Individuals Not In Business Tax Gap Technical Guide

Understanding the gap, estimation method and results

About this guide

This document is designed to be a complete knowledge capture of the Individuals not in business tax gap. As such, the material in the Guide will evolve and mature over time. The Guide also serves the purpose of acting as a "handover document" to retain corporate knowledge.

The primary purpose of the document is to provide full transparency and documentation on:

the tax/program base;

the data sources available;

the agreed methodology;

the resulting estimates;

the current reliability rating

This document has been developed by the tax gap team and is current as at 30 June 2022.

Contents

Executive Summary

This guide documents the context, estimation methodology and results of the 2014-15 to 2019-20 income tax gaps for individuals with no business connections. Tax gaps represent the difference between an estimated theoretical tax liability and actual tax amounts reported to the ATO.

The individual income tax gap is estimated using the results of enquiry programs which randomly sampled from the individual income tax returns lodged by this population.

Results are shown in the table below.

Table 1: Gap estimates

| $ millions	Component	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Population count	n	10,551,187	10,844,682	11,122,167	11,306,048	11,447,818	11,552,468
Tax paid voluntarily	V	118,375	125,343	129,531	140,138	143,785	150,855
+ Amendments	A	809	751	895	711	575	643
= Tax Paid	P = V+A	119,184	126,095	130,426	140,849	144,360	151,498
+ non-pursuable debt	D	161	177	194	220	202	202
= Tax reported	R=P+D	119,345	126,272	130,621	141,069	144,562	151,700
+ Unreported tax	E	6,165	6,651	6,625	6,950	6,306	6,319
+ Non-detection	F	1,845	1,960	2,165	2,485	2,529	2,509
= Theoretical tax	T = R+E+F	127,355	134,883	139,411	150,504	153,396	160,528
Gross tax gap	G = T-V	8,980	9,539	9,880	10,366	9,611	9,673
Net tax gap	N = T-P	8,171	8,788	8,984	9,655	9,036	9,030
Gross tax gap %	G/T	7.1	7.1	7.1	6.9	6.3	6.0
Net tax gap %	N/T	6.4	6.5	6.4	6.4	5.9	5.6

* Estimates in grey
* This table shows the elements of the gap stacked in an additive form, not the actual calculation steps.

Figure 1: Tax paid and net gaps ($m)

Figure 2: Gross gap and net gap %
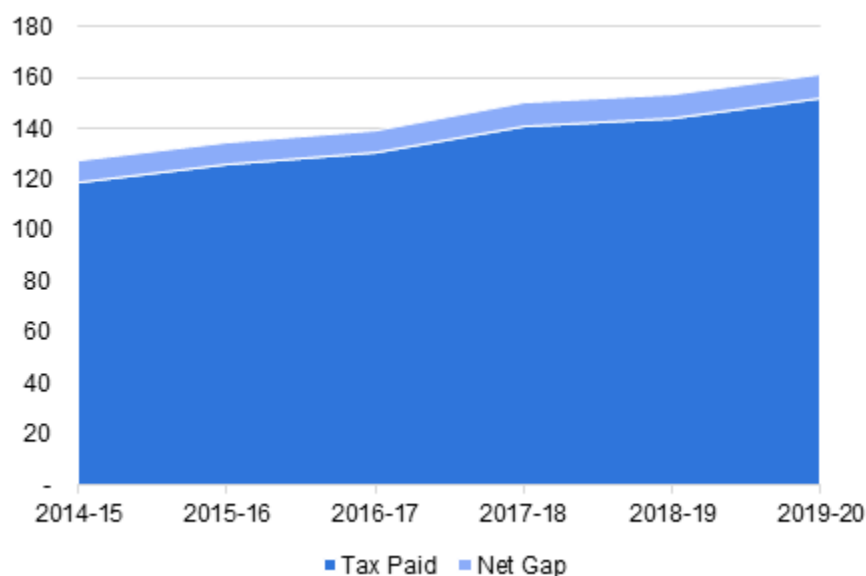

Figure 2: Gross gap and net gap %
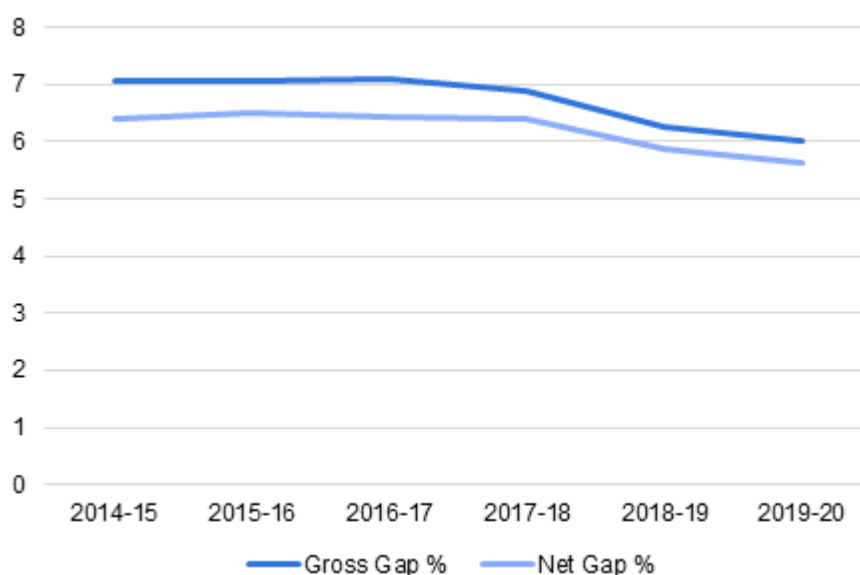
The published estimate is based on the 'rolling bundling' of our yearly Random Enquiry Program (REP) results as outlined in the Methodology section of this document. This approach will require active monitoring for significant shifts in the system or environment. This is because bundling comes with an assumption that the value of amendments identified between years is reflective of a similar legal and economic environment. The current view of the unbundled estimate can be found below:

Table 2: Unbundled Gap estimates

$ millions	Component	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*
Population count	n	10,551,187	10,844,682	11,122,167	11,306,048	11,447,818	11,552,468
Tax paid voluntarily	V	118,375	125,343	129,531	140,138	143,785	150,855
+ Amendments	A	809	751	895	711	575	643
= Tax Paid	P = V+A	119,184	126,095	130,426	140,849	144,360	151,498
+ non-pursuable debt	D	161	177	194	220	202	202
= Tax reported	R=P+D	119,345	126,272	130,621	141,069	144,562	151,700
+ Unreported tax	E	6,509	7,012	5,906	6,997	4,939	6,319
+ Non-detection	F	1,874	2,032	2,306	2,625	2,153	2,509
= Theoretical tax	T = R+E+F	127,728	135,317	138,833	150,690	151,655	160,528
Gross tax gap	G = T-V	9,352	9,973	9,302	10,552	7,869	9,673
Net tax gap	N = T-P	8,543	9,222	8,407	9,841	7,294	9,030
Gross tax gap %	G/T	7.3	7.4	6.7	7.0	5.2	6.0
Net tax gap %	N/T	6.7	6.8	6.1	6.5	4.8	5.6

2019-20 is a projection from the bundled result as the 2020 REP cases are not finalised

Figure 3: Gross gap and net gap %, unbundled estimate
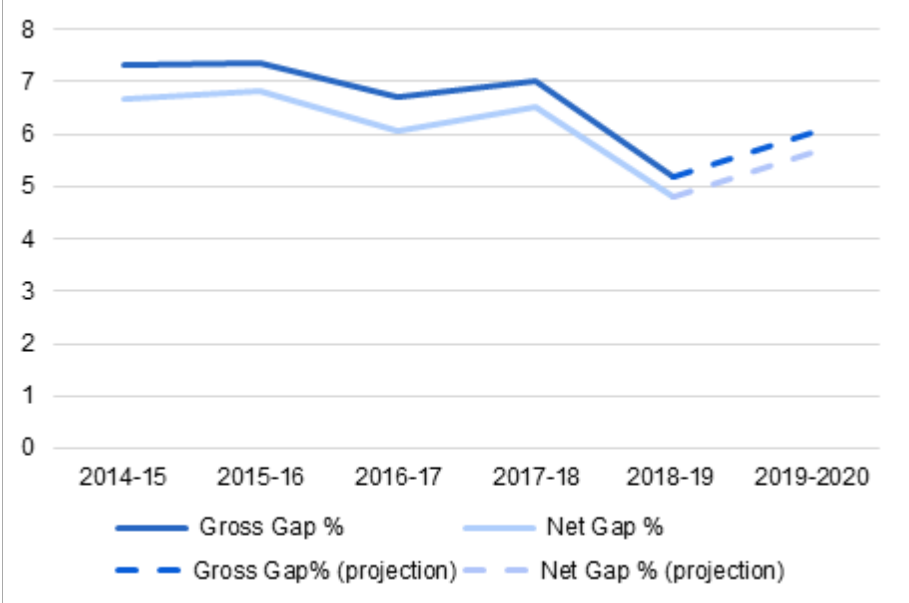
Population

The individuals not in business tax gap population consists of individuals with no business connections. They are typically individual entities other than those identified as being in or linked to small business, high wealth or wealthy Australians or recipients of passive or personal services income (PSI).

The individuals not in business tax gap population was realigned from the early design, to more precisely match the definition of individuals who are not in business. This realignment incorporates additional wealthy individuals in this tax gap population. As these additional individuals only earn passive income, they naturally fit in the Individuals not in business population.

Approach – random enquiry program

We use a bottom-up approach to measure the individuals not in business tax gap drawing on results of our random enquiry program (REP), in addition to operational data. Random enquiry programs review the whole return (all items) and are considered best practice when producing estimates for large populations.

To undertake our random enquiry program, we randomly select a sample of individuals who are not in business taxpayers for profiling. People in this sample who are identified as low risk have their returns verified. The remainder of the sample progress to an audit (the random enquiry program).

Once we have gathered information from the random enquiry program, we estimate the gap by using the incidence rate of adjustments and mean value of amendments resulting from non-compliance. Adjustments refer to the changes we make to items on a tax return to correct identified errors as part of the review process.

This method provides insights, not only into the value of non-compliance but also into the proportion of the sample (and by extension the population) that is incorrectly reporting.

Non-detection

We have identified the following three factors that contribute to non-detection in this gap:

1. Non-detection due to income misreporting
2. Non-detection for deductions and other issues
3. Factoring the impact from hidden wages

Estimates for these factors need to be added to the base unreported liability estimated from the REP results in order to derive a credible gap estimate.

Non-detection due to income misreporting

The first step is to isolate the income-related share of the base unreported liability. We then apply the standard international non-detection uplifts on the income-related component only. The standard international uplift factor is currently 1.26.

Non-detection for deductions and other issues

Applying the complement of the income ratio, we obtain the share (in value terms) of the base unreported tax liability due to non-income issues.

We then used the outcome adjustment rate from the case review conducted on the samples to determine a non-detection factor to be applied to these non-income issues (other amounts). The outcome adjustment rates applied are shown below:

Table 3: Non-detection adjustment rate for deductions and other issues

	2014-15	2015-16	2016-17	2017-18
Original assessments	1,050,000	1,187,000	1,068,346	1,089,379
Adjustments before review	94,655	65,895	47,275	70,900
Adjustments after review	94,924	66,609	47,298	75,904
Variation	269	714	24	5,003
Base adjustment rate (impact)	**0.3%**	**1.1%**	**0.05%**	**7.1%**

The base adjustment rates in Table 2 are bundled to the same or similar degree as the overall estimate before applying them. The bundles used for each estimate, along with the final uplift factor applied are outline in Table 3 below. At the time of refresh, the case review for the 2019 financial year had not been completed, therefore we have projected the 2019 rate onto 2020.

Table 4: Deductions and other issues impact on non-detection applied

	2015	2016	2017	2018	2019	2020
Case review factors bundled	2015	2015, 2016	2015,2016,2017	2016,2017,2018	2017, 2018	2017, 2018
Non-detection factor	0.28%	0.61%	0.48%	3.12%	4.25%	4.25%
Original assessments	1,050,000	2,237,000	3,305,346	3,344,725	2,157,725	2,157,725
Adjustments before review	94,655	160,550	207,825	184,070	118,175	118,175
Adjustments after review	94,924	161,533	208,831	189,811	123,202	123,202
Variation	269	983	1,007	5,741	5,027	5,027
Uplift Factor	**0.28%**	**0.61%**	**0.48%**	**3.12%**	**4.25%**	**4.25%**

Factoring the impact from hidden wages

We have confirmed previously from the individuals REP sample that no hidden wages errors are identified. Up to and including the 2021 Annual Report gap release, in our PAYGW gap

analysis we identified an uplift factor of 1.2% was needed to be applied to the national accounts wages to account for hidden wages. Applying this 1.2% into the PAYGW theoretical liability, resulted in an estimate for hidden wages. This is converted to a tax effect with an allowance made for tax refunds, and was then allocated to this and other gaps, based proportions of individual taxpayers.

For the 2022 Annual Report release, we revised the hidden wage uplift factor applied to the national accounts to 1.8%. We also revised the method used to derive the tax effect of hidden wages. We now apply average effective tax rates to the gross value of hidden wages.

Overall, the impact of non-detection is best viewed in terms of overall proportion of the gross gap. The tables below show the impact of non-detection on the gap:

Table 5: Non-detection impacts 2019-20 ($ million)

$ millions	2019-20	Proportion of gross gap
Income	156	1.6%
Deductions and other issues	258	2.7%
Hidden wages	2,095	21.7%
Total non-detection	2,509	25.9%
People outside the system	87	0.9%
Non-pursuable debt	202	2.1%
Base Unreported Liability	6,875	71.1%
Gross gap ($m)	9,673	

Shadow Economy

For the tax gap reconciliation to shadow economy we are seeking to classify the components and magnitudes of the various elements of the tax gap to those of the national accounts. Here we are seeking primarily to identify the amount of the tax gap that constitutes tax uncollected as a result of shadow economy economic activity. The approach uses the following ABS definitional elements:

> Undisclosed **hidden wages**

> Undisclosed or underreported **business income**

> Over reporting of select **business expenses**

In this individuals not-in business tax gap, the latter two elements would be rare to detect.

The non-detection allocation of hidden wages is 100% shadow economy given none of this issue has been found in the random enquiry program. This element aligns directly with the compensation of employee element of the national accounts.

The people outside the system estimate impact on tax aligns 100% with the shadow economy allocation. Given we have used the sample income amounts as a proxy for income outside the system and this allocation contains no hidden wages, we have aligned this estimate fully with gross mixed income.

Reliability assessment

We take the results from the random enquiry program, and project those results over the total lodged population of taxpayers, including those who lodge late. A preliminary estimate for people outside the system is included to factor in the shadow economy. This method

looks at all items on a tax return, and the taxpayer information we have received. Non-payment is also addressed.

The key assumption with the random enquiry program is that the observations of the sample apply to the population. We have stratified the sampling process to ensure it is representative. We are seeing consistent issues arising in the samples, and the gap does not materially move between years, giving us confidence in the results we are seeing.

The individuals not in business gap is assessed as being of high reliability.

Figure 4: Reliability rating High 22
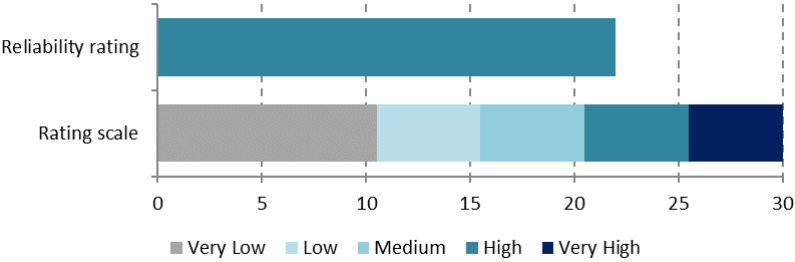
Background

The tax gap is an estimate of the difference between the amount the ATO collects and what we would have collected if every taxpayer was fully compliant. It is driven by cultural and human factors, global forces, complexity in business and legal systems, those who take aggressive tax positions, and genuine errors.

Tax gap estimates and their trends over time provide useful insights into the longer-term operation of the tax and superannuation systems. Along with other performance measures, they tell a story about the performance and integrity of the system, including levels of willing participation and significant shifts in compliance. They guide us in determining priority risks and opportunities, and where to invest our resources.

There are twenty estimates that form the overall tax gap program suite of measures and they are grouped into the following three programs:

transaction-based tax gaps – for taxes collected and paid by an entity higher up in the supply chain (with the cost generally borne by the consumer), such as goods and services tax (GST) and fuel excises

income-based tax gaps – income tax (for both individuals and businesses), large and small super funds, and fringe benefits tax gaps

administrative gaps – non-tax gaps, including for pay as you go (PAYG) withholding, superannuation guarantee and other administered programs.

More information is available on the ATO website at the following using the following links:

Australian tax gaps – overview

Tax gap research program

The tax gap framework

We estimate gaps for the year the economic activity occurred. Our tax gap estimates reflect the laws in effect at the time the tax gaps are being calculated. Where laws change these changes do not affect previous estimates. The following framework diagram below shows all the critical elements of the gap estimates.

Figure 5: Tax gap framework
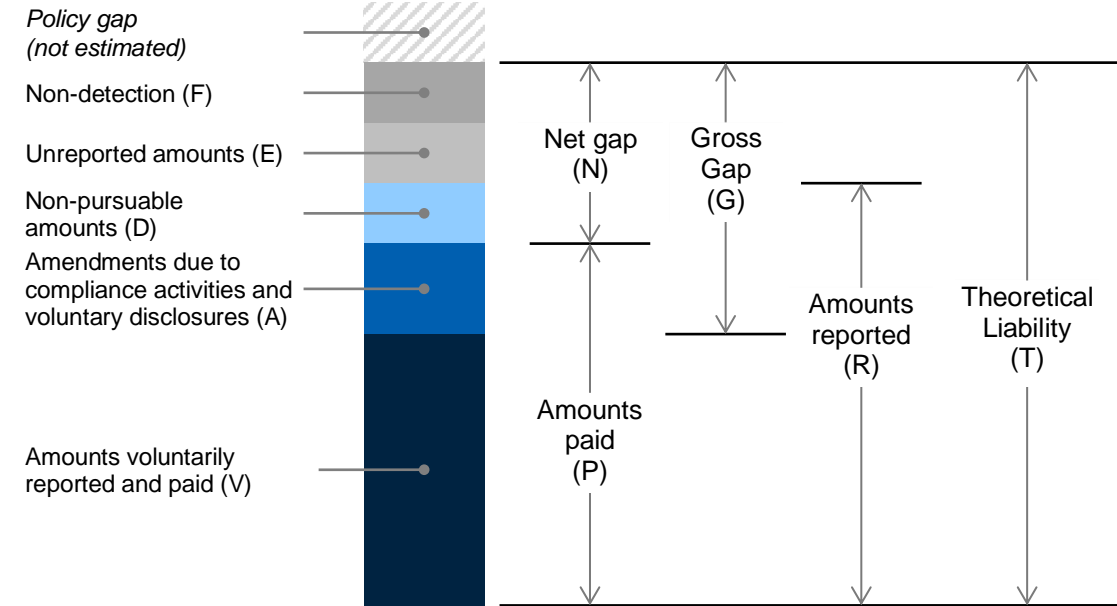
We estimate tax gaps for the law as it stands at the time. Where laws change we would revise our estimates. We do not estimate the impacts of alternative policy measures, which we refer to as *"policy gap"*. Nor do we estimate the impacts or opinion or perceptions of what a gap should be, which we would refer to as *"morality gap"*.

The key measure of the tax gap, matching the definition above, is the net gap. We also determine the gross gap, which is the gap prior to amendment activity by the ATO or taxpayer, i.e. the net gap plus amendment results.

Our estimates aim to quantify the level of non-compliance across four pillars of compliance – registration, lodgment, reporting and payment obligations. As a result the gap estimate includes liabilities that the Commissioner has assessed as being not legally recoverable, not economical to pursue, or unable to be pursued due to another Act, we refer to this amount as non-pursuable debt.

Where possible, we also estimate the amount of revenue not collected from those who do not register or lodge. Penalties and interest are not included in gap estimates.

We use a combination of methods to estimate tax gaps and assess their reliability.

Top-down estimates are developed using externally-sourced aggregated data, for example relying on Australian Bureau of Statistics (ABS) data.

Bottom-up estimates involve analysing internal data sources, such as tax returns or audit data, and extrapolating the results to determine the extent of non-compliance across the whole population.

All gap estimates are assessed for reliability against ten criteria. The reliability rating provides a transparent assessment of our gap estimates, drawing on International Monetary Fund (IMF) and our expertise. We summarise this in a rating assessment for each gap estimate.

More information is available on the ATO website at the following using the following link:

[Principles and approaches to measuring gaps](#)

[Methodological approaches](#)

[Reliability assessment](#)

The tax effect of the shadow economy

The shadow economy refers to businesses and individuals who operate outside the tax and regulatory system. Other terms used include: the shadow economy, cash economy and underground economy. Businesses and individuals may entirely avoid reporting activities, or they may deliberately underreport income in order to evade their obligations[1]. Estimates of the shadow economy are commonly estimates of economic activity as opposed to tax.

Gap estimates are not an estimate of the shadow economy. Tax gap estimates are influenced by the shadow economy and where this is the case, we estimate the **tax effect of the shadow economy** in our published results. We avoid labelling this the shadow economy or other commonly used terms to ensure our measures are understood for what they are.

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[1] Black economy taskforce website: https://treasury.gov.au/review/black-economy-taskforce/

Introduction to the tax

This section of the technical guide summarises the tax, population and non-pursuable debt relevant to the fringe benefits tax gap population and tax gap research program. All amounts relating to the amounts reported component of our framework (Figure 5: **Tax gap framework** above, Elements **V, A, D, P, R)** are detailed here prior to exploring the estimation of the gap in the next section.

Description of the tax

Income tax is payable by individuals based on annual taxable income. Overall rates of individual income tax follow a progressive system that includes a tax-free threshold through to an upper rate of 45% as well as levies such as the Medicare levy. For salary and wages, income tax is collected through the pay as you go (PAYG) withholding system and balancing adjustments are made when the annual tax return is lodged. Additionally, capital gains tax is factored into this annual lodgment.

The marginal income tax rates applying to Australian resident individual taxpayers from the 2014-15 income year are shown in Table 6[2]. Note these rates exclude the Medicare levy and the temporary budget repair levy.

Table 6: Individual marginal income tax rates

Taxable income	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
0 – $18,200	Nil	Nil	Nil	Nil	Nil	Nil
$18,201 – $37,000	19c	19c	19c	19c	19c	19c
$37,001 – $80,000	32.5c	32.5c	32.5c	32.5c	32.5c	32.5c
$80,001 – $87,000	37c	37c	32.5c	32.5c	32.5c	32.5c
$87,001 – $90,000	37c	37c	37c	37c	32.5c	32.5c
$90,001 – $180,000	37c	37c	37c	37c	37c	37c
$180,001 and over	45c	45c	45c	45c	45c	45c

The Medicare levy, Medicare levy surcharge and budget repair levy are included in the gap estimates. The Medicare levy is 2% of an individual's taxable income. The Medicare levy surcharge applies to individuals above certain income levels who do not have an appropriate level of private health cover and ranges from 1% to 1.5% of their surcharge income. The budget repair levy applied to individuals who had more than $180,000 taxable income for 2014-15, 2015-16 and 2016-17 at 2% above this threshold.

Taxpayer population (n)

The individuals not in business tax gap estimates population is one of the five key income tax populations strata present in the research program, to which individual lodgers contribute to four. It consists of taxpayers who receive predominantly salary and wages with some other

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[2] Tax rates on the ATO website.

Current tax rates: https://www.ato.gov.au/rates/individual-income-tax-rates/?=top_10_rates

Historical rates: https://www.ato.gov.au/Rates/Individual-income-tax-for-prior-years/

income that we refer to as "passive income" such as dividend, interest and rental income that are not connected to a wealth group with over $50 million in net assets (a high wealth group).

Table 7: Count of lodged returns for individual tax gap populations

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*
Individuals connected to high wealth	13,610	13,635	13,650	13,633	13,552	13,253
Individuals not in business	**10,551,187**	**10,844,682**	**11,122,167**	**11,306,048**	**11,447,818**	**11,190,959**
Individuals in small business	3,728,346	3,769,971	3,800,286	3,853,612	3,939,902	4,023,897
Individuals in medium business	6,489	6,654	6,305	6,543	6,343	6,265
Total individuals	**14,299,632**	**14,634,942**	**14,942,408**	**15,179,836**	**15,407,615**	**15,234,374**
Proportion of lodgers	74%	74%	74%	74%	74%	73%

* 2020 is currently a projection year. For refreshing the estimate, this figure, which represents actual lodgments, is uplifted to account for expected late lodgments. The uplifted figure is reported in Table 1.

We have estimated the count of non-registrants or long-term non-lodgers, collectively referred to as people outside the system (POTS), to fully capture the individuals not in business population. This is further discussed in **Impact of people outside the system.**

Tax Reported (R)

Total tax reported for individual income tax uses the 'net tax' definition in line with Taxation Statistics and other publications. This definition includes the impact of levies and reflects the tax obligation prior to the impact of franking credits.

Since 2014-15, the total amount of individual income tax payable has increased by approximately $40 billion with an average annual increase of 4% for the period shown. Amounts in the latest year are impacted by late lodgments, with full lodgment generally expected two years after the end of the year. Individuals contributed 64% of income tax payable in 2019-20.

Table 8: Tax reported for individual tax gap populations ($ millions)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*
Individuals connected to high wealth	4,477	4,697	4,696	5,532	5,656	5,797
Individuals not in business (R)	**119,345**	**126,272**	**130,621**	**141,069**	**144,562**	**148,304**
Individuals in small business	63,533	65,232	66,090	70,450	72,304	74,732
Individuals in medium business	1,142	1,243	1,188	1,392	1,165	1,316
Total individuals	188,497	197,444	202,595	218,443	223,687	230,148
Proportion of tax	63%	64%	64%	65%	65%	64%

* 2020 is currently a projection year. For refreshing the estimate, this figure, which represents tax reported from actual lodgments, is uplifted to account for expected tax reported from late lodgments. The uplifted figure is reported in Table 1.

Figure 6: Individual tax reported by tax gap population
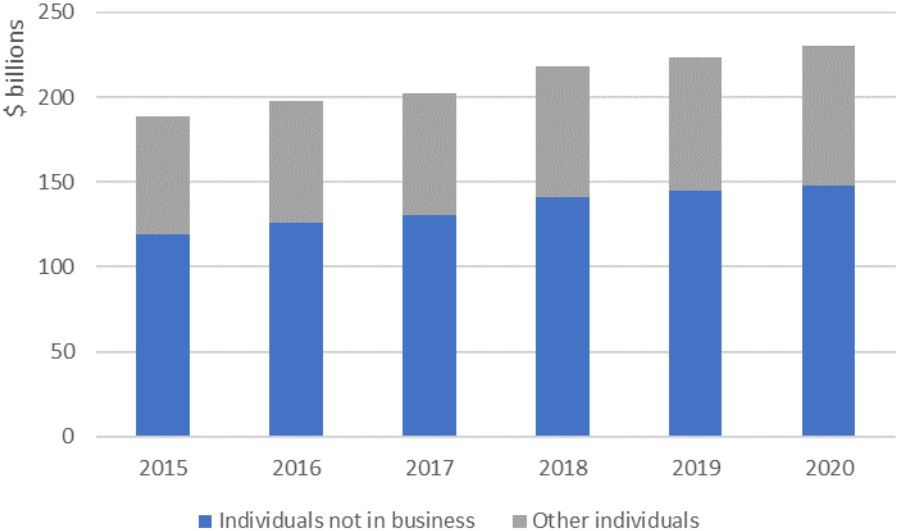
The totals in Table 9 below are from Taxation Statistics 2018-19 which were sourced from individual income tax returns processed by 31 October 2020. At the time of refreshing this guide, Taxation Statistics 2019-20 were yet to be published. Given tax gap data is sourced from all records at the time of the report these numbers will differ from the totals in due to additional lodgments being present in tax gap data and some population rules used in Taxation Statistics.

Table 9: Taxation Statistics all individuals net tax ($ million)[3]

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Taxation Statistics all individuals net tax	177,587	186,283	192,076	209,107	213,967	NA
Difference from tax gap all individuals	10,909	11,161	10,519	9,336	9,721	NA

The following sections reconcile this amount with amendments and non-pursuable debt to arrive at the tax paid element required for estimation.

Amendments (A)

The amendments amount is contained within the tax reported figure above.

The results for the current estimate are shown in the table below.

Table 10: Amendment results and comparison to previous estimates ($ millions)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Total	**809**	**751**	**895**	**711**	**575**	**643**

The 2019-20 year is a projection, based on a two-year average of 2017-18 and 2018-19.

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[3] Source: ATO, *Taxation Statistics 2018-19*

Non-pursuable debt (D)

Tax gap estimates make a distinction between non-pursuable and pursuable debt. Pursuable debt represents liabilities not paid by the due date, but are expected by the ATO to be repaid at some future point. In this sense, pursuable debt is not a gap component given that it is characterised as a deferred payment. By utilising the accrual method of accounting, pursuable debt is simply one component of the total 'originally reported, paid or expected to be paid' component of the total theoretical liability of a tax. It does not contribute to either the net or gross tax gap estimates.

Non-pursuable debt is treated differently. It is a liability that the Commissioner has assessed as being not legally recoverable, not economical to pursue, or unable to be pursued due to another Act. It is a shortfall in the amount recoverable from the total theoretical liability and is a component of the tax gap. Whilst both pursuable and non-pursuable debt may attract a variety of administrative and legal penalties, costs and interest amounts, these are not considered in any component of tax gap estimates.

The latest estimates for Non-pursuable debt can be found below:

Table 11: Non-pursuable debt for individuals not in business ($ million)

($ million)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Total non-pursuable debt (D)	160.5	177.4	194.2	219.9	201.7	202.4

Reconciling revenue reported from the tax (P,V)

Now that we have the tax reported (R), amendments (A) and non-pursuable debt (D) we can reconcile for the tax paid and voluntary tax. This is shown in the table below.

Table 12: Reconciliation of tax reported elements ($ millions)

$ millions	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Tax reported (R)	119,345	126,272	130,621	141,069	144,562	151,700
Non-pursuable debt (D)	161	177	194	220	202	202
Tax Paid (P = Ra – D)	119,184	126,095	130,426	140,849	144,360	151,498
Amendments (A)	809	751	895	711	575	643
Voluntary tax (V = P – A)	118,375	125,343	129,531	140,138	143,785	150,855

Methodology

This section of the technical guide focuses on the measurement of the tax gap itself. We first explore the selection of the method, followed by a summary of the adopted approach before showing the application of the approach and any limitations present.

Methodology options

The selection of an approach is heavily dependent on the design of the tax, characteristics of the population and data available. We start first by looking at the top-down approach then the bottom-up approaches that were rejected as not appropriate for the current measure.

In the case of income tax for individuals there are no aggregate macro-economic measures that are suitable for estimating the value of a tax gap with sufficient reliability or accuracy. This rules out the use of a top down approach, and so a bottom up approach is required.

A key failing of bottom up approaches for a population such as this is the lack of coverage and selection bias present in any data available. For this market we ruled out statistical or illustrative/microsimulation approaches as they are viewed as more likely to produce a less credible estimate for this population.

Random enquiry programs (REPs) which review the whole income tax return (all items) of a random sample of taxpayers from the population are seen as the best approach to measurement of this gap. Using a random sample avoids the selection bias inherent in operational audits, which are selected based on risk. The random sampling method is considered highly credible and is commonly used by other tax jurisdictions for tax gap estimation in similar situations. Therefore, this tax gap is estimated using the results of a random enquiry program.

Sample selection, stratification and outcomes

A random sample of taxpayers is selected from the individuals not in business tax gap population each year. From the outset this program's intent was for an ongoing sample of sufficient size to estimate the gap and provide insights into underlying trends. Advice at the time recommended a bundling approach to using the sample to estimate the gap involving a bundle of up to four years to assist in reducing the confidence interval on the estimate without the need for a larger annual sample. The panel has since highlighted that this bundling also causes an averaging effect creating a tension between how much is bundled and the need for insights on the trend. Given this advice, we have arrived at a three year bundling approach to try and minimise the averaging effect.

The sample size was selected to balance the needs of the program for a sample of sufficient size while simultaneously minimising the impost on those who are selected and the wider community. Overall we draw an annual sample of 545, this was based on the original intended target of over 2,000 random audits over a four year observation window.

Stratification

We have elected to stratify the sample on selection into income-based sub-strata to ensure that the sample is representative of the overall population. Not doing so in a random process would likely skew our results in the event of randomised sampling error oversampling or undersampling on select income bands. We refer to these strata as sub-strata, with the exception of the zero stratum as discussed below. This classification as a sub-stratum is to reinforce the point that the calculation process should not go so far as to treat each of these as separate strata. This is because the sample numbers within would be too small and lead to unreliable estimates for each of these sub-strata. Sample allocations based on the three-year bundle for 2019 across these income sub-strata (using 2019 income tax brackets) are shown in Table 13 with sample strata and sub-strata shown in Figure 7 and discussed in detail below.

Table 13: Annual sample counts 2019 bundled sample

Income Band	2017		2018		2019		2019 Bundled sample	
	Count	Proportion	Count	Proportion	Count	Proportion	Count	Proportion
$0-$18,200	50	9%	45	8%	49	9%	144	9%

$18,200-$37,000	131	24%	134	25%	116	21%	381	23%
$37,000-$90,000	275	50%	250	46%	256	47%	781	48%
$90,000-$180,000	78	14%	101	19%	109	20%	288	18%
>$180,000	11	2%	15	3%	15	3%	41	3%
Total	545	100%	545	100%	545	100%	1,635	100%

The 2020 estimate is currently based on two complete samples (2018 and 2019), with the third year to be included in next year's estimate. These two years of sample data represent two thirds of the final 2020 year sample. The sample allocations across the income sub-strata for the current 2020 year bundle are outlined below.

Table 14: Annual sample counts 2020 bundled sample

	2018		2019		2020 Bundled sample	
Income Band	Count	Proportion	Count	Proportion	Count	Proportion
$0-$18,200	45	8%	49	9%	94	9%
$18,200-$37,000	134	25%	116	21%	250	23%
$37,000-$90,000	251	46%	256	47%	507	46%
$90,000-$180,000	101	19%	109	20%	210	19%
>$180,000	14	3%	15	3%	29	3%
Total	545	100%	545	100%	1,090	100%

Figure 7: Individuals tax gap sample composition framework
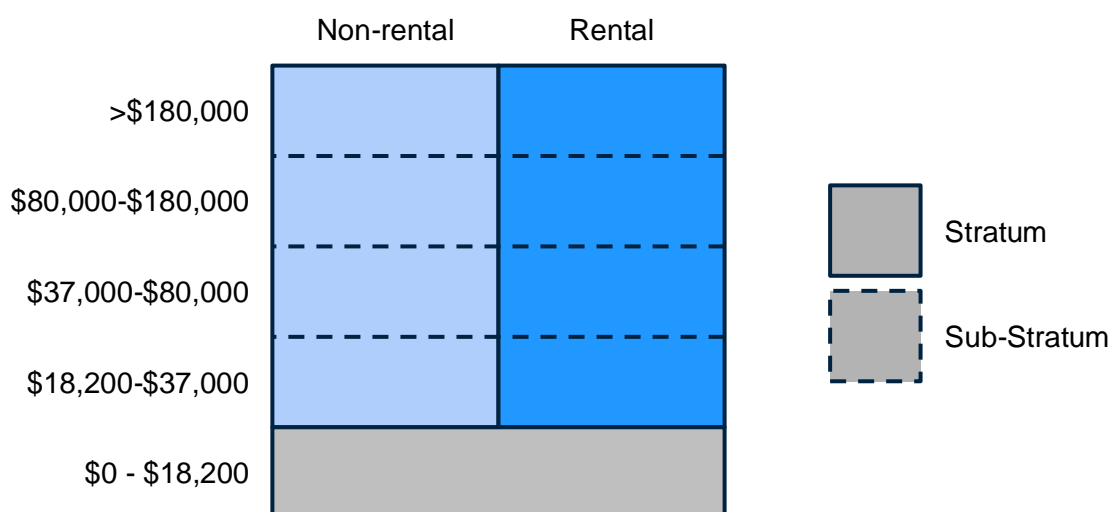
Zero tax stratum

The $0 - $18,200 income band, which has a zero tax rate, has been deliberately isolated as a separate and full stratum. The results from the first year of the random enquiry program led to the conclusion that taxpayers in this band have significantly different incidence rates and issues when compared to the wider population, consistent with them being a low-risk group of taxpayers. Based on the approach used by Denmark of allocating the sample across strata based on risk, we deliberately under sampled this band and over time this under sampling has built into our three-year bundle.

Rental stratum

The other key separate stratum is an issue- based stratum, being those with rental related returns. These are taxpayers who reported rental income and/or rental deductions in their income tax return. Here we have deliberately oversampled taxpayers with rental items as we perceive them to be a higher risk group of taxpayers. A larger random sample from this stratum will provide a better understanding of the extent of their non-compliance and the issues involved. We note that the significant non-compliance from this stratum make it of considerable interest. Having a fully closed three-year sample now provides sufficient closed cases to support the calculation of a reasonably reliable gap estimate for this stratum.

Random enquiry process

The randomly selected sample of individual taxpayers is subject to internal profiling. To minimise impost on taxpayers, where income can be matched to third party data on ATO systems and amounts which cannot be verified are immaterial, these returns are not investigated further. Such taxpayers are verified as having no (immaterial) tax gap. The remainder of the sample are escalated to a review (and subsequent audit when necessary) in order to verify material amounts that could not be verified by third party data (the random enquiry program). The results of the enquiries are fed into the methodological process detailed below to determine the final tax gap.

Random enquiry results

The random enquiry program outcome results as at October 2021 are shown in the table below.

Table 15: Random enquiry results

	2014 sample	2015 sample	2016 sample	2017 sample	2018 sample	2019 sample	2020 sample
Verified	93	86	92	101	90	127	127
In progress	0	0	0	0	0	0	356
Result: nil outcome	21	27	15	30	30	28	9
Result: notional	161	333	239	182	313	364	50
Result: amended	40	95	199	232	112	26	3
Total sample	317	541	545	545	545	545	545
Early exit - replaced	0	34	10	6	33	9	2
Early exit - not replaced	0	4	0	0	0	0	0

Figure 8: Proportion of sample outcomes over time

Legend:
- Result: amended
- Result: notional
- Result: nil outcome
- In progress
- Verified
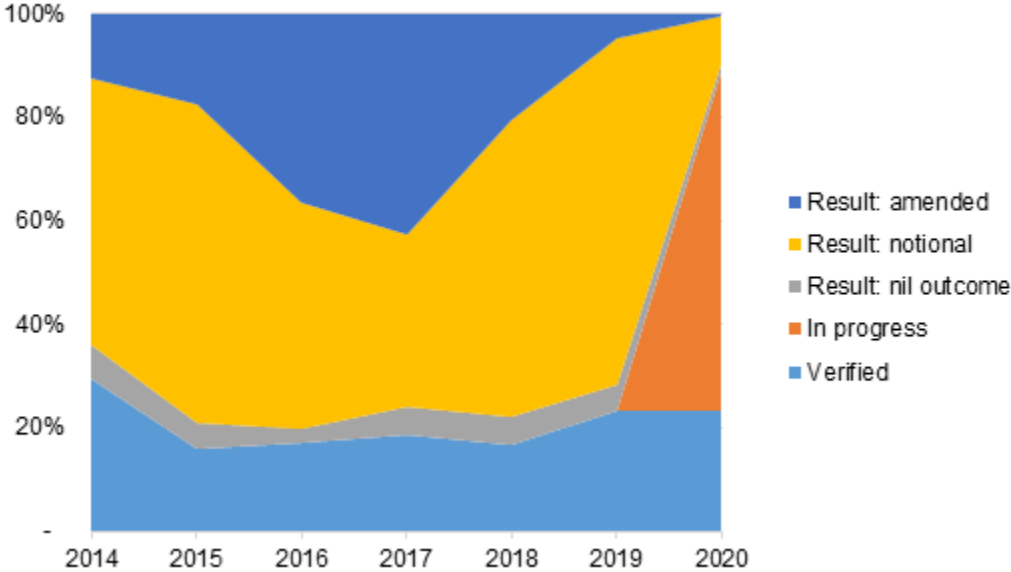
Figure 9: Approach to bundle sample size (three year approach)

Program timeline	Random enquiry annual samples		Bundled samples for estimate years		Samples removed from the bundle
First year of program	2014 year sample (sample 317)	Add	2014 estimate bundle 2014 only (sample 317)		
			↓ Roll forward		
	2015 year sample (sample 541)	Add	2015 estimate bundle 2014 to 2015 (sample 858)		
			↓ Roll forward		
	2016 year sample (sample 545)	Add	2016 estimate bundle 2014 to 2016 (sample 1,403)		
			↓ Roll forward		
	2017 year sample (sample 545)	Add	2017 estimate bundle 2015 to 2017 (sample 1,631)	Remove	2014 year sample (sample 317)
			↓ Roll forward		
	2018 year sample (sample 545)	Add	2018 estimate bundle 2016 to 2018 (sample 1,635)	Remove	2015 year sample (sample 541)
			↓ Roll forward		
Activity finalised	2019 year sample (sample 545)	Add	2019 estimate bundle 2017 to 2019 (sample 1,635)	Remove	2016 year sample (sample 545)
			↓ Roll forward		
Activity commenced 2021	2020 year sample (sample 545) In progress	Add when finalised	2020 estimate bundle In progress (sample 1,635)	Remove	2017 year sample (sample 545)
Ongoing program	Continue annual sampling and additions to rolling pool		Continue to remove samples that are outside the pools period		

Single year vs bundled year samples

To increase the sample size and reduce the confidence interval of estimates, random samples from multiple years are bundled. Bundling (also known as pooling or grouping) takes the samples from prior years along with the sample for the current year and uses them

to estimate the gap in the current year under measure. Figure 9 above maps out the current bundling approach through to the estimate for the 2020 income year.

We do this bundling to increase our aggregate (across year) sample size – without the cost both to us and taxpayers, of a massive program in any single year. This approach was advised by international experts during the foundation of the gap program in addition to being common practice in this field. Overall our current sampling across the individuals not in business and small business populations has achieved the rolling bundle sample size of five thousand taxpayers across both gaps that was recommended by international experts in 2014. But such bundling needs to be monitored to ensure the sample remains relevant to the extrapolation process.
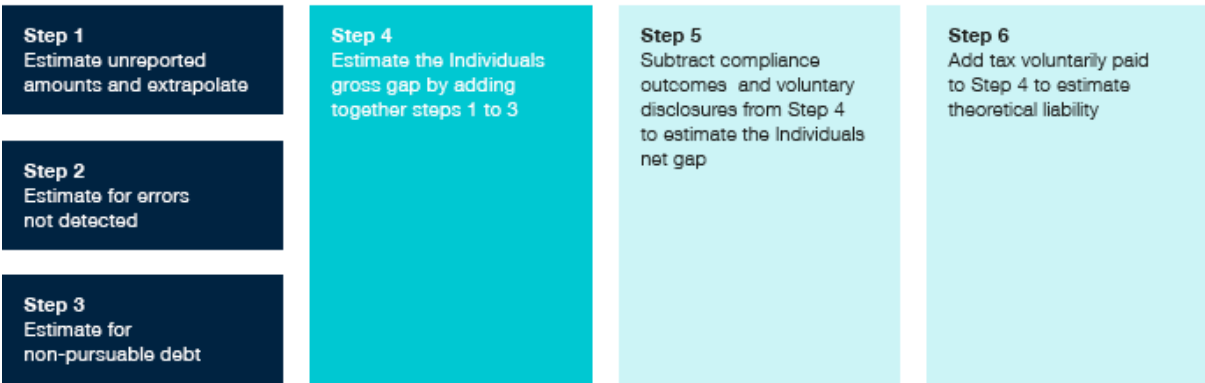
The estimate as at the writing of this report is based on bundling three years of work. Original guidance called for upwards of four years as the most appropriate for reducing the confidence interval on the estimate, though it has been raised by the panel that this also creates an averaging effect on the final estimate. Based on this advice and analysis of the confidence interval we have reassessed the need for a four-year bundle in light of the relatively consistent observations and tighter than expected confidence intervals we are seeing. A three-year bundle is more suited to the Australian environment and is likely to result in less averaging and better insights into the long term trend so long as we can sustain the regular annual sampling.

Such a 'rolling bundling' process will require active monitoring for significant shifts in the system or environment. This is because bundling comes with an assumption that the value of amendments identified between years is reflective of a similar legal and economic environment.

Method used for this gap

The following process is used to estimate the gap. Note that being a bottom up method the random enquiry program primarily focuses on establishing the gross gap (excluding non-pursuable debt).

Figure 10: Step by step process for estimating gap

Step 1 Estimate unreported amounts and extrapolate	Step 4 Estimate the Individuals gross gap by adding together steps 1 to 3	Step 5 Subtract compliance outcomes and voluntary disclosures from Step 4 to estimate the Individuals net gap	Step 6 Add tax voluntarily paid to Step 4 to estimate theoretical liability
Step 2 Estimate for errors not detected			
Step 3 Estimate for non-pursuable debt			

Step 1: Estimate unreported amounts and extrapolate to population in each stratum. Apply estimate for people outside the system

For any single year the all sample data for relevant years is split into the three strata, as identified above, being:

> Zero Tax
> Non-Rental
> Rental

The relevant bundling is then applied to each year, being three years for the most current estimate year, two for the middle year and no bundle for the first year. Each bundled sample is then split into two key groups:

> those that progressed to review
> those that were verified.

Steps 1a to 1c are shown separately in Table 16.

Step 1a: Estimate unreported amounts for reviewed sample in each stratum

For those that progressed to review we identify the *mean amendment* for taxpayers with an amendment as well as the *incidence rate* of amendment for the whole sample.

Step 1b: Estimate unreported amounts for verified sample in each stratum

Complementing step 1a, we next identify the mean and incidence rate of amendment for the verified sample.

To do this we apply the average tax effect of adjustments to deductions of taxpayers who claimed less than $1000 deductions and apply this to verified taxpayers. We also apply the incidence rate of deduction adjustments of taxpayers who claimed less than $1000 deductions and apply this to verified taxpayers.

Step 1c: Combine results and extrapolate to population in each stratum

Here we combine the incidence rates and means from the previous two steps to estimate the unreported tax liability for each stratum. When bringing together steps 1 and 2, actual calculations do not apply rounding, as such the tables below will demonstrate rounding error.

Step 1d: Add up base unreported tax liabilities (Table 17)

We aggregate the unreported amounts for all the strata to obtain the total base unreported tax liability.

Step 1e: Apply estimate for people outside the system

Add the people outside the system estimate dollar impact which draws on the random sample data.

Step 2: Estimate for errors not detected

We adjust the base unreported tax liability to correct for errors not identified through the random enquiry program. These factors include non-detected amounts relating to:

> other income

> deductions

> hidden wages

This is discussed further in sensitivity analysis below.

Step 3: Estimate for non-pursuable debt

We then add the total non-pursuable debt identified in the introduction section.

Step 4: Estimate the gross gap

Next, we add together the results of Steps 1 to 3 to arrive at the gross gap estimate.

Step 5: Estimate the net gap

We subtract amendments from the gross gap to arrive at the net gap estimate.

Step 6: Estimate theoretical liability

We then add the net gap to the tax paid to estimate the theoretical tax liability.

Methodology application

The following tables step through the process above to arrive at estimates for the following years and bundles of REP results:

> Estimate for 2014-15 based on bundled 2013-14 and 2014-15 results

> Estimate for 2015-16 based on bundled 2013-14, 2014-15 and 2015-16 results

> Estimate for 2016-17 based on bundled 2014-15, 2015-16 and 2016-17 results

> Estimate for 2017-18 based on bundled 2015-16, 2016-17 and 2017-18 results

> Estimate for 2018-19 based on bundled 2016-17, 2017-18 and 2018-19 results

> Estimate for 2019-20 based on bundled 2017-18 and 2018-19 results

The population has three strata: rental (taxable), non-rental (taxable) and non-taxable. For each stratum step 1 is calculated in a separate table, prior to being combined in steps 2 to 6 below.

Error! Reference source not found. contains summaries for all single and bundle year result combinations.

Table 16: Applying step 1 to each stratum (three tables)

Rental (taxable) stratum	2014-15 Two years	2015-16 Three years	2016-17 Three years	2017-18 Three years	2018-19 Three years	2019-20 Two years
Step 1a: Estimate unreported amounts for reviewed sample						
Amended count	152	269	340	341	329	219
Sample count	154	273	343	346	333	223
Incidence rate (%)	99%	99%	99%	99%	99%	98%
Mean gap for amended ($)	2,022	1,918	1,846	1,733	1,451	1,353
Step 1b: Estimate unreported amounts for verified sample[4]						
Amended count where total ded. <$1000	46	76	102	108	114	75
Reviewed count where total ded. <$1000	48	80	106	113	117	77
Incidence rate where total ded. <$1000 (%)	96%	95%	96%	96%	97%	97%
Verified taxpayer count	-	-	-	-	-	-
Inferred amended count	-	-	-	-	-	-
Mean gap for amended - total ded. <$1000 ($)	1075	952	768	1,097	1,154	1,500
Step 1c: Combine results and extrapolate to population						
Total amended count	152	269	340	341	329	219
Total sample count	154	273	343	346	333	223
Total incidence rate (%)	99%	99%	99%	99%	99%	98%
Mean gap for all amended taxpayers	2,022	1,918	1,846	1,733	1,451	1,353
Base population count	1,155,279	1,186,134	1,224,797	1,254,556	1,263,846	1,271,651
Potential amended population count	1,140,275	1,168,755	1,214,084	1,236,427	1,248,665	1,248,841
REP extrapolation ($m)	2,306	2,241	2,241	2,143	1,812	1,689

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[4] There were no verified taxpayers in the rental (taxable) stratum, but this step is included for consistency with the other tables.

Non-rental (taxable) stratum	2014-15 Two years	2015-16 Three years	2016-17 Three years	2017-18 Three years	2018-19 Three years	2019-20 Two years
Step 1a: Estimate unreported amounts for reviewed sample						
Amended count	434	738	865	857	813	544
Sample count	595	984	1,157	1,156	1,157	773
Incidence rate (%)	73%	75%	75%	74%	70%	70%
Mean gap for amended ($)	819	873	845	832	769	779
Step 1b: Estimate unreported amounts for verified sample						
Amended count where total ded. <$1000	85	152	172	175	160	114
Reviewed count where total ded. <$1000	122	207	253	262	271	191
Incidence rate where total ded. <$1000 (%)	70%	73%	68%	67%	59%	60%
Verified taxpayer count	136	213	240	245	277	188
Inferred amended count	95	156	163	164	164	112
Mean gap for amended - total ded. <$1000 ($)	83	87	62	54	45	70
Step 1c: Combine results and extrapolate to population						
Total amended count	529	894	1,028	1,021	977	656
Total sample count	595	984	1,157	1,156	1,157	773
Total incidence rate (%)	89%	91%	89%	88%	84%	85%
Mean gap for all amended taxpayers	687	735	725	707	648	658
Base population count	7,141,771	7,304,948	7,474,727	7,689,632	7,910,430	8,227,224
Potential amended population count	6,346,623	6,639,825	6,642,377	6,789,260	6,676,638	6,984,194
REP extrapolation ($m)	4,360	4,883	4,815	4,801	4,324	4,596

Non-taxable stratum	2014-15 Two years	2015-16 Three years	2016-17 Three years	2017-18 Three years	2018-19 Three years	2019-20 Two years
Step 1a: Estimate unreported amounts for reviewed sample						
Amended count	42	59	73	73	80	46
Sample count	106	143	130	133	145	94
Incidence rate (%)	40%	41%	56%	55%	55%	49%
Mean gap for amended ($)	188	137	152	326	295	319
Step 1b: Estimate unreported amounts for verified sample						
Amended count where total ded. <$1000	22	35	46	50	52	28
Reviewed count where total ded. <$1000	57	76	81	88	96	58
Incidence rate where total ded. <$1000 (%)	39%	46%	57%	57%	54%	48%
Verified taxpayer count	43	58	39	38	41	29
Inferred amended count	17	27	22	22	22	14
Mean gap for amended - total ded. <$1000 ($)	38	24	66	169	162	194
Step 1c: Combine results and extrapolate to population						
Total amended count	59	86	95	95	102	60
Total sample count	106	143	130	133	145	94
Total incidence rate (%)	55%	60%	73%	71%	70%	64%
Mean gap for all amended taxpayers	146	101	132	290	266	290
Base population count	2,254,137	2,353,600	2,422,643	2,361,860	2,273,542	2,053,593
Potential amended population count	1,246,080	1,410,687	1,773,154	1,679,778	1,602,586	1,310,804
REP extrapolation ($m)	181	143	233	488	427	380

Table 17: Overall results

Combined	2014-15 Two years	2015-16 Three years	2016-17 Three years	2017-18 Three years	2018-19 Three years	2019-20 Two years
Base population count	10,551,187	10,844,682	11,122,167	11,306,048	11,447,818	11,552,468
Potential amended population count	8,732,979	9,219,267	9,629,616	9,705,465	9,527,889	9,543,839
REP extrapolation ($m)	6,847	7,268	7,290	7,432	6,562	6,665

Table 18: Applying remaining steps

Combined	2014-15 Two years	2015-16 Three years	2016-17 Three years	2017-18 Three years	2018-19 Three years	2019-20 Two years
Step 1d: Add up base unreported tax liabilities						
Total population count	10,551,187	10,844,682	11,122,167	11,306,048	11,447,818	11,552,468
Total potential amended population count	8,732,979	9,219,267	9,629,616	9,705,465	9,527,889	9,543,839
Unreported amounts ($m)	6,847	7,268	7,290	7,455	6,697	6,874
People outside the system ($m)	127	134	230	206	183	87
Total base unreported tax liability	6,974	7,402	7,520	7,661	6,880	6,962
Step 2: Add estimate for non-detection						
Non-detection estimate ($m)	1,845	1,960	2,165	2,485	2,529	2,509
Step 3: Add non-pursuable debt						
Non-pursuable debt ($m)	161	177	194	220	202	202
Step 4: Estimate gross gap						
Gross gap (add steps 4 to 6)	8,980	9,539	9,880	10,366	9,611	9,673
Step 5: Estimate net gap						
Amendments ($m)	809	751	895	711	575	643
Net gap ($m)	8,171	8,788	8,984	9,655	9,036	9,030
Step 6: Estimate theoretical liability						
Tax voluntarily reported and paid ($m)	118,375	125,343	129,531	140,138	143,785	150,855
Theoretical tax liability ($m)	127,356	134,883	139,411	150,504	153,396	160,528
Gross gap %	7.1%	7.1%	7.1%	6.9%	6.3%	6.0%
Net gap %	6.4%	6.5%	6.4%	6.4%	5.9%	5.6%

2020 estimate

We use the two year bundled results of 2018 and 2019 for the 2020 estimate. When 2020 REP cases have been finalised, the 2020 year estimate will be the bundled results of all three years. 2020 amendments are a two year average of the 2018 and 2019 amounts. Population counts and tax reported are 2020 amounts, but have been uplifted to account for lodgments we expect to receive between March 2022 and March 2023 that relate to the 2018-19 income year. The factors are:

> 2020 tax reported was uplifted by 2.1%

> 2020 population count was uplifted by 3.2%

These uplift factors were derived from the additional lodgments received for prior year returns. For example, for the 2017 returns, we looked at the percentage of additional lodgments received between March 2019 and March 2020. We have used a three year average based on the additional lodgments of 2017, 2018 and 2019 returns over the equivalent periods.

Table 19: Applying remaining steps for estimation on 2020

Combined	Component
Step 1d: Add up base unreported tax liabilities	
Total population count	11,552,468
Total potential amended population count	9,543,839
Unreported amounts ($m)	6,874
People outside the system ($m)	87
Base unreported tax liability ($m)	6,962
Step 2: Add estimate for non-detection	
Income non-detection (excluding hidden wages) ($m)	156
Other issues non-detection ($m)	258
Hidden wages non-detection ($m)	2,095
Step 3: Add non-pursuable debt	
Non-pursuable debt ($m)	202
Step 4: Estimate gross gap	
Gross gap (add steps 4 to 6) ($m)	9,673
Step 5: Estimate net gap	
Amendments ($m)	643
Net gap ($m)	9,030
Step 6: Estimate theoretical liability	
Tax voluntarily reported and paid ($m)	150,855
Theoretical tax liability ($m)	160,528
Gross gap %	6.0%
Net gap %	5.6%

Information sources used

Unless otherwise specified all data was current as at March 2022. This gap estimate draws on the following information and data sources:

> Case data from the random enquiry program database

> Case data from the Siebel case management system

> Tax return data from the ATO data warehouse

> Population information from internal risk models

> Debt written off from the ATO data warehouse

> Demographic information from taxation statistics

> Findings from international studies relating to non-detection uplifts

> Findings from the case review process

Assumptions and sensitivity testing

Key assumptions include:

> - The sample was drawn from a sub-population which is obtained after standard audit exclusions were applied. The incidence and magnitude of amendments found in the random sample is assumed to be representative of the population

> - Adjustments made represent the correct outcome at law or are administratively appropriate

> - The non-detection estimate has been reviewed. We have devised separate estimates for income, deductions and other elements based on: uplift factors used by Her Majesty's Revenue & Customs, our findings from the REP and other gap analyses. However, the non-detection estimate is difficult to determine and is assumed to be appropriate.

In addition the following sections cover assumptions and sensitivities relating to the following:

> - Impacts of non-detection
> - Impacts of the shadow economy

Impacts of non-detection on the gap

There are three elements that contribute to non-detection for the individuals not in business tax gap, being:

1. Determining non-detection due to income misreporting
2. Determining non-detection for deductions and other issues
3. Factoring the impact from hidden wages into the gap

Determining non-detection due to income misreporting

In terms of our non-detection framework almost all elements of error are in play. This places our baseline expectation on uplift rates as being similar in nature by the ranges used by the UK in their approach. The international uplifts developed by Feinstein for self-assessment (non-business) range from 1 to 1.928 with a central estimate uplift rate of 1.26.

In terms of determining the impact of non-detection the first step is to go back to each gap just prior to the addition of non-detection and isolate the income-related share of the gap (i.e. total REP extrapolation). We then apply the standard international non-detection uplifts on the income-related component only. This is shown below.

Table 20: Income misreporting impact on non-detection

	2015	2016	2017	2018	2019	2020
Total REP extrapolation ($m)	6,847	7,268	7,290	7,432	6,562	6,665
Income %	9.1%	9.9%	17.6%	17.6%	17.2%	9.0%
Income subject to non-detection ($m)	622	722	1,282	1,308	1,129	598
Non-detection factor (international)	1.26	1.26	1.26	1.26	1.26	1.26
Income non-detection amount ($m)	162	188	333	340	293	156

This uplift factor assumes that the underlying issues uplifted carry through to the factor, i.e. we are duplicating the underlying issues in this uplift factor, not adding new issues.

Determining non-detection for deductions and other issues

Deductions by their nature must be disclosed to be claimed, therefore they can only be incorrectly recorded. Likewise, for a random enquiry program, the auditor must evaluate the correctness of the deduction in the review of the taxpayer. Therefore when both of these are in error we have non-detection present. Through our non-detection framework we have isolated non-detection for elements relating to deductions or other elements to be only associated with *category 1* non-detection.

Given this it is inappropriate to uplift this amount by a general uplift factor given it forms the majority of the errors present. Additionally the broad nature of the current international uplifts applied leads to potential overstatement of the gap.

Instead we utilise the independent findings of the case review to determine the uplift factor based on the errors identified through that process. We take the overall observed error and divide it by the adjustments to determine the relevant uplift factor for this element of the gap. A summary of the findings and results used are identified below.

Table 21: Summary of case reviews

	2015 review	2016 review	2017 review	2018 review
Cases	58	79	80	60
Agree	50	72	77	58
Disagree	8	7	3	2
Incidence	14%	9%	4%	3%
Original assessments	1,050,000	1,187,000	1,068,346	1,089,379
Adjustments before review	94,655	65,895	47,275	70,900
Adjustments after review	94,924	66,609	47,298	75,904
Variation	269	714	24	5,003
Adjust to base (Impact)	0.026%	0.060%	0.002%	0.459%
Adjust to before review (uplift)	0.28%	1.08%	0.05%	7.057%

The uplift is bundled to the same or similar degree as the estimate. For the 2013-14 and 2014-15 estimate years we use the uplift from the first year review. For subsequent years we use the bundled results to align with the use of the bundled sample. At the time of compiling this report the 2019 review was yet to be finalised.

Once we have established the uplift factor we need to estimate the final non-detection element. Applying the complement of the income ratio above, we obtain the share (in value terms) of the REP extrapolation due to non-income issues. We then use the outcome adjustment rate above as the non-detection factor for non-income issues (other amounts). This is shown below.

Table 22: Deductions and other issues impact on non-detection

	2015 Bundled	2016 Bundled	2017 Bundled	2018 Bundled	2019 Bundled	2020[5] Bundled
Total REP extrapolation ($m)	6,847	7,268	7,290	7,432	6,562	6,665
Deduction % (1 - income%)	90.9%	90.1%	82.4%	82.4%	82.8%	91.0%
Other amounts subject to non-detection ($m)	6,226	6,546	6,008	6,124	5,434	6,067
Non-detection factor	0.3%	0.5%	0.5%	3.1%	4.3%	4.3%

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[5] 2020 Non-detection factor is a projection from the 2019 bundle.

Other issues non-detection amount ($m)	18	32	29	191	231	258

This uplift factor assumes that the underlying issues uplifted carry through to the factor, i.e. we are duplicating the underlying issues in this uplift factor, not adding new issues.

Determining non-detection for hidden wages

The blanket uplift rate applied to income assumes that the underlying issues uplifted carry through to the factor. This means it does not make allowance for issues explicitly absent from the random sample detection.

We have confirmed from the individuals REP sample that for all sample years utilised in measurement no hidden wages errors were identified.

Previously, the income tax effect from the results of our separate top-down methods that utilised the original compensation of employees uplift factor of 1.2% needed to be applied to this estimate to account for hidden wages.

For the 2022 Annual Report, findings from the revised PAYGW gap model need to be incorporated into the income tax gaps for Individuals and Small Business, to reflect increased estimates for hidden wages and their associated tax impact. In particular, the key changes are:

- The compensation of employees (COE) uplift factor is now 1.8%.
- The associated tax impacts (i.e. hidden wages non detection) are now derived by applying effective tax rates (ETRs) from the observed population, plus an uplift to reflect bracket creep.
- The individuals not in business share of gross hidden wages is based on the proportion of total reported salary and wage income that sits within the population.

Table 23: Hidden wages non-detection calculation steps

$ millions	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1. Gross hidden wages (1.8% of COE)	12,680	13,059	13,385	14,054	14,777	15,322
2. Individuals not in business share of 1.	10,398	10,757	11,069	11,635	12,231	12,413
3. Average Net Tax/Taxable Income ETR	13.0%	13.2%	13.3%	13.8%	13.4%	13.9%
4. Uplift 3. to account for bracket creep	16.0%	16.2%	16.3%	16.8%	16.4%	16.9%
Hidden wages non detection = 4. X 2.	*1,666*	*1,740*	*1,803*	*1,954*	*2,004*	*2,095*

Assuming the uplift factor of 1.8% equals the incidence rate on REP cases involving hidden wages, we would expect to have only found 20 such cases at most over the three-year REP period. Given such a small number of probable cases against the very large individuals not in business population, it is not entirely unexpected that we have not found such specific cases to date. That is even assuming hidden wages can be detected with information available to an auditor at the time of review. It is often the case that no information exists at all making it borderline impossible to detect through an auditing approach.

This element would be in addition to the non-detection amount for income determined above, given the non-occurrence of hidden wages in the REP samples results. If such hidden wages amounts were to be found in future REP results we would need to reduce or re-calibrate this estimate by those hidden wages amounts.

This amount also forms the major component in our revised framework for the shadow economy.

Summary of elements for non-detection

The following table summarises all of the above:

Table 24: Summary of non-detection elements for 2019

$ millions	2014-15 Bundled	2015-16 Bundled	2016-17 Bundled	2017-18 Bundled	2018-19 Bundled	2019-20 Bundled
Income non-detection (excluding hidden wages)	162	188	333	340	293	156
Other issues non-detection	18	32	29	191	231	258
Hidden wages non-detection	1,666	1,740	1,803	1,954	2,004	2,095
Total non-detection	**1,845**	**1,960**	**2,165**	**2,485**	**2,529**	**2,509**

Impacts of shadow economy on the gap

For the tax gap reconciliation to shadow economy we are seeking to classify the components and magnitudes of the various elements of the tax gap to those of the national accounts. Here we are seeking primarily to identify the amount of the tax gap that constitutes tax uncollected as a result of shadow economy economic activity.

The current approach differs from past allocation approaches as we are now using a much stricter and less subjective definition. We are no longer classifying the intent elements from the broad OECD definitions and instead using the shadow economy taskforce definitions and elements (which align to ABS definitions[6]). These elements are:

> Undisclosed **hidden wages**

> Undisclosed or underreported **business income**

> Over reporting of select **business expenses**

Given this is the individuals not in business tax gap the latter two elements would be rare to detect.

Additionally panel feedback highlighted that:

ABS guidance indicates that they do not use ATO data to derive aggregates for any other categories of individuals' income (e.g. rents, pensions, dividends, interest); as [a] result, adjustments to these items as well as tax deductions (e.g. WRE, re rental income and gifts) arising from ATO verification activity have no direct relevance to estimates of 'underground production' from an ABS perspective, although they clearly form part of the tax gap.

Overall this gives us three key areas from the preceding analysis to categorise non-detection on this gap:

> Non-detection hidden wages allocation

> Non-detection people outside the system allocation, and

> Sample business income/expenses impacts

Shadow economy impacts from hidden wages

The non-detection allocation of hidden wages is 100% shadow economy given none of this issue has been found in the random enquiry program. This element aligns directly with the compensation of employee element of the national accounts.

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[6] National Accounts: Sources and Methods (cat. 5216)

Shadow economy impacts from people outside the system

The people outside the system estimate impact on tax aligns 100% with the shadow economy allocation. Given we have used the sample income amounts as a proxy for income outside the system and this allocation contains no hidden wages we have aligned this estimate fully with gross mixed income.

Shadow economy business income/expenses impacts

The final consideration is how much of the sample and non-detection uplift align to the shadow economy. Here we are purely looking at the issue of business income. Given this is the individuals not in business tax gap such amounts would be rare to detect. Any incidence would represent business activity not disclosed or not commenced on sample allocation. There is little evidence of this, therefore we conclude that none (0%) of the current individuals not in business tax gap is relevant to business related undisclosed income or over claimed business related deductions.

We will continue to monitor the sample over the coming years for observations of business activity that would lead to classifying components of this gap as shadow economy.

Summary of shadow economy impacts

Now that we have determined all three components of the shadow economy in the gross gap we can sum them and view the tax impact of the shadow economy as a whole.

Table 25: Summary of shadow economy

$ millions	2014-15 Bundled	2015-16 Bundled	2016-17 Bundled	2017-18 Bundled	2018-19 Bundled	2019-20 Bundled
Hidden wages	1,666	1,740	1,803	1,954	2,004	2,095
People outside the system	127	134	230	206	183	87
Underground production business income	-	-	-	-	-	-
Total shadow economy	1,793	1,874	2,033	2,160	2,187	2,182
Gross gap	8,980	9,539	9,880	10,366	9,611	9,673
Shadow economy proportion of gross gap	20.0%	19.6%	20.6%	20.8%	22.8%	22.6%

Figure 11: Shadow economy as a proportion of gross gap 2019-20

- Shadow economy
- Rest of gross gap
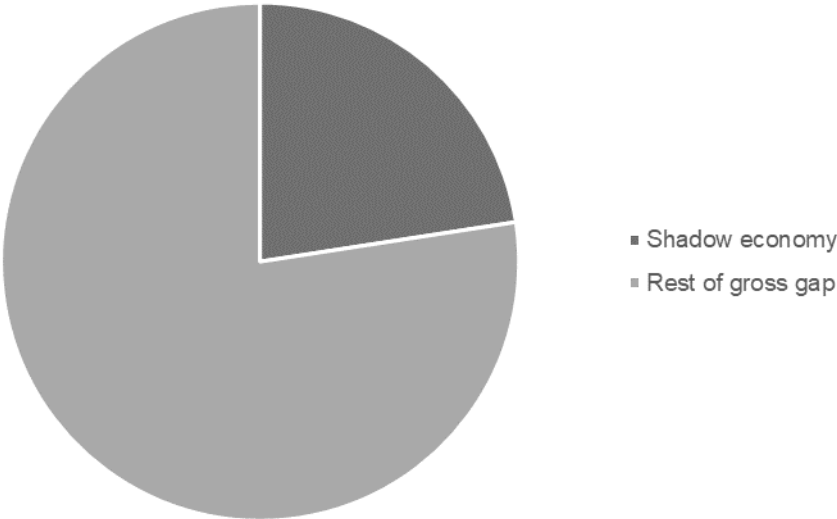
Impact of people outside the system (POTS) on the gap

Here we seek to estimate the impact of non-registrants or long-term non-lodgers on the gap given they were excluded from the sampling but are within the boundary of the law's impact.

First we allocate the number of people outside the system to this gap estimate based on the allocation of people inside the system between the gap research program strata. Here we are assuming that none are in medium business or high wealth given extensive records of business activity and assets present for people identified in those gaps.

Next, we take the population allocated and assume that the incidence and relative magnitude of income non-compliance in the random enquiry sample is representative of the incidence and magnitude of income non-compliance outside the system. We do not assume that the nature of the non-compliance is the same, just the magnitude.

Lastly we add non-detection consistent with the application of the income element above, but this amount remains fully on the POTS estimate and is not factored into the amount above. This ensures that this estimate is held apart from the wider gap estimate along with its population.

The final estimate is shown in the table below, with the figures excluding hidden wages.

Table 26: People outside the system based on omitted income in the sample

	2015 Bundled	2016 Bundled	2017 Bundled	2018 Bundled	2019 Bundled	2020 Bundled
Total people outside the system	2,245,119	2,212,650	1,997,202	1,855,097	1,752,543	1,693,480
Apportionment ratio	0.74	0.74	0.75	0.75	0.74	0.74
Individuals outside the system	1,658,925	1,641,879	1,488,577	1,383,528	1,303,818	1,246,448
Non-compliant count	183	351	434	463	448	306
Sample count	855	1400	1630	1635	1635	1090
Incidence rate (%)	0.21	0.25	0.27	0.28	0.27	0.28
Mean gap for amended taxpayers ($)	284	259	460	418	406	197
Individuals with potential tax obligations	355,068	411,642	396,345	391,788	357,254	349,920
Income non-compliance for POTS ($m)	101	107	182	164	145	69
Uplift for non-detection ($m)	26	28	47	43	38	18
Total POTS unreported tax ($m)	**127**	**134**	**230**	**206**	**183**	**87**

Caveats and limitations

The following caveats and limitations apply when interpreting this tax gap estimate:

> The 2020 estimate uses two of the three finalised REP sample years. This will be updated in future estimates.

> The precision of the tax gap estimate is limited by the relatively small sample size. The estimates will have wide confidence intervals as a result.

> To reduce compliance costs for the taxpayer materiality thresholds were applied at the data-driven review stage. However, should a case be escalated to a manual review, all labels are investigated regardless of value.

> There is no independent data source which can provide a credible or reliable macroeconomic-based estimate (unlike indirect taxes)

> A further limitation of the random enquiry program and of other similar programs undertaken by tax administrators in other jurisdictions is the uncertainty around the impact of the non-detection error. The enquiries undertaken do not uncover the full extent of non-compliance.

Confidence Interval

The three year bundle provides sufficiently narrow confidence intervals whilst reducing the averaging effect on the trend.

Figure 12 shows the upper and lower bands converging over time due to the bundling of samples.

Figure 12: Gross gap and net gap trend results
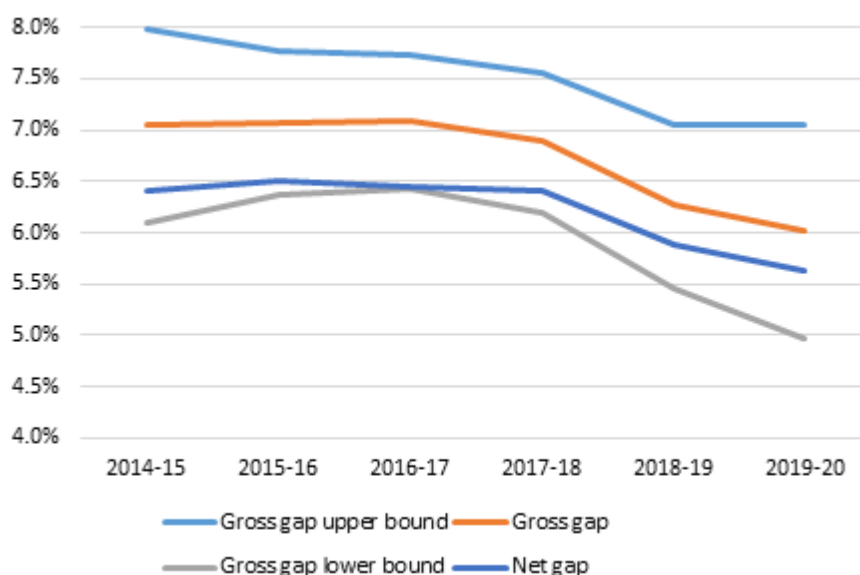
Table 27: Confidence intervals

Amounts $m	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Gross Gap Upper	10,261	10,563	10,859	11,463	10,917	11,458
Gross Gap Point Estimate	8,980	9,539	9,880	10,366	9,611	9,673
Gross Gap Lower	7,700	8,515	8,900	9,269	8,305	7,887
Net Gap Upper	9,452	9,812	9,964	10,752	10,342	10,815
Net Gap Point Estimate	8,171	8,788	8,984	9,655	9,036	9,030
Net Gap Lower	6,891	7,764	8,005	8,558	7,730	7,244
Percentages %	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Gross Gap Upper	8.0	7.8	7.7	7.6	7.1	7.1
Gross Gap Point Estimate	7.1	7.1	7.1	6.9	6.3	6.0
Gross Gap Lower	6.1	6.4	6.4	6.2	5.5	5.0
Net Gap Upper	7.3	7.2	7.1	7.1	6.7	6.7
Net Gap Point Estimate	6.4	6.5	6.4	6.4	5.9	5.6
Net Gap Lower	5.5	5.8	5.8	5.7	5.1	4.6

Reliability assessment

The following section assesses the individuals not in business gap against the reliability assessment criteria established by the tax gap team based on advice from the expert panel.

The panel has not endorsed this assessment and commentary.

Assessment commentary against the criteria

We use the internal reliability to assess the following ten criteria.

Evaluation of the estimation framework

1. Captures the appropriate tax base

Criteria 1 assessment guide	Score
The model covers virtually all potentially taxable activity, omissions quantified	3
The model covers most potentially taxable activity, any omissions noted but not necessarily quantified	**2**
The model incorporates an incomplete tax base; does not identify omissions	1
The model fails to cover a sufficient portion of the tax base to inform a gap estimate	0

The random enquiry program is sampled from and its results projected over the total lodged population of taxpayers. This includes those who lodge late. We allocate a score of two representing a good rating.

2. Covers all potential taxpayers

Criteria 2 assessment guide	Score
Includes virtually all liable taxpayers, with any omissions noted and quantified	**3**
Includes most of liable taxpayers, with any omissions noted	2
Includes some liable taxpayers with large population, but omissions not noted	1
Includes an insufficient population to properly scope gap analysis	0

This method captures all individual returns lodged. Additionally we have included late lodgment uplifts for the most recent estimate. We allocate a score of three representing an excellent rating.

3. Accounts for all potential forms of noncompliance

Criteria 3 assessment guide	Score
Covers virtually all types of non-compliance; exceptions noted and quantified	3
Covers most types of non-compliance; exceptions noted	**2**
Covers some non-compliance, but with limitations in scope	1
Does not cover a sufficient spectrum of non-compliance to inform a gap estimate	0

This method looks at all labels, and the taxpayer information we have received. Non-payment is also addressed. The people outside the system analysis is only preliminary so we rate this down until this analysis is improved. We allocate a score of two representing a good rating.

4. No overlap within or between any two components of the framework

Criteria 4 assessment guide	Score
Little overlap with other gaps identified, or any overlap accurately quantified	**3**
Little overlap identified with other gaps, though cannot be quantified	2
Overlaps with other gap populations or types of non-compliance	1
Broad overlaps identified with other gaps that have not been quantified	0

Program strata definitions isolate taxpayers in this population from the small business tax gap. We note that a significant number of obligations and programs converge on this space; we have factored in any overlaps through the non-detection estimates. We allocate a score of three representing an excellent rating.

5. Evaluate the approach used against the assessment criteria for that methodology

Criteria 5 assessment guide	Score
Satisfies virtually all of good design criteria, robust methodology	3
Satisfies most design criteria for method chosen, some weaknesses noted	**2**
Satisfies some criteria, shortcomings identified and noted	1
Method does not satisfy criteria and/or is inappropriate for analysis	0

The sample has been selected from the lodged population and has been stratified to improve its representativeness. All labels in the tax return were investigated and an estimate for the amount undetected has been included.

Lack of risk based segmentations remains a key future improvement. We allocate a score of two representing a good rating.

Table 28: Criteria for an Effective Random-Audit Based Gap Estimation

	Grade
1. Valid definition of the population	**Medium**
2. Risk-based taxpayer segments for sample selection (stratification)	**Medium**
3. Proper sample selection	**Medium**
4. Comprehensive audit	**High**
5. Projection to the population	**High**
6. Projection to other populations	**High**
7. Accounting for undetected undeclared liability (non-detection)	**Medium**
Overall Grade	**Medium**

6. Most appropriate method used and results validated against supporting information

Criteria 6 assessment guide	Score
Most appropriate method used. Strong validating information available from secondary sources.	3
Appropriate method used. Alternative methods available that could provide a more reliable outcome where greater investment available to use the method. Sufficient validating information available from secondary sources.	**2**
Method applied is sufficient to generate a reliable result; however more appropriate methods are available with further investment of time and resources. Weak validating information used from secondary sources.	1
Method used generates a result that is unreliable or insufficient for estimation purposes. No validating information available from secondary sources or no secondary sources available.	0

This criterion has been revised to assess whether the most appropriate method is used, rather than how many methods are used. Given the size and relative homogeneity of the population, a random enquiry based approach is most appropriate for the individuals not in business gap. The majority of the gap relates to deductions where there are fewer controls compared to income which has more verified third party data to compare against. Overall we allocate a score of two representing a good rating.

7. Sensitivity to underlying model, assumptions and structure

Criteria 7 assessment guide	Score
Displays low sensitivity to adjustments to key model parameters	3
Displays moderate sensitivity to adjustments to key model parameters	**2**
Displays a high degree of sensitivity to adjustments to key model parameters	1
Unable to be assessed	0

The key assumption with the REP is that the observations of the sample apply to the population. We have stratified the sampling process to ensure it is representative. Although the original intention was to build a four year sample, we have assessed a three years of results are sufficient. We are seeing consistent issues arising in the samples and the gap does not materially move between years giving us confidence in the results we are seeing. For this score to improve we need, a fully realised people outside the system analysis and our own estimates for non-detection. We allocate a score of two points representing a good rating.

8. Assessment of assumptions, judgement or expertise

Criteria 8 assessment guide	Score
Strong assumptions used, high level of suitability to estimate, rigorous testing of assumptions. Strong explanation of assumptions/judgement/expertise.	3
Good assumptions used, medium level of suitability with room for improvement, medium testing undertaken for assumptions/judgement/expertise used. Suitable explanations provided, however additional work required/evolving area of estimation.	**2**
Weak assumptions used, low level of suitability/new area of estimation, low to no testing undertaken of assumptions used. Poor/limited explanations provided for assumptions/judgement/expertise. Limited information available to analyst.	1
Poor assumptions used/untested area of research/unable to be assessed.	0

The key assumption is that the sample is representative of the population. We have stratified the sample which increases confidence that this assumption holds true. We have shifted to the incidence based extrapolation to bring the estimate in line with normal practices of gap sample extrapolation. Improvements around the models for people outside the system and non-detection would improve this criterion. We allocate a score of two points representing a good rating.

9. Evaluate the quality of the management process

Criteria 9 assessment guide	Score
Overall processes, decisions and data assessed as being strong.	3
Overall processes, decisions and data assessed as being good.	**2**
Overall processes, decisions and data assessed as being weak.	1
Overall processes, decisions and data assessed as being poor/missing.	0

The published estimate was produced using a manual process however has been codified which improves the reproducibility of the estimate. The overall steps are outlined in the technical guide including any implemented changes. The REP data is stored in a database accessible only to relevant parties and a random sample of cases is independently reviewed Further quality assurance of the REP data entered in the database and completion of the transition to using R to produce estimates should see this being allocated a three. Although the bulk of the calculation is conducted in R, we still manipulate the output in order to derive the estimate as such, we allocate a score of two representing a good rating.

10. The estimate analysis provides insights into the drivers of a gap estimate

Criteria 10 assessment guide	Score
Primary and secondary insights are readily available, with all drivers identified and explained.	3
Primary insights are readily available, with most drivers identified and explained.	**2**
A gap has been identified, however no to little insights available, with no or little drivers identified or explained.	1
Not completed.	0

As this gap uses a random enquiry based approach we are able to identify and quantify the drivers of the gap. The results corroborate our awareness of the relatively few controls over deductions which are the main driver of the gap. We are yet to investigate broader demographic factors that may be drivers of the gap such as occupation, location and age. This limits us to a score of two representing a good rating.

Assessment of reliability

We take the results from the random enquiry program, and project those results over the total lodged population of taxpayers, including those who lodge late. A preliminary estimate for people outside the system is included to factor in the shadow economy. This method looks at all items on a tax return, and the taxpayer information we have received. Non-payment is also addressed.

The key assumption with the random enquiry program is that the observations of the sample apply to the population. We have stratified the sampling process to ensure it is representative and now have three years of samples. We are seeing consistent issues arising in the samples, and the gap does not materially move between years, giving us confidence in the results we are seeing. We will assess whether a full sample of three years is sufficient in future.

The individuals not in business gap is assessed as being of high reliability.

Table 29: Final assessment score

Evaluation of the estimation framework	Current Score
1. Captures the appropriate tax base	2
2. Covers all potential taxpayers	3
3. Accounts for all potential forms of non-compliance	2
4. No overlap within or between any components of the framework	3
Evaluation of the methodology	-
5. Evaluate the approach used against the assessment criteria for that methodology	2
6. Most appropriate method used and results validated against supporting information	2
7. Sensitivity to underlying model, assumptions and structure	2
8. Assessment of assumptions, judgement or expertise	2
Evaluation of the internal process and delivery	-
9. Evaluate the quality of the management process	2
10. The estimate analysis provides insights into the drivers of a gap estimate	2
Final rating and score	**High 22**

Figure 13: Reliability rating
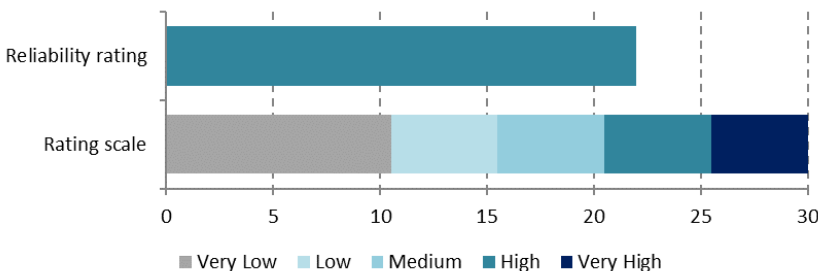
Glossary

Key terms (Letter symbol in tables)

Tax voluntarily reported and paid (V): Amounts correctly reported and paid without direct ATO intervention.

Amounts Paid (P): Amounts (liabilities) reported and paid.

Amendments (A): Amendments to tax returns to correct for tax non-compliance initiated by either the ATO (compliance action) or the taxpayer (voluntary disclosure).

Gross tax gap (G): The gross tax gap is the net gap plus the amount of revenue we raise and collect through our compliance activities.

Net gap (N): The net tax gap is the difference between theoretical tax according to the law, and actual tax paid voluntarily or collected as a result of compliance activities.

Non-detection (F): accounting for imperfections in the methodology that could lead to the final gap estimate not reflecting the true tax gap.

Non-pursuable debt (D): Is a liability that the Commissioner has assessed as being not legally recoverable, not economical to pursue, or unable to be pursued due to another Act.

Tax reported (R): Amount of tax that was reported by the taxpayer including any voluntary disclosures. This includes all elements of tax voluntarily reported and paid, compliance outcomes and voluntary disclosures and debt not recovered.

Theoretical tax liability (T): Total estimated amount payable assuming all entities are fully compliant with the law.

Unreported tax (E): the unreported tax liability never assessed, this is the core component of net gap.

General terms

Accrual revenue: Accrual revenue is based on the 'economic transaction method' and reflects the tax liabilities for the period in which an economic activity actually occurred. This approach facilitates comparison with economic events in the same period.

Avoidance: Tax avoidance occurs when taxpayers exploit the tax laws to gain an advantage. Such transactions generally serve no commercial purpose and are entered into merely to obtain a tax benefit that was not intended by parliament. The extent to which tax avoidance is included in the tax gap depends on whether it is contestable.

Shadow economy: Often known as the 'cash economy' or 'non-observed economy'. Refers to the 'Economic Underground' boundary of an OECD framework. It involves economic activity not declared, which may be a result of attempts to avoid tax obligations. National Accounts data makes a small allowance for expenditure associated with the 'underground economy' (cash economy transactions, transactions relating to other avoidance measures, and understatement of income in ABS surveys).

Bottom-up approach: A bottom-up approach is a detailed examination of specific data sources (typically individual tax returns through audit or review), to determine the extent of non-compliance across the whole population. The data sources can range from tax returns, audit data, risk registers or data matching. It includes random enquiries, data matching, operational data and illustrative methods. These methods are typically used for direct taxes.

Client Experience: Taxpayers with similar characteristics have been grouped into client experience segments. Each taxpayer is allocated to one segment, which include:

Individuals

Small business

Privately owned wealth groups

Compliance: Compliance means in accordance with established legislation and the intent and spirit of the tax law.

Compliance activities: Direct interventions that we initiate to ensure taxpayers comply with their tax and superannuation obligations.

Error: Refers to mistakes made in submitting information to the ATO, including when lodging a tax return. An error can be intentional or unintentional.

Evasion: The act of evading tax obligations. Tax evasion occurs when people break the law by not reporting all of their income, or dishonestly overstating deductions to reduce the amount of tax they need to pay. Examples of tax evasion include underreporting income, not reporting cash wages, not lodging tax returns or not paying employee superannuation entitlements.

Tax gap: The tax gap is an estimate of the difference between the amount of tax theoretically payable (assuming full compliance by all taxpayers) and the amount actually reported or collected for a defined period.

Top-down approach: A top-down approach uses independent aggregated data sources to estimate the size of the theoretical tax base. These methods typically are used for indirect taxes.

Voluntary disclosures: Where a taxpayer tells us about a false or misleading statement they've made to us or a change that increases their tax or reduces their credits, without prompting, persuasion or compulsion on the ATO's part.

Tax refundable: An amount of tax paid and identified by the ATO as being in excess of the amount of tax payable.

Tax liability: The amount of tax payable to or by a taxpayer for a given reporting period