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Money laundering and the harm from organised crime: Results from a data linkage study

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Acronyms and abbreviations

ACIC   Australian Criminal Intelligence Commission

AIC   Australian Institute of Criminology

ANZSOC   Australia and New Zealand Standard Offence Classification

AUROC   area under the receiver operating characteristic curve

AUSTRAC   Australian Transaction Reports and Analysis Centre

NCTL   National Criminal Target List

NPRS   National Police Reference System

OLS   ordinary least squares (statistical technique)

SMR   suspicious matter report

TWFE   two-way fixed effects

WACHI   Western Australian Crime Harm Index

Abstract

We examined the effect of money laundering on the harm associated with organised crime by using linked data on organised crime groups known to law enforcement from the Australian Criminal Intelligence Commission and suspicious transactions reported to the Australian Transaction Reports and Analysis Centre. Involvement in money laundering by an organised crime group, and an increase in the amount of money laundered, increased the probability of organised crime and the amount of crime-related harm to the community. The increase in money laundering preceded the increase in crime-related harm, suggesting the harm was due to the reinvestment of illicit funds in future criminal enterprises. These findings suggest that reducing the amount of money laundered by organised crime groups would limit their ability to reinvest illicit funds in future criminal enterprises.

Executive summary

This report examines the effect of money laundering on the harm associated with organised crime by linking data on organised crime groups known to law enforcement and data on suspicious transactions reported to the Australian Transaction Reports and Analysis Centre (AUSTRAC). This study is the first step in assessing the social and economic harms associated with money laundering and terrorism financing in Australia.

Highlights

1. There was a higher probability of organised crime offending among groups involved in money laundering. Organised crime groups involved in money laundering were 1.7 times more likely to have a recorded organised crime offence. The probability of organised crime offending increased with every additional dollar laundered.

2. Organised crime groups involved in money laundering were responsible for 2.5 times as much crime-related harm as groups not involved in money laundering. Among those groups involved in money laundering, a one percent difference in the amount of money laundered (relative to the mean for all groups) was associated with a 0.07 percent difference in crime-related harm.

3. When an organised crime group was involved in money laundering, the amount of crime-related harm it caused increased by 49 percent compared to the harm it would have caused had it not laundered money. A one percent increase in the amount laundered by an organised crime group involved in money laundering increased the amount of crime-related harm by 0.05 percent.

4. An increase in money laundering preceded an increase in crime-related harm, suggesting that the relationship was due to the reinvestment of illicit funds in future criminal enterprises.

Method

This research has drawn on two main data sources: data on organised crime groups added to the National Criminal Target List (NCTL) between 2010 and 2018, and the criminal histories of individuals affiliated with these groups recorded in the National Police Reference System (NPRS). These data were provided by the Australian Criminal Intelligence Commission (ACIC). While it is no longer operational, the NCTL provided the most comprehensive national list of organised crime groups known to law enforcement, along with detailed information about the membership and criminal activity of each group. Recorded crime-related harm was measured by using a modified version of the Western Australian Crime Harm Index to assign scores to recorded offences in the NPRS. These data were linked with suspicious matter reports (SMRs) made to AUSTRAC by regulated entities between 2014 and 2021. We use SMRs as our principal measure of money laundering because other report types represent transactional data and there is no way of distinguishing licit from illicit transactions. This is consistent with international studies.

These data were used to identify whether an organised crime group on the NCTL was linked to at least one SMR involving a financial transaction and to record the value of suspicious transactions. The former was taken to indicate whether a group was involved in money laundering, while the latter measure was taken as the amount of money laundered by the entities listed on the SMR.

The analysis proceeded in several stages. First, we analysed SMRs linked to known organised crime groups to measure the trend in and total value of suspicious transactions, as well as the characteristics of these SMRs. We then examined the relationship between the prevalence and value of SMRs and the crime-related harm caused by each group on the NCTL between 2014 and 2017 to determine whether groups involved in money laundering were responsible for more recorded crime-related harm than other groups. Next, we used two-way fixed effects (TWFE) models to measure the relationship between suspected money laundering and criminal harm over time and whether an increase in a group's money laundering activity was associated with an increase in recorded crime-related harm. Finally, we examined the direction of the relationship between money laundering and crime-related harm by estimating TWFE models with lagged effects.

Key findings

Organised crime groups involved in money laundering, and groups that laundered larger amounts of money, were responsible for more crime-related harm than other groups. They were more likely to be involved in organised crime offending. Further, money laundering preceded crime-related harm, indicating that the harm was due to the reinvestment of illicit funds. We reached this conclusion on the basis of the following findings.

Suspicious matter reports captured a high proportion of individuals and groups known by law enforcement to be involved in organised crime

There were 7,263 individuals added to the NCTL between 2010 and 2018. Of these, 29 percent (*n*=2,129) were linked to at least one SMR between 2014 and 2021. Overall, 8,785 SMRs were linked to individuals on the NCTL. The total value of these SMRs between 2014 and 2021 was $3.5 billion. The most common reason for submitting an SMR was some form of suspicious activity by the individual(s) named in the report. Around one-third of reports were submitted because law enforcement had advised the reporting entity that the individuals involved were under surveillance.

The number of SMRs submitted and the median financial value of these SMRs were relatively stable between 2014 and 2017. There was a sharp increase in the number of SMRs submitted—and a corresponding decrease in the median financial value of these SMRs—in 2018, after which the trend remained relatively stable. This increase coincided with the civil penalty proceedings against the Commonwealth Bank of Australia. There was a very large increase in reports related to the surveillance of known persons of interest, accounting for around half of the total increase in reports between 2017 and 2018. Because of this significant structural break in the time series, which was due to changes in reporting behaviour rather than changes in laundering activity, our analysis of the link between money laundering and recorded crime-related harm focused on the period between 2014 and 2017.

Known organised crime groups accounted for a very small proportion of suspicious matter reports

We analysed data on all SMRs submitted to AUSTRAC in one financial year to determine how many SMRs were linked to known organised crime groups. While nearly one-third of individuals on the NCTL were linked to at least one SMR, organised crime groups known to law enforcement accounted for a very small percentage of all SMRs reported to AUSTRAC—fewer than one percent. Noting that this was for the period before a sharp increase in proactive reporting of SMRs, and despite the limitations of the NCTL in terms of coverage, this suggests a large amount of suspicious financial activity relating to criminal activity was not captured in law enforcement intelligence.

Several features of SMRs were associated with a higher likelihood of being linked to an individual on the NCTL. SMRs were more likely to be linked to an individual on the NCTL if they involved a larger number of entities and had a higher financial value. While SMRs relating to certain crime types, such as illicit drugs, were more likely to be linked to someone on the NCTL, fraud and scams were significantly under-represented in the linked data. SMRs originating in the gambling and betting industry and financial institutions were significantly more likely to be linked to individuals on the NCTL than reports originating from other sectors.

The amount of money laundered by groups varied according to where they laundered their funds and whether they had professional facilitators

Several factors were associated with both the prevalence of money laundering and larger amounts of money being laundered by organised crime groups known to law enforcement. Larger groups were more likely to launder money. Groups with professional facilitators among their membership were more likely to be involved in money laundering and, when they were involved, they laundered larger amounts of money. Larger amounts of money were laundered through the real estate and gambling sectors, relative to other sectors. Groups with an international presence were also more likely to launder money, indicating the important role that offshore connections and transactions play in money laundering by organised crime groups impacting Australia. Importantly, we found no evidence that groups investigated by law enforcement or which were added to the NCTL during the reference period laundered larger amounts of money.

The presence and amount of money laundering was consistently associated with an increase in recorded crime-related harm and the probability of organised crime

Several variables were associated with the amount of recorded crime-related harm caused by an organised crime group during the reference period. Involvement in illicit drug trafficking and the amount of prior recorded crime-related harm were both associated with higher recorded crime-related harm. A group having been investigated by law enforcement and having been added to the NCTL during the reference period were also associated with higher recorded crime-related harm. Conversely, groups that had a presence in two or more overseas countries recorded lower levels of crime-related harm. It is possible that this reflects the difficulty associated with investigating, arresting and prosecuting individuals who operate internationally.

Most importantly, there was a significant relationship between the two main variables of interest and the total recorded crime-related harm by members of an organised crime group in the reference period. In simple terms, groups that laundered money—meaning they were linked to at least one SMR involving a financial transaction—caused more crime-related harm than groups that did not launder money. Crime-related harm was also higher among groups that laundered more money, measured using the total value of SMRs per group member. Organised crime groups involved in money laundering were responsible for 2.5 times as much crime-related harm as those not involved in money laundering. A one percent difference in the amount of money laundered by groups involved in money laundering, relative to the mean for all groups, was associated with a 0.07 percent difference in crime-related harm. The recorded crime-related harm caused by a group that laundered twice as much money as the average group (a 100% increase) was 5.1 percent higher.

There was evidence that this was due to increased involvement in organised crime offending. Organised crime groups involved in money laundering were 1.7 times as likely to have a recorded organised crime offence. The probability of organised crime offending increased with every additional dollar laundered. This relationship existed even after controlling for other group-level characteristics and whether the group had been investigated or was under surveillance by law enforcement.

Finally, we examined whether the amount of recorded crime-related harm caused by a group increased when the group was involved in money laundering (relative to when it was not), and when the amount of money laundered by that group increased over time. Results showed that, when an organised crime group was involved in money laundering, the amount of crime-related harm it caused increased by 49 percent from the harm it would have caused without money laundering. A one percent increase in the amount laundered increased the amount of crime-related harm by 0.05 percent. When the amount of money laundered by an organised crime group doubled, the amount of recorded crime-related harm caused by that group was 3.5 percent higher than expected. These results held firm in several robustness checks. Overall, these results provide evidence that when a group launders money it will cause more recorded crime-related harm and, when those groups involved in money laundering increase the amount of money they launder, the amount of crime-related harm also increases.

Evidence indicates that the laundering of illicit funds preceded increases in crime-related harm

As well as measuring the relationship between money laundering and crime-related harm in the same year, we repeated the analysis with variables for a one-year and then one- and two-year lagged effect. We did this for both the presence of an SMR involving a financial transaction and the total value of SMRs per group member. In both cases, the additional variable was significant in the model with a one-year lagged effect, suggesting there was a relationship between money laundering and recorded crime-related harm in subsequent years. We then repeated this analysis, but re-specified the model using the value of SMRs per group member (logged) as the dependent variable. This way we could test whether the amount of recorded crime-related harm in past years had any influence over the amount of money laundered in the current year. This time we did not find any evidence of a lagged effect. We therefore concluded that an increase in the amount of money laundered leads to future increases in recorded crime-related harm. This means that the increase in crime-related harm was most likely a consequence of the reinvestment of illicit funds in future criminal enterprises.

Conclusion

We have provided clear and consistent evidence that organised crime groups involved in money laundering, and groups that laundered larger amounts of money, were responsible for more crime-related harm. We also found that this increase in harm was due in part to their increased involvement in organised crime offending. We have also established that money laundering preceded crime-related harm. These findings suggest that reducing the amount of money laundered by organised crime groups would limit their ability to reinvest illicit funds in future criminal enterprises. This research has also highlighted the value of data on suspicious financial transactions in capturing information about organised criminal groups that may not be available from other sources.

Introduction

Money laundering is the process of disguising the proceeds of criminal activity so that they appear to come from a legitimate source. Organised crime groups use money laundering to conceal the origin, ownership and destination of illicit funds. This enables these groups to spend these profits in the legitimate economy or to use these funds for further criminal activities without raising suspicion from law enforcement or financial institutions.

Despite growing recognition of the scale of the problem, and its significant role as an enabler of organised crime, estimates of the scale of money laundering and its associated harms have proven elusive. Indeed, empirical research into its effects remains in its relative infancy. A major reason for this has been the challenges in obtaining useful information to measure both money laundering and its associated harms. These are important to overcome, since evidence on the effects of money laundering could help shape decisions about policy and regulatory responses to the problem, including justifying the investment of substantial resources (Ferwerda et al. 2020).

While there are critics of attempts to measure the scale of money laundering (Reuter 2013), recent methodological advancements, coupled with improved access to data, have enabled researchers to estimate the amount of money laundering more reliably (Ferwerda et al. 2020). Likewise, there have been attempts to empirically assess the effects of money laundering— which are wide ranging and, for the most part, hypothesised (Ferwerda 2013)—demonstrating that it is possible. Most of this work has been undertaken in Europe. Many questions remain, including the degree to which this work can (or should) be replicated for Australia and whether further research, using previously inaccessible data and novel methods, might provide important insights into the effects of money laundering.

Social and economic harms associated with money laundering

The Australian Transaction Reports and Analysis Centre (AUSTRAC) commissioned the Australian Institute of Criminology (AIC) to measure the social and economic harms from money laundering and terrorism financing. The first stage of this project was a scoping and feasibility study involving a comprehensive literature review and consultation with Australian and international stakeholders to identify current and emerging opportunities for money laundering and terrorism financing and the impacts relevant to Australia (see Schmidt 2024).

These impacts were then assessed in the following terms:

- the potential for the impact to be relevant and significant in the Australian context;
- whether evidence was available to support the existence of the impact;
- the ability to measure the impact through empirical research; and
- the ability to attribute the impact to money laundering or terrorism financing.

Of the 18 impacts identified as relevant to Australia, five were also considered significant (Table 1). With the exception of the benefit of the anti-money laundering and counter-terrorism financing regime providing financial intelligence in the context of terrorism financing—recognised as very difficult to measure—the remaining four relevant and significant impacts were considered suitable for a pilot study. The aim of these pilot studies would be to determine the existence and magnitude of the impact and the degree to which it could be attributed to money laundering or terrorism financing. This report presents the results of the first of these pilot studies. It explores the link between money laundering and organised criminal activity and associated harms.

Table 1: Social and economic impacts of money laundering in Australia		
Impact	**Harm or benefit**	**Relevance and/or significance in Australia**
Criminal justice		
Crime levels and associated costs (predicate offences, financed crimes and crimes attracted by money laundering)	Harm	Relevant and significant
Recovery of proceeds of crime	Benefit	Relevant
Financial sector and other designated services		
Profitability	Benefit	Relevant
Reputation	Harm	Relevant and significant
Private sector		
Professional facilitators	Short-term benefit Long-term harm	Relevant
Crowding out of legitimate business	Harm	Relevant
Artificial increase in prices	Harm	Relevant and significant
AML/CTF industry	Benefit	Relevant
Informal remittance sector	Benefit	Relevant
Economy		
Distorted rates	Harm	Relevant
Foreign direct investment	Harm	Relevant
Economic growth	Harm	Relevant
Public sector		
Public revenue	Harm	Relevant and significant
National reputation (AML/CTF regime)	Harm	Relevant
Privacy	Harm	Relevant
Terrorism financing		
Terror attacks	Harm	Relevant
Financial intelligence	Benefit	Relevant and significant
National reputation (Humanitarian work)	Harm	Relevant

Source: Adapted from Schmidt (2024)

Money laundering and crime

The report by Schmidt (2024) outlined a clear rationale for the link between money laundering and criminal offending. On the one hand, money laundering may enable predicate offences, such as illicit drug trafficking or organised fraud, which generate the funds (proceeds of crime) which must be laundered. By disguising the origin of proceeds of crime as legitimate transactions, an offender can spend the funds as if they were obtained from a legal source (Levi 2002; McDowell & Novis 2001). The risk for the offender is that illicit financial flows may lead law enforcement to the criminal activity, resulting in prosecution and the funds or assets being confiscated. If the perceived risk (of detection, apprehension and prosecution) and associated transaction costs are high enough to indicate there is limited opportunity to profit, this would likely deter potential offenders from committing crime. The implication is that, if money laundering is not possible or too difficult, the incentive to commit predicate offences will be reduced and crime levels would decrease.

Conversely, crime will increase when money laundering is possible (Ferwerda 2009; Masciandaro 1999). Money laundering allows offenders to enjoy the profits while attempting to minimise the risk of confiscation and criminal charges (Levi 2002; McDowell & Novis 2001). Part of the appeal of organised crime is the opportunity to enjoy a more affluent lifestyle. Money laundering enables this through the spending of proceeds on luxury items, legitimising the funds and also legitimising the offenders (Levi & Soudijn 2020).

The other dimension to the relationship between money laundering and crime is the effect that money laundering has on future offending. It allows the proceeds of crime to flow into the economy, converting potential purchasing power to effective purchasing power (Masciandaro 1999; Van Duyne, Groenhuijsen & Schudelaro 2005). These funds grow the economic power of those involved in crime and at least a portion of these proceeds can be reinvested in further crime. In this way, money laundering acts as an enabler to crime which may impact on future crime levels (Ferwerda 2009; Masciandaro 1999).

There is surprisingly limited empirical research examining the extent to which money laundering facilitates criminal offending. There are two basic approaches to answering this question. The first approach attempts to measure the increase in the prevalence or frequency of criminal offending that can be attributed to an increase in the prevalence or frequency of money laundering. The increase in offending may represent an increase in predicate offending, enabled by offenders' ability to launder illicit profits (Unger & Rawlings 2008), or an increase in crimes financed by laundered money, or both (Levi 2002; Masciandaro 2013). The second approach attempts to measure decreases in the prevalence or frequency of criminal offending that can be attributed to changes in regulation which decrease the prevalence or frequency of money laundering. This also views laundering as an enabler of crime and assumes that the inability to launder illicit profits deters predicate offending or stops offenders from being able to finance future crimes.

Masciandaro (1999) proposed a theoretical macroeconomic model showing how money laundering acted as a multiplier of criminal financial activities, allowing laundered illegal funds to be reinvested in illicit activities. Unger et al. (2006) attempted to operationalise this model. They relied on several inputs, including the proportion of crime money that needs to be laundered, transaction costs of laundering, the amount of laundered money reinvested in the illegal economy, and the average return of illegal business operations. All of these inputs were estimated. Running various scenarios and adjusting key parameters, they concluded that money laundering generates an additional 10 to 25 percent proceeds of crime for laundering through an increase in illicit activities.

Morgan and Dowling (2023) explored the enablers of illicit drug trafficking, including money laundering. Half the groups included in their study were suspected of being involved in money laundering activity. Professional money laundering groups were relatively rare. Groups involved in money laundering were most likely to target the financial sector. However, they found that organised crime groups involved in laundering via the real estate market and gambling services were more likely to be involved in trafficking multiple drug types (ie poly-drug trafficking). Poly-drug trafficking groups import larger quantities of drugs, have larger amounts of money seized, operate for longer periods and are more likely to be charged with other serious and organised crime offences, meaning they are responsible for a disproportionate level of harm. Morgan and Dowling concluded that laundering through these sectors increases the profitability, adaptability and resilience of organised crime groups.

At least one study has examined the indirect effects of money laundering on crime. Romero (2022) analysed the effect on homicide rates of investing illicit funds in legitimate businesses in Mexican municipalities. This study first showed how criminal organisations had invested dirty money in local businesses by measuring the extent to which local revenue was not explained by legal economic activity, such as local taxes and service charges. The study showed that, while there were declines in violence during the initial economic windfall in municipalities with higher unexplained revenue, there was a significant increase in homicides in future years. In short, money laundering (based on atypical economic activity) increased the likelihood of future criminal violence. This may be because the economic windfall attracted criminal organisations to the area, leading to instability and conflict between groups.

Other research has examined the enabling effect of money laundering on crime by assessing the impact of anti-money laundering policies and regulation. Ferwerda (2009) analysed the effect of anti-money laundering policy—based on Financial Action Task Force, International Monetary Fund and World Bank mutual evaluation reports—on country-level crime rates. The underlying hypothesis was that the amount of crime in a country was related to the probability of being caught for money laundering, sentences for money laundering, the likelihood of being convicted for predicated offences and the transaction costs of money laundering. Ferwerda showed that anti-money laundering policies, in particular those that favoured international cooperation, were associated with lower crime levels.

One of the challenges in trying to measure the relationship between money laundering crime based on whether anti-money laundering policies deter crime is that organised crime offenders are highly adaptable. A recent study by Gerbrands et al. (2022) found that, after the announcement of a money laundering directive in the European Union, money laundering networks adapted, increasing their use of foreigners and corporate structures. Unger and den Hertog (2012) observed similar changes, finding that stricter money laundering regulations had not led to declines in proceeds of crime or in money laundering, as criminals switched commodities, to less regulated financial markets, and from financial markets to other sectors, including electronic payments, trade and real estate. Results that suggest anti-money laundering policy has no effect on crime do not necessarily mean that money laundering does not increase crime; rather, the adaptability of criminal groups can dilute any potential observable relationship between the two phenomena.

This brief review has illustrated the relevance of measuring the relationship between money laundering and crime, but also the limited progress that has been made internationally in doing so. To the best of our knowledge, no studies have specifically measured the relationship between the amount of money laundering and the total crime-related harm. There are various reasons for this; however, the biggest barrier has been the lack of access to suitable, relevant and reliable data, both on money laundering activity and organised criminal activity. Recent examples, such as the study by Ferwerda et al. (2020), illustrate the benefit that can be derived from having access to intelligence sources for the purpose of research. In this study, we aim to build on this earlier research and capitalise on access to data to advance the development of a harm index for money laundering and terrorism financing, starting with the effects of money laundering on crime.

Method

The aim of the current study was to measure the relationship between money laundering and criminal offending and associated harm. It sought to determine the extent to which money laundering enables predicate offending and the extent to which the laundering of the illicit proceeds of crime funds future criminal activity.

Data

We started with data on organised crime groups identified by Australian law enforcement agencies as posing a threat to Australia and which were added to the Australian Criminal Intelligence Commission's (ACIC) National Criminal Target List (NCTL). The NCTL was recently decommissioned but held information on active and nationally significant serious and organised crime groups operating in or affecting Australia. The *Australian Crime Commission Act 2002* (Cth), which governs the operations of the ACIC (formerly the Australian Crime Commission), describes serious and organised crime as an offence that typically involves two or more offenders, substantial planning and organisation, and sophisticated methods and techniques, or one of several specified offences. These offences can include fraud, illicit drug trafficking, violence and extortion, money laundering, bribery and corruption, and other serious crime types commonly associated with organised crime. Groups meeting this definition were added to the NCTL in the period 2010 until 2018. The identities of known members of these groups were also added to the NCTL. While it is no longer operational, the NCTL provided the most comprehensive national list of organised crime groups known to law enforcement, along with detailed information about the membership and criminal activity of each group.

The ACIC provided AUSTRAC with the full list of names and dates of birth for all of the individuals who were affiliated with groups added to the NCTL (*n*=7,263). Information was extracted on all suspicious matter reports (SMRs) made since 2014 (when reliable data were available) in which these individuals were listed as an entity. SMRs capture information about financial transactions or interactions where there is a suspicion that someone is acting illegally. Designated services—which include financial, gambling, bullion and digital currency exchange services—are legally required to submit SMRs to AUSTRAC when they detect potentially suspicious behaviour.

Information was also extracted on threshold transaction reports for transfers of physical currency or digital currency (cryptocurrency) of A$10,000 or more (or the foreign currency equivalent), international funds transfer instruction reports for instructions to send or receive money overseas (of any value), and cross-border movement reports about carrying, mailing or shipping physical currency valued at A$10,000 or more to or from Australia. Regulated entities are also legally required to provide this information to AUSTRAC. In this report we focus on SMRs as our principal measure of money laundering, given these other report types represent transactional data and there is no way of distinguishing licit from illicit transactions. This is consistent with other recent research measuring money laundering activity (Ferwerda et al. 2020). Importantly, SMRs capture transaction information also captured in these other report types (ie they are not mutually exclusive).

The ACIC had previously provided the AIC with information about the groups added to the NCTL and the criminal histories of affiliated members (referred to hereafter as the AIC organised crime database). Data recorded on the NCTL on these groups included information about group membership, including the number of members and whether there were professional facilitators in the group, the criminal activities in which each group was involved (and, where relevant, the nature of this involvement), and the local and international jurisdictions in which each group had a presence. Information on the recorded criminal histories of these individuals was sourced from the National Police Reference System (NPRS), also managed by the ACIC, which holds information designed to assist operational police, including offences resulting in some legal action by police. Records were matched between the two databases using a name and date of birth match (see Morgan & Payne (2021) for a detailed discussion of the matching procedures). This was limited to groups that remained on the NCTL at the date of extraction (or, more accurately, the date on which it was decommissioned). There were 925 organised crime entities in the sample provided by the ACIC, and 6,320 individuals affiliated with these entities. This information was combined with AUSTRAC's SMR data for the purpose of analysis.

Measuring crime-related harm

There are different methods available for measuring the harm associated with crime, including organised crime. We briefly describe some of the approaches considered, before setting out the preferred method for the current study.

Costs

Research into the costs of serious and organised crime (Smith & Hickman 2022) is widely cited. This method typically adopts a top-down approach, whereby the total cost is estimated and the proportion of that cost that can be attributed to a particular cause—in this case, serious and organised crime—is determined. The benefit of this approach is that it allows for a wide range of cost estimates to be calculated. However, many of these costs cannot be estimated at the individual or group level; rather, they are estimated at the jurisdictional or agency level. They also frequently rely on inputs that are estimated.

A component of these costs are the costs associated with individual offences. These are adjusted to account for the extent of organised crime involvement and the projected higher costs from serious and organised crime offences (Australian Crime Commission 2015). Some studies use the cost associated with recorded offences (see Morgan, Brown & Fuller 2018 for an example). It is also possible to estimate prison and other sentence costs (Morgan 2018). However, there are significant gaps in these cost estimates, including for certain crime types that are common among the sample of organised crime offenders used in this study. Indeed, Morgan, Brown and Fuller (2018) reported that cost estimates were only available for 38 percent of offences in their study. The most notable omission was drug offences—and Morgan and Dowling (2023) reported that more than 80 percent of groups in the Australian organised crime database were involved in some form of illicit drug trafficking.

Crime harm index

One method of measuring harm that has grown in popularity in recent years is the use of a crime harm index (van Ruitenburg & Ruiter 2023). Crime harm indexes have now been developed for multiple countries, including several European countries, New Zealand and Australia (Andersen & Mueller-Johnson 2018; Curtis-Ham & Walton 2018; House & Neyroud 2018; Kärrholm, Neyroud & Smaaland 2020; Sherman, Neyroud & Neyroud 2016). They were developed as an alternative to relying on offence frequencies and as a way of distinguishing between prolific and harmful offenders and to better represent the concentration of crime-related harm among offenders, victims or places (Mitchell 2019; Ratcliffe & Kikuchi 2019). A crime harm index involves calculating a harm weight for each offence type based on the length of the sentence for that offence—usually measured in prison days—either based on sentencing guidelines or the actual sentences imposed on offenders. The central argument for developing a crime harm index is that the sentences imposed by the courts should reflect the relative severity of that offence and the harm to the community.

These indexes have been used for a variety of purposes, including measuring crime trends over time, analysing crime concentration among individuals and locations to assist with targeting, and to measure the impact of interventions (van Ruitenburg & Ruiter 2023). They have their limitations, such as access to appropriate sentencing data for all offence types, using offence categories that are narrow enough to be meaningful, and the fact that it can be difficult to determine how to apply a crime harm index to multiple offences, offenders and victims in a single crime incident (which is especially relevant to organised crime; van Ruitenburg & Ruiter 2023). Several studies have applied crime harm indexes to the analysis of Australian organised crime, including to measure the concentration of crime among criminal groups (Morgan, Dowling & Voce 2020), the escalation of offending in the criminal careers of organised crime offenders (Morgan & Payne 2021), and the impact of responses to organised crime (Dowling & Morgan 2022).

Crime harm assessment

An alternative to these approaches is the crime harm assessment proposed by Greenfield & Paoli (2013). This was designed primarily for organised crime. The harm assessment process begins with determining the business model or modus operandi of the criminal activity being assessed. This is followed by identifying the range of harms that are associated with this criminal activity and who bears those harms, evaluating the severity and incidence of these harms, and prioritising the harms that have been identified. These steps are supported by scales and matrices developed for this process. The final stage involves trying to establish causality, with a focus on determining the distance between the actual crime and associated harm and the degree to which these harms are a consequence of the crime itself rather than of the policy response to that crime.

This approach has been applied to a range of crime types, including human trafficking (Greenfield, Paoli & Zoutendijk 2016), cannabis cultivation (Paoli, Decorte & Kersten 2015), cocaine trafficking (Paoli, Greenfield & Zoutendijk 2013) and cybercrime targeting business (Paoli, Visschers & Verstraete 2018). That it has been applied to narrow albeit complex crime problems reflects the fact that it is a comprehensive process that does not easily lend itself to measuring or comparing the harm from all crime types. As a largely qualitative method, it is also unsuited to quantifying the harm from crime.

Preferred method for the current study

The current study uses a crime harm index as the basis for measuring the harm associated with offending by organised crime groups. Specifically, we use the Western Australian Crime Harm Index (WACHI) developed by House and Neyroud (2018). This is the same approach used by Morgan and Payne (2021), Dowling and Morgan (2022) and Morgan, Dowling and Voce (2020).

The WACHI was developed for Australian Standard Offence Classification codes (Australian Bureau of Statistics 2008). These were mapped to the Australian and New Zealand Standard Offence Classification (ANZSOC) codes (Australian Bureau of Statistics 2011) used in the recorded criminal histories of organised crime group members and weighted means were used to aggregate sub-groups into standard offence classifications. ANZSOC codes without a WACHI code were assigned a harm index in one of two ways. For some offences we estimated them directly based on similar offence types already in the WACHI. Where there was no similar offence in the WACHI, we used the imprisonment rates and average custodial sentence lengths published by the NSW Bureau of Crime Statistics and Research (2019) and Sentencing Advisory Council (2015) to calculate multipliers that were then used to estimate scores based on existing WACHI scores.

We elected to use a crime harm index in this study for several reasons. We have already noted the limitations of cost estimates for individual crime types. Similarly, there is no structured framework in the approach developed by Greenfield and Paoli (2013) that could be applied to all crime types in the dataset. Using the WACHI enabled us to measure the harms associated with all crimes committed by organised crime groups in our sample in a systematic, reliable and consistent way. While it does not provide a meaningful absolute measure of the total harm associated with different crime types (in the same way as a cost per offence might), it does allow us to compare the harm caused by individuals or groups.

Analytic approach

The approach used in the analysis is summarised below. More detail about these methods is provided in the relevant sections of the report.

Main variables of interest

We use and refer to several main variables of interest throughout this report. Recorded crime-related harm was measured by using a modified version of the WACHI to assign a harm score to every recorded offence in the NPRS. Recorded crime-related harm was measured at the group level, requiring that the harm scores for all offences by individuals affiliated with an organised crime group be added together. We used the date of the offence, rather than the date of any legal action by police, when determining which offences would be counted. We included all offence types other than traffic offences. To account for differences in group size, we calculated the amount of crime-related harm per member by dividing the total sum of all crime-related harm by the number of members recorded in the NCTL.

Recorded organised crime offending refers to several offence types, including blackmail and extortion, the commercial supply of drugs and firearms, serious fraudulent activity and serious regulatory offences (eg bribery of government officials and import and export regulation offences). We used these offence types as a proxy for organised crime-type offending as it best reflects the range of offences that meet the definition of serious and organised crime used in the *Australian Crime Commission Act 2002* (Cth)—specifically, offences requiring a high degree of planning, organisation and sophistication. We rely on offence type to identify organised crime offending because we were not able to establish co-offending using the current data. Nor is there any standard classification of organised crime offences in officially recorded crime (in the data used in this study or any other Australian data that we are aware of). We note that this may overlook other offence types, particularly violent offences, that may be related to organised criminal activity.

We rely on data on SMRs involving financial transactions to identify whether individuals affiliated with known organised crime groups were involved in money laundering and the amount of money being laundered. Involvement in money laundering was based on whether members of an organised crime group were linked to at least one SMR involving a financial transaction—meaning there was at least one suspicious transaction involving a member of the group during the observation period. The total sum of suspicious transactions included in SMRs relating to an organised crime group was used to measure the amount of money being laundered. Similar to recorded crime-related harm, we used the total value of SMRs per member to account for variation in group size. We used the date the SMR was submitted to AUSTRAC, rather than date of suspicious transactions, to determine which SMRs would be included in the analysis.

Stages in the analysis

There were several stages in the analysis. First, we analysed data on SMRs linked to organised crime groups known to law enforcement to measure the trend in and total value of SMRs, as well as the characteristics of SMRs reported to AUSTRAC, between 2014 and 2021. Using data on all SMRs reported to AUSTRAC in one financial year (2016–17), we compared SMRs that were and were not associated with organised crime groups known to law enforcement. This was used to determine the extent of the overlap between our sample of organised crime groups and the SMRs reported to AUSTRAC.

We then analysed data on the relationship between the characteristics of organised crime groups and the prevalence of SMRs involving a financial transaction and, among those groups with at least one SMR, the total value of SMRs. Because of a significant change in SMR activity in 2018, we focused on the period between 2014 and 2017. This stage of the analysis identified the characteristics of groups associated with money laundering activity.

The analysis then shifted focus to measuring the relationship between money laundering and recorded crime-related harm. We began by analysing the cross-sectional relationship between the prevalence and value of SMRs involving financial transactions and the recorded crime-related harm by each group on the NCTL between 2014 and 2017. We wanted to determine whether groups involved in money laundering were responsible for more recorded crime-related harm (ie between-group variation), including after taking into account other differences between these groups, such as whether they had been investigated by law enforcement.

The final stage of the analysis examined the relationship between suspected money laundering and crime-related harm by measuring whether the amount of crime-related harm caused by an organised crime group increased when they were laundering money, compared with when they were not, or when the amount of money being laundered increased. We used panel data for this analysis—restructuring the dataset so that there were data on money laundering and recorded crime-related harm in every year from 2014 to 2017. Briefly, panel data offers a means of examining the impact of time-varying factors on longitudinal outcomes while accounting for time-stable differences between observations (Wheaton & Young 2021). As well as analysing contemporaneous effects, we examined the direction of the relationship between money laundering and crime-related harm by incorporating lagged effects—meaning we measured the relationship between recorded crime-related harm and money laundering in the current year, as well as in prior years. We repeated this analysis with money laundering as the dependent variable.

Analytic methods

We have used different types of regression analysis throughout this report. Regression analysis allowed us to measure the relationship between our outcome of interest (dependent variable) and one or more explanatory factors (independent variables). We were interested in whether, once we considered the relationship between all variables in the model and the outcome, there was a statistically significant relationship between our main variables of interest and the dependent variable. When a variable in a regression model was statistically significant, we concluded that a change in that variable was associated with a change in the likelihood of the outcome being observed. Our threshold for statistical significance was $p<0.05$, which indicates a less than five per cent probability that the observed result occurred by chance. The type of regression analysis we used varied according to the outcome variable and structure of the data, and is described in detail in the relevant section of the report.

Limitations

Organised crime is, by its very nature, a clandestine and highly secretive endeavour. It is difficult to conduct research on this topic generally (Global Initiative Against Transnational Organized Crime 2021). Indeed, this problem is amplified when it comes to money laundering, for which the primary goal is to disguise the illicit proceeds of crime. This presents unique challenges in trying to measure the relationship between organised crime and money laundering.

The use of law enforcement intelligence assessments offers several advantages. It is very difficult to identify organised crime offenders or groups from police recorded crime data on its own, since it is by design organised around individual offenders, not networks. An assessment by skilled law enforcement personnel can capture useful information about a group, its members and their operations that might not otherwise be captured. The fact that this was a national system, with input from law enforcement agencies around the country, means it also captures groups operating in different markets.

However, intelligence data will only capture what is known about organised crime groups by law enforcement, and the information that has been gathered through investigations. The burden of proof for involvement in criminal activity does not reach the standard required for arrest or prosecution. Some groups may have been more closely investigated, and there may be some bias in the data as a result of this. Indeed, the NCTL is not limited to groups that have been fully investigated by law enforcement. Where appropriate, we limit the analysis to those groups that have been investigated to verify whether the substantive results hold true. Even so, not all forms of organised crime will be equally represented in the data, which is a function of the operational priorities of Australian law enforcement. We consider issues related to generalisability throughout this report.

We acknowledge the data used in this study do not represent a true census of organised crime groups impacting Australia. Trying to identify and capture every group operating in or affecting Australia is an ambitious task. But the use of the NCTL varied between jurisdictions and over time. Though the NCTL includes groups added as late as 2018, its use declined significantly in recent years, and it has now been decommissioned and replaced with new, more focused target assessments. We also expect that the NCTL was better at capturing information about groups with a presence in Australia, as distinct from those operating entirely offshore, and groups linked to countries with which Australia has strong legal and information-sharing arrangements.

The limitations of using recorded crime data to measure offending by individuals involved in organised crime were described by Fuller, Morgan and Brown (2019). They include that the analysis is necessarily limited to the individuals and offences that have been detected by law enforcement and against which legal action has been taken.

Similarly, there are limitations to relying on data on suspicious transactions, or financial transactions more generally, as a reliable indicator of either the presence of money laundering or the scale of that laundering. For example, Levi (2020) notes that SMRs (or suspicious transaction reports or suspicious activity reports, as they are known elsewhere) may reflect possible criminal activity, but might also be a consequence of blind adherence by regulated entities to the legislated requirements of a regulatory body. We therefore need to be cautious about accounting for changes in reporting behaviour. This is not an insurmountable problem; indeed, Ferwerda et al. (2020) recently used suspicious transaction report data in their assessment of the scale of money laundering in the Netherlands.

Suspicious transactions by members of known organised crime groups

In this section we present the results from a descriptive analysis of suspicious transactions linked to individuals who were added to the NCTL between 2010 and 2018 (inclusive). Data on 7,263 unique individuals were supplied by the ACIC to AUSTRAC. Twenty-nine percent (n=2,129) of these individuals were linked to at least one SMR between 2014 and 2021. In total, 8,785 SMRs were linked to individuals on the NCTL. Sixteen percent of SMRs (n=1,413) linked to at least one individual on the NCTL were linked to multiple individuals on the NCTL, while two-thirds (66.7%, n=1,421) of individuals on the NCTL who appeared on at least one SMR appeared on multiple SMRs. Eleven percent (n=237) of individuals on the NCTL appeared on more than 10 SMRs.

Reporting entities can record one or more reasons for submitting an SMR to AUSTRAC (Figure 1). Among those SMRs linked to individuals on the NCTL, the most common reason was some form of suspicious activity by the individual(s) named in the SMR, which included suspicious behaviour and unusual financial activity, such as unusually large transactions (68.0% of all reports). Around one-third of reports (35.7%) were submitted because law enforcement had advised the reporting entity that the individuals involved were under surveillance. Fewer than five percent of reports related to some type of fraud or scam (4.7%), while a similar proportion (4.2%) related to a country or jurisdiction that was identified as high risk. One in five reports were submitted for some other reason, such as an individual failing to disclose their identity or for immigration or border control matters.

Figure 1: Suspicious matter reports linked to individuals on the NCTL, by reason for suspicion (%)
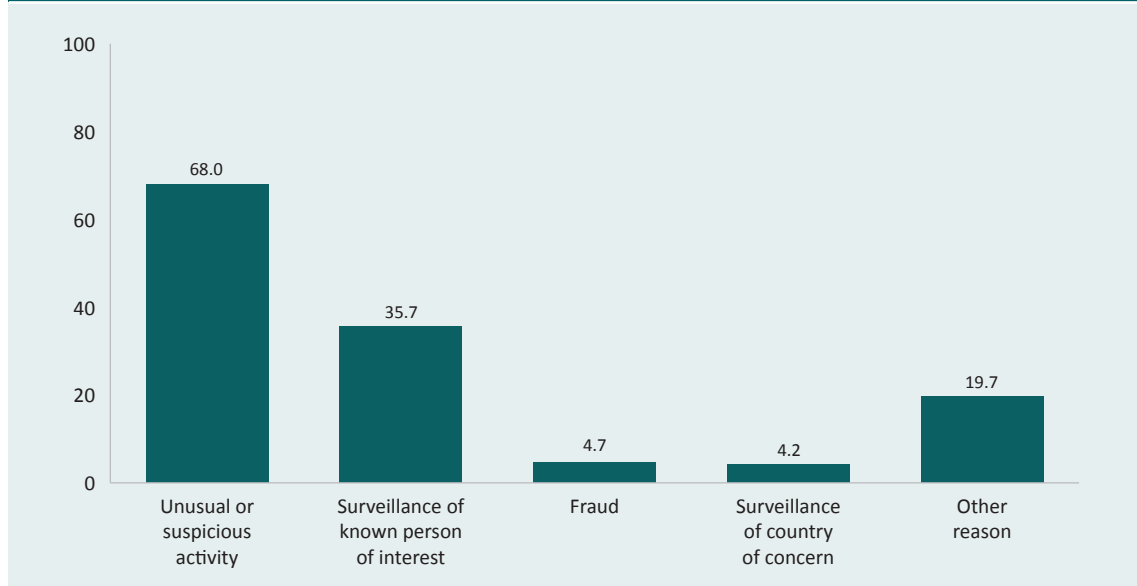
Note: Reports may be submitted for more than one reason (ie categories are not mutually exclusive). Aggregate categories defined by the authors. NCTL=National Criminal Target List

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

The trend in the number of SMRs linked to individuals on the NCTL, and the median financial value of the transactions that formed the basis of these SMRs, is presented in Figure 2. This shows that the trend in both SMRs submitted and the median financial value of these SMRs was relatively stable between 2014 and 2017. There was a sharp increase in the number of SMRs submitted—and a corresponding decrease in the median financial value of these SMRs—in 2018, after which the trend remained relatively stable. In fact, the number of SMRs submitted increased from an average of 702 reports per year between 2014 and 2017 to an average of 1,494 reports per year between 2018 and 2021.

Figure 2: Number and median financial value of suspicious matter reports linked to individuals on the NCTL, 2014–2021
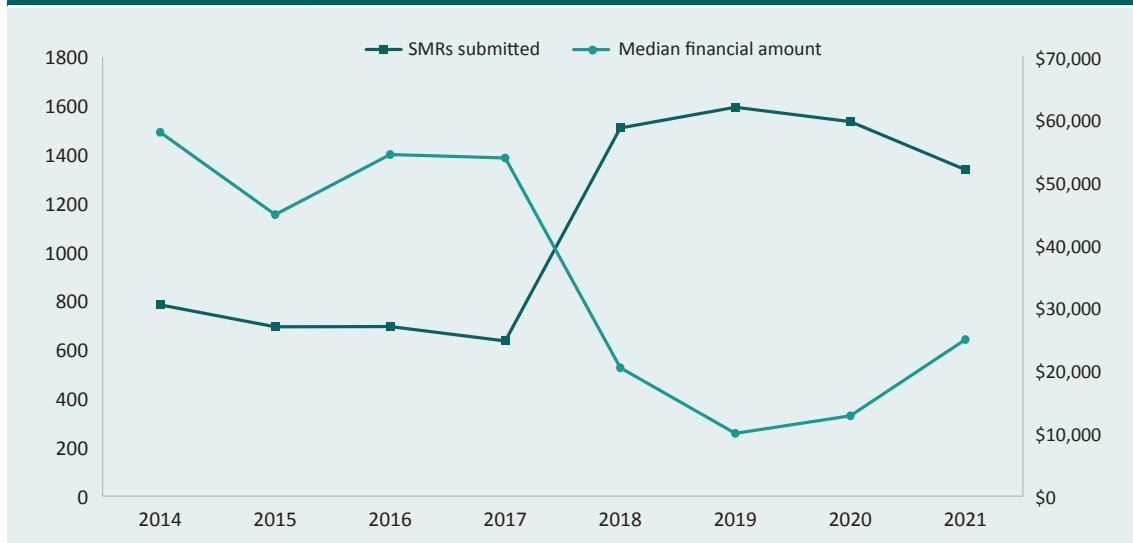
Note: NCTL=National Criminal Target List
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Analysis of the monthly number of SMRs linked to individuals on the NCTL submitted to AUSTRAC is presented in Figure 3 and provides further insight into the timing of this trend change. The initial increase followed the August 2017 initiation of civil penalty proceedings in the Federal Court against the Commonwealth Bank of Australia for non-compliance with the *Anti-Money Laundering and Counter-Terrorism Financing Act 2006* (Cth). A further, smaller increase occurred following the June 2018 announcement of an agreement between AUSTRAC and the Commonwealth Bank for a $700 million penalty. The timing of this trend change, and the coinciding decline in value of SMRs, indicates an increase in more proactive reporting by reporting entities.

Figure 3: Number of suspicious matter reports linked to individuals on the NCTL, by month, 2014–2021
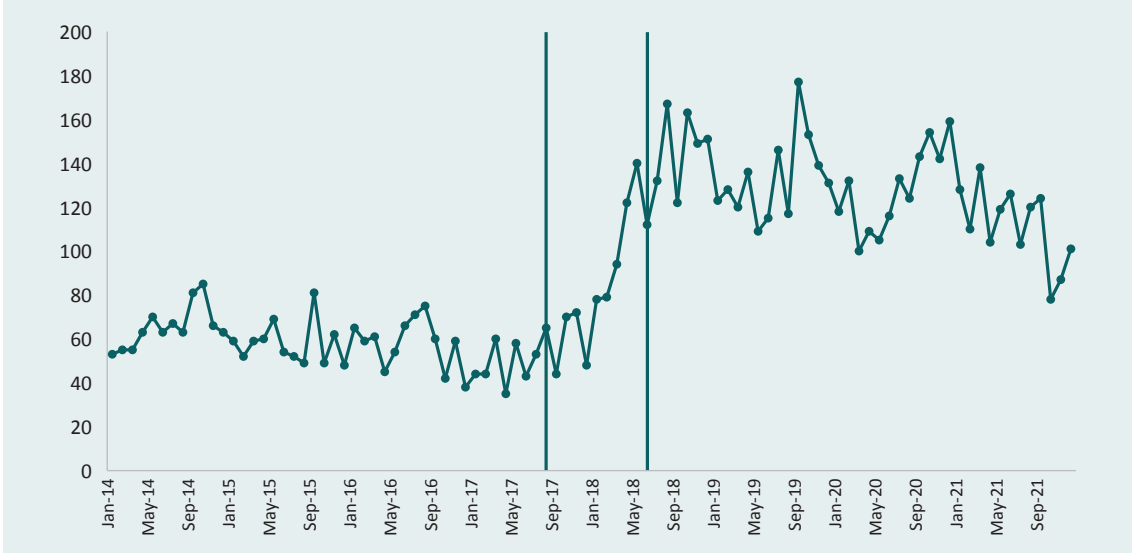
Note: NCTL=National Criminal Target List
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

This trend change is also evident in the annual data on SMRs presented in Table 2. The total value of SMRs linked to individuals on the NCTL over the entire eight-year period was $3.5 billion. Despite the nearly threefold increase in reporting, the 2014–2017 period accounted for 44 percent of this total value (around $1.5 billion). Notably, three very large value SMRs accounted for one-third (35.0%) of this total value (and the largest accounted for 21%).

Table 2: Number and financial value of suspicious matter reports linked to individuals on the NCTL, 2014–2021

	Number of SMRs	Maximum value	Mean value	Median value	Total value
2014	784	$12,557,789	$300,934	$58,000	$235,932,040
2015	694	$4,416,000	$171,720	$44,875	$119,173,577
2016	695	$727,865,472	$1,360,961	$54,450	$945,868,090
2017	636	$19,067,668	$326,151	$53,901	$207,432,253
2018	1,509	$7,491,781	$192,365	$20,460	$290,278,342
2019	1,594	$345,526,976	$447,915	$10,005	$713,976,201
2020	1,535	$25,295,208	$199,913	$12,800	$306,867,143
2021	1,338	$138,305,616	$479,704	$24,953	$641,843,289
Total	8,785	$727,865,472	$394,009	$26,880	$3,461,370,935

Note: NCTL=National Criminal Target List; SMRs=suspicious matter reports
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

The change in reports submitted was also reflected in the trend in the number of SMRs linked to individuals on the NCTL when it is analysed according to the reason for suspicion (Figure 4). There was a very large increase in reports related to the surveillance of known persons of interest, accounting for around half of the total increase in reports between 2017 and 2018. The proportion of reports where the reason for suspicion was that the transaction(s) related to a known person of interest increased from 16.0 percent in 2017 to nearly half of all linked SMRs (45.9%) in 2018. This increase in the surveillance of known persons of interest on the NCTL has important implications for the following analysis of the links between suspicious transactions and crime-related harm.

Figure 4: Number of suspicious matter reports by reason for suspicion and year of submission
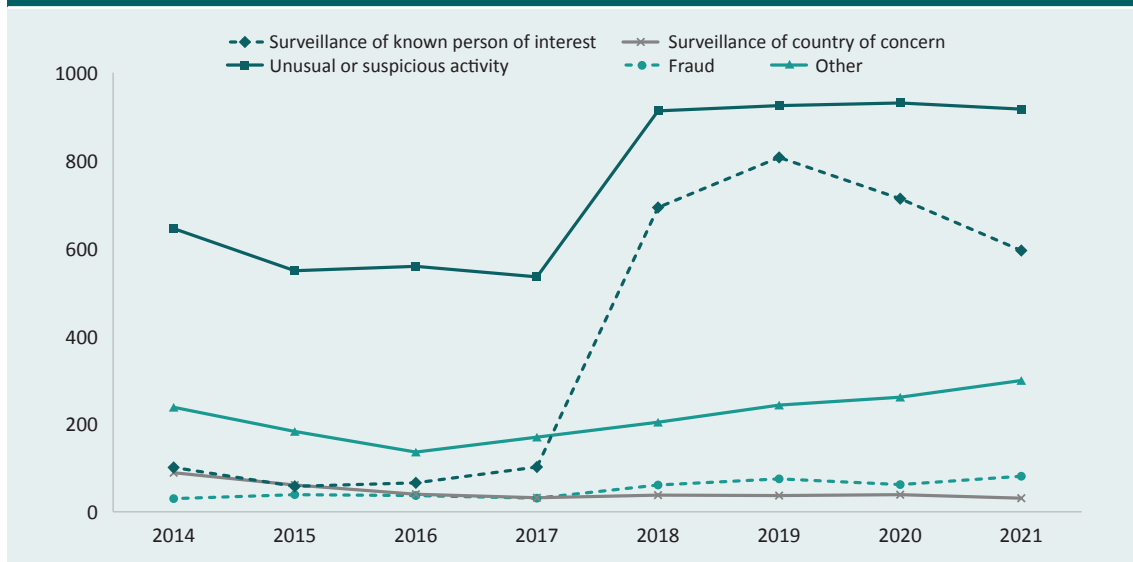
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

While we have shown that a significant proportion of members of known organised crime groups were involved in suspicious transactions, we do not know the full extent of the overlap between the NCTL and SMRs—that is, the proportion of SMRs linked to individuals on the NCTL. To determine how many SMRs were linked to known organised crime groups, we analysed data on all SMRs submitted to AUSTRAC in one financial year. AUSTRAC received 74,102 SMRs in 2016–17. Of these, 629 SMRs (0.9%) were linked with individuals on the NCTL. There were 42,074 SMRs in this period with more detailed information on crimes that formed the basis of the SMR. In this reduced sample, 339 SMRs (0.8%) were linked to an individual on the NCTL. In short, while nearly one-third of individuals on the NCTL were linked to at least one SMR, organised crime groups known to law enforcement accounted for a very small percentage of all SMRs reported to AUSTRAC (Figure 5).

Figure 5: Overlap between suspicious matter reports and individuals on the NCTL

For every 100 individuals on the NCTL,
29 were linked to an SMR between 2014 and 2021

For every 100 SMRs submitted in 2016–17,
<1 was linked to an individual on the NCTL
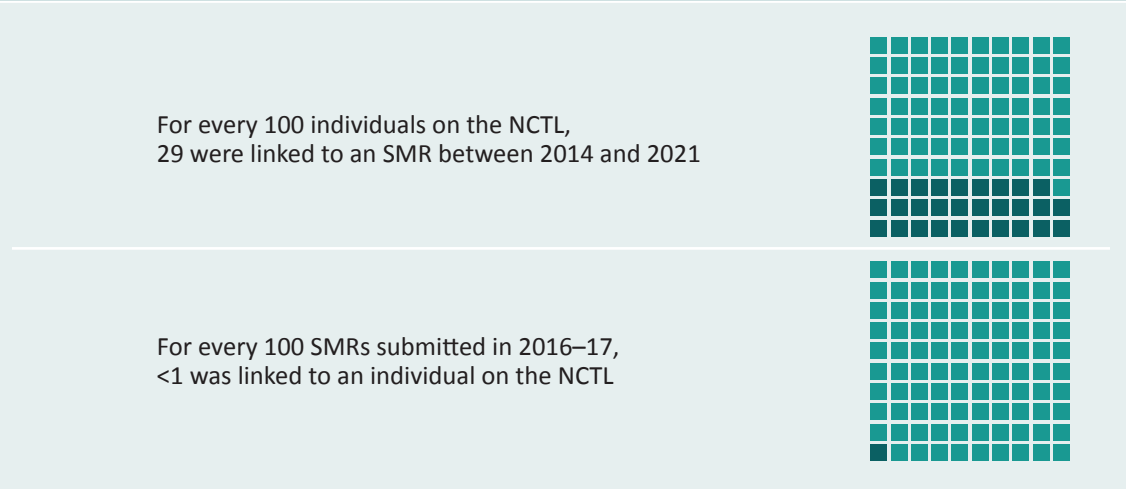
Further analysis revealed several key differences between the SMRs that were and were not linked to individuals on the NCTL. We considered several characteristics of SMRs, including the total financial value of the SMR (which may relate to multiple transactions), the number of entities involved, the industry from which the SMR was submitted and the reasons for suspicion. The reasons for suspicion varied between the two samples, with a more detailed breakdown based on additional analysis by AUSTRAC available for the reduced sample. We log transformed the value of the SMRs because they were highly skewed.

We used logistic regression to compare those SMRs linked to someone on the NCTL and those that were not. Logistic regression is used when the outcome is a binary variable. Because the outcome in both samples was extremely rare (less than one percent), and standard logistic regression can underestimate the probability of rare events (King & Zeng 2001), we used a special form of logistic regression known as rare events logistic regression. This corrects for the bias that might otherwise be present due to rare events (King & Zeng 2001). Statistically significant variables are those which we can be confident are associated with a change in the likelihood of the outcome being observed. We repeated this analysis for both samples. We report the odds ratios (ORs), which are a measure of association between each independent variable and the outcome. They are interpreted as the odds that an outcome will occur when the variable is present, relative to the odds of the outcome occurring when that variable is not present or for a one unit increase in a variable.

Results are presented in Table 3. In both the full sample (FS) and reduced sample (RS), a higher number of entities listed on an SMR was associated with an increased likelihood that the report would be linked to an individual on the NCTL (FS OR=1.05, RS OR=1.04). The total value of the SMRs (logged) was also statistically significant, but only in the full sample (OR=1.07).

There was a statistically significant relationship between the reasons for suspicion and the likelihood of an SMR being linked to an individual on the NCTL in both the full and reduced samples. In the full sample, SMRs were more likely to be linked to an individual on the NCTL if they related to a person under surveillance (OR=2.24). Also in the full sample, SMRs were less likely to be linked to an individual on the NCTL if they were submitted because they related to a country under surveillance (OR=0.14), suspicious activity (OR=0.34), fraud or scams (OR=0.06) or for some other reason (OR=0.25). In the reduced sample, SMRs relating to the suspected involvement of a person of interest in crime (OR=4.02), money laundering (OR=1.44), illicit drugs (OR=3.19), taskforce activity (OR=2.07), other serious crime (OR=2.23) and professional facilitators (OR=1.64) were all more likely to be linked to an individual on the NCTL. Conversely, SMRs relating to fraud (OR=0.47) and scams (OR=0.48) were under-represented in SMRs linked to the NCTL. Finally, SMRs originating in the betting and gambling industry (FS OR=14.09; RS OR=6.30) and financial institutions (FS OR=3.66; RS OR=1.78) were significantly more likely to be linked to individuals on the NCTL than reports originating from other sectors, such as payment systems and alternative remittance services.

Table 3: Rare events logistic regression measuring relationship between characteristics of suspicious matter reports and links with the NCTL				
	Model 1: Full sample (n=74,102)		Model 2: Reduced sample (n=42,074)	
	Coefficient (SE)	OR	Coefficient (SE)	OR
Total value of SMR (logged)	0.07*** (0.01)	1.07	0.03 (0.02)	1.03
Total number of entities listed on SMR	0.05*** (0.01)	1.05	0.03* (0.01)	1.04
Reason for suspicion (full sample)				
Person under surveillance	0.81** (0.25)	2.24	–	–
Country under surveillance	−1.98*** (0.25)	0.14	–	–
Suspicious activity	−1.08*** (0.19)	0.34	–	–
Fraud or scam	−2.89*** (0.34)	0.06	–	–
Other	−1.37*** (0.21)	0.25	–	–
Reason for suspicion (reduced sample)				
Suspected involvement in crime	–	–	1.39*** (0.15)	4.02
Money laundering	–	–	0.37** (0.12)	1.44
Fraud	–	–	−0.75*** (0.16)	0.47
Scam	–	–	−0.74* (0.32)	0.48
Illicit drugs	–	–	1.16*** (0.19)	3.19
Taskforce activity	–	–	0.73*** (0.17)	2.07
Politically exposed persons, corruption and bribery	–	–	0.18 (0.13)	1.19
Terrorism and national security	–	–	0.03 (0.25)	1.03
Other serious crime	–	–	0.80*** (0.20)	2.23
Professional facilitators	–	–	0.50* (0.22)	1.64
Industry (vs others)[a]				
Betting and gambling	2.65*** (0.19)	14.09	1.84*** (0.27)	6.30
Financial institution	1.30*** (0.20)	3.66	0.57* (0.25)	1.78
Constant	−5.76*** (0.18)	0.00	−6.10*** (0.30)	0.00
AUROC	0.78		0.79	
Nagelkerke pseudo R-squared	0.10		0.12	

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

a: Other industries include alternative remittance services, payment systems, other financial services and other industries

Note: Reduced sample is limited to suspicious matter reports (SMRs) with crime type information included. Coefficient and robust standard errors reported along with odds ratios (OR). Dependent variable is whether SMR is linked to at least one individual on the National Criminal Target List (NCTL). Area under the receiver operating characteristic (AUROC) curve and Nagelkerke pseudo R-squared estimated from logistic regression model. The AUROC (measured on a scale of 0.5 to 1) is a useful statistic because it helps assess the predictive accuracy of a model (the ability to correctly discriminate between cases). It reflects the probability that two randomly selected cases—one with the outcome (linked to NCTL) and one without (not linked to NCTL)—would be correctly classified by the model. An AUROC of 0.7 and above is considered to have an acceptable level of discrimination

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Relationship between characteristics of organised crime groups and suspicious transactions

The next stage of the analysis measured the relationship between the characteristics of known organised crime groups and the prevalence and value of suspicious transactions made by the members of these groups. This was limited to groups for which we had information (ie they remained on the NCTL at the time of data extraction, n=925). We also limited our analysis to groups with more than one member (n=838, 90.6%). Groups with only one member were most likely significant facilitators who provided services to multiple serious and organised crime groups, or individuals identified in the course of investigating an organised crime group but for which information on other group members was unavailable. While the former may be important in understanding the links between money laundering and organised crime, the method used in this study does not allow for cross-group effects to be measured. We excluded one more group because it was linked to a very high value SMR and, as such, was an extreme outlier. There were 837 groups in our final sample for analysis.

Individuals could be affiliated with more than one group. Indeed, 17.5 percent of members were affiliated with more than one group, while most groups in the sample had at least one member who was affiliated with more than one group (64.7%). This is a function of the highly connected networks that characterise contemporary organised crime.

Information about these groups is presented in Table 4. The mean size of each group was 9.6 members (standard deviation=9.2); however, 37.6 percent of groups had five or fewer members, while 70.3 percent had 10 or fewer members. Thirty-one percent of groups had at least one professional facilitator among their membership, while nearly one in five (18.3%) had two or more professional facilitators (Table 4). Overall, 74.2 percent of organised crime groups had a known presence in at least one overseas country, meaning they either originated offshore or had strong offshore links. More than one-third of groups (38.8%) had a presence in two or more overseas countries. It was also common for groups to operate across state and territory borders, with 46.4 percent having a presence in more than one Australian state or territory.

Four in five groups (81.5%) were involved in the importation, manufacture or distribution of illicit drugs or their chemical precursors. Overall, 42.3 percent of groups trafficked more than one drug type (ie they were poly-drug trafficking groups). Half (51.2%) of the groups in the sample imported at least one drug type, 26.2 percent manufactured (or cultivated) an illicit substance, and 62.3 percent distributed a drug.

One in 10 groups (11.9%) trafficked illicit commodities other than illicit drugs, while it was slightly less common for groups to be suspected of serious fraud offending (9.5%). A significant proportion of groups had a reputation for violence, with 17.7 percent of groups suspected of engaging in violence, extortion or abduction, and 5.7 percent suspected of being involved in the criminal use of firearms.

Overall, 22.4 percent of groups were identified as having infiltrated or exploited at least one sector. This was most commonly a private sector or commercial industry (11.9%). A further 9.8 percent of groups had infiltrated or exploited the transport sector, which includes air, sea and surface transport. Public sector corruption was less common (4.9%). Half of all groups were involved in money laundering (51.1%). This was most commonly carried out through the financial sector (21.8%). Eight percent of groups were suspected of laundering illicit profits through gambling services and 6.8 percent through real estate. A similar proportion of groups were identified as operating professional money laundering syndicates (6.8%).

Finally, the majority of groups had at least one member with a known history of organised crime offending, meaning they had previously been subject to legal action by police. This suggests a high degree of relevant criminal expertise. The average age of members was 40.2 years.

Importantly, 51.2 percent of groups had been investigated by law enforcement. Further, 30.2 percent of groups were added to the NCTL during the reference period (ie between 2014 and 2017). That not all groups were investigated by law enforcement, and that when they were added to the NCTL varied, had important implications for our analysis. We needed to take this into account, since the degree of law enforcement activity targeting a particular group may have influenced the likelihood of both suspicious transactions being detected and organised crime offences being recorded.

Table 4: Characteristics of organised crime groups (*n*=837)		
	n	%
Group size, composition and reach		
Number of members (mean, SD)	9.6 (9.2)	
Professional facilitators		
None	581	69.4
One	103	12.3
Two or more	153	18.3
International presence[a]		
No international presence	187	25.8
Presence in one overseas country	257	35.4
Presence in two or more overseas countries	282	38.8
Presence in multiple Australian states and territories[a]	337	46.4
Concurrent criminal activities[b]		
Illicit drug trafficking	676	81.5
Importation	407	51.2
Manufacture or cultivation	208	26.2
Distribution	495	62.3
Poly-drug trafficking	351	42.3
Other illicit commodities (besides drugs)	99	11.9
Fraud	79	9.5
Violence, extortion and abduction	147	17.7
Criminal use of firearms	47	5.7
Exploitation and infiltration[b]		
Transport sector	81	9.8
Private or commercial industry	99	11.9
Public sector	41	4.9
Other sector	20	2.4
Any	186	22.4
Money laundering[b]		
Financial sector	181	21.8
Real estate	56	6.8
Gambling	64	7.7
Professional	56	6.8
Other	108	13.0
Any	424	51.1
Criminal expertise		
Prior history of organised crime offending	459	54.8
Prior recorded crime-related harm per member	175.6 (367.8)	
Average member age (mean, SD)	40.2 (7.8)	

a: Information missing for 111 groups

b: Information missing for 7 groups

Source: AIC Organised crime database

We then examined the SMRs relating to these 837 groups. More than three-quarters of groups (79.5%, *n*=665) had at least one SMR in the entire observation period (2014–2021). The average number of SMRs per group was 14.5 (median=6). There was a relatively high concordance between law enforcement assessments of group involvement in money laundering and whether a group had members linked to at least one SMR involving a financial transaction. Among those groups identified by law enforcement as being involved in money laundering, 82.6 percent had a corresponding SMR involving a financial transaction (meaning only 17.4% did not). However, the use of SMR data captures significantly more suspected money laundering activity than relying on law enforcement intelligence alone. Among those groups with at least one SMR, only 53.1 percent were identified by law enforcement as being involved in money laundering. In other words, 46.9 percent of groups with at least one member linked to an SMR were not recorded by law enforcement as being involved in money laundering.

Given the findings regarding the significant increase in reporting that occurred from 2018, and given the vast majority of groups were added to the NCTL before 2018, we focused on 2014–2017 as our reference period. In this four-year period, 57.2 percent of groups had a member listed on at least one SMR, with 4.3 reports per group (median=1). A smaller proportion (53.9%) had a member listed on at least one SMR involving a financial transaction.

Because organised crime groups vary considerably in size, we calculated the financial value of SMRs per group member during the reference period. The average for all groups in the sample was $134,488 (median=$384). Among those groups with at least one SMR involving a financial transaction, the average value of SMRs per group member was $250,147 (median=$31,375).

We anticipated this value would vary between groups depending on a range of factors. Because the data were not normally distributed, we compared the median financial value of SMRs per group member. Given the important role that professional facilitators play in money laundering (Kramer et al. 2023; Levi 2021), we compared the median value of SMRs between groups that had two or more, one or no professional facilitators among their membership. There was a statistically significant relationship, with groups with two or more professional facilitators ($27,781) or one professional facilitator ($2,344) recording a higher median value of SMRs per group member than groups with no professional facilitators ($0; $\chi^2(2)$=67.1, *p*<0.001).

We also examined whether the value of suspicious transactions was higher among those groups identified by law enforcement as being involved in money laundering through certain sectors. We limited this to groups identified by law enforcement as being involved in money laundering (recognising that this overlooked many groups that had SMRs involving financial transactions) and compared groups suspected of being involved in money laundering in certain sectors with those which were not (Table 5). Overall, the median value of SMRs was significantly higher for groups suspected of money laundering via the real estate sector ($20,510 vs $1,251; $\chi^2(1)$=10.4, *p*<0.01) and gambling sector ($15,042 vs $1,411; $\chi^2(1)$=6.0, *p*<0.05). There was no difference for groups involved in laundering through the financial sector, while the median value of SMRs was significantly lower among those groups involved in laundering through other sectors ($0 vs $6,594; $\chi^2(1)$=6.1, *p*<0.05). While it does not relate to a specific sector, we also compared groups that were involved in professional money laundering and those that were not, and the difference was not statistically significant.

Table 5: Organised crime groups and suspicious transactions		n	Median value	χ²
Money laundering activity, as identified by law enforcement (*n*=424)				
Financial sector	Yes	181	$3,787	0.1
	No	243	$2,077	
Real estate	Yes	56	$20,510	10.4**
	No	368	$1,251	
Gambling	Yes	64	$15,042	6.0*
	No	360	$1,411	
Other	Yes	108	$0	6.1*
	No	316	$6,594	
Professional	Yes	56	$265	1.6
	No	368	$3,488	
Involvement of professional facilitators (*n*=837)				
Professional facilitators	None	581	$0	67.1***
	One	103	$2,344	
	Two or more	153	$27,781	

***statistically significant at *p*<0.001, **statistically significant at *p*<0.01, *statistically significant at *p*<0.05

Note: Chi-squared value is based on Kruskal–Wallis tests

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Next, we estimated logistic regression models to analyse the relationship between selected characteristics of organised crime groups and the prevalence of at least one SMR involving a financial transaction, indicative of money laundering activity. We estimated three models. Model 1 was based on the full sample (with a handful of cases excluded due to missing data). Explanatory variables included group size and composition, predicate offences and enabling activities. These were included on the basis that we hypothesised they may be related to the amount of money laundered by organised crime groups. Model 2 included information on the geographic distribution of groups, which resulted in a further 107 cases being excluded due to missing data. Finally, Model 3 included variables related to whether a group had been investigated by law enforcement and when it was added to the NCTL. This final model is of most interest, as it accounts for the potential bias that comes from a group having been the focus of law enforcement activity.

Model fit was assessed using the Hosmer–Lemeshow goodness-of-fit test (Hosmer & Lemeshow 2004). Because there is evidence this test is susceptible to bias in large samples (Nattino, Pennell & Lemeshow 2020), further link tests were conducted to assess the goodness-of-fit. This test is used to detect specification errors and assumes in a properly specified model that it would not be possible to identify additional significant independent variables (Pregibon 1979). The area under the receiver operating characteristic curve (AUROC), which is a measure of the classification accuracy of the model, was also calculated (Hosmer & Lemeshow 2004).

The results in Table 6 show that groups with more members were more likely to be linked to at least one SMR involving a financial transaction. Similarly, the relationship between professional facilitators and the prevalence of SMRs involving a financial transaction was significant even after taking other factors into account. Groups with an international presence in one country or two or more overseas countries were also more likely to be linked to at least one SMR involving a financial transaction.

Table 6: Relationship between organised crime group characteristics and suspicious matter reports involving a financial transaction, 2014–2017

	Model 1 Coefficient (SE)	Model 2 Coefficient (SE)	Model 3 Coefficient (SE)
Group size and composition			
Number of members	0.13*** (0.02)	0.11*** (0.02)	0.11*** (0.02)
One professional facilitator (vs none)	0.31 (0.23)	0.39 (0.25)	0.51* (0.26)
Two or more professional facilitators (vs none)	0.94*** (0.24)	1.00*** (0.26)	1.13*** (0.27)
Predicate offending			
Illicit drug trafficking	−0.09 (0.20)	−0.05 (0.21)	0.11 (0.23)
Other illicit commodities (besides drugs)	−0.18 (0.25)	−0.19 (0.27)	−0.25 (0.27)
Fraud	0.36 (0.31)	0.20 (0.33)	0.36 (0.34)
Enabling activities			
Violence, extortion and abduction	0.34 (0.23)	0.44 (0.25)	0.39 (0.26)
Criminal use of firearms	0.01 (0.42)	0.09 (0.47)	0.05 (0.48)
Exploitation and infiltration	−0.22 (0.20)	−0.25 (0.22)	−0.15 (0.23)
Geographic distribution of group			
Presence in one overseas country (vs no international presence)	−	0.58** (0.22)	0.52* (0.22)
Presence in two or more overseas countries (vs no international presence)	−	0.53* (0.22)	0.46* (0.23)
Investigation status			
Investigated by law enforcement	−	−	0.28 (0.18)
Added to NCTL during the reference period	−	−	0.23 (0.19)
Constant	−1.08*** (0.22)	−1.30*** (0.28)	−1.62*** (0.31)
n	830	723	685
Nagelkerke pseudo R-squared	0.23	0.22	0.23
Hosmer–Lemeshow goodness-of-fit	$\chi^2=356.6$, $p=0.44$	$\chi^2=443.6$, $p=0.27$	$\chi^2=536.2$, $p=0.39$
AUROC	0.74	0.73	0.74

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$
Note: Coefficient and robust standard errors (SE) reported. Dependent variable is whether the group had members linked to at least one SMR involving a financial transaction
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We then estimated a series of ordinary least squares (OLS) regression models which measured the relationship between the characteristics of organised crime groups and the value of SMRs linked to each group. This was limited to groups that recorded at least one SMR involving a financial transaction. Our dependent variable was the natural log of the total value of SMRs per group member. We used the natural log because the data were highly skewed. This analytical decision was confirmed by verifying that the major assumptions underlying OLS regression were met; namely, the normality of residuals, constant variance along the regression line (homoscedasticity) and the absence of outlier or influential observations.

We followed the same model building process as before and present the final model in Table 7. The R-squared value for the final model—which indicates the amount of variance explained by the model—was 0.10, indicating that the model explains 10 percent of the variance in the value of SMRs per group member.

The results in Table 7 show that, among groups with at least one linked SMR, groups with one or two or more professional facilitators recorded higher value SMRs. Groups involved in the trafficking of illicit drugs recorded a lower value of SMRs per group member. No other variables—including being investigated by law enforcement or having been added to the NCTL during the reference period—were associated with the value of SMRs.

Overall, these results indicate that larger groups were more likely to launder money (based on having at least one SMR involving a financial transaction). Groups with professional facilitators among their membership were also more likely to launder money and, when they did, they laundered larger amounts of money. Larger amounts of money were laundered through the real estate and gambling sectors, relative to other sectors. Groups with an international presence were also more likely to launder money, indicating the important role that offshore connections and transactions play in money laundering by organised crime groups impacting Australia. Importantly, we found no evidence that groups investigated by law enforcement or which were added to the NCTL during the reference period were more likely to launder money or to launder larger amounts of money, which is relevant to the next stage of the analysis.

Table 7: Relationship between organised crime group characteristics and value of suspicious matter reports, 2014–2017

	Coefficient (SE)
Group size and composition	
Number of members	−0.01 (0.01)
One professional facilitator (vs none)	0.71* (0.35)
Two or more professional facilitators (vs none)	0.98** (0.32)
Predicate offending	
Illicit drug trafficking	−1.51*** (0.34)
Other illicit commodities (besides drugs)	−0.24 (0.38)
Fraud	−0.10 (0.41)
Enabling activities	
Violence, extortion and abduction	0.33 (0.33)
Criminal use of firearms	−0.56 (0.61)
Exploitation and infiltration	0.02 (0.33)
Geographic distribution of group	
Presence in one overseas country (vs no international presence)	0.62 (0.37)
Presence in two or more overseas countries (vs no international presence)	0.39 (0.36)
Investigation status	
Investigated by law enforcement	−0.02 (0.25)
Added to NCTL during the reference period	−0.01 (0.26)
Constant	10.77*** (0.48)
n	386
R-squared	0.10

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors (SE) reported. Dependent variable is total value of suspicious matter reports linked to the group, per group member (log transformed). Cases with missing data excluded. NCTL=National Criminal Target List

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Relationship between suspicious transactions and crime-related harm

The aim of the next stage of the analysis was to measure the relationship between suspicious transactions and recorded crime-related harm. This analysis proceeded in three stages. First, we examined the relationship between the prevalence and total value of SMRs and the total crime-related harm caused by each group on the NCTL between 2014 and 2017. This allowed us to measure whether groups that laundered any amount of money and—among groups that did launder money—groups that laundered larger amounts of money were responsible for more recorded crime-related harm (ie between-group variation). Second, we used two-way fixed effects (TWFE) models to explore the relationship between suspected money laundering and criminal harm over time. This assessed whether annual fluctuations in the prevalence and value of suspicious transactions were associated with changes in crime-related harm—that is, whether an increase in money laundering activity was associated with an increase in recorded crime-related harm (ie within-group variation). Finally, we attempted to more clearly establish the direction of the relationship observed between money laundering and crime-related harm by estimating a TWFE model with lagged effects.

Between-group variation

We began by estimating a series of OLS regression models with the natural log of total crime-related harm per group member as the dependent variable. Crime-related harm was measured using an adjusted WACHI, with scores allocated to recorded offences using ANZSOC codes and summed across groups. We used the rate of harm per group member to account for the heterogeneity in group size. Larger groups may be expected to launder larger amounts of money.

We started by focusing on the relationship between the prevalence of SMRs involving a financial transaction and recorded crime-related harm (Table 8). Model 1 is the base model and was limited to two variables: whether a group had at least one SMR involving a financial transaction (where 1=yes, 0=no) and prior recorded crime-related harm per group member (logged). Model 2 included a number of variables that were expected to be related to the amount of crime-related harm, including the type of predicate offending the group was suspected of being involved in and enabling activities (other than money laundering). Model 3 included information on the geographic distribution of groups, while Model 4 included variables related to whether a group had been investigated by law enforcement and when it was added to the NCTL. The amount of variance explained by the models increased as additional variables were added.

Table 8: Linear regression model measuring relationship between suspicious matter reports involving a financial transaction and crime-related harm, 2014–2017

	Model 1 Coefficient (SE)	Model 2 Coefficient (SE)	Model 3 Coefficient (SE)	Model 4 Coefficient (SE)
SMR involving a financial transaction	0.97*** (0.14)	0.95*** (0.14)	1.04*** (0.15)	0.93*** (0.15)
Prior recorded crime-related harm per member (logged)	0.40*** (0.03)	0.31*** (0.04)	0.29*** (0.04)	0.31*** (0.04)
Predicate offending				
Illicit drug trafficking	–	1.25*** (0.18)	1.36*** (0.19)	1.57*** (0.20)
Other illicit commodities (besides drugs)	–	0.00 (0.19)	0.08 (0.20)	0.16 (0.20)
Fraud	–	−0.07 (0.21)	0.08 (0.21)	0.10 (0.22)
Enabling activities				
Violence, extortion and abduction	–	0.52** (0.19)	0.44* (0.20)	0.32 (0.20)
Criminal use of firearms	–	0.40 (0.23)	0.30 (0.27)	0.24 (0.26)
Exploitation and infiltration	–	−0.51** (0.15)	−0.53** (0.17)	−0.16 (0.19)
Geographic distribution of group				
Presence in one overseas country (vs no international presence)	–	–	−0.16 (0.18)	−0.27 (0.18)
Presence in two or more overseas countries (vs no international presence)	–	–	−0.33 (0.18)	−0.41* (0.18)
Investigation status				
Investigated by law enforcement	–	–	–	0.41** (0.15)
Added to NCTL during the reference period	–	–	–	0.98*** (0.16)
Constant	1.13*** (0.14)	0.42** (0.16)	0.60** (0.21)	−0.09 (0.23)
n	837	830	723	685
R-squared	0.23	0.29	0.28	0.32

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is crime-related harm per group member (logged). NCTL=National Criminal Target List; SMR=suspicious matter report

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We then repeated this process but focused on the total value of SMRs per group member as the main variable of interest (Table 9). For this analysis, we limited the sample to organised crime groups with at least one SMR involving a financial transaction.

Several variables were associated with the amount of recorded crime-related harm caused by an organised crime group. These results were consistent across both models. Involvement in illicit drug trafficking and prior recorded crime per member were associated with higher crime-related harm. Groups that had been investigated by law enforcement and were added to the NCTL during the reference period were also associated with higher offending harm, indicating an enforcement effect. Conversely, groups that had a presence in two or more overseas countries recorded lower levels of crime-related harm. It is possible that this reflects the difficulty associated with investigating, arresting and prosecuting individuals who operate internationally.

Most importantly, there was a significant relationship between the two main variables of interest and the total recorded crime-related harm caused by members of a given group in the reference period. Because the outcome variable was log transformed, we can convert the coefficients into a percentage change in recorded crime-related harm. Based on Model 4 in Table 8—which controls for prior crime-related harm, the type of predicate offending, enabling activities, the international presence of groups and investigation status—recorded crime-related harm was 153 percent or 2.5 times higher for organised crime groups with at least one SMR involving a financial transaction. Further, based on the results in Table 8, among groups with at least one SMR involving a financial transaction, a one percent increase in the value of SMRs per group member, relative to the mean value for all groups, was associated with a 0.07 percent increase in the amount of crime-related harm. In simple terms, groups that were involved in money laundering were responsible for significantly more recorded crime-related harm during the reference period. And, among those groups that had laundered money, those that laundered more money also caused more crime-related harm.

Table 9: Linear regression model measuring relationship between value of suspicious matter reports and crime-related harm, 2014–2017

	Coefficient (SE)
Value of SMRs per group member (logged)	0.07* (0.03)
Prior recorded crime-related harm per member (logged)	0.22** (0.06)
Predicate offending	
Illicit drug trafficking	1.70*** (0.27)
Other illicit commodities (besides drugs)	0.12 (0.26)
Fraud	0.00 (0.30)
Enabling activities	
Violence, extortion and abduction	0.24 (0.23)
Criminal use of firearms	0.18 (0.29)
Exploitation and infiltration	−0.09 (0.25)
Geographic distribution of group	
Presence in one overseas country (vs no international presence)	−0.40 (0.23)
Presence in two or more overseas countries (vs no international presence)	−0.53* (0.22)
Investigation status	
Investigated by law enforcement	0.65** (0.19)
Added to NCTL during the reference period	1.06*** (0.21)
Constant	0.26 (0.49)
n	386
***R*-squared**	0.33

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is crime-related harm per group member (logged). Model is limited to groups with a least one suspicious matter report (SMR) involving a financial transaction. NCTL=National Criminal Target List

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We used the results from Table 9 to illustrate the difference in the amount of crime-related harm at different values of money laundered relative to the mean for all groups with at least one SMR involving a financial transaction (Figure 6). The mean value of SMRs per group member for all groups was $208,061. While a one percent increase in value may seem relatively small, it is important to note that the value of SMRs per group member could be as high as $6.3 million. As Figure 6 shows, a 10 percent difference in the amount of money laundered is associated with a 0.7 percent difference in crime-related harm. The mean recorded crime-related harm caused by a group that launders twice as much money as the average group (a 100% increase) was 5.1 percent higher.

Figure 6: Difference in crime-related harm associated with differences in value of suspicious transactions (*n*=386)
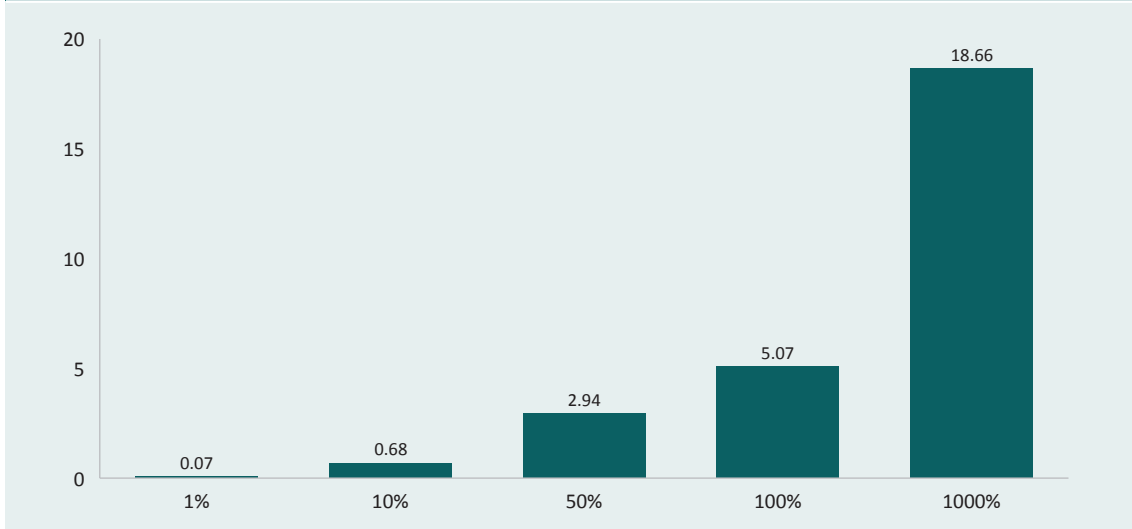
Note: Percentage estimates are derived from the coefficient in Table 9. Limited to groups with a least one suspicious matter report involving a financial transaction

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

While the analysis clearly established a link between the value of SMRs linked to organised crime groups and the amount of crime-related harm caused by those groups, we have not yet established a link specifically with organised crime offending. We therefore examined whether groups linked to at least one SMR involving a financial transaction and SMRs with a higher value per group member were more likely to be involved in organised crime offences. Because the outcome variable was binary (whether or not a group had at least one organised crime offence), we used logistic regression. We followed the same model building process as before. As shown in Table 10, groups linked to at least one SMR involving a financial transaction had a much higher likelihood of also being involved in at least one organised crime offence. Groups involved in money laundering were significantly more likely to commit an organised crime offence.

Table 10: Logistic regression model measuring relationship between prevalence of suspicious matter reports involving a financial transaction and organised crime offending, 2014–2017				
	Model 1 Coefficient (SE)	Model 2 Coefficient (SE)	Model 3 Coefficient (SE)	Model 4 Coefficient (SE)
SMR involving a financial transaction	1.23*** (0.15)	1.30*** (0.16)	1.26*** (0.17)	1.24*** (0.18)
Prior recorded crime-related harm per member (logged)	0.28*** (0.04)	0.21*** (0.04)	0.21*** (0.04)	0.23*** (0.04)
Predicate offending				
Illicit drug trafficking		1.41*** (0.24)	1.37*** (0.25)	1.44*** (0.27)
Other illicit commodities (besides drugs)		0.36 (0.25)	0.49 (0.26)	0.56* (0.28)
Fraud		0.13 (0.30)	0.16 (0.31)	0.10 (0.33)
Enabling activities				
Violence, extortion and abduction		0.19 (0.23)	0.16 (0.24)	0.16 (0.25)
Criminal use of firearms		0.30 (0.35)	0.37 (0.38)	0.23 (0.40)
Exploitation and infiltration		−0.38** (0.19)	−0.40 (0.21)	−0.15 (0.23)
Geographic distribution of group				
Presence in one overseas country (vs no international presence)			0.48* (0.22)	0.47* (0.23)
Presence in two or more overseas countries (vs no international presence)			0.36 (0.22)	0.21 (0.23)
Investigation status				
Investigated by law enforcement				0.27 (0.18)
Added to NCTL during the reference period				0.70** (0.21)
Constant	−1.64*** (0.16)	−2.63*** (0.26)	−2.86*** (0.32)	−3.36*** (0.38)
n	837	830	723	685
Nagelkerke pseudo *R*-squared	0.22	0.28	0.27	0.29
Hosmer–Lemeshow goodness-of-fit	χ^2=674.9, p=0.16	χ^2=706.9, p=0.18	χ^2=634.4, p=0.24	χ^2=640.2, p=0.23
AUROC	0.73	0.76	0.76	0.77

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is whether at least one member of the group has been subject to legal action for an organised crime offence. AUROC=area under the receiver operating characteristic curve; NCTL=National Criminal Target List; SMR=suspicious matter report

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Table 11 presents the results from the final logistic regression estimating the likelihood of being involved in an organised crime offence for groups that had at least one SMR involving a financial transaction. In this model, we measured the relationship between the value of SMRs per group member and the likelihood of organised crime offending. The likelihood of a group being involved in at least one organised crime offence increased with the value of SMRs. This means groups that were linked to higher value suspicious transactions were more likely to be involved in organised crime.

Table 11: Logistic regression model measuring relationship between value of suspicious matter reports and organised crime offending, 2014–2017	
	Coefficient (SE)
Value of SMRs per group member (logged)	0.16** (0.05)
Prior recorded crime-related harm per member (logged)	0.23** (0.07)
Predicate offending	
Illicit drug trafficking	1.47*** (0.34)
Other illicit commodities (besides drugs)	0.76 (0.40)
Fraud	0.24 (0.43)
Enabling activities	
Violence, extortion and abduction	0.06 (0.31)
Criminal use of firearms	0.61 (0.48)
Exploitation and infiltration	−0.10 (0.31)
Geographic distribution of group	
Presence in one overseas country (vs no international presence)	0.13 (0.34)
Presence in two or more overseas countries (vs no international presence)	−0.09 (0.32)
Investigation status	
Investigated by law enforcement	0.57* (0.24)
Added to NCTL during the reference period	0.77** (0.29)
Constant	−3.69*** (0.74)
n	386
Nagelkerke pseudo *R*-squared	0.21
Hosmer–Lemeshow goodness-of-fit	χ^2=383.5, *p*=0.34
AUROC	0.73

***statistically significant at *p*<0.001, **statistically significant at *p*<0.01, *statistically significant at *p*<0.05

Note: Coefficient and robust standard errors reported. Dependent variable is whether at least one member of the group has been subject to legal action for an organised crime offence with at least one suspicious matter report (SMR) involving a financial transaction. AUROC=area under the receiver operating characteristic curve; NCTL=National Criminal Target List

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

To illustrate the relationship between money laundering and organised crime offending, average predictive margins were estimated using the marginal standardisation method (Muller & MacLehose 2014). First, drawing on the results of the regression model presented in Table 10, we estimated the probability of at least one member having an organised crime offence for groups with and without at least one member to linked an SMR involving a financial transaction (Figure 7). The probability of a group that was not linked to an SMR involving a financial transaction having at least one member with a recorded organised crime offence was 37.0 percent. The probability of involvement in organised crime offending when a group was linked to at least one SMR involving a financial transaction was 62.8 percent—25.8 percentage points or 1.7 times more likely.

Figure 7: Predicted probability of group involvement in organised crime offending (*n*=685)
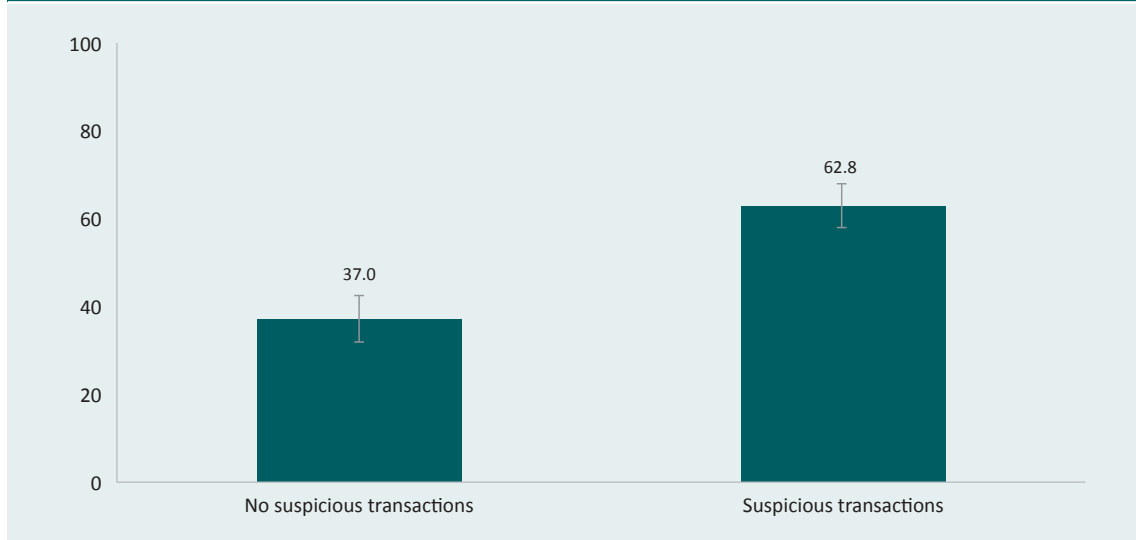
Note: Probabilities are derived from Model 4 in Table 10. Error bars show 95% confidence intervals
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We then used the results of our regression model in Table 11 to estimate the predicted probability of a group being involved in at least one organised crime offence at different SMR values (Figure 8). For groups that laundered an average of $10,000 per member, the probability of one of those members having an organised crime offence was 62.3 percent. For groups at the higher end of the spectrum—such as those laundering an average of $1 million per member—the probability of at least one member having a recorded organised crime offence was 75.6 percent.

Figure 8: Predicted probability of group involvement in organised crime offending, by average value of SMRs per group member (*n*=386)
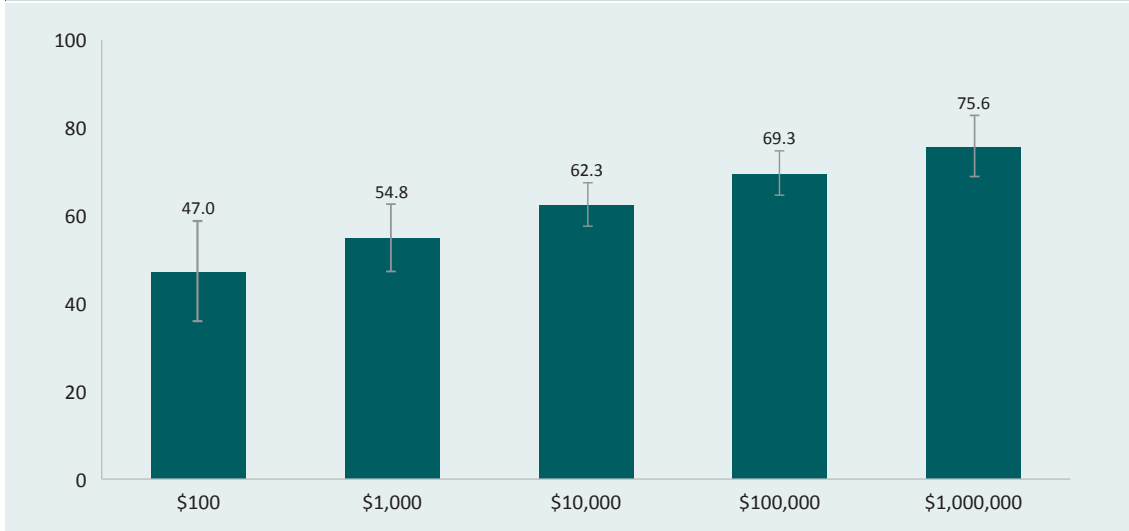
Note: Probabilities are derived from Table 11. Error bars show 95% confidence intervals. SMR=suspicious matter report

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Within-group variation

This next stage of the analysis examined whether the amount of crime-related harm increased when an organised crime group was involved in money laundering or in laundering larger amounts of money. Whereas the previous analyses compared groups with one another to determine whether a group involved in money laundering was responsible for more crime-related harm, this stage of the analysis focused on within-group variation. That is, it examines whether the amount of recorded crime-related harm caused by a group increased when a group was involved in money laundering (relative to when it was not), and when the amount of money it laundered increased. This analysis involved a time series component, whereas the previous analyses were cross-sectional in nature.

We employed a TWFE regression estimator, with both group and time fixed effects, to measure the relationship between the prevalence of SMRs involving a financial transaction, and the value of SMRs, and the amount of crime-related harm caused by each organised crime group. The benefit of this approach is that the TWFE estimator removes the effect of time-invariant characteristics of organised crime groups in the sample and makes it possible to assess the net effect on the outcome variable of the characteristics that do vary over time—in this case, the presence and the amount of money laundering activity. As with the previous analysis, the outcome or dependent variable was the natural log of total crime-related harm per group member.

We confirmed the suitability of the TWFE estimator by first establishing whether a random effects estimator was preferred to the normal OLS regression. This was assessed using Breusch and Pagan's (1980) Lagrangian multiplier test for random effects, which determines whether there is any variation across entities within the data (ie a panel effect). This test was significant, indicating there was a panel effect and that the random effects regression was preferred to an OLS regression (χ^2=526.2, p<0.001). We then compared a random effects regression to a fixed effects regression model using a Hausman (1978) test. This tests whether there is correlation between the independent variables in the model and the error term—if they are not correlated, then it is possible to use the more efficient random effects. In this instance, the Hausman test was statistically significant ($\chi^2(1)$=13.8, p<0.05), meaning there was a correlation between the regressors and the error term. This confirmed the choice of a fixed effects model, which controls for all time-invariant differences between groups, and which means we can be confident that our results are not biased due to any omitted variables for time-invariant characteristics (ie things we do not know about the groups).

We employed an incremental approach to building the model, first estimating a model with only the main time variant variable of interest (whether the group was linked to an SMR involving a financial transaction) and group fixed effects (Model 1, Table 12). We repeated the analysis with year fixed effects, to account for any temporal changes that might influence the outcome, such as changes in policy or law enforcement in terms of targeting organised crime (Model 2, Table 12). The need to include time fixed effects was established by testing for non-linear effects (F=4.88, p<0.01). Finally, we included another relevant time variant variable—whether the group had been added to the NCTL in that year (Model 3, Table 12). We have already shown that, in a cross-sectional analysis, the timing of a group being added to the NCTL has important implications for the amount of recorded crime-related harm caused by a group. When a group was added to the NCTL, it had likely been subjected to increased surveillance and law enforcement activity.

The interpretation of the coefficient in the TWFE is the change in the outcome associated with a change in the independent variable over time. It is the common effect across all groups in the data. It indicates the change in the outcome relative to what we would have expected for each group and given the time period under observation. In Model 3 in Table 12, the coefficient for the main variable of interest is statistically significant. This represents the effect of a group having an SMR involving a financial transaction when, in the previous time period, it did not. Once again, because the dependent variable is log transformed, we can convert this coefficient to a percentage change to make it easier to interpret. Based on these results, when an organised crime group was involved in money laundering (when it had an SMR involving a financial transaction), the amount of crime-related harm it caused increased by 49 percent, or 1.5 times more than if it had not laundered money.

Table 12: Two-way fixed effects regression model measuring relationship between presence of money laundering and crime-related harm

	Model 1	Model 2	Model 3
Coefficient (SE)			
SMR involving a financial transaction	0.41*** (0.01)	0.40*** (0.09)	0.40*** (0.09)
Added to NCTL during the reference period	–	–	0.50** (0.17)
Constant	1.29*** (0.02)	1.45*** (0.05)	1.35*** (0.07)
Model specifications			
Group fixed effects	Yes	Yes	Yes
Year fixed effects	No	Yes	Yes
Observations	3,348	3,348	3,176
Groups (n)	837	837	794
R-squared	0.01	0.02	0.02

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$

Note: Coefficient and robust standard errors reported. Dependent variable is crime-related harm per group member (logged). The low R-squared explaining the amount of variation within groups over time is due to limited within-panel variation of time-varying predictors

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We then limited the sample to those groups that had at least one SMR involving a financial transaction, and re-estimated the same series of models but changed the main time-variant variable of interest to the natural log of the value of SMRs per group member. Results from this TWFE regression are presented in Table 13. The value of SMRs per group member was statistically significant in the final model, indicating that, as the value of suspicious transactions by a group increased, so too did the amount of crime-related harm caused by members of that group.

Table 13: Two-way fixed effects regression model measuring relationship between amount of money laundering and crime-related harm

	Coefficient (SE)
Value of SMRs per group member (logged)	0.05*** (0.01)
Added to NCTL during the reference period	0.37 (0.23)
Constant	1.51*** (0.11)
Group fixed effects	Yes
Year fixed effects	Yes
Observations	1,704
Groups (n)	426
R-squared (within groups)	0.03

***statistically significant at $p<0.001$

Note: Coefficient and robust standard errors reported. Limited to groups with at least one SMR during the reference period. Dependent variable is crime-related harm per group member (logged). The low R-squared explaining the amount of variation within groups over time is due to limited within-panel variation of time-varying predictors

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Because we used the natural logarithm of the value of SMRs per group member and amount of recorded crime-related harm, the coefficient for the main variable of interest can be interpreted as the percentage increase in recorded crime-related harm. We used these results to illustrate how the amount of crime-related harm caused by an organised crime group changes as the amount of money laundered increases over time (Figure 9). The mean value of SMRs per group member in one year was $47,996 (the maximum was $3.7 million). As Figure 9 shows, a one percent increase in the amount of money laundered was associated with a 0.05 percent increase in recorded crime-related harm. A 10 percent increase was associated with a 0.5 percent increase. And, when the amount of money laundered by an organised crime group doubled over time, the amount of recorded crime-related harm by that group was 3.5 percent higher than expected.

Figure 9: Increase in crime-related harm associated with increases in value of suspicious matter reports
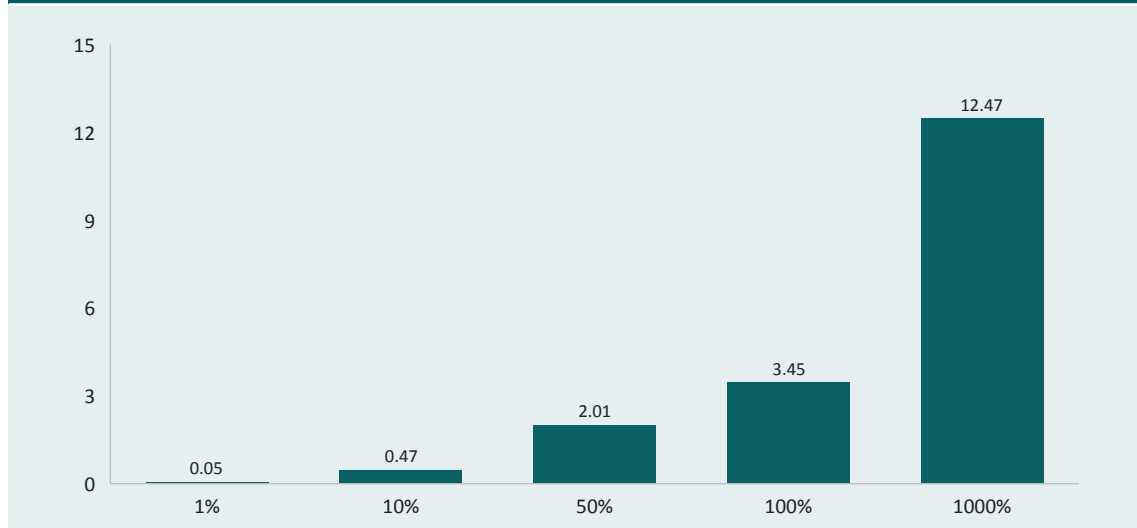
Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

As with any analysis, we have made several assumptions and imposed certain constraints on our statistical models. We therefore repeated the analysis several times, altering certain parameters, to examine the robustness of our results (Table 14). We did this for both of our main variables of interest—whether a group had at least one SMR involving a financial transaction, and the value of SMRs per group member. First, we included an additional year of data in our analysis—2018—which includes the period after which there had been a significant increase in the number of SMRs submitted. The coefficient in both models remained largely unchanged. Second, we considered whether the results might be a function of law enforcement activity, and we repeated the analysis by limiting the sample to groups that had been investigated by law enforcement and then to groups that had not been investigated. There was a small difference in the coefficient for the main variables of interest, with a stronger relationship between money laundering and crime-related harm among investigated groups, consistent with an enforcement effect. However, the main variables of interest were statistically significant in each model. Therefore, while some of the apparent increase in recorded crime-related harm may be a function of law enforcement investigations, it does not fully explain the effect of money laundering on crime-related harm.

Overall, these results provide evidence that when a group launders money it causes more crime-related harm and, when those groups involved in money laundering increase the amount of money they launder, the amount of crime-related harm also increases. We are cautious about drawing the conclusion that this represents a causal relationship. There are two potential causes of bias. The first is simultaneity, which occurs when the main explanatory variable (money laundering) is jointly determined by the dependent variable (crime-related harm) and vice versa. The second is reverse causation, where the dependent variable causes the explanatory variable (and not the other way around). We cannot definitely rule either of these out. Ferwerda (2009) described similar limitations in his analysis of the effects of anti-money laundering policy, arguing that a longer time series may permit the use of something known as a Granger causality test. However, because of the significant structural break in SMR reporting, and the limits of data on recorded crime, we too were reliant on a limited time series.

Table 14: Robustness checks, alternative model specifications					
	Additional year		**Investigated by law enforcement**		**Not investigated by law enforcement**	
	Any SMR	**Total value of SMR**	**Any SMR**	**Total value of SMR**	**Any SMR**	**Total value of SMR**
Coefficient (SE)						
SMR involving a financial transaction	0.31*** (0.07)	–	0.50*** (0.13)	–	0.28* (0.13)	–
Value of SMRs per group member (logged)	–	0.04*** (0.01)	–	0.06*** (0.01)	–	0.04* (0.01)
Added to NCTL	0.39** (0.14)	0.25 (0.20)	0.60** (0.23)	0.44 (0.28)	0.39 (0.27)	0.28 (0.41)
Constant	1.40*** (0.07)	1.57*** (0.11)	1.36*** (0.10)	1.357*** (0.14)	1.38*** (0.12)	1.48*** (0.19)
Model specifications						
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,970	2,130	1,568	948	1,516	716
Groups (*n*)	794	426	392	237	379	179
R-squared	0.02	0.02	0.03	0.03	0.02	0.02

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is crime-related harm per group member (logged). NCTL=National Criminal Target List; SMR=suspicious matter report. The low *R*-squared explaining the amount of variation within groups over time is due to limited within-panel variation of time-varying predictors

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Accounting for lagged effects

We can address these issues to some extent by incorporating lagged effects in our analysis. We cannot establish the direction of the relationship between the money laundering by a group, as measured by whether there were SMRs involving a financial transaction or the total value of SMRs per group member, and the amount of recorded crime-related harm by limiting the analysis to contemporaneous effects. We therefore repeated our analysis using TWFE regression with lagged variables for the main variable of interest. In addition to a variable denoting the contemporaneous relationship between money laundering and crime-related harm, we repeated the analysis with variables for a one-year (t−1) and then one- and two-year (t−2) lagged effect. We did this for both of our main variables of interest (Table 15). Importantly, we used the date of reporting the SMR involving a financial transaction to AUSTRAC as the date of any money laundering activity (noting the actual transactions may have occurred some time prior to the report), and the date of the offence for recorded crime-related harm. That way we could be confident about the temporal order of money laundering and criminal offending.

Models 1 and 2 in Table 15 include lagged effects for whether the group had at least one SMR involving a financial transaction. In the model with a one-year lagged effect (t−1), the additional variable was significant, alongside the main explanatory variable of interest. The one- and two-year lagged effects were not significant in the second model. A similar pattern was observed in Models 3 and 4, which include lagged effects for the total value of SMRs per group member. The lagged effect was only significant in the model with a one-year lagged effect. These results show that the amount of recorded crime-related harm in the current year is influenced by the presence and amount of money laundering occurring in the same year as well as in the year prior.

Table 15: Two-way fixed effects regression model with lagged variables

	SMR involving a financial transaction		Total value of SMR	
	Model 1: One-year lag	**Model 2: Two-year lag**	**Model 3: One-year lag**	**Model 4: Two-year lag**
Coefficient (SE)				
SMR involving a financial transaction (t)	0.33** (0.11)	0.43** (0.16)	–	–
SMR involving a financial transaction (t−1)	0.36* (0.11)	0.33 (0.18)	–	–
SMR involving a financial transaction (t−2)	–	−0.01 (0.17)	–	–
Value of SMRs per group member (logged, t)	–	–	0.04** (0.01)	0.05** (0.02)
Value of SMRs per group member (logged, t−1)	–	–	0.03* (0.01)	0.03 (0.02)
Value of SMRs per group member (logged, t−2)	–	–	–	0.00 (0.02)
Added to NCTL	0.45* (0.23)	0.37 (0.44)	0.48 (0.30)	0.23 (0.63)
Constant	1.12*** (0.11)	0.99*** (0.21)	1.23*** (0.16)	1.19*** (0.33)
Model specifications				
Group fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,382	1,588	1,278	852
Groups (*n*)	794	794	426	426
R-squared	0.01	0.01	0.02	0.02

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is crime-related harm per group member (logged). NCTL=National Criminal Target List; SMR=suspicious matter report. The low *R*-squared explaining the amount of variation within groups over time is due to limited within-panel variation of time-varying predictors

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

We then repeated this analysis, but respecified the model using the value of SMRs per group member (logged) as the dependent variable. This allowed us to determine whether there was evidence of lagged effects operating in the opposite direction; specifically, whether the amount of crime-related harm in past years had any influence over the amount of money laundered in the current year. If lagged effects in this direction were observed, then we would conclude that money laundering increases crime-related harm because it allows more predicate offending, leading to more illicit funds in need of laundering.

We did not find any evidence of a lagged effect between crime-related harm and money laundering, either with a one- or two-year lagged effect (Table 16). While the amount of crime-related harm per group member was significantly associated with the value of SMRs (as you would expect, given the relationship observed in the opposite direction), we did not observe a significant relationship for lagged effects at t−1 or t−2. We can therefore tentatively conclude that the relationship between money laundering and recorded crime-related harm works in the direction originally hypothesised. That is, an increase in the amount of money laundered leads to a future increase in recorded crime-related harm, meaning that the increase in crime-related harm is a consequence of the reinvestment of illicit funds in future criminal enterprises.

Table 16: Two-way fixed effects regression model with lagged variables (value of suspicious matter reports as dependent variable)			
	Model 1: Base model	Model 2: One-year lag	Model 3: Two-year lag
Coefficient (SE)			
Crime-related harm per group member (logged, t)	0.25*** (0.05)	0.20** (0.06)	0.23* (0.10)
Crime-related harm per group member (logged, t−1)		−0.02 (0.06)	−0.03 (0.11)
Crime-related harm per group member (logged, t−2)			−0.02 (0.08)
Added to NCTL	−0.89* (0.37)	−0.86 (0.54)	−0.38 (0.94)
Constant	2.62*** (0.16)	2.57*** (0.23)	2.34*** (0.48)
Model specifications			
Group fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	3,176	2,382	1,588
Groups (n)	794	794	794
R-squared	0.02	0.01	0.01

***statistically significant at $p<0.001$, **statistically significant at $p<0.01$, *statistically significant at $p<0.05$

Note: Coefficient and robust standard errors reported. Dependent variable is value of suspicious matter reports per group member (logged). NCTL=National Criminal Target List. The low R-squared explaining the amount of variation within groups over time is due to limited within-panel variation of time-varying predictors

Source: AIC Organised crime database; AUSTRAC suspicious matter reports [computer files]

Discussion

The aim of this study was to measure the relationship between criminal offending and money laundering. It represents an important first step in attempting to measure the wider social and economic impacts of money laundering. This study involved linking ACIC data on known organised crime groups and the recorded criminal histories of their members with AUSTRAC data on suspicious transactions. This is, to the best of our knowledge, the largest study of money laundering by Australian organised crime groups, and provides a number of useful insights regarding the role of money laundering as a critical enabler of organised crime.

How much money was laundered by organised crime groups?

If we take SMRs involving a financial transaction as a measure of money laundering activity, we can conclude that the total amount of money laundered by the organised crime groups in our sample between 2014 and 2021 was $3.5 billion. Despite the significant increase in reporting from 2018, nearly half this amount ($1.5 billion) was recorded in the observation period for this study (2014–2017). Of course, this is not an accurate estimate of the scale of money laundering by organised crime groups in Australia. We know that the vast majority of SMRs in any given financial year (more than 99%) were not linked to our sample of organised crime groups. Indeed, Ferwerda et al. (2020) estimated that in 2014—which falls within the observation period of our study—the total amount of funds laundered in Australia was $61.0 billion (when adjusted to 2022 Australian dollars). This estimate was based on simulated data generated from suspicious transactions reported in the Netherlands. A similar method would be possible using the SMR data provided for the purpose of this study—not restricted to the sample of known organised crime groups—and would provide a more complete estimate than is possible here.

What was measurable in the current study was the extent of involvement in suspected money laundering by a large sample of organised crime groups. There were 8,785 unique SMRs relating to 2,129 individuals—nearly one-third of the entire membership of the NCTL. At the group level, the overlap between the NCTL and SMR data was even higher. More than three-quarters of groups had at least one SMR in the entire observation period (2014–2021), and more than half of the groups were linked to an SMR during the reference period of this study (2014–2017), most of which involved a financial transaction. In fact, the proportion of groups linked to at least one SMR was much higher than the proportion of groups identified by law enforcement as being involved in money laundering.

What does this research tell us about the nature of money laundering in Australia?

By analysing patterns of money laundering among a relatively large sample of organised crime groups, it is possible to draw several conclusions about the nature of money laundering and its role in organised crime in the Australian context.

A notable finding from this study was the significant role that professional facilitators play in laundering the proceeds of crime made by organised crime groups. Overall, groups with professional facilitators were linked with much higher value suspicious transactions. Even after controlling for other variables, groups with professional facilitators, and especially groups with multiple professional facilitators among their membership, were more likely to be involved in money laundering and, when they did launder money, laundered much larger amounts of money.

Relatedly, we observed a high concentration of SMRs among a relatively small proportion of individuals. Eleven percent of individuals on the NCTL who appeared on at least one SMR appeared on more than 10 SMRs, each of which may relate to multiple transactions. So, while a significant minority of individuals on the NCTL were linked to at least one SMR, and had some involvement in suspicious transactions, a lot of the suspicious transactions by organised crime groups can be linked to a relatively small group of prolific individuals. Whether these individuals were professional facilitators is unclear, but this aligns with other research into influential money laundering actors (Kramer et al. 2023).

Finally, groups suspected by law enforcement of laundering money through the real estate sector and through the gambling sector were responsible for much higher value suspicious transactions than other groups. Further, SMRs relating to the betting and gambling industry were much more likely than SMRs from other industries to be linked to organised crime groups.

Many of these findings echo results from the recent study by Morgan and Dowling (2023), which also highlighted the important role of professional facilitators and the vulnerability of the gambling and real estate sectors. Indeed, the vulnerability of the real estate market to money laundering has been well established in Australia and overseas. Recent inquiries have sought to address the vulnerability of real estate and the role of professional facilitators (Cullen 2022; Legal and Constitutional Affairs References Committee 2022). Gambling services have also continued to attract considerable concern, despite their status as a reporting entity under Australia's regulatory regime. As with real estate, a recent inquiry has drawn attention to the scale of money laundering activity associated with gambling services (Bell 2022), while several high-profile casino operators have been subject to regulatory action.

Given the links between the amount of money laundered, organised crime offending and recorded crime-related harm revealed by this study, identifying those sectors with higher value transactions suspected of being related to money laundering has clear and important implications for law enforcement and regulatory responses to reduce the harm associated with money laundering.

What was the relationship between money laundering and criminal offending?

We applied several analytical methods to measure the relationship between the amount of money laundered by organised crime groups, based on the financial value of SMRs, and the amount of recorded crime-related harm caused by those groups. Irrespective of the method used, we observed consistent evidence of an effect.

First, we showed that groups that laundered money—and, among groups involved in money laundering, those that laundered a larger amount of money than the average group—were responsible for more recorded crime-related harm. Indeed, organised crime groups involved in money laundering were responsible for 2.5 times as much crime-related harm as the groups not involved in money laundering. A one percent difference in the amount of money laundered by groups involved in money laundering was associated with a 0.07 percent difference in crime-related harm.

We can conclude that this additional crime-related harm is at least in part due to increased involvement in organised crime, since groups that laundered money, and that laundered more money than the average group, also had a higher probability of being involved in at least one organised crime offence. Organised crime groups involved in money laundering were 1.7 times more likely to have an organised crime offence. The probability of organised crime offending increased with every additional dollar laundered. This was after controlling for the effects of increased surveillance (by virtue of being added to the NCTL) and investigations by law enforcement.

Next, we showed that, as the prevalence and amount of money laundered by groups increased over time, so too did the amount of crime-related harm. When an organised crime group was involved in money laundering in a given year, the amount of crime-related harm it caused increased by 49 percent from what it would have been without money laundering. A one percent increase in the amount laundered increased the amount of crime-related harm by 0.05 percent.

Finally, we measured the direction of the relationship between money laundering and crime-related harm by incorporating lagged effects in our analysis. This approach is similar to the method used by Romero (2020) in a study of the relationship between money laundering and violence. We showed that the amount of recorded crime-related harm in the current year is influenced by the presence and amount of money laundered in the same year as well as in the year prior. An increase in money laundering precedes an increase in crime-related harm, rather than the other way around.

Overall, we concluded that organised crime groups that laundered money, and laundered larger amounts of money, were responsible for a greater amount of recorded crime-related harm. Further, we concluded that the relationship between money laundering and recorded crime-related harm works in the direction originally hypothesised by Masciandaro (1999)— that is, an increase in the amount of money laundered leads to a future increase in recorded crime-related harm. This means that the increase in crime-related harm is most likely a consequence of reinvesting illicit funds in future criminal enterprises.

These findings suggest that reducing the amount of money laundered by organised crime groups would limit their ability to reinvest illicit funds in future criminal enterprises. This has important implications for decisions about policy and regulatory responses to money laundering, including justifying the investment of resources in anti-money laundering policy.

Was this a law enforcement effect?

An obvious question is whether what we have observed in this study is simply an enforcement effect. That is, was the relationship between money laundering and recorded crime-related harm the outcome of a third variable: law enforcement activity? Certainly, the information we have on organised crime groups and their money laundering activity is based on a sample of groups identified by law enforcement. Likewise, a significant proportion of SMRs linked to individuals in these groups were submitted because law enforcement had advised the reporting entity that the group was under surveillance.

But there are several reasons we can be confident these results are not simply the outcome of law enforcement investigations. Throughout this report, our analysis controls for—to the extent possible—the effects of increased surveillance and investigations by law enforcement. Specifically, we factored in whether the groups had been investigated by law enforcement (based on information recorded in the NCTL) and whether they had been added to the NCTL during the relevant observation period. Our robustness checks revealed some evidence that the relationship between detected money laundering and recorded crime was stronger among groups that had been investigated by law enforcement—evidence of a likely enforcement effect—but also showed that the relationship between money laundering and crime-related harm was present among all groups, irrespective of their investigation status.

Further, while there was a significant relationship between law enforcement activity and the amount of recorded crime-related harm, there was no such relationship between a group being investigated by police or being added to the NCTL during the relevant period and the prevalence and amount of money laundering. In other words, while law enforcement activity may have influenced our outcome variable—recorded crime-related harm (which we took into account)—groups that were suspected of being involved in money laundering, or laundered greater amounts of money, were no more likely to have been investigated by law enforcement.

That said, we do not know how these results would apply to organised crime groups not known to law enforcement. It is highly likely that groups that were particularly adept at laundering funds were able to evade detection by law enforcement. This may extend also to the predicate offences that generate illicit funds, or the offences funded by laundered money.

Further, there are certain biases that exist in our data as a consequence of the groups being targeted by law enforcement. The vast majority of groups in our sample were involved in illicit drug trafficking. While the social and economic costs of illicit drugs account for a significant proportion of the overall costs of serious and organised criminal activity (37.8%; Smith & Hickman 2022), organised fraud is the next most costly criminal activity to the Australian community (21.5%). However, only 9.5 percent of groups in our sample were involved in some form of fraud (some of which may be related to laundering the proceeds of illicit drug trafficking). SMRs that related to fraud offending were significantly less likely to be linked to an organised crime group on the NCTL. When we estimate the relationship between money laundering and crime-related harm, we need to be mindful that this is specific to the harm associated with organised crime groups and the crime types represented on the NCTL. The extent to which we can generalise the results of our study to organised crime groups beyond our sample is not clear.

What was not captured in our analysis?

Related to this point, it is important to be clear about what was not captured in our analysis. We measured offending by organised crime groups that were suspected of being involved in money laundering. This represents the direct effect of money laundering on crime. We do not consider the wider effects of money laundering on crime. This includes the potential flow-on effects of organised crime enabled by money laundering, such as drug-related crime committed by offenders beyond the groups contained in our study sample. It also excludes the crime committed by offenders attracted to Australia by the ability to launder funds. These are harder to estimate because it is more difficult to establish a causal relationship.

This study has demonstrated the importance of a bottom-up approach to establishing the relationship between money laundering activity and associated harms. But this comes at the expense of being able to measure the full scale of the effects of money laundering. In other words, certainty comes at the expense of coverage. Further research may be able to measure these wider effects of money laundering and crime; however, whether this additional research should be undertaken depends on the likelihood of being able to pinpoint these wider effects and attribute them to money laundering activity, and the potential for diminishing marginal returns.

What does this mean for the importance of financial transaction data?

While it was not a specific goal of this study, the linkage of data from the ACIC on organised crime groups with financial information from AUSTRAC provides valuable insights into the dark figure of organised crime—the portion of organised crime that is not recorded in law enforcement databases. A significant minority of individuals suspected of being involved in organised crime, and most organised crime groups, were linked with at least one SMR over the period for which data were available. However, only a very small proportion of SMRs in

2016–17 were linked with any organised crime group. For every 100 SMRs submitted during that financial year, less than one was linked with an individual from an organised crime group on the list maintained by the ACIC. Most linked SMRs only involved one person from the NCTL, suggesting there were many others outside of this list involved in suspicious transactions.

We know that the NCTL does not provide a true census of organised crime groups impacting Australia, which is why we did not use these linked data to estimate the scale of money laundering in absolute terms. Even ignoring the challenge of trying to identify and capture every group operating in or impacting Australia, we are aware that the use of the NCTL varied between jurisdictions and over time. Though it includes groups added in as late as 2018, use of the NCTL declined significantly in the years before that, and it has now been decommissioned and replaced with new, more focused target assessments. Some groups may have been known to law enforcement, whether at the Commonwealth or state and territory level, but would not have been captured in the data used for this study.

This may have contributed to the very small proportion of SMRs that were linked to organised crime groups, even at the peak of the NCTL's use. It is also important to note that SMRs capture criminal activity (eg child sexual exploitation material and some financial crimes) that may not be connected to organised crime groups, as defined by law enforcement. Further, not all SMRs will relate to organised crime; indeed, as Levi (2020) argues, at best they represent the suspicion of criminal activity. As this report has shown, SMRs are susceptible to changes in reporting practices (though of course the same is also true of many crime types). Nevertheless, it is clear that the SMR data capture significantly more organised criminal activity—or at least the financial transactions association with organised crime—than is possible in any law enforcement intelligence database. For this reason, the analysis of SMR data, for intelligence and research purposes, would arguably provide an important picture of overall patterns and trends in organised criminal activity. We note also that there have been significant improvements to the quality and amount of detail of information recorded in SMRs, including after the observation period for this study, which likely facilitates this type of analysis. Any such analysis does need to account for the effects of proactive reporting, especially that which coincides with enforcement action, to provide an accurate picture of money laundering activity impacting regulated entities.

How does this contribute to the development of a harm index?

This is the first empirical study that aims to contribute to the development of an overall harm index that can measure the social and economic impact of money laundering and terrorism financing. It serves as both a study of the harms associated with money laundering in one domain—criminal offending—and as a test case for future efforts to measure harms in other domains identified during stage one as being relevant and potentially significant to Australia.

First and foremost, it has produced robust estimates of the effects of money laundering on organised crime and crime-related harm that were not previously available. These results alone do not provide an absolute measure of the scale of crime-related harm associated with money laundering. Rather, they reveal the relative difference in crime-related harm that may be attributable to money laundering. The utility of a relative measure, and whether this is likely to be the outcome of other pilot studies, requires further consideration.

Further work is also needed to consider how to apply the results of this study to econometric domain analysis that might be undertaken by AUSTRAC. This analysis relies on a top-down approach, which tends to be better able to capture the full range of costs associated with money laundering. The question that needs to be answered is how to use the effect sizes produced by this study in the econometric domain analysis or similar analyses. Consideration could be given to applying the effect sizes to estimates of the costs of serious and organised criminal activities (Smith & Hickman 2022), and whether it is appropriate to do so.

Notwithstanding these remaining questions, this study has demonstrated that it is possible to quantify the harms associated with money laundering. There is scope to build on this work and expand the measurement of additional harms associated with money laundering and terrorism financing.

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