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Income, Wealth, and Tax at the Top: Bridging bespoke wealth surveys and Distributional National Accounts in New Zealand

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Abstract

In 2023, New Zealand's High Wealth Individuals Project produced the country's only direct evidence on top effective tax rates (ETRs), but the underlying data is withheld under privacy provisions, or destroyed. We develop a method to reconstruct a synthetic Project population, bridging between National Accounts and publicly available Project data, extending the top ETR estimate from the original 2015–21 window back to 2012 and forward to 2024, within a full-population Distributional National Accounts (DINA) and capitalised wealth framework following Alvaredo et al. (2020). Top-tail wealth shares are separately recalibrated using Project data and the NBR Rich List, applying Blanchet, Fournier and Piketty's (2022) generalised Pareto curve method.

Top 10 and top 1 percent net private wealth shares decline from around 70 and 25 percent respectively in the early 2000s to 60 and 17 percent by 2020, before rising again; the top 0.1 percent share follows suit, ending at 9.8 percent. New Zealand's top wealth shares initially tracked those measured in France, above Australia and the UK, until property-price boom drove a distinct 2010–2020 decline that pushed New Zealand below both. More recently, property market corrections have begun to reverse the decline.

Wealthy New Zealanders pay roughly 62 percent of the macroeconomic rate throughout. The gap widened, rather than closed, with the 2021 top tax rate increase. Progressivity, apparent on taxable income, proves illusory under income concepts that consider accrued capital gains, or on wealth rankings. The low ETRs achieved by those at the top is not confined to an exceptional group, but a more systematic feature detectable well before the final percentile. This should be taken as a cue to approach increasing the progressivity of New Zealand's tax system by broadening the income tax base or introducing new bases, rather than through rate changes.

Executive Summary

In 2023, New Zealand's IRD High Wealth Individuals (HWI) Project produced the country's only direct evidence on effective tax rates (ETRs) at the top, but the underlying microdata has since been destroyed and its enabling legislation repealed. We develop a novel method, bridging between publicly available sources to reconstruct a synthetic version of the Project population from National Accounts aggregates and the remaining Project data, to extend the ETR estimate from the 2015–21 Project window back to 2012 and forward to 2024. We embed this in a full-population DINA and capitalised wealth framework following Alvaredo et al. (2020), and separately recalibrate top-tail wealth shares using the Project data and the NBR Rich List, estimating the generalised Pareto curves of Blanchet, Fournier and Piketty (2022).

Both the top 10 percent and top 1 percent shares of net private wealth decline, from heights around 70 percent and 25 percent respectively in the early 2000s, to 60 and 17 percent by 2020, but appear to have commenced rising again since 2020. The same is suggested of top 0.1 percent shares, ending the period at 9.8 percent. Where early in the period New Zealand's top wealth shares tracked closely with those in France, above those in Australia or the UK, the decline between 2010 and 2020 is distinct – in large part owing to the diluting effect of a property price boom – and brings New Zealand's top shares below those measured in Australia and the UK, before reversals in the property market begin to undo the previous decade's decline.

Effective tax rates are estimated across the distribution, considering personal, corporate, and trustee taxes (direct taxes; indirect taxes such as consumption taxes are out of scope). We find that the wealthiest New Zealanders' ETR sits at roughly 62 percent of the macroeconomic rate throughout the period, and that this gap widened rather than narrowed after the 2021 top tax rate increase. While an appearance of progressivity can be maintained on a taxable income basis, a comprehensive income basis shows this to be an effect of the definition of the taxable base. Over broader income concepts or a wealth ranking, progressivity is shown to be illusory. The low ETRs achieved by those at the top is not confined to an exceptional group, but a more systematic feature detectable even before the final percentile.

In the years since the original report, policy changes raised the top personal tax rate and the trustee income tax rate, taking aim at the wealthy, yet each change is likely to have passed through more strongly to the general population than to the very wealthy. The greater flexibility of the very wealthy to recompose income across entity structures and rebalance portfolios toward low-taxed or untaxed returns is likely to have insulated them from much of the intended impact of the rate increases. This should be taken as a cue to approach increasing the progressivity of New Zealand's tax system by broadening the income tax base (introducing a comprehensive capital gains tax) or introducing new bases (such as a wealth tax), rather than through rate changes. While the taxable income base remains open to maneuver, and wealth remains beyond the purview of the tax system, rate and threshold changes within the existing bases will be limited in their ability to restore the progressivity of New Zealand's tax system.

Background

How much tax the wealthy pay is one of the most consequential – and least understood – questions in tax policy. Debates about the fairness of tax systems turn on facts that are surprisingly difficult to establish. Whether a tax system is genuinely progressive depends not only on its headline statutory rates, but also on what counts as income, and on the scope for strategic tax planning within as well as beyond the bounds of the tax system.

Income and wealth inequality have increased dramatically across advanced economies over the last four decades (Piketty and Saez, 2003; Saez and Zucman, 2016; Piketty, Saez, and Zucman, 2018). At the same time, many tax systems, including New Zealand's, have become less progressive. During and immediately after World War II, the top marginal income tax rate in New Zealand was 90%. From there, it reduced from 66% in 1986 to 33% in 1988 (RBNZ, 1989) (then to 39% in 2000, 38% in 2009, 33% in 2010 and back to 39% from April 2021 (tax year end March 2022)). Corporate taxes (which are progressive in the sense that they tax corporate profits, a highly concentrated source of income) have declined from 48% in the 1980s to 28% in 2010. Greater emphasis on consumption taxes has dented the redistributive potential of the tax system, even after transfers are taken into account.

Though idealised in theory, in practice, taxable income bases are never complete. In New Zealand, the tax system excludes most realised capital gains from the income base, meaning opportunities to minimise one's income tax liability through strategic income planning are significant. No surprise, then, that untaxed capital gains have, over time, become a greater component of the comprehensive income of the wealthiest households, bringing into question the progressivity of even the personal income tax (PIT) schedule when a broader notion of income is taken into account.

The composition and sources of income for the very wealthy differs significantly from that of households nearer the middle of wealth and income distributions. Failing to tax forms of income that are earned predominantly by those towards the top of the distribution reduces the progressivity of the tax system – and is also likely to impose other economic costs through distorted investment incentives as resources flow toward tax-favoured activities rather than productive uses.

But even in jurisdictions with comprehensive capital gains taxes, these are almost always on a realisation basis, and still the taxable income reported by the very wealthy can be miniscule compared to their wealth and comprehensive economic income. No matter how comprehensive the income base, tax minimisation strategies are sophisticated and varied, making use of different holding structures domestically and offshore, always evolving with the tax code itself – and accrued capital gains remain beyond purview, to be estimated in value rather than directly observed.

Analytical work completed in 2023 significantly expanded our understanding of the progressivity – and failures of progressivity – characterising the New Zealand tax system. New Zealand's tax system has accommodated strategic tax planning, allowing those with the resources to do so to legally achieve

remarkably low effective tax rates - far below people with lesser wealth, who cannot flexibly adjust income to take advantage of the tax system. Ching (2023) and Ching et al. (2023) estimated comprehensive effective average tax rates (ETRs) across New Zealand's income and wealth distributions, measuring the progressivity of the tax and transfer system as we consider increasingly comprehensive definitions of income. The IRD's High Wealth Individuals (HWI) Project (IRD, 2023a) did the same, coordinating as closely as possible with the approach of Ching (2023), for 311 high wealth families. Taken together, these reveal how the profile and extent of progressivity depend on the types of income and taxes being considered.

The IRD's HWI Project (hereon, "the Project") computed comprehensive ETRs for 311 high wealth families, drawing on tax administration data, public data and survey data collected specifically for the Project under section 17GB of the Tax Administration Act (TAA), over the six-year period 1 April 2015 to 31 March 2021. The personal income tax rate of the original Project population was around 30% on a median taxable income of \$268,000. But personal taxable income amounted to only 7 percent of the Project population's comprehensive economic income.

The main source of untaxed income included in the ETRs is unrealised capital gains on the assets held by the Project population. Retained profits and capital gains from business entities (corporate and unincorporated enterprises) were particularly significant, at over 50 percent of economic income over the Project period. Business profits represent income to the owner, and when retained rather than disbursed as dividends, this is taxed at the companies rate, 28%, rather than at the owner's personal tax rate, which would generally have been 33% or 39% in recent years. The capital gains of the Project population significantly reduce their ETRs when compared to income based on taxable sources, and significantly exceed the average capital gains in the economy. Further, 67 percent of the Project population's comprehensive income was earned through trusts, either as trustee income or capital gains on trust assets. Misalignment between the trustee tax rate and the top personal income tax rate before changes progressed through Budget 2023 meant concessionary treatment of the taxable portion of income earned through trusts.

This other income - from companies, trusts, and capital gains - taxed at a substantially lower rate, makes up the majority of the Project population's comprehensive income. The most comprehensive ETR constructed in the Project gave a median ETR (excluding GST) for the Project population of 8.9%. Excluding GST, the median ETR for a family at the middle of New Zealand's income and wealth distributions is around 16%, roughly double the 8.9% median faced by the Project population (Ching et al., 2023). Including GST widens the gap, to 20% in the middle of the distribution, against 9.5% in the Project population - GST is generally understood to be slightly regressive over income distributions, as the wealthy have higher savings rates, and GST is levied on consumption (nuances are well-discussed in Ching (2023)).

In this paper, we aim to extend the exercise performed in the original paper, which considered the period 2015–2021, as near as possible to the present day. We do so with different, significantly curtailed, access to information and data than the original Project benefitted from. We use and combine the information and data available to the public. For this reason, it is a more limited exercise: where the original Project drew directly from bespoke surveys and detailed tax administration records, we work from summary Project data, National Accounts aggregates, household survey data, and publicly available IRD statistics, and therefore must drive more by modelling where the original study was able to make direct observations. Our estimates are accordingly less precise, and we are more reliant on modelled relationships between the Project population and the National Accounts aggregates than on direct measurement. We are transparent throughout about where assumptions are required, and wish to convey the range of uncertainty around our central estimates.

We find that, across the full period from 2012 to 2024 (we project back in time as well as forward), New Zealand's wealthiest families paid an effective tax rate of 9.7% on their comprehensive economic income, roughly 62% of the effective tax rate that ordinary households paid – a gap that appears resistant to the policy changes of the intervening years. The estimated ETR on comprehensive economic income of the very wealthy runs between approximately 7 and 12 percent throughout the period, while the macroeconomic ETR averages nearly twice that level over the same years. The estimates for the high wealth population are best interpreted as upper bounds on the true effective rates: the modelling assumptions adopted are collectively conservative, and the true ETRs faced by the wealthiest New Zealanders may be lower still.

In the years since the original report, policy changes raised the top personal tax rate and the trustee income tax rate, taking aim at the wealthy, yet each change is likely to have passed through more strongly to the rest of the economy than to those at the very top. The greater flexibility of the very wealthy to recompose income across entity structures and rebalance portfolios toward untaxed returns has likely insulated them from much of the mechanical impact of the rate increases.

This should be taken as a cue to approach increasing the progressivity of New Zealand's tax system by broadening the income tax base (such as by introducing a comprehensive capital gains tax) or introducing new bases (such as a wealth tax), rather than through rate changes. While the taxable income base remains open to maneuver, and wealth remains beyond the purview of the tax system, rate and threshold changes within the existing bases will be limited in their ability to raise the effective tax rate paid by the wealthiest. A modest uptick in the ETR on the very wealthy from 2023 is visible in the estimates and may reflect the top personal rate changes beginning to bite at the margin, but it is small relative to the underlying gap, has had a stronger impact on those just below the very top, and its durability is uncertain.

We also construct a Distributional National Accounts (DINA) and capitalised wealth series for New Zealand for the period 2001 to 2024, and we estimate a full distribution of ETRs. The approach is

consistent with approaches to DINA advanced by Alvaredo et al. (2020), and consistent with the foregoing analysis of the very wealthy. We integrate the extension to the HWI Project with the full distributional analyses, to produce comparable, unified basis for results, commentary, and policy implications. The estimates of the very top constructed here also underpin the calibration of Pareto estimates for shares of wealth within the top 1%. These wider analyses are treated in greater detail elsewhere – here we just provide enough exposition of the method to ground the integrity of the results and comparisons.

This paper forms a series with four others: one [constructing the microdata basis](#) for DINA and ETR estimates, one [constructing the National Accounts](#), one for the fuller exposition of the DINA and ETR estimates, and one for the fuller exposition of the capitalised wealth distributions.

We begin Part I by situating this paper in relation to prior analyses of wealth and income distributions in New Zealand, and then introducing the DINA methods and the IRD HWI Project as a response to the measurement difficulties encountered at the top of the wealth and income distributions, which have limited visibility at the top in previous work. We document the tax and macroeconomic changes since the end of the Project period that bear on both the level and composition of high wealth income. We then set out the income and tax concepts underlying both the original Project and this paper's extension, before working through and presenting the income and wealth distributions for the full population, the basis for comparison with the estimates of the very wealthy to come. That completes Part I. In Part II we describe the data sources available to us and how we reconcile the Project data with the National Accounts to construct a synthetic representation of the Project population. We then describe the method by which we extend the estimates of the ETRs on the very wealthy to the present day - modelling the evolution of net wealth, taxable and untaxed rates of return to wealth, and effective tax rates on taxable income across household and business sectors. We present results, tracing the estimated ETR on comprehensive economic income for the very wealthy from 2012 through to 2024, and comparing its trajectory to that of the economy as a whole. Comparison with international studies follows, and we conclude with discussion of policy implications.

Part I: Distributional National Accounts for New Zealand

Previous estimates of income and wealth distributions in New Zealand

This work continues in the spirit of extensive earlier work to produce long-run series of top income shares in New Zealand (Atkinson & Leigh 2007 and 2008; Alvaredo & Atkinson 2013 and 2014; Alvaredo 2017; and Alvaredo & Kergozou 2019). Fisher-Post (2020, 2023) extends those estimates - which were based on fiscal income data from tax authorities – updating them and extending the estimates to cover all sources of national income, including non-fiscal (nontaxable) income that is not reported on tax returns, applying the techniques described in Alvaredo et al (2020). Compared to those works, with which we share a preference for National Income concepts, we have benefitted to more direct access to the administrative

microdata, where previous work was limited to tabulations provided by tax authorities. Where previous work (with the exception of Forward and Fisher-Post, 2024) in the New Zealand context has been confined to the use of tabulations, resulting in ‘simplified Distributional National Accounts’ estimates for New Zealand, here we have worked directly from microdata contained in the Integrated Data Infrastructure (IDI)¹ maintained by StatsNZ. We produce estimates of the full distribution of all national income in New Zealand for the period 2001 to 2024 by combining household surveys with administrative tax microdata and adjusting to match National Accounts aggregates. Forward and Fisher-Post (2024) previously made use of the New Zealand microdata, with a conceptual framework following Alvaredo et al (2020) – the present work elaborates and refines that previous work.

The methods advanced by Alvaredo et al. (2020) are not completely prescriptive because of the substantial variation across countries in institutional features and data availability. Our approach is therefore considerably influenced by the particular institutional features of New Zealand and the nature of the available data, including the relative strengths and weaknesses of alternative data sources.

On the wealth side, this paper can also be situated in the body of literature on methods for estimating the distribution and evolution of wealth in different contexts under different conditions of data availability and quality. There is growing evidence internationally that official statistics derived from household wealth surveys underestimate top wealth shares (Balestra & Tonkin, 2018; Vermeulen, 2018; Lustig, 2019). Rather, income tax data, household surveys and national accounts must be reconciled to obtain a consistent picture of wealth inequality. Following Saez and Zucman (2016) and refinements since, mixed income tax capitalisation methods have been found to be a high-performing method for estimating asset holdings that generate taxable income flows, particularly towards the top of the net wealth distribution where surveys tend to be biased by underrepresentation of the wealthiest and underreporting of assets. Capitalisation methods effectively aim to reverse engineer what an individual taxpayer’s wealth must have been in order to generate the taxable income pattern we observe in other tax records. Wealthy taxpayers manipulate their taxable income to reduce tax liability, so this reverse engineering benefits from assumptions about tax minimisation behaviour and rates of return to different asset classes. Benefitting considerably from international work in the area, we develop a method for estimating New Zealand’s wealth distribution following from the mixed income tax capitalisation method detailed in Saez & Zucman (2016; 2022) and subsequent refinements (Smith, Zidar, Zwick, 2023).

¹ Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers. These results are not official statistics. They have been created for research purposes from the IDI which is carefully managed by Stats NZ. For more information about the IDI please visit: [https:// www.stats.govt.nz/integrated-data/](https://www.stats.govt.nz/integrated-data/). The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes and is not related to the data’s ability to support Inland Revenue’s core operational requirements.

Ching, Forward, and Parkyn (CFP, 2023) presented estimates of the distribution of wealth in NZ using a capitalisation method developed for the NZ context, combining IR tax administration data with Reserve Bank (RBNZ) and Statistics New Zealand (StatsNZ) household balance sheet data. They find capitalisation places substantially more wealth at the top than HES – a 2018 top-percentile share of 26.1 percent against the survey’s 20.1 percent on a comparable individual basis, and a top decile of 67.2 against 59.3 percent. The present paper extends that work from three tentative cross-sections to a continuous 2001–2024 series, renews the National Accounts and microdata basis for the estimates, and resolves the top tail directly using the HWI Project accounts and the National Business Review (NBR) Rich List within a generalised Pareto framework. We recover a WID-consistent wealth distribution for New Zealand that spans the full period, reconciles to national private wealth, resolves shares within the top tail using the Project data, and is internally consistent with the income and effective-tax-rate estimates built on the same microdata.

At the other end of the historical record, the only long-run wealth distributional series rests on the estate-multiplier method: Galt (1985) reconstructed a wealth distribution from death-duty records for 1870–1939, a route closed by the abolition of estate duty in 1993. The method was never extended using the estate tax records on 1939–1993, on account of rising exemption thresholds progressively narrowing the taxed estate population to an unrepresentative sliver. In any case, Galt’s estimates are biased by the age structure, coverage, and the conservative valuation of estates (CFP, 2023). Between the survey present and the estate-duty past, the distribution above the survey’s reach has been largely unobserved, while international evidence gives good reason to expect the underestimation at the top is significant, and consequential.

On the income side, considerable previous work has gone into estimating distributions in New Zealand outside of a national income framework². While complementary to the analysis we undertake, and making use of similar underlying datasets, this body of work differs from that advanced by Alvaredo et al. (2020). Most important is the difference in income concepts. In these studies, only income captured in the household income account is distributed to households, and thus components of national income, including retained earnings of corporations and government expenditure, are out of scope. Compared to prior work, we present distributional information that is based on more comprehensive income concepts, concerned with the total of national income rather than income as measured only in the household income account.

² See, for recent examples, Creedy & Ta (2022), Alinaghi et al. (2022), Wright & Nguyen (2024), Stephens (2023). StatsNZ (2018) begins a reconciliation of HES survey data with Household Income & Outlay Accounts of the National Accounts, but does not attempt to integrate other institutional sector accounts (and therefore does not fully distribute national income), and limits exploration to 2007. Wright & Nguyen (2024) make more sophisticated use of expenditure data in distributing in-kind services provided by the government than we do here.

Earlier studies have found New Zealand's annual income inequality to rise in the late 1980s and early 1990s, and find it broadly flat since (Creedy, Gemmell & Nguyen, 2017; Stephens, 2023; Cleveland & Stephens, 2024). Against this backdrop of apparently stable, mobile fiscal income, a parallel literature shows that comprehensive economic income, including accrued capital gains is more top-heavy and lightly taxed: effective average tax rates flatten or turn regressive across the wealth distribution once accrued capital gains are counted (Ching, 2023; Ching, Reid & Symes, 2023), and taxpayers systematically shelter income in companies and trusts to exploit rate gaps (Gemmell, 2020; Domican & Zhang, 2025).

The assets that make this possible, generating the returns that New Zealand's income tax largely does not reach, are clearly concentrated at the top – but given deliberate financial opacity and obfuscation makes the top tail of the wealth distribution difficult to understand, in turn compromising our collective understanding of the revenue and distributive possibilities of any given intervention aimed at restoring progressivity, among other objectives.

The question of how much tax the wealthiest New Zealanders pay is too important to leave unanswered simply because the ideal data is unavailable. A transparently constructed estimate can meaningfully advance public understanding while acknowledging the limits to its precision. Beyond the immediate findings, extending the original exercise with publicly available data tests whether the patterns identified in the Project period have persisted, and the discipline of constructing an explicit model of the relationship between the Project population and the National Accounts aggregates forces a transparency about the underlying dynamics, and the contribution of different features and effects – the rates of return, portfolio composition, and tax rates that drive the ETR – that more data-rich approaches can obscure or ignore. The method we develop here is also replicable in future, and can provide cues for an internationally generalisable approach. First, we construct the full income and wealth distributions, and associated ETRs, for the full population (Part I), before building the generalisation of the Project population (Part II), which in turn calibrates the top shares in the full distribution.

Measurement at the top of the wealth and income distributions

Income flows and wealth stocks are difficult to observe for top wealth holders. Survey data, such as New Zealand's Household Economic Survey (HES), are generally regarded as problematic when attempting to accurately capture the top tail of the wealth distribution. The wealthy are recognised to be under-sampled, and even deliberate correction via oversampling tends to only partially correct for underestimation of wealth (Vermeulen, 2018). New Zealand's Household Economic Survey (HES) survey does not attempt to oversample the wealthy and Stats NZ has acknowledged that it is unlikely to accurately reflect the top tail (Stats NZ, 2022). In part, missing top tail wealth can be explained by the survey's limited sample size and

the corresponding low probability of selecting wealthy households. However, non-response and underreporting are also likely to be more widespread and significant among wealthier households³.

Ching, Forward, and Parkyn (CFP, 2023) find evidence that HES underestimates top wealth in New Zealand: the highest net wealth observed in HES 2018 was \$20 million, whereas the capitalisation method in CFP (2023) estimated the average net wealth in the top 0.1% at \$33 million, and the median HWI family had a net wealth of \$86 million in 2018. HES also significantly undercounts total net worth when compared to the Stats NZ Household Balance Sheet (HHBS).

To help address the limitations inherent in sample surveys, in 2021 the IRD was provided with funding and legal powers. Specific information was provided through bespoke surveys. While more comprehensive than sample surveys such as HES, tax administration data is limited to the definition of taxable income, which excludes some receipts included in economic income. For this reason, further information was sought from the Project population through three information collections targeted towards gaps in the information otherwise available (see Appendix C in the IRD report for a description of these collections). Different asset classes were valued by different methods: an automated valuation model for residential property, rateable valuations for non-residential property, self-reported portfolio investment valuations, a multiple-based method for unlisted equities and market basis for significant holdings of listed equities.

Comparing HES with wealth estimates from the IRD Project reinforces the suspicion that the most affluent households are scarce in the HES dataset. The 311 wealthy families were not randomly collected and may not represent the wealthiest 311 families in New Zealand. The mean and median net worth for the research Project population was estimated to be \$238 million and \$86 million respectively in 2018. Both of these figures are significantly higher than the highest net worth of an individual participating in HES 2018, which was estimated to be \$20 million. These figures imply an additional \$74 billion in net worth held by the 311 families that would be highly unlikely to be accounted for in HES 2018. Appendix G of the IRD report provides estimates of the New Zealand wealth distribution combining HES and the Project data.

Information was collected from the Project population under section 17GB of the Tax Administration Act 1994. Consistent with these obligations, the bespoke survey data collected for the Project has since been destroyed, meaning the detailed individual-level records that underpinned the original analysis are no longer available. This bears directly on the approach taken in this paper, which must work from the summary statistics and aggregates that remain in the public domain. The legislation enabling the Project to take place will also shortly be repealed through the 2025-26 omnibus taxation Bill⁴.

³ For discussion see Kennickell & McManus, 1993; Kennickell & Woodburn, 1999; Vermeulen, 2016, 2018; and Higgins, Lustig, & Vigorito, 2018.

⁴ The reasoning presented in the Regulatory Impact Statement for the repeal: “Information collection powers require a balance between the value of the information collected and the impact on privacy and compliance, and

Income concepts

Much of the difficulty in measurement at the top arises from the basic problem that taxable income – for which we are able to obtain detailed records from the administrative work of the IRD – is not a comprehensive definition of income. Taxable income reflects only the components of income that Parliament has decided to tax, the boundary around which is somewhat arbitrary and is subject to policy change through time. Among the wealthy, this gap between taxable and economic income is not accidental – sophisticated planning actively exploits those boundaries, systematically pushing taxable income as far below economic reality as the law permits.

Personal taxable income is income individuals receive that is taxable, such as salary, wages, interest and dividends, that is, both labour and capital income, insofar as they are taxable.

Wealth, or net worth (we use the terms interchangeably), can earn a return consisting of not only taxable capital income, but untaxed or marginally taxed forms of income, including further increases in the value of the assets. Capital gains, increases in the value of an asset, are accrued over the time someone is holding the asset, then realised upon sale of the asset as the difference between the original purchase price, and the resale price. “Realisation” refers to the sale, or disposal, of the asset, whereupon the accrued gain is converted to a cash asset for the seller. Upon the disposal of the asset, these “capital gains” are realised, and provides an increase in potential consumption to the former asset holder. However, even prior to realisation, the asset holder benefits in consumption terms from the accrual of capital gains, through both their higher expected future income⁵, raising their consumption possibilities, and through access to favourable financing terms. The wealth distribution therefore offers a broad guide as to who is likely to benefit, including in consumption terms, as assets appreciate.

Comprehensive economic income is a measure of income that includes all items that increase an individual’s ability to consume goods or services, that is, both taxable and non-taxable sources of income. This should also look through legal form and holding structures. The Project attributes to the individuals the income effectively earned, and tax remitted, through entity structures such as companies and trusts. This recognises that, in the end, only individuals earn income and pay tax, not entities. However, this requires making assumptions that mean, in some cases, such as for trusts, the degree of ownership is calculated independently of rules that might apply under taxation law or accounting principles.

administrative costs.” Inland Revenue’s preferred option was to retain section 17GB, but restrict the use of information collected under section 17GB to the development of policy.

⁵ Following the “permanent income hypothesis” (Friedman, 1957), consumption is determined not by current income but by expected lifetime (permanent) wealth. Under this logic, an accruing capital gain raises consumption possibilities immediately because rational agents smooth consumption against their full expected future resource stream, not just realised income. The consumption-wealth relationship is formalised in models like that of Hall (1978), which derives from the permanent income hypothesis and shows that consumption responds to revisions in expected lifetime wealth – meaning unrealised gains feed through to consumption behaviour as soon as they are anticipated.

The economic income measure used here and in the Project approximates a Haig-Simons definition, which considers income as consumption expenditure plus the change in net wealth for a period (Simons, 1938). This approach views income as potential consumption, treating most things that would allow an individual to consume more as income⁶. While the Haig-Simons definition is generally regarded as the ideal for income measurement, practical difficulties tend to limit its measurement (Smeeding & Weinburg, 2001). It is commonly approached not by measuring directly from consumption and change in wealth, but through the gains – both the realised income, from labour or capital, and the potential income in accrued capital gains – to the individual. In effect, the Project started with income sources taxable at the personal level – using tax administration data – and progressively added in additional income not taxed at the personal level, modelling from the bespoke surveys where necessary.

Four national income concepts are identified in Alvaredo et al. (2020): pretax factor income; pre-tax post-replacement income; post-tax disposable income; and post-tax national income⁷. Ideally, pre-tax factor income corresponds to total income accruing to capital and labour, where all of national income is attributed to capital or labour, before any taxes and transfers.

⁶ In principle, Haig-Simons economic income should be based on real consumption possibilities, which are eroded by inflation over time. As Ching (2023) notes, the projects were “focussed on assessing economic income, which should only refer to real returns. The Haig-Simons ideal (current consumption plus increased wealth) incorporates increased wealth because it represents potential future consumption. In turn, wealth can only be converted into consumption to the extent that inflation has not reduced the purchasing power of wealth” (see also, Thuronyi, 1996). On the other hand, ETRs are ratios, and the division of one nominal term by another in the same period is the same as taking both in real terms. Ching (2023) found that inflation in the Project period (a low inflation environment) had a negligible effect on the ETR profile. Accordingly, in this paper, we use nominal figures throughout unless stated otherwise.

⁷ Pre-tax national income is the same as pre-tax factor income, but with an adjustment made to account for the public pension system by allocating pension payments to recipients and deducting the contributions used to fund them (such that the national income aggregate is preserved). In New Zealand, however, the pension system is non-contributory, and as such a contributions basis for distributing pension income lacks meaning. Aiming to accord as nearly as possible with the concepts proposed by the WIL while representing the pension system soundly, our factor income and our pre-tax national income series differ from one another in that the former allocates net government primary income (consisting of revenue from indirect taxes, operating surpluses, and property income) as a per-capita lump-sum, and the latter first allocates pension income to its recipients, then distributes the remaining government income as a lump-sum. In this way, factor income can be thought of as “pre-pension”, and pre-tax national income as “post-pension”. Post-tax series go on to capture the wider tax and transfer system. Transfers are included in the income base, direct taxes are distributed (see below on distribution of direct taxes), indirect and user-pays taxes are distributed as (negative) lump-sums, and the remainder of public sector income distributed by head.

Also; here, we always produce post-tax national income series, as we distribute all government income – rankings, however, are identical between post-tax disposable and national incomes, the difference is in shares of Net National Income.

The Haig-Simons ideal is a personal-income concept: it asks what any one individual consumed plus what they added to their own net worth in a given period, with no requirement that the sum across individuals reconcile to anything external. The DINA concepts inherit this comprehensiveness in spirit but discipline it against an aggregate control total. Each of the four national income concepts above is constructed so that summing across every adult in the population reproduces net national income as measured in the National Accounts. This is what allows the concepts to be compared meaningfully across time and between countries.

In New Zealand, realised gains are largely untaxed outside specific trading and land-sale provisions, so they surface in taxable income only incidentally and are essentially absent from the fiscal aggregates that most tax-based income measures draw on. A Haig-Simons-consistent, national-accounts-consistent treatment of the resulting gap requires an explicit choice: either exclude capital gains from the income base entirely (as in our headline pre-tax and post-tax series) or add them back on an accruals basis (as in the comprehensive-income variant reported alongside them, discussed below). Unrealised gains, in either case, do not appear anywhere in net national income (NNI) – they are captured only in the Revaluation Accounts that supplement the national accounting balance sheets, recording the change in asset values between periods that is attributable to holding gains rather than to saving or investment flows. It is this Revaluation Account series, not the national income accounts, that we draw on to construct the comprehensive income concept.

Next we set out the National Accounts basis that both the full population distributions and the estimates for the very wealthy rely on, and sketch the macroeconomic context over 2001–2024, before turning to the DINA, ETR methodology, including on an augmented comprehensive income basis, and the wealth capitalisation, each presented here in brief – see the companion papers for full exposition. We then return to the extension of the Project estimates, later bringing the two together.

National Accounts

The National Accounts aggregates are compiled by StatsNZ following the System of National Accounts (SNA 2008) developed by the United Nations Statistical Commission (UNSC). See StatsNZ (2024) for the detailed methodology. The construction of National Accounts tables for these purposes is presented in an accompanying technical paper, found [here](#). Tables are provided in Annex 1.

Over 2001–2024 NNI rose from \$123.4bn to \$436.0bn, a 3.5-fold increase (5.6% a year). These figures are nominal. Much of the 3.5-fold rise reflects prices and population: CPI rose by about 79 per cent over the period, and the resident population grew by roughly 38 per cent, from 3.88 million in 2001 to 5.34 million in 2024. Deflating to constant 2024 prices, real NNI grew at 3.0 per cent a year rather than 5.6; expressed per head of population, real NNI grew at just 1.6 per cent a year (Figure 1).

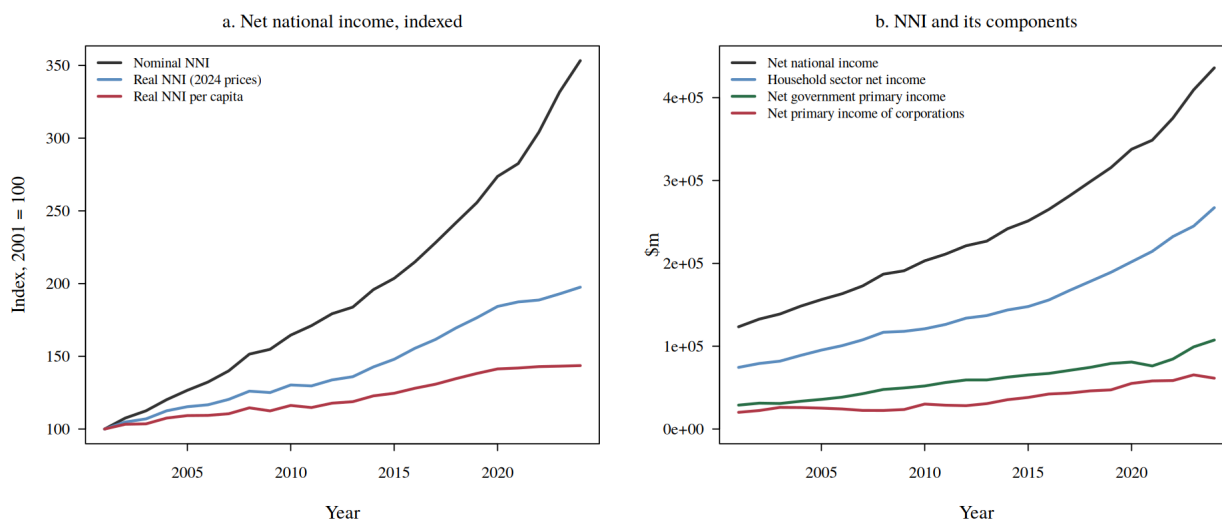


Figure 1. (a) Net national income: nominal, real (2024 prices) and real per capita, indexed to 2001 = 100. (b) Net national income and its household, corporate and government components, 2001–2024 (\$m).

Table 1. Selected national accounts aggregates at benchmark years (\$m, current prices, March years) and 2001–2024 average growth.

	2001	2006	2012	2018	2024	CAGR
Net national income (NNI)	123,421	163,304	221,268	298,648	436,001	5.6%
Net primary income of household sector	74,412	100,627	133,862	178,194	267,218	5.7%
Net primary income of corporations	20,158	24,216	28,174	46,026	61,376	5.0%
Net government primary income	28,851	38,461	59,232	74,428	107,407	5.9%
Compensation of employees	48,056	69,619	92,165	122,508	184,806	6.0%
Dividends	1,528	5,284	4,917	7,468	14,900	10.4%
Interest	4,909	7,731	8,566	8,444	16,582	5.4%
Total trustee income	1,980	7,338	6,212	9,462	11,452	7.9%
Total transfers	12,482	13,951	21,718	25,074	40,969	5.3%
PIT paid	17,525	23,852	25,085	35,671	61,858	5.6%
CIT paid	4,373	9,148	7,916	12,941	16,167	5.8%
TIT paid	653	2,422	2,050	3,122	3,779	7.9%

Household net income kept pace with NNI (5.7% a year, a stable ~61% of NNI), while the fastest-growing components were dividends (10.4% a year), trustee income and trustee income tax (7.9% each), and compensation of employees (6.0%). Entrepreneurial income was laggard (3.9%). The shares of NNI accruing to the household sector (~60–61%), corporations (~13–16%), and government primary income (~23–27%) were stable across the period (Table 1).

Private wealth

Between 2001 and 2022, the share of private wealth held in financial and business assets declined relative to wealth held in housing, as housing assets appreciated at a greater rate than other asset classes on average. Household net worth grew roughly 5.8-fold to 2024 against 4.6-fold for corporate net worth, so the household share of private wealth rose, from about 74 percent in 2001 to about 79 percent in 2024 (Figure 2). Housing equity (owner-occupied and other residential property, net of associated liabilities) rose from about one-third of private net worth in 2001 to a peak of just over one-half by 2022 (from about 34 to 53 percent), before easing back to around 47 percent by 2024 as house prices retreated from their 2022 high. Over the same 2001–2022 window, the combined share of unincorporated and corporate business fell from about 48 to 33 percent, and the share held in interest-bearing and insurance/pension assets fell from about 18 to 14 percent.

Growth in house prices will have compressed the measured concentration of wealth at the top of the distribution, because the asset classes that dominate top portfolios – corporate and unincorporated business equity – shrank as a share of the total while housing, the asset of the middle of the distribution, expanded. The corporate component alone fell from about 26 percent of private net worth in 2001 to about 21 percent by 2022, edging back up only slightly by 2024 as business and corporate asset values continued to rise while house prices fell. Symes (2021) demonstrates that the relative decline of top wealth shares can obscure the widening gap between homeowners and non-owners at the bottom of the distribution.

The decade-long, housing-driven compression partially reversed after the 2021 peak. As house prices fell back – owner-occupied housing dropped from about \$1,276 billion in March 2022 to \$1,185 billion in 2023 before a partial recovery to \$1,221 billion in 2024 – while business and corporate asset values continued to rise, the housing share of private net worth fell from about 53 percent (2022) to 47 percent (2024), and the combined unincorporated and corporate business share recovered from about 33 to 38 percent (with the corporate component alone rising from roughly 21 to 21 percent, essentially flat after a small dip).

Because top wealth shares in this series are driven by enterprise holdings, this compositional swing works in the opposite direction to the 2001–2021 trend: the recent fall in house prices relative to business values removes some of the mechanical compression of the preceding decade and, all else equal, nudges measured top shares back up. We develop this point later in the paper – that movements in headline top shares over this period combine the counterdirectional (with respect to top shares) effects of the housing cycle and underlying changes in the concentration of business wealth.

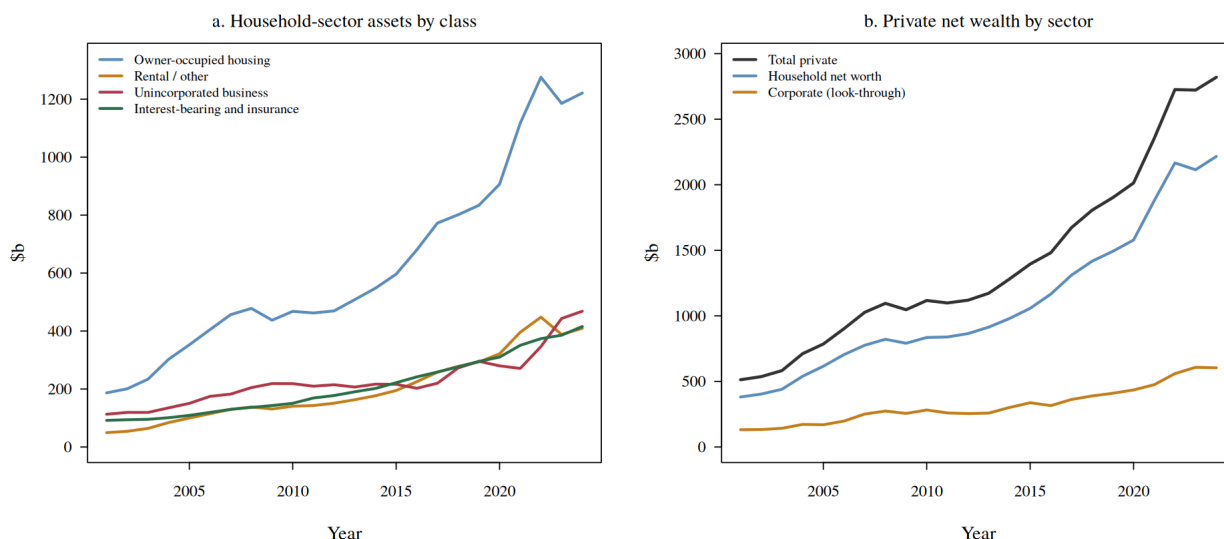


Figure 2. (a) Household-sector wealth aggregates by asset class, \$bn, 2001–2024. (b) Private net worth: total, household, and corporate (look-through) sectors.

Several years depart from trend:

2009 and 2011 – negative capital gains. In these two post-GFC years accrued capital gains were negative (–\$38bn and –\$16bn), as house and equity prices fell, inverting the usual relationship: comprehensive income is below NNI, and the effective rate on comprehensive income rises above the rate on NNI – 26.2% vs 21.0% in 2009.

2010 – "the Great Tax Switch". 2010 stands out on the tax side rather than the gains side: PIT fell despite the recovery in capital gains, reflecting the October 2010 rate cut – discussed below.

2021–22 – asset-price surge and anticipation effects. Capital gains were enormous (78–85% of NNI), pushing the comprehensive effective rate to its lowest points in the series; and trustee income spiked as dividends were realised through trusts ahead of the 39% rate.

2023 – housing correction. Capital gains were again negative (–\$41bn), driven by a \$101bn fall in housing revaluations as the 2021–22 boom unwound. The comprehensive effective rate again exceeds the NNI rate (21.6% vs 19.5%). 2023 is the mirror image of 2021–22 and underlines that the housing cycle, not the corporate or business cycle, dominates the swings in the untaxed wedge: owner-occupied housing is the largest single capital-gains form in most years and the source of the biggest reversals.

Tax policy timeline

New Zealand's tax system reflects a longstanding "broad base, low rate" philosophy, favouring comprehensive, low-rate taxes with minimal exemptions or carve-outs over narrower taxes with higher rates or targeted reliefs. In practice this means reliance on a small number of broad-based taxes: personal income tax (PIT) on a progressive schedule, a flat corporate income tax (CIT), a flat trustee income tax (TIT) on trust income (largely sharing taxable income definitions with the PIT schedule), and GST on consumption, with no general social security or payroll tax and no local income tax. There is no comprehensive capital gains tax, and no annual wealth tax, estate tax, or gift duty (the latter abolished in 2011), leaving capital gains and accumulated wealth largely outside the tax base except where specific anti-avoidance or bright-line rules apply. Because trusts and companies are taxed at their own flat rates rather than on a look-through basis to the individual, the relationship between the top personal rate and these flat entity rates has been a persistent determinant of incentives to shelter income within a company or trust rather than earn it directly. The differential between the top personal rate and the flat 33% trust rate – open 2000–2010, closed 2010–2021, reopened 2021–2024, and finally shut in April 2024 – has been the primary (domestic⁸) avenue for flexible tax minimisation, besides the non-taxation of capital gains.

Summarising Table 2 below, taken together, major tax policy changes over the period collectively erode progressivity: the 39% introduction (2000) and reintroduction (2021) were progressive at the top statutory margin, but each opened a 6-point gap below the flat 33% trust rate that seeds persistent income-shifting. The 2009 (39→38%) and 2010 (38→33%) cuts are regressive – company rate cuts in 2008 and 2011 mainly (up to general equilibrium effects) benefit owners of capital. The GST increase to 15% is regressive on an annual-income basis. In the other direction, raising the trustee rate to 39% in 2024 removed the main top-end avoidance channel, so measured and true top effective rates should marginally converge from 2025. When the PIT top rate was previously brought into alignment with the trust rate, in October 2010, a marked drop in trustee income was observed (Figure 3).

PIT dominates the direct tax take throughout, but its share of the direct tax total fell from 78% (2001) to 67% (2006) as corporate and trustee receipts grew, then recovered to 76% by 2024 (Figure 3). Two policy episodes are visible in the series and are material to ETR estimates. First, the October 2010 personal rate cut shows up as an absolute fall in PIT paid in 2010 and 2011 (from \$29.0bn in 2009 to \$24.7bn in 2011) despite rising incomes. Second, the reintroduction of the 39% top rate from 1 April 2021 coincides with a sharp CIT dip (–30% in 2021) and a trustee-income spike, discussed below.

⁸ We do not address international tax planning or income-shifting avenues in this paper; the analysis is confined to income that is taxable in New Zealand. Were global incomes and offshore-held wealth brought into scope, we would expect the resulting distribution to show greater inequality than the domestic-only picture presented here.

Table 2: Tax policy developments 2000–2024

Effective date	Measure and prevailing rates (PIT; CIT; TIT)	Visibility in National Accounts and microdata
1 Apr 2000	Top personal rate 33% -> 39% above \$60,000. PIT: 19.5% \$0-38k; 33% \$38-60k; 39% \$60k+. CIT: 33%. TIT: 33%.	Visible as a step up in PIT paid through the early 2000s; trustee income and TIT begin their long climb as the 33% trust rate opens a gap below the new 39% rate.
1 Apr 2008	Company tax rate 33% -> 30%. PIT: 19.5 / 33 / 39. CIT: 30%. TIT: 33%.	Lowers CIT relative to the corporate base; imputation credits re-based 30/70. Partly masked by the GFC-driven CIT fall in 2009.
1 Oct 2008	Personal bracket shifts, rate cuts. PIT: 12.5% \$0-14k; 21% \$14-48k; 33% \$48-70k; 39% \$70k+. CIT: 30%. TIT: 33%.	PIT growth flattens.
1 Apr 2009	Top personal rate 39% -> 38%. PIT: 12.5 / 21 / 33 / 38. CIT: 30%. TIT: 33%.	Small; contributes to the 2010-11 dip in PIT paid despite recovering incomes.
1 Oct 2010	Major switch: personal scale 10.5 / 17.5 / 30 / 33; GST 12.5% -> 15%; company 30% -> 28% (from 1 Apr 2011). PIT: 10.5% \$0-14k; 17.5% \$14-48k; 30% \$48-70k; 33% \$70k+. CIT: 28% (from Apr 2011). TIT: 33%. GST: 15%.	PIT paid falls in absolute terms in 2011; GST shifts revenue toward indirect tax (not in Table A2's direct-tax rows); realignment of top PIT and trust rate.
1 Apr 2021	Top personal rate 33% -> 39% reintroduced above \$180,000. PIT: 10.5% \$0-14k; 17.5% \$14-48k; 30% \$48-70k; 33% \$70-180k; 39% \$180k+. CIT: 28%. TIT: 33%.	Trustee income spikes +56% in 2021 (dividends realised through trusts at 33% ahead of the 39% rate); CIT dips -30% as timing shifts; PIT steps up thereafter.
1 Apr 2024	Trustee rate 33% -> 39% (aligned to top personal rate); personal thresholds shifted (Jul 2024). PIT: 10.5 / 17.5 / 30 / 33 / 39 (thresholds lifted Jul 2024). CIT: 28%. TIT: 39%.	Closes the trust-personal gap; expect trustee income and TIT to normalise from 2025 (outside the 2000-2024 window). Threshold shift will lower PIT at the margin.

Personal thresholds were essentially frozen from October 2010 until July 2024 – nearly fourteen years – while nominal incomes doubled. In this way, average tax rates silently rise across the distribution, with the bite concentrated on middle-income earners pushed toward the 30% and 33% thresholds. Figure 3 shows PIT recovering strongly after 2011; in large part due to fiscal drag. Because of this, the effective PIT schedule tightened continuously even while the statutory schedule didn't move⁹.

⁹ For a median full-time earner, the 2010–11 "Great Tax Switch" average personal tax rate (under the PIT schedule only) from about 23 per cent to about 17 per cent, and bracket creep then raised it steadily back to about 23 per cent by 2024 – eroding the entire six-point cut through nominal wage growth alone, with no change in the statutory schedule. Against a counterfactual in which the 2011 scale had been indexed to the CPI, roughly 3.4 percentage points of that increase is pure drag. The effect is concentrated on the middle of the distribution, where earners are

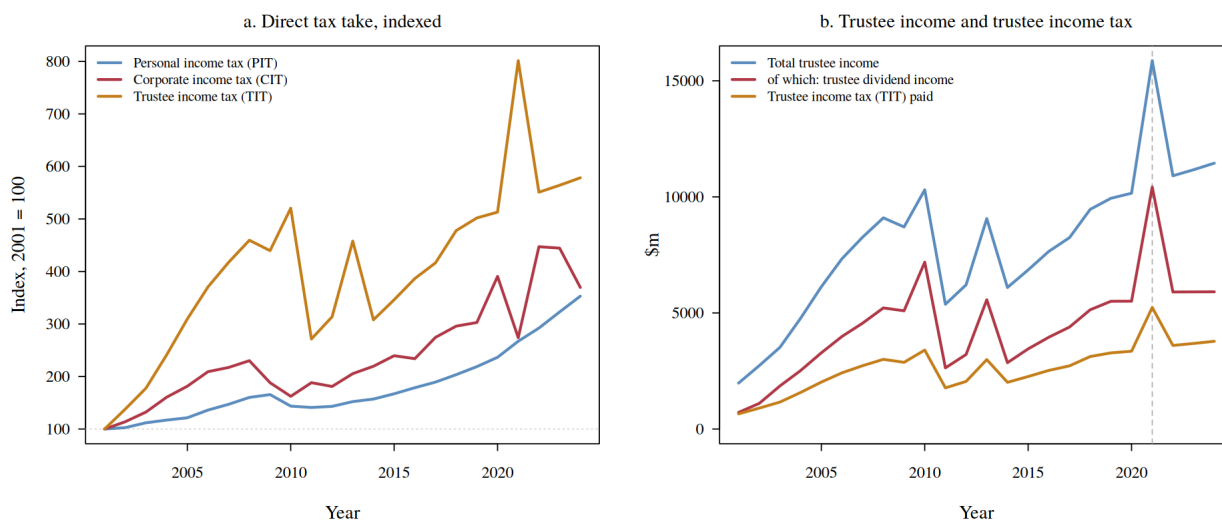


Figure 3. (a) Direct tax take – personal, corporate and trustee income tax – indexed to 2001 = 100. (b) Trustee income and trustee income tax, 2001–2024 (\$m). The dashed line marks 2021.

Total trustee income grew nearly eight-fold over the period. There is a striking 2021 spike – total trustee income jumped 56% to \$15.9bn, driven almost entirely by trustee dividend income (\$10.4bn), with TIT paid rising to \$5.2bn. This is the National Accounts footprint of income being realised through trusts in anticipation of the 39% personal rate: dividends were brought forward through trusts and taxed at 33%. CIT also exhibits year-on-year swings of –30% (2021), +63% (2022) and –17% (2024), reflecting timing, provisional-tax reconciliations, and profit-cycle and valuation effects rather than changes in the corporate income base itself, which grew a steady 5.0% a year. Total transfers grew 5.3% a year, with a compositional shift from main benefits toward superannuation, which rose from 42% of transfers in 2001 to 53% by 2024 as the population aged.

Microdata sets

We combine tax microdata tables adapting the method employed by StatsNZ in the construction of the Administrative Population Census (APC, Welsh 2023, Stats NZ 2023). Adaptations provide for the more detailed disaggregation of income sources, particularly capital income types, than is found in the IDI's APC tables. Within the resident population, our benchmark DINA series consider the subpopulation of people of age 20 and older. In New Zealand the tax unit is the individual, therefore we construct “individualistic adult” series, restricting to this population in the microdata.¹⁰

pushed toward the 30 and 33 per cent thresholds. The drag also interacts with the 2022–24 inflation surge, which sharply accelerated the effect in the final years of the window.

¹⁰ We use the individual series, rather than the equal-split adult series, in the current work. For WID purposes, including in the international comparisons in this paper, we apply a simple transformation to attain an equal-split adult series, drawing on the relation between the individualistic and equal-split series for Australia, constructed in

Distributing taxes

Household sector taxable income – distinguishing personal and trustee tax bases

Trustee income must be drawn out of Household sector primary incomes, because it is taxed differently (TIT flat rate rate applies to trustee income, PIT progressive schedule applies to personal income). From IRD data, we are able to decompose household sector income and tax as reported in the National Accounts into that from individuals (taxed according to the PIT schedule) and that from trusts (taxed according to the TIT schedule). From the taxable income aggregate for households, we remove trustee income aggregate reported by the IRD. We apply the PIT schedule current to each year to the remainder to estimate tax paid at the individual level. The implied aggregate PIT tax collected reconciles well with the totals reported in IRD tabulations. We scale the resulting distributions to the exact IRD totals, removing small discrepancies in the aggregates.¹¹

IRD tabulations decompose total trustee income into dividends, interest, and other income (including from rental properties and unincorporated businesses). With these distinct aggregates, we suppose that the distribution of each stream of trustee income is distributed identically to the distribution of those sources of income when earned directly. That is, we assume the distribution of, say, dividends, over any income ranking, is the same whether the equity assets earning the dividends are held inside and outside of trusts. In reality, this is a conservative assumption – we expect that trustee earnings of any given type of income are more concentrated towards the top within trusts than outside of trusts, given the general preference for the flexibility and opacity of trust holdings among the wealthy. Decomposing trustee income into these three constituent streams gives the basis for the distribution of total trustee income and trustee tax (flat 33% on trustee income in the years considered).

Taxes included in the National Accounts as other taxes on production and imports capture New Zealand's indirect taxation and user-pays regimes (GST, excise duties, and other indirect levies, net of subsidies). These are not distributed in the ETR exercises, but for the post-tax income DINA estimates, these taxes are distributed on a per head basis.

The aggregates and their microdata basis for distribution are presented in Table 3. Recapitulating, tax under the PIT schedule is distributed according to an application of the PIT schedule to a total taxable income variable constructed from the microdata, tax under the TIT schedule is estimated by applying the 33% rate to the distribution of trustee income derived by distributing aggregate trustee income by source (dividend, interest, and other) identically to the distribution of those respective sources when earned outside of trusts – a conservative assumption. Tax under the CIT schedule is distributed according to dividends and other taxable companies income (excluding asset disposals). In this way, we cover the same

Fisher-Post et al (2022). Some further imputations and extensions are required where microdata was lacking – these are documented in an accompanying technical paper, which presents and discusses the resulting series.

¹¹ Local body rates are excluded from this calculation, as they are in the foregoing analysis of the very wealthy.

income taxes treated in the estimation of the ETR on the very wealthy, and ignore the same components of the tax system scoped out of the earlier analysis¹². We use the same National Accounts aggregates throughout.

Table 3: Concordance between National Accounts aggregates and distributional basis in tax microdata

Sector	Item	Aggregate source	Distributional basis
Corporate sector	Net taxable corporate income	National Accounts	Dividend income + other companies income excluding asset disposals ¹³
	Corporate income tax paid		
Household sector	Net income taxable under PIT schedule	National Accounts minus IRD source on trustee income	Total personal taxable income
	Taxable trustee income - Dividends	IRD (Income of Trusts and Estates statistics)	Dividend income
	Taxable trustee income - Interest		Net interest income
	Taxable trustee income - Other (incl. rent & unincorp. business)		Net rental income + self-employment income
	Personal income tax paid	National Accounts - Household sector tax paid minus Trustee income tax paid in IRD source	Applying tax schedule to total personal taxable income
	Trustee income tax paid	IRD (Income of Trusts and Estates statistics)	33% on taxable trustee income

Augmented DINA – comprehensive economic income

We also estimate the ETR and DINA over a comprehensive economic income concept – the concept foregrounded in the analysis of the very wealthy. We make use of precisely the same microdata basis and wider National Accounts aggregates for the DINA and for the ETR computations ahead, the same again as in the analysis of the very wealthy – the series are therefore mechanically internally consistent.

To accord with the comprehensive economic income concept used in the estimation of ETRs on the very wealthy, we require a basis for the distribution of capital gains on assets. Taking Holding gains and losses from the Accumulation Accounts as aggregates, we distinguish four categories of capital gains: those on Corporate sector net assets (excluding equity liabilities), Household sector net financial assets (excluding

¹² The taxes included are personal income tax (PIT), corporate income tax (CIT), and trustee income tax (TIT). Excluded are excise taxes and gaming duties, fringe benefit tax, local body rates, ACC levies, and employer superannuation contribution tax – excluded for the same reasons given in the analysis of the very wealthy: immateriality, difficulty of individual attribution, or because they are not levied by central government.

¹³ The microdata variable denoted C00 captures asset disposals, and is extremely lumpy, sensitive to individual disposals in any given year – and is therefore excluded.

equity assets), Household sector owner-occupied property (dividing non-financial assets between owner-occupied property and non-owner-occupied property according to RBNZ series), Household sector other non-financial assets (primarily non-owner-occupied real property), and Unincorporated enterprise sector net assets. These are distributed in the microdata environment according to the underlying income streams each asset class generates: Corporate sector capital gains by dividends and other companies income, Household net financial assets by net interest income, owner-occupied property by the HES-based owner-occupied housing imputation, other non-financial assets by net rental income, and Unincorporated enterprise sector assets by net rental income plus self-employment income. We form rankings over a pre-tax income concept that follows Alvaredo et al (2020) specifications for the construction of DINA, augmented by distributed capital gains¹⁴. Income totals coincide with total national private income, plus superannuation, plus Holding Gains and Losses of the National Accounts Revaluation Accounts. The construction and features of the capital gains series based on the National Accounts is documented in an accompanying technical paper, found [here](#).

This approach to distributing capital gains resembles capitalisation methods for estimating wealth distributions – and suffers the same limitations: allocating aggregate gains to individuals in proportion to the income their assets generate implicitly assumes a constant rate of return (or rate of capital gains) across the distribution, when in practice returns are known to vary systematically with the scale and type of holding, so that the very wealthy, who hold a different portfolio mix even within a given asset category and can access higher-yielding or less liquid assets, may see their capital gains income under- or over-stated relative to their true share.

Our preferred series for comparison with the analysis of the very wealthy is the capital gains-augmented pre-tax national income series. Life-cycle effects in wealth accumulation mean that significant capital gains accrue to pension-earners, who may have little labour income, hence including pensions in the income concept raises the older population in the rankings, rather than collecting too much capital gains income at the bottom of the distribution. Adding the constructed capital gains series to NNI gives a measure of comprehensive private income, and the gap between the two is the untaxed income wedge that we are centrally concerned with.

¹⁴ For ETR purposes, government-derived incomes aside from pensions are not distributed, so income totals before capital gains coincide with national income totals excluding Government sectors except superannuation (national private income + superannuation), and income totals after capital gains are national private income + superannuation + capital gains aggregates, the latter given in the National Accounts Revaluation Accounts.

Table 4. *Revaluation Accounts: Aggregate holding gains and losses*

Sector	National Accounts (\$m)	2005	2015	2024	Distributive basis	b50%	90-99	t1%
Household	Net financial assets (excl. equity asset)	0	-333	6505	Interest income	2%	51%	33%
	Owner-occupied housing	27547	31180	18131	OO housing imputed from survey data	38%	17%	2%
	Other non-financial assets	8963	9954	5916	Net rental income	1%	57%	23%
Unincorp. sector	Net assets	29843	34473	-325	Net rental income + self-employment income	8%	43%	15%
Corporate sector	Net assets (excl. equity liability)	15556	18523	20771	Dividends + other companies income	3%	33%	35%

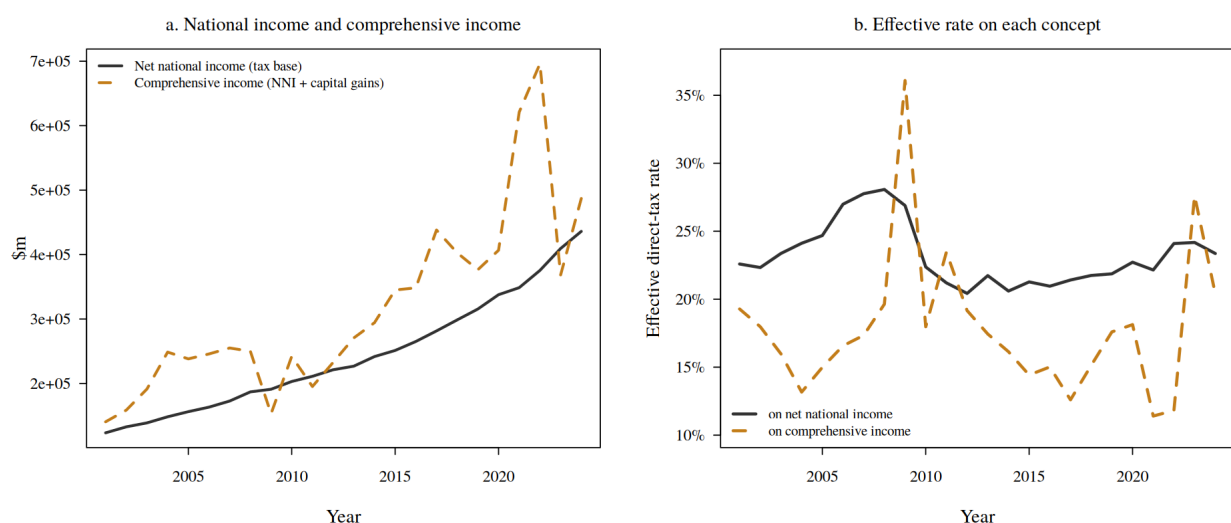


Figure 4. (a) *Net national income and comprehensive income (NNI plus capital gains), 2001–2024 (\$m).* (b) *Macroeconomic tax rate on NNI versus on comprehensive income, 2001–2024.*

In aggregate terms, the untaxed wedge is large and highly cyclical. Averaged over 2001–07, capital gains were 28% of comprehensive income; they collapsed to around 2% on average through the GFC years 2008–11, recovered to ~21% over 2012–19, and ran at ~22% over 2020–24, with individual-year peaks far higher. Direct tax runs at a fairly steady 16–22% of NNI after the 2010 tax reform, but once capital gains are added to the denominator, the effective rate on comprehensive income is materially lower in most years – averaging around 13–14% – and far more volatile. In the strongest asset-price years the effect is dramatic: in 2021 and 2022 the effective rate on comprehensive income falls to about 10%, roughly half the rate on NNI, because capital gains added \$272bn and \$321bn respectively – 78% and 85% of NNI – almost none of it taxed.

Wealth capitalisation

For each asset class, a multiplier is derived from the ratio between the asset's total capital income flow and the National Accounts aggregate, and applied to each micro series such that the sum over individuals reconciles to its National Accounts total. In our approach, the two exceptions are owner-occupied housing and student loans, which are not capitalised from a flow but assigned from microdata imputations and reconciled to the National Accounts aggregate. Other liabilities are capitalised from an imputed flow of interest payable, draw from expenditure surveys, whereas student loans generally do not carry interest in New Zealand. The imputations are covered in detail in the accompanying paper on the construction of the microdata basis.

Table 5. *Concordance between asset types and distributive income flows*

Balance-sheet asset class	Distributive basis	Treatment
Owner-occupied housing	Imputed OO housing value	direct imputation from survey
Other residential / rental	Rental income	capitalised from tax administrative microdata
Unincorporated business	Self-employment (S00-S02, P00-P02)	
Interest-bearing assets	Interest income	
Insurance & pension reserves	Pension & insurance earnings (on interest)	
Corporate net worth	Dividend + C01 + C02	
Liabilities (mortgage/consumer)	Imputed interest payable	direct imputation from survey
Student loans (largely interest-free)	direct imputation from survey	

In its simplest form, the method relies on the assumption of fixed rates of return by asset class (Atkinson and Harrison, 1978; Saez and Zucman, 2016). As Saez and Zucman (2016) discuss, this is violated where asset-specific returns are correlated with wealth, and a growing literature debates how the method should be adapted in response (Saez & Zucman, 2020, 2022; Smith, Zidar & Zwick, 2023). If heterogeneity in returns was present within New Zealand asset classes it would bias the capitalised distribution. The direction and scale are, in principle, empirical questions, but the evidence at the top points towards higher shares – this is treated in greater detail in the companion paper.

Results

Distributing National Income

We distribute net national income across adult individuals under three concepts: pre-tax national income excluding capital gains, post-tax national income, and then pre-tax national income including accrued capital gains (comprehensive economic income).

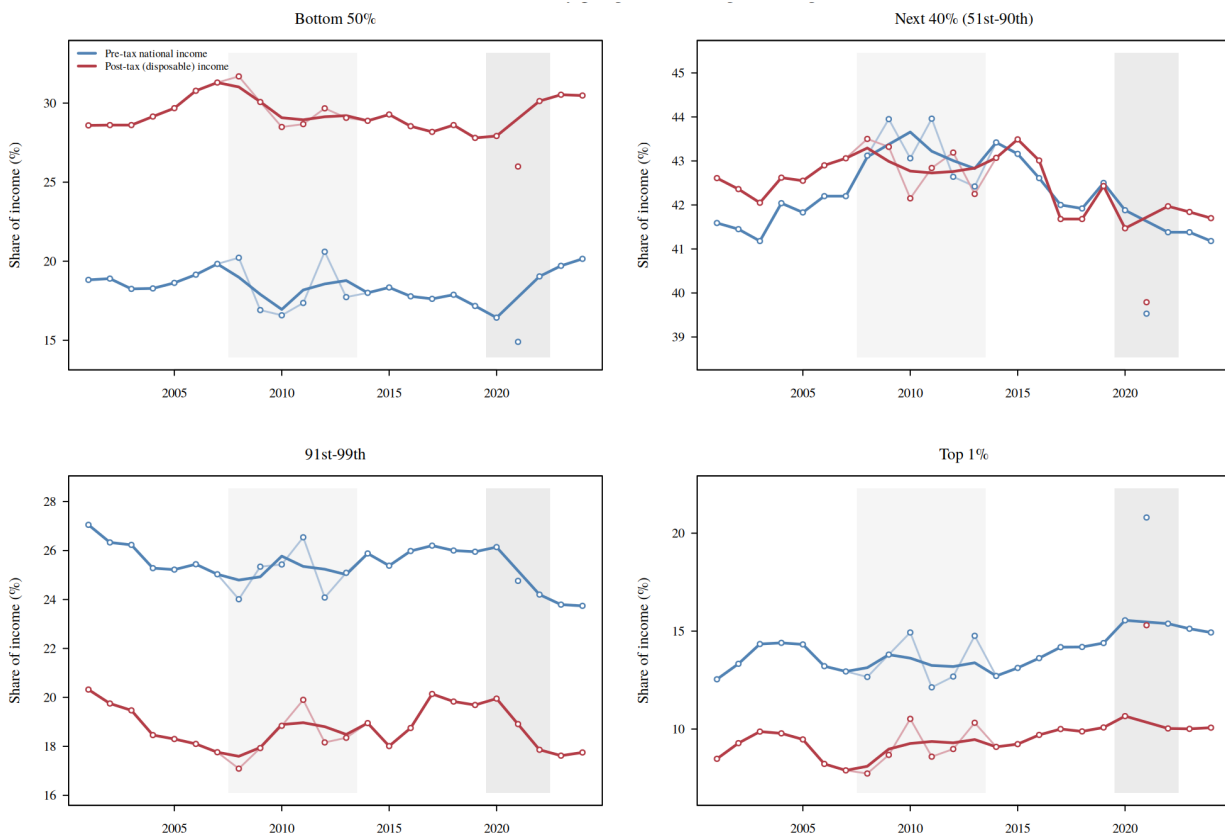


Figure 5. Share of income held by each group, 2001–2024, pre-tax and post-tax national income, excluding capital gains.

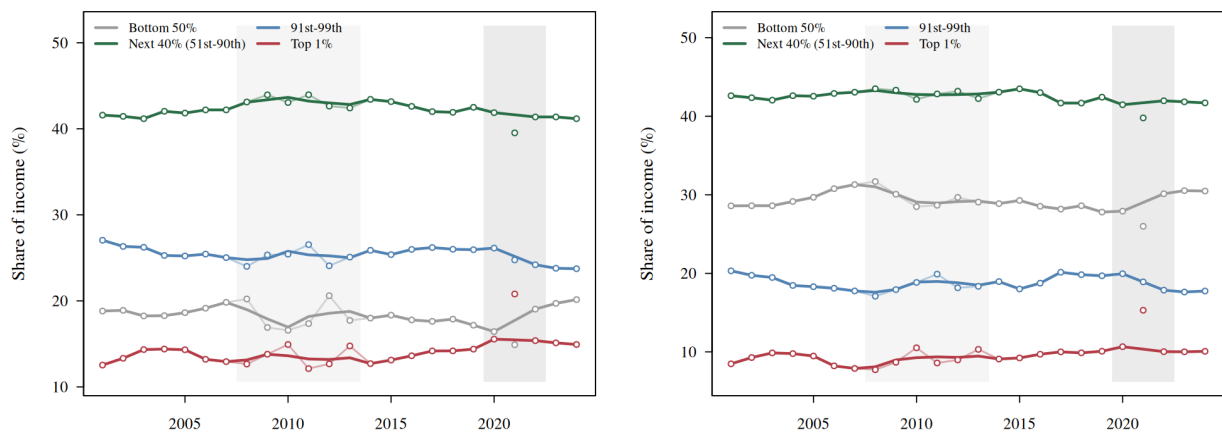


Figure 6. Share of income held by each group (a) Pre-tax national income. (b) Post-tax national income.

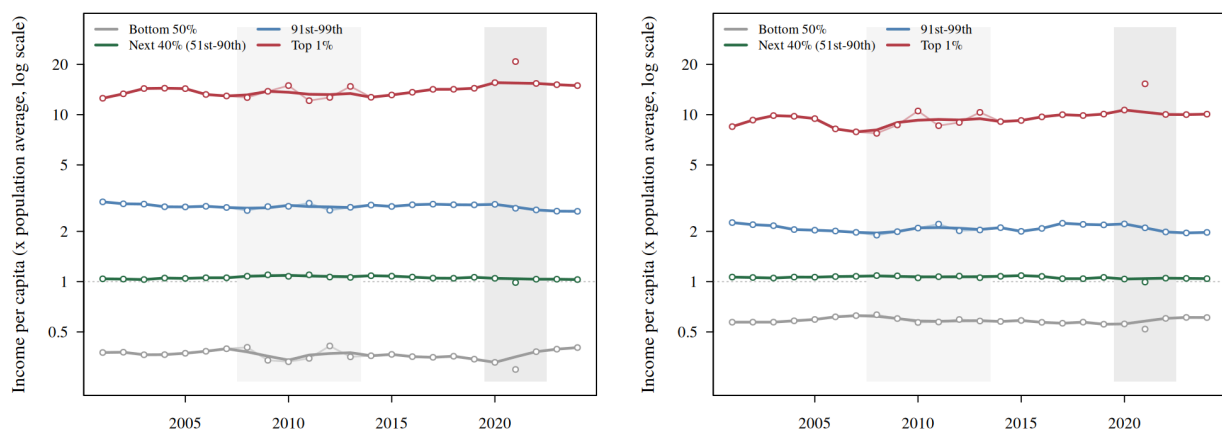


Figure 7. *Incomes as a proportion of per capita mean (a) Pre-tax national income. (b) Post-tax national income.*

Figures 5, 6, and 7 track four groups – the bottom 50 percent, the next 40 (51–90), percentiles 91–99, and the top 1 percent – on each capital gains-exclusive income concept. In the bottom half, post-tax income sits far above the others, lifted by positive net transfers. The upper-middle (51–90) is where the concepts are closest, where redistribution is approximately neutral – though transfers were net positive for this group in the earlier years, fluctuating positive or negative since. Bottom shares gradually decline (pre-tax 18.9 percent in 2001, to 17–18 percent over 2016–2019, 16.4 in 2020) before rebounding after 2021 (pre-tax 19–20.1 percent 2022–2024), on both income concepts (around 10 percent higher in all years on post-tax national income). The next 40 have a U-shaped evolution of shares over the period, rising at first (pre-tax 41–42 percent 2001–2004, 42–44 percent over 2008–2016), then declining from the middle of the period onwards, on both concepts (pre-tax 41 percent over 2022–2024). Percentiles 91–99 decline over the period (pre-tax 27.0 percent in 2001, 23.7 by 2024), while the top 1 percent rises (pre-tax 12.5 percent in 2001, around 15 percent 2022–2024, 4–5 percent less post-tax throughout). The 51–90 maintains the average per capita income level on both pre- and post-tax concepts, the bottom earns below half of the average per capita in pre-tax terms, just above half on post-tax terms. The top 1 percent earns 12–15 times the per capita average pre-tax, and 8–10 times the per capita average post-tax.

Adding accrued gains (Figure 8) to the income base raises the top 1 percent share – by little in ordinary years but sharply in asset booms. In the weak-gains years the two lines nearly coincide, in years of strong gains, they diverge. Little difference is made to the bottom 50% share, but greater shares of comprehensive income are earned at the top in years with strong gains. Ultimately the distributive effect of the inclusion of capital gains depends on the balance between gains in the housing sector, and other sectors. In this way, the capital gains contribution to measured inequality is a pro-cyclical wedge that widens with asset prices, bearing resemblance and contributing to hysteresis effects over economic cycles, supporting growing top shares over time.

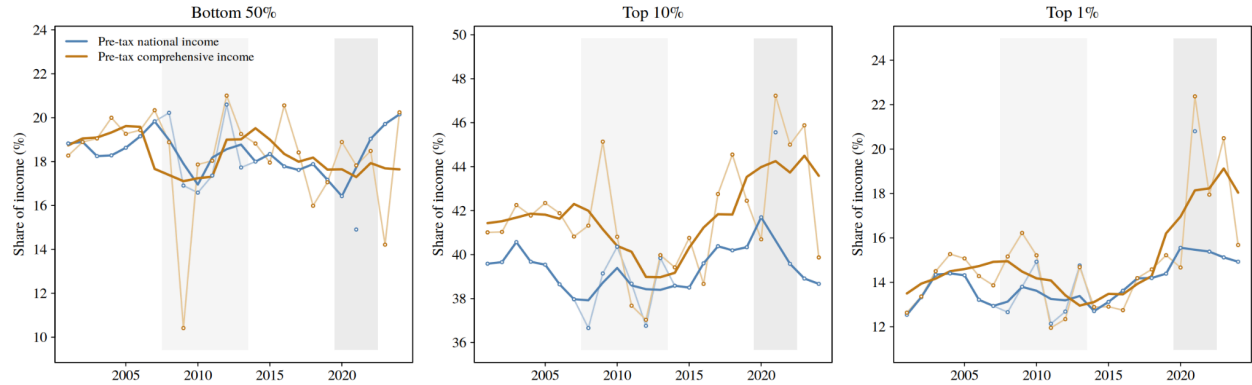


Figure 8. Shares of pre-tax income excluding versus including accrued gains.

Effective tax rates

We distribute direct taxes over the pre-tax private income ranking and measure effective tax rates (ETR). Throughout, unless stated otherwise, the denominator is either pre-tax private income + superannuation or it is pre-tax private income + superannuation + accrued capital gains, and the numerator is personal, corporate and trustee income tax (PIT + CIT + TIT), each reconciled to its National Accounts control.

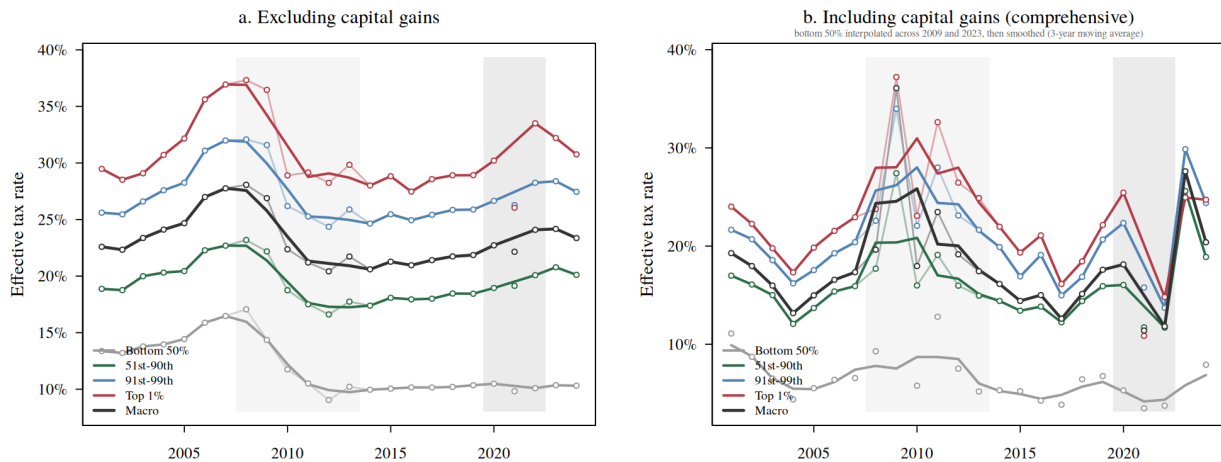


Figure 9. (a) Effective tax rate on pre-tax private income by income group, 2001–2024. (b) Effective tax rate on pre-tax private income + capital gains by income group, 2001–2024.

Figure 9 shows the ETRs by percentiles over time. The schedule is clearly progressive in statutory terms, on a pre-tax income basis (panel (a)), each higher income group having ETRs above the last. The group's rates share a common profile through time: rising through the 2000s to a peak around 2008–2009 and then fell sharply with the 2010 reform, which cut the top personal rate from 39 to 33 percent and the company rate from 33 to 28 percent, rising very gradually with fiscal drag over 2012–2019. The top rate rise in 2021 lifts the top more than the middle, and no change is perceptible at the bottom. The top 1 percent rate peaked at 37 percent in 2008–2009, dropping to around 29 percent 2010–2015. Panel (b) shows the

compression of the schedule with capital gains, drawing all but the bottom into very similar rates in years of strong capital gains. In 2024, where gains are maintained in business equity but collapsed in housing, the top 1 percent enjoys a lower ETR than even the 91–99 percentiles, even though the top PIT rate has by this point been raised.

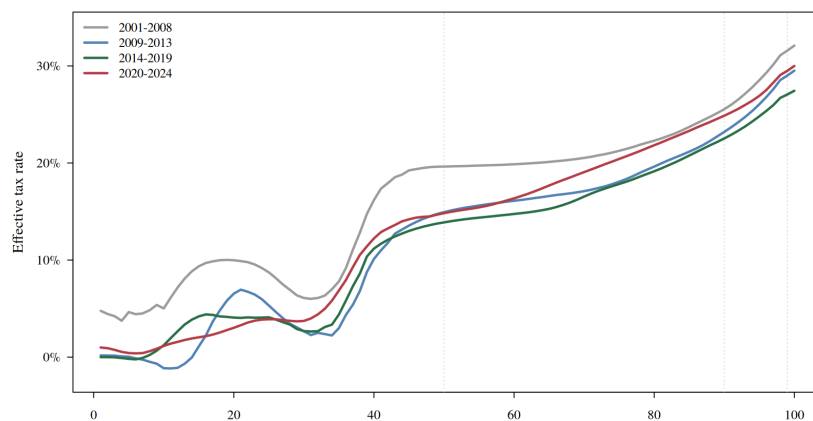


Figure 10. *Effective tax rates on a pre-tax private + superannuation basis, excluding gains, period average percentile rates.*

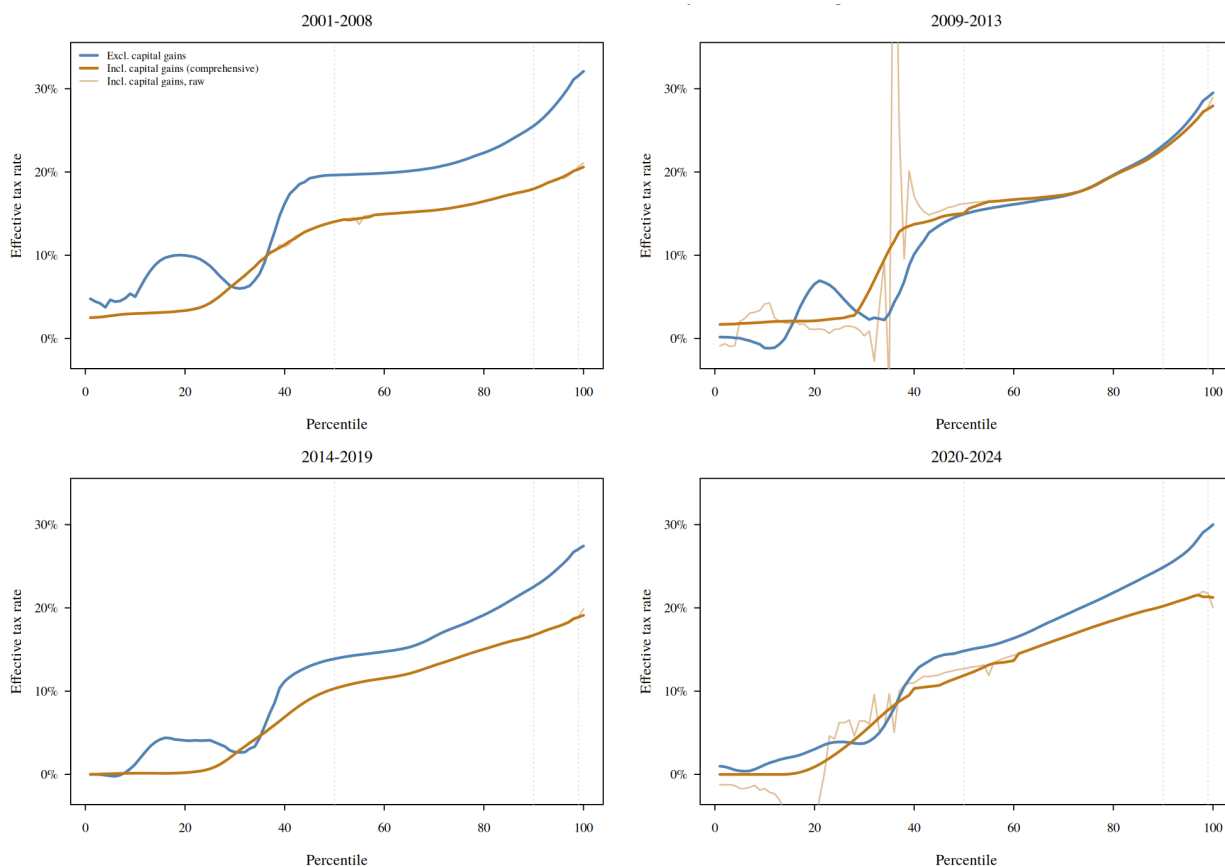


Figure 11. *Effective tax rates over the income distribution, on a pre-tax private income basis, and a pre-tax private income + capital gains basis, period average percentile rates.*

Figures 10 and 11 give the full distributions, for four distinct periods (percentile average rates over each set of years): 2001–2008, prior to reform, 2009–2013, reform and GFC, 2014–2019, sustained property expansion, and 2020–2024, pandemic and post-pandemic house price correction. Lumps around the 20th percentile in each gains-exclusive series, vanishing once gains are accounted for, are the income-poor, asset-rich – largely composed of retirees – who are reranked higher under a gains-inclusive concept. The reform and GFC period is notable for having scarce difference between ETRs on either base. All other periods see the gap open from around the 40th percentile, widening with incomes. That is, the depression of tax rates, considered on a gains-inclusive basis rather than pre-tax private + superannuation alone (itself a more comprehensive income concept than a narrower fiscal income, and with corporate and trust taxes already in the numerator, rather than a narrower personal-only tax numerator), is greater for those with higher income, on account of the correlation with wealth which earns untaxed capital gains.

Figure 12 sets out the headline wealth-concentration series. Panel (a) shows the top 10 percent declining gradually from 70 to 60 percent of net wealth across 2001–2020. The top 1 percent similarly falls through the house-price boom (in the bottom half, owner-occupied housing is almost the entire portfolio, while for the top 1 percent, corporate equity and unincorporated business holdings dominate, with housing a comparatively minor component - see panel (b)). Both the top 10 and top 1 percent show a rising share since 2020, consistent with the housing correction weakening the non-financial share of aggregate private wealth. The bottom 50 percent's share is negligible throughout – never above about 4 percent.

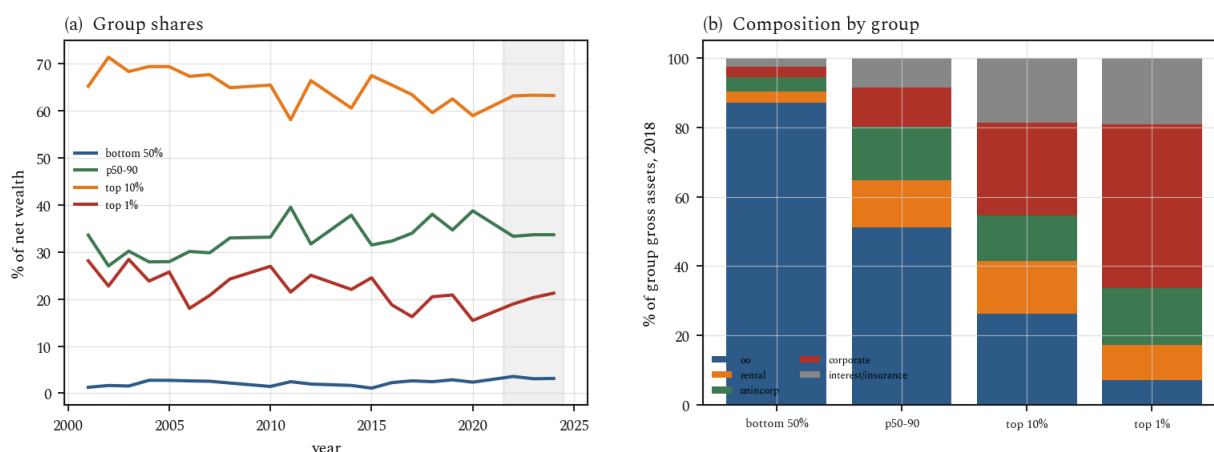


Figure 12. (a) Net wealth shares by wealth group, 2001–2024. (b) composition by group, 2018

Little taxable income relative to wealth is realised at the top: Figure 13 (a) shows the taxable share of comprehensive income collapsing for top wealth holders relative to the bottom half and the median, with the corresponding effect visible in (c) where the top 1% ETR on comprehensive income sits well below the rest. In panel (b), it appears the ability to realise little taxable income has strengthened over time, as the top 1% ETR on pre-tax private income separates further from the rest.

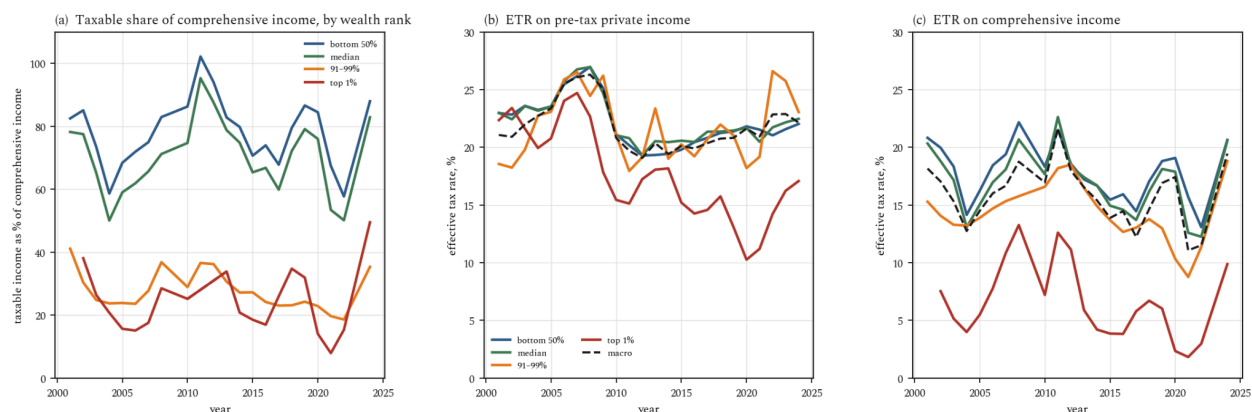


Figure 13. (a) Taxable share of comprehensive income, by wealth group. (b) ETR on pre-tax private income. (c) ETR on comprehensive income.

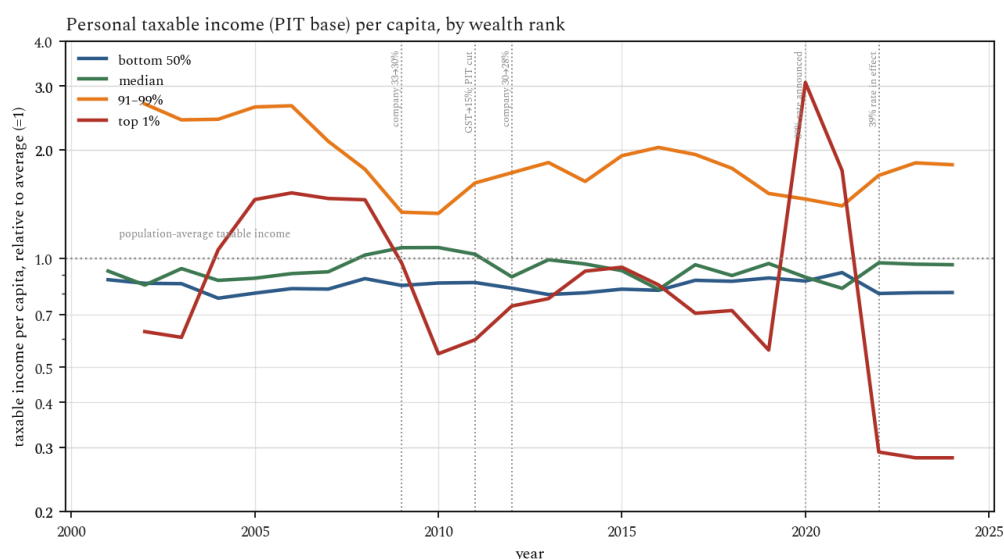


Figure 14. Personal taxable income base per capita, relative to population mean, by wealth group.

The top 1 percent's taxable income per capita, relative to the population average, swings sharply around policy change points (Figure 14). It spikes with the announcement of the 39 percent top rate change, and then collapses to under a third of the average within two years, consistent with anticipatory realisation, followed by durable income-shifting once the higher rate took effect. Top wealth holders appear to have realised comparatively more taxable income under the PIT schedule ahead of the CIT rate change in 2009, and shifted to realise the advantage as a gap emerging with the CIT rate, settling at a lower level of PIT income relative to national means in after the 2010 reform than they did before. Since 2008 (with the exception of realising extraordinary income ahead of the 2021 top rate change) the top 1% wealth holders have earned below mean personal taxable income, while the 91-99 percentiles always earn higher than average PIT income. Since 2010, top wealth holders have usually earned less PIT income per capita than the bottom 50%.

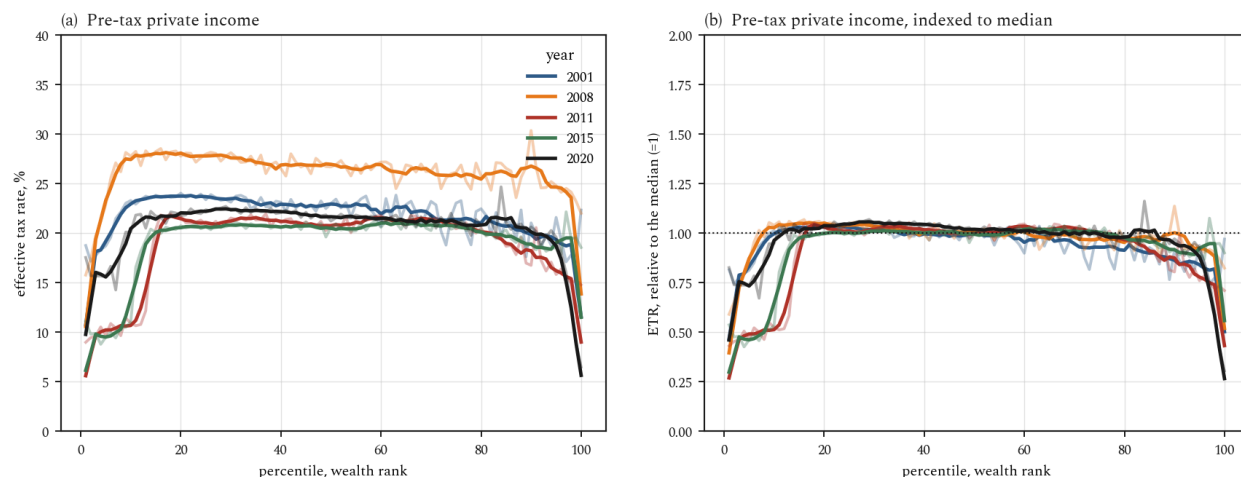


Figure 15. (a) Effective tax rates over the wealth distribution, pre-tax private income base. (b) Indexed to median ETR

Figure 15 considers taxation over the wealth, rather than income, ranking. The pre-tax private + superannuation income basis ETR is close to flat across most of the wealth distribution in every sample year, but falls away at both tails – unsurprisingly at the bottom, both wealth and income poor, but more tellingly at the very top, where the ETR drops back below the median. The pattern here corroborates the IRD’s finding in the HWI Project – that top wealth holders achieve ETRs around half of the median earner – showing it to be an enduring feature of the tax system, and not isolated to a small exceptional group, but systematic at the top of the distribution; ETRs fall dramatically even before the final wealth percentile.

The percentile-level estimates above resolve the distribution to 100 equal-population cells, which is ample for the bottom, the middle, and the top decile, but the fixed-return capitalisation method cannot discern shape within the top 1 percent from a thin, imperfectly observed income flow. As already noted, the great majority of comprehensive economic income at the extreme top is unrealised capital gains held in trusts and companies, and the tax administrative data underlying the capitalisation exercise has systematically limited access to this. We next return to the IRD’s HWI Project data, to anchor a synthetic extension of its population against the National Accounts, allowing us to model the relationship between the very wealthy and macroeconomic aggregates outside the Project’s own 2015–2021 window.

Part II: Extending the IRD High Wealth Individuals Project

ETRs for the Project population are calculated by combining tax administration data, public data and survey data collected specifically for the Project. The period for which ETRs are calculated was the six-year period 1 April 2015 to 31 March 2021 (the Project period).

The National Accounts provide coverage and continuity beyond the Project period - we use the National Accounts to construct a synthetic extension of the Project population, calling this “the very wealthy”, anchoring our estimates to aggregate totals while drawing on the Project data to inform the modelling of the relationship between the very wealthy and the National Accounts aggregates.

The Project was motivated by questions of tax progressivity – how the tax system bears on the wealthiest families – while the National Accounts are motivated by macroeconomic accounting of income, saving and wealth across the economy as a whole. The design of the respective data collections reflects those different purposes. Accordingly, reconciling the two requires mapping distributional concepts onto aggregate ones - attributing to the Project population their share of flows and stocks that the National Accounts record at the sectoral level.

[Inland Revenue has made summary Project data available](#), providing net worth summary statistics for the Project population, by categories: trust and non-trust holdings of entities, directly-held real property, real property held in trust, real property held in land-rich companies, trust and non-trust holdings of portfolio assets, for years 2015, 2018, and 2021.¹⁵ For other years not given, we derive a constant growth rate between data points to interpolate net wealth figures¹⁶. The tables give economic income totals and composition for the Project population, by categories: base income, additional property income, additional portfolio income, additional business entities income, trustee income and non-taxable trust distributions (combined), and total tax paid (excluding GST). As indicated in Table 12.1 of the IRD report, the additional property and portfolio incomes are largely non-taxable, while additional business entity income is in large part (though not completely) taxable at the corporate income tax (CIT) rate. The trustee income portion of the category given as “trustee income and non-taxable trust distributions” is taxable at the trustee income tax rate of 33% for most of the period, raised to 39% in April 2024 (see below).

The Project population, like the very wealthy globally, are characterised by extensive ownership of business enterprises. Among families near median income or wealth, holdings of equity in corporations is scarce – ownership is highly concentrated at the top of the distribution, in New Zealand as it is elsewhere.

¹⁵ It is not stated explicitly whether these are March or June years, or otherwise – however in other places years are indicated as March years, so we assume alignment and take these to be March years.

¹⁶ A net wealth growth rate of 0.085 between 2015 and 2018 on Household sector wealth, 0.078 between 2018 and 2021, and 0.037 between 2015 and 2018 on Business sector wealth, 0.041 between 2018 and 2021.

To consider a synthetic Project population derived from National Accounts data, reconciled with the Project data, we construct two sectors: a household sector (comprising the financial and non-financial holdings of households, trusts, and unincorporated business enterprises – income from which are taxed under PIT and TIT schedules), and a business sector (incorporated businesses, both financial and non-financial – taxed under the CIT schedule). Looking through these holding types, individuals ultimately hold the equity in business entities too. For this reason, when considering the asset holdings of each type respectively, we remove net equity from the respective balance sheets¹⁷. This effectively collapses the accounting distance between the private holder of equity in the business (an individual, household, or trust - a non-business), and the business itself. In tax terms, the household sector incurs PIT and trustee income tax (TIT), and the business sector incurs CIT.

The first sector combines Households and Non-incorporated Business Enterprises from the National Accounts institutional sector accounts. Unincorporated business operations incur tax at the PIT rate of the individual earning the income, which is attributed directly to the individual. We therefore aim to account for the wealth, income, and tax of unincorporated entities by assimilating them with the households that operate them, rather than considering them akin to incorporated businesses. Because in the National Accounts, trusts are treated in the Household sector, trust assets, trustee income, and trustee tax are included in the Household sector accounts. The average tax rates derived from these combined accounts therefore amalgamate PIT and TIT receipts, while CIT receipts are captured in the accounts of business entities. Remittance of CIT incurred by corporations held in trusts is captured in the Corporate Business accounts (we combine Non-financial Corporate Business and Financial Business accounts), *prior* to the recording of trustee income on which TIT is calculated, and therefore does not appear in the sector accounts containing the trusts themselves. Adjustments made to the National Accounts are documented in Annex 1.

For the general population, we construct a measure of capital gains as we did for the comprehensive concept in the full population estimates, applying the same adjustments to the Revaluation Accounts as made to the balance sheets. The procedure and resulting quantities are shown in Annex 1.

In the Project data, combining income earned directly (base income, additional property income, additional portfolio income) and through trusts (trustee income and non-taxable trust distributions) we can reconcile with this expanded Household sector as treated in the National Accounts¹⁸. We can

¹⁷ We account for public holdings of business enterprises by only removing the privately held equity liability, so there remains the liability that accords with the public holding of the private business sector.

¹⁸ Trading trusts are treated as business entities rather than as trusts in the Project methodology, meaning their income is measured and attributed using the business entity approach rather than the trust attribution methodology. This creates an imperfection in the National Accounts reconciliation, since trading trusts would appear in the National Accounts Household sector (where trusts sit) rather than the Corporate Business sector.

distinguish between taxable income derived through households and trusts (base income taxed at the PIT rate, and trustee income taxed at the TIT rate) and untaxed income derived through households and trusts (additional property and portfolio income, and non-taxable trust distributions). The same income category for the median population can be expected to be largely composed of base income, and some portion of additional property income, to the extent that the median household holds owner-occupied housing assets. We consider there to be minimal additional portfolio income, and minimal trust income earned by the median household. Business entities in the Project are defined as companies (listed and unlisted) and trading trusts – unincorporated entities such as sole traders and general partnerships are explicitly excluded from the business entity category. Unincorporated business profits are assimilated with the income of the individual, and so is captured in base income in the Project data via the IR3 returns. The taxable and untaxed incomes in either data source are therefore reasonably well-aligned.

The Income and Outlay sector accounts in the National Accounts are used to form taxable income series for each sector, and record the income tax paid by each sector, allowing us to compute an effective tax rate on the taxable income component of each sector's economic income. For the expanded Household sector, this rate reflects the combined weighting of the PIT and TIT schedules, the distribution of personal income across tax brackets, and any applicable exemptions. For the Business sector, it reflects the taxable portion of corporate income net of exemptions, applied at the CIT rate. Variation in the effective tax rate on taxable income through time reflects variation in the use of the policy environment – including the application of exemptions, deferred loss rules, and incentives to route income through particular entity structures – and fiscal drag, as nominal income growth lifts individuals into higher tax brackets in the absence of threshold adjustment. The resulting series are documented in Annex 1.

Several features of the data and methodology warrant explicit acknowledgment. First, negative incomes recorded in the Project population – where loss carry-forward rules allow taxable income to be negative even for families with substantial wealth – presents a particular challenge for the construction of ETR series from National Accounts aggregates.

Tax rules allow individuals to report and carry-forward business losses. These losses do not imply the value of the underlying businesses are negative or zero. Indeed, with careful planning, many privately-held firms can engineer, by design, such large taxable losses that the owners' income becomes negative even though these owners have considerable wealth in these assets. The most common methods include accelerated depreciation of assets (where tax rules allow costs to be deducted faster than the asset economically declines in value), interest deductions on debt used to finance appreciating assets (creating paper losses while underlying wealth grows - see footnote 14), and the allocation of shared costs – such as management fees or overhead – from profitable entities to loss-making ones within a commonly owned group. Together, these mechanisms allow taxable income to be suppressed well below economic income in any given period, often indefinitely, particularly where the offsetting gains accumulate as unrealised capital appreciation rather than as taxable receipts.

Table 6. Concordance between Project data and National Accounts

Category	Sector	Project data	National Accounts
Sectors	Business		Corporate Business Enterprises, Financial Business Enterprises
	Household		Households (including trusts), Non-corporate Business Enterprises
Net wealth	Business	Business Entity net wealth	Net financial assets - net equity in
	Household	Property net wealth + Portfolio net wealth	corporate enterprises + Non-financial assets - Annual Balance Sheets
Taxed income	Business	Derived proportion of Additional Business Entity income	Total primary income receivable - Total primary income payable - Income and Outlay sector accounts
	Household	Base Income + Derived proportion of Trustee income	Total primary income receivable excluding gross operating surplus - Total primary income payable - Income and Outlay sector accounts
Untaxed income	Business	Derived proportion of Additional Business Entity income	Holding gains and losses on net wealth except for net equity in corporate enterprises - Accumulation Accounts - Revaluation Account
	Household	Additional Property income + Additional Portfolio income + Derived proportion of Trustee income and non-taxable trust distributions	
Tax	Business	Implied tax from CIT regime on additional business entity income	Income Tax - secondary income payable - Income and Outlay sector accounts
	Household	Implied tax from PIT regime on base income + Derived tax from TIT regime on trustee income	

* Computations given in Annex 2.

Table 7. Summary tables constructed from Project data

a. Combining Household and Trust											
Year	Net Wealth	Taxed	Un-taxed	Tax paid	Total econ. inc	ETR taxable	ETR econ. inc	Taxable return	Un-taxed return	Pre-tax return	After -tax return
2016	17097	422	1468	121	1890	28.7%	6.4%	2.5%	8.6%	11.1%	10.3%
2017	18549	394	1244	112	1638	28.4%	6.8%	2.1%	6.7%	8.8%	8.2%
2018	20124	441	1607	127	2048	28.8%	6.2%	2.2%	8.0%	10.2%	9.5%
2019	21691	445	1730	128	2175	28.8%	5.9%	2.1%	8.0%	10.0%	9.4%
2020	23381	435	1265	125	1700	28.7%	7.4%	1.9%	5.4%	7.3%	6.7%
2021	25202	983	4590	306	5573	31.1%	5.5%	3.9%	18.2%	22.1%	20.9%

b. Business											
Year	Net Wealth	Taxed	Un-taxed	Tax paid	Total econ. inc	ETR taxable	ETR econ. inc	Taxable return	Un-taxed return	Pre-tax return	After -tax return
2016	50051	1127	1430	315	2557	28.0%	12.3%	2.3%	2.9%	5.1%	4.5%
2017	51898	1031	1309	289	2340	28.0%	12.4%	2.0%	2.5%	4.5%	4.0%
2018	53814	1000	1270	280	2270	28.0%	12.3%	1.9%	2.4%	4.2%	3.7%
2019	55994	1404	1782	393	3186	28.0%	12.3%	2.5%	3.2%	5.7%	5.0%
2020	58263	1376	1747	385	3123	28.0%	12.3%	2.4%	3.0%	5.4%	4.7%
2021	60624	1637	2078	458	3715	28.0%	12.3%	2.7%	3.4%	6.1%	5.4%
c. Total											
Year	Net Wealth	Taxed	Un-taxed	Tax paid	Total econ. inc	ETR taxable	ETR econ. inc	Taxable return	Un-taxed return	Pre-tax return	After -tax return
2016	67148	1549	2898	436	4447	28.1%	9.8%	2.3%	4.3%	6.6%	6.0%
2017	70447	1425	2553	401	3978	28.1%	10.1%	2.0%	3.6%	5.6%	5.1%
2018	73938	1441	2877	407	4318	28.2%	9.4%	1.9%	3.9%	5.8%	5.3%
2019	77685	1849	3512	521	5361	28.2%	9.7%	2.4%	4.5%	6.9%	6.2%
2020	81644	1811	3012	510	4823	28.2%	10.6%	2.2%	3.7%	5.9%	5.3%
2021	85826	2620	6668	764	9288	29.2%	8.2%	3.1%	7.8%	10.8%	9.9%

Figures in \$m NZD, current prices

In principle, loss carry-forward provisions counter the arbitrariness that results from taxing income based on a single tax year which may have little to do with the real seasonality of a given business or economic activity, allowing losses in one period to offset income in another. Where losses are genuine, these provisions are desirable. The provisions are, however, vulnerable to manipulation, and the appearance of losses for tax purposes can say little of economic substance. Using firm-level characteristics to value firms, Smith, Zidar, and Zwick (2023) find that 17 percent of total pass-through business wealth in the US accrues to those with losses. New Zealand's loss carry-forward rules can mean that historical tax losses can assign negative income to businesses generating economic value.

If these losses were temporary or cyclical, one would expect them to be absorbed by taxable income over time. Genuine losses are not a concern, but that losses which persist over time and continuously exceed taxable income may signal exploitation of the tax code, and that a form of positive economic income is being accumulated but not realised or taxed. IRD (2016) suggests that the role of loss carry-forward might be particularly pronounced for the very wealthy:

“The proportion of carry-forward tax losses to taxable income [for high wealth individuals (HWIs)] has remained relatively consistent across the years at 1.3 to 1.5 times taxable income ... The fact that the HWI population has significant tax losses available to them means that they will be able to offset them against

current income streams without needing to pay tax thereby enabling them to further build their store of wealth to the extent the income is not needed to support their lifestyle.”

Indeed, in the IRD report, when taxable income alone is considered, around 70 percent of Project population families fall in the top income decile – consistent with their being very high earners – but a striking 30 percent are spread across all other deciles, with 9 percent falling in the very lowest (p. 37). Analysis of the Project population’s GST payments indicated that many among the high-wealth population reported spending more than their taxable income, almost certainly drawing on accumulated wealth, demonstrating that these families have “considerable resources beyond their taxable income” (p.112)¹⁹.

Negative taxable incomes indicate a further layer of opacity over comprehensive incomes; the taxable income data can have little to do with economic activity and capital accumulation, being more of an artefact of the tax planning layered over it. The true scale of income being generated – in the form of appreciating assets, retained earnings, and accruing capital gains – is obscured. This opacity is particularly corrosive for the purposes of estimating ETRs on comprehensive economic income for the wealthiest households, since it is precisely among those households for whom the gap between taxable and economic income is largest that the taxable income data is least informative. This is an inherent difficulty in estimating any feature of very wealthy populations.

Second, comprehensive income – and particularly capital gains – is highly volatile year to year, as is visible in the Project data itself, where business entity income ranges from negative in 2019 to very large in 2021. Annualised estimates in the extension period should therefore be interpreted with caution, and period averages should be considered a more reliable comparator than any single year.

Third, Project population net wealth is available only for 2015, 2018, and 2021, requiring interpolation between these points; the interpolation method introduces smoothing that may obscure genuine within-period dynamics, particularly around the sharp asset price movements of 2020 and 2021.

Fourth, the Project summary data do not separately identify PIT, TIT, and CIT transparently – some assumption-driven allocation between schedules is required, documented and discussed in Annex 2.

¹⁹ The use of GST and consumption data to infer income for high-wealth individuals is methodologically appealing precisely because it sidesteps the opacity of the taxable income record – if negative taxable incomes render the tax data uninformative about economic activity, expenditure data offers an independent signal of actual living standards and resource flows. This also finds appealing theoretical justification in that lifetime consumption approximates lifetime income under the permanent income hypothesis. In practice, however, the primary source of expenditure data is household surveys, which are costly to design, administer, and maintain at the scale required for reliable inference, and which suffer from the same underrepresentation of top-wealth households that afflicts income surveys.

The mapping between Project data concepts and the National Accounts is reasonable, but not perfect. Capital gains on sole trader and partnership assets are not calculated at all in the Project, due to difficulties in valuing these entities. That is, capital gains on unincorporated business entities are absent from the Project population income measures. The National Accounts capture the appreciation in value of, say, an unincorporated farm or a partnership's non-residential property as a holding gain in the Household sector revaluation account. The Project, by contrast, explicitly does not calculate capital gains on sole trader businesses or partnerships due to valuation difficulties, meaning this component of economic income is absent from the Project data entirely. The holding gains on unincorporated business assets that appear in the National Accounts Household sector revaluation account have no counterpart in the Project data. The National Accounts will show holding gains on unincorporated assets in the Household revaluation account that the Project simply does not measure, introducing a systematic downward bias in the Project's economic income estimates that the National Accounts comparison cannot correct for without an additional adjustment.

However, since the gap is likely to be reasonably stable in structure – sole trader and partnership assets are consistently excluded from capital gains measurement throughout the Project period, so the downward bias this introduces is present in every year. To the extent that unincorporated business holdings as a share of total Project population wealth are stable, the bias is roughly constant and the derived ratios absorb it. However, if the composition of the Project population's holdings shifted during the Project period – say, if some business activity migrated between incorporated and unincorporated forms in response to tax incentives – the bias would be time-varying within the Project period, introducing noise into the derived relationships that the paper cannot easily detect or correct for given the limited number of data points available.

The more significant concern is whether the gap is stable in the extension years relative to the Project period. There are reasons to think it may not be. The tax policy changes documented in the paper – particularly the increase in the top PIT rate to 39% in 2021 and the anticipation of the alignment of the trustee tax rate with the top PIT rate in 2024 – altered the relative attractiveness of different holding structures. These changes are likely to have induced marginal shifts in the proportion of income earned through trusts and companies relative to personal income. The question is whether these same incentives affected the balance between incorporated and unincorporated structures. If higher PIT and TIT increased the attractiveness of incorporation – converting what was previously sole trader or partnership activity into company activity – then the share of the Project population's economic income that is unincorporated, and therefore missing from the capital gains measure, would have declined over the extension period relative to the Project period. The derived ratio between Project population untaxed returns and macroeconomic untaxed returns, calibrated on Project period data, would then overstate the gap in the extension years, introducing an upward bias in the estimated ETR improvement – or equivalently, understating the true level of untaxed income in the extension period. The likely direction of

the bias induced here is towards overstating the ETR on the very wealthy – contributing to the overall conservatism of our estimates here.

Finally, 2021 is anomalous in several respects simultaneously – high capital gains, anticipatory income realisation ahead of the top rate change, and the end of the Project period – making it an unreliable anchor for the relationships that are then projected forward, leading us to exclude 2021 from the estimation of relationships between the Project population and National Accounts for some components.

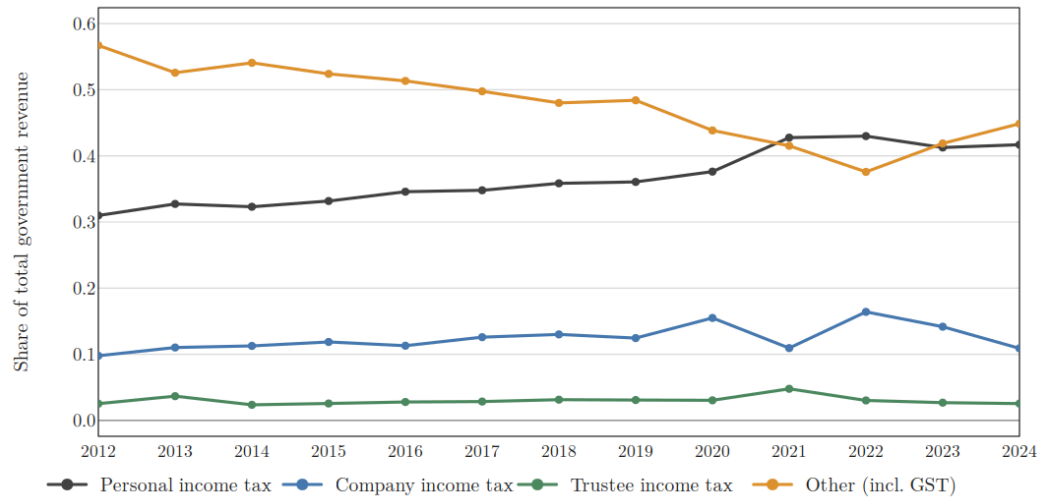
Differential responses to tax changes between end of Project period and present day

With the exception of 2021, over the Project period there are no policy shifts sufficiently material to introduce structural breaks in the effective tax rates on either sector, and the series can be treated as broadly continuous. The extension years are different in this respect – the changes to the top PIT rate, the trustee tax rate, and residential property rules each have the potential to alter the effective rates on one or both sectors (see earlier discussion)²⁰ – with attendant behavioural responses, the scale of which are difficult to cleanly estimate. The cumulative effect of these changes on the composition of the income of a representative Project population is ambiguous. We can, however, expect:

- Marginal decrease in the proportion of income earned through trusts (tax changes since the Project period only negatively impact the tax incentive to earn income through trusts).
- Marginal decrease in the proportion of personal taxable income drawn, on account of the higher top rate (see Figure 13). The amount of tax paid may still be higher than a no policy change counterfactual – the mechanical effect on revenue from the policy change and the effect on revenue from behavioural response to the policy change are opposed.
- With both personal and trust income marginally decreased, we can expect the proportion of high earner income being earned through companies is marginally increased relative to a no policy change counterfactual. That is, it is likely that the companies tax base is larger than it otherwise would have been, though this may not be prima facie visible in the shares of revenue, given the higher take from the personal income tax base with the higher top rate.
- The effect on portfolio composition between nonfinancial assets and financial assets from tax changes is ambiguous. Other macroeconomic developments – especially housing market dynamics – may dominate the effect of tax changes.

²⁰ The PIT and trustee rate increases would tend to raise the Household sector rate, while the behavioural response of reallocating income toward the Business sector would tend to raise the Business sector rate modestly while dampening the Household sector rise.

Figure 16. Composition of tax revenue, IRD (2025a)



Anticipatory behavioural responses to the incoming top rate change are visible in the revenue shares ahead of April 2021: more personal income was realised and taxed in the 2020 tax year – and correspondingly less income retained in companies – as those with flexibility to draw taxable income directly chose to do so before the higher rate took effect. Once the 39% rate was in place, however, the pattern reversed, though the shift in revenue shares between the PIT and CIT schedules is smaller than would be expected from a purely mechanical application of the rate change, indicating a reallocation of income toward CIT-liable sources and away from personal income where the top rate would apply. Together these suggest the top rate change was partially anticipated and partially avoided, rather than fully absorbed. Figure 13 suggests the anticipatory behavioural response was concentrated at the top.

To consider the effect of policy changes, ideally we would estimate the elasticity of taxable income – and, separately, the elasticity of the composition of taxable income across entity structures – using these to model the behavioural responses to tax changes on several different margins. The elasticity of taxable income (ETI) with respect to the net-of-tax rate is the most widely used summary measure of behavioural response to income tax changes, capturing the combined effect of real labour supply responses, avoidance, and evasion (Saez, Slemrod, and Giertz, 2012). For high wealth individuals whose income is predominantly derived from capital rather than labour, the standard ETI framework is of limited relevance – the more pertinent margins are the timing of income realisation, the allocation of income across entity structures, and the composition of portfolios between taxable and untaxed assets. Estimates of these margins are less well established in the literature and are likely to be highly context-specific. Saez (2010) and Chetty (2012) show that short-run ETI estimates are dominated by avoidance and retiming responses that may not persist, while longer-run structural responses – such as genuine reallocation of investment or incorporation decisions – tend to be smaller and slower to materialise.

Estimates from other countries consistently suggest that high income earners exhibit larger and faster responses than those at lower income levels, with higher estimates of the ETI for top earners generally associated with avoidance responses that are sensitive to the availability of sheltering mechanisms, and to the broadness of the income tax base (Gruber and Saez, 2002, Kleven and Schultz, 2014, Piketty, Saez, and Stantcheva, 2014). The degree to which these international estimates translate to the New Zealand context – where the absence of a capital gains tax provides particularly broad scope for income recomposition – is uncertain and untested. This is a highly technical task, and producing credible New Zealand-specific estimates for the high wealth population is beyond the scope of the current work.

Behavioural responses to tax changes at the aggregate level are reflected in the National Accounts: shifts in the composition of taxable income between PIT, TIT, and CIT sources, and changes in the share of economic income that is realised as taxable income rather than retained or accrued, are captured in the Income and Outlay accounts and Revaluation accounts of the respective sectors. To the extent that the general population responds to tax changes, those responses are therefore already embedded in the National Accounts series we use as the basis for the extension. We can expect, however, consistent with the international literature, a stronger response from the Project population – already evident in Figure 13. The very wealthy tend to respond more strongly, more quickly, and on additional margins not visible in the aggregate data.

Below, we derive relationships between the Project population and the National Accounts during the Project period and project them forward: if those relationships shift in the extension years on account of differing strengths of behavioural response to policy changes, the projected series will be biased. However, the direction of the bias is predictable – the Project population's greater flexibility, sophistication, and exposure to the top rate changes means their response is likely to exceed that of the macroeconomy as a whole on every relevant margin, and for that response to be directed toward lower tax burdens and higher after-tax returns. Still, the magnitude of the difference is uncertain. Including a stronger behavioural response among the Project population would therefore produce lower estimated Project population ETRs. In this sense, our estimates are conservative.

Bridging between the Project data and the National Accounts

The Project population derives most of its income from ownership of assets, especially financial assets. Income is composed of taxable and non-taxed streams of income from this underlying wealth. At the highest level, there are two determinants of Project population income: the scale and composition of the population's net wealth, in terms of the particular asset classes, and the return – taxable and untaxed – on those assets. That is, a given asset may generate a taxable stream of income, and an untaxed stream, and have accordingly a taxable rate of return and a rate of untaxed return – the total economic return on the asset combines both, and the holder can generally be thought of as maximising the expected (risk-adjusted) after-tax total economic return. Different tax rates apply on average to different sources of

income, varying particularly with holding entities. We are able to consider these distinctions – taxable and untaxed rates of return to wealth, and tax rates applying to the taxable portion of income – by distinguishing between the two sectors (a Household sector, and a Business sector) we construct above.

For net wealth W_t^k in a given sector k (Household sector H , Business sector B), earning a rate of taxable return $r_t^{k\tau}$, a rate of untaxed return r_t^{ku} , and that has a tax rate on taxable income τ_t^k , the effective tax rate on economic income in a given sector is:

$$ETR_{kt} = \frac{\tau_t^k r_t^{k\tau}}{(r_t^{k\tau} + r_t^{ku})}$$

The ETR on economic income in a given sector for either population (among the very wealthy or the general population) depends on net wealth to the extent that rates of taxable or untaxed return, and tax rates on taxable income, are a function of net wealth. Still, even if rates of return and tax rates on taxable income were independent of net wealth, the ETR on aggregate economic income across sectors would vary with differences in shares between sectors over the wealth distribution.

The aggregate ETR across both sectors is $ETR_t = \frac{\sum_k \tau_t^k r_t^{k\tau} W_t^k}{\sum_k (r_t^{k\tau} + r_t^{ku}) W_t^k}$. We can also write this as a weighted sum

of sector ETRs: $ETR_t = \omega_{Bt} ETR_{Bt} + \omega_{Ht} ETR_{Ht}$ where the weights $\omega_{kt} = \frac{(r_t^{k\tau} + r_t^{ku}) s_t^k}{\sum_j (r_t^{j\tau} + r_t^{ju}) s_t^j}$ are sector income

shares, with $s_t^k = W_t^k / W_t$ sector shares of total net wealth ($\sum_k \omega_{kt} = 1$, and $\sum_k s_t^k = 1$).

We would also like to be able to consider the drivers of shifts in the ETR through time. In Annex 3 we derive the following expression for the decomposition of the change in ETR:

$$\Delta ETR_t = \sum_k \bar{\omega}_{kt} \frac{r_t^{k\tau}}{(r_t^{k\tau} + r_t^{ku})} \Delta \tau_t^k + \sum_k \bar{\omega}_{kt} \frac{\tau_t^k r_t^{ku}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r_t^{k\tau} - \sum_k \bar{\omega}_{kt} \frac{\tau_t^k r_t^{k\tau}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r_t^{ku} + \sum_k \bar{ETR}_{kt} \Delta \omega_{kt}$$

Where barred terms are the average value between t and $t + 1$. The first term gives the tax rate effect, the second gives the taxable rate of return effect, the third gives the untaxed rate of return effect, and the final term gives the sector share effect. Each of the first three effects themselves decompose to a sector share effect and an effect for each of the respective sector rates. Intuitively, the ETR is increasing in τ^k and $r^{k\tau}$, decreasing in r^{ku} , and shifts in wealth shares increase the ETR when shifts are towards the higher ETR sector, and decrease the ETR when shifts are towards the lower ETR sector.

If we then consider the ratio of population ETRs (where P denotes the Project population and G denotes the general population): $R_t = \frac{ETR_t^P}{ETR_t^G}$, and following derivations in Annex 3 we obtain:

$$\Delta R_t = \frac{1}{ETR_t^G} \sum_{i=1}^4 (\delta_{it}^P - \bar{R} \delta_{it}^G)$$

Where δ_i are each of the four effects (the four terms) in the decomposition of ΔETR shown above. As such, we can see the change in the ratio of population ETRs as a sum of the differential tax rate effect, the differential taxable return effect, the differential untaxed return effect, and the differential sector composition effect.

To summarise, the difference in Project population and macroeconomic (general population) ETRs, and the changes in each through time, is the result of differential:

- rates of taxable returns to assets by sector
- rates of untaxed returns to assets by sector
- average tax rates on the taxable income derived in a given sector
- shares of income in either sector

The first three are within sector effects, the last is the between sector effect. The shares of income in either sector are themselves a function of the taxable and untaxed rates of return and the net wealth in either sector – such that the quantities we model are the respective rates of return ($r^{k\tau}$ and r^{ku} for each sector), the growth rate g^k on net wealth W^k in either sector (so that we can evolve by $W_{t+1}^k = (1 + g^k)W_t^k$, and the sector tax rates on taxable income τ^k . For each of these parameters, we estimate a relationship between the Project population values, and the macroeconomic values, in order to use the National Accounts to extend the estimates for the population of very wealthy individuals, representing a synthetic Project population. We consider no additional behavioural responses not already present in the National Accounts – that is, setting aside for the moment the likelihood of differing strengths of behavioural response between the Project population and the general population²¹.

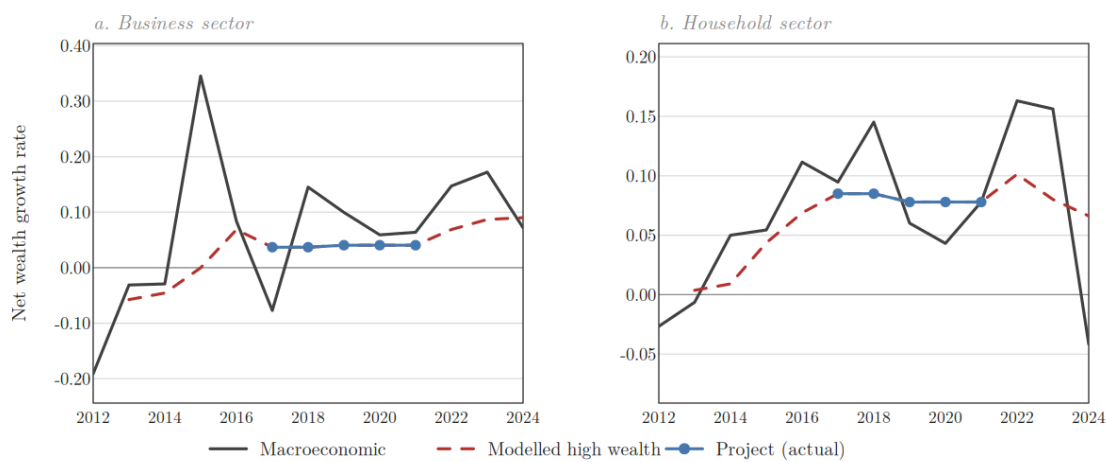
²¹ As discussed above, the projection does not capture differential behavioural responses to macroeconomic and policy changes between the two populations – it relies instead on National Accounts aggregates and historical relationships estimated over a relatively stable policy period. National Accounts will capture the aggregate mechanics of and responses to macroeconomic and policy changes; what we therefore exclude is only the differential responsiveness to those changes between the Project population and the macroeconomy as a whole. Given the greater flexibility and sophistication in tax planning available to high-wealth individuals, we would expect the Project population to be more responsive to any given change than the macroeconomy, and for that response to be directed toward lower tax burdens and higher after-tax returns. Including a stronger behavioural response among the Project population would therefore produce lower estimated Project population ETRs.

We want to assume as little structural relation between these variables as possible - otherwise we reduce the macroeconomic mechanics of the projection to fewer things, imposing too restrictive a structure on the relationships instead of allowing changes in the relations between the variables to be what is able to drive the eventual differences in ETRs. By the procedure described in Annexes 1 and 2 we obtain a series for the general population and a series for the Project population to serve as a basis for comparing the evolution of the Project population over the project period, with the evolution of the macroeconomy over the same period. With this we are able to model differential growth rates of wealth, and differential taxable and untaxed rates of return between the macroeconomy and the very wealthy based on historically observed relationships.

1. Net wealth growth rates by sector

Project population growth rates of net wealth are imputed to a constant rate between 2015-2018 and 2018-2021 for each sector (having only 2015, 2018, and 2021 net wealth figures directly) - meaning we have limited information with which to understand a structure on co-movements between Project population and macroeconomic net wealth growth rates between those dates. Still, it seems plausible that the growth rate on business wealth approximates, if not the macroeconomic growth rate on business wealth, then a longer run average of it. Observing the series (Figure 17), Projection population growth rates average slightly below 4-period moving averages in each sector - partially on account of valuation differences. If Project population wealth had evolved from 2015 according to a moving average of macroeconomic growth rates, shifted downwards by the average difference between the moving average and the Project population rates, deviations from the observed data points are minimal - we therefore suggest it is reasonable to evolve Project population net wealth in each sector by this shifted moving average of macroeconomic growth rates. As seen in equations above, this won't be consequential to the computation of the ETRs, but will inform the decomposition of the change in ETRs through time.

Figure 17. Annual net wealth growth rates



In notation: let g_{kt} be the Project population growth rate on net wealth in sector k , and f_{kt} be the same for the general population (the macroeconomic growth rate on net wealth in sector k). We have series for both over the Project period 2016 – 2021. Estimate g_{kt} by:

$\hat{g}_{kt} = \bar{f}_{kt} + \bar{\delta}_k$ where $\bar{f}_{kt}$ is the four-period moving average of f_{kt} and $\bar{\delta}_k$ is the mean difference between the Project period growth rate and the moving average $\bar{f}_{kt}$ over the Project period:

$$\bar{f}_{kt} = \frac{1}{4} \sum_{j=0}^3 f_{kt-j} \quad \bar{\delta}_k = \frac{1}{5} \sum_{t=2016}^{2021} (g_{kt} - \bar{f}_{kt})$$

2. Rates of taxable return by sector

The Project population has a far lower rate of taxable return to net wealth than the general population (Figure 18) - partially the result of tax planning made possible by the degree of control owners may exercise over closely-held companies. Deciding to retain earnings in the entity rather than incur dividend withholding tax is a legal and straightforward thing to do as an owner of a closely-held company, whereas a small shareholder not exercising control must take any dividends as given. The Project population also has similar rates of taxable return between the two sectors - suggesting reallocation of incomes to equalise rates.

In both the Project population and the macroeconomy as a whole, rates of taxable return seem to decline gradually from 2016 onwards. Over the project period, the Project population taxable return to business wealth is between 25% and 30% that of the macroeconomic rate, and household sector taxable returns is between 13% and 18% of macroeconomic rate (excluding 2021²²) - it is reasonable to model the taxable returns of the very wealthy by these ratios of macroeconomic returns beyond the project period. In notation:

$$\hat{r}_t^{k\tau P} = \beta r_t^{k\tau G} \text{ where } \beta = \frac{1}{5} \sum_{t=2016}^{2021} \frac{r_t^{k\tau P}}{r_t^{k\tau G}}$$

The rate of taxable return to an asset is not determined solely by the underlying return to that asset – it also reflects the scope of the taxable income base, which is itself a feature of the policy environment. When the boundary of what counts as taxable income shifts – through the closing of exemptions, the extension of the bright-line test, the phasing out of interest deductibility for residential property investors, or changes to the treatment of losses – income that was previously untaxed moves into the

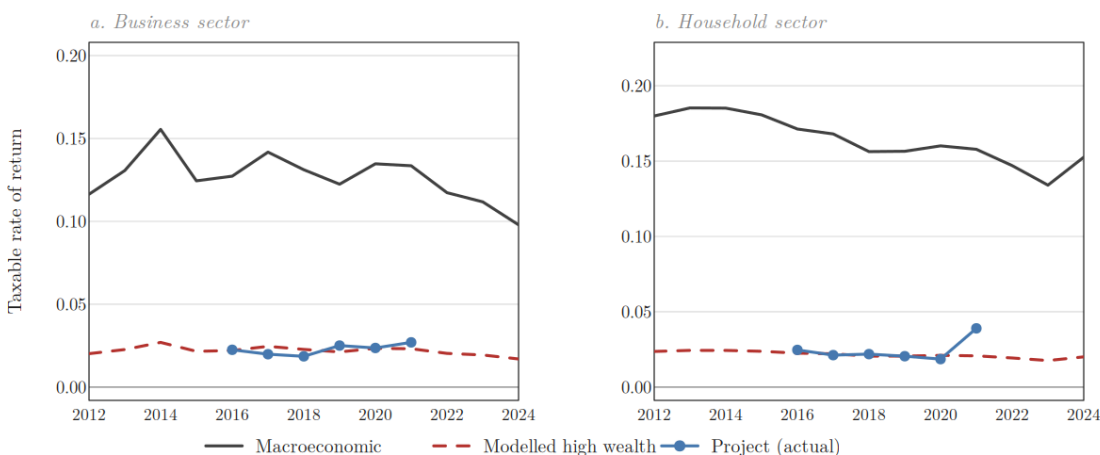
²² As discussed, 2021 is anomalous in several respects simultaneously – high capital gains, anticipatory income realisation ahead of the top rate change, inducing more taxable income to be earned in both sectors, not as visible in the general population (greater visibility of the effect in the Project data reflects the wealthy being both more responsive and more exposed to the change in top rate) – making it an unreliable anchor for the relationships that are then projected forward. We exclude 2021 from the estimation of relationships between the Project population and the National Accounts for some components.

taxable category, raising the measured rate of taxable return without any change in the underlying economic return to the asset. Conversely, the creation of new exemptions or the expansion of deductibility provisions shifts income in the opposite direction, reducing the taxable return rate while leaving the total economic return unchanged.

For example, the phasing out of mortgage interest deductibility for residential property investors between 2021 and 2025 increased the taxable income generated by rental property assets held in the household sector, raising the measured taxable return to those assets without any change in the rental yield or capital gain – an effect that would be absorbed into the macroeconomic taxable return series but is unlikely to bear with the same force on the very wealthy, whose property holdings are more likely to be commercial or held through entity structures with different deductibility profiles.

Second, the same policy changes can induce portfolio recomposition responses that further shift the boundary. An investor facing the loss of interest deductibility on residential property has an incentive to reallocate toward assets whose returns remain outside the taxable base – accruing equity in unlisted companies, for instance, or increasing exposure to assets whose gains are unlikely to be captured under the bright-line test. This means the rate of taxable return and the rate of untaxed return in each sector are not totally independent: policies that shift the boundary between them on one asset also induce reallocation toward other assets, making the total effect on the composition of income difficult to isolate from the underlying return data alone.

Figure 18. Rates of taxable returns to net wealth by sector



It is worth noting, however, that these base and boundary effects are likely to be modest in scale relative to the dominant drivers of variation in taxable return rates – namely, macroeconomic fluctuations in underlying asset returns – and are unlikely to materially alter the central estimates. They only impact the ETR estimates to the extent that the very wealthy exhibit stronger behavioural responses to policy changes affecting the bases and boundaries. Though this is likely the case, other effects will dominate.

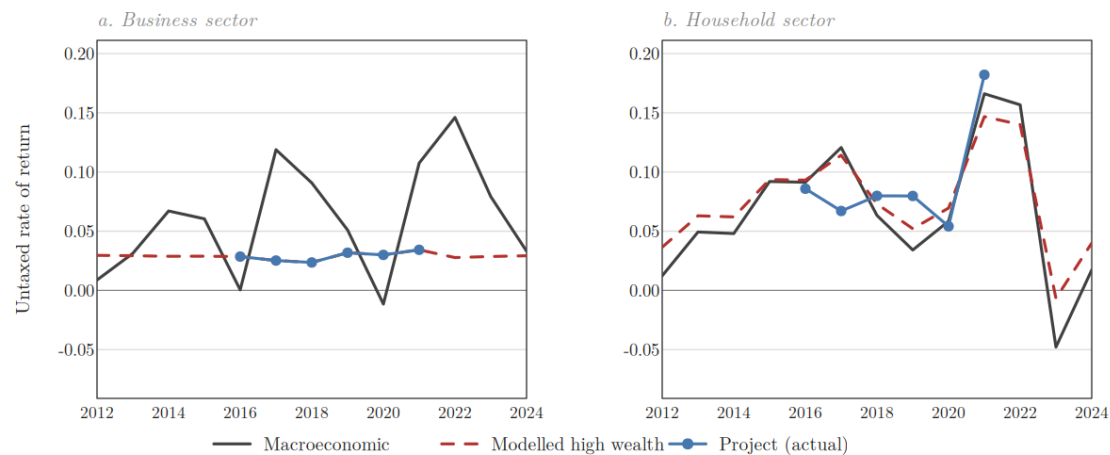
3. Rates of untaxed return by sector

For the business sector (Figure 18), the macroeconomic untaxed return is highly volatile throughout the period, reflecting the sensitivity of corporate equity valuations to macroeconomic conditions: the series swings from sharply negative in 2016 to a peak of around 34 percent in 2022, before falling sharply as rates rose and valuations corrected. The Project population actual series, by contrast, is remarkably flat and low throughout the Project period, hovering just above zero – a finding that, at first glance, appears to understate the capital gains the very wealthy are known to earn from business entities. This likely reflects the valuation methodology used in the Project, which applies comparable company multiples to financial statement data, producing smoother and more conservative estimates of business entity capital gains than the market-price movements that drive the National Accounts revaluation account, and also the smoothing of Project population income from this sector described in Annex 2. In either sector, we model the rates of untaxed return accruing to the very wealthy as a linear function of the macroeconomic rate:

$$\hat{r}_t^{kuP} = \alpha + \beta r_t^{kuG} \quad \text{where } \alpha \text{ and } \beta \text{ respectively are estimated by least-squares.}$$

In the household sector (Figure 18), the Project population series and the macroeconomic series track more closely together than in the Business sector. The dominant driver of household sector untaxed returns in this period is residential and commercial property price movements, which bear on both populations in similar ways.

Figure 19. Rates of untaxed returns to net wealth by sector



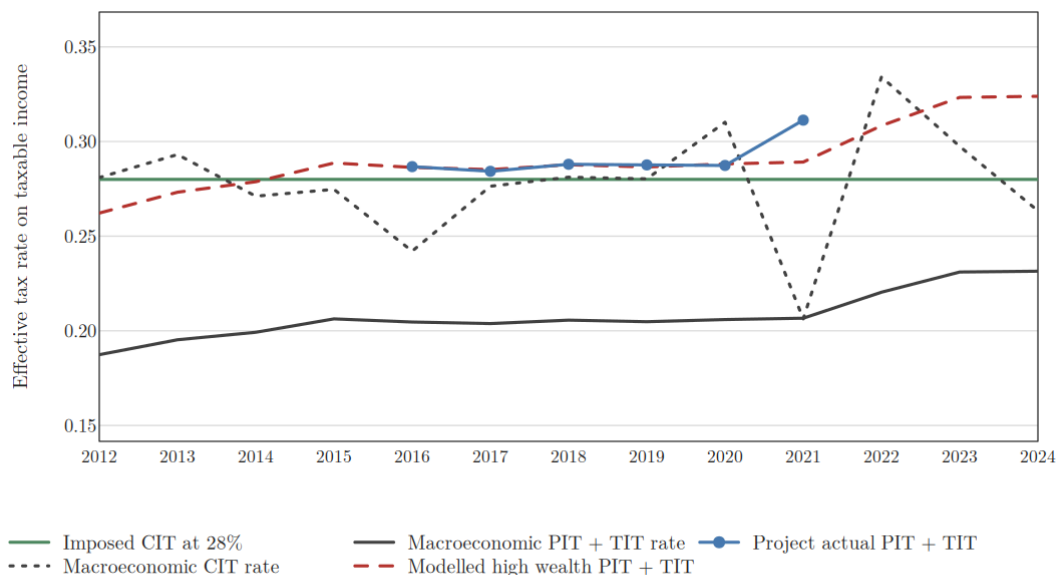
Two features of the untaxed return series warrant particular attention. First, the volatility of the macroeconomic business sector series in the extension years – swinging from 34 percent in 2022 to around -7 percent in 2024 – is substantially larger than anything observed in the Project period, meaning the linear model trained on Project period data has scarce explanatory power. The modelled very wealthy population series accordingly shows much less sensitivity to these swings than the National Accounts do,

which may be a genuine feature of the Project population's more stable business valuations, or may reflect a limitation of the modelling approach, owing to the difference in valuation methodology between the National Accounts and the Project. Second, the negative untaxed returns visible in both sectors in 2023–2024 – reflecting the housing market correction and corporate valuation declines – have no precedent in the Project period data, and the behaviour of the very wealthy during asset price contractions is therefore entirely modelled rather than observed, as the Project period happens to coincide with a prolonged period of asset price appreciation. It is possible that the derived relationships may be better suited to capturing upside dynamics than downside ones.

4. Tax rates on taxable income by sector

The Project population appears to obtain the same effective tax rate on taxable income between sectors, achieving a household sector rate around the CIT rate. We can expect the increase in top PIT rate and the trust rate to lift the tax rate on taxable household income, as is visible in the macroeconomy, where the ETR on taxable income for the household sector lifts in 2022, rising further with the effects of fiscal drag over the higher inflation period. The very wealthy population would be more exposed to the change in top PIT rate and the trustee tax rate, which would suggest a stronger lift in the ETR on taxable household income for the wealthy than for the general population, however this effect will be subdued as the wealthy reallocate income between CIT and PIT liable sources to reduce their total tax burden, dampening the effect.

Figure 20. *Effective tax rates on taxable income*



Some of the difference between the general population and the Project population seen here will also be due to imperfect alignment between the construction of the boundary between taxable and untaxed incomes (as well as, in the household sector, different distribution across tax brackets). We use the CIT

statutory rate for the business sector, by construction, and take the PIT rate in the very wealthy population to be a constant multiple of the macroeconomic rate – the average multiple over the Project period, around 1.32 (over 2015 - 2020, the multiple is steady between 1.31 and 1.32). Note that the stable multiple is derived in a period of minimal policy change - the assumption of a stable multiple is vulnerable in the years following the rate changes, where the reallocation dynamics described above are likely to be most active and the true multiple most uncertain. In notation:

$$\tau_t^{HP} = \beta \tau_t^{HG} \text{ where } \beta = \frac{1}{5} \sum_{t=2016}^{2021} \frac{\tau_t^{HP}}{\tau_t^{HG}}$$

Results

By the procedure described above we produce estimates for the ETRs on total economic income for the general population and for a very wealthy population derived from National Accounts data, modelled on the original Project population. We use the same method to extend the series both backwards and forwards in time from the Project period, in order to both validate the modelling relationships against the longer pre-Project period for which National Accounts data is available, and to situate the extension period estimates within a trend that, as the figures show, meaningfully predates the Project itself.

The Project population's estimated ETR on comprehensive economic income sits persistently and substantially below the macroeconomic ETR throughout the entire period from 2012 to 2024. The ETR on the very wealthy runs between approximately 7 and 12 percent throughout, while the macroeconomic ETR is between 10 and 21 percent (Table 8, excl. 2023). Across the full period, the ratio of the two ETRs averages around 0.62, meaning the wealthiest New Zealanders pay roughly 62 cents in tax on each dollar of comprehensive economic income for every dollar paid in the macroeconomy. In the extension period (2021–24), that figure falls from 0.63 to 0.58 (Table 9).

The results are consistent with the IRD's findings from the original Project. The IRD estimated a weighted-mean all-income ETR of 9.8 percent for the Project population over 2015–21; the modelled series sits between approximately 9 and 11 percent through those same years, aggregating to an ETR of 9.84 percent over 2016–2020 (Table 8).

The high wealth ETR becomes a lesser proportion of the macroeconomic ETR – contrary to the effect expected with the policy changes in the extension period. While the macroeconomic household sector ETR rises from 14.3% in the Project period to 15.6% in the extension period, the high wealth Household sector ETR rises more modestly, from 6.1% to 6.4%. Though top income earners should be more exposed to the increased PIT rate, the macroeconomic ETR on household sector income increases proportionately more than the high wealth population rate does – discussed further below.

The taxable share of household income for the full population declines from 78.0 percent in 2012–15 to 69.7 percent in 2021–24 (Table 9), while the high wealth equivalent falls from 27.3 percent to 20.5 percent. That is, the macroeconomic household taxable share remains roughly three times that of the high wealth population throughout. This gap reflects the composition of income in each case: in the macroeconomy, household income is dominated by wages and standard rental income, producing a high taxable share even as property gains compress it at the margin, whereas the high wealth household sector is characterised by accumulating capital gains against a very low taxable return to wealth. Notably, the untaxed rate of return to household wealth is similar across the two populations (Table 9: 6.4–7.9 percent for the high wealth population against 5.1–7.1 percent for the macroeconomy across periods) – it is the substantially lower taxable rate of return earned by the very wealthy (average of 2.1 percent against 16.0 percent, Table 9) that drives the gap in household taxable income shares.

The two populations' aggregate ETRs differ markedly in volatility. The high wealth ETR occupies a narrow band throughout – between 7.1 percent (2021) and 11.6 percent (2014) – while the macroeconomic ETR swings from 10.3 percent (2021) to 20.6 percent (2024), driven by its heavy exposure to the household sector (averaging around 78 percent of income, Table 9), where untaxed housing capital gains mechanically compress the taxable income share when property prices rise. The high wealth population, by contrast, derives over half its income from the business sector (Table 9), where its ETR is both higher and more stable, insulating the aggregate high wealth ETR from housing-driven volatility. The macroeconomic business sector ETR is itself volatile – swinging from 33.9 percent (2020) to 11.4 percent (2021) – as large fluctuations in corporate equity valuations alternately inflate and deflate the untaxed share of business economic income (Table 8). The high wealth business ETR is comparatively stable, reflecting the Project's use of company-multiple valuations rather than market prices, the constant CIT statutory rate applied by construction, and the greater scope for timing and structuring income in closely-held businesses.

Table 8: *Estimated high wealth and macroeconomic ETRs*

Year	ETR Business (High wealth)	ETR Business (Macro)	ETR Household (High wealth)	ETR Household (Macro)	ETR Total (High wealth)	ETR Total (Macro)
2012	11.4%	26.1%	10.3%	17.5%	11.09%	19.04%
2013	12.2%	23.7%	7.6%	15.4%	10.64%	16.90%
2014	13.5%	18.9%	7.9%	15.8%	11.63%	16.50%
2015	12.0%	18.5%	5.8%	13.7%	9.26%	14.65%
2016	12.2%	24.1%	5.6%	13.3%	9.30%	14.97%
2017	13.8%	15.0%	4.6%	11.9%	9.28%	12.55%
2018	13.7%	16.6%	6.3%	14.6%	10.55%	15.10%
2019	11.2%	19.8%	8.1%	16.8%	10.14%	17.48%
2020	12.3%	33.9%	6.7%	15.1%	10.01%	18.00%
2021	11.3%	11.4%	3.6%	10.1%	7.07%	10.33%
2022	11.8%	14.9%	3.7%	10.7%	7.09%	11.57%
2023	11.3%	17.4%	52.1%	35.9%	14.91%	28.25%
2024	10.3%	19.7%	10.8%	20.8%	10.47%	20.55%
Period	ETR Business (High wealth)	ETR Business (Macro)	ETR Household (High wealth)	ETR Household (Macro)	ETR Total (High wealth)	ETR Total (Macro)
2012-2015	12.3%	21.1%	7.5%	15.4%	10.6%	16.5%
2016-2020	12.6%	20.6%	6.1%	14.3%	9.8%	15.5%
2021-2024	11.2%	15.7%	6.4%	15.6%	9.0%	15.6%

Figure 21. Population Effective Tax Rates (ETRs) on total economic income across sectors

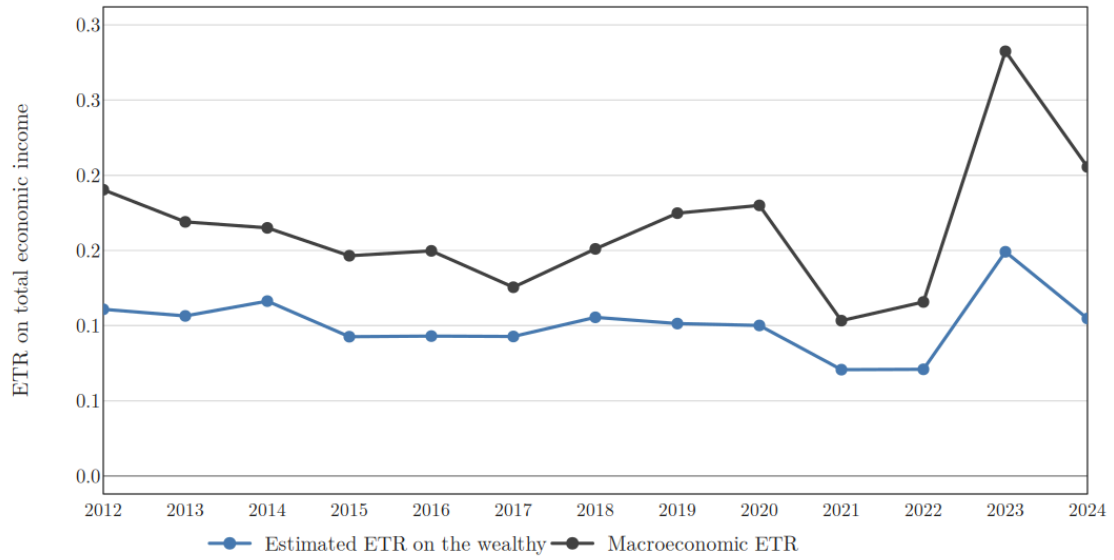


Table 9.

(a) Aggregated results for wealthy population

	2012-2015	2016-2020	2021-2024	2012-2024
Wealthy population - aggregated periods				
$r^{B\tau}$ taxable rate of return to Business wealth	2.3%	2.3%	2.0%	2.2%
$r^{H\tau}$ taxable rate of return to Household wealth	2.4%	2.1%	1.9%	2.1%
r^{BU} untaxed rate of return to Business wealth	2.9%	2.8%	3.0%	2.9%
r^{HU} untaxed rate of return to Household wealth	6.4%	7.9%	7.5%	7.4%
ϕ^B taxable share of Business income	43.9%	45.0%	39.9%	42.8%
ϕ^H taxable share of Household income	27.3%	21.3%	20.5%	22.2%
ω^B Business income weight	65.0%	57.6%	55.4%	58.6%
ω^H Household income weight	35.0%	42.4%	44.6%	41.4%
τ^B tax rate on taxable Business income	28.0%	28.0%	28.0%	28.0%
τ^H tax rate on taxable Household income	27.6%	28.7%	31.2%	29.5%
ETR_B Business sector ETR	12.3%	12.6%	11.2%	12.0%
ETR_H Household sector ETR	7.5%	6.1%	6.4%	6.5%
ETR aggregate high wealth ETR	10.6%	9.8%	9.0%	9.7%

(b) Aggregated macroeconomic results

	2012-2015	2016-2020	2021-2024	2012-2024
Macroeconomic - aggregated periods				
$r^{B\tau}$ taxable rate of return to Business wealth	13.1%	13.1%	11.3%	12.3%
$r^{H\tau}$ taxable rate of return to Household wealth	18.3%	16.2%	14.7%	16.0%
r^{BU} untaxed rate of return to Business wealth	4.3%	4.7%	8.7%	6.3%
r^{HU} untaxed rate of return to Household wealth	5.1%	7.1%	6.4%	6.4%
ϕ^B taxable share of Business income	75.4%	73.7%	56.6%	66.1%
ϕ^H taxable share of Household income	78.0%	69.6%	69.7%	71.4%
ω^B Business income weight	19.6%	19.8%	23.8%	21.5%
ω^H Household income weight	80.4%	80.2%	76.2%	78.5%
τ^B tax rate on taxable Business income	28.0%	28.0%	27.8%	27.9%
τ^H tax rate on taxable Household income	19.7%	20.5%	22.4%	21.1%
ETR_B Business sector ETR	21.1%	20.6%	15.7%	18.4%
ETR_H Household sector ETR	15.4%	14.3%	15.6%	15.1%
ETR macroeconomic ETR	16.5%	15.5%	15.6%	15.8%
R ratio of population aggregate ETRs	64.3%	63.4%	57.9%	61.5%

Annex 4 undertakes a decomposition of effects on the difference in ETRs between the very wealthy and the macroeconomic rate. Between the prior period and the Project period the shift of the high wealth population's income toward the lower-taxed household sector put downward pressure on the ratio (sector mix effect -0.027, Table A4), but was broadly offset by rising equity and property holding gains compressing the macroeconomic taxable income shares, such that both the business and household taxable share effects bring the general population and the high wealth population closer together (+0.015 and +0.014, Table A4), leaving the ratio essentially unchanged (-0.009). In the extension period the sector mix effect was more moderate (-0.013), but a larger household tax rate divergence acted in the same direction (-0.024), as income recomposition in response to the rate changes, and the far lesser exposure given their low taxable share, could insulate the high wealth population from the increase in PIT rate and incoming increase in TIT rate, meaning the rate increases fell more heavily on the general population.

It appears that the policy changes which nominally targeted the wealthy fell more heavily on the general population than the high wealth population – and notably, this result is obtained without modelling differential behavioural responses between the two populations. To the extent that the wealthy do respond more strongly and more rapidly to rate changes than the general population, as the international literature suggests, the true divergence in ETR movements will be larger still, and the estimated high wealth ETRs should be read as upper bounds. A modest uptick in the high wealth ETR is visible from 2022 (Table 8) – whether this represents the rate changes beginning to bite at the intended point in the wealth distribution, or simply reflects the partial reversal of the asset price correction that compressed the ETR in 2021–22, is not yet discernible from the available data. Raising revenue is not the same as raising the effective rate on the wealthy: a higher statutory rate that induces income recomposition can increase aggregate revenue while leaving the ETR of those at the top little changed, and raising it more sharply on the wider population with less flexibility to rearrange away from the increased rate, and less exposure to them in the first place.

Because the full-distribution ETRs constructed above and the very-wealthy rates constructed here share the same National Accounts aggregates and all comprehensive income concepts (as neatly as possible), they can be placed in the same frame as the earlier computation for the rest of the distribution. On taxable income, the hierarchy is as the schedule of statutory rates would predict: the very wealthy sit at roughly 28 percent – unsurprisingly, around the CIT rate, and essentially matching the top 1 percent, comfortably above the median and the bottom 50 percent, and well above the macroeconomic average.

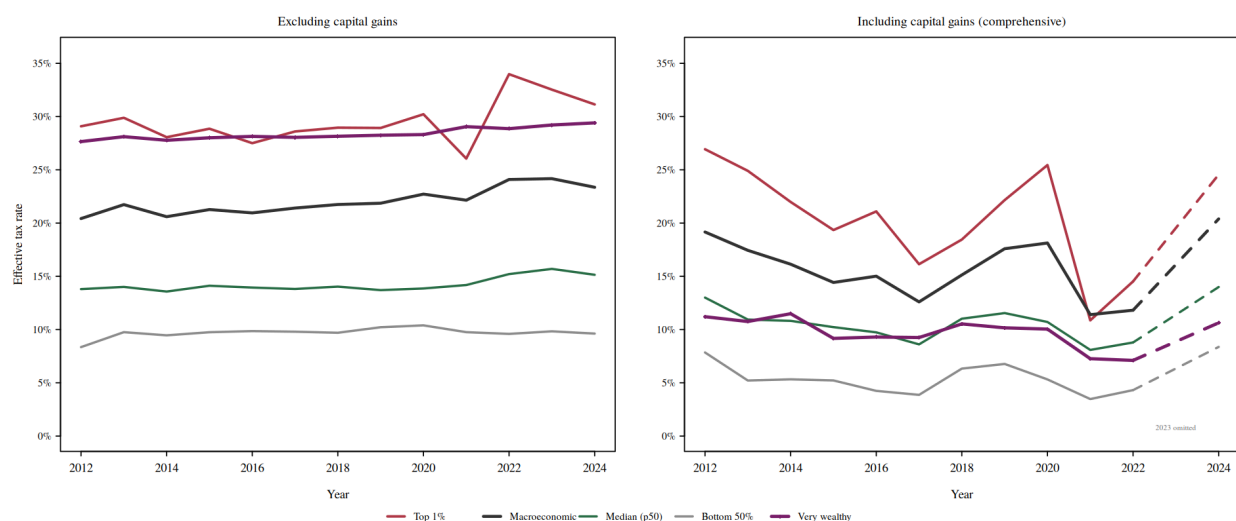


Figure 22. The very-wealthy effective tax rate against the macroeconomic, median (p50), bottom 50 percent and top 1 percent rates, 2012–2024, excluding capital gains (left) and including capital gains (right); common scale. In the comprehensive panel, 2023 is omitted (negative realised gains distort readability of the figure), instead 2022–2024 interpolated (dashed); the excluding-gains panel shows all years.

Read on the taxable income basis alone, the tax system looks progressive. Fluctuations around the top 1 per cent are muted except for in 2021–2022, reflecting moves to anticipate the top bracket change and realise income ahead of it. With the 39 percent top personal rate reinstated from April 2021, income was anticipated and realised ahead of the change, then correspondingly held back once it took effect, in the same pattern of dividend timing documented earlier for the top of the wealth distribution (Gemmell, 2020; Domican & Zhang, 2025). The series for the very wealthy is more stable than the top 1%, reflecting that we derive rates on the very wealthy from macroeconomic aggregates, not registering behavioural responses specific beyond what is visible at the macroeconomic level. That the response is visible in the top 1% suggests it should be *more* visible among those at the very top – that it isn't points again to the conservatism of our estimates. That the very wealthy ETR ends the period below the top 1% might signal that the top rate change has failed to get traction within the top 1% – but it is too soon to tell if the gap between the top 1% and the wealthiest within it will be enduring.

Once gains enter the base, the group ordering inverts. The profile over the years is similar for the very wealthy and the other population groups – encouraging given the difference in methods to calculate each. The very wealthy fall to roughly 9–12 percent – not just below the top 1 percent, whose comprehensive rate itself dips toward ten percent in boom years, but below the median household. The 2021–2022 swing is sharper still. That timing effect briefly compresses the measured gap between the very wealthy and the top 1 percent around the transition, before the two lines diverge again once the anticipatory realisation has passed through. The macroeconomic rate, itself dragged down by capital gains concentrated in upper groups, runs at close to double the very-wealthy rate across 2012–2024 – as above, the very wealthy pay only about 62 percent of the average comprehensive rate paid by ordinary households. At the end of the period, the very wealthy rate on the comprehensive basis appears not to have rebounded as strongly as the other groups after the drop associated with the housing correction.

Taken together, the results support four conclusions.

- First, the Project population's ETR on comprehensive economic income has remained persistently and substantially below that of the general population throughout 2012–2024, averaging around 6 percentage points below the macroeconomic rate over the full period and sitting at roughly 62 percent of the macroeconomic rate in the extension years.
- Second, the apparent narrowing of the gap between 2012 and 2021 was not a product of increased taxation of the wealthy but of the compression of the macroeconomic ETR given high untaxed gains on property assets – a process that reversed sharply from 2022, restoring and widening the underlying gap.
- Third, the policy changes of the extension period – the introduction of the 39 percent top rate, (anticipating) the trustee rate alignment, and the property tax rule changes – appear likely to have had a materially larger effect on the macroeconomic ETR than on the Project population ETR,

consistent with the proposition that income flexibility and a low taxable share of income insulates the wealthy from the full mechanical impact of rate increases, detectable even with the paper's conservative modelling assumptions.

- Finally, referring back to Figures 12 and 13, constructing ETRs over the full wealth distribution, the dynamics and ultimate failure of progressivity at the top is not isolated to an exceptional group, but perceptible in the top several percentiles – a much larger and more general group than we interrogate here.

The incipient rise in the Project population ETR in the final years, possibly signalling some of the policy changes successfully biting at the intended point in the income and wealth distributions, is notable but modest in scale relative to the underlying gap, and its durability is uncertain. Considering the low realisation of personal income among the top 1% since the change, we can expect that income has been diverted into the CIT or TIT schedules to avoid the top rate. The effect of the closure of the gap with the TIT rate is not yet discernible.

The IRD report found a median all-income ETR (excluding GST) for the Project population of 8.9 percent over the period 2015–2021, with a weighted-mean ETR of 9.8 percent. Our total ETR for the high wealth population runs between approximately 9.3 and 10.6 percent through the Project years, with the central estimates (similarly constructed weighted-mean over the period) for the Project period coinciding with the IRD's mean figure (9.8 percent, Table 9), providing reassurance that the synthetic construction from National Accounts data and summary Project statistics is not materially misaligned with the underlying calculations that the original project was able to perform directly. The appropriate interpretation is that the modelled series is broadly consistent with the original findings rather than a precise replication of them, and that the extension period estimates should be read in that spirit – as indicative of the direction and approximate magnitude of change rather than as precise point estimates of the ETRs that a renewed full-scale project would produce.

Calibrating top tail wealth shares from the Project files

The fixed-return wealth capitalisation method of Part I cannot resolve shares within the top 1 percent from a thin income flow heavy in unrealised capital gains. Heterogeneity in rates of return follows directly from the dominant presence of capital gains in the income of the wealthiest. Having established the very wealthy's ETR using the Project series, we now turn the Project data towards resolving the top of the capitalised wealth distribution, fitting generalised Pareto curves to extend the percentile-level distribution into a full top-tail estimate.

The classical approach to top-tail estimation assumes a single Pareto exponent applies uniformly above some threshold. A more flexible object, standard in the DINA literature, is the inverted Pareto coefficient: for a distribution with quantile function $Q(p)$, define $b(p) = E[X \mid X > Q(p)] / Q(p)$, the ratio of the average

income or wealth above rank p to the threshold at p . Blanchet, Fournier and Piketty (2022) show that $b(p)$ is typically U-shaped across the income and wealth distribution, tending to rise again at the very top. A single Pareto coefficient fitted from data around the top percentile will systematically understate concentration among the very wealthiest families. Naïve estimates that extrapolate a single, constant Pareto coefficient from the shape observed near the top percentile put the top 0.1 percent at roughly 5 to 6 percent of net wealth across 2010–2024 (Figure 24). With data points within the top tail, we should fit $b(p)$ directly rather than assuming it constant.

We estimate shares within the top tail by fitting $b(p)$ to the Project data, from the top 1 percent anchor established in the capitalisation. To this point, we have used the Project data to estimate ETRs at the top of the distribution, taking the Project population to be roughly representative of very wealthy New Zealanders. We have not asserted that the wealth and income of the Project population is the wealth and income of a top quantile. The panel is a population identified as having “high” wealth, not necessarily the very top²³, of which 219 to 400 individuals hold over \$50 million in net wealth, depending on the attribution rule.²⁴

The files report economic income and net worth for the same families and separates realised income from unrealised. Writing σ for the realised share, a group’s share of comprehensive capital income is exactly $\Theta = \sigma(\text{population})/\sigma(\text{group})$ times its share of realised income, so Θ measures the factor by which a realised-flow capitalisation under-attributes wealth to that group. Both terms are ratios, so Θ is immune to the undervaluation problems discussed below.

The Project families realise between 3 and 7 percent of what they earn, against 19 percent for the household sector at large (computed from National Accounts), and the realised share falls as one moves up the group. This is a measured returns gradient, which generates a rising inverted Pareto curve: the further up the distribution, the wider the wedge between what a family earns and what it realises.

²³ The Project itself notes the 311 families “were not randomly collected and may not represent the wealthiest 311 families in New Zealand,” having been identified through valuation models, asset-threshold criteria and referral processes. But the notional placement is corroborated in magnitude: the HWI population’s 2018 median net worth of \$86 million was more than four times the highest net worth recorded anywhere in that year’s Household Economic Survey (\$20 million), and its mean of \$238 million was over ten times higher – confirming these families sit further into the tail than any general survey reaches, even if their precise ordering within it cannot be verified.

²⁴ The Project’s unit is the family; ours is the individual adult. We split each family’s reported wealth equally between two adults to convert. The median age of the Individual A respondent is 68 and most Project families are couples, so an even split is a closer approximation here than it would be across a population that includes sole parents, single adults, and multi-generational families. Across five attribution rules – one adult per unit (11.01 percent), equal-split couples (preferred – 9.76 percent), a Rich-List-informed 2.93 (the average household size in among the Rich List – 9.04 percent), extended families at three (9.00 percent), and an asymmetric 75/25 couple (9.23 percent) – the 2024 top 0.1 percent runs from 9.0 to 11.0 percent. We adopt equal-split adults as the headline.

Table 11: Realised share of comprehensive capital income, pooled 2016–2021, implying return heterogeneity at the top

Group	Comprehensive income	Realised	σ	Θ	Share of household comprehensive capital income
All 311 families	\$31.09bn	\$2.20bn	0.071	2.70	3.37%
Top 100 by economic income	\$27.72bn	\$1.17bn	0.042	4.51	3.01%
Top 50 by economic income	\$22.03bn	\$0.66bn	0.030	6.37	2.39%
Household sector	–	–	0.191	1.00	100%

If comprehensive rates of return are homogenous even though realised returns are not, a group's share of comprehensive capital income is its share of wealth. The 311 families take 3.37 percent of household comprehensive capital income; their directly measured net worth share in 2018 is 4.1 percent at Project valuations and 5.0 at market. That is, an income calculation using no wealth data lands close to the wealth-side measurement from a bespoke survey basis – but still underestimates. We can see then, that there is variation in the rate of comprehensive return, not just realised returns.

Calibrating on the Project data alone, the top 0.1 percent falls from 8.2 to 7.9 percent of private wealth over 2015–2024, dipping as low as 7.2 percent in 2021. However, the Project collection and valuation choices bear significantly on the top-tail estimation.

Unlisted businesses are valued conservatively, at industry-average multiples and a flat 25 percent illiquidity discount. The top-tail shares here are therefore conservative; a market-consistent valuation would raise them. Over the period, house prices grew about 10 percent a year and the NZX about 14 percent, yet the Project population's unlisted business values grew only about 3 percent a year, clearly indicating a conservative valuation method. The business entity growth for the Project population is far lower than that in the general population (Figure 23), which strains credibility.

Second, the Project population is a fixed panel; a gap emerges as new business wealth accrues outside the panel. In particular, the sectoral skew likely means the panel misses the fastest-growing fortunes. The panel over-weights property and primary industry and under-weights secondary sectors, and is as a result structurally unlikely to capture new, fast-growing fortunes – such as those identified in the NBR Rich Lists, discussed below. On the other hand, the repeating cross-section that delivers the top 1 percent share also exhibits a declining share over the Project period, before rebounding thereafter, so some decline in top shares is likely a true feature.

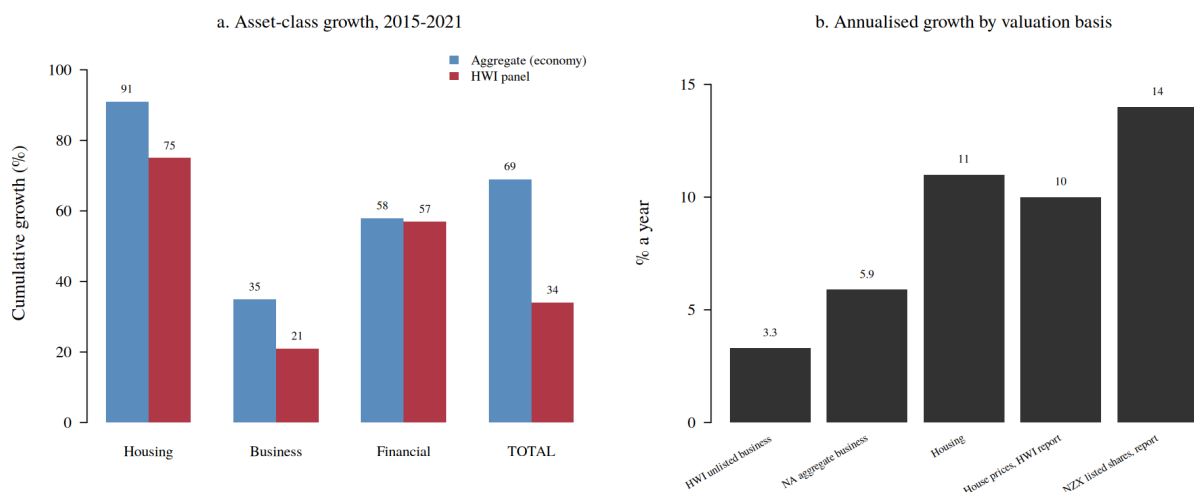


Figure 23. Growth 2015–2021 by asset class and valuation basis

The NBR Rich List

The HWI Project is not the only source on the top of New Zealand’s wealth distribution. The National Business Review (NBR) has published an annual Rich List since 1986 (not all publicly accessible). Recent editions profile roughly 120–150 of the wealthiest individuals, families and partnerships above a threshold near \$50 million, valuing private companies by turnover, profit and industry price-earnings ratios, listed holdings at market, and property by track record. It is journalistic and unreconciled to the National Accounts, but it is usefully independent of the Project accounts – a different (and quite opaque) method, on a different, annually-refreshed population. Crucially, the Rich List is not a fixed panel but a repeated cross-section where individuals are named. We assemble it at 2010, 2015, 2021 and 2024 – two of which (2015 and 2021) overlap the HWI observation years²⁵. The top-ten totals are \$13.7bn (2012), \$19.7bn (2015), \$29.2bn (2021) and \$52.1bn (2024). The 2024 list totals about \$96 billion for its roughly 120 profiles (the top 0.006 percent or so of adults), which is about 3.0 percent of private net worth – above the top 0.01 implied by the Project panel based calibration – while in 2015 the Rich List finds only 184 units above a \$50 million threshold, holding \$57.4 billion total, where Inland Revenue finds 219 families holding \$76.2 billion (once revalued). That the Project panel estimates higher wealth earlier on, and lesser wealth when extended forward, points to the fixed panel affliction discussed above.

As further corroboration of the fixed panel effect, the Rich List growth to about \$129 billion by 2026 is tech-driven, whereas the Project group was more predominantly primary industries, with nineteen newcomers worth over \$10 billion and the top places now held by fortunes – Zuru’s Mowbray brothers near \$20 billion, Rocket Lab’s Peter Beck rising from under \$1 billion to \$11 billion – that were small or absent when the Project panel was selected.

²⁵ Because the published list mixes New Zealand residents with offshore figures outside the IRD tax base, we filter each list to NZ-resident families. The filter shifts the ten-family total by about a billion dollars.

The Project-only calibration corrected to market valuation (no correction for the fixed panel effect) and a calibration based only on the Rich Lists are remarkably consistent to 2018 – 9.77 against 9.96 percent in 2015, coinciding at 9.03 percent in 2018 (Figure 24). From there, the two independently-calibrated shares diverge: by 2021 the market-valued Project panel has fallen to 8.50 percent while the Rich List reads 9.05, lending support to the fixed panel correction.

Correcting the Project-calibrated top wealth shares

The baseline tail is conservative in two separable ways: it is valued below market, because unlisted business – the overwhelming majority of tail wealth – is undervalued; and it is stale, because the fixed panel increasingly misses fortunes that vault into the top after the panel was fixed, and we have reason to believe the sectoral coverage of the Project panel would mean greater growth in fortunes outside the panel than inside it. The first is a level bias, which we can suppose to be roughly constant over time; the second is a trend bias, negligible when the panel is fresh and growing as it ages. We correct each, using the Rich List to calibrate.

Removing the illiquidity discount scales unlisted business up by a third. Because the discount is a property of the valuation method rather than of any date, this level correction applies uniformly across the period. Since the extreme tail is roughly 80 percent private business, it lifts the top 0.01 percent share by about 31 percent.

Earlier Rich Lists can be “frozen” into a panel, members tracked and aged, and compared with later lists. For example, matching entries above \$50 million across the lists, 90 percent of the 2010 cohort survives to 2015; those survivors grow 47 percent while the cross-section grows 50 – suggested a churn rate of 2.2 percent a year (the ratio of the two growth factors, 1.502 over 1.349, compounded across five years) read as a divergence between two growth paths rather than a rate of exit.

Table 12. *Estimating panel churn*
Prior to Project period

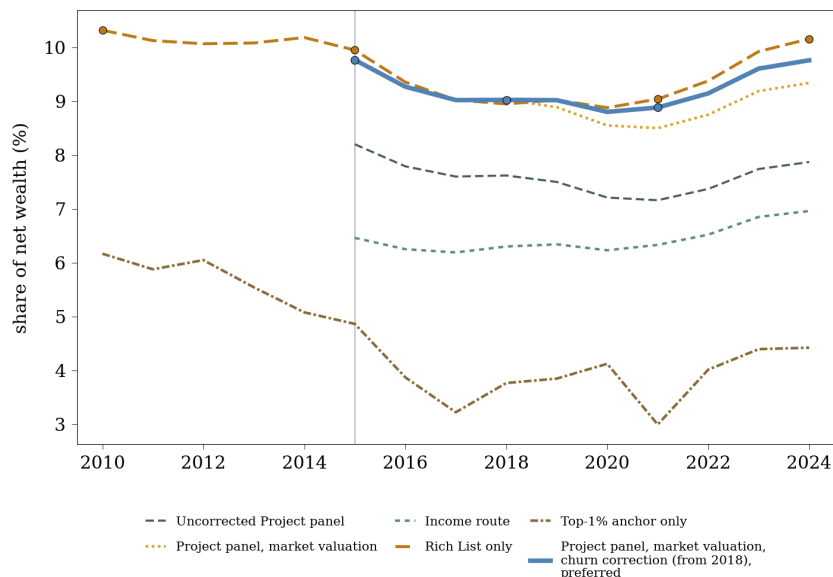
	Window	Years	Group	Survivors	Frozen panel	Cross-section	Churn factor	Per year
A. Fixed threshold	2010–2015	5	≥ \$50m	133 (90%)	1.349	1.502	1.113	2.17%
	2010–2015	5	≥ \$100m	70 (92%)	1.331	1.623	1.220	4.05%
B. Fixed count	2010–2015	5	top 100	74 (74%)	1.270	1.442	1.135	2.57%
	2010–2015	5	top 50	38 (76%)	1.256	1.398	1.113	2.17%

During and beyond Project period²⁶

	Window	Years	Group	Survivors	Frozen panel	Cross-section	Churn factor	Per year
Fixed count	2010–2021	11	top 10	3	0.997	1.582	1.586	4.28%
	2015–2021	6	top 10	4	0.804	1.150	1.430	6.15%
	2010–2024	14	top 20	10	1.327	2.701	2.035	5.21%
	2015–2024	9	top 20	10	1.022	2.002	1.959	7.76%

Table 12 shows churn varying along two dimensions at once – through time and across the distribution – which any single rate must simplify. At the \$50m-threshold, where the panel correction is to be applied, 2010–2015 churn runs at 2.17 percent a year on a robust sample of 133 survivors out of 147. Further into the tail, at fixed counts of 10 or 20 names, measured rates climb to 4.3–7.8 percent, particularly once the window extends past 2015. Both patterns are consistent with genuine wealth mobility increasing over time and being more pronounced near the very top than at broader thresholds. Given this, applying 2.2 percent a year to the panel correction is a conservative choice: it reflects the best-measured, most stable estimate at the depth the correction operates on, while likely understating true churn both further into the tail and in the more recent period.

Figure 24. Top 0.1% share wealth share under different specifications



²⁶ These windows are matched at top 10 or 20 rather than the \$50m or \$100m thresholds used in the table above. The accessible 2021 extract only runs to 10 names and 2024 to 20. 2010 and 2015 carry more complete accessible lists – 147 and 175 $\geq$ \$50m, respectively.

We consider six lines in Figure 24, all on the treated anchor and the same estimator, differing only in the treatment of the calibration data. The uncorrected Project panel reflects the raw Project threshold group with no adjustment; it is then valued to market with no correction for the fixed panel effect; the preferred series then corrects for the fixed panel, from 2018. Two further lines calibrate independently: the income route prices the tail off comprehensive income alone, and the Rich List route off the complete Rich Lists alone – both using no Project panel wealth data whatsoever. The income route provides a floor throughout. We saw directly that it underestimates wealth for the Project's own granular source groups – their measured share of comprehensive capital income sits below their directly measured net worth share. The fifth, the top-1 percent anchor only, extrapolates with no external data at all, included to show how badly a naive approach performs.

On that basis of our preferred series – the Project panel with market valuation fixed panel correction applied from 2018 – the top 0.1 percent of New Zealand adults holds about 9.8 percent of private net wealth in 2015 and 9.8 percent again in 2024, dipping to a trough near 8.8 percent around 2020 before recovering. The top 0.1 percent – roughly 4,000 people – held 11.5 percent of private net wealth in 2010,²⁷ against a bottom half whose own share fell from 1.4 percent in 2010 to 1.1 percent in 2015 before rising to 3.1 percent by 2024. That is, the top 0.1 percent held around eight times as much as the entire bottom half of the adult population in 2010, nine times as much in 2015, narrowing to roughly three times as much by 2024 as the bottom half's own share tripled.

Table 13. Top-tail wealth shares under each Project panel-based specification, share of private net wealth

	Year	Top 1% anchor	Top 0.1%					
			Naive	Project uncorrected	Project, market value	Project, market value + fixed panel correction	Rich List alone	Income route (lower bound)
Top 0.1%	2010	25.33	6.17	9.67	11.52	11.52	10.32	7.63
	2015	21.47	4.86	8.20	9.77	9.77	9.95	6.46
	2018	18.87	3.76	7.62	9.03	9.03	8.95	6.30
	2021	18.63	2.99	7.16	8.50	8.88	9.04	6.33
	2024	20.48	4.42	7.87	9.34	9.76	10.16	6.96

The World Inequality Database's (WID) harmonised methodology supports comparison across contexts. We turn now to place New Zealand's top income and wealth shares, and the effective tax rates borne at each point of the distribution, against this wider comparative literature.

²⁷ Before 2015, top 0.1 percent shares are backcast by the Rich List growth rates.

International comparison

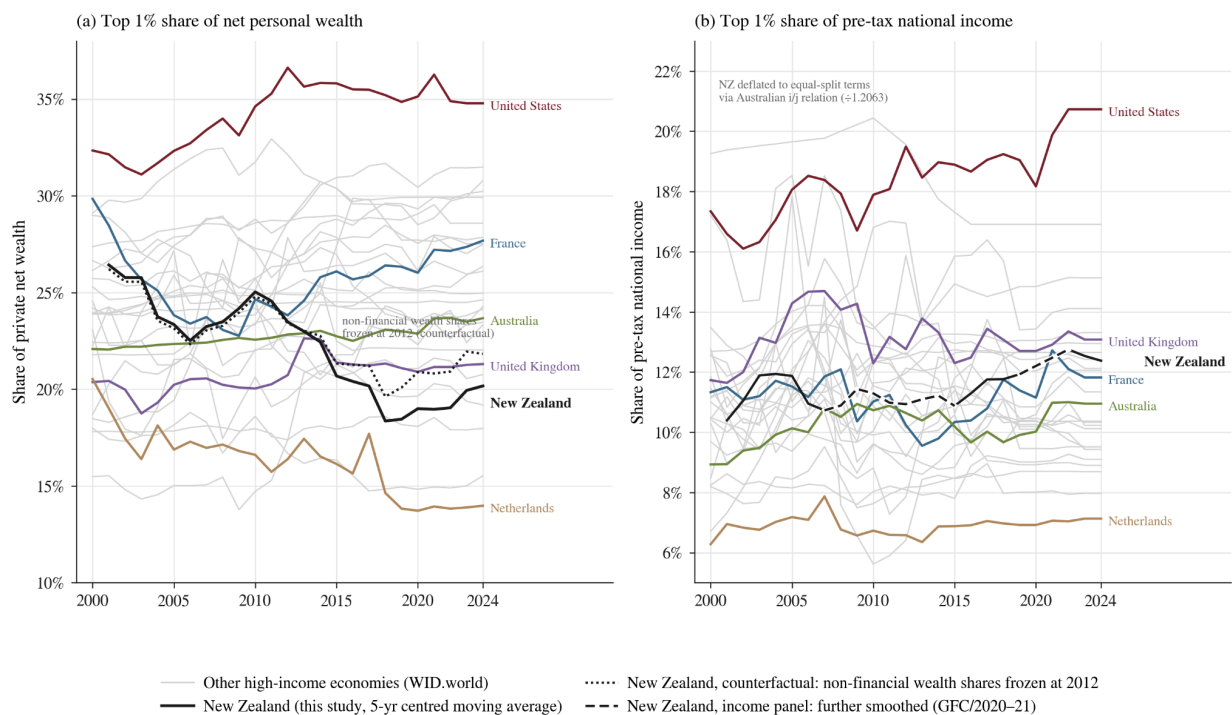


Figure 25. Top 1 percent shares of net personal wealth (left) and pre-tax national income (right), 2000–2024. For New Zealand, the income series here are the earlier individualistic adult series (being the tax unit), transformed to equal-split terms for comparison. The GFC and the 2020–21 asset-price and dividend distribution spike are smoothed by a centred three-year moving average and, for 2020–21, linear interpolation between the observed 2019 and 2022 values, to better present the underlying trajectory.

In level terms New Zealand's top 1% wealth and income shares both begin the period resembling those measured in France. Top income shares (implementing an adjustment to equal-split adults, rather than the individualistic series reported earlier) have been rising since at least 2010, and more strongly than measured in the UK over the same period. New Zealand's top 1 percent share of pre-tax national income rises from 10.1 percent in 2011 to 12.4% in 2024 – a climb of a similar pace as the Australian rise, but starting earlier.

Top wealth first declines, tracking France's decline over the first decade, then continuing to decline beyond where shares in France rise. The continued decline is the property boom drawing weight to shares below the top – after 2020, especially when house prices correct, New Zealand's shares begin to rebound. Freezing the non-financial share of net private wealth at its 2012 level (dashed line in left figure), mutes the decline but does not totally remove it – the reranking produced by the rise in property values deconcentrates net wealth still.

Below we put seven series on a single direct-tax basis: personal income tax plus corporate and capital tax attributed to owners, plus wealth or property tax where levied. Consumption taxes and all social contributions²⁸ are excluded from every line. The construction of the series from other studies²⁹ is given in Annex 5. The New Zealand series averages over 2015–2019, to align with the periods of the comparators.

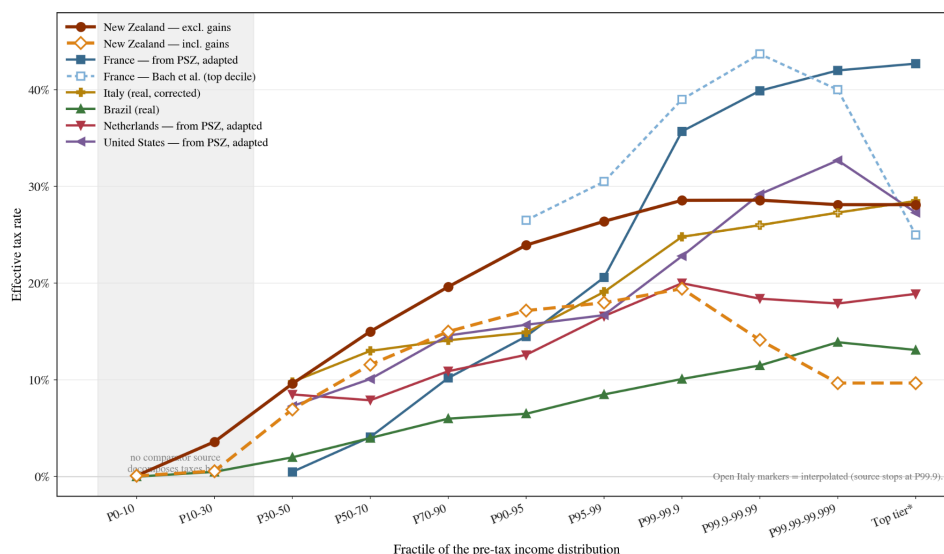


Figure 26. The direct-tax profile over fractiles, in comparison

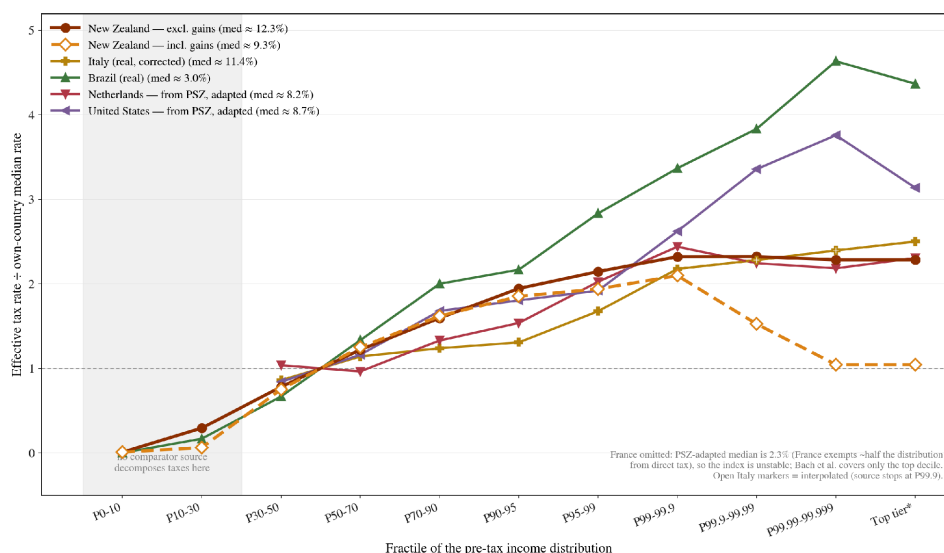


Figure 27. The direct-tax profile over fractiles, in comparison – indexed to median

²⁸ From P30–50 to P95–99 the New Zealand excl.-gains line sits above every other series in the comparison. Read naively this would suggest New Zealand taxes its upper-middle earners unusually hard. Rather, comparators raise a substantial share of revenue through social contributions – payroll levies for pensions, health and unemployment insurance – which this construction deliberately scopes out. New Zealand raises almost none of its revenue this way.

²⁹ Piketty, Saez, & Zucman 2018, Bozio et al. 2020, Dalle Luche et al. 2024, Bruil et al. 2022, Palomo et al. (2025). France appears twice: adapted from Piketty, Saez, & Zucman (2023), and from Bach et al. (2025).

Above P99, France, Italy, Brazil and the United States all continue rising, monotonically or near-monotonically, from P99–99.9 to the top fractile, consistent with the broader WID finding that direct taxation remains mildly progressive deep into the upper tail across most advanced and large emerging economies. In New Zealand rates flatten at about 28.5 percent – a mechanical consequence of a flat 33 percent top personal rate with no wealth or estate tax layered above it.

The New Zealand case is a specific instance of a mechanism identified across much of the literature – that once retained rather than distributed income is counted, measured progressivity at the very top erodes and can reverse. Similarly regressive turns are documented by Saez and Zucman for the United States and by Garbinti, Goupille-Lebret and Piketty for France. The ETR on the wealthiest US households has fallen toward, and in some estimates below, the rate paid by ordinary working households, driven by the decline in corporate tax progressivity since the 1980s, the near-elimination of the estate tax, and a capital gains rate held structurally below the top ordinary rate. Bozio and coauthors find a comparable mechanism operating in France through personal holding companies: income retained inside the vehicle is taxed once, at the corporate rate, rather than distributed and taxed again at the top marginal personal rate, and the 2018 replacement of the wealth tax with a narrower real-estate-only levy removed the one instrument in the French system that had reached wealth independent of realisation. New Zealand shares the underlying behaviour – retain income in favourable holding structures rather than realise and expose income to the PIT schedule – with the lack of comprehensive capital gains taxation, even on a realisation basis, and a trustee tax rate historically below the top personal rate elevating the advantage to doing so for those with the flexibility to.

We see upon comparison with own-country medians that nowhere else in this comparison does the ETR at the top fall to a level indistinguishable from the rate paid at the median. New Zealand is the only series in this comparison presented with and without accrued capital gains; every other line is built on an income base excluding most unrealised gains. Constructing a comprehensive, gains-inclusive series for other countries on the same principle applied to New Zealand would very plausibly pull each of those lines down as well, more so at the top, rather than leaving New Zealand as an outlier in a comparison where it is simply the one economy for which the comprehensive measure has been constructed. Taken as an indicative benchmark, the wedge between the two income bases for New Zealand – which widens to 2.1 times the median at P99–99.9 – suggests the scale of difference an accrual adjustment could plausibly make elsewhere.

Conclusion

This paper has extended the IRD's High Wealth Individuals Project estimates towards the present, using publicly available National Accounts data and summary Project statistics to construct a synthetic representation of the Project population's income and effective tax rates from 2012 through 2024. The exercise is necessarily less precise than the original project, which drew on bespoke survey data and detailed tax administration records now destroyed. Still, the modelled series sits broadly in line with the IRD's own findings over the Project period – where the median all-income effective tax rate was estimated around 8.9 percent. Working transparently from public data to meaningfully extend an exercise of this kind demonstrates that the structural relationships between a high wealth population and the macroeconomy, estimated over a period of direct observation, can serve as a durable basis for projection – provided those relationships are derived transparently, their stability is tested, and the resulting estimates are presented with appropriate uncertainty rather than with false precision. That the construction here reproduces the original Project's central findings closely (albeit on a period of stable policy), without access to the underlying records, provides some reassurance that the approach taken here is not materially misaligned with the economic reality beneath the original Project.

We find that **the effective tax rate on comprehensive economic income for New Zealand's wealthiest families has remained persistently and substantially below that of a median household throughout the entire period under examination.**

The persistence of lower ETRs among the very wealthy than at the macroeconomic level and the median in part reflects the incomplete income base – most notably the exclusion of most capital gains from taxable income – and the flexibility available to high wealth individuals to arrange their affairs so as to minimise the share of their economic income that falls within that base. That flexibility, exercised through choices about when to realise income, through which entity structure to hold assets, and how to balance taxable and untaxed returns within a portfolio, is itself a function of wealth – and the extent of rewards that a tax system makes available to the wealthy are themselves the result of policy choices.

The ETRs on both the general macroeconomic population, median households, and the very wealthy were tracking downwards over 2012 - 2022. The rapid accumulation of untaxed housing capital gains over the period compressed ETRs, as those gains were large relative to taxable income for many households. The high wealth population's ETR, by contrast, was broadly stable throughout, and its gradual decline, even under conservative assumptions, appears to continue. The appearance of converging rates evaporated as the housing market corrected from 2022. When untaxed housing gains reversed, the macroeconomic ETR rose sharply while the high wealth population ETR remained comparatively flat. The gap, which had seemed to narrow, or at least been tracking downwards in parallel, snapped back – and then widened further.

It is preferable to improve tax progressivity by increasing the tax paid by the very wealthy, rather than allowing the appearance of progressivity improvements underwritten by large untaxed capital gains. Moreover, if the progressivity of the tax system is contingent on continuing capital gains in the housing market, the economy as a whole remains hostage to the protection of those gains, to the detriment of renters who face an inaccessible housing market, and to the population at large. The distortion of investment toward residential property – an asset whose returns are predominantly untaxed – and away from productive business investment undermines allocative efficiency and heightens financial instability risks, as resources flow toward activities valued for their tax treatment rather than their economic contribution. A tax system that inadvertently depends on asset price inflation for its apparent progressivity is one whose distributional properties are fragile, cyclically contingent, and liable to reverse.

The introduction of the 39 percent top PIT rate in 2021 and the various changes to residential property tax rules appear to have had a larger effect on the general population and median household's ETR than on that of the high wealth population. When statutory rates rise, those with the greatest flexibility to recompose income toward lower-taxed structures absorb less of the mechanical rate increase than those without that flexibility. The wealthy were more exposed to the rate changes in a formal sense – holding more income in the brackets and entity structures directly targeted – but their greater capacity to recompose income across structures, and to rebalance portfolios toward untaxed returns, insulated them from the full mechanical impact. The result is that the gap between the high wealth population ETR and the macroeconomic ETR has widened since 2021, not narrowed. The incipient rise in the ETR on the very wealthy from 2022 may reflect the cumulative effect of the rate changes beginning to bite at the intended point in the wealth distribution, but the rise is modest relative to the widened gap, and its durability is uncertain.

Meanwhile, New Zealand's broader fiscal difficulties are more a revenue problem rather than a spending one. The IMF has recommended new tax bases and a comprehensive capital gains tax to mitigate long-term spending pressures and adverse distributional effects (IMF, 2025). Rating agencies have identified the repeated delays in restoring operating surplus, attributable to sustained avoidance of tax reform, and political unwillingness to undertake that reform as a source of policy credibility risk in its own right – compounding the underlying fiscal weakness and calling long-term sustainability into question despite moderate debt levels by international standards (Standard & Poors, 2025a, 2025b). Spending restraint cannot close a structural gap in the design of the revenue base.

The divergence between statutory progressivity and effective progressivity is not particular to New Zealand. The findings in this report situate New Zealand within a well-documented global pattern, replicated across diverse contexts in the international public finance literature. For example, Saez and Zucman (2019) document, for the United States, the combined effect of capital income exemptions, corporate tax avoidance, and offshore wealth accumulation, in allowing the very wealthiest pay lower effective rates than the merely affluent; Advani and Summers (2020a, 2020b) show that unrealised capital

gains, largely excluded from the taxable base, are the primary driver of low effective rates among the wealthiest UK taxpayers; and Bachas et al. (2022) find that capital income exemptions systematically undermine progressivity at the top across a wide range of country contexts. The mechanism is consistent across these settings, and worsening through time: comprehensive economic income diverges from taxable income most sharply at the top of the wealth distribution, where capital income – whether accruing as unrealised gains, retained earnings, or returns routed through tax-favoured structures – constitutes the dominant income source and falls predominantly outside the taxable base.

What is distinctive about New Zealand is the particular configuration of features that drive the gap. The absence of a comprehensive capital gains tax – rare among OECD economies – means that the single largest source of income for the wealthiest households falls entirely outside the taxable base. The density of trust usage in New Zealand, historically encouraged by the gap between the trust tax rate and the top personal rate, has historically added a further structural layer through which income and assets can be arranged to reduce effective rates, and whose opacity has limited the visibility of the full economic picture to tax administrators and researchers alike.

As discussed earlier, estimates presented here are appropriately taken as upper bounds on the average ETR among the very wealthy, rather than taking the results as point estimates. The paper rests on modelling assumptions that are individually defensible, and collectively compound in the same direction. If after the policy changes of the extension period, consistent with international evidence, the wealthy shift income away from the relevant taxable forms of income faster than the general population could, our conservative assumptions are unlikely to fully capture the difference in strength of behavioural response between the general population and the very wealthy. This means the ETR estimates are more plausibly upper bounds than central estimates. This is deliberate. Full and robust modelling of differential behavioural response modelling is beyond the scope of this exercise (to be approached in future), so instead we approach the modelling in such a way as to support an argument that the omitted dynamics would push the ETRs of the very wealthy further below that of the general population. Each of the assumed relationships between macroeconomic and Project population variables, if they were to break down, would push the results in the same direction – producing ETRs for the very wealthy that are lower still.

Further, Alstadsæter, Johannesen, and Zucman (2019) have further shown that offshore wealth holdings – incompletely captured in domestic tax records – suggest a further downward bias in measured effective rates for the very wealthy, a concern that applies in the New Zealand context, and given the original Project acknowledged only partial coverage of foreign income and assets. This paper has not attempted to consider offshore tax evasion, rather focussing on the legal scope for ETRs to diverge just in the domestic context. Were we to look to global economic income, the ETRs on the very wealthy would again be lower still.

Beyond the immediate findings, this paper makes a methodological contribution that is replicable and, under particular conditions, with comparable material able to reveal important features at the top of the wealth distribution, could be internationally generalisable. The original IRD project was exceptional in its access, benefitting from special legislative powers, purpose-built surveys, and detailed administrative records assembled under conditions unlikely to be replicated in New Zealand and rarely achieved elsewhere. Yet the approach developed here demonstrates that an ETR exercise of this kind can be meaningfully extended and updated using National Accounts aggregates and publicly available summary statistics alone. Structural relationships between a high wealth population and the National Accounts, estimated over the period of direct observation, can serve as a durable basis for projection, provided those relationships are derived transparently, their stability is tested, and the resulting estimates are presented with appropriate uncertainty rather than false precision.

The question this paper has sought to address – how much tax do the wealthiest New Zealanders pay, relative to everyone else? – is too consequential to leave unanswered simply because the ideal data is unavailable. The repeal of section 17GB of the Tax Administration Act, which provided the legal basis for the original project's bespoke surveys, removes the mechanism by which the most direct and reliable answer to that question could be produced. That loss is significant. The approach developed here is a partial substitute, not a replacement. Future work should explore more rigorous modelling of differential behavioural responses to policy changes between high wealth group and general population, and make fullest use of tax microdata held in the StatsNZ Integrated Data Infrastructure (IDI).

The findings have direct implications for assessments of tax progressivity in New Zealand. A tax system that applies formally progressive statutory rates while leaving the majority of the income of the wealthiest households outside the tax base is progressive in form but not in substance. Closing that gap – whether through a wealth tax, a comprehensive capital gains tax, or other mechanisms – requires confronting not only the design of the income base but also the structural advantages of wealth itself.

The policy changes of the extension period offer a cautionary lesson in this respect. The introduction of the 39 percent top personal income tax rate and the alignment of the trustee tax rate were designed to increase the tax burden on the very wealthy. The evidence here suggests the former fell more heavily on the moderately wealthy among the general population, particularly highly paid employees, those exposed to the top PIT rate without the flexibility to rearrange income, than on the wealthiest. This is not an argument against rate increases – it is to emphasise that they must be accompanied by base broadening, and with new bases. A higher rate applied to a narrow and manipulable base invites recomposition; a broader base that captures the forms of income the wealthy predominantly earn – capital gains, retained earnings, unrealised asset appreciation – leaves less room for maneuver.

Income flows are difficult to observe for top wealth holders. In practice, taxable income bases are never complete. But even in jurisdictions with comprehensive capital gains taxes, these are almost always on a

realisation basis, and still the taxable income reported by the very wealthy can be miniscule compared to their wealth and comprehensive economic income. No matter how comprehensive the income base, tax minimisation strategies are sophisticated and varied, making use of different holding structures domestically and offshore, always evolving with the tax code itself, and accrued capital gains generally remain beyond purview. It is in this context that wealth taxation appeals as a potentially powerful complement to income taxation, one that targets accumulated wealth directly rather than relying on the incomplete and easily manipulated flows of reported income.

The gap documented in this paper is large, persistent, and resistant to the policy changes of the past decade. The exploitability of the tax code is not, however, inevitable. It reflects choices – about what counts as income, which structures receive concessionary treatment, and how aggressively the boundaries of the tax base are maintained and enforced. Each of those choices can be revisited. The question is whether the political will to do so can be assembled before the fiscal and distributional costs of inaction become harder still to absorb.

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Annex 1: National Accounts Tables

The National Accounts aggregates are compiled by StatsNZ following the System of National Accounts (SNA 2008) developed by the United Nations Statistical Commission (UNSC). See StatsNZ (2024) for the detailed methodology. The construction of National Accounts tables for these purposes is presented in an accompanying technical paper, found [here](#).

Table A1.1. Revaluation Accounts: Holding Gains and Losses, 2001 and 2024

	National Accounts aggregate		Proportion of comprehensive income	
	2001	2024	2001	2024
Owner-occupied housing	1078	17751	0.8	3.7
Other property	339	6296	0.2	1.3
Household net financial	0	-466	0.0	-0.1
Unincorporated business	12,168	-325	8.7	-0.1
Corporate (net)	3544	19876	2.5	4.1
Total holding gains and losses	17129	43132	12.2	9.0
Total comprehensive economic income	140,550	479,133	100.0	100.0

Table A1.2. Balance sheet items, 2001 and 2024

	National Accounts aggregate		Proportion of comprehensive income		average annual growth
	2001	2024	2001	2024	2001-2024
Owner-occupied housing	186.6	1,221.20	36.4	43.3	8.5%
Other property	49.4	409.5	9.6	14.5	9.6%
Unincorporated business	112.9	468.4	22.0	16.6	6.4%
Int.-bearing / insurance	91.8	415.7	17.9	14.7	6.8%
Liabilities	59.4	299	11.6	10.6	7.3%
Household net worth*	381.2	2,215.90	74.3	78.6	8.0%
Corporate net worth*	131.7	603.9	25.7	21.4	6.8%
Total private wealth	512.9	2,819.70	100.0	100.0	7.7%

Table A1.3. National Accounts series 2000–2024

	2000	2001	2002	2003	2004	2005
Compensation of employees	45,715	48,056	51,637	55,055	59,297	64,267
Gross operating surplus of unincorporated business	7,410	7,475	7,617	8,070	8,621	9,214
Entrepreneurial income	25,468	27,285	29,271	26,105	28,740	28,931
Interest	3,938	4,909	4,378	4,964	5,391	6,483
Dividends	5,144	1,528	1,749	2,758	3,607	4,607
Earnings attributable to insurance and pension policyholders, and investment fund shareholders	1,933	1,937	1,836	1,646	1,582	1,610
Overseas capital income	995	1,316	1,129	1,133	1,211	1,312
Interest payable	-14,295	-16,035	-16,309	-15,499	-17,079	-18,361
Household sector gross income	76,308	76,471	81,308	84,232	91,370	98,063
Household sector consumption of fixed capital	-1,944	-2,059	-2,156	-2,276	-2,492	-2,789
Household sector net income (including trustee)	74,364	74,412	79,152	81,956	88,878	95,274
Trustee dividend income	330	717	1,105	1,857	2,520	3,282
Trustee interest income	359	504	648	766	929	1,176
Trustee other income	539	759	979	897	1,325	1,670
Total trustee income	1,228	1,980	2,732	3,520	4,774	6,128
Net primary income of corporations	18,715	20,158	22,342	26,086	25,941	25,225
Net private income	93,079	94,570	101,494	108,042	114,819	120,499
Net government primary income	23,766	28,851	31,228	30,815	33,513	35,777
Net national income (NNI)	116,845	123,421	132,722	138,857	148,332	156,276
Personal income tax (PIT) paid	15,724	17,525	17,995	19,613	20,508	21,283
Corporate income tax (CIT) paid	3,897	4,373	4,982	5,788	7,023	7,937
Trustee income tax (TIT) paid	405.24	653.4	901.56	1161.6	1575.42	2022.24
Net other revenue	16084	18782	20073	17046	17691	17780
Total government revenue	36,110	41,333	43,952	43,609	46,797	49,022
Superannuation	5068	5273	5450	5642	5889	6083
Main benefits	7,276	7,209	7,274	7,152	7,395	7,162
Total transfers	12,344	12,482	12,724	12,794	13,284	13,245
Public goods and services in kind	23,766	28,851	31,228	30,815	33,513	35,777
Total government expenditure	36,110	41,333	43,952	43,609	46,797	49,022

	2006	2007	2008	2009	2010	2011
Compensation of employees	69,619	74,368	80,674	84,956	85,710	88,699
Gross operating surplus of unincorporated business	9,807	10,342	11,115	11,130	10,403	11,501
Entrepreneurial income	27,848	30,788	35,531	30,627	33,951	37,775
Interest	7,731	9,074	10,695	11,399	8,148	8,847
Dividends	5,284	6,138	6,658	5,812	6,536	3,985
Earnings attributable to insurance and pension policyholders, and investment fund shareholders	1,630	1,638	1,661	1,621	1,563	1,515
Overseas capital income	1,653	1,797	1,552	1,664	1,887	2,051
Interest payable	-19,892	-23,168	-27,521	-25,516	-23,357	-24,219
Household sector gross income	103,680	110,977	120,365	121,693	124,841	130,154
Household sector consumption of fixed capital	-3,053	-3,307	-3,560	-3,768	-3,835	-3,913
Household sector net income (including trustee)	100,627	107,670	116,805	117,925	121,006	126,241
Trustee dividend income	3,988	4,563	5,216	5,093	7,188	2,634
Trustee interest income	1,464	1,846	2,297	2,953	2,096	1,650
Trustee other income	1,886	1,859	1,584	659	1,020	1,090
Total trustee income	7,338	8,268	9,097	8,705	10,304	5,374
Net primary income of corporations	24,216	22,448	22,401	23,527	30,128	28,732
Net private income	124,843	130,118	139,206	141,452	151,134	154,973
Net government primary income	38,461	42,655	47,770	49,606	51,966	56,141
Net national income (NNI)	163,304	172,773	186,976	191,058	203,100	211,114
Personal income tax (PIT) paid	23,852	25,781	28,074	29,014	25,165	24,719
Corporate income tax (CIT) paid	9,148	9,502	10,063	8,229	7,096	8,232
Trustee income tax (TIT) paid	2421.54	2728.44	3002.01	2872.65	3400.32	1773.42
Net other revenue	16990	20317	23862	28120	36600	42697
Total government revenue	52,412	58,328	65,001	68,236	72,261	77,421
Superannuation	6414	6810	7348	7744	8290	8830
Main benefits	7,537	8,863	9,883	10,886	12,005	12,450
Total transfers	13,951	15,673	17,231	18,630	20,295	21,280
Public goods and services in kind	38,461	42,655	47,770	49,606	51,966	56,141
Total government expenditure	52,412	58,328	65,001	68,236	72,261	77,421

	2012	2013	2014	2015	2016	2017
Compensation of employees	92,165	94,883	98,574	104,182	109,707	115,443
Gross operating surplus of unincorporated business	12,156	12,742	13,488	14,384	15,178	16,233
Entrepreneurial income	41,312	36,398	42,510	38,751	40,171	47,840
Interest	8,566	8,560	8,475	9,606	9,359	8,059
Dividends	4,917	7,182	4,461	5,522	6,138	7,165
Earnings attributable to insurance and pension policyholders, and investment fund shareholders	1,601	1,729	1,620	1,756	1,802	1,715
Overseas capital income	2,278	2,485	2,498	2,321	2,815	2,599
Interest payable	-25,104	-22,810	-23,308	-23,784	-24,101	-26,107
Household sector gross income	137,891	141,169	148,318	152,738	161,069	172,947
Household sector consumption of fixed capital	-4,029	-4,211	-4,628	-4,882	-5,286	-5,657
Household sector net income (including trustee)	133,862	136,958	143,690	147,856	155,783	167,290
Trustee dividend income	3,211	5,568	2,857	3,452	3,955	4,393
Trustee interest income	1,517	1,603	1,358	1,492	1,511	1,464
Trustee other income	1,484	1,893	1,882	1,910	2,187	2,389
Total trustee income	6,212	9,064	6,097	6,854	7,653	8,246
Net primary income of corporations	28,174	30,653	35,408	38,133	42,257	43,444
Net private income	162,036	167,611	179,098	185,989	198,040	210,734
Net government primary income	59,232	59,244	62,649	65,258	67,113	70,807
Net national income (NNI)	221,268	226,855	241,747	251,247	265,153	281,541
Personal income tax (PIT) paid	25,085	26,676	27,528	29,288	31,316	33,186
Corporate income tax (CIT) paid	7,916	8,985	9,600	10,476	10,230	12,007
Trustee income tax (TIT) paid	2049.96	2991.12	2012.01	2261.82	2525.49	2721.18
Net other revenue	45899	42845	46072	46262	46484	47457
Total government revenue	80,950	81,497	85,212	88,288	90,555	95,371
Superannuation	9584	10235	10913	11591	12267	13043
Main benefits	12,134	12,018	11,650	11,439	11,175	11,521
Total transfers	21,718	22,253	22,563	23,030	23,442	24,564
Public goods and services in kind	59,232	59,244	62,649	65,258	67,113	70,807
Total government expenditure	80,950	81,497	85,212	88,288	90,555	95,371

	2018	2019	2020	2021	2022	2023	2024
Compensation of employees	122,508	130,221	139,025	144,056	158,198	171,775	184,806
Gross operating surplus of unincorporated business	17,564	18,694	20,139	21,595	22,881	25,150	27,962
Entrepreneurial income	50,729	53,443	58,167	62,459	69,963	64,338	66,408
Interest	8,444	8,843	8,257	6,261	5,468	10,062	16,582
Dividends	7,468	8,215	8,108	13,259	9,632	10,531	14,900
Earnings attributable to insurance and pension policyholders, and investment fund shareholders	1,693	1,689	1,631	1,630	1,812	1,623	1,678
Overseas capital income	2,875	3,193	3,135	3,009	3,316	2,970	5,023
Interest payable	-26,695	-28,003	-28,851	-29,075	-30,715	-32,033	-39,949
Household sector gross income	184,586	196,295	209,611	223,194	240,555	254,416	277,410
Household sector consumption of fixed capital	-6,392	-7,126	-7,754	-8,701	-8,187	-9,477	-10,192
Household sector net income (including trustee)	178,194	189,169	201,857	214,493	232,368	244,939	267,218
Trustee dividend income	5,137	5,503	5,507	10,423	5904	5908	5912
Trustee interest income	1,608	1,678	1,669	1,553	1732	1723	1714
Trustee other income	2,717	2,758	2,982	3,892	3273	3539	3826
Total trustee income	9,462	9,939	10,158	15,868	10,909	11,170	11,452
Net primary income of corporations	46,026	47,245	55,065	58,067	58,519	65,349	61,376
Net private income	224,220	236,414	256,922	272,560	290,887	310,288	328,594
Net government primary income	74,428	79,129	80,854	76,134	84,514	99,119	107,407
Net national income (NNI)	298,648	315,543	337,776	348,694	375,401	409,407	436,001
Personal income tax (PIT) paid	35,671	38,354	41,463	46,820	51,213	56,597	61,858
Corporate income tax (CIT) paid	12,941	13,242	17,080	11,979	19,553	19,437	16,167
Trustee income tax (TIT) paid	3122.46	3279.87	3352.14	5236.44	3599.97	3686.1	3779.16
Net other revenue	47768	51478	48324	45469	44768	57444	66572
Total government revenue	99,502	106,354	110,219	109,504	119,134	137,164	148,376
Superannuation	13699	14562	15521	16569	17764	19517	21574
Main benefits	11,375	12,663	13,844	16,801	16,856	18,528	19,395
Total transfers	25,074	27,225	29,365	33,370	34,620	38,045	40,969
Public goods and services in kind	74,428	79,129	80,854	76,134	84,514	99,119	107,407
Total government expenditure	99,502	106,354	110,219	109,504	119,134	137,164	148,376

Table A1.4. Income and tax concepts

Concept	Definition
Pre-tax national income	private primary + superannuation + (public in-kind – superannuation, distributed per head)
Post-tax national income	private primary + superannuation + benefits – PIT – CIT – TIT + (public in-kind – superannuation – benefits, distributed per head)
Pre-tax comprehensive income	private primary + superannuation + (public in-kind – superannuation, distributed per head) + holding gains and losses
ETR numerator ³⁰	PIT + CIT + TIT
ETR denominator	private primary + superannuation

³⁰ Indirect tax (net other revenue in the National Accounts, \$57.4bn in 2023 against \$79.7bn of direct tax – 42 per cent of total revenue) is excluded from the ETR numerator.

Annex 2: Project concepts

Income concepts

The economic income measure in the Project is calculated as the sum of: annual net income or loss (base income), realised capital gains (for assets sold during the Project period), accrued capital gains (for assets not sold during the Project period), non-taxed distributions to the family from companies and trading trusts³¹, trustee taxable income (and capital gains on the assets in trusts), taxable income of land-rich entities (this replaces distributions from those entities and is in addition to the capital gains on real property), and imputed rents on owner-occupied housing³².

The first component in the calculation of economic income is the individual's annual "net income or loss" as defined in the Income Tax Act 2007, section BC 4 - referred to in the Project as "base income." This is derived from tax administration data. Capital gains were measured on the following asset types³³:

- Real property – This includes owner-occupied homes, other residential property, commercial and industrial property, bare land and farms. Capital gains from real property held directly, or in trusts, partnerships and land-rich entities, are included.
- Portfolio financial assets – This includes portfolio equity instruments, debt instruments, and other investments held in New Zealand or overseas. An equity investment was treated as a

³¹ A trading trust is a trust whose trustee carries on a business activity, as distinct from a trust that merely holds passive investment assets. Unlike ordinary trusts, trading trusts are treated as business entities for tax purposes, placing them outside the company imputation regime while retaining the asset-protection and income-distribution flexibility characteristic of the trust form.

³² Imputed rental income on owner-occupied housing is the rent individuals would pay for their homes if they did not own them. This recognises the real benefits to individuals from owning their homes (Smeeding & Weinberg, 2001). For households with otherwise similar incomes, the consumption possibilities are greater for households with low housing costs than for those with high housing costs. Including imputed rental as part of consumption-based income measures recognises this consumption benefit that accrues to homeowners and allows a more meaningful comparison of households with different tenure types (Perry, 2019). For some estimates of economic income, the Project incorporated imputed rent, though it is not of great consequence to the final ETR, being a small component of total economic income for the Project population. In the current paper, we exclude imputed rent from our income concept.

³³ Capital gains from smaller assets and personal items, such as cars, artwork, intellectual property and jewellery, are not included. While this arguably results in some downward bias to the income measures, these capital gains are likely to be immaterial and many of these items may be better thought of as consumption goods rather than assets. Capital gains have generally not been calculated on holdings in foreign nonportfolio entities, except for foreign subsidiaries owned by a New Zealand listed company. This is because of difficulties with identification and valuation. Estimates of capital income are net of the financing costs associated with the income-producing asset.

portfolio investment when the family, together with trusts, held less than a 10 percent ownership interest in the entity or the entity did not meet a specified asset or income threshold. This includes portfolio financial assets held directly or in trusts.

- Business entities – Business entities are identified and measured separately when the family, together with trusts, owns 10 percent or more of the entity and the entity meets a specified asset or income threshold. Business entities are companies (that is, they are incorporated, either publicly listed or unlisted) and trading trusts – not unincorporated business entities, which are directly associated with the family. Capital gains are not calculated on sole trader businesses or partnerships due to difficulties with valuing such entities (discussed further below). Capital gains on indirect holdings of New Zealand companies (when the family's holding is greater than 10 percent) and companies held in trust are also included.

Measures of income used here and in the Project do not include in-kind government expenditure, such as expenditure on health and education (our ETRs above aligned with this denominator). In-kind government expenditure generally reduces the appearance of income inequality³⁴. Government transfers, such as superannuation, on the other hand, are treated as income rather than as a negative tax. Transfer income only comprises about 1 percent of personal taxable income for the Project population, so this does not significantly impact measures based on the Project population's total income.

A family is defined as a single adult or a couple and their dependent children. Though not often the approach taken in the literature, use of families as the unit of analysis reflects that families share resources, and that asset or income splitting arrangements are vulnerable to use for tax minimisation purposes, especially among those high wealth groups who tend to devote greater resources to sophisticated tax planning. Further, trust income has been grouped by family in our analysis as assets in trust are often for the benefit of the family³⁵.

³⁴ Net National Income is a concept of income that takes account of market income, government cash transfers, direct and indirect taxation, and in-kind government expenditure on services, such as health and education. Final income reflects a more comprehensive measure of the economic resources available to a household than does market or disposable income. The work of the World Inequality Lab (see Bozio et al., 2024; Piketty, Saez, and Zucman, 2018) attempts to distribute in-kind expenditure for comprehensive analyses of the distribution of government expenditures over wealth and income distributions, though this sort of exercise poses a number of additional methodological difficulties: in-kind services such as health and education are hard to value at the individual level, their incidence is contested, and the assumption that the fiscal value of a service equals its benefit to the recipient is a strong one that is unlikely to hold uniformly across the distribution. We do not consider in-kind government expenditure in this paper – but we do in the accompanying paper concerning the full distribution. At the top of the distribution, the difference is likely to be marginal.

³⁵ Project results were sensitive to the unit of analysis (such as individual or family) – analysis with either unit is presented in the report, though IRD favours the analysis taking the family as the unit. NZ's tax system, being assessed

Using the family unit is narrower than using a household unit (that is, all individuals living in a household) as household surveys such as HES tend to. However, the demographic characteristics among the Project population suggest that the family and household units will, in this setting, often be similar. The median age of the Individual A responder population is 68 and most families are two people. Further, given the tax system is based on individuals, the narrower definition of family is preferred, as households may contain more distantly related, or even unrelated, people, less likely to share resources. The unit of analysis is discussed further when we consider the median income household and individual measures.

Tax concepts

Tax is recognised as the tax assessed on taxable income (of the individual or entity) under New Zealand tax law for a given income year³⁶. Likewise, a company's or trustee's taxable income will be the amount assessed in relation to the entity's taxable income in a tax year. We aim for symmetry in the treatment of income and taxation. This means that when an income flow is included (for example, capital gains from companies), we will also include any taxation it bears at either the individual or entity level (for example, company tax).

Consistent with the approach to the full distribution above, the following taxes are included in the high wealth ETRs:

- Personal income tax (PIT): New Zealand income tax assessed on personal taxable income earned by members of the family.
- Corporate income tax (CIT): When a Project family owned more than 10 percent of a company, they were attributed a share of company tax proportionate to their shareholding when the relevant income source is included in the ETR (this is also the case when the company is held in trust). To ensure that tax paid by companies is not double counted, when company tax is attributed to individuals, it is reduced by the amount of the imputation credit from that company included in personal tax.

at the individual rather than the household or family level, creates well-documented opportunities for income and asset splitting between spouses and family members - shifting income to lower-rate taxpayers, or spreading assets across individuals to reduce the concentration of wealth visible in any single return (see, for example, Tax Working Group, 2019. Taking the family rather than the individual as the unit of analysis partially corrects for this, grouping together income and assets that may have been formally separated for tax purposes but that, in economic substance, remain under common control.

³⁶ The establishment of taxable income includes provisions for losses that make it possible to delay – sometimes indefinitely – actual payment of taxes. For our purposes, as in the Project, tax is recognised when it is accrued rather than when it is paid. This accords with National Accounts conventions.

- Trustee tax: Trustee income tax is attributed to the family when the taxable income of the trust is attributed to the family³⁷.

Income and tax components included in the Project estimates³⁸ to be replicated here are summarised in Table A2 below.

IRD's tax administration data was used as much as possible. Tax administration data is, by construction, an accurate source of information on income as defined in tax law. It has become standard for literature on income inequality to rely heavily on tax administration data (Delestre et al., 2022, Advani & Summers, 2020, Piketty & Zucman, 2018, Piketty & Zucman, 2014, Piketty & Saez, 2003). The Project also used public sources of information, such as information from share and property registers, where possible. Much of this data is available to us for use in reproducing and extending the analysis.

Personal taxable income is sourced from information IRD holds for the individual taxpayer from tax assessments. It is the sum of the income types taxable at the personal level minus any allowable expenses and minus any losses that have been brought forward and claimed. It comprises income that is taxed at source and/or income (or losses) returned on an Individual Income Tax return (IR3). Income that is taxed

³⁷ To attribute income earned through trusts, the IRD first considered if the family has real (as opposed to legal) control of the trust or has exclusive beneficial ownership (regardless of control) of the trust. If this is not the case, then the strength of the family's relationship to the trust, and then the proportion of distributions the family has either received or has the right to receive, were considered in sequence. This determines the proportion of trustee income and trust capital gains that is attributed to the family. The trust attribution factor is not applied to beneficiary income, for which the actual amount received is included in the recipient's base income.

Economic income from the trust for the family is the sum of: beneficiary income received by the family (already included in the annual net income base, as part of individuals' personal taxable income), the trustee's taxable income attributable to the family, and the capital gains on the underlying assets of the trust (that is, real property held directly by the trust or in a land-rich entity held by the trust, business entities held in trust, and portfolio assets held by the trust as per the portfolio methodology) at the proportion attributable to the family.

Tax from trusts included in the ETR is trustee tax plus attributed company tax on companies owned by the trust, at the proportion attributable to the family. Tax on beneficiary income is included in tax on personal taxable income.

³⁸ The following taxes (or tax-like charges) are not included within ETRs: Excise taxes and gaming duties: Excluded because these taxes are levied to address the social costs associated with a particular activity, and are unlikely to be material. Fringe benefit tax: Excluded because the tax is paid by employers, and it is difficult to attribute it to, or determine the incidence on, individuals. Local body rates: Excluded as they are not levied by central government. ACC levies: Excluded because they are difficult to attribute to individuals, are unlikely to be material and are more akin to insurance. Employer superannuation contribution tax: This was considered immaterial in this context.

Foreign income and tax are included within ETR measures where practical. However, difficulties with the measurement of foreign income and tax mean that not all amounts are included. Some international studies (such as Alstadsaeter et al., 2018, 2019) show that foreign asset holdings can be significant for high-wealth individuals, hence the omission of some foreign income may result in an underestimation of income.

at source includes: salary and wages, government transfer payments, interest, dividends, schedular payments, Māori Authority distributions and government subsidies, such as the COVID-19 wage support payment. Most of the responder population had filed an IR3 or other income tax assessment (82 percent). Income/loss on an IR3 that is not taxed at source includes taxable estate or trust distributions (beneficiary income), overseas income, partnership income, look-through company income, shareholder-employee salary, income from residential property, other rental income, most self-employment income, income from taxable property sales, other income, and expenses or losses relating to these income types.

Table A2: Income and tax components by source

Source	Additional income	Tax
Personal taxable income	No untaxed income, by construction ³⁹	Personal tax (net of imputation credits)
Direct holdings of real property (including in unincorporated generalised partnership)	Capital gains income from real property	None
Direct holdings of portfolio investments	Untaxed income, including capital gains income, from portfolio investments	None
Income from holdings of business entities ⁴⁰	Share of capital gains income from change in the equity value of the business entity – including non-disbursed income (also called retained profits) ⁴¹ . Non-taxed business entity distributions to the family.	Share of entity tax

³⁹ No capital gains on unincorporated equity are included. The Project explicitly did not calculate capital gains on sole trader businesses or partnerships due to valuation difficulties, meaning this component of economic income is absent from the Project data entirely – discussed further below.

⁴⁰ Direct and indirect holdings greater than 10 percent in both listed and unlisted companies.

⁴¹ Outstanding loans of closely-held companies are sometimes considered income, but are not considered income in the Project nor in our approach. The issue is presently attracting IRD's attention: "IR is concerned that the current tax rules for taxing shareholder loans are inadequate and make the tax system less fair and efficient. When a shareholder borrows a large amount from their company and does not promptly pay it back, they can pay less tax compared to shareholders in other companies who receive taxable dividends or taxpayers who earn income as sole traders, partners or salaries ... The main proposal is to treat loans ... as income if they exceed a de minimis threshold and are not repaid within a set period of time, consistent with the approach of other countries" (IRD, 2025b).

Trusts	Trustee income and capital gains on assets held in trust x trust attribution factor	Trustee tax x trust attribution factor Trust's share of company tax for business entities x trust attribution factor
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Table adapted from Table 12.1 in IRD (2023a)

The Project relied on bespoke survey data collected under amendments to section 17GB of the Tax Administration Act (TAA) to help address the significant limitations inherent in sample surveys. Lacking the same funding and legal powers, here we are limited to the use of publicly available data. We aim to construct a synthetic representation of the Project population by combining National Accounts and IRD data available on longer periods. The results are accordingly less precise than the original study. We make maximal use of the available Project data, however this is only of a summary nature, whereas the original study made extensive use of the full surveys. Accordingly, here we must drive more by assumption, where the original study was able to draw directly from the data collections.

Annex 3: Construction of Table 4 from summary Project data

Taking from the net worth tables accessible [here](#), Project population wealth in each of Property, Portfolio, and Entity assets are as in the table *Net worth distributions*. Land-rich entities are for our purposes included as Entity wealth, contributing to the wealth of the Project population Business sector. Property and Portfolio assets will be assigned to the Household sector.

Table A3.1: Project population net wealth by asset (\$m)

	Total Property	Total Portfolio	Total excl. land-rich	Total incl. land rich	Total Entities excl land-rich	Total incl. land rich
2015	\$ 4,444	\$ 11,315	\$ 15,759	\$ 18,980	\$ 45,049	\$ 48,270
2018	\$ 5,799	\$ 14,325	\$ 20,124	\$ 24,639	\$ 49,298	\$ 53,814
2021	\$ 7,428	\$ 17,774	\$ 25,202	\$ 31,225	\$ 54,602	\$ 60,624

Table A3.2: Household sector income and tax before the addition of trusts (\$m)

	Taxable household	Untaxed household				
March year	Base income	Additional Property income*	Additional Portfolio income	Taxed proportion	Implied PIT	ETR on base
2016	316	772	453	0.205	86	0.272
2017	289	844	160	0.223	77	0.266
2018	312	665	648	0.192	85	0.271
2019	315	727	709	0.180	86	0.272
2020	302	980	-18			
2021	668	1949	1923	0.167	283	0.292
Period total (Tax year 2016 to 2021)	2203	5938	3874	0.183	616	0.280

Table A3.3: Trust holdings by asset (\$m)

Property	Portfolio	Total Personal	Proportion personal	Total Entity	Proportion Entity
2765	8156	10921	0.537	9409	0.463
3661	11263	14924	0.525	13517	0.475
4657	14350	19007	0.526	17138	0.474
Proportion trust holdings, all years			0.528		0.472

Combined property and portfolio net wealth, excluding land-rich entities, is interpolated with an annual growth rate of 0.085 from 2015 to 2018, and an annual growth rate of 0.078 to 2021, to give the Household sector net wealth. Entity net wealth is interpolated with an annual growth rate of 0.037 from 2015 to 2018, and 0.041 to 2021.

Base income, Additional Property income, and Additional Portfolio income is attributed to the Household sector. Base income is taxed according to the PIT schedule, giving implied tax incurred against the PIT schedule, and implied ETRs on base income between 26.6% and 29.9% over the period.

Having the total tax paid by the Project population in each year, the remainder after removing the implied PIT (Table A3.2, above) is the combined trustee tax (33% over the period) and CIT tax (28% over the period) paid.

$$Total\ tax\ paid = PIT + TIT + CIT$$

$$Total\ tax\ paid - PIT = 0.33 * Y_{TIT} * taxable\ share_{TIT} + 0.28 * Y_{CIT} * taxable\ share_{CIT}$$

Let the taxable share of additional trust income reflect a weighted sum of the taxable portion of personal and corporate income - reflecting the composition of assets between property and portfolio on one hand (personal assets, for our purposes) and entity assets on the other.

$$taxable\ share_{TIT} = taxable\ share_{CIT} * entity\ share\ of\ trust\ assets \\ + taxable\ share_{PIT} * personal\ share\ of\ trust\ assets$$

Meaning we can solve for $taxable\ share_{CIT}$ and gain $taxable\ share_{TIT}$ thereafter, allowing the remaining tax paid to be divided between CIT and TIT, and allocated to the Business and Household sectors accordingly. The result is an average $taxable\ share_{CIT}$ of 0.441 over the period, giving $taxable\ share_{TIT}$ of 0.305 ($taxable\ share_{PIT} = 0.183$). With these shares we can estimate taxable income and untaxed income from the composite categories for business entity and trust income. For CIT-liable income, the actual

taxable share will vary significantly with the use of loss provisions. We are more interested in the average ETRs, noting the volatility year-to-year with use of loss provisions and with the volatility of capital gains. To counter the effect of these volatilities, we can obtain CIT paid as a residual of PIT and TIT paid, and then use this to spread the volatile economic income from entities over years (Table A3.4.).

Using the taxable shares of economic income for trusts and entities respectively to decompose the economic incomes into taxable income and untaxed income, and combining the trust amounts with base income (for taxed income) and additional property and portfolio incomes (for untaxed income), we obtain Table 7, which goes on to underpin the estimation of relationships between the Project population and the National Accounts.

Table A3.4: Decomposing Project population tax paid, and computing economic income from entities from CIT as residual of tax paid (\$m)

	Total tax (ex GST)	PIT	TIT	CIT (residual)	Economic income from entities (from residual)	Economic income from entities (actual)
2016	\$436	\$86	\$35	\$315	\$2,557	\$2,908
2017	\$400	\$77	\$35	\$289	\$2,340	-\$588
2018	\$407	\$85	\$43	\$280	\$2,270	\$4,754
2019	\$521	\$86	\$43	\$393	\$3,187	-\$899
2020	\$511	\$81	\$44	\$385	\$3,123	\$517
2021	\$764	\$202	\$104	\$458	\$3,715	\$9,013

Annex 4: Decomposition into effects

We would like to be able to consider the drivers in shifts in the ETR through time. Following a Shapley-Owen decomposition (splitting cross-terms symmetrically, leaving no residual, bars denote averages of old and new period values, see Shorrocks, 2013):

$$\Delta ETR = \sum_k \Delta ETR_k \bar{\omega}_k + \sum_k \bar{ETR}_k \Delta \omega_k, \text{ where:}$$

$$\Delta ETR_k \approx \frac{r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})} \Delta \tau_k + \frac{\tau_k r^{ku}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{k\tau} - \frac{\tau_k r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{ku}$$

$$\Delta \omega_k = \frac{(r^{k\tau} + r^{ku}) \Delta s^k}{\sum_j (r^{j\tau} + r^{ju}) s^j} - \frac{(r^{k\tau} + r^{ku}) s^k \sum_j (r^{j\tau} + r^{ju}) \Delta s^j}{(\sum_j (r^{j\tau} + r^{ju}) s^j)^2}$$

We can observe within-sector effects from changes in the tax rate on taxable income $\Delta \tau_k$ (a higher tax rate directly raises the effective rate proportionally to the taxable income share), from changes in the rate of taxable return $\Delta r^{k\tau}$ (larger share of total economic income becoming taxable), and from changes in the rate of untaxed return Δr^{ku} (lesser share of total economic income becoming taxable). Shifts in the sector composition of net wealth reflect in the change in income weights $\Delta \omega_k$, holding rates of taxable and untaxed return fixed. If wealth shifts toward a sector with a higher effective rate, ΔETR is positive; if toward a lower-rate sector, negative. Combining components:

$$\Delta ETR = \sum_k \bar{\omega}_k \frac{r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})} \Delta \tau_k + \sum_k \bar{\omega}_k \frac{\tau_k r^{ku}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{k\tau} - \sum_k \bar{\omega}_k \frac{\tau_k r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{ku} + \sum_k \bar{ETR}_k \Delta \omega_k$$

Denote: $\delta_1 = \sum_k \bar{\omega}_k \frac{r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})} \Delta \tau_k$ $\delta_2 = \sum_k \bar{\omega}_k \frac{\tau_k r^{ku}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{k\tau}$ $\delta_3 = - \sum_k \bar{\omega}_k \frac{\tau_k r^{k\tau}}{(r_t^{k\tau} + r_t^{ku})^2} \Delta r^{ku}$

$$\delta_4 = \sum_k \bar{ETR}_k \Delta \omega_k$$

Consider the ratio of population ETRs: $R = \frac{ETR^P}{ETR^G}$ and note that:

$$\Delta R = \frac{ETR_{t+1}^P}{ETR_{t+1}^G} - \frac{ETR_t^P}{ETR_t^G} = \frac{ETR_{t+1}^P - ETR_t^P}{ETR_t^G} - \frac{ETR_{t+1}^P}{ETR_t^G} \frac{ETR_{t+1}^G - ETR_{t+1}^G}{ETR_{t+1}^G} = \frac{\Delta ETR_t^P}{ETR_t^G} - \frac{ETR_{t+1}^P}{ETR_t^G} \frac{\Delta ETR_{t+1}^G}{ETR_{t+1}^G}$$

To treat old and new periods symmetrically, we should replace period-specific values with averages between the two periods, to give:

$$\Delta R = \frac{\Delta ETR^P}{ETR^G} - \bar{R} \frac{\Delta ETR^G}{ETR^G}$$

The same expression for the decomposition of the changes shown above holds for each population, meaning the ratio of population ETRs is given (after some manipulation not shown here) by:

$$\Delta R = \frac{1}{\bar{ETR}^G} \sum_{i=1}^4 (\delta_i^P - \bar{R} \delta_i^G)$$

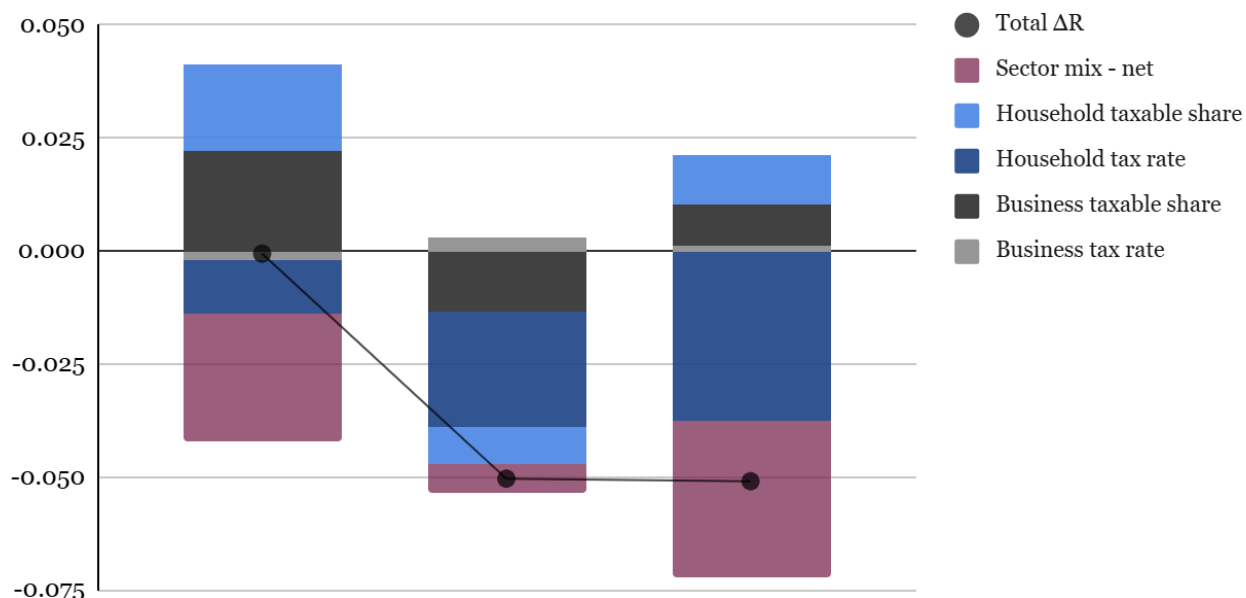
Where δ_i are each of the four effects (the four terms) in the decomposition of ΔETR shown above. As such, we can see the change in the ratio of population ETRs as a sum of the differential tax rate effect ($\delta_1^P - \bar{R} \delta_1^G$), the differential taxable return effect ($\delta_2^P - \bar{R} \delta_2^G$), the differential untaxed return effect ($\delta_3^P - \bar{R} \delta_3^G$), and the differential sector composition effect ($\delta_4^P - \bar{R} \delta_4^G$). The first three are within-sector effects, operating through changes in tax rates and rates of return within each sector. The last is the between-sector effect, operating through changes in the allocation of income across sectors.

From the prior period to the Project period: 2012–15 → 2016–20

The ratio between the two ETRs barely moved between the first two periods – falling by just 0.009, from 0.643 to 0.634 – but the apparent stability conceals substantial offsetting movements. The dominant force depressing the ratio was the sector mix effect (–0.027). Over this period, the income of the high wealth population shifted progressively toward the household sector – carrying the lower ETR of the two – as untaxed household returns, (driven largely by rising residential and commercial property capital gains) increased as a share of total high wealth economic income. Because the household sector ETR sits persistently below the business sector ETR for the high wealth population, this compositional shift mechanically compresses the aggregate high wealth ETR relative to the macroeconomic ETR, whereas the income weight of the household sector was already dominant and changed less markedly across the transition for the general population.

Counteracting this were positive contributions from taxable share effects in either sector. The business taxable share effect added +0.015 to the ratio: the macroeconomic taxable income share in the business sector fell more sharply than that of the very wealthy across this period, driven by the surge in corporate equity holding gains entering through the National Accounts revaluation account. Large positive holding gains swell total macroeconomic business income without any corresponding rise in taxable income, mechanically reducing the taxable share for the general population, bringing it nearer the high wealth taxable share. The household taxable share effect contributed a further +0.014: both populations experienced declining household taxable shares as property capital gains compressed the taxable proportion of household income, but the macroeconomic share fell more in absolute terms given its higher starting level and greater exposure to residential property price movements through the household balance sheet. With these three effects approximately cancelling – the sector mix putting downward pressure on the ratio, while the two taxable share effects work to lift the ratio – on the whole the ratio between the two population ETRs emerged essentially unchanged.

Figure A4. Decomposition of effects on ratio



The tax rate effects were small across the first periods, reflecting the absence of any major statutory rate changes between 2012 and 2020. The household tax rate contribution of -0.012 is consistent with gradual fiscal drag for the macroeconomy (bringing their average PIT rate towards that of the high wealth population, which is proportionately less affected, being concentrated in the top bracket where generalised inflation does not lift taxpayers into higher brackets), and minor rebalancing of income across entity structures for the high wealth population – neither sufficient to materially disturb the ratio.

From the Project period to the extension period: 2016–20 → 2021–24

The 39 percent top personal income tax rate, introduced in April 2021 was explicitly designed to increase the tax burden on high-income and high-wealth individuals. Yet the high wealth population's aggregate ETR falls from 9.8 percent to 9.0 percent across the two periods, while the macroeconomic ETR is essentially unchanged at 15.6 percent (previously 15.5 percent, Table 9) – the ratio between the two falls by 5.5 percentage points, from 63.4 percent to 57.9 percent. The direction of this divergence is counterintuitive in the context of the statutory rate changes of the period.

The household tax rate effect is the dominant contributor to the decline in the ratio (-0.024). Table 9 shows the tax rate on taxable household income rising from 28.7 percent to 31.2 percent for the high wealth population and from 20.5 percent to 22.4 percent in the macroeconomy – a larger absolute rise for the wealthy. However, the high wealth population's taxable share of household income is 20.5 percent in the extension period, against 69.7 percent for the macroeconomy (Table 9). The higher rates apply to so small a fraction of the very wealthy's economic income that even a larger absolute rate increase generates a far smaller ETR impact than the same rate environment applied to the general population's much wider

taxable base. Rate increases bite harder on the general population not because the wealthy face lower statutory rates, but because so much less of their economic income is exposed to those rates at all.

Income recomposition provides a further layer of insulation. The high wealth population's tax rate on taxable household income rising to only 31.2 percent – rather than more sharply, given the 39 percent statutory rates applying to PIT (and after 2024, also TIT, for which we expect anticipatory responses) – is consistent with partial recomposition of income away from personal and trust structures toward company structures, where the CIT rate remained 28 percent, dampening the mechanical effect of the rate changes. The high wealth income weight in Table 9 does not isolate this cleanly – the business income weight falls from 57.6 percent to 55.4 percent, with the household weight rising correspondingly, as macroeconomic dynamics including the surge and correction of business sector holding gains dominate the weight movements – but the modest rise in the high wealth household tax rate relative to the statutory changes is consistent with recomposition being operational at the margin. The general population, with far less capacity to recompose income across entity structures, absorbs the mechanical impact of the rate increases more fully, and its household tax rate rises proportionately more (Table A4).

The business taxable share effect (–0.011) reflects the rise in macroeconomic untaxed returns to business wealth – from 4.7 percent in 2016–20 to 8.7 percent in 2021–24 (Table 9) – as large positive corporate equity holding gains swelled total macroeconomic business income without any corresponding rise in taxable income, compressing the macroeconomic taxable share of business income from 73.7 percent to 56.6 percent and narrowing the gap with the high wealth population's more stable business taxable share. The household taxable share effect (–0.008) was more modest, as the property market correction tempered untaxed gains in the macroeconomy, stabilising its household taxable share relative to the prior period, while the high wealth household taxable share continued to edge downward (Table 9: from 21.3 percent to 20.5 percent).

Table A4. Decomposition of effects on ratio

Component	2012-15 -> 2016-20	2016-20 -> 2021-24	Total
R (period t-1)	0.643	0.634	-0.064
R (period t)	0.634	0.579	
Actual delta R	-0.009	-0.055	
Contribution to change in ratio			
Business tax rate	0	0.001	0.001
Business taxable share	0.015	-0.011	0.004
Household tax rate	-0.012	-0.024	-0.036
Household taxable share	0.014	-0.008	0.006
Sector mix - net	-0.027	-0.013	-0.04
Total delta R	-0.009	-0.055	-0.064

Annex 5: Adaptations for international comparison, Figures 26 and 27

Every series below is expressed as tax paid over pre-tax income, with income defined to match national income (DINA convention) except where noted. The target basis is: personal income tax + corporate/capital tax attributed to owners + wealth/property tax where levied. Excluded from every series: consumption taxes (VAT, GST, excises), employer and employee social security contributions, both contributive and non-contributive.

Table A5.1. Sources and adaptations applied

Series	Ref. year	As published – taxes included	Removed	Removal size
New Zealand – excl. Gains, this series	2015–19 avg	Income tax + trustee income tax + attributed company tax. Income = pre-tax national income excl. capital gains.	Nothing.	–
New Zealand – incl. Gains, this series	2015–19 avg	Same numerator; income base adds accrued capital gains.	Nothing.	–
France – Bozio et al. 2020 (in PSZ 2023)	2018	All taxes at all levels of government, incl. contributive SSC	Consumption taxes; contributive + non-contributive SSC.	14.4% of NI (consumption) + 24.6% (SSC) = 39.0 of 55.0
France – Bach et al. 2025	2016	PIT + wealth tax (ISF) + non-contributive SSC + CIT (domestic and foreign), comprehensive income, top decile only.	Non-contributive SSC only. Wealth tax retained.	≈ 3pp per fractile, tapering to 0 at the top
Italy – Dalle Luche et al. 2024	≈ 2015	All taxes, decomposed by type by percentile.	SSC employer, SSC employee, SSC self-employed, VAT, other indirect, paid-by-public-sector.	32.6pp at P30–50 falling to 15.8pp at P99–99.9
Brazil	2019	PIT + business income tax (CIT + CSLL) attributed via shareholder registry.	Nothing – published on the target basis already.	–
Netherlands – Bruil et al. 2022 (in PSZ 2023)	2018	All taxes at all levels of government, incl. contributive SSC.	Consumption taxes; all SSC.	7.0% of NI (consumption) + 19.0% (SSC) = 26.0 of 45.0

United States – Piketty-Saez- Zucman 2018 (in PSZ 2023)	2018	All taxes at all levels of government, incl. payroll.	Consumption taxes; payroll (contributive + non-contributive).	6.0% of NI (consumption) + 6.5% (SSC) = 12.5 of 30.0
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Consumption tax – shape taken from Italy’s Figure A.7, the only fractile-level decomposition in this comparison that isolates VAT and other indirect taxes: 20.7 percent of income at P30–50, falling to 8.3 percent at P99–99.9. Rescaled multiplicatively per country to hit that country’s aggregate.

Social contributions – not rescaled from Italy. SSC is levied on labour income, so $SSC/income = SSC\ rate \times labour\ share$, and labour share is roughly flat through the middle and collapses at the top. Italy’s measured SSC profile peaks at P95–99; multiplicatively rescaling that peak for France implied SSC of 35 percent of income there, which is not plausible and carved an artificial trough. The labour-share profile used instead runs 0.80 at P30–50 to 0.04 at the top tier, anchored to each country’s SSC aggregate.

Table A5.2. Fractile profile of removals

Fractile	Consumption shape (% of income, Italy)	Labour share	France removal	US removal
P30–50	20.7	0.80	$19.4 + 31.0 = 50.3$	$8.1 + 8.2 = 16.3$
P50–70	18.9	0.78	$17.7 + 30.2 = 47.9$	$7.4 + 8.0 = 15.4$
P70–90	16.0	0.72	$15.0 + 27.9 = 42.9$	$6.2 + 7.4 = 13.6$
P90–95	15.1	0.65	$14.1 + 25.1 = 39.2$	$5.9 + 6.6 = 12.5$
P95–99	13.0	0.55	$12.2 + 21.3 = 33.5$	$5.1 + 5.6 = 10.7$
P99–99.9	8.3	0.25	$7.8 + 9.7 = 17.5$	$3.2 + 2.6 = 5.8$
P99.9–99.99	6.0	0.12	$5.6 + 4.6 = 10.2$	$2.3 + 1.2 = 3.5$
P99.99–99.999	4.5	0.06	$4.2 + 2.3 = 6.5$	$1.8 + 0.6 = 2.4$
Top tier	3.5	0.04	$3.3 + 1.5 = 4.8$	$1.4 + 0.4 = 1.8$

Annex 6: Top tail shares calibration detail

Table A6.1. Top tail sources

Source	Coverage in adults	Years	Reported as
HWI panel	62 to 622 (depending on attribution rule)	2015, 2018, 2021	ten decile cumulative totals, plus top 50, top 100, and the over-\$50m subgroup
NBR Rich List	2 to c. 370	2010, 2012, 2015 complete; 2021, 2024 partial	individual valuations with names

At a \$50 million threshold in 2015 the Rich List finds 184 units holding \$57.4 billion collectively. IRD finds 219 families holding \$62.1 billion at Project valuations, or about \$76.2 billion once the entity component is revalued. At a common threshold and on common valuation IRD finds a third more wealth than the Rich List, across 19 percent more families. The characterisation of the Rich List as generous, and therefore as an upper bound on the tip, is not supported. Still, 92 of the 311 families hold net worth below \$50 million, averaging about \$25 million each – yet the Rich List's 184th entry in 2015 already exceeded \$50 million, so these families cannot occupy ranks 220 through 311 as a calibration taking the whole panel would assume – we clearly do not have the very top individuals. We get around this by considering the Project population above the \$50 million threshold, defining the group by a wealth level and letting the number of individuals emerge from the data (under different assumptions on attribution within family units), rather than asserting that the panel's internal ordering corresponds to those same national rank positions.

Churn measurement

Rich List entries above \$50 million were matched on surname keys across the 2010, 2012, 2015, 2021 and 2024 lists. Panel A of Table A6.2 holds the dollar threshold fixed; Panel B holds the count fixed instead, which removes a confound – the list deepens over time (147, 154 and 175 entries above \$50 million in 2010, 2012 and 2015; 76, 96 and 127 above \$100 million), so part of the cross-section's apparent growth is more people clearing a fixed threshold rather than more wealth per person above it. Holding either the threshold or the count fixed separates the two effects. Panel C extends the same exercise to 2021 and 2024, at the only depth those later lists support: the top 10 (2021) or top 20 (2024) names, rather than the \$50m or \$100m thresholds used for 2010–2015.

Table A6.2. Estimating panel churn
Prior to Project period

	Window	Years	Group	Survivors	Frozen panel	Cross-section	Churn factor	Per year
A. Fixed threshold	2010–2015	5	≥ \$50m	133 (90%)	1.349	1.502	1.113	2.17%
	2010–2015	5	≥ \$100m	70 (92%)	1.331	1.623	1.220	4.05%
B. Fixed count	2010–2015	5	top 100	74 (74%)	1.270	1.442	1.135	2.57%
	2010–2015	5	top 50	38 (76%)	1.256	1.398	1.113	2.17%

During and beyond Project period⁴²

	Window	Years	Group	Survivors	Frozen panel	Cross-section	Churn factor	Per year
Fixed count	2010–2021	11	top 10	3	0.997	1.582	1.586	4.28%
	2015–2021	6	top 10	4	0.804	1.150	1.430	6.15%
	2010–2024	14	top 20	10	1.327	2.701	2.035	5.21%
	2015–2024	9	top 20	10	1.022	2.002	1.959	7.76%

Panels A and B agree closely, 2.17 to 2.57 percent a year, on 133 to 139 survivors, whichever of threshold or count is held fixed. Panel C's rates are three to four times larger, but they are measured on only 3 to 10 surviving names at the very tip of the distribution, much thinner evidence, and the acceleration they show cannot be distinguished from the variability that induces rather than a genuine change over time or over the distribution using this evidence alone. Extending the same top-10 comparison back to 2010–2015 gives 1.14 percent a year, close to the ≥\$50m estimate for that period, which suggests the higher Panel C rates are a real feature of the post-2015 period rather than an artefact of the smaller group. The correction uses the conservative, better-evidenced Panel A/B rate of 2.2 percent a year throughout, rather than the higher Panel C figures.

The correction is applied to the calibration points before the tail is fitted. Applying only after 2018, in practice the churn factor is only applied to 2021. Each of the panel's 2021 deciles is scaled up by a single

⁴² These windows are matched at top 10 or 20 rather than the \$50m or \$100m thresholds used in the table above. The accessible 2021 extract only runs to 10 names and 2024 to 20. 2010 and 2015 carry more complete accessible lists – 147 and 175 ≥\$50m, respectively.

compounding factor, 1.022^h , where h is the number of years since 2018. The corrected cuts are converted to shares of private net wealth and refitted with the same generalized-Pareto-style estimator (quadratic- ϕ) used throughout. This gives the corrected shares as a ratio to that year's own top 1 percent anchor. Every other year's estimate is then built by interpolating this ratio and multiplying it back through that year's own anchor. Before 2018, the correction is exactly zero by construction, so the corrected and uncorrected series coincide. Between 2018 and 2021, the ratio rises smoothly from its uncorrected value to its corrected 2021 value. After 2021, there is no further panel observation to refit against, so the ratio to the anchor is held at its 2021 level rather than continuing to compound – the estimate still moves year to year after 2021, but only because each year's own anchor moves, not because additional churn is being applied.

Table A6.3. Contribution of each correction to the top 0.1 percent share

Correction	Direction	Effect on share	Evidence
Panel taken as threshold group	raises	+0.43 pp	92 of 311 families below \$50m (2015), 2.9% of the panel
Market valuation of entities	raises	+1.04 pp	documented 25% discount on 70% of panel wealth
Fixed panel churn	raises	+0.38 pp by 2021, +0.42 pp by 2024	2.2% a year estimated from the frozen Rich List
Attribution convention	either	-0.76 to +1.25 pp	Across five defensible rules
Return heterogeneity, income route	independent	-2.80 pp against wealth route	σ of 0.03–0.07 against 0.19 macroeconomic rate

Annex 7: Additional tables

Table A7.1. Pre-tax national income shares

Year	Bottom 50%	51–90	91–99	Top 1%
2001	18.82%	41.59%	27.05%	12.54%
2002	18.90%	41.45%	26.33%	13.33%
2003	18.25%	41.18%	26.23%	14.34%
2004	18.28%	42.04%	25.28%	14.40%
2005	18.63%	41.83%	25.22%	14.32%
2006	19.15%	42.20%	25.44%	13.21%
2007	19.83%	42.20%	25.03%	12.94%
2008	20.22%	43.12%	24.01%	12.66%
2009	16.91%	43.95%	25.34%	13.80%
2010	16.58%	43.06%	25.43%	14.93%
2011	17.36%	43.96%	26.54%	12.13%
2012	20.60%	42.64%	24.08%	12.68%
2013	17.73%	42.42%	25.09%	14.76%
2014	18.00%	43.42%	25.88%	12.71%
2015	18.34%	43.16%	25.38%	13.12%
2016	17.78%	42.61%	25.98%	13.62%
2017	17.62%	42.00%	26.20%	14.18%
2018	17.88%	41.92%	26.00%	14.19%
2019	17.17%	42.50%	25.95%	14.39%
2020	16.43%	41.88%	26.14%	15.55%
2021	14.90%	39.53%	24.76%	20.80%
2022	19.04%	41.38%	24.20%	15.38%
2023	19.71%	41.38%	23.79%	15.12%
2024	20.15%	41.18%	23.74%	14.93%

Table A7.2. Post-tax national income shares

Year	Bottom 50%	51–90	91–99	Top 1%
2001	28.59%	42.61%	20.32%	8.48%
2002	28.61%	42.36%	19.75%	9.28%
2003	28.61%	42.05%	19.47%	9.87%
2004	29.15%	42.62%	18.46%	9.78%
2005	29.68%	42.55%	18.30%	9.47%
2006	30.78%	42.90%	18.10%	8.22%
2007	31.30%	43.06%	17.76%	7.89%
2008	31.69%	43.50%	17.09%	7.73%
2009	30.07%	43.32%	17.93%	8.68%
2010	28.49%	42.15%	18.84%	10.52%
2011	28.67%	42.84%	19.90%	8.59%
2012	29.67%	43.19%	18.16%	8.98%

2013	29.07%	42.25%	18.35%	10.32%
2014	28.88%	43.07%	18.95%	9.09%
2015	29.28%	43.49%	18.01%	9.23%
2016	28.54%	43.01%	18.75%	9.70%
2017	28.18%	41.68%	20.14%	10.00%
2018	28.61%	41.68%	19.83%	9.88%
2019	27.80%	42.43%	19.69%	10.08%
2020	27.92%	41.47%	19.95%	10.66%
2021	25.99%	39.79%	18.91%	15.30%
2022	30.13%	41.97%	17.86%	10.03%
2023	30.53%	41.84%	17.62%	10.01%
2024	30.48%	41.70%	17.75%	10.07%

Table A7.3. *Effective tax rates on pre-tax private income + superannuation basis*

Year	Bottom 50%	51–90	91–99	Top 1%	Median	Project extension	Macro
2001	13.4%	18.9%	25.6%	29.5%	18.7%	–	22.6%
2002	13.2%	18.8%	25.5%	28.5%	18.4%	–	22.3%
2003	13.8%	20.0%	26.6%	29.1%	19.5%	–	23.4%
2004	14.0%	20.3%	27.6%	30.7%	19.4%	–	24.1%
2005	14.4%	20.4%	28.2%	32.2%	19.2%	–	24.7%
2006	15.9%	22.3%	31.1%	35.6%	20.7%	–	27.0%
2007	16.5%	22.7%	32.0%	36.9%	20.7%	–	27.8%
2008	17.1%	23.2%	32.1%	37.3%	20.7%	–	28.1%
2009	14.3%	22.2%	31.6%	36.5%	18.1%	–	26.9%
2010	11.8%	18.8%	26.2%	28.9%	15.1%	–	22.4%
2011	10.5%	17.5%	25.3%	29.2%	13.7%	–	21.2%
2012	9.1%	16.6%	24.4%	28.2%	13.8%	27.6%	20.4%
2013	10.2%	17.7%	25.9%	29.8%	14.0%	28.1%	21.7%
2014	9.9%	17.4%	24.6%	28.0%	13.6%	27.8%	20.6%
2015	10.1%	18.1%	25.5%	28.8%	14.1%	28.0%	21.3%
2016	10.2%	17.9%	24.9%	27.5%	13.9%	28.1%	21.0%
2017	10.2%	18.0%	25.4%	28.6%	13.8%	28.1%	21.4%
2018	10.2%	18.5%	25.9%	28.9%	14.0%	28.1%	21.7%
2019	10.3%	18.4%	25.9%	28.9%	13.7%	28.2%	21.9%
2020	10.5%	18.9%	26.6%	30.2%	13.9%	28.3%	22.7%
2021	9.8%	19.1%	26.3%	26.0%	14.2%	29.1%	22.1%
2022	10.1%	20.1%	28.2%	33.5%	15.2%	28.9%	24.1%
2023	10.3%	20.8%	28.4%	32.2%	15.7%	29.2%	24.2%
2024	10.3%	20.1%	27.4%	30.8%	15.1%	29.4%	23.4%

Table A7.4. *Effective tax rates on pre-tax private income + superannuation + capital gains basis*

Year	Bottom 50%	51-90	91-99	Top 1%	Median	Project extension	Macro
2001	11.1%	17.0%	21.7%	24.0%	16.9%	–	19.3%
2002	8.7%	16.1%	20.7%	22.3%	15.5%	–	18.0%
2003	6.5%	15.0%	18.6%	19.8%	14.0%	–	16.0%
2004	4.4%	12.1%	16.2%	17.3%	10.7%	–	13.2%
2005	5.5%	13.7%	17.6%	19.8%	12.1%	–	15.0%
2006	6.4%	15.4%	19.3%	21.6%	13.7%	–	16.6%
2007	6.6%	15.9%	20.4%	22.9%	13.9%	–	17.3%
2008	9.3%	17.7%	22.6%	23.8%	15.8%	–	19.6%
2009	-32.9%	27.4%	34.0%	37.2%	29.6%	–	36.1%
2010	5.8%	16.0%	22.1%	23.1%	12.0%	–	18.0%
2011	12.8%	19.1%	28.0%	32.6%	15.4%	–	23.5%
2012	7.5%	16.0%	23.1%	26.5%	13.0%	11.2%	19.2%
2013	5.2%	14.9%	21.6%	24.9%	10.9%	10.8%	17.4%
2014	5.3%	14.4%	19.9%	22.0%	10.8%	11.5%	16.1%
2015	5.2%	13.4%	16.9%	19.3%	10.2%	9.2%	14.4%
2016	4.3%	13.8%	19.1%	21.1%	9.7%	9.3%	15.0%
2017	3.9%	12.2%	15.0%	16.1%	8.6%	9.2%	12.6%
2018	6.4%	14.4%	16.9%	18.4%	11.0%	10.5%	15.1%
2019	6.8%	15.9%	20.7%	22.1%	11.6%	10.2%	17.6%
2020	5.3%	16.0%	22.4%	25.4%	10.7%	10.0%	18.1%
2021	3.5%	11.7%	15.8%	10.9%	8.1%	7.3%	11.4%
2022	3.8%	11.7%	13.7%	14.8%	8.8%	7.1%	11.8%
2023	86.3%	25.6%	29.9%	24.9%	21.9%	14.9%	27.6%
2024	7.9%	18.9%	24.4%	24.7%	14.0%	10.6%	20.4%

Table A7.5. *Shares of net private wealth*

Year	Bottom 50%	51-90	91-99	Top 1%
2001	1.3	33.6	37.1	28.1
2002	1.6	27.0	48.6	22.8
2003	1.5	30.2	39.9	28.4
2004	2.8	27.9	45.5	23.8
2005	2.7	27.9	43.6	25.7
2006	2.6	30.1	49.3	18.0
2007	2.6	29.8	46.9	20.8
2008	2.2	33.0	40.6	24.2
2009	2.1	32.6	37.9	27.4
2010	1.4	33.1	38.5	26.9
2011	2.5	39.5	36.6	21.5
2012	2.0	31.7	41.3	25.0
2013	1.0	38.3	38.9	21.9

Year	Bottom 50%	51–90	91–99	Top 1%
2014	1.7	37.8	38.5	22.0
2015	1.1	31.5	42.9	24.5
2016	2.3	32.3	46.7	18.8
2017	2.6	34.0	47.1	16.2
2018	2.4	38.0	39.1	20.5
2019	2.9	34.7	41.6	20.9
2020	2.4	38.7	43.5	15.4
2021	1.9	29.4	49.4	19.2
2022	3.6	33.3	44.2	19.0
2023	3.1	33.7	43.0	20.3
2024	3.1	33.7	42.0	21.3

Table A7.6. (Table 13.) Top-tail wealth shares under each Project panel-based specification, share of private net wealth

	Year	Top 1% anchor*	Top 0.1%					
			Naive	Project uncorrected	Project, market value	Project, market value + fixed panel correction	Rich List alone	Income route (lower bound)
Top 0.1%	2010	25.33	6.17	9.67	11.52	11.52	10.32	7.63
	2015	21.47	4.86	8.20	9.77	9.77	9.95	6.46
	2018	18.87	3.76	7.62	9.03	9.03	8.95	6.30
	2021	18.63	2.99	7.16	8.50	8.88	9.04	6.33
	2024	20.48	4.42	7.87	9.34	9.76	10.16	6.96

*divergence with Table A7.5 due to smoothing