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What are the taxpayer savings from cancelling the visas of organised crime offenders?

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Cancelling and refusing the visas of 184 organised crime offenders **saved an estimated $116 million**, or over $630,000 per offender.

Targeting prolific offenders early in their criminal career generates the largest savings from crimes and prison days avoided.

Greater savings can be achieved by focusing on OMCG members, offenders with many prior offences by the age of 25, and those with weapons offences.

OMCG members commit more crimes and more serious crimes than other organised crime offenders.

These crimes cost the community over **$500,000 per OMCG member** and almost $320,000 for other organised offenders. Most of these costs are from violent crimes.

The average cost of offending by OMCG members, based on crime and prison costs, is $1.3 million. For other organised crime offenders the estimated cost is more than $1 million.

By age 60 **OMCG members spend nearly 7 years in prison** at a cost of more than $800,000 to the taxpayer. This is almost 20 percent higher than other organised crime offenders.

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What did we do?

- At the request of the Australian Criminal Intelligence Commission (ACIC) we estimated the taxpayer savings from cancelling or refusing the visas of 184 organised crime offenders between December 2014 and May 2018.
- We did this by working out what offences are committed by organised crime offenders over their lifetime using a database of the criminal histories of known associates of organised crime groups developed by the Australian Institute of Criminology (AIC) using data from the ACIC.
- We calculated the cost of these offences to the community—including medical costs, costs due to lost output, property loss and intangible costs—using estimates published by the AIC.
- We also calculated the time spent in prison for each offence and the direct and indirect costs of imprisonment.
- We were then able to estimate the potential taxpayer savings of cancelling or refusing a visa. We estimate these savings at different ages, for both outlaw motorcycle gang (OMCG) members and other organised crime offenders, and for more and less prolific offenders.

What did we find?

- Organised crime offenders are a prolific group. They show a level of activity, and persistence in offending, unlikely to be observed in any general population of offenders. Offending by OMCG members starts serious and stays serious, while the seriousness of offending by other organised crime offenders increases over time.
- Offences committed by OMCG members between the ages of 20 and 60 cost the community more than half a million dollars per offender. The average cost of offences committed by other organised crime offenders over that same period is nearly $320,000. Most of these crime costs are the result of violent offences.

- OMCG members accrue an average of nearly seven years in prison by the time they reach 60 years of age. This is higher than for other organised crime offenders because they are more prolific and more likely to commit violent crime.
- By the age of 60, the average OMCG member will cost taxpayers more than $800,000 in prison costs, while the cost of prison for other organised crime offenders is more than $700,000.
- The average total cost to the taxpayer of offending by OMCG members, based on both crime and prison costs, is $1.3 million. For other organised crime offenders, the estimated cost is more than $1 million per offender.
- We estimate the total savings from cancelling or refusing the visas of 184 organised crime offenders, including 139 OMCG members, to be $116 million, or $632,446 per person.
- There is a relatively small group of very prolific offenders who commit significantly more offences, and more costly offences, and who accrue substantially more time in prison. This group costs the taxpayer four times more than other organised crime offenders.
- Greater savings can be achieved by focusing attention on prolific offenders with a high number of prior offences by the age of 25, who are OMCG members or who have committed weapons offences.

Introduction

Section 501 of the *Migration Act 1958* (Cth) allows the Minister for Home Affairs or their delegate to cancel or refuse the visa of a person on the grounds that they do not meet the character requirements set out in the Act. These grounds may be grouped into five broad categories, a number of which are particularly relevant to individuals involved in organised crime, including outlaw motorcycle gang (OMCG) members. A person will not pass the character test if they have a substantial criminal record, if they are (or have been) a member of a group or organisation that the Minister suspects of being involved in criminal behaviour, if they are assessed as being not of good character based on their past and present criminal behaviour, or if there is a risk they will continue to engage in criminal conduct and be a danger to the community. Cancellation of a visa is mandatory for those people who are currently serving a full-time custodial sentence and who have been sentenced to a term of at least 12 months imprisonment.

Data provided by the Department of Home Affairs shows that, between December 2014 and May 2018, 184 organised crime offenders had their visas cancelled (n=166, 91%) or refused (n=18, 9%) for failing to meet these character requirements or under other related sections of the *Migration Act*. Seventy-six percent (n=139) of these organised crime offenders were members of an OMCG. The median age of visa cancellation or refusal was between 35 and 39 years old. Around one-third (29%) were less than 30 years of age, while one in eight (13%) was 50 years or over at the time their visa was refused or cancelled.

The individuals whose visas were cancelled or refused under section 501 had committed a combined total of more than 300 offences, meaning some had committed multiple offences. Overall, 50 percent of these offences were violent offences, 23 percent were property offences, 20 percent were drug offences and seven percent were national security or organised crime offences. OMCG members were significantly more likely to have committed violent offences (55% vs 32% of all offences), while other organised crime offenders were much more likely to have committed a drug offence (36% vs 16%).

Cancelling the visas of these individuals prevents them from committing further offences in Australia. Besides the obvious benefits to community safety, this may also generate significant savings to the Australian taxpayer.

What was the purpose of this study?

At the request of the Australian Criminal Intelligence Commission (ACIC), the Australian Institute of Criminology (AIC) estimated the taxpayer savings associated with cancelling or refusing the visas of OMCG members and other organised crime offenders. More specifically, this study addressed the following questions:

- How common is offending by organised crime offenders?
- What are the costs to the community from offences committed by organised crime offenders?
- How much time do organised crime offenders spend in prison?
- What are the costs to the taxpayer associated with the time spent in prison?
- How much could be saved by cancelling or refusing the visas of organised crime offenders?
- Could the savings be higher if more prolific offenders were targeted?
- Who is more likely to be in the most prolific group of offenders?

To answer these questions, we had to work out what would have happened if the visas of organised crime offenders had not been cancelled, and what the crimes not prevented would have cost the taxpayer.

How did we do it?

We started by working out how many and what types of offences are committed by organised crime offenders, including OMCG members, from age 20 to 60 using a database of the recorded apprehension histories of known associates of organised crime groups (Fuller, Morgan & Brown in press). This database was created by matching records from two ACIC databases: the National Criminal Target List (NCTL) and the National Police Reference System. This served as the counterfactual—what happens if an organised crime offender is permitted to stay in the country—and assumes that those offenders whose visas were cancelled would have followed a similar offending trajectory to the offenders in the database. The final sample comprised 6,154 offenders responsible for 97,706 offences, including 611 OMCG members (10%) and 5,543 other organised crime offenders (90%).

We estimated the societal costs associated with these offences, including medical costs, costs due to lost output, property loss, and intangible costs, using cost of crime estimates published by the AIC (Smith et al. 2014). Multipliers published by the Australian Crime Commission (ACC 2015) were used to determine the cost of offences committed by offenders while they were members of an organised crime group (ie serious and organised crimes). Offences were classified as serious and organised crime if they were committed in the five years before or any time after the offender was added to the NCTL.

We then estimated the number of prison days associated with these offences. We used data published by the NSW Bureau of Crime Statistics and Research (BOCSAR) on the proportion of offenders sentenced to prison and the average length of a custodial sentence for each offence type (NSW BOCSAR 2017), along with data published by the Sentencing Advisory Council in Victoria on the likelihood of a custodial sentence for each reoffence (Fisher 2015). From this we calculated the amount of time spent in prison (in both days and years) by each person in the database.

The cost of imprisonment was based on figures regularly reported in the Productivity Commission's *Report on government services* (SCRGSP 2018) on the operating expenditure and capital costs of prison per prisoner in Australia, per day. Because other costs are accrued when someone is sent to prison, we used the results from recent AIC research on the wider costs of imprisonment (Morgan 2018) to estimate the indirect costs of each prison sentence.

These costs were then used to determine the potential taxpayer savings from visa cancellations. Estimated savings are based on the costs accrued after a certain age. We estimated the potential savings based on multiple intervention points (ie visa cancellation at different ages), for both OMCG members and other organised crime offenders, and for more and less prolific offenders. We also estimated the savings associated with the 184 organised crime offenders whose visas were cancelled or refused under the *Migration Act* between December 2014 and May 2018, based on the ages of these offenders.

What's not included in these estimates?

The focus of this study is the direct cost of offences committed by organised crime offenders, and the cost of prison sentences associated with these offences. Policing costs, particularly those incurred when investigating offences committed by organised crime offenders, are not included in these estimates. Similarly, the cost of offenders being processed through the courts, including criminal trials and appeals, is excluded. Both stages are likely to incur significant taxpayer costs, particularly for more serious offences. The costs of sentence types other than prison (ie community orders) are also excluded. Further, the cost of certain offence types, most notably drug supply offences, could not be reliably estimated, while only those crimes that have come to the attention of police were included in the estimated offence costs. Therefore, while the estimates presented in this report are comprehensive, they underestimate both the costs of offending by organised crime offenders and the taxpayer savings that may result from visa cancellations and refusals. More information about these exclusions is in Appendix A.

Results

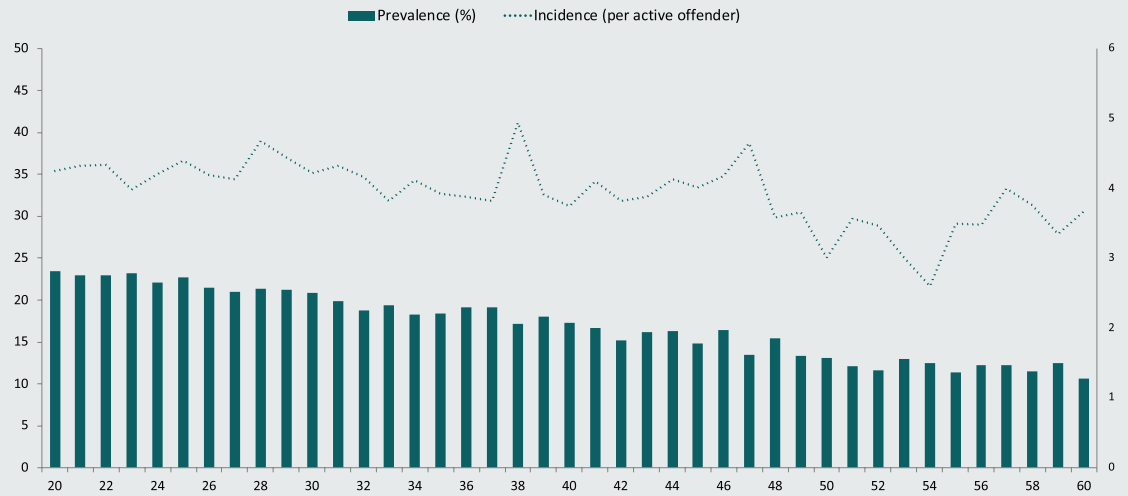
How many crimes are committed by organised crime offenders?

The first step in our analysis was to determine how frequently those involved in organised crime commit crime, including those offences that may result in a custodial penalty. The prevalence and incidence of offending at each age was calculated for the entire cohort from the age of 20 through to 60 (Figure 1). Given that reliable criminal history data was not available until the early 1990s, these figures were calculated using the total population of offenders observed at each age. *Prevalence* refers to the proportion of offenders who committed at least one offence at that age. *Incidence* refers to the average number of offences per active offender.

Figure 1 shows that the prevalence of offending among all the organised crime offenders in our database gradually decreased from 23 percent at age 20 to 11 percent by age 60. Nevertheless, the level of activity and persistence among this group of offenders is unlikely to be observed in any general offending population. They are prolific offenders.

The incidence of offending, however, followed a slightly different pattern. The number of offences committed by active offenders remained relatively stable at between four and five offences per offender until the late 40s, before decreasing slightly (with some fluctuation) up to the age of 60. This means that, while the proportion of offenders who are active appears to fall, those who continue to offend do so at similar frequency.

Figure 1: Prevalence and incidence of offending, by age of offender, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

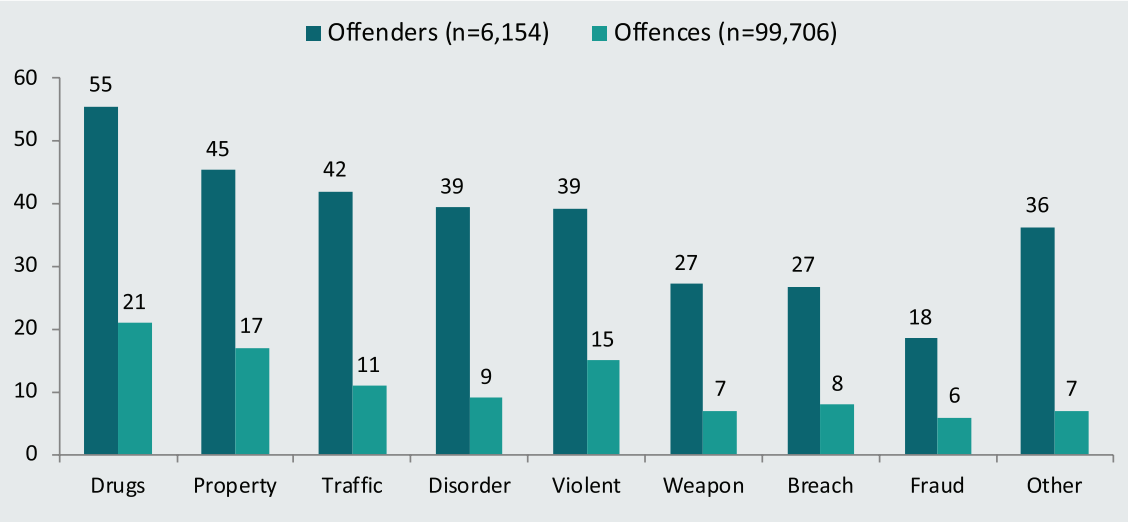
A similar trend is observed in both the prevalence and incidence of offending among OMCG members and other organised crime offenders. However, while the incidence of offending is roughly the same, the prevalence of offending—the proportion of offenders who are active—is significantly higher among OMCG members (Figure 2). Nearly one in three OMCG members was active during their 30s, and this proportion did not fall below one in five until well into their 40s. This means they are responsible for a disproportionate amount of crime, even when compared to other organised crime offenders. The rate of offending does not converge until the late 40s, which means OMCG members are more active than other organised crime offenders throughout their 20s, 30s and 40s.

Figure 2: Prevalence of offending, by age of offender and OMCG membership (%)

Source: AIC organised crime offender database, 2018 [computer file]

We also analysed the types of offences committed, because different offence types incur different costs to the community and because some offence types are more likely than others to result in a custodial sentence. This analysis was also used to confirm the organised crime offenders within the database were broadly comparable to the organised crime offenders who had their visas cancelled or refused.

Figure 3: Prevalence of offending and offences, by major offence type, all organised crime offenders (%)

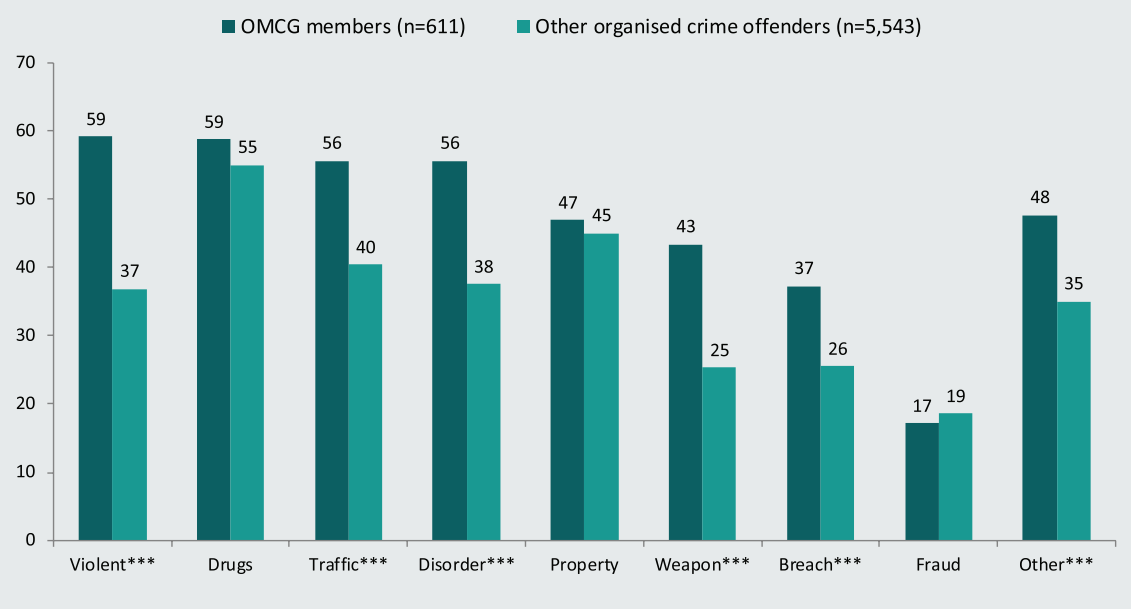


Source: AIC organised crime offender database, 2018 [computer file]

The most common offence type was drug offences, with more than half (55%) of the 6,154 offenders with links to organised crime having recorded at least one drug offence, and drug offences comprising one-fifth (21%) of all recorded offences by these offenders (Figure 3). This was followed by property offences (45% of offenders, and 17% of offences). Two in five offenders (39%) had committed a violent offence, and these comprised 15 percent of all recorded offences.

As shown in Figure 4, there is no difference between OMCG members and other organised crime offenders in rates of drug offending, property crime or fraud offending. OMCG members are, however, significantly more likely to have committed a violent, serious traffic, disorder, weapon, breach or 'other' offence. The largest difference was in violent and weapon offences, with OMCG members 60 percent more likely to have committed a violent offence and 70 percent more likely to have committed a weapon offence than other organised crime offenders in the database.

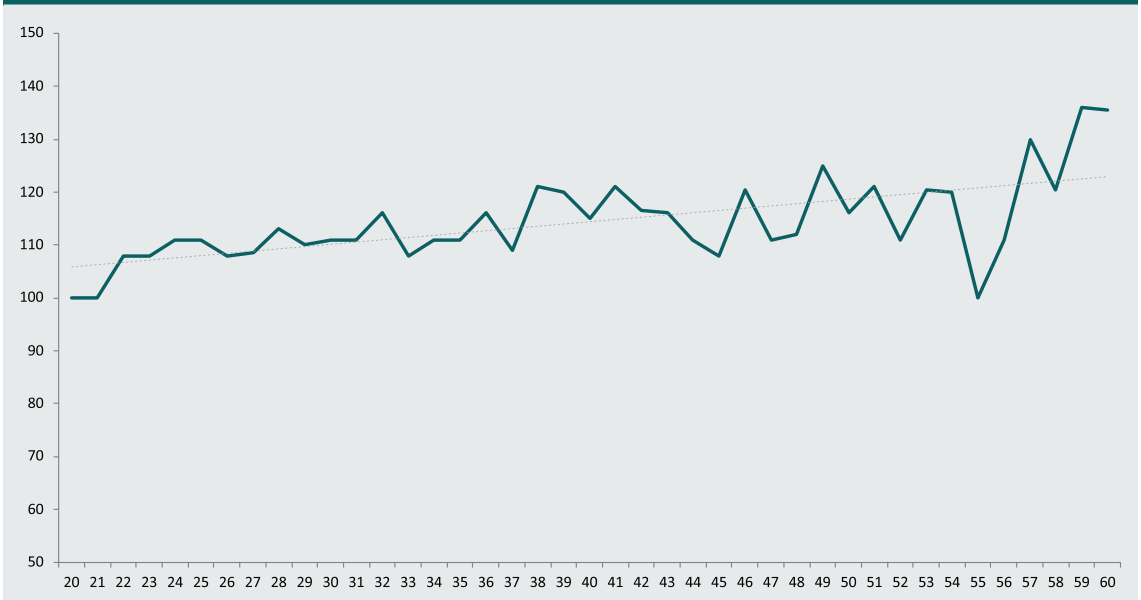
Figure 4: Prevalence of offending, by major offence type and OMCG membership (%)



*** Statistically significant at $p<0.001$
Source: AIC organised crime offender database, 2018 [computer file]

The seriousness of offences committed is also a major factor in the likelihood an offender will receive a custodial sentence. More serious offences, particularly more serious violent offences, also incur greater costs to the victim. Offence seriousness was measured using the Australian Bureau of Statistics' National Offence Index (NOI), which ranks offences based on their perceived seriousness. The most serious offence committed by each offender at each age was identified for both OMCG members and other organised crime offenders. Figure 5 shows that the seriousness of the most serious offences committed by other organised crime offenders increased with offender age. Offences committed by offenders in their 40s and 50s were more serious than those committed by offenders in the database during their 20s and 30s.

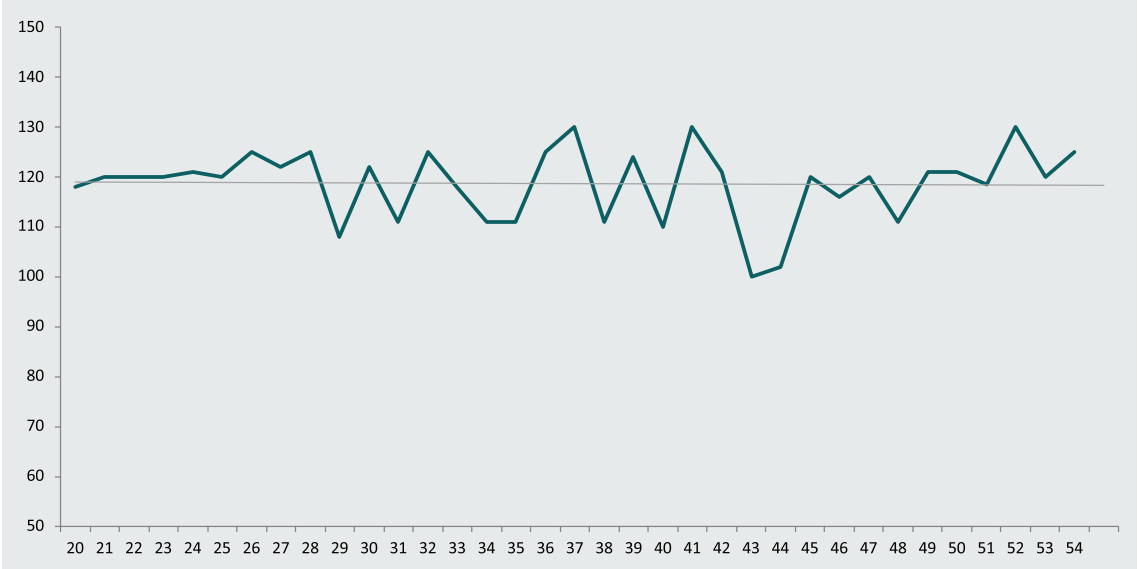
Figure 5: Seriousness of most serious offence, by age of offender, other organised crime offenders



Note: Seriousness refers to median NOI of most serious offence
Source: AIC organised crime offender database, 2018 [computer file]

The same analysis was conducted for OMCG members (limited to age 52, due to small sample sizes thereafter), with different results (Figure 6). The maximum seriousness of offences is similar to that of other organised crime offenders. But, rather than increasing in severity over time, offences committed by OMCG members start serious and stay serious. This probably reflects the high rate of violent offences committed by OMCG members.

Figure 6: Seriousness of most serious offence, by age of offender, OMCG members



Note: Seriousness refers to median NOI of most serious offence. Limited to age 52 due to small number of offenders (<10) in subsequent years
Source: AIC organised crime offender database, 2018 [computer file]

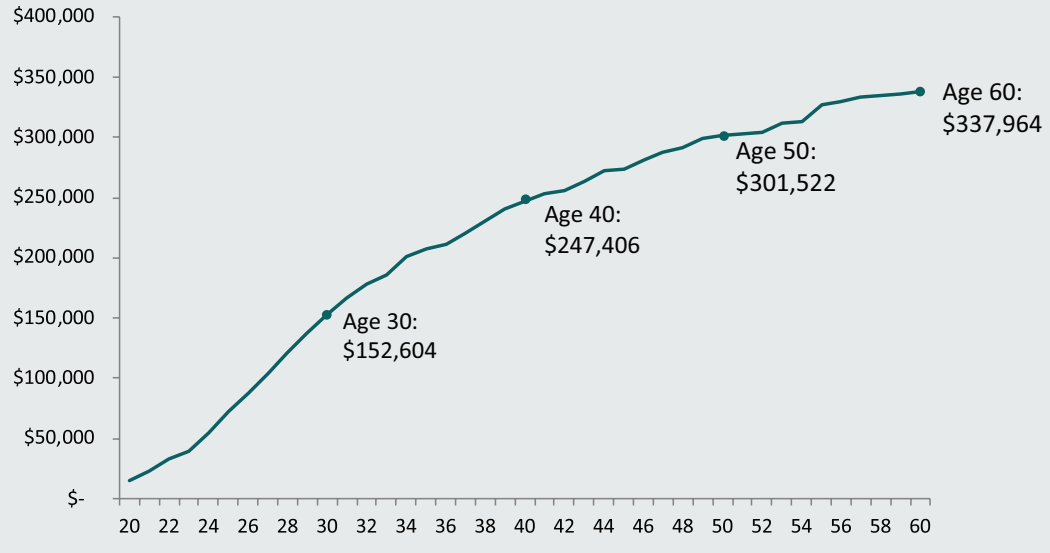
What do offences committed by organised crime offenders cost the community?

We started by estimating the cost of offences by organised crime offenders to the Australian community. This was based on the medical costs, costs due to lost output, property loss and intangible costs reported by Smith et al. (2014) for different offence types. Per incident crime costs were mapped against Australian and New Zealand Standard Offence Classification (ANZSOC) categories of offences. Overall, estimated costs were available for 38 percent of all offences in the database, with costs varying significantly by offence type. Most of the remaining 62 percent of offences were crimes for which there is likely no direct economic cost outside of criminal justice costs (eg breach offences, driving offences). There were, however, some crime types for which reliable estimates were not available (see Appendix A for more information).

Crime costs were inflated to 2016–17 dollars. We categorised offences committed up to five years prior to an offender being added to the NCTL or any time thereafter as serious and organised crimes, on the basis that they were likely to have been committed while an offender was associated with an organised crime group. We adjusted the cost of these offences based on the multipliers published by the ACC (2015), which reflect the additional harm associated with offences committed by organised crime groups.

We estimated that offences committed by an average organised crime offender by age 60 will cost the community $337,964 (Figure 7). Violent offences account for almost three-quarters (72%, $243,585) of all offence costs.

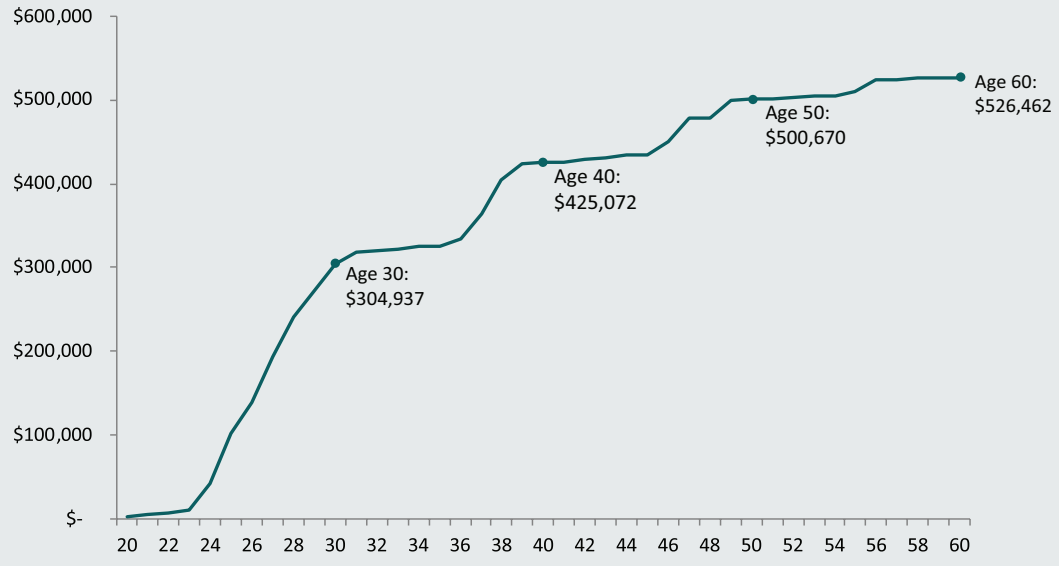
Figure 7: Average cumulative crime costs, by offender age, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

There is, however, a big difference in the cost of crimes committed by OMCG members and other organised crime offenders. The average cost of offences committed by OMCG members between the ages of 20 and 60 is $526,462 (Figure 8). A significant portion of the offence costs for OMCG members (58%, $304,937) are accumulated during their 20s, after which the growth in offence costs slows. Violent offences account for 86 percent of all crime costs for OMCG members ($451,134).

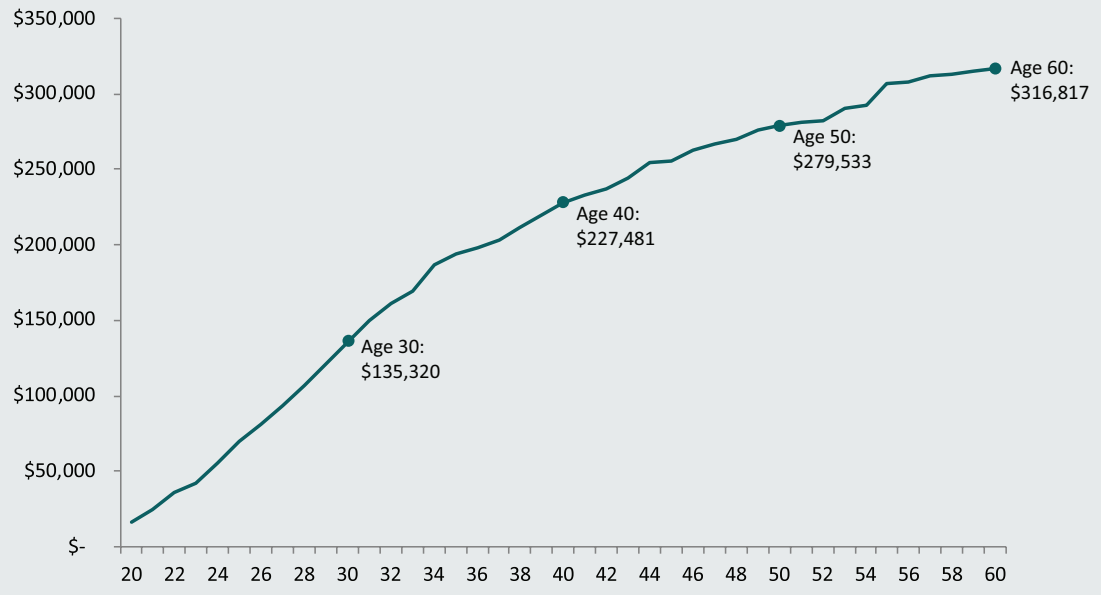
Figure 8: Average cumulative crime costs, by offender age, OMCG members only



Source: AIC organised crime offender database, 2018 [computer file]

The cost of crimes committed by OMCG members is 66 percent higher than the costs for other organised crime offenders (Figure 9). The average cost of offences committed by other organised crime offenders over the same period is $316,817.

Figure 9: Average cumulative crime costs, by offender age, other organised crime offenders



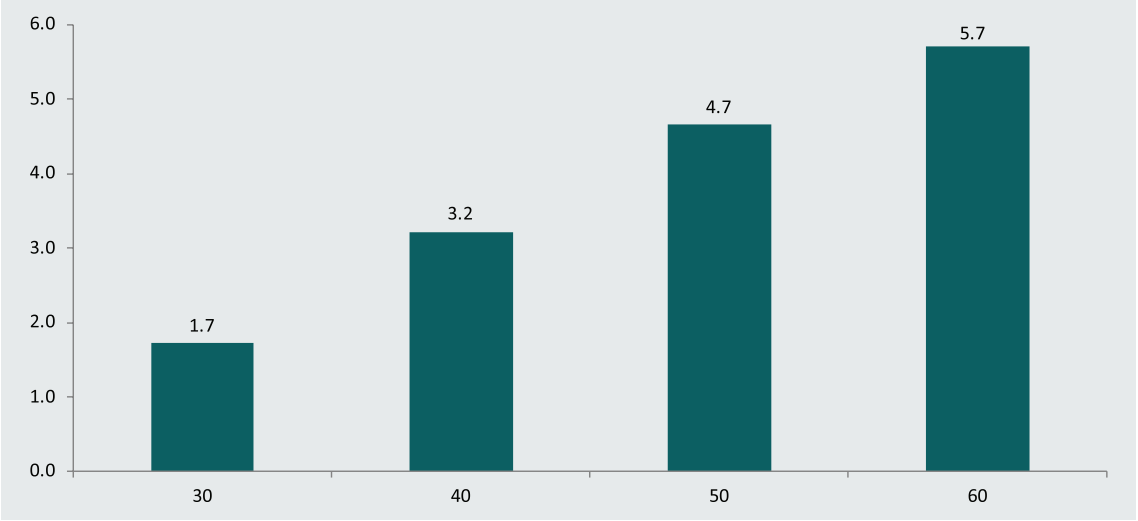
Source: AIC organised crime offender database, 2018 [computer file]

How much time do organised crime offenders spend in prison?

Next, we used information on the number and type of offences committed by organised crime offenders to estimate how much time they spend in prison. Actual custodial data were not available for offenders in the database, so we had to rely on other sources. We used data published by the NSW BOCSAR on the proportion of offenders sentenced to prison and the average sentence for each offence type, classified according to ANZSOC categories, to calculate an adjusted sentence length for each offence. Research has shown that the likelihood of receiving a prison sentence increases each time a person reoffends (Fisher 2015), so the imprisonment rate was indexed accordingly for each reoffence in the database (see Appendix A for more information). The number of prison years accrued at each age was based on when the sentence was imposed, not when it would have been served. Further, we assumed that offenders served the full sentence in custody. We did not count those offences for which the offender was found not guilty, or which were not proceeded against. Sentences for the same offence in the same year were assumed to have been served concurrently.

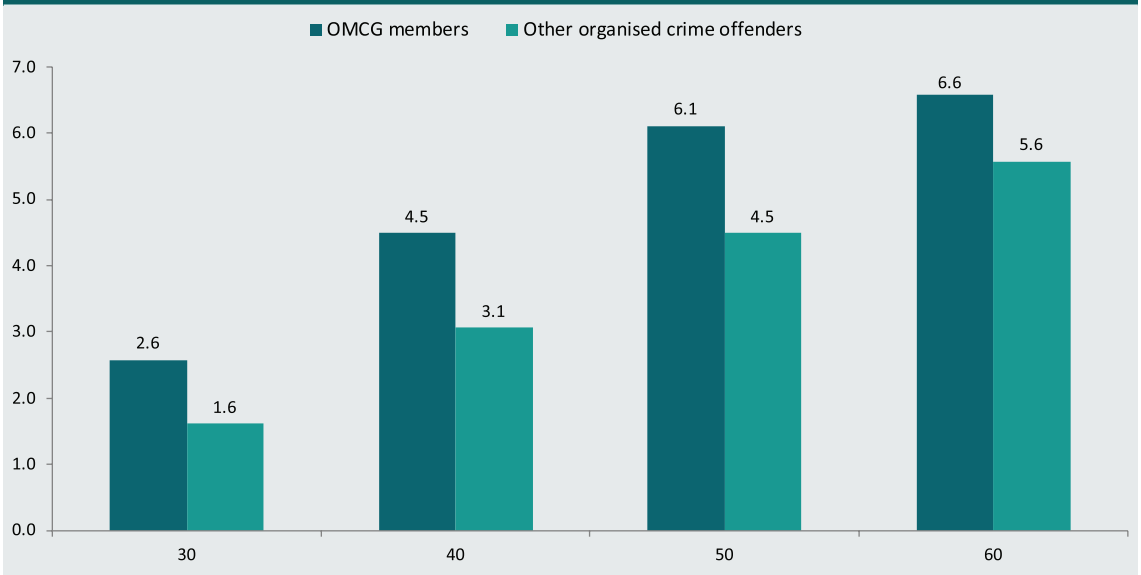
The results for all organised crime offenders are presented in Figure 10. By age 30, it is estimated that organised crime offenders in the database had accrued an average of 1.7 years in prison. This increased to 3.2 years by age 40, and 4.7 years by age 50. We estimated that by the age of 60 offenders with links to organised crime groups had accrued an average of 5.7 years in prison.

Figure 10: Average cumulative prison years, by offender age, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

Figure 11: Average cumulative prison years, by offender age and OMCG membership



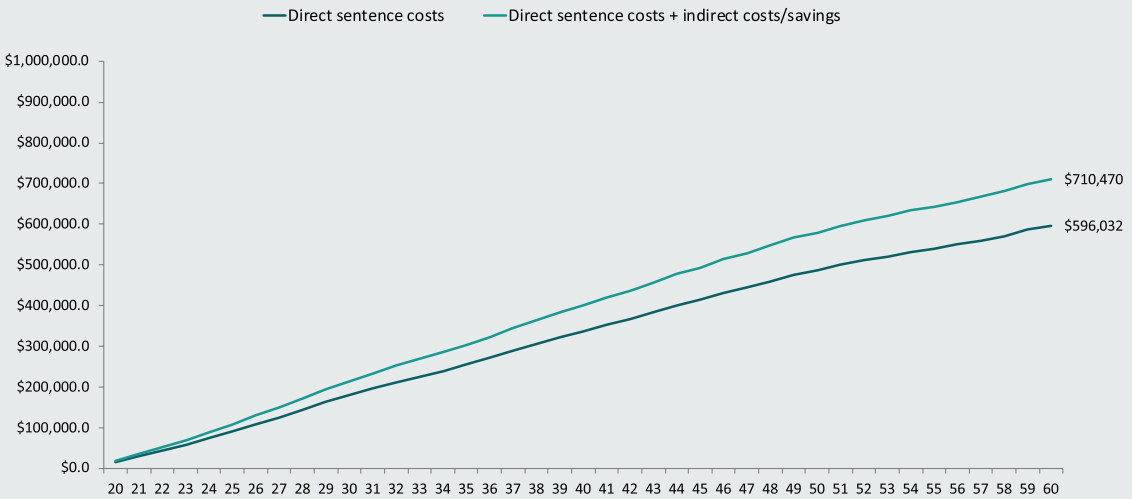
Source: AIC organised crime offender database, 2018 [computer file]

On average, OMCG members spend more time in prison than other organised crime offenders. By age 30, it is estimated that OMCG members had accrued an average 2.6 years in prison, compared with 1.6 years among other organised crime offenders (Figure 11). This increased to 4.5 years and 3.1 years by age 40, and 6.1 years and 4.5 years by age 50. It is estimated that OMCG members had accrued 6.6 years in prison by age 60, compared with 5.6 years for other organised crime offenders. The gap closed by age 60, in line with slowing offence rates for OMCG members.

What does it cost to imprison organised crime offenders?

Based on the amount of prison time each offender was estimated to have accrued, it was possible to determine the costs to the taxpayer. These calculations drew on two sources. The direct sentence costs were based on the *Report on government services* (SCRGSP 2018), which gives both the operating expenditure and capital costs per prisoner per day ($286 in 2016–17). Indirect costs were taken from the AIC report *How much does prison really cost? Comparing the costs of imprisonment with community corrections* (Morgan 2018), which estimates the other costs that are accrued when someone spends time in prison, including costs and savings to the taxpayer from lost productivity, changes to government payments and the incapacitation effect of imprisonment. Including these wider costs increased the average daily cost of prison by 19.2 percent.

Figure 12: Average cumulative direct and indirect prison costs, by offender age, all organised crime offenders

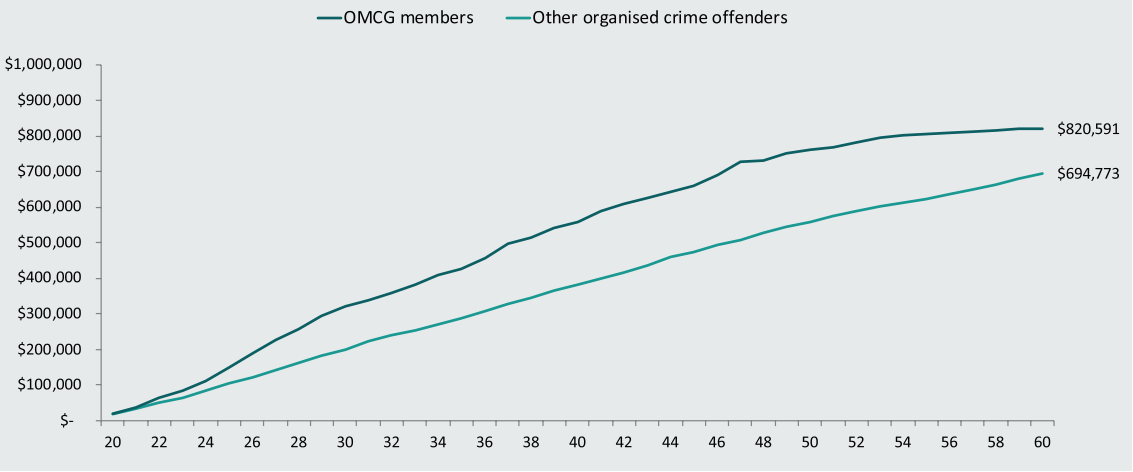


Source: AIC organised crime offender database, 2018 [computer file]

Results for all organised crime offenders are presented in Figure 12. It is estimated that, between the ages of 20 and 60, offenders accrued an average of $596,032 in direct costs from prison sentences to be served over their lifetime. When indirect costs are included, this cost increases to $710,470 per offender.

The direct and indirect prison costs for OMCG members were 18 percent higher than for other organised crime offenders—$820,591 compared with $694,773 (Figure 13). However, the cost of prison for the OMCG members started to plateau from around age 50, when there was a decrease in the number of additional prison days. This is possibly due to the relatively small number of OMCG members at age 60 in the database, but may also be an effect of incarceration—OMCG members had a higher rate of imprisonment in earlier years and this may have limited their ability to commit further offences.

Figure 13: Average cumulative direct and indirect prison costs, by offender age and OMCG membership

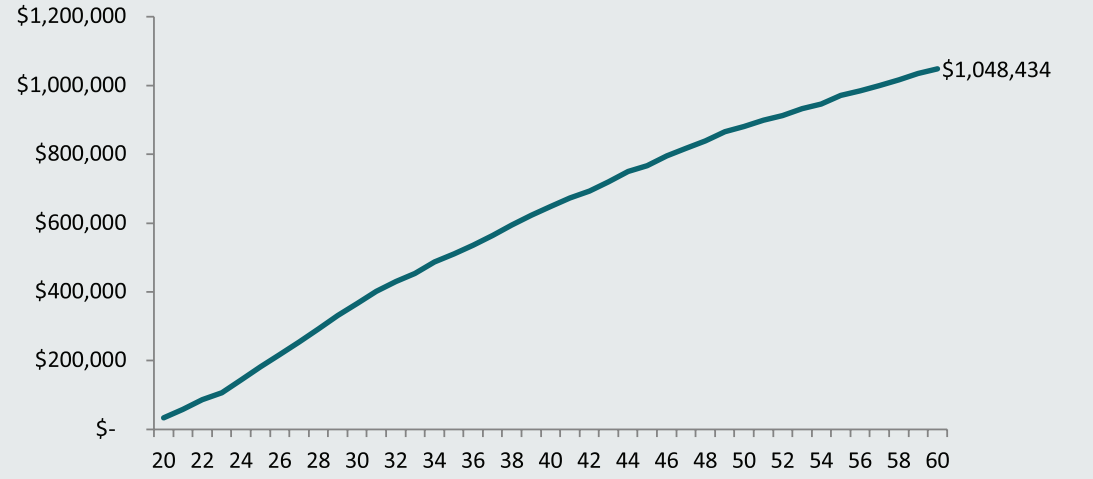


Source: AIC organised crime offender database, 2018 [computer file]

How much could be saved by cancelling or refusing the visas of organised crime offenders?

Crime costs and direct and indirect prison costs were then combined to determine the overall cost to the taxpayer of offending by organised crime offenders (Figure 14). We estimate that, by age 60, each organised crime offender will have cost taxpayers and the economy more than $1 million.

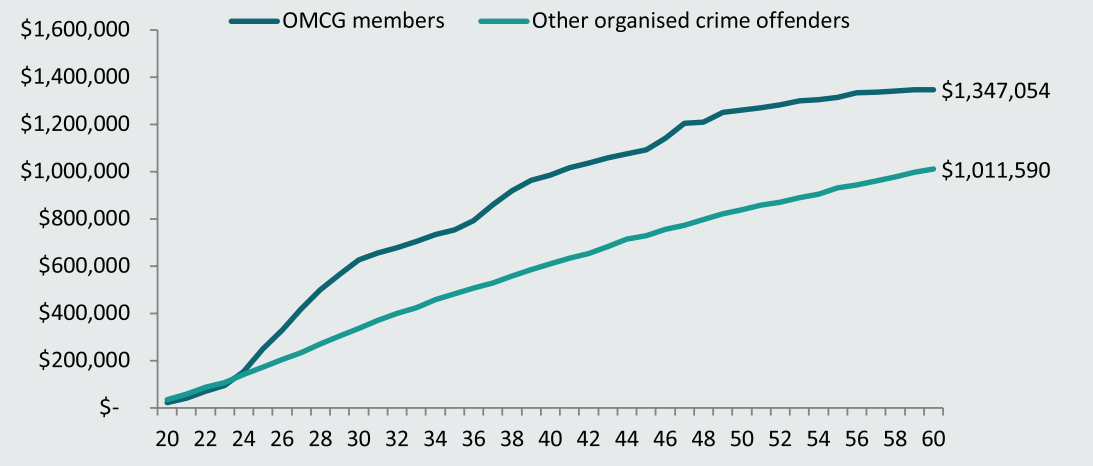
Figure 14: Average cumulative total costs (crime costs and prison costs combined), by offender age, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

Our estimate for OMCG members was 28 percent higher than for other organised crime offenders, with OMCG members accumulating more than $1.3 million in crime and prison costs by the age of 60 (Figure 15). The estimated average crime and prison cost for other organised crime offenders was $1 million.

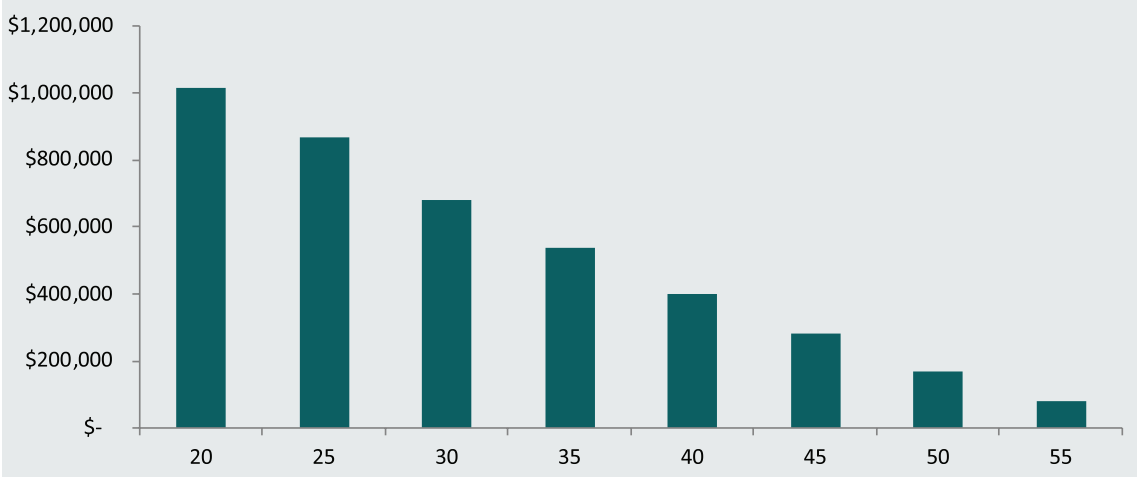
Figure 15: Average cumulative total costs (crime costs and prison costs combined), by offender age and OMCG membership



Source: AIC organised crime offender database, 2018 [computer file]

We then used these costs to determine the potential savings to the taxpayer from cancelling or refusing the visas of individuals with links to organised crime groups. The savings are simply those costs that would have been accrued if the visa had not been cancelled or refused. Obviously, the earlier a visa is cancelled or refused, the larger the savings over the lifetime (to age 60). Results for the entire sample of organised crime offenders are presented in Figure 16. Cancelling or refusing a visa at age 20 is estimated to save the taxpayer an average of $1 million per offender. Intervening at age 35—identified as the lower end of the median age range for cancellations and refusals—saves the taxpayer an average of $537,379 per offender.

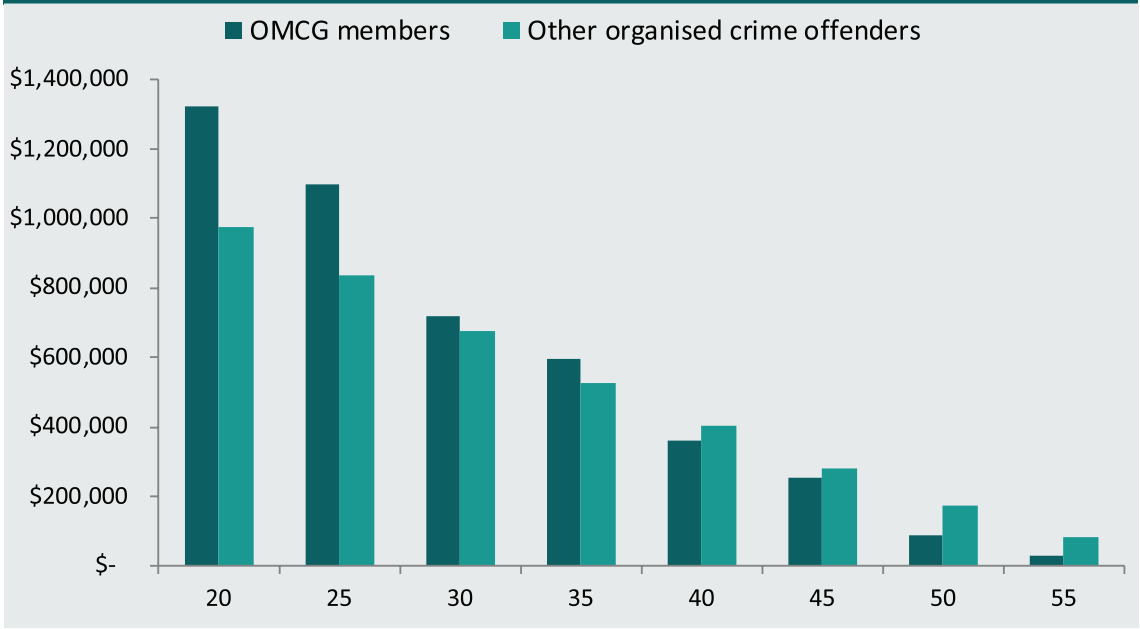
Figure 16: Estimated average total savings to age 60 from avoided crime and prison costs, by age of cancellation or refusal, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

Not surprisingly, the estimated savings are higher for OMCG members, at least where intervention takes place at a younger age (Figure 17). Cancelling or refusing an OMCG member's visa at age 20 is estimated to save the taxpayer an average of $1.3 million per offender. Intervening at age 35 saves the taxpayer an average of $593,310 per OMCG member, compared with $528,470 for other organised crime offenders. Savings from age 40 onwards are lower for OMCG members because the prevalence of offending in later years is lower than for the rest of the sample.

Figure 17: Estimated average total savings to age 60 from avoided crime and prison costs, by age of cancellation or refusal and OMCG membership



Source: AIC organised crime offender database, 2018 [computer file]

Importantly, the short-term savings (ie within 10 years) are significantly greater for OMCG members. Cancelling or refusing an OMCG member's visa at age 20 would save $604,134 within 10 years, compared with $301,553 for other organised crime offenders. At age 30, the savings are $358,006 and $272,683, respectively. Cancelling or refusing an OMCG member's visa at age 35 saves $339,481 within 10 years, compared with $247,329 for other organised crime offenders. The short-term savings remain higher until age 46.

Using information provided by the Department of Home Affairs on the age profile of OMCG members and other organised crime offenders whose visas were cancelled or refused, along with our results, we estimated how much may have been saved in avoided crime and prison costs by the cancellation or refusal of 184 visas between December 2014 and May 2018 (Table 1). These results are limited to the estimated costs until age 60, limited to those costs associated with offending by the individual (not fellow gang members with whom they may co-offend), assume that there is no substitution effect (meaning the offences they would have committed are not committed by a fellow gang member), and assume the offence histories and profiles of the 184 OMCG members and other organised crime offenders born overseas are comparable to those of the offenders in the database.

We estimate that the total saving from these visa cancellations and refusals is $116.3 million, or $632,446 per individual. The estimate for the 139 OMCG members is $91.8 million, or $660,581 per individual, and the estimate for other organised crime offenders is $24.5 million, or $545,541 per individual.

Table 1: Estimated total savings to age 60 from avoided crime and prison costs from visa cancellations and refusals

		OMCG members		Other organised crime offenders	
	n[a]	Savings to age 60	Total	Savings to age 60	Total
<24[b]	16	$1,324,609	$15,895,305	$976,621	$3,906,483
25–29	38	$1,096,682	$33,997,133	$837,408	$5,861,859
30–34	35	$720,475	$18,732,346	$675,068	$6,075,608
35–39	28	$593,310	$13,052,826	$528,470	$3,170,818
40–44	27	$362,469	$6,524,446	$402,385	$3,621,461
45–49	16	$253,829	$2,792,118	$281,141	$1,405,703
50–54	8	$85,475	$512,850	$172,851	$345,702
55–59	12	$31,378	$313,779	$80,849	$161,698
60+	<5	–	–	–	–
Total	184	–	$91,820,804	–	$24,549,331

a: Total visas cancelled or refused, by age group. Age breakdown by OMCG status not reported due to small numbers. Estimates for OMCG members and other organised crime offenders based on number of visas cancelled or refused in each age group
b: Estimated savings based on intervention at age 20. For all remaining age groups, estimated savings based on lower end of the age range. No individual whose visa was cancelled or refused was under the age of 18
Source: AIC organised crime offender database, 2018 [computer file]

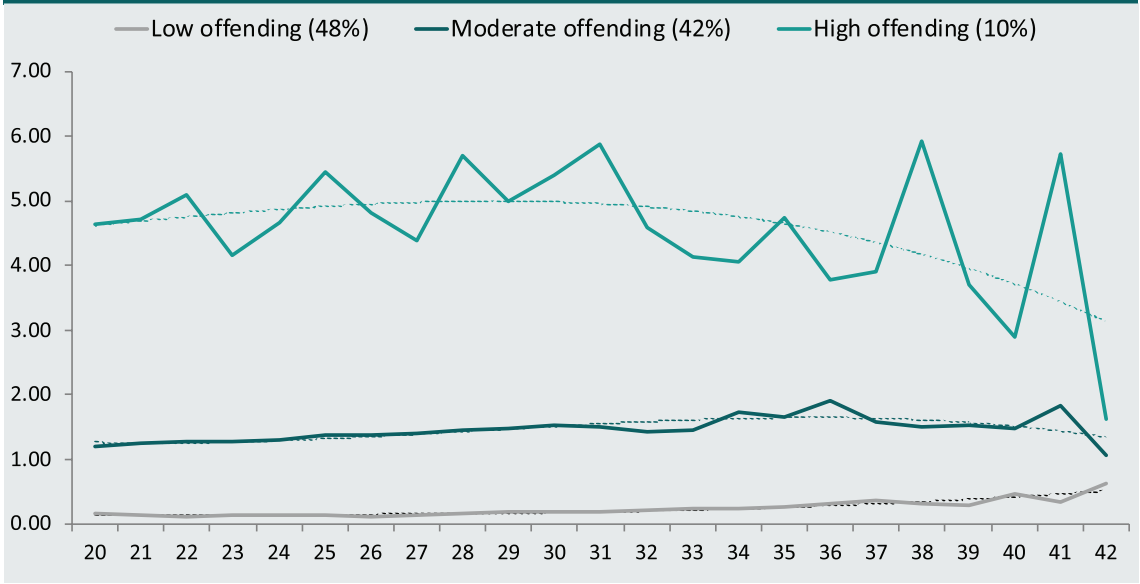
Could the savings be higher if more prolific offenders were targeted?

So far, the analysis has looked at the sample of offenders in the database as a whole. However, this cohort-level analysis masks individual differences. Some offenders will have offended much more frequently, or less frequently, than the average for the whole group. The estimated cost of prison sentences, and therefore the potential savings to the taxpayer from visa cancellations and refusals, also varies significantly.

We used a statistical technique called group-based modelling to identify distinct offending trajectories within the sample of offenders in the database. This method groups offenders who share similar offending patterns into a small number of offending trajectories. More detail about this process, and the results, is in Appendix A. This part of the analysis was limited to those offenders we could follow from age 20 (n=3,262) and, because of the limits of reliable national criminal history data, we could examine these trajectories only until age 42.

We found three distinct offending trajectories (Figure 18). The first, and most common, was the late onset, low-offending trajectory (48%). The next most common group followed a moderate, persistent trajectory (42%). Finally, there was a chronic, high-offending group (10%). This third group, although small, was responsible for a very large number of offences. Members of this high-offending group averaged 5.4 offences per year between the ages of 20 and 42, compared with 1.5 offences per year by the moderate-offending group and 0.2 offences per year by the low-offending group.

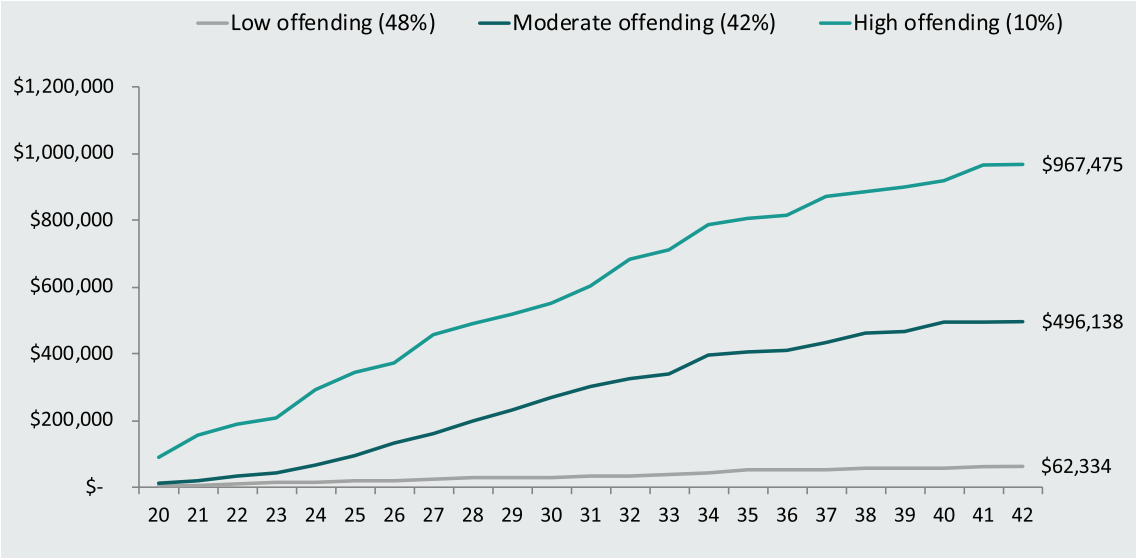
Figure 18: Average offending frequency by organised crime offenders, by offender age and trajectory group, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

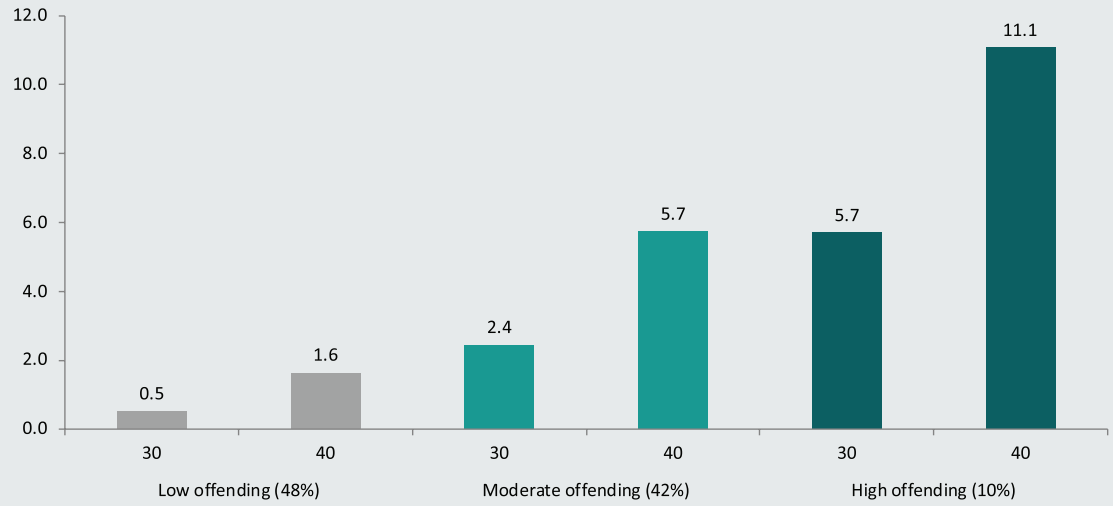
The cost of offences committed by offenders in each of the three trajectory groups is presented in Figure 19. This shows that offenders in the high-offending group accrue nearly $1 million in crime costs by age 42—twice that of the moderate-offending group ($496,138) and nearly 16 times the cost of offences committed by the low-offending group over the same period ($62,334).

Figure 19: Average cumulative crime costs, by offender age and trajectory group, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

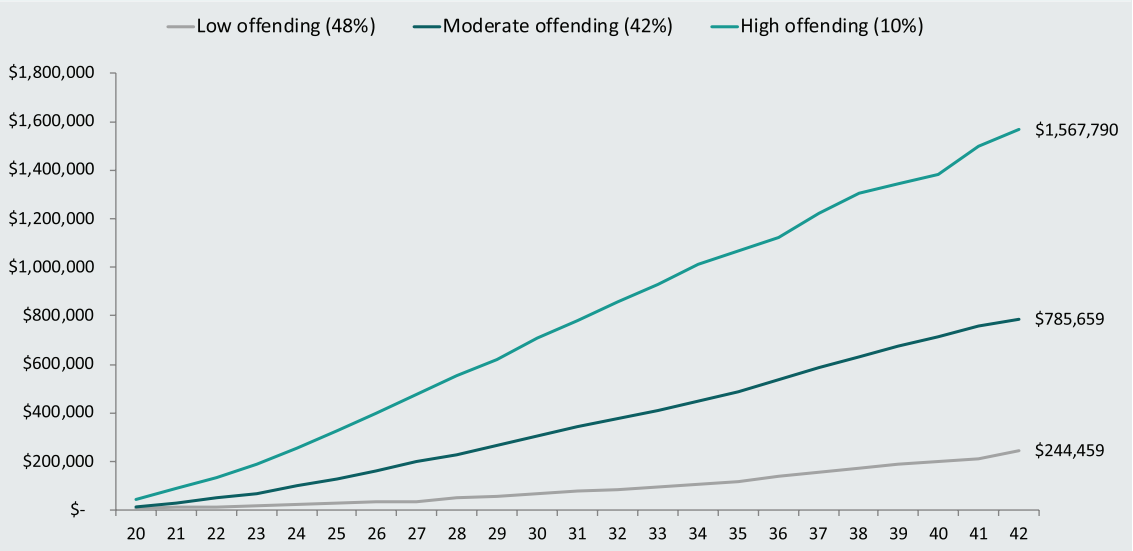
Figure 20: Average cumulative prison years, by age and trajectory group, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

The estimated number of sentenced prison years accumulated for the entire sample, by trajectory group, is presented in Figure 20. The significant difference in accumulated prison time reflects the different offending patterns. By age 30, a member of the high-offending group is estimated to have accrued 5.7 years in prison, compared with 2.4 years for offenders in the moderate-offending group and 0.5 years in the late onset, low-offending group. By age 40, this increases to 11.1 years for the high-offending group, 5.7 years for the moderate-offending group and 1.6 years for the low-offending group.

Figure 21: Average cumulative direct and indirect prison costs, by age at offence, all organised crime offenders

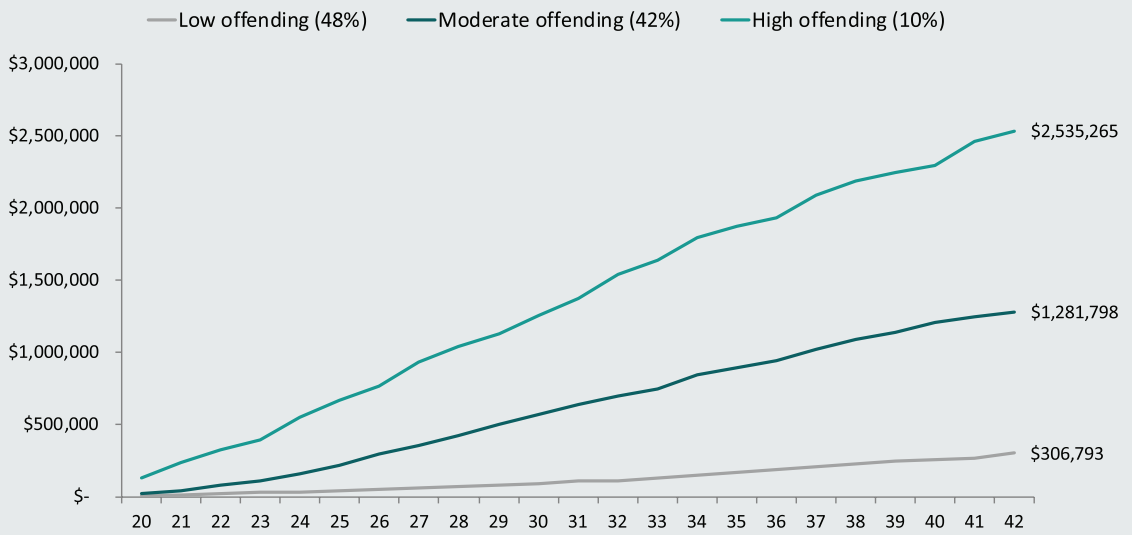


Source: AIC organised crime offender database, 2018 [computer file]

The costs associated with this time in prison are presented in Figure 21. By the age of 42, an organised crime offender in the high-offending group is estimated to have accrued an average of $1,567,790 in direct and indirect prison costs, compared with $785,659 for the moderate-offending group and $244,459 for the low-offending group. By comparison, the average cost for the entire sample at age 42 was $437,132.

Overall, offenders in the high-offending group will accrue more than $2.5 million in crime costs and direct and indirect prison costs by the age of 42 (Figure 22). This is $1.2 million more than those in the moderate-offending group, and well over $2 million more than offenders in the low-offending group.

Figure 22: Average cumulative total costs (crime costs and prison costs combined), by offender age and trajectory group

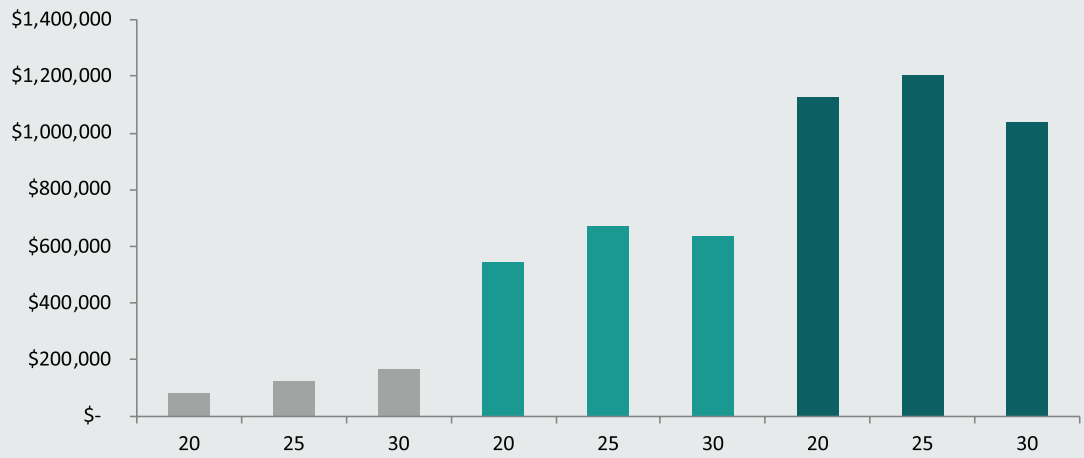


Source: AIC organised crime offender database, 2018 [computer file]

These differences are reflected in the short-term savings within 10 years (Figure 23). Intervening at age 25, for example, saves the taxpayer $1.2 million per offender for the high-offending group, which is nearly twice that for the moderate-offending group ($670,793) and nearly 10 times that for the low-offending group ($125,061). But, more importantly, the estimated savings that would result from cancelling or refusing the visa of someone in either the moderate- or the high-offending group are significantly higher than the estimate for all offenders ($328,827 at age 25).

In short, cancelling or refusing the visa of someone in the high- or moderate-offending group would likely save significantly more than the estimated savings to age 60 we presented earlier. Conversely, savings would be significantly lower if offenders whose visas are cancelled or refused belong to the low-offending group.

Figure 23: Estimated average total savings within 10 years from avoided crime and prison costs, by age of cancellation or refusal and trajectory group, all organised crime offenders

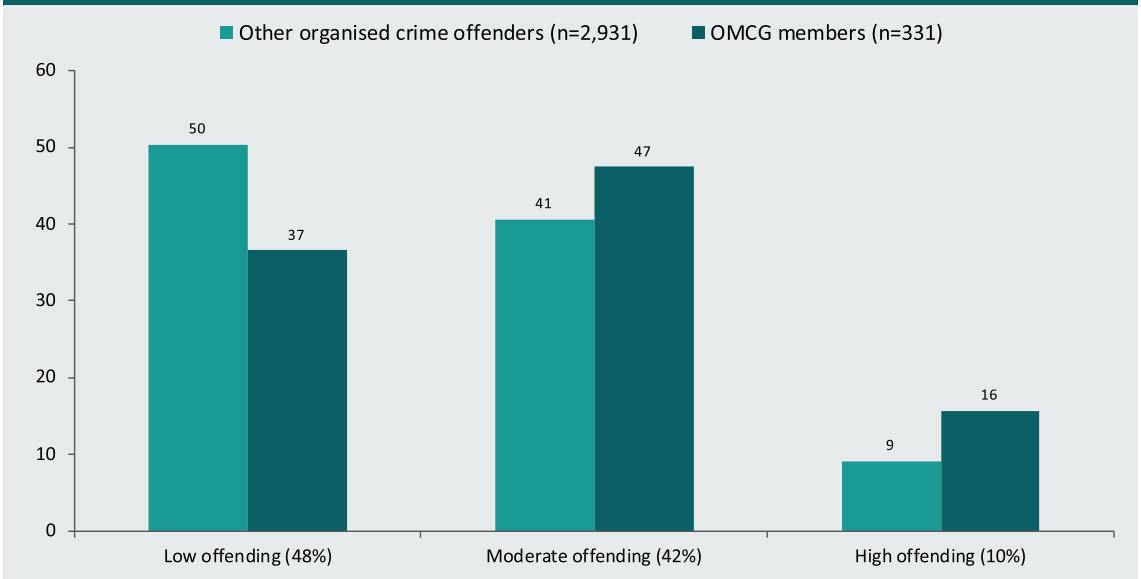


Source: AIC organised crime offender database, 2018 [computer file]

Which offenders are more likely to be in the high-offending group?

The final stage in our analysis aimed to identify those characteristics that predict whether an offender is more likely than other offenders to be in the high-offending group. OMCG members were nearly twice as likely as other organised crime offenders to belong to the high-offending group (16% vs 9%; Figure 24). They were also more likely to belong to the moderate-offending group.

Figure 24: Trajectory group membership, by OMCG status

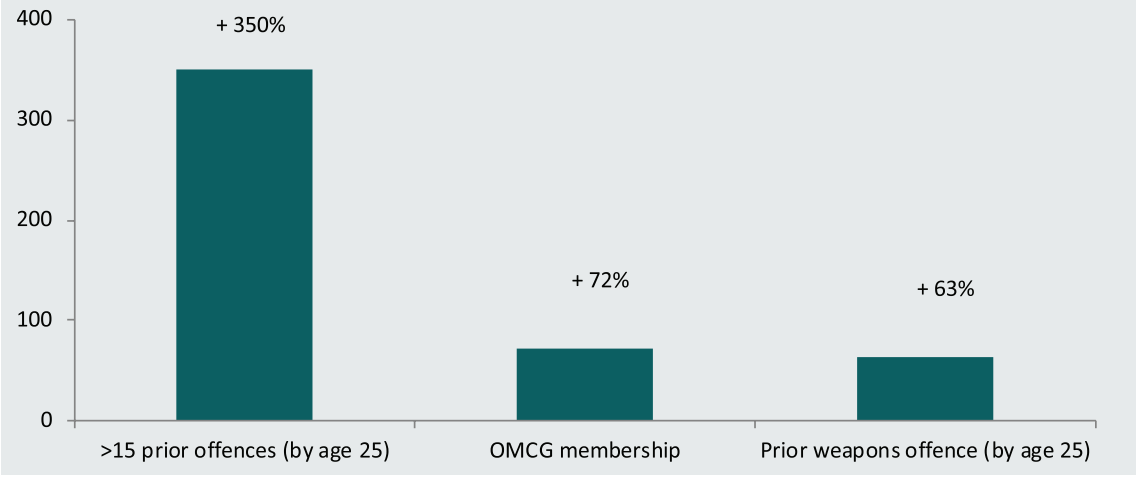


Source: AIC organised crime offender database, 2018 [computer file]

We examined whether this remained true once other factors were considered, particularly offending in the early part of the trajectory. We limited this analysis to those offenders with at least 10 years of criminal history data (n=2,670). The strongest predictor of being in the high-offending group between the ages of 20 and 42 is having a higher number of prior offences by age 25. Offenders with 16 or more offences by the age of 25 are 350 percent more likely than those with fewer offences to be in the high-offending group. OMCG members are 72 percent more likely to be in the high-offending group, even after controlling for criminal history, while offenders with a prior weapons offence by age 25 are 63 percent more likely to be in the prolific group (Figure 25).

Because they have an increased likelihood of becoming prolific offenders, and of continuing to offend into their 30s and 40s, cancelling the visas of organised crime offenders born overseas who have these characteristics may generate the greatest savings to the taxpayer.

Figure 25: Factors associated with an increased likelihood of being in the high-offending group (%)



Note: Percentage difference refers to difference in the odds of being in the high-offending group. Limited to those variables that were significant in the model (see Appendix A for detailed results)
Source: AIC organised crime offender database, 2018 [computer file]

Conclusion

In this report, we estimate the taxpayer savings from cancelling or refusing the visas of organised crime offenders, with a focus on OMCG members. We used the AIC's database of the criminal histories of more than 6,000 organised crime offenders developed using ACIC data to determine how much crime is committed by individuals involved in organised crime, including OMCG members, and to estimate how much this crime costs the taxpayer.

Organised crime offenders are prolific offenders and commit serious offences

When looking at them as a group, organised crime offenders are prolific offenders. Both the prevalence and incidence of offending is higher than we might expect in a normal offending cohort. This is particularly true of OMCG members, who are far more likely to offend during their 20s, 30s and 40s than other organised crime offenders.

The seriousness of offences committed by organised crime offenders increases as they get older. But, for OMCG members, offences start serious and stay serious. This probably reflects the high rate of violent offences by OMCG members.

OMCG members commit more crimes and more serious crimes

Not all offenders commit crime at the same rate, and the same is true for organised crime. There is a relatively small group of very prolific offenders who accrue substantially more crime costs and time in prison. OMCG members are more likely than other organised crime offenders to belong to this prolific group. There is also a large group who offend much less often, commit relatively few serious or costly offences, and who we estimate spend much less time in prison.

Crimes committed by OMCG members cost over $500,000 per offender, on average

Offences committed by OMCG members between the ages of 20 and 60 cost the community more than half a million dollars. The average cost of offences committed by other organised crime offenders over that same period is nearly $320,000. These costs are mostly associated with violent crime, meaning that offence costs are concentrated among the two-fifths of offenders who have been apprehended for a violent offence.

Imprisoning the average OMCG member costs more than $800,000

We estimate that by the age of 60 organised crime offenders will, on average, have accrued prison sentences equivalent to 10 percent of their adult life—almost six years. Not surprisingly, OMCG members accrue more prison time, and accrue it more quickly, than others in the database. By the age of 60, the average OMCG member will cost taxpayers more than $800,000 in prison costs, while the cost of prison for other organised crime offenders is more than $700,000.

The total cost of offending by OMCG members is, on average, $1.3 million per offender

Overall, the average total cost to the taxpayer of offending by OMCG members, based on both crime and prison costs, is $1.3 million. For other organised crime offenders, the estimated cost is more than $1 million per offender.

Cancelling or refusing the visas of 184 organised crime offenders saved an estimated $116 million

Given these significant costs, savings can be maximised by cancelling or refusing an offender's visa early in their criminal career (ie early 20s). The total savings from visa cancellations or refusals for 184 organised crime offenders, including 139 OMCG members, under the *Migration Act* are estimated to be $116 million, or $632,446 per person. This represents a significant saving to the taxpayer.

Targeting prolific offenders early in their criminal career generates the largest savings

This study has also provided some useful insights about whom to target. The prolific offender group, which represents just 10 percent of the entire group, accrues average offence and prison costs of more than $2.5 million by their early 40s, which is four times the average cost accrued by other offenders. The strongest predictor of future offending is prior offending—offenders who have already committed more than 15 offences by the age of 25 are significantly more likely to become prolific offenders. OMCG membership and prior weapon offences are also significant predictors.

The societal costs of offences committed by organised crime offenders, and the amount of time they spend in prison, represent a significant burden on the taxpayer, and this is before other costs are taken into consideration, including other criminal justice costs and the cost of unrecorded crime (Smith et al. 2014). Intervening to prevent offending by individuals involved in organised crime has the potential to save the government and taxpayer a significant amount of money.

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Appendix A: Detailed methodology and results

Limitations and excluded costs

Limitations to both the data used as the basis for this study and the methods used to analyse costs need to be acknowledged. The database of organised crime offenders is limited to those individuals identified by law enforcement as being affiliated with an organised crime group and who have a criminal offence history in Australia. We acknowledge that not all individuals involved in organised crime, particularly those who are successful at evading detection, will have been arrested or have a criminal record. If they do have one, it may not reflect every offence they have committed.

We have limited information on the characteristics of those offenders in our database, and on those whose visas were cancelled or refused. While we are confident that using estimates for a large sample of offenders limits the potential for bias, there may be differences between the two groups that impact the generalisability of our findings on offending patterns and prison sentences to those offenders in the visa cancellation and refusal group. A more robust method would involve some level of statistical matching; however, that would require access to considerably more information than we have available to us.

Unrecorded crime

In estimating the cost of crimes committed, we have not attempted to estimate the cost of unrecorded crime. While Smith et al. (2014) reported multipliers for different crime types to account for unrecorded crime, they did not distinguish between undetected offences committed by those offenders apprehended by police, and offences committed by other offenders who are not known to law enforcement. Further, we have not adjusted our estimates to account for offences involving multiple offenders, because we do not have information on co-offending or information on particular incidents. While it is reasonable to argue that offences involving multiple offenders (and a single target or victim) may be qualitatively different, and potentially more serious, it is nevertheless possible that we have overestimated the costs associated with some offences by double counting.

Drug offences

On a related point, we were unable to estimate the costs associated with all offence types (see below). A notable omission is drug offences, which have been committed by more than half of all offenders in the database. While aggregate estimates of the cost of drug abuse, including drug-related crime, have been produced (Collins & Lapsley 2008; Smith et al. 2014), costs have not typically been estimated for individual incidents. We attempted (unsuccessfully) to address this by estimating the average seizure quantity per arrest, by drug type, using data from the ACIC's *Illicit drug data report 2016–17*, and combining this with the estimated social costs of different drugs per gram using the figures presented by Moore (2007) and incorporated in the Australian Federal Police's (2017) Drug Harm Index.

There were a number of reasons we could not produce a valid estimate. First, by apprehending offenders for drug supply offences and seizing substances, police intervene *before* those substances cause harm to the community. If we had assumed that these drugs were to reach the community, then we could not also count the resulting prison sentences, which we have done. This runs counter to the approach used in costing other offence types (eg violent crime), where the offender is apprehended after the harm has been caused.

Second, there is limited information on what proportion of trafficked drugs actually reach the community prior to an offender being apprehended. That is, we do not know how many times offenders get away with drug trafficking prior to being caught. This prevents us from estimating the number of successful drug supply crimes committed by the offenders in the database. Third, setting aside these first two issues, there is limited evidence that drug seizures, or removing a relatively small group of offenders from the drug supply chain, has a positive impact on aggregate-level harms (Wan et al. 2014). Further work is required to more accurately estimate the impact of interventions targeting drug suppliers, particularly in terms of taxpayer savings.

Criminal justice costs

There are obvious limitations with estimating custodial sentences rather than using data on actual sentences; however, these data are not readily available at a national level. We were also unable to include justice system costs other than the cost of imprisonment. Policing costs, particularly those incurred when investigating offences committed by organised crime offenders, are not included in these estimates. The annual cost of the law enforcement response to serious and organised crime, including criminal investigations, has been estimated at more than $3 billion nationally (ACC 2015). However, we are not aware of any attempt in Australia to estimate the cost of investigations per offence—at least not in line with the offence categories used in this study. A recent Canadian study estimated the average cost of investigations per offence, illustrating the significant costs borne by the taxpayer, particularly for more serious crimes (Ellingwood 2015).

Likewise, the cost of offences being processed through the courts, including criminal trials and appeals, are excluded. Estimates of expenditure on courts per finalised matter, disaggregated by court level, are available in the *Report on government services* (SCRGSP 2018); however, these costs are limited to the cost of operating the court, court staff and judicial officers. Several other parties are involved in the process who also incur significant costs.

Finally, we were unable to estimate the cost associated with non-custodial orders. While the *Report on government services* includes data on the cost of community corrections per offender per day, and data are available on both the likelihood of receiving a non-custodial order (NSW BOCSAR 2017) and how that likelihood changes with each reoffence (Fisher 2015), reliable data on the length of orders by offence type, and by the specific type of order, are not published at a sufficiently disaggregated level. Although we could not develop a reliable estimate, our exploratory work indicated that average costs for community orders over the lifetime would be relatively low for organised crime offenders (in the region of $100,000 to age 60), partly because of the low cost of these orders, but also because of the serious nature of offences committed by offenders in the database.

Crime cost calculations and sensitivity analysis

Estimated crime costs were derived from two main sources: the AIC publication *Counting the costs of crime in Australia: A 2011 estimate* (Smith et al. 2014), and the ACC report *The costs of serious and organised crime in Australia 2013–14* (ACC 2015). Costs per incident were mapped against the ANZSOC categories used in the current study (at the subdivision level). The cost of some offence types was approximated based on estimates for similar crimes. Estimates were adjusted to account for variable offence outcomes (eg injury vs no injury) and where multiple crime types fell within the same ANZSOC category (as was the case with theft and property damage offences).

Table A1: Estimated cost per offence, by ANZSOC subdivision (2016–17 dollars)

ANZSOC code	Subdivision description	Cost per offence ($)	Organised crime multiplier	Cost per organised crime offence ($)
11	Murder	$2,995,560	1.4	$4,193,785
12	Attempted murder[a]	$63,263	1.4	$88,568
13	Manslaughter and driving causing death	$2,995,560	1.4	$4,193,785
21	Assault	$2,907	1.4	$4,069
29	Other acts intended to cause injury[b]	$488	1.4	$684
31	Sexual assault	$4,342	2.0	$8,684
32	Non-assaultive sexual offences	–	–	–
41	Dangerous or negligent operation of a vehicle	–	–	–
49	Other dangerous or negligent acts endangering persons	–	–	–
51	Abduction and kidnapping[c]	$2,907	1.4	$4,069
52	Deprivation of liberty/false imprisonment[c]	$2,907	1.4	$4,069
53	Harassment and threatening behaviour[b]	$488	1.4	$684
61	Robbery	$4,080	2.1	$8,646
62	Blackmail and extortion	–	–	–
71	Unlawful entry with intent/burglary, break and enter	$2,467	3.4	$8,341
81	Motor vehicle theft and related offences	$3,283	3.4	$11,082
82	Theft (except motor vehicles)	$665	2.8	$1,895
83	Receive or handle proceeds of crime[d]	$665	2.8	$1,895
84	Illegal use of property (except motor vehicles)	–	–	–
91	Obtain benefit by deception[e]	$28,550	2.0	$57,100
92	Forgery and counterfeiting[e]	$28,550	2.0	$57,100
93	Deceptive business/government practices[e]	$28,550	2.0	$57,100
99	Other fraud and deception offences[e]	$28,550	2.0	$57,100
101	Import or export illicit drugs	–	–	–
102	Deal or traffic in illicit drugs	–	–	–
103	Manufacture or cultivate illicit drugs	–	–	–
104	Possess and/or use illicit drugs	–	–	–
109	Other illicit drug offences	–	–	–

Table A1: Estimated cost per offence, by ANZSOC subdivision (2016–17 dollars) cont.

ANZSOC code	Subdivision description	Cost per offence ($)	Organised crime multiplier	Cost per organised crime offence ($)
111	Prohibited weapons/explosives offences	–	–	–
112	Regulated weapons/explosives offences	–	–	–
121	Property damage[f]	$5,118	2.8	$14,467
122	Environmental pollution	–	–	–
131	Disorderly conduct	–	–	–
132	Regulated public order offences	–	–	–
133	Offensive conduct	–	–	–
141	Driver licence offences	–	–	–
142	Vehicle registration and roadworthiness offences	–	–	–
143	Regulatory driving offences	–	–	–
144	Pedestrian offences	–	–	–
151	Breach of custodial order offences	–	–	–
152	Breach of community-based orders	–	–	–
153	Breach of violence and non-violence orders	–	–	–
154	Offences against government operations	–	–	–
155	Offences against government security	–	–	–
156	Offences against justice procedures	–	–	–
161	Defamation, libel and privacy offences	–	–	–
162	Public health and safety offences	–	–	–
163	Commercial/industry/financial regulation	–	–	–
169	Other miscellaneous offences	–	–	–

a: Based on assaults requiring hospitalisation
b: Based on cost of assaults not resulting in injury to victim
c: Based on average cost per assault offence
d: Based on cost of other theft offences
e: Based on cost per police recorded fraud offence. No adjustment for type of fraud
f: Adjusted to include arson offences
Note: Unit crime costs adjusted to account for variable offence outcomes (eg injury, no injury)
Source: ACC 2015; Smith et al. 2014

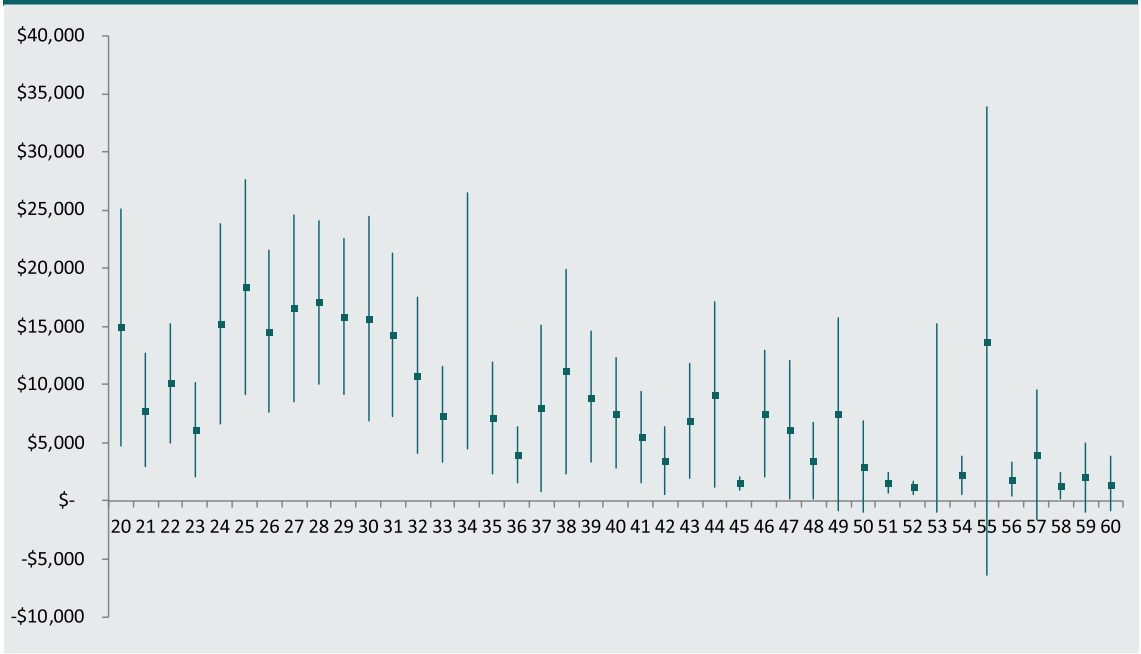
As is evident from Table A1, unit costs were not available for all ANZSOC categories. The proportion of offences within the database for which a cost could be calculated is presented in Table A2. This highlights the variability between offence types. Costs could be calculated for 100 percent of property and fraud offences, and 87 percent of violent offences. No cost estimates were available for drug, traffic, weapon, breach and other offences. However, as noted already, this generally reflects the fact that these offence types do not incur costs outside of criminal justice expenditure—that is, at the point of apprehension by police, there is no victim and no associated losses. There was also some variation between the low-, moderate- and high-offending groups, which reflects the different offending profiles of these cohorts.

Table A2: Availability and applicability of crime cost estimates, by offender and offence characteristics

	Cost estimates available		Cost estimates not available or not applicable	
	n	%	n	%
All organised crime offenders	36,976	38	60,730	62
OMCG status				
OMCG members	4,589	35	8,618	65
Non-OMCG members	32,387	38	52,112	62
Offence type				
Violent	12,432	87	1,861	13
Property	16,426	100	–	–
Drugs	–	–	20,086	100
Traffic	–	–	10,767	100
Disorder	2,168	24	6,685	76
Weapon	–	–	7,091	100
Breach	–	–	7,668	100
Fraud	5,950	100	–	–
Other	–	–	6,572	100
Trajectory group				
Low	1,406	29	3,528	72
Moderate	8,868	33	18,372	67
High	8,609	42	12,006	58

Note: Percentages may not total 100 due to rounding
Source: AIC organised crime offender database, 2018 [computer file]

Figure A1: Average annual crime costs, by offender age (with 95% confidence intervals)



Source: AIC organised crime offender database, 2018 [computer file]

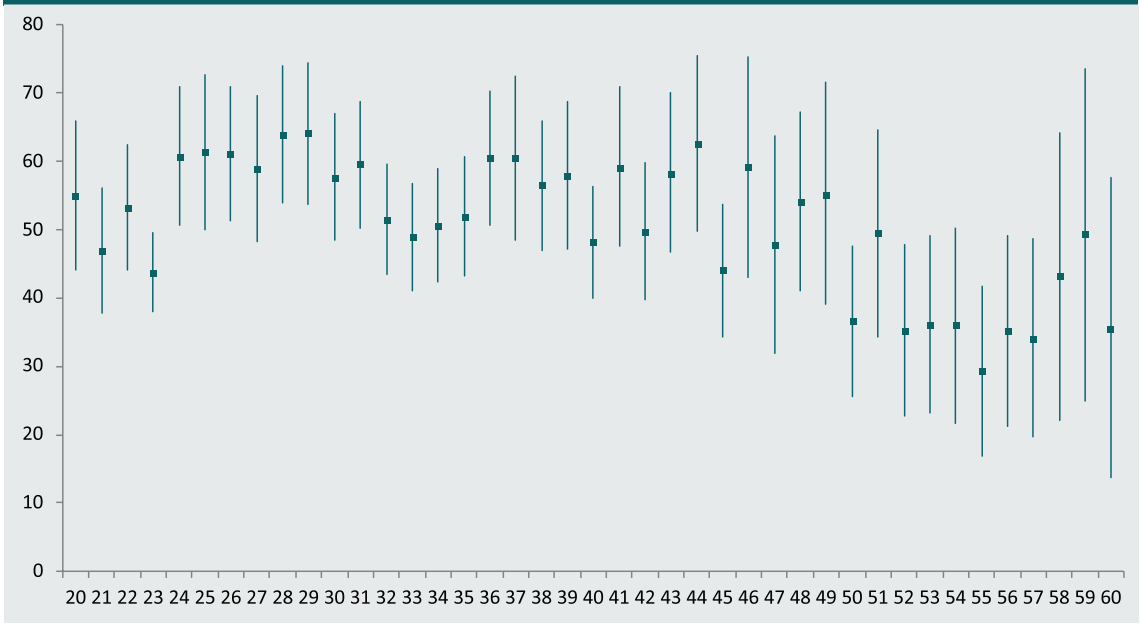
We conducted a sensitivity analysis to determine the robustness of our estimate of crime costs. This was particularly important given that not all offenders were observed at every age (especially at older ages). We started by determining the standard error of the mean to determine how close the estimated crime costs might be to the actual cost at each age. The lower the standard error, the more precise the estimate. This is affected by sample size, which is why the estimated average crime costs are less reliable at older ages, where fewer offenders remained in the sample.

From this, it was possible to determine the confidence intervals (Figure A1). Simply put, we can be 95 percent confident that the actual value (for the population of offenders from which our sample is drawn) falls within the range depicted in the chart. These confidence intervals are relatively large, which is a consequence of both the small number of very serious (and expensive) crimes such as homicide offences, and also the declining population as the sample ages. On a small number of occasions, particularly at older ages, the confidence intervals intersect with zero, meaning these latter estimates should be treated with some caution.

Sensitivity analysis of estimated prison costs

As with crime costs, we conducted sensitivity analyses of the estimated prison costs to determine the robustness of the estimates. Average prison days at each offender age, with confidence intervals, are presented in Figure A2. Once again, as the sample ages, the confidence intervals widen. However, the standard errors were generally quite small, indicating the estimates of time spent in prison were more precise than the estimated crime costs.

Figure A2: Average prison days, by offender age (with 95% confidence intervals)



Source: AIC organised crime offender database, 2018 [computer file]

Additional sensitivity analyses were conducted to determine the impact of the assumptions underpinning the modelling—specifically, the impact of changing the way we estimated prison sentences. Prison sentences were estimated by using the proportion of offenders sentenced to prison (imprisonment rate), and the average sentence for each offence type, to calculate an adjusted sentence length for each offence in the database.

In the end, four different estimates were generated. The parameters for each model were as follows:

- Model 1: Imprisonment rate indexed for each reoffending event (up to 10 reoffences); prison sentences for all offences in each year assumed to have been served concurrently.
- Model 2: Average imprisonment rate used for each reoffence; prison sentences for the same offence in the same year assumed to have been served concurrently, and sentences for different offences in the same year assumed to have been served consecutively.
- Model 3: Imprisonment rate indexed for each reoffending event (up to 10 reoffences); prison sentences for the same offence in the same year assumed to have been served concurrently, and sentences for different offences in the same year assumed to have been served consecutively.
- Model 4: Imprisonment rate indexed for each reoffending event (up to 10 reoffences); prison sentences for all offences assumed to have been served consecutively.

Indexation of the imprisonment rate was based on the percentage of offenders sentenced to prison at each reoffence in Victoria reported by Fisher (2015; Table A3). The base imprisonment rate for each offence type—the average for all offenders sentenced to prison—was adjusted based on the number of reoffending events for that offender. Every year of offending by an organised crime offender was counted as a reoffence.

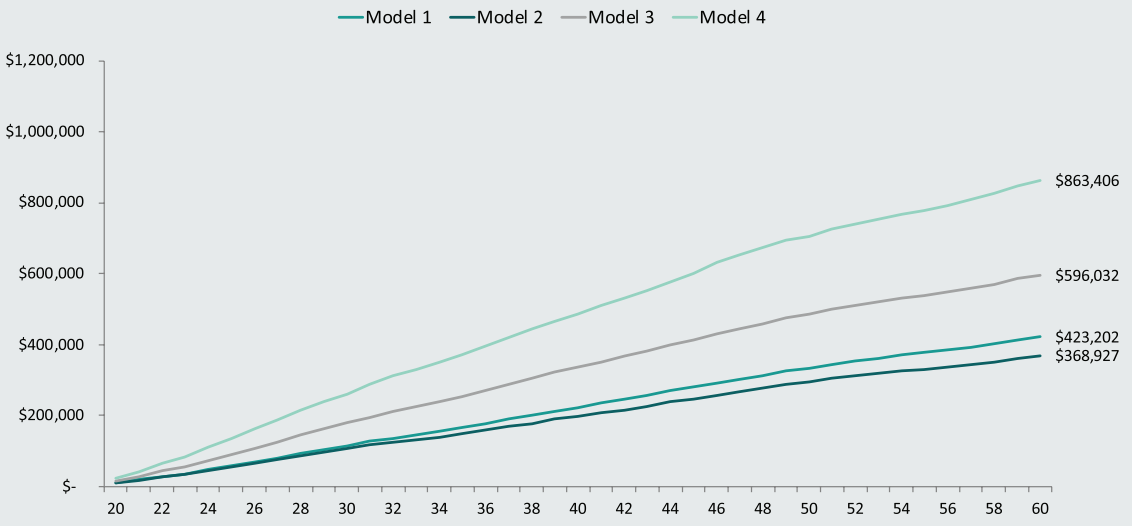
Table A3: Imprisonment rate and indexation for reoffences

Event	Imprisoned (%)	Indexation
1	7.4	1.00
2	11.6	1.57
3	14.9	2.01
4	18.6	2.51
5	23.2	3.14
6	26.9	3.64
7	29.4	3.97
8	33.2	4.49
9	36.3	4.91
10+	36.6	4.95

Source: Adapted from Fisher (2015)

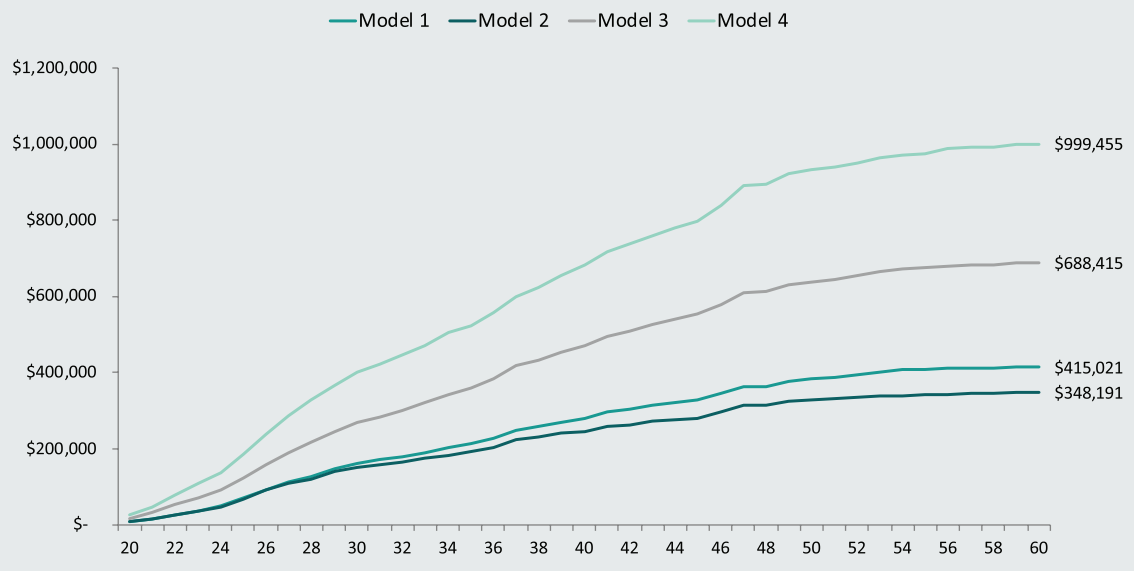
Results for the four models for all organised crime offenders are presented in Figure A3. Model 3 was the preferred estimate, falling roughly midway between the lowest and highest estimates. It accounts for the increased rate of imprisonment due to repeat offending, and also more closely reflects how sentences for multiple offences of the same type are imposed. Results for the four models for OMCG members are presented in Figure A4 and follow a similar pattern.

Figure A3: Average cumulative prison costs, by offender age, all organised crime offenders



Source: AIC organised crime offender database, 2018 [computer file]

Figure A4: Average cumulative prison costs, by offender age, OMCG members



Source: AIC organised crime offender database, 2018 [computer file]

There are other assumptions and inputs into the modelling that should be acknowledged. The average prison cost per offender per day varies significantly between states and territories, ranging from $219 in NSW prisons to $436 in the ACT (SCRGSP 2018). The actual cost of time in prison for offenders in the database will therefore vary depending on the jurisdiction in which each offender is imprisoned. Similarly, the length of custodial sentences and likelihood of imprisonment may also vary between states and territories. The Australian Bureau of Statistics report data on custodial sentences but at a higher ANZSOC classification, meaning the data do not accurately reflect the range of offences committed by offenders in the database. Further, we assumed that all offenders serve the full custodial sentence in prison. In reality, many prisoners will be released on parole before the end of their custodial sentence. There are still significant costs associated with parole supervision; however, a valid estimate of parole supervision costs (as distinct from community corrections more generally) was not available.

Adjustments to estimated costs and savings

Where applicable, costs included in this report were adjusted to 2016–17 dollars using the General Government Final Consumption Expenditure chain price deflator, which is the same method used in the *Report on government services* (SCRGSP 2018). Discount rates were not applied to estimated savings in future years. In the event of direct comparisons between the costs associated with visa cancellations and resulting taxpayer savings, future costs and savings should be adjusted in accordance with recommended discount rates (see, for example, Harrison (2010), who recommends a discount rate of eight percent, with testing over a range from three percent to 10 percent).

Group-based trajectory analysis

To identify the different offending trajectories that existed within the sample of organised crime offenders, we undertook group-based trajectory analysis using the Stata plugin developed by Jones and Nagin (2013).

This analytical approach is an iterative process that requires certain assumptions to be made prior to conducting the analysis. Data were assumed to follow a zero-inflated Poisson distribution. This distribution is designed for the analysis of longitudinal count data (eg arrests by age) with many zero counts (eg no arrests in a given year).

It was necessary to specify the number of trajectory groups being modelled and the form of these trajectories before commencing the analysis. The analysis was repeated multiple times with various numbers of groups and forms of trajectory, to find the optimal fit for the data. The model that provided the best fit for the data was determined using the Bayesian Information Criteria (BIC) and the average probability of group membership. The aim was to identify the model that produced the highest BIC, relative to other models, and an average probability of group membership that was as close to 100 percent as possible.

The model that was assessed to be the best fit for the data had three groups—two groups followed a cubic form (as indicated by a significant cubic term, $p<0.05$) and the third group followed a linear form. The significant linear term for the third group suggests the offending frequency for this group remained largely unchanged throughout the observation period.

Three distinct trajectory groups were identified (Table A4). The first, and most common, was the late onset, low-offending trajectory (48%). The next largest group was made up of moderate, persistent offenders (42%). Finally, there was a chronic, high-offending group (10%). This third group, although relatively small, was responsible for a very large number of offences.

Table A4: Significance of parameter estimates for final trajectory model		
	Standard estimate	*p*
Low-offending group (48%)		
Intercept	–0.79	<0.001
Linear	–0.10	<0.01
Quadratic	0.02	<0.001
Cubic	0.00	<0.01
Moderate-offending group (42%)		
Intercept	1.20	<0.001
Linear	–0.01	0.32
Quadratic	0.00	<0.01
Cubic	0.00	<0.01
High-offending group (10%)		
Intercept	2.30	<0.001
Linear	0.01	<0.001
n	3,262	
BIC	–62,667.71	

Source: AIC organised crime offender database, 2018 [computer file]

Model predicting likelihood of being in the prolific, high-offending group

We used a logistic regression model to determine which factors were associated with an increased likelihood of being in the prolific, high-offending group, controlling for other variables. Results are presented in Table A5. This analysis was limited to those offenders included in the trajectory analysis and, more specifically, those for whom at least 10 years of criminal history data were available. Overall, the model was a good fit for the data (area under the curve (AUC)=0.77; R^2=0.27).

The strongest predictor of being a prolific offender was having a high number of prior offences by age 25. The odds of offenders with 16 or more prior offences by the age of 25 being in the high-offending group were 4.5 times the odds of offenders with no prior offences by the age of 25. Conversely, offenders with a small number of offences by the age of 25 (1–5 offences) were actually less likely than those offenders with no priors to be in the prolific group (odds ratio (OR)=0.38), suggesting that infrequent offending early in the trajectory was a good indicator of less frequent offending over the next two decades.

Two other factors emerged as significant, controlling for other variables. OMCG members were significantly more likely than other organised crime offenders to be in the high-offending group (OR=1.72), even after taking their criminal histories into account. Offenders with a prior weapons offence by age 25 were also significantly more likely to be in the prolific group (OR=1.63).

Table A5: Logistic regression model predicting membership of the high-offending group

	Odds ratio	95% CI lower	95% CI upper
OMCG membership*	1.72	1.10	2.69
Prior violent offence	1.12	0.69	1.81
Prior property offence^	1.63	0.98	2.72
Prior breach offence	1.24	0.77	2.00
Prior weapons offence*	1.63	1.04	2.55
Prior serious traffic offence	1.05	0.69	1.59
Prior disorder offence	1.36	0.86	2.15
Prior fraud offence	1.54	0.88	2.71
Prior other offence	1.28	0.83	1.99
Prior drug supply offence	1.33	0.82	2.16
Prior drug offence (non-supply)	0.86	0.48	1.52
Previously acquitted of an offence	0.94	0.56	1.58
1–5 prior offences (vs no prior offence)*	0.38	0.21	0.69
6–10 prior offences (vs no prior offence)	0.58	0.24	1.37
11–15 prior offences (vs no prior offence)	0.67	0.24	1.82
16+ prior offences (vs no prior offence)**	4.50	1.55	13.03
Constant***	0.05	0.04	0.07
n	2,670		
Chi-square (19)	346.04		
Log likelihood	–622.43		
p	<0.001		

***$p<0.001$, **$p<0.01$, *$p<0.05$, ^$p<0.10$
Note: CI=confidence interval. AUC=0.77; Nagelkerke $R^2=0.27$; Hosmer-Lemeshow $\chi^2(4)=5.07$, $p=0.28$
Source: AIC organised crime offender database, 2018 [computer file]

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