we use e61's Model of Australian Tax Treatment (MATT-SIM), developed by Matthew Maltman and Matt Nolan. MATT-SIM is an R-based simulation model covering the years 2012–13 to 2022–23 built in the PLIDA environment and trained on Personal Income Tax (PIT) data. It mechanically recreates the Australian tax system using information reported on individual tax returns, which can then be altered to examine how changes in policy settings affect tax liabilities.

MATT-SIM incorporates all major components of the Australian tax system. These include individual income taxation using the actual tax brackets and rates in effect over the period, the Medicare levy—including the low-income phase-in, which varies with the number of dependants—and the major tax offsets: the Low Income Tax Offset (LITO) and, in the years where they applied, the Low and Middle Income Tax Offset (LMITO) and the Mature Age Worker Tax Offset (MAWTO). The Medicare levy calculation also accounts for whether the individual qualifies as a Senior and Pensioner Tax Offset (SAPTO) recipient. The model additionally includes the Medicare levy surcharge and the SAPTO itself, though these components are less precisely replicated than others. They are accordingly treated as exogenous in the "Simple" version of the model and endogenous in the "Complex" version.

MATT-SIM also allows for differential tax treatment between Australian residents and foreign residents, including those on Working Holiday Maker visas. All other tax offsets and policies are treated as exogenous—that is, they are held fixed and do not vary with income. The model does not attempt to capture the more idiosyncratic elements of the tax system relevant to individuals with complex financial affairs, such as carried-forward losses or foreign income tax offsets. These are lumped into a exogenous error term which does not vary with income, and only exist for around 2% of taxpayers.

A.5. Modelling real capital gains

Estimate a nominal sale price (not observed in data) using sale year rents and a flat rental yield of 4%.

$$\widehat{P}_s^{\text{nom}} = \frac{R_s^{\text{ref}}}{y}, \qquad y = 0.04$$

Use the estimated nominal sale price and nominal capital gain (observed) to construct a nominal cost base which can be converted to real.

$$CB_{a\to s}^{\text{real}} = CB_a^{\text{nom}} \times \frac{CPI_s}{CPI_a}$$

Estimate real capital gain

$$G_s^{\text{real}} = P_s^{\text{nom}} - CB_{a\to s}^{\text{real}}$$

Apportion over holding periods:

$$g_t^{\text{real}} = \frac{G_s^{\text{real}}}{H}, \qquad t = a, \ldots, s-1$$

Convert to price level in year the gain was accrued

$$g_t^{\text{nom}} = g_t^{\text{real}} \times \frac{CPI_t}{CPI_s}$$

Disallowing the inflation component of interest

$$\pi_t = \frac{CPI_t}{CPI_{t-1}} - 1$$

$$r_t^{real} \approx r_t^{nom} - \pi_t$$

Calculating the deductible component of interest, inferring the debt balance from the nominal interest expenses:

$$I_{t,\text{ded}} = I_t^{nom} \cdot \frac{r_t^{real}}{r_t^{nom}} = I_t^{nom} \cdot \frac{\frac{1+r_t^{nom}}{1+\pi_t} - 1}{r_t^{nom}}$$

$$I_{t,\text{ded}} \approx I_t^{nom} \cdot \left(1 - \frac{\pi_t}{r_t^{nom}}\right) \quad \text{(when } r_t^{nom} > 0\text{)}.$$

Calculating the disallowed component

$$I_{t,\text{disallow}} = I_t^{nom} - I_{t,\text{ded}}.$$

A.6. ABS disclaimer

The results of these studies are based, in part, on data supplied to the ABS under the Taxation Administration Act 1953, A New Tax System (Australian Business Number) Act 1999, Australian Border Force Act 2015, Social Security (Administration) Act 1999, A New Tax System (Family Assistance) (Administration) Act 1999, Paid Parental Leave Act 2010 and/or the Student Assistance Act 1973. Such data may only used for the purpose of administering the Census and Statistics Act 1905 or performance of functions of the ABS as set out in section 6 of the Australian Bureau of Statistics Act 1975. No individual information collected under the Census and Statistics Act 1905 is provided back to custodians for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the Australian Taxation Office, Australian Business Register, Department of Social Services and/or Department of Home Affairs' core operational requirements. Legislative requirements to ensure privacy and secrecy of these data have been followed. For access to MADIP and/or BLADE data under Section 16A of the ABS Act 1975 or enabled by section 15 of the Census and Statistics (Information Release and Access) Determination 2018, source data are de-identified and so data about specific individuals has not been viewed in conducting this analysis. In accordance with the Census and Statistics Act 1905, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.