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***Tobacco and vaping products in
Australia:***

An updated economic assessment



Table of Contents

What's new in this report

Executive summary

1. Australia's economic climate

Worse-off consumers

A worse-off government

Important fiscal implications

2. The dynamics of tobacco tax revenues

Rising tobacco taxes

Box: A brief history of Australian tobacco excise tax legislation

Falling tobacco tax receipts

Diminishing returns to tobacco taxation

An econometric study of legal tobacco demand in Australia

New Roy Morgan survey data

Implications for future tobacco fiscal policy

3. The accelerating illicit trade problem

The increased incentive to production and smuggling

The price gap between legal and illicit tobacco

The tax gap and foregone revenue

4. Cost and benefit estimates of legalising vaping products

Illicit vaping in Australia

Unintended consequences

Three ways to control illicit vaping

Benefits to public finances

Appendix

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What's new in this report

This report is an update to the *Llewellyn Consulting* report of October 2022 “*Tobacco and vaping products in Australia: An economic assessment*”.

It builds on our initial economic assessment using updated metrics based upon the latest available information as well as insights derived from a nationally representative Australian Roy Morgan survey commissioned by *Independent Economics*.

This new report finds that:

1. Australian consumers and households, having already experienced a substantial reduction in their real incomes, would find it more than usually challenging to absorb any policy measure that further increased the cost of living and thereby further reduced their (real) income.
2. To the extent that the government remains committed to its fiscal targets, broadening the tax base might well be considered the best option out of the three principal fiscal policy options – borrowing more, raising taxes, or broadening the tax base.
3. Our econometric analysis finds that the demand for legal, tax-paid, tobacco products is highly responsive to price, and consequently, any significant tax increase would risk a decline in excise revenues, together with further growth in the illicit tobacco market.
4. Furthermore, Roy Morgan survey data indicates that if tobacco excise were to be increased further, some 14% of current consumers of legal tobacco products would substitute illicit tobacco for them; and a further 9% would substitute vaping products. This would represent a potential loss of government tax receipts of AUD 2.9 bn as consumers moved from the legal market to the black markets.
5. Any potential future loss of consumers moving into illicit products would add to the existing loss of excise from the tobacco black market, which has been estimated at between AUD 1.9 bn by the Australian Taxation Office and AUD 3.4 bn by KPMG.
6. Perhaps in part because Australia has the second most unaffordable tobacco products in the world, and notwithstanding Australia's prescription-only nicotine vaping regulatory framework, the number of vaper consumers continues to grow. Roy Morgan find the number of adult vapers has nearly tripled in two years with 1.3 m adults vaping in December 2022, some 6.5% of Australia's adult population.
7. The incidence of adult vaping is similar to that in otherwise-comparable countries without prescription-requirements. With Roy Morgan finding however that only 8% of vapers have a current prescription, Australia may have one of the largest illicit vaping markets in the world.
8. It is unlikely, unless there is structural policy change, that the demand for illicit vaping will reduce: Roy Morgan find that only 10% of vapers are willing to obtain a prescription in the future. At the same time, 79% of current vapers indicate that they would buy products lawfully from a licensed retailer were they to be sold as an adult consumer product.
9. Roy Morgan find that 73% of respondents support vaping products being sold as a regulated adult consumer product; 20% support the current prescription-only model; and 2% support general consumer regulations with no age restrictions. Furthermore, 63% of all respondents consider that the current prescription-only requirement has not worked well to stop young people from accessing vaping products.
10. With regards to the fiscal benefit of introducing an adult consumer regulatory framework, the previously-estimated AUD 200 m in GST receipts has increased to AUD 254 m reflecting higher incidence rates. Taken together with company taxes and import tariffs of 5%, an estimated AUD 415 m in additional annual government revenue (AUD 1.7 bn over forward estimates) could result were the tax base broadened by regulating vaping products as an adult consumer good.

Executive summary

Section 1

1. Australia's wage earners have experienced falling real incomes – by 4.3% over the year to Q4 2022 – due to a range of factors from the COVID pandemic to the Ukraine war. Some of these external inflationary increases are now reversing, but meanwhile flooding and other adverse weather in Australia are leading to higher food prices.
2. Over the two years to end-2023, the fall in real wages is likely to be of the order of 5%. It stands to be many years before wages in real terms regain previous levels.
3. Households too have suffered a reduction in their real (disposable) incomes: the RBA puts the figure at 1.7% for the year ending Q4 2022, and project a further loss of 0.1% for the year to Q4 2023. The reason that the reduction in real incomes of households is less than that of real wages is that government implemented a set of policies to limit the effects of price rises on households.
4. The government has also experienced a hit to its real income. But in the latest budget the country's projected fiscal deficit and thereby public debt are kept under tight control, mainly by expenditure reductions and reprioritisations.
5. To the extent that the government wishes, or needs, to increase spending, it will need to borrow more, increase tax rates, and/or expand the tax base. Of the three, expanding the tax base might well be considered the best option.

Section 2

6. Australia's tobacco taxes rank amongst the highest in the world. Higher tobacco tax rates have increased the price of duty paid tobacco (cigarettes and RYO tobacco combined) by more than 7.5% pa, on average, in real terms over the last decade (2012 to 2022).
7. Almost 95% of the historical increases in the price of legal cigarettes over and above inflation is attributable to taxes.
8. Tobacco tax receipts in real terms have plateaued; and declined in 2022. Although over the last decade, there was a positive correlation between higher tax rates and tax revenues, successive tax rate increases have delivered smaller incremental tax revenue increases.
9. Not only has there been a negative correlation between legal tobacco sales volumes and (real terms) price increases, but also cigarette consumers seem to have become more price sensitive over time.
10. Our econometric analysis suggests that the demand for duty-paid tobacco is now highly price elastic – that each 1% rise in the (relative) price leads to a somewhat more than proportionate (1.1%) fall in legal volume sold.
11. The evidence suggests that tobacco taxes are approaching the tax revenue maximising point (and have potentially exceeded this point for cigarettes).

Section 3

12. The sale and consumption of illicit tobacco products is a growing problem, that risks being exacerbated by further increases in tobacco taxes.
13. Approximately 20% of total tobacco consumption in Australia today is illicit.
14. New Roy Morgan data finds that if taxes are raised, 14% of lawful consumers will downtrade to illicit tobacco and 9%.
15. The net excise 'duty gap' for smuggled and illicit domestic production has been estimated at AUD 3.4 bn for 2021.
16. An estimated further AUD 506 m in GST and company taxes was also lost – by wholesalers, retailers, and those involved in logistics of the illegal tobacco industry.

17. The cost of illicit tobacco to the Australian economy is likely over AUD 4 bn a year.

Section 4

18. Vaping has accelerated markedly – new Roy Morgan data show that there are now an estimated 1.3 m adult users of vapour products in Australia. The number of Australian adults vaping has nearly tripled over the past two years.
19. Notwithstanding Australia's prescription-only policy, the incidence of adult vaping exceeds that of some countries (including the US and France) that regulate vaping as an adult consumer product.
20. Only 8% of all Australian vapers have a prescription, implying a 92% illicit market, whose products cannot be regulated or monitored.
21. The prescription-only policy has had low take-up, apparently being unpopular with users and doctors. One reason may be that no products have been officially approved by the regulator with supply categorised as a therapeutic good.
22. New Roy Morgan data also find that only 20% of Australians consider that vaping should be treated like a prescription medicine. Moreover, 73% of Australians consider that vaping should be legalised, and regulated similarly to tobacco or alcohol products.
23. We estimate that AUD 489 m of gross value added (GVA) could be gained if products currently sold and consumed illicitly were brought into the legal net.
24. Further, if vaping were legalised, this could raise an additional AUD 415 m in GST, company taxes (retail and wholesale), and import tariffs amounting to AUD 1.7 bn over the four-year budget cycle.
25. Legislation would also bring additional non-financial benefits, including substantially better consumer protection and the improved monitoring and control of the supply and consumption of vaping products.

1. Australia's economic climate

- *Australia's wage earners have experienced falling real incomes – by 4.3% over the year to Q4 2022 – due to a range of factors from the COVID pandemic to the Ukraine war.*
- *Some of these external inflationary increases are now reversing, but meanwhile flooding and other adverse weather in Australia are leading to higher food prices.*
- *Over the two years to end-2023, the fall in real wages is likely to be of the order of 5%. It stands to be many years before wages in real terms regain previous levels.*
- *Households too have suffered a reduction in their real (disposable) incomes: the RBA puts the figure at 1.7% for the year ending Q4 2022, and project a further loss of 0.1% for the year to Q4 2023.*
- *The reason that the reduction in real incomes of households is less than that of real wages is that government implemented a set of policies to limit the effects of price rises on households.*
- *The government has also experienced a hit to its real income.*
- *But in the latest budget the country's projected fiscal deficit and thereby public debt are kept under tight control, mainly by expenditure reductions and reprioritisations.*
- *To the extent that the government wishes, or needs, to increase spending, it will need to borrow more, increase tax rates, and/or expand the tax base.*
- *Of the three, expanding the tax base might well be considered the best option.*

Worse-off consumers

Consumers are worse off ...

1. Australia's wage earners are experiencing substantial falls in their real incomes (i.e. adjusted for general inflation) and thereby standard of living. Over the year to Q4 2022, Australia's wage price index¹ rose by 3.5%, whereas the consumer price index rose by 7.8%: thus, wages in real terms fell by 4.3%. (See figure 4).

... and real wages are likely to fall again ...

2. This wave of inflation was caused largely by factors external to Australia, including a huge rise in shipping costs stemming from pandemic-related disruptions to supply chains, and substantial increases in the prices of both energy and food as a result of the Ukraine war.

3. Some of these influences are now unwinding. Shipping costs have largely reverted to normal, and most other upstream price pressures are somewhat down from their peaks. But some of the effects from the past increases are still to come through: in particular, a further significant increase in Australia's utilities prices is likely in 2023.

4. Meanwhile on top of these largely global factors, inflation has been boosted by flooding and other adverse weather, which has damaged crops and led to increasing food prices. The most recent round of flooding looks set to prolong the effect on food prices to at least the end of 2023.

5. Real wages are, therefore, likely to fall further. The Reserve Bank of Australia (RBA) forecasts that over the year to Q4 2023, the wage price index will rise by a further 4.2%, whereas the consumer price index will rise by 4.8%: a further 0.6% fall in real wage incomes.²

It stands to be many years before previous levels are regained

6. Thus, over the two years to end-2023, the fall in real wages is likely to be of the order of 5%.
7. People are, therefore, considerably worse off now than they were only two years ago. Moreover, it stands to be many years before wages in real terms regain

previous levels. Even assuming that, starting in 2024, wages start to grow as fast or faster than the aggregate price level, there will a c. 5 ppt gap that will have to be made up before real wages – and hence purchasing power – are back to the level they were at before the events of 2020 to 2022 unfolded. This could take several years at least, and quite possibly more if productivity grows slowly, or the country's terms of trade deteriorate further.

8. **Households** too have suffered a reduction in their real (disposable) incomes – the RBA puts the figure at 1.7% in the year ending Q4 2022, and project a further loss of 0.1 ppt in the year to Q4 2023.
9. The reason that the reduction in real (disposable) incomes in households is less to that of real wages is that the government's implementation of a set of policies to limit the effects of price rises on households.

Worse-off government

"Since coming to government, we've been up-front about the challenges facing the economy and the budget."

"These challenges mean we need to make responsible budget choices."

Treasurer of Australia³

10. Like all major economies, and including all the OECD countries, Australia's economy was affected adversely by the COVID pandemic. Following a relatively modest (by international standards) 2.1% contraction of the economy in 2020, Australia's GDP had already, by the following year, recovered to its pre-pandemic level.
11. However, while government revenues remained buoyant throughout the crisis, and beyond, general government total expenditure, which had already risen by 11% in 2019, rose further, by 13%, in 2020 as the authorities funded a series of schemes to provide both direct economic support and additional financial assistance to workers and businesses.⁴ The result was a rapidly growing fiscal deficit: general government net borrowing grew to 8.8% of the country's GDP in 2020. (See figure 1).

The government is also under pressure

Measures taken

12. In response, the government has taken measures to bring the fiscal deficit back down, so that in coming years it will revert to something like pre-COVID levels. The

Figure 1: Government net lending/borrowing



Source: International Monetary Fund (IMF)

Figure 2: Australia Real GDP growth



Source: IMF

... and has taken measures to bring the deficit under control ...

public sector deficit (cash balance basis) is projected by the Australian Treasury to be 1.5% of GDP (AUD 36.9 bn) in 2022-23 and 1.8% of GDP (AUD 44 bn) in 2023-24.⁵ That the projected deficit is so contained comes about in large part from significant projected expenditure reductions or reprioritisations.⁶

13. The result will inevitably be a comparatively modest increase in government debt, including as a proportion of GDP. In the recent budget:

- Gross public sector debt rises from an estimated 37.3% of GDP (AUD 927 bn) in 2022-23 to 40.8% of GDP (AUD 1,004 bn) in 2023-24.
- Projected net debt rises from an estimated 23.0% of GDP (AUD 572 bn) in 2022-23 to 25.8% of GDP (AUD 634 bn) in 2023-24.⁷

14. Notwithstanding this constructive prognosis for the medium term, the increase in country's public sector debt will raise the cost of debt service, particularly given that interest rates globally – and thereby in Australia too – are on the rise.

... including through expenditure cuts and reprioritisations

Fiscal implications

It will take years for incomes to regain previous levels

15. It will almost certainly take many years for real incomes, whether of consumers, households, or the government, to regain their previous levels.

GDP seems likely to grow only modestly over the coming years

16. GDP seems likely to grow only modestly in the coming few years: (the RBA forecasts 1.4% in the year to Q4 2023, and 1.6% in the year to Q4 2024; the Treasury 1.5% in 2023-24 and 2.5% in 2024-25), and in and of itself this will help to raise real incomes, albeit slowly. (See figure 2).

Falling commodity prices will reduce Australia's income

17. Falling world commodity prices however stand, in and of themselves, to reduce Australia's real income. Over the coming year, the prices that Australia receives for its exports are likely to continue to fall relative to the prices that it pays for its imports. The Treasury puts the value of this decline in Australia's 'terms of trade' at around 4% of national income, a significant figure in relation to the likely growth of GDP.⁸ (See figure 3).

Figure 3: S&P Goldman Sachs Commodity Index



Source: S&P Dow Jones Indices

Some important fiscal implications follow ...

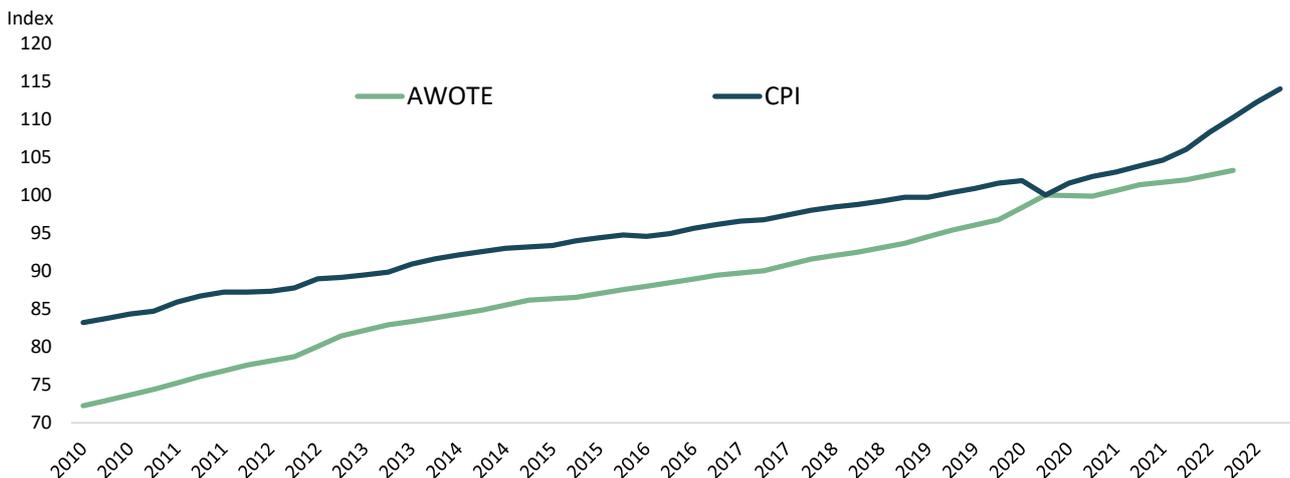
18. Such a development of real incomes, whether for consumers, households, or the government, will perforce have important fiscal implications.

- First, the average consumer will already be experiencing a heightened incentive to look for ways to reduce expenditure; and for cigarette smokers the main way will be to switch to cheaper (illicit tobacco and/or vaping) alternatives. To the extent that this happens this will, under the present tax structure, reduce the tax base.
- Second, governments are always under political pressure to spend more. But the firm expenditure reductions and reprioritisations in the present budget are likely, given the hit to the real income of Australia and thereby the government, to be particularly intense. To the extent that the government finds itself wishing, or obliged, to spend more than is in its baseline budget, it has only three basic options: to borrow more; to raise taxes; or to broaden the tax base.
- Third, Australian consumers and households, having already experienced a substantial reduction in their real incomes, would find it more than usually challenging to absorb any policy measure that further increased the cost of living and thereby further reduced their (real) income. (See figure 4).

... which point to tax-base broadening being a good option

19. Taken together, these considerations would suggest that, to the extent that the government remains committed to its fiscal targets, broadening the tax base might well be considered the best of the three options.

Figure 4: Average weekly ordinary time earnings (AWOTE) vs consumer price index (CPI)



Source: Australian Bureau of Statistics (ABS)
 Note: Chart is indexed to Q2 2020

2. The dynamics of tobacco tax revenues

- Australia's tobacco taxes rank amongst the highest in the world.
- Higher tobacco tax rates have increased the price of duty paid tobacco (cigarettes and RYO tobacco combined) by more than 7½% pa, on average, in real terms over the last decade (2012 to 2022).
- Almost 95% of the historical increases in the price of legal cigarettes over and above inflation is attributable to taxes.
- After several years of growth, tobacco tax receipts in real terms plateaued and declined in 2022.
- Although over the last decade, there was a positive correlation between higher tax rates and tax revenues, successive tax rate increases have delivered smaller incremental tax revenue increases.
- Not only has there been a negative correlation between legal tobacco sales volumes and (real terms) price increases, but also cigarette consumers seem to have become more price sensitive over time.
- Our econometric analysis suggests that the demand for duty-paid tobacco is now highly price elastic – that each 1% rise in the (relative) price leads to a somewhat more than proportionate (1.1%) fall in volume sold.
- The evidence suggests that tobacco taxes are approaching the tax revenue maximising point (and have potentially exceeded this point for cigarettes).

Rising tobacco taxation

Tobacco taxes have risen considerably

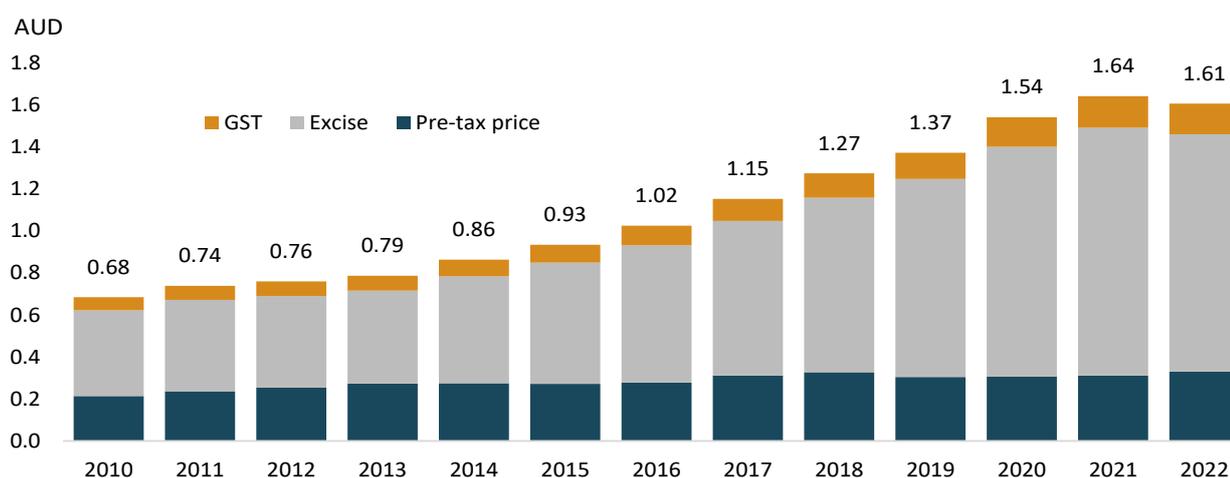
20. Australia's cigarette and 'roll-your-own' (RYO) tobacco excise tax rates increased considerably until 2021. (See Box for further details of how tax rates have evolved).

21. The result was that, over the past decade, the price of duty paid tobacco (i.e. cigarettes and RYO tobacco taken together) increased by more than 7.5% per year, on average, in real terms.

22. Almost all (94%) of the above-inflation tobacco-price-increase is attributable to increased tax. (See figure 5).

Taxes account for nearly all of the above-inflation tobacco-price-increase

Figure 5: Breakdown of average real tobacco price tobacco



Source: Information Resources Incorporated (IRI), Australian Tax Office (ATO), ABS

Note: 2022 prices

23. From 2020 to 2021, tobacco excise taxes increased by almost 11.5% in nominal terms. With consumer price inflation reaching almost 3% in that period – higher than in any year in the preceding decade – the real-terms increase in the tobacco tax burden was a slightly more modest, but still substantial, 8.3%.
24. In 2022, tobacco tax increases were more modest, in line with the growth in nominal wages, but lagging general inflation, which accelerated markedly. Hence there was a decline in the real-terms tobacco price and the tax rate, notwithstanding the nominal-terms increase. (See figure 5).

Box: A brief history of Australian tobacco excise tax legislation

In 2010, the Federal Government of Australia implemented an increase in cigarette excise duty of 25%.

After that it introduced an annual 12.5% increase over and above consumer price inflation, each year from 2013 to 2016.

In 2016, the government continued this policy thrust by committing to annual increases in cigarette excise tax, up to and including 2020, equal to: 12.5%, applied in September of every year; together with an additional increase in excise duty on a bi-annual basis (applicable in March and September of every year) in line with the growth in average weekly ordinary time earnings (AWOTE).

These higher excise rates increased the price of factory-made cigarettes considerably — by a factor of around 2.4 over the past decade relative to the overall price of goods and services in Australia.

Furthermore, excise taxes on RYO tobacco were increased, such that they are now broadly the same per stick-equivalent as factory-made cigarettes.

From January 2023, for cigarettes not exceeding 0.8 grams tobacco content, Australia’s excise tax is set at AUD 22.8 per pack of 20.

For RYO tobacco and heavier cigarettes, the tax is AUD 1,629 per kilogram of tobacco content.

Tax increases were particularly acute for RYO tobacco ...

25. As well as the substantial (almost 10% above inflation per year) increase in the tobacco tax rate between 2012 and 2022, tax rate increases were particularly acute for RYO tobacco. By 2021, the tax gap between cigarettes and RYO tobacco was eliminated. The result has been that the price of cigarettes and RYO tobacco is now almost the same – consumers are no longer able to switch to a lower priced, lower taxed, legal alternative product.

... with prices now almost the same as for cigarettes

26. As a consequence of these large tax rate increases, the average tax incidence on tobacco (i.e. cigarettes and RYO tobacco combined) increased from 69% in 2010 to 81% by 2020-22.

Australia’s tobacco taxes are now amongst the highest

27. With such high tax rates Australia ranks amongst the highest in the world, and thereby meets World Health Organization (WHO) targets, that the total tax share (including excise, VAT, sales taxes, and import duties) should represent at least 75% of the retail price of a country’s most popular brand of cigarettes.⁹ Only 40 countries out of 195 meet this target.¹⁰

With cigarettes ranking near top in unaffordability

28. As well as advocating that the tax share of tobacco prices should reach the 75% level, the WHO has placed an increasing emphasis on reducing the affordability of tobacco. By indexing its tobacco taxes to wages (as measured by AWOTE) and, in addition, adding a large percentage over a long period, the affordability of tobacco in Australia has been reduced substantially over the past decade, notwithstanding real incomes having risen progressively.

29. On the basis of the latest data available, Australia is virtually at the top of the cigarette ‘unaffordability’ league amongst OECD countries. Only in New Zealand are cigarettes less affordable. (See figure 6).

Falling tobacco tax receipts

30. Increasing excise tax rates have, in turn and as intended, delivered increasing tax receipts – until recently. Cigarette and RYO excise revenues grew by around 6% per year on average between 2012 and 2022.

Tobacco tax receipts peaked in 2020 ...

31. However, there was a slight downturn in tobacco tax revenues in 2021 and a larger, 6.5%, decline in 2022. (See figure 7).

... declined in both 2021 and 2022 ...

32. Moreover, it seems likely that tobacco tax receipts will come in lower in the coming year than earlier expected: the October budget notes that:

“Forecasts for fuel and tobacco excise receipts have been downgraded since PEFO, while alcohol excise and customs duty have been upgraded. The downgrade in fuel and tobacco excise is driven by a weak outlook for consumption of these goods, partially offset by increases to excise rates.”¹¹

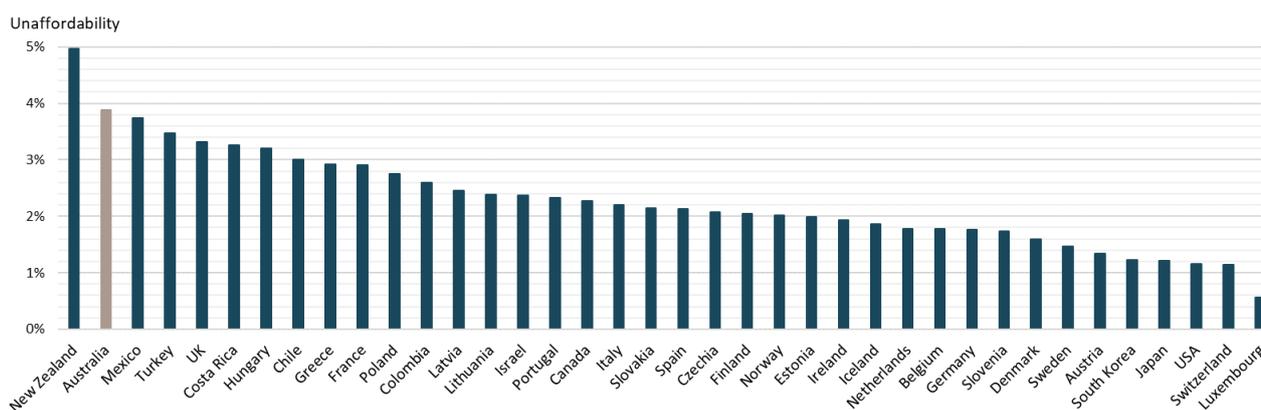
... and are forecast to come in lower in the coming year

33. Estimated tobacco revenue in 2022-23 has decreased from AUD 12.8 bn in the March 2022 budget to AUD 12.4 bn in the October 2022 budget. And forward revenue forecasts in the Budget papers are that tobacco taxation revenue will increase from the 2021-22 actual of AUD 12.6 bn to just AUD 13.3 bn in 2025-26.

34. It is appropriate also to consider the evolution of tax revenues in real terms. The tax base – determined by consumers’ purchasing power – can be expected to rise at least in line with the general price level, and government spending can also be expected to go on rising broadly in line with general price level.

35. When tobacco tax revenues are expressed in these terms, the slowdown in growth of tax receipts is even more apparent. In real terms, these revenues grew over the decade 2012 to 2022 by 3.3% per year on average. However, in the period 2020 to 2022, combined cigarette and RYO tobacco excise receipts fell by 8% per year on average (falling by 3.5% in real terms between 2020 and 2021, and by more than 12% in real terms in 2022). (See figure 8).

Figure 6: WHO cigarette unaffordability (OECD countries)



Source: WHO

Note: Unaffordability = the percentage of GDP per capita at PPP exchange rates required to purchase 2,000 cigarettes of the most sold brand

Successive tax rate increases have delivered smaller tax revenue increases ...

36. Thus, a large part of the 2022 real-terms downturn in excise receipts was due to unusually rapid consumer price inflation, described in Section 1 above. However, the nominal-terms fall in excise revenues in 2022 was also an important factor.

Diminishing returns to tobacco taxation

... suggestive that the tobacco-tax revenue maximising point is near

37. Figure 10 shows a simple plot of tax revenues, in real terms, on the vertical axis against the tax rate on tobacco (again in real terms) on the horizontal axis.

38. Over the past ten years, there has been an evident positive correlation between higher tax rates and tax revenues. But the line is concave: successive tax rate increases have delivered smaller incremental tax revenue increases – the rate at which tax revenues are increasing because of higher tax rates appears to be slowing. This suggests that tobacco taxes are approaching the tax revenue maximising point.

The principal reason is the falling volume of legal consumption

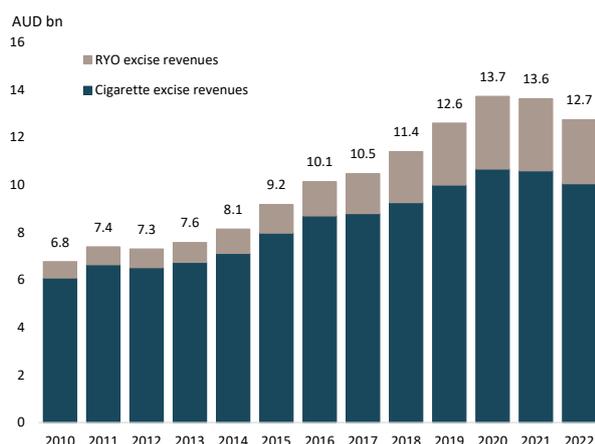
39. Tax receipts in 2022 were a clear outlier compared with the longer-term trend. The decline in real terms tax receipts in that year was due partly due to a large increase in consumer price inflation, documented above. But it also reflected a continued downturn in (legal) tobacco sales, and hence the excise tax base, as the purchasing power of household incomes contracted, and consumers cut back on non-essential spending and looked for cheaper substitutes.

40. The principal reason for the flattening of the growth (in real terms) of tobacco tax revenues is the continued decline in legal consumption. (See figure 10).

41. Between 2013 and 2021 – the period in which the largest tax increases were implemented – the average increase in tobacco excise was more than 13% per year on average in excess of inflation. The sale of legal tobacco fell by 6-7% per year over the same period.

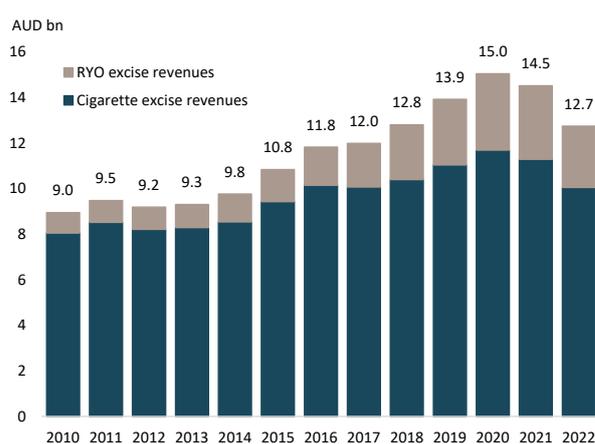
42. Between 2019 and 2021, however, the average excise per stick-equivalent increased even faster – more than 12.5% per year in real terms. Yet, tax revenues went up much more slowly – only around 2% per year above general inflation. The balance between lost tobacco sales volumes and a continued increasing tax burden was changing.

Figure 7: Tobacco excise duty revenues (nominal)



Source: IRI, ATO, ABS

Figure 8: Tobacco excise duty revenues (real, 2022 prices)



Source: IRI, ATO, ABS

The demand for tobacco is highly price elastic ...

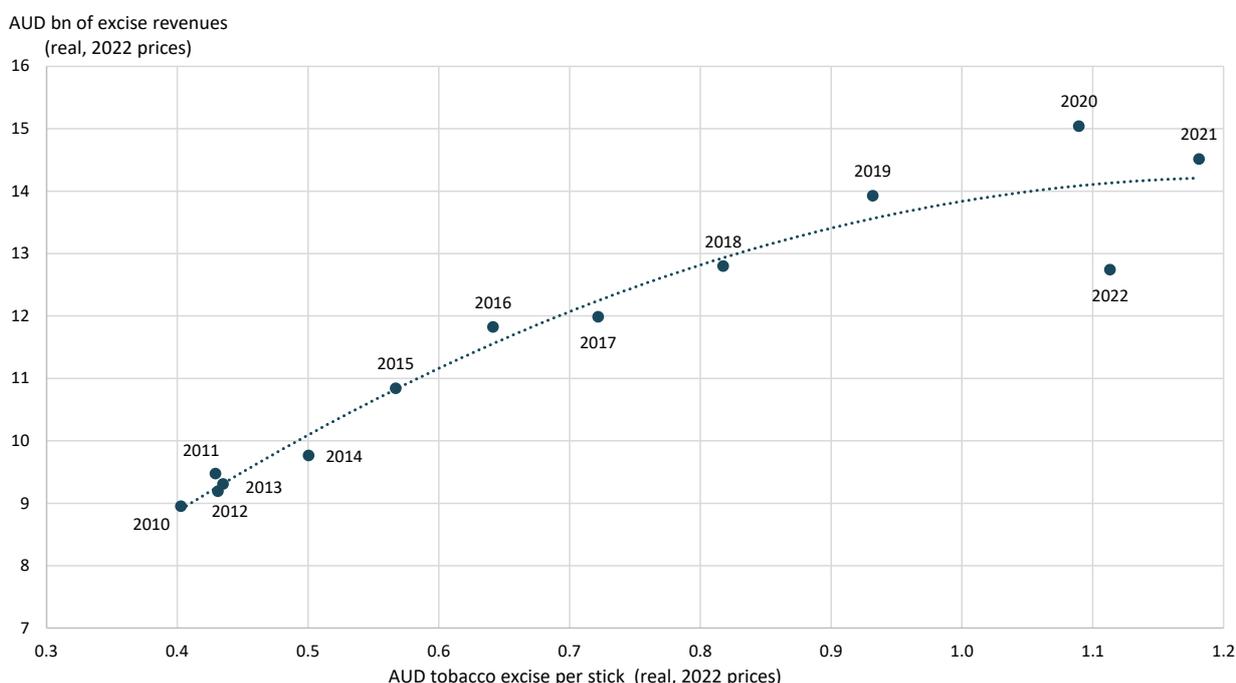
43. In 2022, tobacco excise receipts fell to broadly the same level as in 2018 in real terms. Inflation-erosion of the real terms value of the tax burden accounted for only one-third of lost real-terms tax receipts. The primary reason for the remaining two-thirds of the lost tax revenues in 2022 was the continued decline in duty-paid cigarette and RYO tobacco sales volumes. (See figure 11).
44. It is a general tenet of consumer behaviour that the demand for almost any product or service – including tobacco – will be inversely related to its price. The (volume of) demand for a consumer product (consumption) is customarily considered to be:
- a function (generally positive) of consumers' income; and
 - a function (generally negative) of the product's (relative) price.
45. When a given rise in (relative) price results in a (proportionately) smaller fall in demand – i.e. demand for a product is 'inelastic' – revenue rises; and conversely. The breakeven value is where the price elasticity of demand (PED) = -1.
46. As regards tax revenues, with excise tax on duty-paid tobacco in Australia being of the order of 80% of the overall selling price, the tax-revenue-maximising price is that where the $PED \approx -1/0.8 = -1.25$.

(For a further description of how tax revenues are at a maximum where the inverse of the tax incidence equals the PED, and the assumption of full pass-through of any tax rate increase – which has generally been the case in Australia – see *The relationship between price and the price elasticity of demand for cigarettes*, July 2019, FTI Consulting).

PED's are determined by substitution and income effects

47. Various factors determine the price elasticity of demand for any product or service:
- **First**, the availability of substitutes. To the extent that there are one or more close substitutes for the product in question, its price elasticity will tend to be

Figure 9: Tobacco excise duty revenues vs excise rates (real terms, 2022 prices)



Source: IRI, ATO, ABS

higher than it would be with no such close substitutes. In the case of tobacco in Australia, illicit tobacco and vaping products are close substitutes for duty-paid tobacco products.

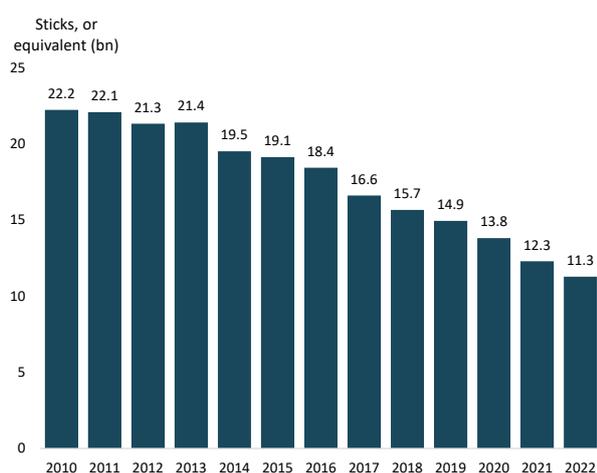
- **Second**, 'income effects'. When the price of a product increases, consumers' real purchasing power – 'real income' – is reduced. This effect is greater, the higher the proportion that consumption of the product represents in a consumer's overall expenditure. In turn, the greater the reduction in real income, the greater will be the reduction in both consumption and the overall price elasticity.
48. The way in which Australian consumers have responded to tax and price increases over the past decade or so suggests that the demand for tax-paid tobacco products will have increased over time (as would be expected when prices increase) and is now price elastic:
- Between 2010 and 2017, a 7.6% per year average real-terms increase in cigarette prices resulted in an average annual reduction of legal cigarette sales of just over 4% per year.
 - Between 2018 and 2022, however, an average 5.7% per year real-terms increase in cigarette prices resulted in a decline in sales of almost 8% per year.
49. Of course, simple statistics on price and volume changes are only indicative. Factors other than prices – such as changing economic conditions and general consumer trends – can also affect the sales volumes of tobacco products. Such factors should be considered and allowed for. Hence, to examine the elasticity of demand for tobacco products further, and to provide a quantitative estimate, we conducted an econometric analysis of the demand for duty-paid tobacco in Australia over the period Q1 2010 to Q4 2022.

An econometric analysis of legal tobacco demand in Australia

Our econometric analysis suggests that the PED is now -1.1 ...

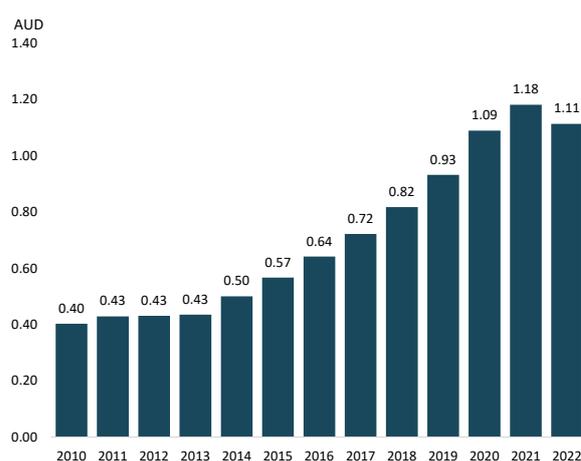
50. We found from our econometric analysis of legal tobacco demand in Australia that:
- There is a robust relationship between the quantity of cigarettes consumed and their (inflation adjusted) price.

Figure 10: Tobacco sales volume



Source: IRI, ATO, ABS

Figure 11: Average excise per stick



Source: IRI, ATO, ABS

... implying that significant further price increases would ...

- The precise value of the estimated PED is influenced somewhat – as is almost invariably the case – by the precise specification of the estimated equation.
- Taking all these considerations into account, our preferred estimate of the PED is -1.1. In other words, all other factors given, a 10% increase in the price of duty-paid tobacco products in Australia can be expected to result in an 11% decline in the volume of duty-paid tobacco products consumed.

... reduce sales more than proportionately, and that ...

51. To the extent that this estimate is broadly correct, it suggests that:

- The price of tobacco products is now at or even slightly above the point at which any significant further increase in (relative) price would reduce sales volumes more than proportionately.
- Tax rates are also approaching the point at which tax revenue is maximised.
- Any such tax hike would almost certainly give impetus to the growing illicit market (see Section 3 for further discussion of this issue).

... the price of tobacco is near the tax-maximising point

New Roy Morgan survey data

... and tax hikes would encourage further consumer switching away from legal tobacco

52. Econometric analysis, which is unavoidably based on past data, can take the understanding of future consumer behaviour only so far. To examine these issues further, we commissioned a survey, by Roy Morgan, to ask a representative sample of Australian smokers, vapers and non-smokers or vapers about a range of factors that affect their behaviour.

53. The survey found that 62% of all Australians, and 82% of Australian smokers, say that *“continuing to increase government taxes on cigarettes will encourage smokers to buy cheaper non-taxed, non-branded cigarettes brought in illegally from overseas to save money.”* (See table 1).

Such behaviour is supported by new Roy Morgan data

54. Moreover, 57% of all Australians surveyed agreed that *“continuing to increase government taxes on cigarettes will encourage smokers to switch to vaping to save money”*. The same view was expressed by 63% of smokers, and 75% of vapers. (See table 2).

55. Further survey data from Roy Morgan suggest that the impact of higher taxes and prices would be regressive, due to smoking and vaping incidences being higher in lower socio-economic groups.

- Those in the lowest socioeconomic quintile are roughly twice as likely to smoke or vape than those in the highest socioeconomic quintile.¹²

Implications for future tobacco fiscal policy

Four implications of policy significance stem from this

56. **Four general implications of policy significance** follow from the current level of excise taxes on tobacco:

- **First**, continuing the existing legislated policy of increasing tobacco tax rates in line with AWOTE would seem likely to result in continuing, sustainable, tax revenues. That said, with sales volumes likely to continue to fall, incremental tax receipts are highly likely to continue to be smaller than have historically been the case.
- **Second**, from the standpoint of revenue-raising, there is probably only distinctly limited scope, at best, to raise excise taxes over and above the rate of growth of wage inflation.

Table 1: Responded “agree” or “strongly agree” to: Continuing to increase government taxes on cigarettes will encourage smokers to buy cheaper non-taxed, non-branded cigarettes brought in illegally from overseas to save money.

Age Group	Adult Population	Adult Smokers
18-24	70%	84%
25-34	62%	78%
35-44	57%	78%
45-54	59%	86%
55-64	65%	86%
65+	56%	84%*
Total	62%	82%

Source: Roy Morgan National Survey, February 2023

Base: Adults n=3,056; adult smokers n=514.

Note: *denotes a low base and is to be read directionally

Table 2: Responded “agree” or “strongly agree” with: Continuing to increase government taxes on cigarettes will encourage smokers to switch to vaping to save money.

Age Group	Adult Population	Adult Smokers	Adult Vapers
18-24	63%	64%	71%
25-34	63%	66%	79%
35-44	55%	60%	71%
45-54	59%	63%	73%
55-64	52%	60%	69%*
65+	50%	68%*	33%*
Total	57%	63%	75%

Source: Roy Morgan National Survey February 2023

Base: Adult population n=3,056; adult smokers n=514; adult vapers n=393.

Note: *denotes a low base and is to be read directionally.

- **Third**, Australia's high tobacco taxes and consequent high prices of duty-paid products encourage smuggling and domestic production of illicit products.
- **Fourth**, the squeeze on household real incomes, at least for the next few years, that is set to result from the slowdown in Australia's economic growth and, even more, by its declining international terms of trade, will result in Australians experiencing a greater incentive to reduce their tobacco-related expenditure, by:
 - Reducing their consumption of tax-paid tobacco products.

Given that the excise tax structure is fully specific, and RYO taxes (and prices) are similar to those for cigarettes, there is distinctly limited scope for consumers in Australia to do this. However, there is scope for consumers to switch to contraband cigarette brands, which evade taxes.
 - Switching to cheaper brands; and/or
 - Switching to alternative products, whether legal or illicit, including 'chop chop' for tobacco and vapour products.

3. The accelerating illicit trade problem

- The sale and consumption of illicit tobacco products is a growing problem, that risks being exacerbated by further increases in tobacco taxes.
- Approximately 20% of total tobacco consumption in Australia today is illicit.
- New Roy Morgan data find that if taxes are raised, 14% of lawful consumers will downtrade to illicit tobacco and 9% into vape with the corresponding estimated cost to tax revenues.
- The net excise ‘duty gap’ for smuggled and illicit domestic production has been estimated at AUD 3.4 bn for 2021.
- An estimated further AUD 506 m in GST and company taxes was also lost – by wholesalers, retailers, and those involved in logistics of the illegal tobacco industry.
- The cost of illicit tobacco to the Australian economy is likely over AUD 4 bn a year.

The increased incentive to production, and smuggling

Illicit consumption

Higher taxes encourage evasion ...

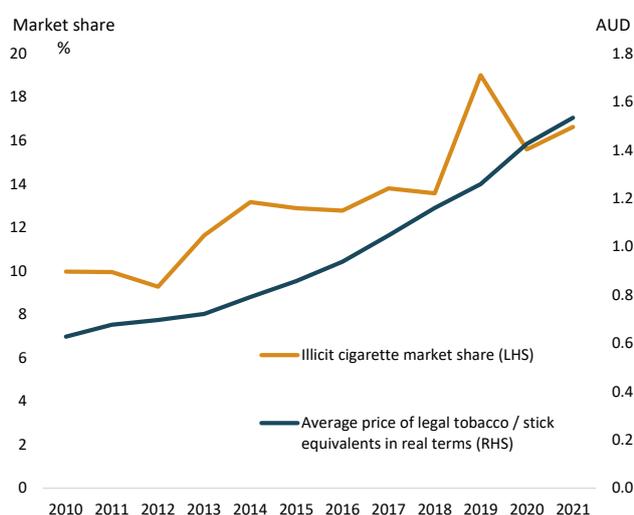
57. A typical consequence of increases in the (relative) prices of specific goods or services is that they encourage a switch of demand to cheaper substitutes. By extension, this general case can be expected to apply to (the taxation of) tobacco products. At least some of the switch in demand from higher taxes and thereby prices could be expected to be to products that are untaxed and illicit. And certainly, the data is consistent with this. (See figure 12).

58. This aligns with the new Roy Morgan survey findings, where 20% of respondent smokers said that they have “started to buy non-taxed cheaper/unbranded cigarettes/or loose tobacco in from overseas because they can no longer afford to buy their preferred brands” (See table 3).

... reducing government tax receipts ...

59. Roy Morgan also find that if the Australian government continues to increase taxes on cigarettes, 23% of existing smokers are “likely” or “very likely” to switch from

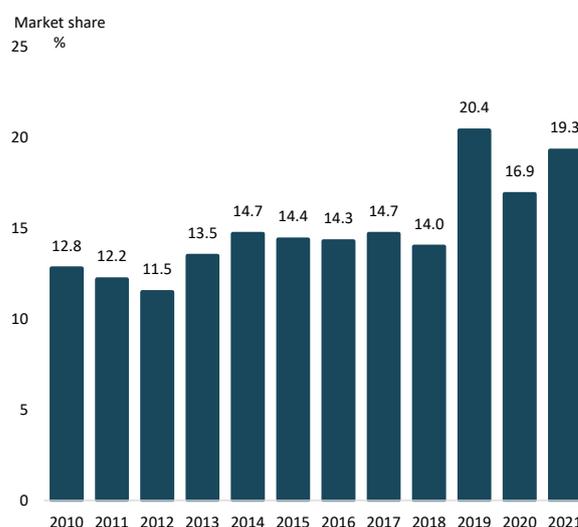
Figure 12: Duty-paid tobacco price vs illicit tobacco share



Source: IRI, KPMG

Note: Prices in nominal terms then deflated by CPI (2021 prices)

Figure 13: Illicit tobacco market share in Australia



Source: KPMG, BAT Market Survey

purchasing legal tobacco to non-taxed cheaper/unbranded tobacco brought in from overseas (14%) or to vaping (9%).¹³ (See table 4).

- If 23% of the market were to follow through and move to illicit tobacco, this would represent a loss to government tax receipts of the order of AUD 2.9 bn.

Illicit supply

60. The counterpart to any increase in demand for cheaper substitutes will generally be an increase in their supply. In the case of tobacco products illicit supply can be smuggled or domestically produced.
61. The scale of smuggling and domestic production in Australia of various illicit tobacco products (including counterfeit cigarettes and RYO) is significant. (See figures 12 and 13).
62. Before COVID, typically, around half (just under 46% in 2020) of illicit tobacco was contraband – i.e. legally manufactured, but smuggled, cigarettes. The other half was unbranded tobacco ('chop chop').
 - All these products are non-compliant with Australian regulations. Unbranded tobacco carries no labelling or health warnings. There is also evidence that chop-chop tobacco is more harmful than the legal counterparts.¹⁴

... spawning difficult-to-control criminal activity ...

Table 3: Thinking about the Australian economy over 2022 - including rising petrol prices, inflation and rising interest rates - how has this impacted you as a smoker? Select the option below that best describes you:

Age Group	I have started to buy non-taxed cheaper / unbranded cigarettes/ or loose tobacco brought in from overseas because I can no longer afford to buy my preferred brands	I have switched from cigarettes or roll-your-own tobacco to vaping because I can no longer afford to buy cigarettes/ or tobacco.	I have made no changes to my smoking because of the cost of living, I am still smoking my preferred brands of cigarettes or loose tobacco
18-24	21%	26%	22%
25-34	17%	20%	33%
35-44	22%	9%	42%
45-54	24%	6%	56%
55-64	19%	8%	62%
65+	16%	0%*	79%*
Total	20%	14%	44%

Source: Roy Morgan National Survey February 2023

Base: Adult smokers n=514.

Note: *denotes a low base and is to be read directionally.

Table 4: Responded “likely” or “very likely”: If the Australian government continues to increase taxes on cigarettes, how likely are you to: “If the Australian government continues to increase taxes on cigarettes, how likely are you to: switch to non-taxed cheaper/unbranded cigarettes/unbranded loose tobacco brought in from overseas to save money; switch to vaping.”

Age Group	Switch to illicit tobacco	Switch to vaping
18-24	7%	7%
25-34	11%	10%
35-44	15%	8%
45-54	23%	11%
55-64	13%	6%
65+	16%*	11%*
Total	14%	9%

Source: Roy Morgan National Survey February 2023

Base: Adult smokers n=514.

Note: *denotes a low base and is to be read directionally.

63. However, in 2021, during the COVID pandemic, the contraband share fell considerably to 29%: and this was counterbalanced by an increase in unbranded tobacco produced domestically, the share of which rose to an estimated 69%.
- In October 2022, The ATO estimated that in 2021 attempts were made to bring a total of 2,599 tonnes of illicit tobacco to the Australian market. An estimated 1,365 tonnes were seized, so an estimated $(2,599 - 1,365) = 1,234$ tonnes of illicit tobacco made it to market, amounting to over 10% of all tobacco consumed in Australia.¹⁵
 - An alternative estimate, made by KPMG, was that 2,242 tonnes were consumed in Australia in 2021.¹⁶ (See figure 14). This represented around 20% of all tobacco consumption; and compares with an estimated 11-12% a decade ago.
64. In principle, such increases in illicit supply could be counteracted by enhanced enforcement. But control of illicit supply (including domestic production) is both difficult and expensive, especially in Australia given the length of coastline, size of the country, and volume of the country’s international trade.

“When it comes to tobacco jobs, to be frank, at times we don't have the resources to allocate to that,” he said. “We would like to see a little more of a collegiate approach with our other government agencies, but we're all busy trying to do what we can.”

Senior Sergeant Chris Asenjo in 2022, Victoria Police

“There is a clear need, in short, for more to be done to tackle the problem of illicit tobacco.”

A report by the Australian Parliament on the fight against the illicit tobacco trade.¹⁷

... and depriving legal market operators of sales revenue

65. These illicit markets not only deprive the government of tax revenue and fuel crime, they also deprive legal market operators – including the retail sector – of sales revenue,¹⁸ and frustrates the country’s tobacco-control policy objectives.

“Currently, criminal syndicates can set up shops in every country town and quite openly sell this illegal product.” (a former Australian Border Force officer).¹⁹

The price gap between legal and illicit tobacco

Australia’s legal/illicit price gap is today considerable

66. In Australia, the price differential (gap) between legal and illicit tobacco has long been considerable. According to data from KPMG, the Australian Bureau of Statistics (ABS) and BAT market survey data:

- In 2010, duty-paid tobacco was more expensive than illicit tobacco by a factor of 2.5. That price difference amounted to 37 cents per cigarette.²⁰
- Over the decade to 2021, this gap approximately doubled in absolute terms, and remained near-constant proportionately, when adjusted for general inflation. As of 2021, duty-paid tobacco is more expensive than illicit tobacco by a factor of around 2.2.²¹ That price difference amounts to 85 cents per cigarette.

The tax gap and foregone revenue

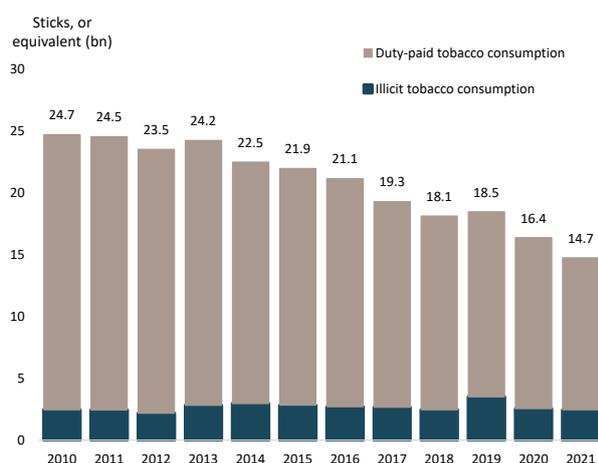
Forgone government revenue from illicit tobacco could be as high as AUD 3.4 bn per year ...

67. Considerable revenue is foregone as a result of the consumption of illicit tobacco. The ATO puts this ‘tax gap’²² in 2020-21 at AUD 1.89 bn, made up of AUD 1.6 bn evaded through illicit imports, and AUD 0.29 bn evaded through illicit production.²³ Moreover, the figure has grown rapidly, being an estimated 42% higher than that for the previous year – some AUD 1.3 bn.

68. Other estimates are somewhat higher: KPMG has put the net excise duty gap (both smuggled and domestic production) in 2021 at AUD 3.4 bn.²⁴ (See Figure 15).

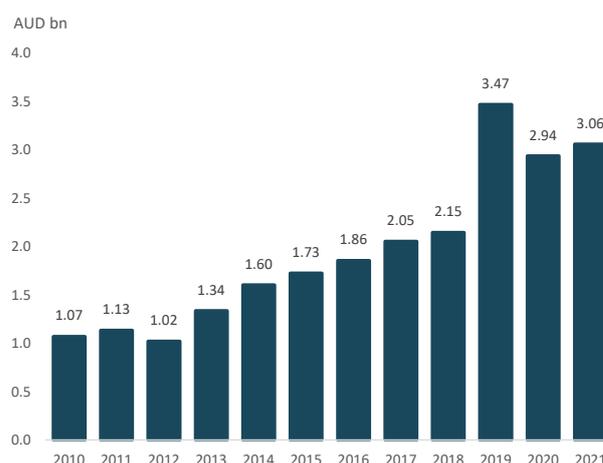
69. In addition to potential excise revenue not captured by the government, legal industries – including wholesalers, retailers, and those involved in the logistics chain – also miss out on potential revenue.

Figure 14: Evolution of illicit tobacco



Source: KPMG, Industry Exchange of Sales

Figure 15: Illicit tobacco tax gap



Source: KPMG, ATO, BAT Market Survey

70. Using KPMG’s estimate of 2,242 tonnes of illicit tobacco consumed in Australia in 2021, we estimate that AUD 339 million (m) of gross value added (GVA) was forgone due to illicit tobacco. (GVA is a measure of an entity’s contribution within an economy: i.e the value of gross output minus purchased inputs.)²⁵
- AUD 275 m of GVA from the retail sector.
 - AUD 64 m of GVA from the wholesale sector.
71. Our estimates also suggest that AUD 492 m was forgone in GST and company taxes. (See table 5).
72. The estimated cost to the economy as a whole is over AUD 4 bn per year.

... and the cost to the economy as a whole is over AUD 4 bn per year

Table 5: Foregone annual tobacco market tax receipts

Tax	Value (AUD m)
GST	\$492
Company Tax (Retail)	\$10
Company Tax (Wholesale)	\$4
Total Tax Receipts	\$506

4. Costs and benefits of legalising vaping products

- *Vaping has accelerated markedly – new Roy Morgan data show that there are now an estimated 1.3 m users of vapour products in Australia. The number of Australian adults vaping has nearly tripled over the past two years.*
- *Notwithstanding Australia’s prescription-only policy, the incidence of adult vaping exceeds that of some countries (including the US and France) that regulate vaping as an adult consumer product.*
- *Only 8% of all Australian vapers have a prescription, implying a 92% illicit market, whose products cannot be regulated or monitored.*
- *The prescription-only policy has had low take-up, apparently being unpopular with users and doctors.*
- *New Roy Morgan data also find that only 20% of Australians consider that vaping should be treated like a prescription medicine. Moreover, 73% of Australians consider that vaping should be legalised, and regulated similarly to tobacco or alcohol products.*
- *We estimate that AUD 489 m of gross value added (GVA) could be gained if products currently sold and consumed illicitly were brought into the legal net.*
- *Further, if vaping were legalised, this could raise an additional AUD 415 m in GST, company taxes (retail and wholesale), and import tariffs.*
- *Legalisation would also generate significant new revenue streams of up to AUD 1.7 bn over forward estimates for the government.*
- *It would also bring additional non-financial benefits, including substantially better consumer protection and the improved monitoring and control of the supply and consumption of vaping products.*

Illicit vaping in Australia

Vaping incidence has accelerated considerably

73. Roy Morgan survey data indicates that there are 1.3 m current adult vapers in Australia, an over three-fold increase over the past five years (See figure 16)²⁶.
74. There are substantial differences in vaping product consumption across Australian States and Territories. (See table 6).
- In New South Wales, an estimated 7.4% of adults consume vaping products.
 - In Tasmania, an estimated 3.5% of adults consume vaping products.²⁷

This suggests that there remains significant scope for growth, to the extent that other States and Territories catch up with the rate in New South Wales.

Australia’s laws on vaping are amongst the world’s strictest

75. Australia currently has one of the world’s most restrictive laws on nicotine vaping, however despite this, Australia’s adult vaping incidence rate of 6.5% is higher than other countries which permit the adult retail sale of nicotine vaping products. (See figure 17).²⁸
76. Since October 2021, liquid nicotine can be sold in Australia only under medical prescription to those who smoke.
- Vaping products must be for the personal use of the holder of the prescription.
 - The importing and possession of nicotine liquids and vaping devices also requires a prescription, signed by an Australian doctor.

Table 6: Growth in adult vaping incidence by state or territory

State	December 2018	December 2022	4 Year Growth
NSW (inc ACT)	1.2%	7.4%	530%
VIC	1.7%	6.7%	299%
QLD	1.8%	6.0%	236%
SA	2.3%	4.1%	80%
WA	2.3%	6.0%	163%
TAS	1.8%	3.5%	93%
NT	1.8%	4.8%	176%

Source: Roy Morgan Single Source

Base: Interviews are conducted on a weekly basis with approximately 50,000 surveys being completed annually.

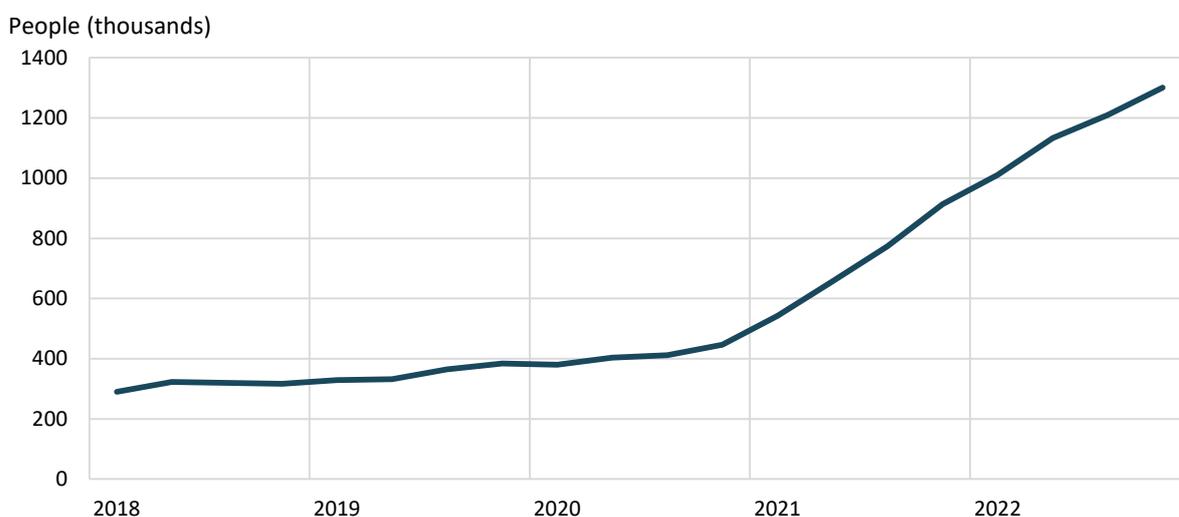
77. The reasoning behind this law was stated in 2020 in a Senate committee thus:²⁹

“... a prescription-based model provides the best pathway to strike an appropriate balance between providing treatment options for long term smokers under medical supervision while protecting against the legitimate risk of uptake of e-cigarette use from non-smokers, particularly young Australians (teenagers and young adults).”

78. In practice, however, the take-up rate is small, few doctors offer the service, and most are reluctant to do so.

- Of the almost 100,000 medical practitioners in Australia who can legally write a prescription, only 1,513 or so are Authorised Prescribers, of whom only some

Figure 16: Australian adult vaping incidence



Source: Roy Morgan Single Source

373 Authorised Prescribers had consented to the Therapeutic Goods Administration (TGA) publication of the name and surgery from which they practice.

- The TGA goes on to state that health professionals are reporting that they do not feel confident prescribing and supplying NVPs (Nicotine Vaping Products): one reason may be that no products have been officially approved by the regulator with supply categorised as a therapeutic good.

79. The consequence of tight restrictions on the supply of legal vaping products, together with few doctors writing prescriptions for them, is a growing illicit market. ECigIntelligence reports:

“... critics are voicing concerns that the prescription-only policy has led to a thriving black market and say a more open market would be safer for consumers.”

- The new Roy Morgan survey commissioned for this report finds that 73% of Australians consider that nicotine vaping products should be available to adults to purchase from licensed retail stores where tobacco products are currently sold, with the same proof-of-age measures as apply to other tobacco products and alcohol, and with restrictions on marketing.

80. Most OECD countries allow the sale and use of vaping products. Vaping products are regulated, with controls over advertising, ingredients, and use in public places.

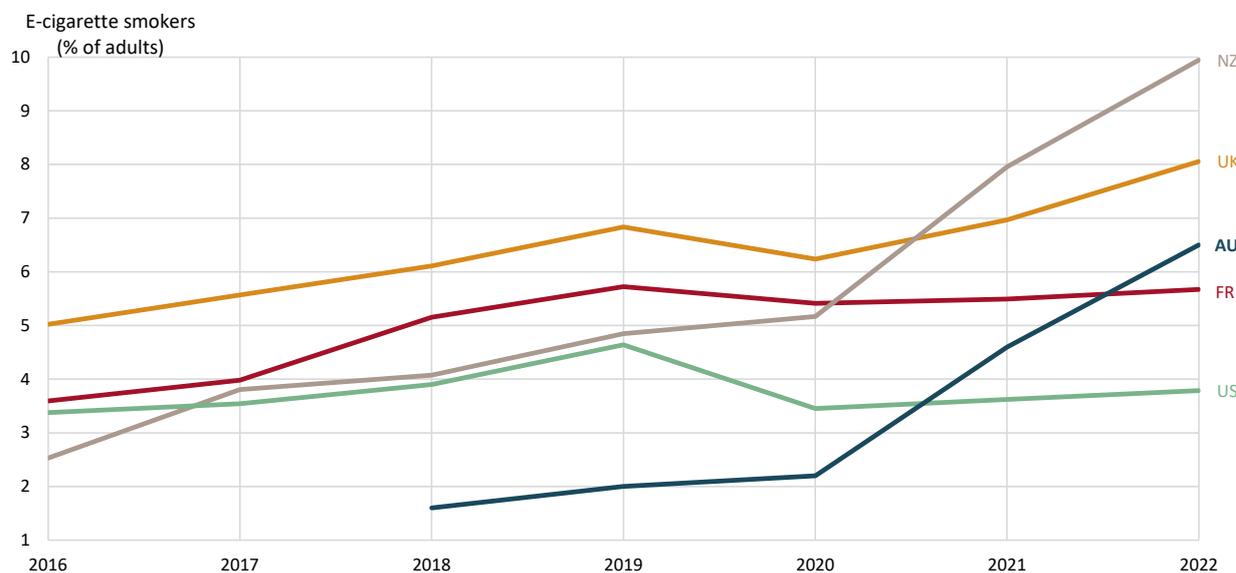
- Some countries – such as the UK, France, and New Zealand – apply only standard VAT with no excise duties.

Unintended consequences

81. The high prevalence of illicit vaping products in Australia has created several problems.

The prevalence of vaping poses several problems

Figure 17: Vaping Incidence (selected countries)



Source: Roy Morgan (Australia), ECigIntelligence (all other countries), United Nations
 Note: Labels are country abbreviations

82. **First**, given that the supply of these products is, by definition, neither regulated nor well monitored, the Australian authorities lack oversight of the products being consumed.
- Packaging and health warnings have limited regulatory oversight, and there are no mechanisms for monitoring ingredients and device standards and/or electrical compliance.
83. **Second**, as quantified below, significant revenues are lost to the authorities and to legal wholesale and retail traders, as well as to the distribution sector.
84. **Third**, the proceeds from other lucrative illegal activities are often used to fund further criminal ventures (as seen in the illicit tobacco trade).
- This is obviously something that all customs, law enforcement agencies and revenue authorities seek to prevent – but only with partial success.
85. Australians are evidently well aware of these issues.
86. In their recent survey, commissioned by Independent Economics for the purposes of this report, Roy Morgan drew specific attention to the following of their findings. (See table 7):
- Only 20% of respondents agree that vaping should be treated like a prescription medicine, and 73% believe that it should be regulated similarly to tobacco or alcohol.
 - Among smokers, only 8% agree that vaping should be treated like a prescription medicine, and 84% believe that it should be regulated similarly to tobacco or alcohol.
 - Among vapers, the figures are 5% and 88%.

Table 7: How do you think nicotine vaping products should be regulated in Australia?

Group	The same as other consumer products – no age restrictions and limited product/marketing restriction	Similar to tobacco or alcohol – purchase should be restricted by age, sold only by licensed retailers and there should be restrictions around how they are marketed	Like a prescription medicine – only accessible via a doctor's prescription from a pharmacy
Total Smokers	5%	84%	8%
Total Vapers	6%	88%	5%
Total Adults	2%	73%	20%

Source: Roy Morgan National Survey February 2023

Base: Adult population n=3,056; adult smokers n=514; adult vapers n=393.

Three ways to control illicit vaping

87. There are three basic ways in which the Australian government could seek to reduce the quantity of illicit vaping products currently sold in the illicit market:
- Devote substantially more resources to reducing the importation of illicit vaping products.

There are three ways to reduce illicit vaping:

- Bolster the Medicare-based prescription in a proactive bid to convert adult consumers of illicit vaping products to legal devices and e-liquids.
- Legalise vaping products in a regulated and comprehensively licenced retail environment, allowing them to be sold as an adult consumer good.

1. Reduce the availability of illicit vaping products

Reduce smuggling and
illicit production ...

88. This is challenging:

- The length of Australia's coastline makes it difficult to intercept smuggled goods. This is particularly the case in respect of vaping products.³⁰
- The size of the country makes it difficult to catch illicit domestic importers, particularly given the fragmentation of supply. Prosecutions are rare in relation to the volume of incoming products.
- The volume and complexity of Australia's international trade makes it difficult to intercept and monitor concealed consignments of this nature.

2. Bolster the Medicare based prescription scheme

... push the Medical
Benefits Schedule
approach forcefully ...

89. An alternative, but likely largely unworkable, approach, could be to reduce illicit consumption by using the current prescription-based framework more proactively.

90. At present, this policy approach costs approximately AUD 39.75 per consultation and prescription, based on the minimum GP consultation time.³¹

- The take-up of the prescription scheme is small, with acceptance from GPs in Australia low:
 - In November 2022, only 1,513 out of nearly 100,000 registered practitioners were publicly listed as nicotine prescribers.³²
- Moreover, strengthening the *status quo* would need to include a 'crack-down' on most current adult consumers who do not have prescriptions.
- This will be a considerable challenge, as Roy Morgan finds only some 10% of all vapers are willing to obtain a prescription in the future.
- It would also be necessary to incentivise, or oblige, more doctors to issue prescriptions, and more adult consumers to seek consultation – something that both doctors and current illegal vaping-product adult consumers are evidently reluctant to do.³³
- Moreover, the Medicare scheme – when accessible – enables only current smokers to get a prescription for vaping products. It does not enable those who vape to get a prescription for vaping products. The majority of vapers in Australia however are not dual users, so the way the current Medicare system is operated – even if substantially expanded – would not bring illicit vapers back into the legal net. To do so, not only would the Medicare system need to be rolled out more extensively, it would also need to be expanded to cover those who vape.

91. The new Roy Morgan data suggest that only 8% of respondents currently have a prescription for vaping, which in turn would mean that there is a 92% share of illicit. This is a decrease on previously reported data (from CMA) which suggested 12% of adult vapers in Australia held a prescription.

3. Legalise and properly regulate the use of vaping products

.. or make vaping
legal

92. The third – and more workable – approach to addressing the increasing consumption of illicit vaping products would be to adopt the practice of other

advanced countries, such as New Zealand, the UK, and France, and regulate vaping products as an adult consumer product through appropriately licenced retailers.

93. Legalisation would make it feasible for the Australian Government to monitor consumption, together with trends in consumer behaviour: authorities and industry currently must depend on surveys.
94. Legalisation would also make it possible to implement appropriate regulations to protect consumers (e.g. enforcing appropriate restrictions on ingredients and nicotine strength, product warnings, ensuring the product is not sold to under-18s, and so on).
95. The new Roy Morgan data find that 79% of total respondents say that they would be more likely to purchase legal regulated nicotine vaping products from licenced retailers if the Australian government was to regulate vapour products in the same way as tobacco or alcohol. This indicates a similar compliance rate of lawful purchase from vaper consumers as what there currently is for legal tobacco consumers. (See table 8).

Table 8: If the Australian Government regulated nicotine vaping products in the same way as tobacco or alcohol, making them available from lawful retailers, with proof-of-age measures, would you:

Age Group	Be more likely to purchase legal regulated nicotine vaping products from licenced retailers	Continue to buy unregulated products as you do now
18-24	81%	19%
25-34	79%	21%
35-44	91%	9%
45-54	83%	17%
55-64	58%*	42%*
65+	67%*	33%*
Total	79%	21%

Source: Roy Morgan National Survey February 2023

Base: Adult vapers n=393.

Note: *denotes a low base and is to be read directionally.

96. The Green Party of New South Wales, at the end of February this year, put a plan forward to regulate vaping like tobacco products and legalise nicotine vapes in order *“to end the nicotine vape black market and reduce the harms associated with vaping”*.³⁴

Benefits to public finances

97. Legalisation of vaping would also generate significant new revenue streams. To illustrate:
- The average adult smoker in Australia consumes around 75 cigarettes per week.³⁵
 - The average cost of a vaping product is estimated to be around AUD 25 per week.³⁶
 - While the nicotine content in vaping products is highly variable, as a broad indication a typical, or average, vaping product can be taken as equivalent to around 50 cigarettes.³⁷
 - Hence, assuming that on average a typical vaper consumes broadly the same amount of nicotine as that consumed by a typical cigarette smoker, a typical vaper will consume:
 - 1.5 vaping products per week; and thereby
 - Spend around AUD 37.5 per week, or AUD 1,950 per year.
 - In turn, making this consumption subject to GST tax (10%) would result in a tax take of around AUD 200 per vaper per year.
98. The annual difference between the prescription model and regulated and licenced retail market would thereby be c. AUD 200 plus AUD 39.75 for a GP visit, making for a total of c. AUD 240 per person. Thus:
- If it were possible to convert each of the 1.3 m adult consumers currently using illicit vaping products to legally prescribed products via Medicare – which is moot – this would require an additional budget amount from the Australian Treasury of approximately AUD 52 m per year.
99. Using Roy Morgan’s estimate of 1.3 m vapers in Australia in Q4 2022, we estimate that AUD 489 m of gross value added (GVA) could be gained from legalising vaping. (GVA is a measure of an entity’s contribution within an economy: basically, it is the value of gross output minus purchased inputs).³⁸
- AUD 381 m of GVA in the retail sector.
 - AUD 108 m of GVA in the wholesale sector.
100. In turn, we estimate that AUD 415 m annually of GST, company taxes (retail and wholesale), and import tariffs at a rate of 5% could be gained if vaping were legalised. (See table 9).
101. This amounts to AUD 1.7 bn over the four-year forward estimates budget cycle for the government.³⁹
102. The estimated potential upside to the economy as a whole from legalisation is estimated at AUD 904 m per year, the sum of GVA (AUD 489 m) and tax receipts (AUD 415 m).

Legalising vaping
would benefit the
federal budget ...

Table 9: Potential annual additional tax revenues from legalising vaping products

Tax	Value (AUD m)
GST	\$254
Company Tax (Retail)	\$46
Company Tax (Wholesale)	\$13
Import Tariffs	\$103
Total Tax Receipts	\$415

Note: Totals may not add up precisely because of rounding.

Appendix

Roy Morgan survey results summary

A comprehensive survey on consumers conducted was by Roy Morgan in early 2023, and commissioned by Independent Economics for the specific purposes of this report.

Roy Morgan is the largest and longest established Australian market research company, with nearly 80 years' experience in the conduct of market research.

The data collected in the survey was commissioned by Independent Economics to understand attitudes around the regulation of vaping in Australia and the impact of the rising cost of living on Australian smokers. The study was conducted among the general adult population including smokers of cigarettes and those who currently vape.

The overall sample comprises n=3,056 Australian adults, with quotas to representative of the Australian adult population. This sample includes a 'boost' of n=514 regular adult smokers, n=393 regular adult vapers and n=213 adults who both smoke and vape.

The survey was conducted online, using the Roy Morgan consumer panel between 18 January 2023 and 1 February 2023.

In addition to the population attitude survey, Independent Economics has sourced national vaping incidence data from Roy Morgan's Single Source survey. Single Source survey interviews are conducted on a weekly basis (n=1,000) with approximately 50,000 surveys being completed annually.

Roy Morgan is certified to the AS/NZS ISO9001 Quality Management Systems standard, AS ISO 20252 Market, Opinion and Social Research standard and ISO27001 Information Security Standard. Roy Morgan adheres to the Code of Professional Behaviour of ESOMAR and the Australian Market and Social Research Society, the Australian Federal Privacy Act and all other relevant legislation.

Below are the summary survey results.

Results included in the sections themselves (tables 1 to 8)

Table 1: Responded “agree” or “strongly agree” to: Continuing to increase government taxes on cigarettes will encourage smokers to buy cheaper non-taxed, non-branded cigarettes brought in illegally from overseas to save money.

Age Group	Adult Population	Adult Smokers
18-24	70%	84%
25-34	62%	78%
35-44	57%	78%
45-54	59%	86%
55-64	65%	86%
65+	56%	84%*
Total	62%	82%

Source: Roy Morgan National Survey, February 2023

Base: Adults n=3,056; adult smokers n=514.

Note: *denotes a low base and is to be read directionally

Table 2: Responded “agree” or “strongly agree” with: Continuing to increase government taxes on cigarettes will encourage smokers to switch to vaping to save money.

Age Group	Adult Population	Adult Smokers	Adult Vapers
18-24	63%	64%	71%
25-34	63%	66%	79%
35-44	55%	60%	71%
45-54	59%	63%	73%
55-64	52%	60%	69%*
65+	50%	68%*	33%*
Total	57%	63%	75%

Source: Roy Morgan National Survey February 2023

Base: Adult population n=3,056; adult smokers n=514; adult vapers n=393.

Note: *denotes a low base and is to be read directionally.

Table 3: Thinking about the Australian economy over 2022 - including rising petrol prices, inflation and rising interest rates - how has this impacted you as a smoker? Select the option below that best describes you:

Age Group	I have started to buy non-taxed cheaper / unbranded cigarettes/ or loose tobacco brought in from overseas because I can no longer afford to buy my preferred brands	I have switched from cigarettes or roll-your-own tobacco to vaping because I can no longer afford to buy cigarettes/ or tobacco.	I have made no changes to my smoking because of the cost of living, I am still smoking my preferred brands of cigarettes or loose tobacco
18-24	21%	26%	22%
25-34	17%	20%	33%
35-44	22%	9%	42%
45-54	24%	6%	56%
55-64	19%	8%	62%
65+	16%	0%*	79%*
Total	20%	14%	44%

Source: Roy Morgan National Survey February 2023

Base: Adult smokers n=514.

Note: *denotes a low base and is to be read directionally.

Table 4: Responded “likely” or “very likely”: If the Australian government continues to increase taxes on cigarettes, how likely are you to: “If the Australian government continues to increase taxes on cigarettes, how likely are you to: switch to non-taxed cheaper/unbranded cigarettes/unbranded loose tobacco brought in from overseas to save money; switch to vaping.”

Age Group	Switch to illicit tobacco	Switch to vaping
18-24	7%	7%
25-34	11%	10%
35-44	15%	8%
45-54	23%	11%
55-64	13%	6%
65+	16%*	11%*
Total	14%	9%

Source: Roy Morgan National Survey February 2023

Base: Adult smokers n=514.

Note: *denotes a low base and is to be read directionally.

Table 6: Incidence and growth of adult vaping incidence by state or territory.

State	December 2018	December 2022	4 Year Growth
NSW (inc ACT)	1.2%	7.4%	530%
VIC	1.7%	6.7%	299%
QLD	1.8%	6.0%	236%
SA	2.3%	4.1%	80%
WA	2.3%	6.0%	163%
TAS	1.8%	3.5%	93%
NT	1.8%	4.8%	176%

Source: Roy Morgan Single Source

Base: Interviews are conducted on a weekly basis with approximately 50,000 surveys being completed annually.

Table 7: How do you think nicotine vaping products should be regulated in Australia?

Group	The same as other consumer products – no age restrictions and limited product/marketing restriction	Similar to tobacco or alcohol – purchase should be restricted by age, sold only by licensed retailers and there should be restrictions around how they are marketed	Like a prescription medicine – only accessible via a doctor’s prescription from a pharmacy
Total Smokers	5%	84%	8%
Total Vapers	6%	88%	5%
Total Adults	2%	73%	20%

Source: Roy Morgan National Survey February 2023

Base: Adult population n=3,056; adult smokers n=514; adult vapers n=393.

Table 8: If the Australian Government regulated nicotine vaping products in the same way as tobacco or alcohol, making them available from lawful retailers, with proof-of-age measures, would you:

Age Group	Be more likely to purchase legal regulated nicotine vaping products from licensed retailers	Continue to buy unregulated products as you do now
18-24	81%	19%
25-34	79%	21%
35-44	91%	9%
45-54	83%	17%
55-64	58%*	42%*
65+	67%*	33%*
Total	79%	21%

Source: Roy Morgan National Survey February 2023

Base: Adult vapers n=393.

Note: *denotes a low base and is to be read directionally.

Additional results, not included in the sections themselves (tables 10 to 15)

Table 10: Do you currently have a prescription to buy nicotine vaping products?

Age Group	Yes	No	Have had but not currently
18-24	6%	92%	2%
25-34	7%	89%	4%
35-44	17%	76%	7%
45-54	9%	85%	6%
55-64	10%*	90%*	0%*
65+	0%*	100%*	0%*
Total	8%	88%	4%

Source: Roy Morgan National Survey February 2023

Base: Adult vapers n=393

Note: *denotes a low base and is to be read directionally.

Table 11: Responded “agree” or “strongly agree” to: How do you think nicotine vaping products should be regulated in Australia?

Age Group	The same as other consumer products – no age restrictions and limited product/marketing restriction	Similar to tobacco or alcohol – purchase should be restricted by age, sold only by licensed retailers and there should be restrictions around how they are marketed	Like a prescription medicine – only accessible via a doctor’s prescription from a pharmacy
18-24	5%	78%	14%
25-34	3%	78%	13%
35-44	3%	73%	18%
45-54	1%	74%	20%
55-64	1%	71%	24%
65+	0%	63%	34%
Total	2%	73%	20%

Source: Roy Morgan National Survey February 2023

Base: Adults n=3,056

Table 12: Smokers who responded “agree” or “strongly agree” to: How do you think nicotine vaping products should be regulated in Australia?

Age Group	The same as other consumer products – no age restrictions and limited product/marketing restriction	Similar to tobacco or alcohol – purchase should be restricted by age, sold only by licensed retailers and there should be restrictions around how they are marketed	Like a prescription medicine – only accessible via a doctor’s prescription from a pharmacy
18-24	7%	88%	3%
25-34	5%	86%	5%
35-44	9%	78%	12%
45-54	4%	80%	11%
55-64	1%	87%	9%
65+	0%	79%*	16%*
Total	5%	84%	8%

Source: Roy Morgan National Survey February 2023

Base: Adult smokers n=514

Note: *denotes a low base and is to be read directionally.

Table 13: Vapers who responded “agree” or “strongly agree” to: How do you think nicotine vaping products should be regulated in Australia?

Age Group	The same as other consumer products – no age restrictions and limited product/marketing restriction	Similar to tobacco or alcohol – purchase should be restricted by age, sold only by licensed retailers and there should be restrictions around how they are marketed	Like a prescription medicine – only accessible via a doctor’s prescription from a pharmacy
18-24	7%	88%	4%
25-34	7%	87%	5%
35-44	5%	93%	2%
45-54	9%	79%	9%
55-64	3%*	90%*	7%*
65+	0%*	100%*	0%*
Total	6%	88%	5%

Source: Roy Morgan National Survey February 2023

Base: Adult vapers n=393

Note: *denotes a low base and is to be read directionally.

Table 14: Adults who responded “agree” or “strongly agree” to: Making the nicotine vaping products a prescription-only product has not worked well in stopping young people aged under 18 from accessing and using vapes.

Age Group	Total	Smokers	Vapers
18-24	68%	76%	76%
25-34	60%	64%	68%
35-44	63%	68%	76%
45-54	66%	63%	67%
55-64	64%	58%	55%*
65+	60%	63%*	67%*
Total	63%	65%	70%

Source: Roy Morgan National Survey February 2023

Base: Adults n=3,056; adult smokers n=514; adult vapers n=393

Note: *denotes a low base and is to be read directionally.

Table 15: Adults who responded “agree” or “strongly agree” to: Limiting nicotine vaping products to only be available to purchase in a pharmacy with a medical prescription, has created a black market which is easily accessed by young people aged under 18.

Age Group	Total	Smokers	Vapers
18-24	67%	79%	75%
25-34	60%	68%	72%
35-44	61%	74%	79%
45-54	65%	77%	85%
55-64	57%	65%	72%*
65+	53%	63%*	100%*
Total	60%	71%	75%

Source: Roy Morgan National Survey February 2023

Base: Adults n=3,056; adult smokers n=514; adult vapers n=393

Note: *denotes a low base and is to be read directionally.

Table 16: Vaping incidence among adults in Australia by quarter (moving annual total).

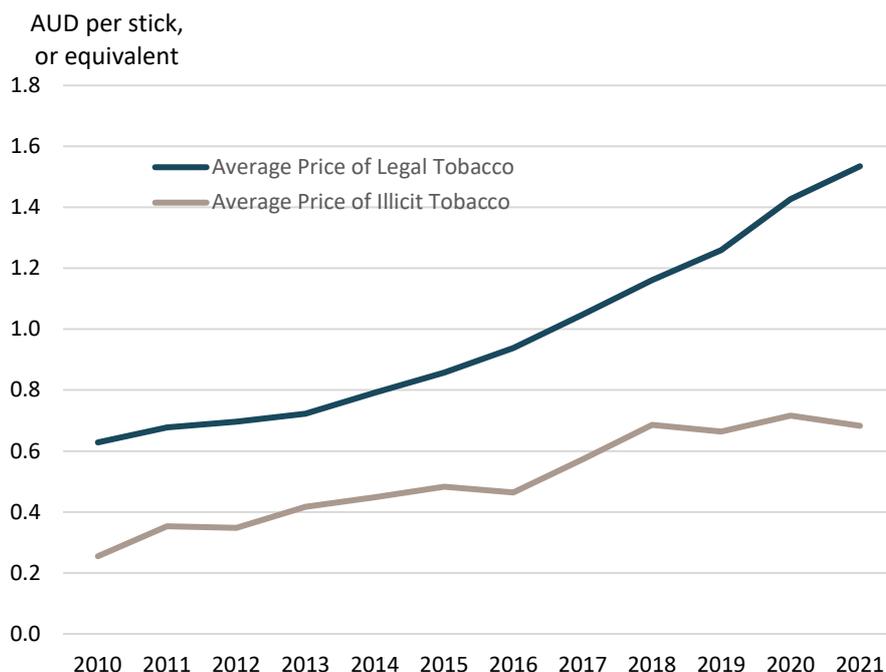
Date	Number of Vapers (thousands)	Incidence (% of adults)
March 2018	290	1.5%
June 2018	323	1.7%
September 2018	320	1.7%
December 2018	317	1.6%
March 2019	329	1.7%
June 2019	332	1.7%
September 2019	365	1.9%
December 2019	384	2.0%
March 2020	380	1.9%
June 2020	404	2.0%
September 2020	412	2.1%
December 2020	446	2.2%
March 2021	543	2.7%
June 2021	657	3.3%
September 2021	774	3.9%
December 2021	914	4.6%
March 2022	1,011	5.1%
June 2022	1,133	5.7%
September 2022	1,210	6.0%
December 2022	1,301	6.5%

Source: Roy Morgan Single Source

Base: Interviews are conducted on a weekly basis with approximately 50,000 surveys being completed annually.

- ¹ Australia's Wage Price Index is a Laspeyres-type index covering wage and salary costs. It measures the change in the price between the current period and the price at a given base period with the quantity and quality of labour services being held constant. For more, see [Chapter 1 - Introduction | Australian Bureau of Statistics \(abs.gov.au\)](#)
- ² See: <https://www.rba.gov.au/publications/smp/2023/feb/pdf/forecast-table-2023-02.pdf>.
- ³ <https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/media-releases/superannuation-tax-breaks>, 28 February 2023
- ⁴ For more on the various individual programmes, see [A brief overview of Australia's economic response to COVID-19 \(hlf.global\)](#)
- ⁵ [Budget Paper No. 1](#)
- ⁶ Other important measures taken to contain the public sector deficit and thereby debt include: extending the ATO's Tax Avoidance Taskforce, Shadow Economy, and Personal Income Taxation Compliance programs; and action to ensure multinationals pay their 'fair share' of tax. See: https://budget.gov.au/2022-23-october/content/bp1/download/bp1_bs-1.pdf
- ⁷ See [Budget Paper No. 1](#) Table 1.2
- ⁸ Basically, the Treasury's arithmetic is that the terms of trade will return to their historic average, and that this implies a fall of 20%. Given that exports are around 22% of Australia's GDP, this 20% fall in the terms of trade translates into a fall of 4%-odd in Australia's national income. For more, see [Budget Paper No. 1](#)
- ⁹ See: <https://www.who.int/teams/health-promotion/tobacco-control/global-tobacco-report-2021>
- ¹⁰ *ibid*
- ¹¹ See: https://budget.gov.au/2022-23-october/content/bp1/download/bp1_bs-5.pdf
- ¹² Roy Morgan gives each survey respondent a score out of 60 each for education level, income, and occupation for a total score out of 180. Quintiles are then based on this score.
- ¹³ Strictly, the sum of its two components (13.8 and 8.6) is 22.4. The figure of 23 in the text is the result of rounding.
- ¹⁴ <https://www.tobaccoinaustralia.org.au/chapter-3-health-effects/3-27-health-effects-of-smoking-tobacco-in-other-fo>
- ¹⁵ See: <https://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-gap/Tobacco-tax-gap/>
- ¹⁶ See: KPMG, 2022. *Illicit tobacco in Australia*. London: KPMG.
- ¹⁷ See: https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Law_Enforcement/IllicitTobacco46th/Report/section?id=committees%2Freportjnt%2F024342%2F73455
- ¹⁸ An analysis by PwC in 2022 concluded that higher prices for duty-paid cigarettes, driven predominantly by increases in taxes, have led, all other things given, to higher potential profits for the suppliers of illicit cigarettes, and larger potential savings for the consumer, therefore generating higher levels of illicit market activity.
- ¹⁹ See: <https://www.standard.net.au/story/6491518/smokers-warned-of-chop-chop-dangers/>
- ²⁰ In 2021 prices i.e. when adjusted for general inflation.

²¹ Illicit tobacco price gap relative to general inflation:



²² The 'tax gap' is defined by the Australian Taxation Office as the difference between theoretical tax according to the law, and actual tax paid voluntarily or collected as a result of compliance activities.

<https://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-gap/Principles-and-approaches-to-measuring-gaps/?page=7#Glossary>

²³ See: <https://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Tax-gap/Tobacco-tax-gap/>

²⁴ Calculated by KPMG by taking their estimates of illicit volumes and multiplying them by actual tax rates.

²⁵ Note that the results are highly sensitive to changes in assumptions of gross margins and pre-tax margins. The assumptions made are as follows:

- The gross margins for tobacco in the retail and wholesale sector are assumed to be 30% and 10% respectively.
- The pre-tax margins for tobacco are assumed to be 4% in retail and 2% in wholesale.
- A conversion factor of 0.7g of loose tobacco per stick.
- Elasticity of demand for tobacco is unchanged.
- Given that there is no legal domestic production of tobacco products in Australia, the supply chain consists only of wholesale and retail sectors.

Gross value added (GVA) and tax receipts are calculated based on the above assumptions, together with current tax rates, data about the supply chain of the legal tobacco industry, all then applied to illicit tobacco quantities to 'scale down' the legal market. (Details available on request.)

²⁶ For the raw data, see Table 16 in the Appendix.

²⁷ Roy Morgan surveys.

²⁸ The data used for the charts come from surveys, and so they are only estimates, and consequently subject to uncertainty. This is particularly so in the case of Australia, because the market is illegal and unregulated. Data from Roy Morgan were selected for Australia because these are probably more accurate than the corresponding data from ECigIntelligence. But ECigIntelligence data are probably sufficiently accurate for all the other markets, which are legal and regulated.

²⁹ See:

https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Tobacco_Harm_Reduction/TobaccoHarmReduction/Report

³⁰ Moreover, Australian Border Force have confirmed that no additional resourcing has been allocated to the detection and seizure of nicotine vaping products. See

https://parlinfo.aph.gov.au/parlInfo/download/committees/estimate/25615/toc_pdf/Legal%20and%20Constitutional%20Affairs%20Legislation%20Committee_2022_02_14_Official.pdf;fileType=application%2Fpdf#search=%22legal%22 and especially the interchange between Senator Abetz and Mr. Outram, p. 90.

³¹ See <http://www9.health.gov.au/mbs/fullDisplay.cfm?type=item&q=93680&qt=item&criteria=nicotine>. This cost includes, *inter alia*, professional attendance for nicotine and smoking cessation counselling, care and advice by a general practitioner at consulting rooms lasting less than 20 minutes and must include any of the following: (a) taking a patient history, aimed at identifying disease risk factors attributable to nicotine use and smoking dependence, and/or identifying barriers and enablers to cessation; (b) completing an assessment of the patient's nicotine dependence, including where clinically appropriate a basic physical examination; (c) initiating interventions and referrals for the cessation of nicotine, if required; (d) implementing a management plan for appropriate treatment; (e) providing the patient with nicotine and smoking cessation advice and information, including modifiable lifestyle factors; with appropriate documentation.

³² https://consultations.tga.gov.au/medicines-regulation-division/proposed-reforms-to-the-regulation-of-nicotine-vap/user_uploads/tga-consultation-paper---nicotine-vaping-products---nov-22-1.pdf

³³ "GPs are skeptical about vaping and are reluctant to prescribe nicotine. They are constantly exposed to negative messaging by the Therapeutic Goods Administration, government agencies, medical associations, colleges, health charities, and the mainstream media. GPs also fear medico-legal repercussions for prescribing unapproved products and no vaping products are approved by the medicines regulator. GPs also know very little about vaping and have had minimal training. Most do not even know how to write a nicotine prescription." See:

<https://spectator.com.au/2022/09/australias-vaping-experiment-has-failed/>

³⁴ <https://greens.org.au/nsw/news/media-release/greens-propose-plan-regulate-vaping-reduce-harms>, 28 February 2022.

³⁵ According to Australian Government surveys. See: <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/smoking/latest-release>

³⁶ According to estimates from various news websites. See: <https://www.smh.com.au/world/asia/from-bootcamps-in-china-to-australian-schools-how-vapes-hook-children-on-nicotine-20210830-p58n6w.html>;

<https://www.heraldsun.com.au/news/victoria/children-as-young-as-ten-target-of-vaping-crackdown-by-police/news-story/2365346276277cbd3f6a3a3136b19679>; and

<https://www.abc.net.au/news/2022-06-25/experts-fear-vaping-increase-in-latrobe-valley/101179486>

³⁷ This is an estimate, published by the NSW government. See: <https://www.health.nsw.gov.au/vaping>

³⁸ Note that the results are highly sensitive to changes in assumptions of gross margins and pre-tax margins. The assumptions made are as follows:

- Gross margins of the retail and wholesale sector are 15% and 5% respectively.
- The pre-tax margins are 6% in retail and 2% in wholesale.
- As with tobacco, no legal domestic production of vaping products in Australia: the supply chain consists only of wholesale and retail sectors.
- A (standard) import tariff of 5%.

Gross value added (GVA) and tax receipts are calculated based on the above assumptions, estimates of the size of the Australian vaping market, and prevailing tax rates. (More details are available on request.)

³⁹ This figure assumes that tax receipts remain unchanged over the Australian Treasury's four-year forecast period.

Important notice

This Report has been prepared by Independent Economics LLP for British American Tobacco ('Australia BAT'). It builds on the Llewellyn Consulting report of October 2022.

Section 2 is written based on the most up to date estimates on illicit by KPMG. New numbers will soon be available from FTI Consulting soon and the report will be (slightly) updated to reflect them when they are, but there is no sign that it will change any of the findings or conclusions reached.

The consumer survey was commissioned by Independent Economics, and undertaken by Roy Morgan in January 2023.

Independent Economics recognises the wider public policy context within which governments decide regulatory and fiscal changes for the tobacco industry, and that the analysis in this Report considers only the economic aspects.

Independent Economics has agreed that this Report can be shared with certain third parties to facilitate discussions between them and BAT, subject to the remaining paragraphs of this Notice, to which readers' attention is drawn.

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16th March 2023.