

Recent Trends in Banknote Counterfeiting

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Photo: Reserve Bank of Australia

Abstract

Law enforcement intervention has shut down several large counterfeiting operations and led to a decline in counterfeiting rates over the past couple of years. At the same time, the increased availability of low-cost, high-quality printing technology has meant that the quality of counterfeits has improved. This article discusses trends in banknote counterfeiting in Australia and the impact of counterfeiting on different stakeholders.

Introduction

As Australia's banknote issuing authority, the Reserve Bank of Australia (the Bank) aims to prevent counterfeiting and maintain public confidence in the security of Australian banknotes.

Counterfeiting is a crime and amounts to theft; since counterfeits are worthless, if an individual or business unknowingly accepts a counterfeit in exchange for something of value, they have been stolen from. More broadly, counterfeiting can erode public confidence in physical currency, which carries social and economic costs.

Counterfeiting is prosecuted under the *Crimes (Currency) Act 1981*, which prescribes a number of offences. These include:

- making, buying or selling counterfeit money
- passing counterfeit money
- possessing, importing or exporting counterfeit money
- possessing, importing or exporting materials used to counterfeit money
- sharing information about how to counterfeit money
- wilfully damaging genuine money.

Penalties for counterfeiting can be severe, including fines of up to \$75,000 and/or up to 14 years imprisonment for responsible individuals. The Bank assists in preventing counterfeiting by ensuring that Australia's circulating banknotes are secure and of high quality, and by raising public awareness of banknote security features. The Bank also examines and monitors counterfeits seized and detected in Australia, makes referrals to the Australian Federal Police (AFP), and assists police and prosecutors with information and expert evidence.

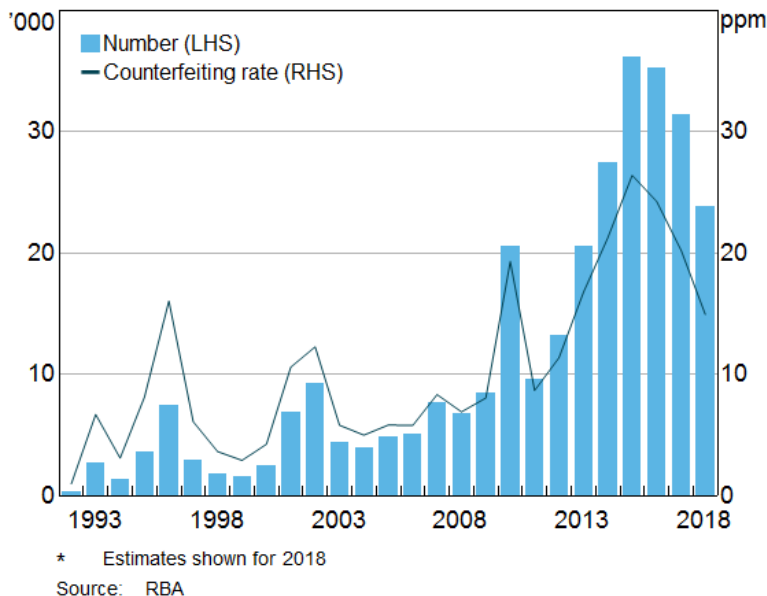
This article discusses recent trends in counterfeiting in Australia, and the costs and impact of counterfeiting on different stakeholders, including the public, retail businesses, the Bank and law enforcement. The article also contains information on how to detect counterfeits, and what to do with them.

Trends in Counterfeiting

The Bank typically receives around 30,000 counterfeits per year. This is small relative to the total amount of banknotes in circulation (around 1.6 billion pieces). Therefore, when we measure the incidence of counterfeiting we use the number of counterfeits per million genuine banknotes in circulation (parts per million, or ppm). Counterfeiting in Australia rose steadily from the early 2000s, when the counterfeiting rate was around 5–10 ppm, until 2015, when the counterfeiting rate reached 26 ppm (Graph 1). Since then, counterfeiting has declined to an estimated 15 ppm in 2018. Much of this decline can be attributed to a number of successful police operations,

which disrupted several large counterfeiting sources. The declining cost and growing sophistication of technology will likely enable counterfeiters to more easily produce counterfeits on a larger scale than was the case previously, and the Bank does not necessarily expect the counterfeiting rate to return to the low levels of the early 2000s (Brown, Collard and Spearritt 2017).

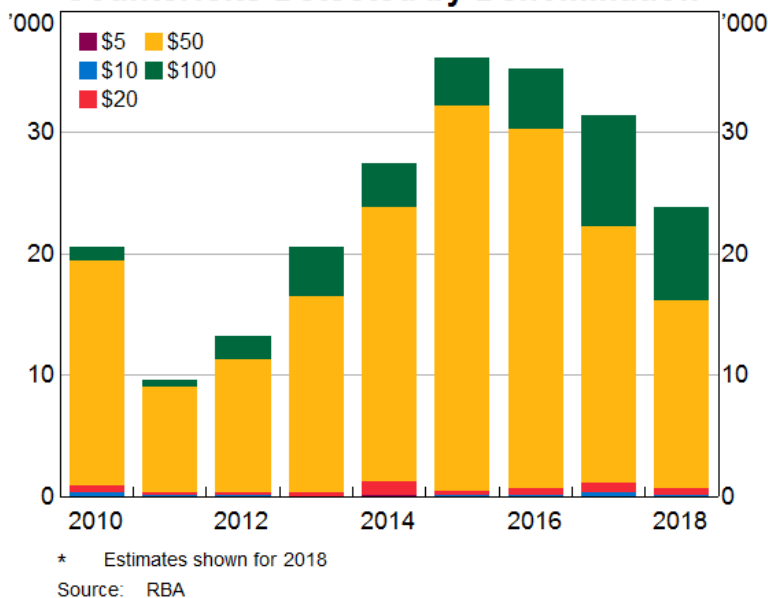
Graph 1
Counterfeits Detected*



Denominations

As the \$50 banknote is the most commonly withdrawn from ATMs and used in everyday transactions, and is of relatively high value, it is perhaps unsurprising that \$50 counterfeits account for the majority of all counterfeits (Graph 2). The lower denominations, while also used regularly in transactions, suffer comparatively few counterfeit attacks. This is likely because the cost of counterfeiting – both the direct production cost and the cost of being caught and going to jail – is judged too high by potential counterfeiters, relative to the expected payoff.

Graph 2
Counterfeits Detected by Denomination*



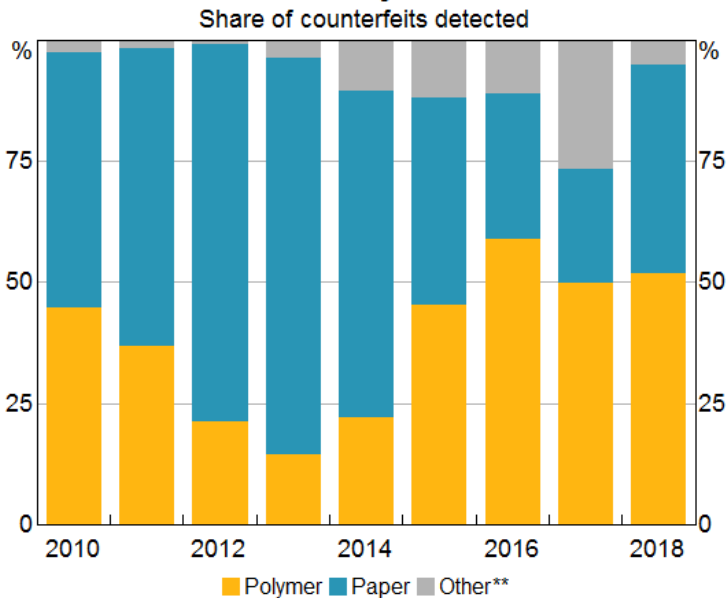
Counterfeits of the \$100 banknote have increased over recent years from relatively low levels, with their overall volume now around half that of \$50 counterfeits. Since there are fewer \$100 banknotes in circulation, the rate of \$100 counterfeiting is now similar to that of \$50 counterfeiting. This may in part reflect advances in technology, which have enabled the production of counterfeits that will usually pass a cursory inspection (although fail a more thorough inspection that checks security features). Given that \$100 banknotes are likely to be more closely inspected than other denominations when spent, counterfeiters are unlikely to produce and try to pass them unless they believe that the counterfeits have a good chance of fooling an unsuspecting retailer or member of the public.

Substrate

The substrate is the material on which a banknote is printed; genuine Australian banknotes have been printed on a polymer substrate since 1992. Over the past decade, we have seen the emergence of sizeable volumes of counterfeits made using polymer. Although the first polymer counterfeit banknote was detected in 1997, it was not until 2010 that we began seeing significant volumes of polymer counterfeit attempts. The increase in both domestic and international polymer counterfeiting was a major factor in the decision by the Bank to begin upgrading Australia's banknotes. Polymer-based counterfeits now represent more than half of all

counterfeits detected, with the remainder being mostly poorer-quality paper counterfeits (Graph 3).

Graph 3
Counterfeits by Substrate*



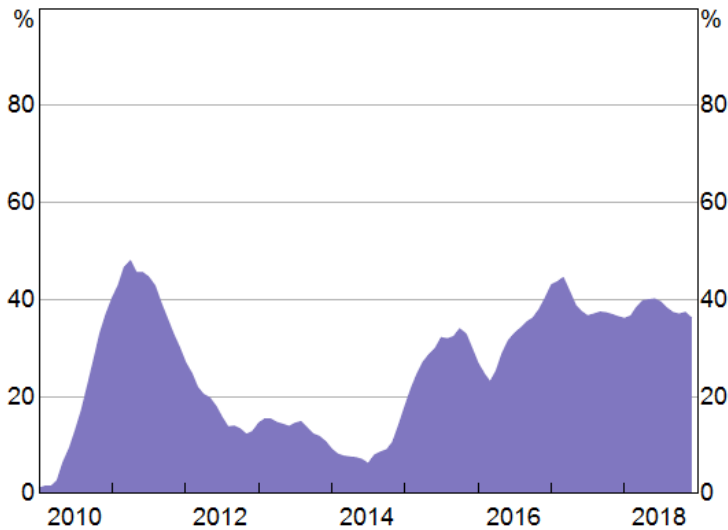
* Estimates shown for 2018

** 'Other' includes hybrid, composite substrates and wilfully damaged genuine banknotes

Source: RBA

Polymer counterfeits are usually higher quality than paper ones, and so the rise in the share of polymer substrate counterfeits has occurred alongside an increase in the average quality of counterfeits. Over the past two years, around 40 per cent of counterfeits detected in Australia have been considered high quality (Graph 4). This has been driven by a small number of counterfeit manufacturers.

Graph 4
High-Quality Counterfeits*
 Share of counterfeits detected; smoothed



* Counterfeits characterised as being 'good', 'very good', or 'excellent' quality; estimates shown for 2018

Source: RBA

It is worth noting that counterfeits that successfully replicate security features such as the microprint, shadow image, see-through register or intaglio (raised ink) print are rare, and members of the public can check these security features if they suspect a counterfeit (see [Box A](#) [11](#)).

Box A: Banknote Security Features

There are a number of security features that can be used to confirm whether a banknote is genuine. All Australian banknotes are produced on polymer, which contributes to their distinct texture and makes them difficult to tear. They should spring back when crumpled. The ink is raised, and you should be able to feel it with your finger. The print should also be sharp, not blurry or fuzzy. This means that when looking closely or with a magnifying glass, the microprint should be clearly legible. The window should be clear and look like it is integrated into the design, and when examined under UV light, certain elements on the banknote will glow.

On the first series of polymer banknotes, you can also look for the shadow image produced when the banknote is held to the light, or the see-through register that is formed (Figure A1).

Figure A1: First Polymer Banknote Series Security Features



On the new series of polymer banknotes, the clear top-to-bottom window is an additional security feature (Figure A2). Within the window are multiple elements, including holographic sections, a flying bird, and the value of the banknote switching directions when the banknote is held at different angles. In the top corner of the banknote you can also see a rolling-bar colour effect.

Figure A2: Second Polymer Banknote Series Security Features



See the [Reserve Bank's Banknotes microsite](#) to learn more about security features you can use to verify a banknote.

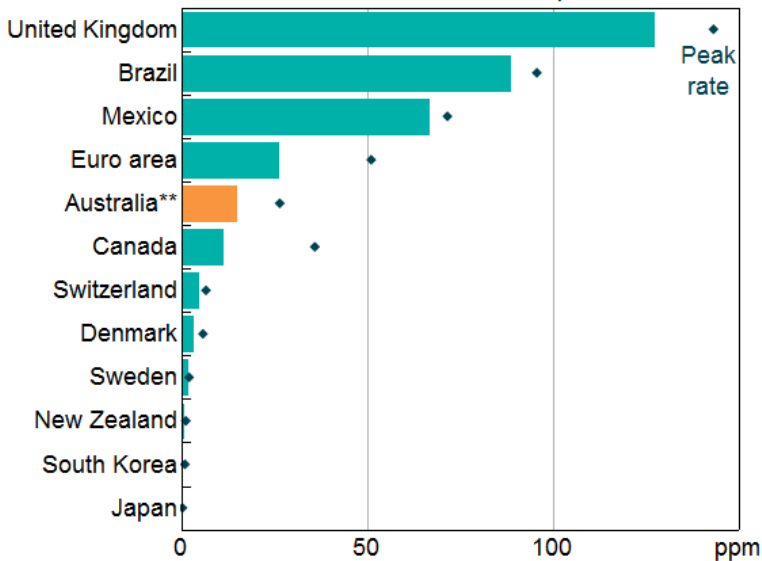
International comparison

Despite the increase seen through to 2015, Australia's counterfeiting rate has remained low relative to other major currencies, peaking at 26 ppm (Graph 5). This compares with the counterfeiting rate reaching around 50 ppm in the euro area and 140 ppm in the United Kingdom over the past five years. The release of upgraded banknotes saw Canada's counterfeiting rate decline to quite low levels following high rates in the early 2000s, although it has increased slightly in recent years. Relative to a larger sample of currencies for which data are available, however, Australia's counterfeiting rate is around average, with some countries – New Zealand, for example – having very low counterfeiting rates of less than 1 ppm (RBNZ 2018).

Graph 5

Counterfeiting Rate*

Latest rate and 2014–2018 peak rate



* Calendar year counterfeiting rates; New Zealand data are for years to June

** Bar is 2018 estimate

Sources: Central banks; law enforcement agencies; RBA

Counterfeiting rates across countries are affected by a number of factors including the broader crime rate, the security of a currency’s banknotes, how cash is used, and the cost of equipment used to counterfeit banknotes (Quercioli and Smith (2015); van der Horst *et al* (2016)). The ‘internationalness’ of currencies also appears to be a contributing factor: on average, more widely used currencies (such as the US dollar, euro and British pound) have higher counterfeiting rates than other, less international, currencies. This may be because counterfeiters in neighbouring countries choose to counterfeit a more widely used foreign currency rather than the domestic one.

Impact of Counterfeiting

The Bank does not reimburse individuals or businesses for counterfeit banknotes, as doing so would act as an incentive to counterfeit. This choice is consistent with other central banks. Consequently, a successfully passed counterfeit results in a direct loss to the individual or business who unknowingly accepts it.

The value of counterfeits received by the Bank each year is typically around \$1–2 million. Not all counterfeits are submitted to police, however, as should be the case; a survey conducted by the

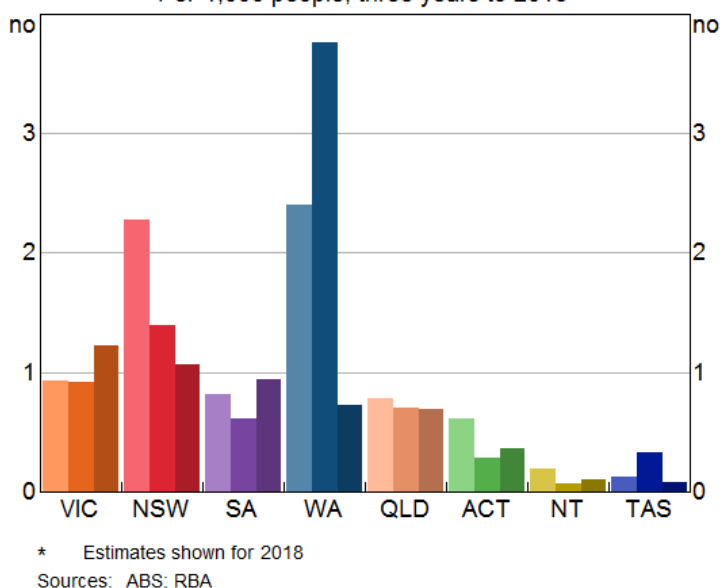
Bank indicates that around 20 per cent of people would either keep or throw out a counterfeit that came into their possession. This suggests that total losses from counterfeiting are moderately higher than the recorded \$1–2 million per year.

Although losses associated with counterfeiting are relatively minor compared with other kinds of payment fraud, receiving a counterfeit can have severe consequences for people with low incomes and businesses with small profit margins.^[2] The average retail business would need to sell around \$2,200 worth of goods or services to recoup the loss sustained through a single \$100 counterfeit banknote.^[3] Businesses that face narrower profit margins would need to raise prices or sell even more goods or services to make back any losses due to counterfeiting.

Broadly speaking, commercial banks and cash depots are where counterfeits are most commonly detected. This is unsurprising given their bulk cash processing role. However, when cash processing organisations and banks detect counterfeits and know who the depositor of the counterfeit was, they typically pass the loss back to the originating customer.

On a per capita basis, Victoria and New South Wales have the highest counterfeiting rates, while Tasmania and the Northern Territory have low rates (Graph 6). This is largely related to where large counterfeiting operations choose to distribute the counterfeits. For example, a large counterfeiting source was recently operating out of Western Australia, but this was shut down by police at the end of 2017; this helps to explain the large spike and fall in Western Australian counterfeits per capita. The difference in counterfeiting rates could also be affected by other factors such as differences in crime reporting rates.^[4]

Graph 6
Counterfeits Detected*
 Per 1,000 people, three years to 2018



Beyond the direct losses to the general public and businesses, there are a number of other indirect costs of counterfeiting. The Bank aims to maintain public confidence in the supply, security and quality of Australia’s banknotes as a secure means of payment and store of wealth. To that end, the Bank operates a Counterfeit Examination Laboratory to examine and monitor counterfeit currency in Australia. Almost all counterfeits seized and detected in Australia are sent to this laboratory for examination, and significantly higher numbers of counterfeits contribute to increased monitoring and examination costs. The Bank also runs education programs and liaises with businesses that deal heavily in cash to promote an adequate knowledge of banknote security features. Most visibly, Australia’s banknotes have been upgraded with improved security features to prevent counterfeiting.^[5]

Businesses also incur indirect costs associated with counterfeiting. Cash depots, banks and retail businesses all deal heavily with cash, which leads to expenses such as staff training, equipment investment and administrative costs (such as processing banknotes to identify counterfeits, and invoicing customers for the value of counterfeits submitted). In addition, significant law enforcement resources are devoted to reducing counterfeiting.

Box B: What to do with a Counterfeit

If you have received a banknote that you suspect may not be genuine, first check the security features (see [Box A](#)). If any security features are missing, take the following steps:

1. Put aside

Handle the suspected counterfeit banknote as little as possible, and store it in an envelope.

2. Provide details

Try to remember as many details as possible about when, where and how you came into possession of the banknote. This information can help police and the Bank gain a better understanding of counterfeiting in Australia, and assist police in any investigations.

3. Submit

Report the incident to your local police or the AFP. When submitting a counterfeit, you will also be asked to complete a [Suspect counterfeit banknote form](#). Your form and the suspect banknote will be sent to the AFP. From there it will be brought to the Bank and examined. If the banknote turns out to be genuine, it will be sent back to you.

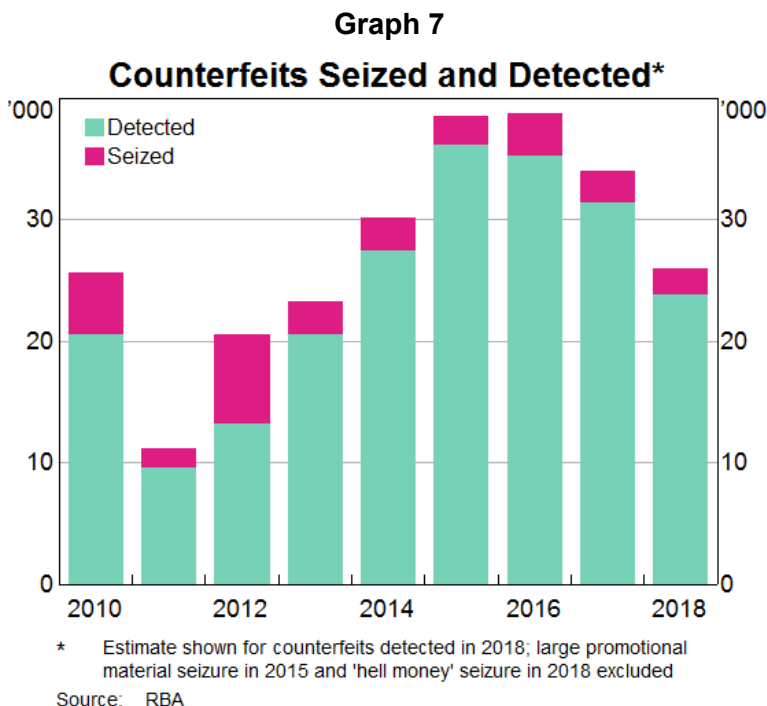
More details about what to do if you come into possession of a counterfeit can be found on the [Reserve Bank's Banknotes microsite](#) or the [Australian Federal Police website](#). You are within your rights to refuse to accept a banknote you suspect is counterfeit. Knowingly passing a counterfeit banknote is a crime.

Role of Law Enforcement

Law enforcement efforts to investigate and prosecute counterfeiting operations play a large role in managing the threat of counterfeiting. When counterfeit banknotes are sent to the Bank's Counterfeit Examination Laboratory, they are assessed by specialised document examiners. Counterfeits that are considered to be made by the same production source are grouped, monitored and referred to the AFP for investigation if deemed to be a high risk (high volume and/or high quality) to the Australian public or businesses. The AFP, state police forces, and the Commonwealth Director of Public Prosecutions all work to investigate and prosecute counterfeiting operations, with information and expert witness statements often provided by the Bank.

Police seizures of stocks of counterfeits that have not yet been passed prevents these counterfeits from entering circulation, ensuring no one loses money as a result of accepting the

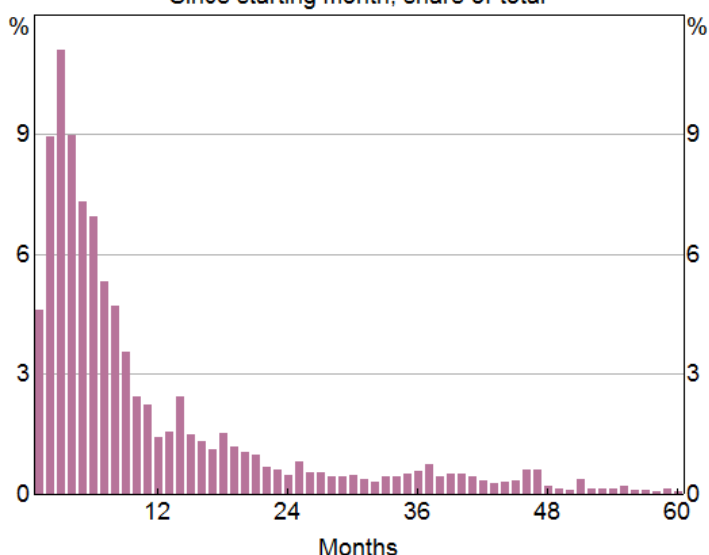
counterfeits. Over the past decade, police seizures have averaged 16 per cent of all counterfeit detections in Australia (Graph 7). In addition, there have been several large seizures of counterfeits made for promotional or 'hell money' purposes (that is, counterfeits that are not intended to be passed into circulation).^[6] Although these may not be manufactured with the aim of being passed into circulation, there are examples of this nonetheless happening and so seizures of these are important in protecting the public from loss.



The Life of a Counterfeit

Counterfeits from high-volume counterfeiting operations are mostly detected within the first few months after the first counterfeit is detected, and almost all are detected within two years of this point (Graph 8). This suggests that most of these operations' production is released into circulation within a fairly short period, and then progressively removed as they are detected. A major reason why this period is short, leading to an early peak and rapid decline in detections, is the efforts of law enforcement in shutting down a number of counterfeiting operations soon after their initial detection.

Graph 8
Average Counterfeits Detected*
 Since starting month, share of total



* Average monthly shares of total detections of inactive counterfeit sources since 1997
 Source: RBA

Conclusion

The rate of counterfeiting in Australia steadily increased up until its peak in 2015, and has since declined to a rate of around 15 counterfeits per million genuine banknotes. The majority of counterfeits are \$50 banknotes, while the share of counterfeits that are of high quality or made of polymer has increased over time. The rise in counterfeiting before 2015 was largely due to several high-volume counterfeit manufacturers. Since then, AFP and state and territory police intervention has led to a number of counterfeiting operations being shut down, preventing tens of millions of dollars’ worth of losses by the Australian public. If you receive a suspicious banknote, check for the security features and submit it to police if you believe that it may be a counterfeit.

Footnotes

[*] The author is from Note Issue Department.

[1] See Fox, Liu and Martz (2016) for more information on the security features on the new banknote series.

- [2] Losses related to fraudulent card and cheque transactions were around \$650 million in 2017/18 (Australian Payments Network 2018). The value of counterfeits detected in the same year was less than \$2 million. However, people are not reimbursed for counterfeits regardless of how a counterfeit came into their possession.
- [3] The retail sector had a net profit margin of 4½ per cent in 2016/17 (ABS 2018).
- [4] Reporting rates based on the Australian Bureau of Statistics (ABS) Crime Victimization survey vary significantly between states and territories (ABS 2019).
- [5] See Kim and Turton (2014) for a discussion on the impact of counterfeits on the development of the new polymer banknote series. RBA (2018) estimates that the banknote upgrading program will cost approximately \$37 million for all denominations to be upgraded.
- [6] ‘Hell money’, ‘ghost money’ or ‘spirit money’ are counterfeit banknotes that are intended to be burned during religious ceremonies.

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