Tobacco and vaping products in Australia:

An economic assessment

Received 23 July 2024

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Summary and conclusions

1. Australia's economy has recovered strongly from its COVID-induced downturn. Indeed, the labour market is tight, inflation is above the RBA's target, and wage growth is accelerating.
2. Australia's general government debt is high by historical standards (though below the average for OECD countries),[1] and interest rates and bond yields have risen, raising the cost of servicing the government debt.
3. Policymakers in Australia, as in all OECD countries, are under continual pressure to maintain their public finances on a sustainable medium-term footing. Hence there is a continual search for further efficiencies in public spending, and any scope for increasing tax revenues.
4. One area for consideration, in all countries, is the taxation of alcohol and tobacco. This report is concerned with the tobacco dimension in Australia.
5. In Australia, taxes on tobacco products – mostly cigarettes, but also roll-your-own ('RYO') tobacco, which remains popular in Australia) – have been increased considerably over the years, and are now high:
    5.1. Cigarette taxes in Australia today are amongst the highest in the world; and relative to per capita incomes, cigarettes in Australia are now less affordable than in any OECD country bar New Zealand.
    5.2. Taxes on RYO are broadly commensurate.
6. Tobacco taxes have thereby delivered increasing tax receipts. In real terms (i.e. adjusted for general inflation) excise tax revenues from cigarettes and RYO tobacco grew at an average annual rate of 4.4% between 2011 and 2021. However, the rate of increase has slowed, from 6.5% from 2013 to 2018 to 4.3% from 2018 to 2021.
7. The principal reason for the slowdown in the growth of tax revenue has been a decline in the volume of consumption of legal tobacco in recent years. Adult consumers have variously reduced their consumption, stopped altogether, or switched to illicit tobacco or vaping products.[2]
8. The relationship between tax rates, consumption, and tax revenue has a number of elements; and the importance of these changes over time. An increase in the tax rate on tobacco products has two broad effects:
    8.1. First, in a purely mechanical sense, it raises the tax revenue per unit sold, which in and of itself has a positive effect on tax revenues at any given level of sales.
    8.2. Second, because adult consumers are paying a higher price, it reduces the volume of (duty-paid) cigarettes that people buy, and this has a negative effect on revenues.
    8.3. When these two opposing tendencies exactly offset each other tax revenue is at its maximum. Increases in the tax rate beyond that point reduce tax revenues – the 'Laffer-type' relationship between tax revenue and tax rates.
    8.4. Thus the response of sales volume to tax rate changes – the 'price elasticity of demand' for duty-paid tobacco – is a fundamental determinant of the effect of a tax rate increase on tax revenues.
9. The price elasticity of demand is a function of several factors.
    9.1. Generally, when the tax on a product represents only a small proportion of its overall price, the (volume of) demand will be little affected by a small increase in the tax rate, i.e. demand is 'price inelastic.' Hence a small tax rate increase will generally result in higher tax revenues.

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9.2. However, as the tax rises as a proportion of the overall selling price, volumes tend to be affected proportionately more, i.e. demand becomes progressively more 'price elastic' and the revenue gains become smaller.

10. A second important influence on the price elasticity of demand is the existence, and prices, of substitutes. To the extent that there are one or more close substitutes – in this case, illicit tobacco and vaping products – the price elasticity for duty-paid tobacco will be higher than it would be were there no such close substitutes.

11. A third element affecting the price elasticity of demand is the amount that adult consumers spend on the good (tobacco) or, more precisely, the share of that good in adult consumers' budgets – the so-called 'income effect'.

    11.1. When the price of tobacco products increases, adult consumers' real purchasing power, or real income, decreases. This effect is greater the higher the proportion that consumption of a product represents in a consumer's overall expenditure. The greater the reduction in real income, the greater will be the reduction in the consumption of tobacco and the greater will be the overall price elasticity of demand.

    11.2. This effect stands to be quantitatively important in the case of duty-paid tobacco in Australia, given the high expenditure on duty-paid tobacco relative to incomes.

12. All these elements are in play in the real world of tobacco consumption in Australia. Hence it is useful and, for policy purposes, important to have as good an estimate as possible of the overall price elasticity of duty-paid tobacco, obtained using up-to-date data for Australia.

    12.1. We have therefore conducted an econometric analysis that estimates the price elasticity of demand for duty-paid tobacco in Australia based on data up to the end of 2021.

13. All estimates are subject to margins of uncertainty. But it would appear, with a reasonable degree of certainty, that in Australia today the price elasticity of demand for duty-paid tobacco is now of the order of -1.0.

14. To the extent that this estimate is broadly correct, it has two basic implications.

    14.1. **Sales revenue**. Prices of duty-paid tobacco products in Australia are seemingly close to the level that maximises sales revenue. And, by implication, any further significant increases in price would likely decrease overall sales revenue.

    14.2. **Tax revenue**. This reaches a maximum at a price somewhat higher than the sales-maximising price. For Australia, where the excise tax on duty-paid tobacco is of the order of 80% of the overall selling price, this implies that the tax-revenue-maximising price is that where the price elasticity of demand is around -1.25.

15. This analysis has two basic implications:

    15.1. First, continuing the existing legislated policy of increasing tobacco tax rates in line with wage inflation is likely to result in a sustainable tax revenue stream although, with sales volumes likely to continue to fall, the incremental tax receipts may well be smaller than historically. However, from the standpoint of revenue-raising, there is probably only limited scope to raise excise taxes over and above that.

    15.2. Second, Australia's high tobacco taxes and consequent high prices of duty-paid product encourage smuggling and domestic production of illicit tobacco products (including counterfeit cigarettes and RYO), and a range of illicit vaping products.

16. These illicit markets have grown enormously, in the process depriving both the government and legal retailers and distributors of revenue.

17. Estimates are perforce uncertain but, according to KPMG, in under a decade the share of illicit tobacco has grown to 15-20% of the overall market for tobacco.

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17.1. 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').

17.2. However, in 2021, largely because of COVID, the contraband share fell considerably, to 29%, and this was counterbalanced by an increase in unbranded domestically produced tobacco, the share of which rose to 69%. The ready supply of 'chop chop' made it, and continues to make it, difficult to control this problem.

18. This Illicit tobacco problem has two important consequences:

18.1. It results in sizable tax revenues being foregone: the scale of government revenues evaded as a result of illicitly-supplied tobacco is estimated at between AUD 1 and over 3 bn; and

18.2. It frustrates the country's tobacco control policy objectives.

19. Another, newer, problem for the Australian authorities is the rapid growth of the consumption of vaping products.

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

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

20.2. Others – including Italy, the US, and Germany – levy an excise tax on e-liquids but at a much lower rate than on combustible tobacco.

21. Australia is something of an outlier, permitting consumption of vaping products only by medical prescription. But the take-up rate is extremely small, few doctors offer the service, and most are reluctant to do so.

21.1. Nevertheless, and despite its not being legal, consumption of vaping products has been brisk, and levels of penetration are now similar to those in New Zealand, the UK, and France.

22. The consumption of illicit vaping products poses various problems.

22.1. From a financial perspective, every vaping product sold illegally represents a lost tax-revenue opportunity.

22.2. From a public health perspective, there are no controls over who buys vaping products and where they buy them. Packaging and health warnings cannot be monitored and enforced. And there are no mechanisms to restrict the ingredients used, including limits on nicotine content.

23. There are three principal ways in which the Australian government could seek to control the quantity of vaping products consumed.

24. **First, devise more effective ways, and devote more resources,** to reducing the importation and production of illicit vaping products.

24.1. This, however, has so far proved to be both difficult and expensive. Despite Australia's prohibition on the retail sale of nicotine vaping products, the number of adult consumers has increased by 260% over the past five years. Border control measures, even though reasonably robust, are evidently insufficient by themselves: only a holistic supply chain approach would seem likely to succeed.

25. **Second, bolster the Medicare based prescription framework** more proactively, to reduce illicit vaping product consumption.

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25.1. However, this would be expensive, costing the government approximately AUD 40 to switch each adult illicit vaping product consumer to a legal, prescribed product.

26. **Third, legalise the use of nicotine vaping products**, regulating them as an adult consumer good through properly licenced retailers.

    26.1. This approach would enable the Australian government to properly monitor and regulate the use of vaping products as adult consumer goods as well as generating additional revenue streams.

27. The annual difference in net cost between the prescription model and properly regulated, and licenced, retail market would be approximately AUD 200 plus AUD 40 – i.e. around AUD 240 – per person. Thus:

    27.1. If it were possible to convert each of the 1.1 million 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 45 million per year.

    27.2. In contrast, were vaping products legalised as described above, and each of the 1.1 million adults currently using illicit vaping products were being serviced by the legal, properly regulated – and inclusive of Goods and Services Tax (GST) – supply chain, it is possible that over AUD 200 million in new GST revenues could be generated per year.

28. **In summary,** the recent evolution of the dynamics of the markets for tobacco products and vaping products in Australia suggests that:

    28.1. Continuing to increase tobacco excise rates by wage inflation, as currently legislated, combined with legalising nicotine vaping product sales, would be the path most likely to optimise government tax revenues.

    28.2. An ancillary advantage of this policy is that it would bear down on the growth in illicit tobacco consumption, and bring large and growing illicit vaping product sales into the legal net.

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1. Australia's economic environment

The economic backdrop

Australia's long-run growth owes much to good governance

29. Given its decades-long economic performance of brisk GDP growth combined with low public debt and low levels of unemployment and inflation, Australia has often been called the '*lucky country*'.

30. While favourable export prices have helped, Australia's economic performance owes also to good governance.

30.1. When the COVID pandemic struck, public finances were such that the economic impact of the policies of drastic lockdowns and migration restrictions could be offset by substantial increases in government spending.

31. Australia's COVID policies seem to have been successful, despite high infection rates compared with other advanced countries.

The economy bounced back quickly from the pandemic …

31.1. Both fatality rates relative to numbers of cases, and the overall death rate have been amongst the lowest.[3] As a result, the Australian economy emerged from the pandemic more quickly than many other advanced countries.

31.1.1. Already in the first quarter of 2022, GDP was 4% above its pre-pandemic peak.

The challenge

… but this has brought a challenge for macro policy

32. This rapid exit from the pandemic poses a challenge for the stability-oriented macroeconomic policies typically followed by the Australian government.

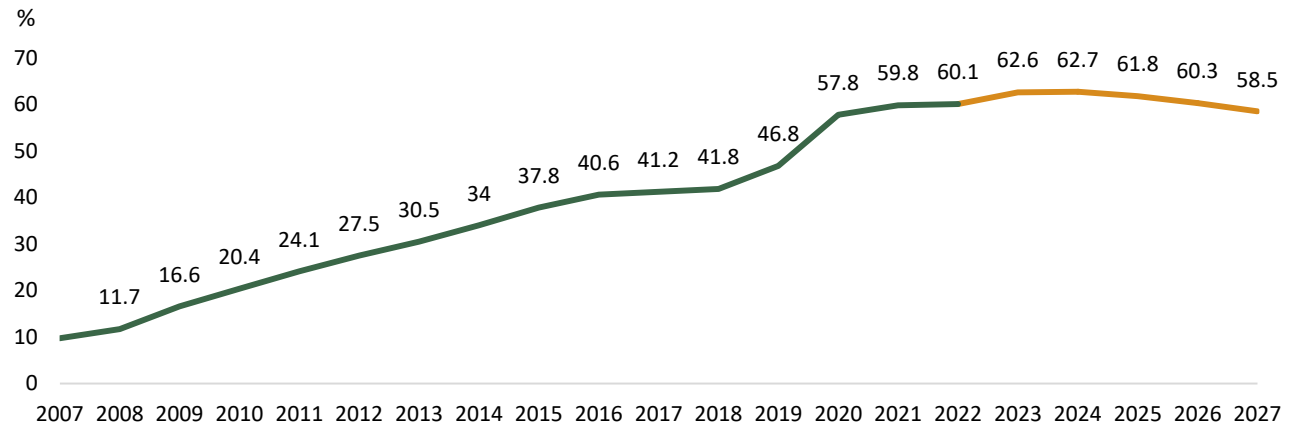
33. **GDP growth**. While the IMF expects real GDP to grow by a little under 4% this year, it expects it to slow to a little under 2% next year.[4]

34. **Public sector debt**. Australia's public debt is proportionately modest compared with most other OECD countries. Few countries had or have lower ratios.

… including in managing higher debt levels

34.1. However, even before the pandemic, and despite highly favourable terms of trade, gross public debt had been rising, from about 10% of GDP before the global financial crisis to 47% in 2019, and to 60% in 2021. (See figure 1).[5]

Figure 1: Australia gross debt (percentage of GDP)



Source: International Monetary Fund
Notes: Forecast from 2022 onwards

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34.1.1. This is in stark contrast to its evolution late last century and the early years of the 21st, when there were worries that Australia's gross debt could fall to zero, which would have complicated the operation of monetary policy.

Government budgets

Notwithstanding likely strong GDP growth …

35. The economic outlook on which the latest Budget Statement was based projected GDP growth to remain strong, and with the terms of trade favourable.

36. The Statement projected a deficit (cash balance) of 3.4% of GDP for the 2022-2023 fiscal year, close to that of the previous year.

36.1. Higher than expected inflation, strong earnings growth, and lower than expected unemployment may well result in higher revenue and lower social transfers, and a somewhat lower public sector deficit. Government debt could also be somewhat lower than projected for the current fiscal year but would remain at historically high levels.

… debt servicing stands to become more challenging

37. However, interest rates worldwide are on the rise, and certainly in Australia, so that it would be prudent to assume that debt servicing costs will be at least somewhat higher relative to GDP than in recent decades, and that either tax revenue will have to be diverted from other programmes to finance it, or tax revenues will need to be higher relative to GDP.

Taxes on incomes however are high

38. In the Australian tax system, taxes on incomes – of households and firms – account for about three quarters of the total, a high ratio compared with many other OECD countries.

39. Additional tax revenue would arguably be raised better through taxes on expenditure rather than income – the supply side/incentive effects argument.

Additional tax revenue would best come from indirect taxation

40. Such additional revenue could therefore come from an increase in GST – a well-regarded tax because it is intrinsically non distortionary; or it could come from broadening the tax base.

41. Tobacco taxes in Australia, historically an important and reliable source of revenue, are amongst the highest in the world.

41.1. In FY2022, tobacco excise receipts were about AUD 13 bn, 2.5% of total tax revenue, which was itself 22% of GDP.[6]

Taxes on tobacco are now among the highest in the world

41.2. Customs duties, excise taxes, and GST on tobacco account for around 12% of indirect tax receipts, about the same as the duties on diesel fuels, and equivalent to 0.6% of GDP.

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2. The dynamics of cigarette and RYO tobacco tax revenues

Purpose of excise taxes

Excise taxes aim to raise revenue and deter consumption

42. Excise taxes – such as on alcoholic drinks and tobacco – are generally intended both to deter consumption of the product in question and, at the same time, raise revenue for the government.

    42.1. If a government has public support, and if there are no non-taxed close substitutes, the government has an interest, from the standpoints both of raising revenue and deterring consumption, in raising excise taxes to high levels.

    "*Sugar, rum, and tobacco are commodities which are nowhere necessaries of life, which are become of almost universal consumption, and which are therefore extremely popular subjects of taxation.*" (Adam Smith).[7]

But go too far and not only consumption, but also revenue, falls

43. However, there can come a point where the effect of a higher tax reduces consumption by proportionately more than the increase in the tax rate. At this point, there is a trade-off between the objectives of raising revenue and deterring consumption.

The rapid growth in tobacco excise tax rates in Australia

Australia's tobacco taxes have increased considerably …

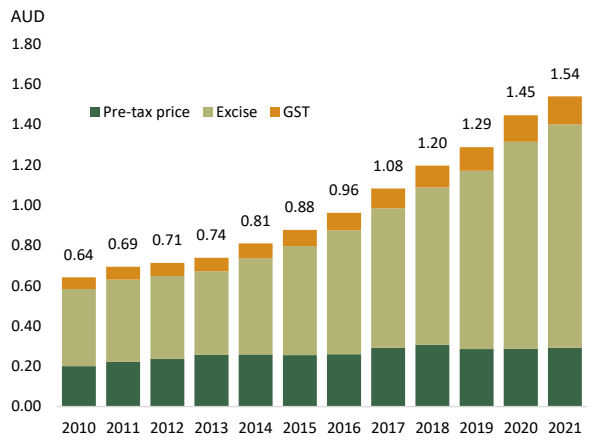
44. In 2010, the Federal Government of Australia implemented an increase in cigarette excise duty of 25%, after which it introduced an annual 12.5% increase over and above consumer price inflation each year from 2013 to 2016.

45. In 2016, the Government continued this policy thrust by committing to annual increases in cigarette excise tax, up to and including 2020, equal to:

    45.1. 12.5%, applicable in September of every year; together with

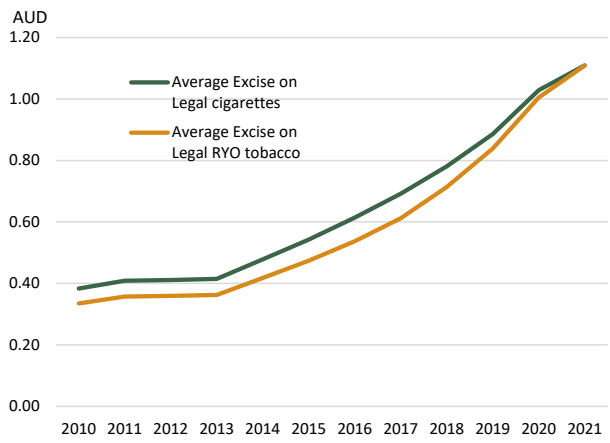
    45.2. An additional increase in excise duty on a bi-annual basis (applicable in March and September of every year) in line with the growth in average weekly ordinary time earnings (AWOTE).

Figure 2: FMC prices per stick



Source: IRI, Australia Bureau of Statistics, and Australia Ministry of Finance
Note: FMC prices in nominal terms then deflated by CPI (2021 prices)

Figure 3: Excise gap between FMC and RYO



Source: IRI and KPMG
Note: Prices in nominal terms then deflated by CPI (2021 prices)

46. These higher excise rates increased the price of factory-made cigarettes (FMC) considerably – by a factor of 2.4 over the past decade – relative to the overall price of goods and services in Australia. (See figure 2).[8]

47. Furthermore, excise taxes on 'roll-your-own' (RYO) tobacco were increased such that they are now broadly the same per stick equivalent as factory-made cigarettes (See figure 3).

    47.1. From March 2022, for cigarettes not exceeding 0.8 grams tobacco content, Australia's excise tax is set at AUD 22.5 per pack of 20.

    47.2. For RYO tobacco and heavier cigarettes, the tax is AUD 1,610 per kilogram of tobacco content.

… and are now amongst the highest in the world

48. As a result, Australia, which has long had high tobacco taxes and prices by global standards, now has amongst the highest cigarette taxes in the world.

49. The WHO recommends that the total tax share should represent at least 75% of the retail price of the most popular brand of cigarettes (including excise, VAT, sales taxes, and import duties).[9]

    49.1. Globally, only 40 countries out of 195 meet this WHO 75% total-tax target.[10]

    49.2. Most OECD countries, however, do meet the target.

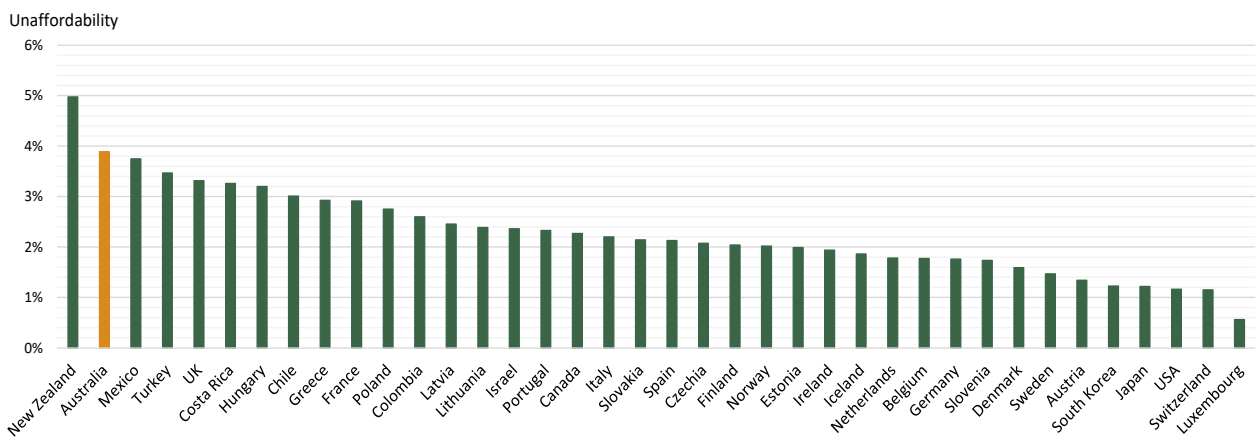
        49.2.1. EU legislation, for example, imposes an excise tax of at least 60% of the weighted average retail selling price, or a minimum of €90 per 1,000 cigarettes, whichever is higher.[11] And then there is VAT on top of that. Individual EU countries are at liberty to impose higher rates.[12]

        49.2.2. In Australia, the tax on the most popular brand of cigarette as calculated by the WHO is 74%.

        49.2.3. On a weighted average of all cigarettes, it is 81%.[13]

50. As well as advocating that the tax share of tobacco prices should reach the 75% level, the WHO has increased the emphasis on reducing the affordability of tobacco.

Figure 4: WHO cigarette unaffordability (OECD countries)



Source: World Health Organization
Note: Affordability = the percentage of GDP per capita at PPP exchange rates required to purchase 2,000 cigarettes of the most sold brand

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51. By indexing its tobacco taxes to AWOTE plus a large percentage over a long period, Australia's tobacco has become substantially less affordable over the past decade, even as real incomes rose.

Australia has the least affordable cigarettes of all OECD bar NZ

52. The result is that today Australia is virtually at the top of the cigarette 'unaffordability' league amongst OECD countries. Only in New Zealand are cigarettes less affordable. (See figure 4).

The evolution of tobacco tax revenues

53. These higher tax rates have delivered increasing tax receipts:

    53.1. In nominal terms, tobacco excise revenues (cigarettes and RYO tobacco combined) grew on average by 6.3% per year between 2011 and 2021.

    53.2. In real terms – i.e. relative to general inflation – revenues grew on average by 4.4% per year over the same period.

Tax increases have yielded smaller revenue increases …

54. Recently, however, there have been signs of diminishing returns to successive tobacco tax rate increases.

    54.1. Figure 5 shows a 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.

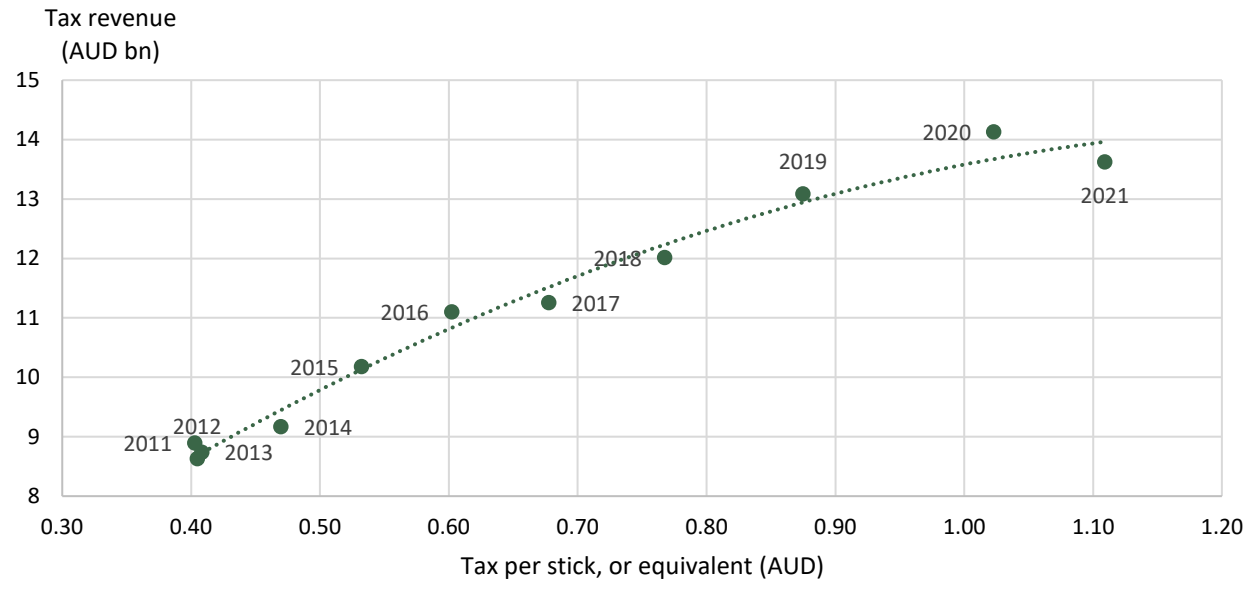
    54.2. The line slopes upwards, indicating that successive tax rate increases have indeed been associated with higher tax revenues.

    54.3. But the line is also concave: successive tax rate increases have delivered smaller incremental tax revenue increases.

… the main reason being a decline in demand

55. The principal reason for the flattening of the (real terms) growth in tobacco tax revenues (see figure 5) is the decline in legal consumption (measured by the volume of tobacco sold) (see figure 7). And a principal contributor to this has been the (accelerating) increase in tobacco taxes in recent years (see figure 6):

Figure 5: Tobacco excise revenue vs tobacco excise rates



Source: Industry exchange of sales data, Australia Bureau of Statistics, and Australia Ministry of Finance
Note: Tax revenues are reported by calendar year. All data is relative to general inflation (2021 prices)

55.1. Between 2011 and 2019, the average excise per stick equivalent for cigarettes and RYO tobacco combined increased by more than 10% per year above inflation, and tax revenues increased by almost 5% per year relative to inflation (See figure 6).

55.2. But between 2019 and 2021, the excise per stick (equivalent) increased at an even higher rate, by more than 12.5% per year in real terms, yet tax revenues went up at a much lower rate, only around 2% per year above general inflation (See figure 7).

The price elasticity of demand and its importance to tax revenues

Demand is a function of income and (relative) price …

56. The (volume of) demand for a consumer product (consumption) is customarily considered to be:

56.1. A function (generally positive) of consumers' income;[14] and

56.2. A function (generally negative)[15] of the product's (relative) price.

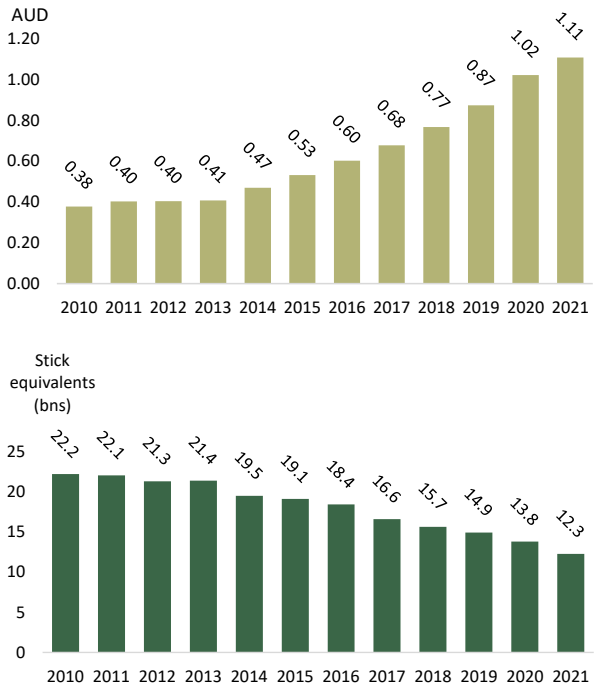
57. When a given rise in (relative) price results in a (proportionately) much smaller fall in demand – i.e. demand for a product is intrinsically highly 'inelastic' – an increase in the tax rate on the product will typically lead to an increase in tax revenue, the increase in tax per unit sold being only partially offset by the fall in demand i.e. reduction in the number of units sold.

57.1. This effect will be all the greater, the smaller is the weight of tax in the overall selling price.

58. By contrast, when a given rise in (relative) price brings about a fall in demand that is (proportionately) larger – i.e. demand for a product is intrinsically 'elastic' – tax

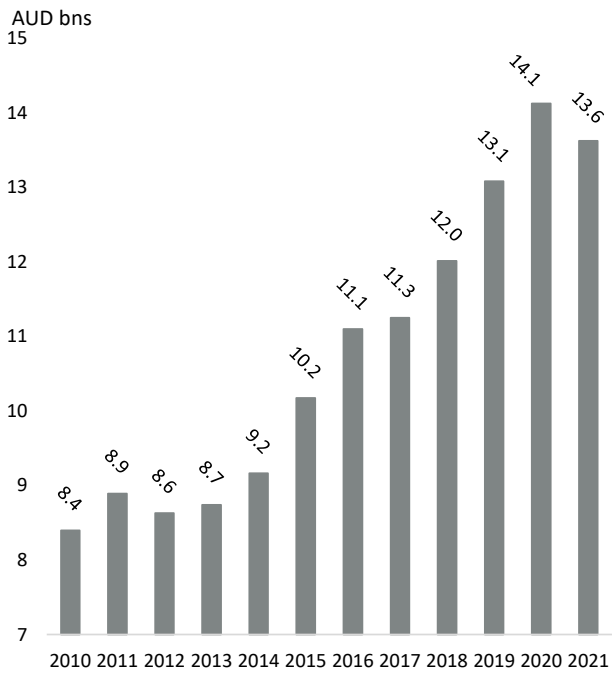
Figure 6: Tobacco excise per stick (above)

Figure 7: Tobacco sales volume (below)



Source: Industry exchange of data, Australia Bureau of Statistics, and Australia Ministry of Finance

Figure 8: Tobacco excise revenues (Adjusted for general inflation)



Source: Product of figure 6 and figure 7

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revenue will typically fall, the increase in tax per unit sold being more than offset by the fall in demand i.e. the number of units sold.

58.1. This effect will be all the greater, the larger is the weight of the tax in the overall selling price.

… and various factors determine the effect of prices on demand

59. Various factors determine the elasticity of demand. In particular:

59.1. **The existence of substitutes.** To the extent that there are one or more close substitutes for the product in question, its price elasticity will be higher than it would be were there no such close substitutes.

59.1.1. In the case of tobacco in Australia, illicit tobacco and vaping products are close substitutes for duty-paid tobacco products.

59.2. **The 'income effect'.** When the price of a product increases, consumers' real purchasing power – 'real income'– decreases. This effect is greater, the higher the proportion that consumption of the product represents in a consumer's overall expenditure.

59.2.1. And in turn the greater the reduction in real income, the greater will be the reduction in both consumption and the overall price elasticity.

59.2.2. This stands to be quantitatively important in the case of duty-paid tobacco in Australia, given the number of cigarettes consumed by the average smoker, their high cost per stick, and hence the high cost of smoking relative to incomes.

60. There are certain critical values for the price elasticity of demand (PED):

60.1. **Sales revenue** is maximised when the selling price is such that the PED = -1. Below that value, an increase in price will raise sales revenue: above that price, an increase in price will cause sales revenue to fall.

60.2. **Tax revenue**, by contrast, is at a maximum when the selling price is at a point where the PED = -1 divided by the proportion of the selling price that is accounted for by tax.

61. All these elements are in play in the real world of tobacco consumption in Australia. Hence it is useful and, for policy purposes, important to have as good an estimate as possible of the overall price elasticity of duty-paid tobacco.

62. Many estimates of the average price elasticity of demand for tobacco products have been made in the past, and for a range of countries.[16] But many are now quite elderly – which matters, not least because in recent years tax rates have increased considerably.

63. We have therefore conducted an econometric analysis that estimates the price elasticity of demand for duty-paid tobacco in Australia based on data up to the end of 2021.[17]

The average price elasticity of demand is now around - 1 …

64. All estimates are subject to margins of uncertainty; but it would appear, with a reasonable degree of certainty, that in Australia today the price elasticity of demand for duty-paid tobacco is now of the order of -1.0.

64.1. Note that this estimate of the PED is an average over the whole period. Given that the PED can be expected to increase with price, it could be that the 'point' elasticity of demand is greater than the estimated average.

64.2. Moreover, the PED could well be different for different age groups – perhaps higher for younger age groups.

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64.3. All this could usefully be a subject for further investigation.

… which is the value at which sales are at a maximum …

65. To the extent that this estimate is broadly correct, it has two basic implications.

65.1. **Sales revenue**. Prices of duty-paid tobacco products in Australia are seemingly close to the level that maximises sales revenue. And, by implication, any further significant increases in price would likely decrease overall sales revenue.

… and close to where tax revenues are at a maximum

65.2. **Tax revenue**. With excise tax on duty-paid tobacco being of the order of 80% of the overall selling price, the tax-revenue-maximising price is that where the PED ≈-1/0.8 = -1.25.

66. Three policy implications follow from the current level of excise taxes on tobacco:

66.1. First, continuing the existing legislated policy of increasing tobacco tax rates in line with wage inflation is likely to result in a sustainable tax revenue stream.

66.1.1. That said, with sales volumes likely to continue to fall, the incremental tax receipts are likely to be smaller than has historically been the case.

66.2. Second, from the standpoint of revenue-raising, there is probably only highly limited scope to raise excise taxes over and above that.

66.3. Third, Australia's high tobacco taxes and consequent high prices of duty-paid product encourage smuggling and domestic production of illicit products.

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3. The growing illicit trade issue

The incentive to production and smuggling

High taxes encourage evasion …

67. One typical consequence of high excise rates is that they encourage both smuggling and illicit production; and there would seem little doubt that this has been the case in Australia, with smuggling and domestic production of various illicit tobacco products (including counterfeit cigarettes and RYO), and a range of illicit vaping products.

68. These illicit markets have grown enormously. In the process they deprive both the government and legal market operators – including the retail sector – of revenue.[18]

    "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

69. In Australia the price gap between legal and illicit tobacco has long been considerable. In 2010, for example:

    69.1. Duty-paid tobacco was more expensive than illicit tobacco by a factor of 2.5.

    … and Australia's legal/illicit price gap is today considerable

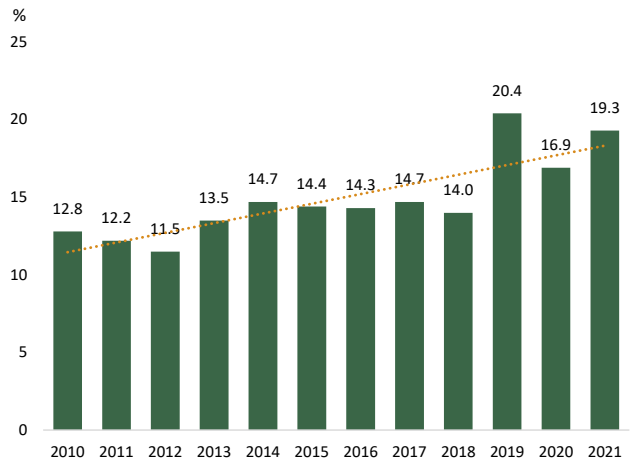
        69.1.1. That price difference amounted to 37 cents per cigarette – AUD 7.4 per pack of 20.[20]

    69.2. Over the decade to 2021, this gap approximately doubled in absolute terms, and remained near-constant proportionately, when adjusted for general inflation.

        69.2.1. Duty-paid tobacco is more expensive than illicit tobacco by a factor of 2.2.[21]

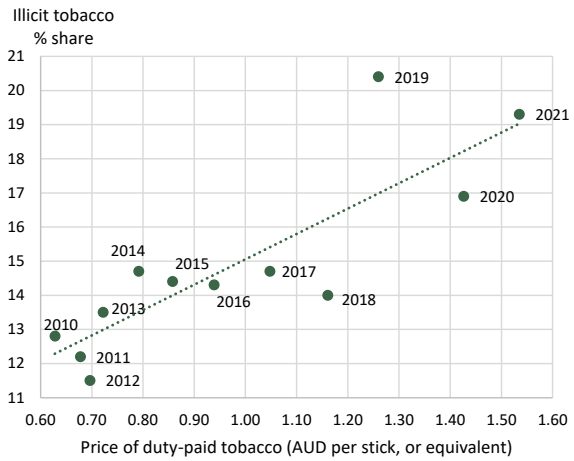
        69.2.2. That price difference amounts to 85 cents per cigarette – around AUD 17 per pack of 20.

Figure 9: Illicit tobacco market share in Australia (weight-based)



Source: KPMG

Figure 10: Duty-paid tobacco price vs illicit tobacco share



Source: IRI and KPMG
Note: Prices in nominal terms then deflated by CPI (2021 prices)

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Illicit consumption, production, and smuggling

Some 20% of all tobacco consumption is illicit

70. The scale of consumption of illicit tobacco in Australia is evidently considerable.

    70.1. Approximately 20% of all tobacco consumption, over 2,200 tonnes of illicit tobacco, were consumed in Australia in 2021.[22] (See Figure 9). This compares with an estimated 11-12% a decade ago.

    70.2. A principal reason has been the fall in the consumption of duty-paid tobacco products. (See figure 11).

71. Moreover, there is an evident correlation between illicit share and duty-paid price. (See figure 10).

    71.1. Although correlation does not conclusively prove causality, it is consistent with what would be expected *a priori.*

Illicit tobacco is very difficult to control …

    71.2. It is patently difficult for the customs and excise authorities to control the supply of illicit tobacco in Australia, given the length of the coastline, the size of the country, and the volume of Australia's international trade.

72. 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').

73. However, in 2021, because of COVID, the contraband share fell considerably, to 29%, and this was counterbalanced by an increase in unbranded tobacco produced domestically, which rose to 69%.

74. Illicit tobacco is a problem in three respects. It causes the Australian Treasury to lose sizable potential tax revenues every year; it fuels organised crime; and it frustrates the country's tobacco control policy objectives.

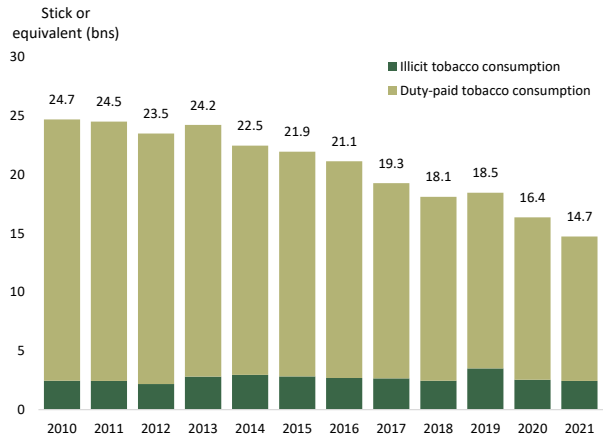
The scale of tax evasion

… and some AUD 1 to over 3bn of tax revenue is foregone

75. The amount of revenue that is foregone as a result of illicit tobacco (the 'tax gap') is clearly considerable

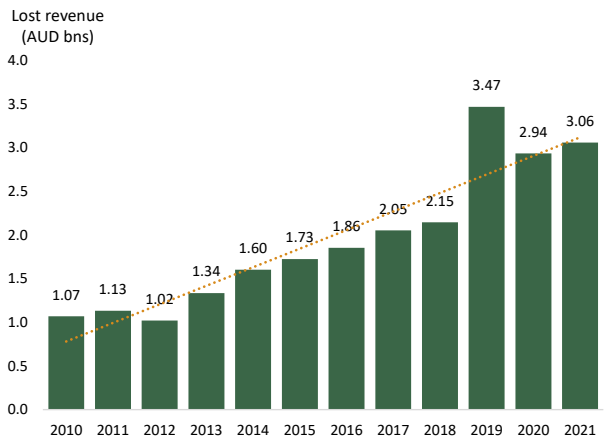
    75.1.1. The Australian Tax Office (ATO) estimates that, for the 2019-20 financial year, consumption of illicit tobacco resulted in a loss of

Figure 11: Evolution of illicit tobacco



Source: KPMG

Figure 12: Tax gap



Source: KPMG

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excise revenue to the government of around AUD 909 m, some 6.2% of tobacco excise revenue.[23]

75.1.2. KPMG has estimated the tax gap in 2021 at over AUD 3 bn.[24] (See Figure 12).

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4. Potential costs and benefits of legalising vaping products

Illicit vaping in Australia

Vaping incidence has accelerated considerably

76. In Australia, the growth in consumption of vaping products has been brisk, with the number of users estimated 1.1 million users.[25]

77. Although they are not legal in Australia, the penetration of vaping products is now similar to that in New Zealand, the UK, and France (See Figure 13).[26]

78. There are substantial differences in vaping product consumption across Australian States:

    78.1. The highest rate is in New South Wales, where currently 7.2% of adults consume vaping products.

    78.2. The lowest rate is in Tasmania, at 3.4%.[27]

    78.3. This may imply 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

79. The data also indicate that current vaping incidence among Australian adults is 5.8%, a 259% increase over the past five years.[28]

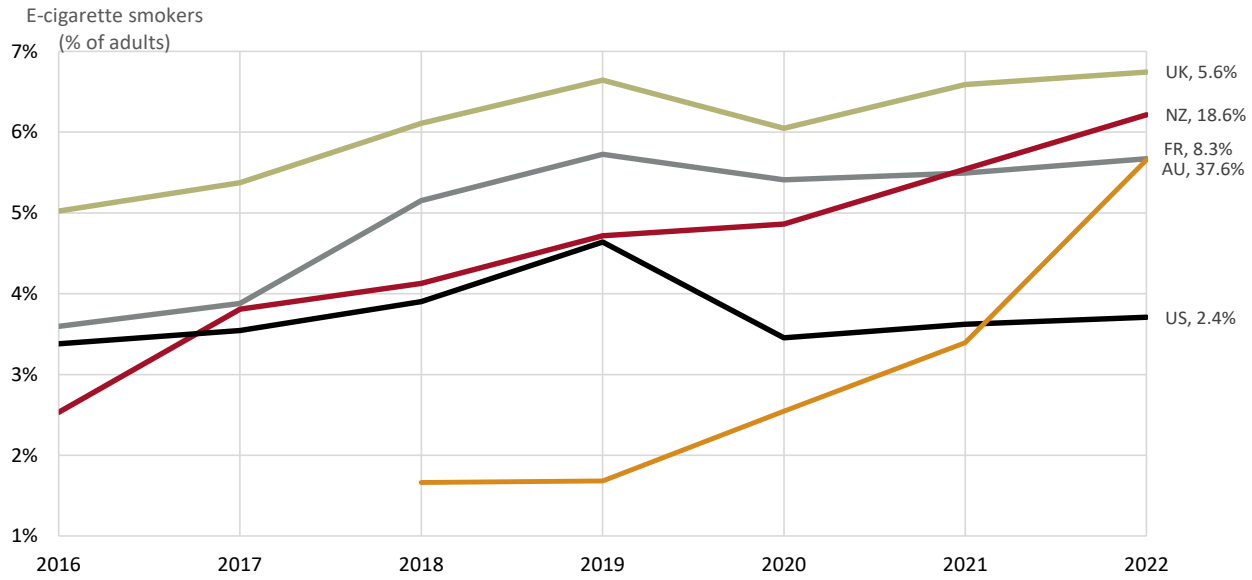
80. Australia currently has one of the world's most restrictive laws on nicotine vaping.

81. Since October 2021, liquid nicotine can be sold in Australia only under medical prescription, with the importing and possession of nicotine liquids and vaping devices also requiring a prescription signed by an Australian doctor.

    81.1. In this context, vaping products must be for the personal use of the holder of the prescription.

82. In 2020, a Senate committee argued that:[29]

Figure 13: Vaping Incidence (selected countries)



Source: Roy Morgan (Australia), ECigIntelligence (all other countries)
Note: Labels are country abbreviation and CAGR

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"… 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)."

83. However, the take-up rate is very small, few doctors offer the service, and most are reluctant to do so.

84. 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."

85. Australia is something of an outlier in this respect when compared with other developed nations.

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

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

Unintended consequences

The prevalence of vaping poses several problems

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

87. First, given that the supply of these products is, by definition, neither properly regulated nor monitored, the Australian authorities lack oversight of the products being consumed.

    87.1. Packaging and health warnings have limited regulatory oversight, and there are no mechanisms to monitor the ingredients and device standards and/or electrical compliance.

    87.2. A fully legal market, as observed in many progressively regulated vaping countries – such as the UK, France and New Zealand – provides greater control over product standards and industry compliance.

88. Second, significant amounts of goods and services tax (GST) revenues are being lost to illicitly sold vaping products, as well as customs import duties payable at border entry.

89. Third, the proceeds from other lucrative illegal activities are often used to fund additional criminal ventures (as seen in the illicit tobacco trade).

    89.1. This is something that all customs, law enforcement agencies and revenue authorities are seeking to prevent, using every policy advantage available to them.

90. These unintended consequences could largely be avoided through proper regulation on vaping products, again, as in the UK and New Zealand.

Three ways to control illicit vaping

There are three ways to reduce illicit vaping:

91. There are three ways in which the Australian government could seek to reduce the amount of illicit vaping products currently flooding the illicit market:

    91.1. Devote more substantially more resources to reducing the importation of illicit vaping products.

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91.2. Bolster the Medicare based prescription programme much more proactively in a bid to convert adult consumers of illicit vaping products to legal devices and e-liquids.

91.3. Legalise vaping products in a properly regulated and comprehensively licenced retail environment, allowing them to be sold as an adult consumer good.

1. Reducing the importation of illicit vaping products

Reduce smuggling and illicit production …

92. This is extremely challenging:

92.1. The length of Australia's coastline makes it difficult to intercept smuggled goods. This is particularly important in respect of vaping products.[30]

92.2. The size of the country makes it difficult to catch illicit domestic importers, particularly given the fragmentation of supply. Prosecutions, whilst they do occur, are rare, in relation to the volume of incoming products.

92.3. 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 …

93. An alternative, yet likely unworkable, approach, could be to reduce illicit consumption by using the current prescription based framework more proactively.

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

94.1. The take-up of the prescription scheme is minimal, with acceptance from GPs in Australia markedly low.

94.1.1. In June 2022, only 200 out of 31,000 general practitioners were publicly listed as nicotine prescribers.[32]

94.2. Moreover, the strengthening the *status quo* would need to include a 'crack down' on the vast majority of existing adult consumers who do not have prescriptions.

94.3. The Australian Government would also have to 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]

3. Legalise and properly regulate the use of vaping products

.. or make vaping legal

95. The third, and more workable, approach to addressing the increasing consumption of illicit vaping products would be to regulate them properly as an adult consumer product through appropriately licenced retailers.

Benefits to public finances

96. This approach would enable the Australian Government to properly monitor and regulate the use of vaping products as adult consumer goods.

97. It would also generate additional revenue streams. To illustrate:

97.1. The average adult smoker in Australia consumes around 75 cigarettes per week.[34]

97.2. The average cost of a vaping product is around AUD 25 per week.[35]

97.3. The nicotine content in one vaping product can equal around 50 cigarettes.[36]

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97.4. The average vaping product consumer therefore consumes perhaps 1.5 vaping products per week, at a cost of around AUD 37.5 per week, or AUD 1,950 per year.

97.5. Given the rate of GST in Australia of 10%, this would result in a tax take of nearly AUD 200 per vaping product user per year.

Legalising vaping would benefit the federal budget …

98. The annual difference between the prescription model and properly regulated and licenced retail market would therefore be approximately AUD 200 plus AUD 39.75 for a GP visit, totalling AUD 240 per person. Thus:

98.1. If it were possible to convert each of the 1.1 million 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 45 million per year.

98.2. In contrast, if vaping products were legalised as described above, and each of the 1.1 million adults currently using illicit vaping products were being serviced by the legal, properly regulated (and GST inclusive) supply chain, it is possible that over AUD 200 million in new GST revenues could be generated per year. ■

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[1] See https://data.oecd.org/gga/general-government-debt.htm

[2] Also known as electronic nicotine delivery systems (ENDS), or e-cigarettes.

[3] University of Oxford, "*Our World in Data*".

[4] IMF *World Economic Outlook,* October 2022. https://www.imf.org/en/Publications/WEO/weo-database/2022/October

[5] The GDP-weighted ratio for the G7 aggregate by contrast rose from 118% to 138% of GDP between those two years, a bigger rise, and from a much higher base. Source: International Monetary Fund, *World Economic Outlook Database*, April 2022

[6] https://archive.budget.gov.au/2022-23/bp1/download/bp1_2022-23.pdf

[7] Adam Smith, *An Enquiry into the Nature and Causes of the Wealth of Nations*, The Wealth of Nations, Chapter 5, p. 750 of the 1900 Edition, Routledge.

[8] Source: IRI (Information Resources, Inc.) https://www.iriworldwide.com/en-au

[9] See: https://www.who.int/teams/health-promotion/tobacco-control/global-tobacco-report-2021

[10] See: https://www.who.int/teams/health-promotion/tobacco-control/global-tobacco-report-2021

[11] EU tobacco excise tax regulations. https://taxation-customs.ec.europa.eu/taxation-1/excise-duties/excise-duties-tobacco_en .

[12] See https://taxfoundation.org/cigarette-tax-europe-2021/

[13] Source: IRI, Australian Bureau of Statistics, and Australian Ministry of Finance.

[14] While per capita demand for most products rises with per capita real income, there are exceptions. The demand for so-called 'inferior' goods – potatoes are an example – decreases with rising per capita income, people then being able to eat 'superior' products, such as meat, the per capita demand for which rises disproportionately with real per capita income.

[15] Examples include Veblen goods and Giffen goods. A Veblen good is a type of luxury good for which the demand increases as the price increases: its demand curve is upward-sloping. The higher prices of Veblen goods may make them desirable as a status symbol in the practices of conspicuous consumption and conspicuous leisure. Examples include expensive jewellery, or expensive yachts.

A Giffen good is a low-priced product that people consume more of as the price rises, and vice versa. A Giffen good is so strongly inferior in the minds of consumers that the income effect more than offsets the substitution effect, so that the net effect of an increase in the price of the good is to increase demand for it. Examples include bread, wheat, and rice.

[16] Various estimates have been made of elasticities of demand for tobacco products, especially cigarettes. All such estimates are subject to a margin of uncertainty: demand specification, data issues, and estimation methods have varying degrees of influence on reported estimates of price, income, and advertising elasticities. See for example the meta-analysis by Gallet C and List J., 2002. *Cigarette demand: a meta-analysis of elasticities*. Health Economics 2003;12(10):821–35. http://www3.interscience.wiley.com/journal/101520325/abstract?CRETRY=1&SRETRY=0 cited in Greenhalgh, EM, Scollo, MM and Winstanley, MH. Tobacco in Australia: Facts and issues. Melbourne: Cancer Council Victoria; 2022

[17] The basic equation regresses the quantity of duty-paid tobacco sold on: a measure of real income; and a time trend to capture any systematic effects, including rising real income. The regression procedure also identifies lags in the adjustment process; and suggests two dummies, one in Q4 2015 and the other in Q4 2020 through Q2 2021, which presumably captures the one-off effect of the Covid-related lockdown. Details are available on request.

The regressions were run in two forms: log levels, and first differences of logs. The two specifications yielded similar parameter values for the all-important income elasticity; but we prefer the first differences equation because that specification is the more demanding.

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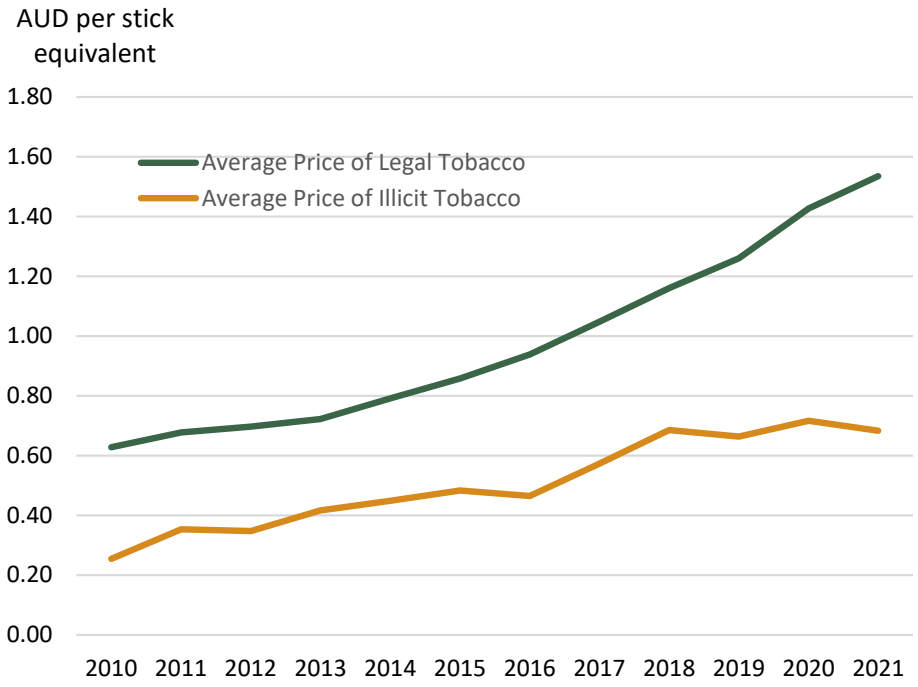
[18] An analysis by PwC in 2022 concluded that higher prices for duty-paid cigarettes, driven predominantly by increases in taxes, have led, all other things given, to higher potential profits for the suppliers of illicit cigarettes, and larger potential savings for the consumer, therefore generating 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



Source: IRI and KPMG

[22] See: KPMG, 2022. *Illicit tobacco in Australia.* London: KPMG.

[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] See https://aacs.org.au/1-1-million-reasons-to-regulate-australias-illegal-vape-industry/

[26] The data used for the charts come from surveys, and so they are only estimates, and consequently subject to uncertainty. This is particularly so for 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.

[27] Roy Morgan surveys.

[28] Roy Morgan surveys.

[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.

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[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] See: https://spectator.com.au/2022/09/australias-vaping-experiment-has-failed/

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

[35] 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

[36] This is an estimate, published by the NSW government. See: https://www.health.nsw.gov.au/vaping

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Received 23 July 2024