Cash Demand during COVID-19

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Abstract

Since the onset of the COVID-19 pandemic, the value of banknotes in circulation has risen sharply. This was despite cash being used much less for everyday transactions. Much of the strong demand for banknotes can be attributed to people's desire to hold cash for precautionary or store-of-wealth purposes. This behaviour is common during periods of significant economic uncertainty and stress, and many other countries saw similar patterns of cash demand.

Trends in banknote demand

The COVID-19 pandemic significantly affected cash demand in Australia. Demand for banknotes was extraordinarily high over 2020, despite a sharp decline in the use of cash in day-to-day transactions. The pandemic has accelerated trends in banknote demand that had already been occurring for many years. Namely, the use of physical currency as a means of payment has continued to decline, while demand for cash as a store of wealth has grown (Caddy, Delaney and Fisher 2020; Finlay, Staib and Wakefield 2019). This article explores how banknote issuance evolved during the pandemic so far, what factors drove the increase in demand for cash and how this compares to historical and international experiences.

The sharp rise in the demand for currency began in mid March 2020, around the time that the federal and state governments began imposing containment measures – such as travel restrictions and social distancing rules. The value of banknotes in circulation grew by 17.1 per cent over the year to February 2021 reaching $97.3 billion (Graph 1). This compares with average annual growth in banknotes outstanding of around 5 per cent over the previous decade. As a result, the value of banknotes in circulation, measured as a percentage of GDP, has reached a historic high of 4.9 per cent.

The bulk of the increase in banknotes issued by the Reserve Bank of Australia (RBA) occurred over the first 6 months of the pandemic ($13.1 billion in gross issuance from March to August). The large spike in demand in mid March coincided with a period of acute uncertainty during the early stage of the pandemic. Cash demand grew at a more moderate pace in April as strict pandemic containment measures limited economic activity. Demand for cash picked up again between May and August as government restrictions were gradually eased, giving households more opportunities to use cash. Since then, the value of banknotes in circulation has continued to grow at around its average pace.

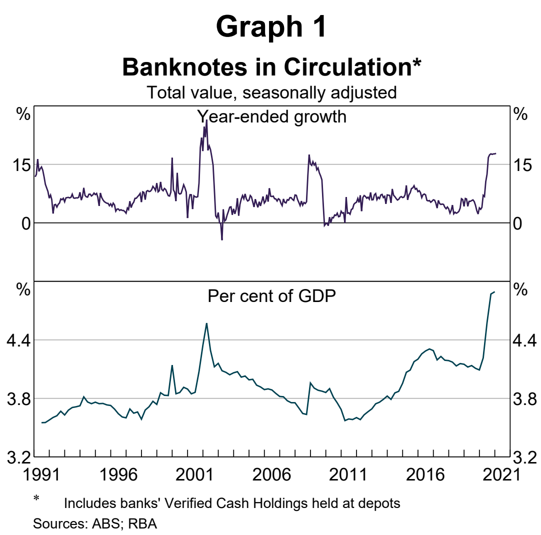
The strong growth in banknotes in circulation was driven by demand for the higher denominations ($50 and $100 banknotes) (Graph 2). Around 70 per cent of the volume of banknotes issued since mid March 2020 were $50 banknotes and almost 20 per cent were $100 banknotes. At the same time, returns of poor quality or old series banknotes to the RBA were lower than usual throughout 2020, but have picked up in early 2021. Further, banks stopped returning banknotes that were surplus to their requirements after the onset of the pandemic. This is likely due to the sharp drop in economic activity leading to a slowing in the movement of cash around the economy, as well as some precautionary holdings by banks. The increase in high-denomination banknotes in circulation, coupled with reduced transactional cash use, suggests an increased desire in the community to hold banknotes as a precaution or store of wealth.

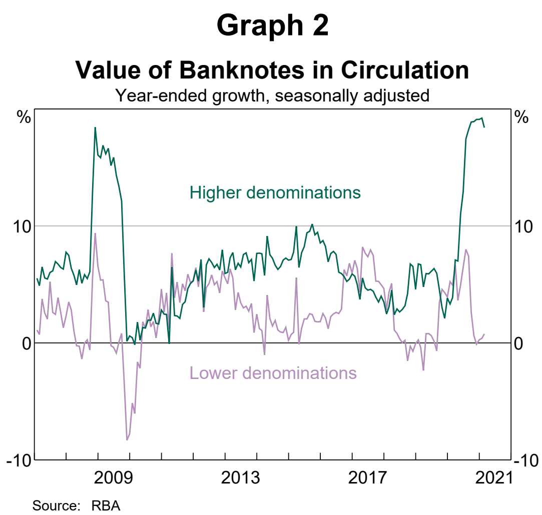
Drivers of cash demand during COVID-19

Transactional demand for cash

The use of cash for day-to-day payments has been in trend decline. The share of total retail payments made in cash has fallen from 69 per cent in 2007 to 27 per cent in 2019 (Caddy, Delaney and Fisher 2020). For in-person transactions, the share of payments made with cash was a little higher before the onset of the pandemic, at 32 per cent in 2019 (Delaney, McClure and Finlay 2020). COVID-19 has accelerated this trend; the decline in transactional cash use was most apparent at the times when lockdown restrictions were acute (and there was less opportunity for in-person spending), but survey data suggest that the shift away from day-to-day cash use may become permanent for many consumers. There is a range of data sources that point to weak demand for cash for transactional purposes, including: subdued issuance of low-value banknotes ($5, $10 and $20); declines in cash lodgements at cash depots; lower ATM withdrawals; a sustained shift to online spending; and survey data on banknote use during the pandemic.

There has been little issuance of low-value banknotes during the pandemic (Graph 3). These denominations are typically used for in-person transactions and for merchants to provide change, so subdued demand for these banknotes reflects reduced use of cash for consumer spending. This is particularly the case for the $5 and $10 denominations. There was no issuance of these





denominations in the first half of 2020 and subdued issuance over the remainder of the year.

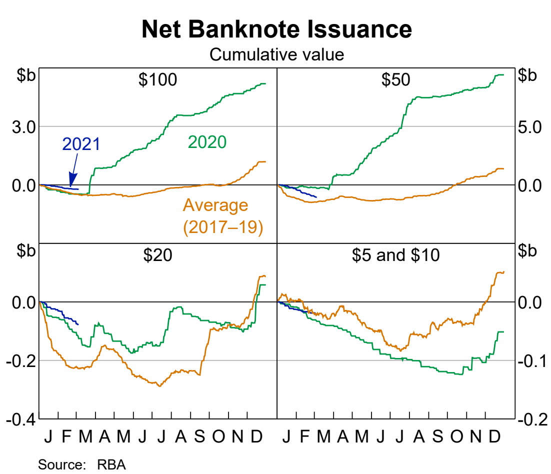
The value of cash that is moved from a retailer to a bank via a commercial cash depot provides an indication of cash spending in the economy. These lodgements at cash depots fell sharply at the onset of the pandemic as businesses received fewer cash payments and took longer to deposit their cash floats into commercial banks. The value of cash lodged at depots fell by around a third between February and May, and remains well below pre-pandemic levels.

Lower transactional demand for cash is also evident from the sharp decline in the number and value of cash withdrawals, particularly at ATMs and in the early stages of the pandemic (Graph 4). The number of ATM withdrawals fell by around 50 per cent in the first 2 months of the pandemic in Australia. By the end of the year, withdrawals were still 20 per cent lower than before the pandemic in February 2020. The average withdrawal size increased at a slightly faster pace than its trend increase, which points to some demand for cash as a store of wealth. Access to cash also declined due to closures of ATMs and bank branches. This decline in access was mostly temporary, with venues being inaccessible due to lockdown restrictions and banks adjusting their operations through reduced trading hours.

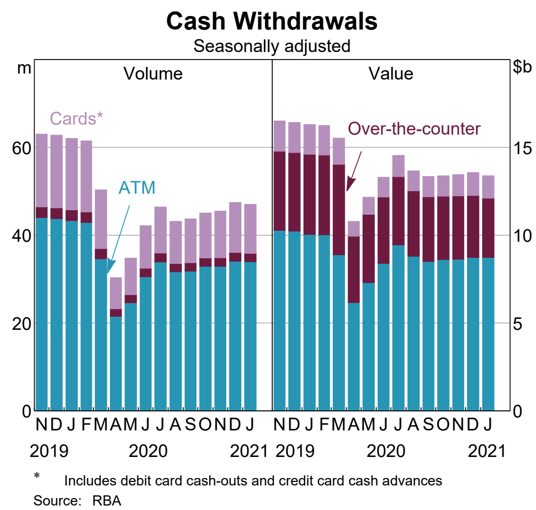
While aggregate retail spending has remained resilient throughout most of the pandemic, it does not appear to have translated into the usual level of cash transactions. Households have adapted to restrictions by making more of their purchases online, with one-third of Australians preferring to shop more online now than before the pandemic (ABS 2020). The share of retail sales conducted online has sharply increased from an average of 6½ per cent in the second half of 2019 to an average of 10 per cent since March 2020 (Graph 5). It has remained elevated even after physical-distancing restrictions eased, which suggests that consumers' change in shopping habits will endure. The shift towards online transactions is also clear from data on debit and credit card use. Both in-person and remote card transactions declined sharply during March and April, reflecting lower household spending. But the number of in-person transactions fell 3 times more than remote transactions in percentage terms in the early part of the pandemic. In-person transactions returned to pre-COVID-19 levels in late 2020, while the volume of remote card transactions recovered more quickly.

A survey commissioned by the RBA – the RBA Online Banknotes Survey – identified the broader shift away from transactional cash use over 2020. (See 'Box A: Consumer Cash Use during COVID-19: Evidence from the Online Banknotes Survey' for more details on the survey of individuals' attitudes towards cash.) Cash was used for 23 per cent of respondents' most recent in-person transactions. Although not directly comparable, this is lower than the 32 per cent of in-person payments made in cash in 2019 from the Consumer Payment Survey (CPS) (Delaney, McClure and Finlay 2020). Forty-four

Graph 3



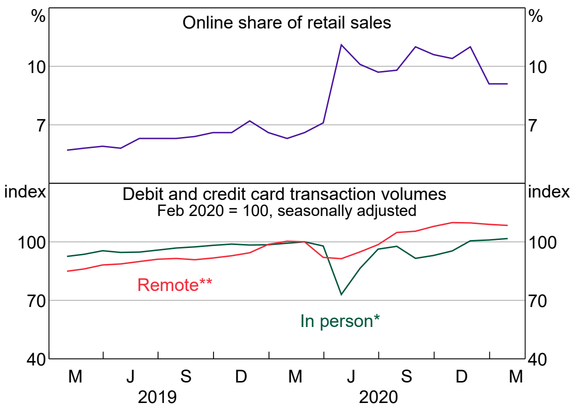
Graph 4



per cent of individuals reported using less cash since the start of the pandemic, compared with only 12 per cent using more cash (Graph 6). Two-thirds of individuals said this change in payment behaviour was likely to continue even after the pandemic was over.

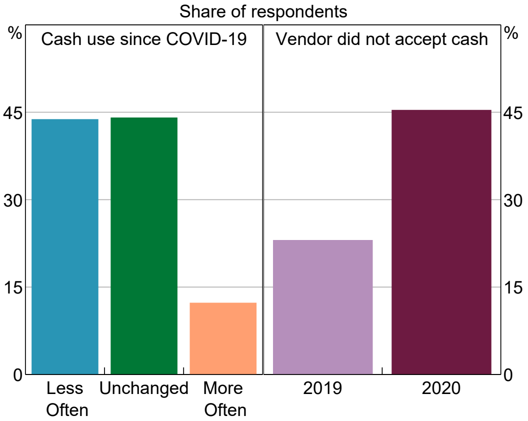
One reason for this dramatic shift in payment preferences and behaviour is community concern about transmission of the virus via banknotes. Of those people who preferred not to use banknotes in transactions, 28 per cent said one reason was because they thought of cash as being unhygienic. The RBA also responded to a small number of public enquiries about the potential health risks of using cash, recommending that banknotes be treated like any other surface and to follow good hand hygiene (RBA 2020a). Concern over cleanliness also drove some businesses to discourage cash use. The consumer survey found that 45 per cent of respondents had encountered a business that did not accept cash in the month of September 2020, a substantial increase from 23 per cent in 2019. Furthermore, almost a quarter of respondents cited concerns about cash acceptance as a reason for preferring not to use cash, compared with just 7 per cent in 2019.

Graph 5
Online and In-Person Spending



* The card or other device interacts with an acceptance technology at the point of sale
** Transaction is processed via remote card acceptance technology
Sources: ABS; RBA

Graph 6
Effect of COVID-19 on Cash Use
Share of respondents



Source: RBA

An RBA survey of retail businesses during September 2020 identified a small but statistically significant decline in cash acceptance (See 'Box B: Merchant Acceptance of Cash and Cards' for more details on the survey methodology and results). Although the vast majority of retail businesses continued to accept cash during the pandemic, the acceptance rate decreased by 3.6 percentage points to 95.8 per cent, compared with near-universal cash acceptance in February 2020. As such, the merchant and consumer surveys both highlight a decline in cash acceptance. Note that a small decline in cash acceptance by a few merchants could potentially lead to a larger decline in the ability for people to use cash.

Precautionary holding of cash and store-of-wealth motives

The significant increase in outstanding banknotes in the economy against the backdrop of reduced cash payments implies that the demand for cash during the pandemic has likely been driven by hoarding behaviour. The relatively strong demand for high-value banknotes suggests a significant precautionary savings or store-of-wealth motive by households and businesses.[1] Since mid March 2020, almost 90 per cent of the volume of banknotes issued were $50 and $100 banknotes.

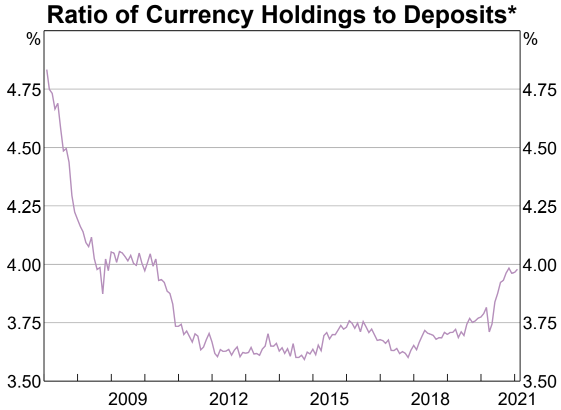
Both cash held by the community (outside banks) and bank deposits increased strongly over 2020, but growth in cash holdings outpaced that of deposits. As such, the currency-to-deposits ratio is around its highest point in a decade (Graph 7). The strong growth in deposits suggests that confidence in the banking sector as a whole was sustained, but it is possible that some people held more cash because of a general sense of uncertainty or because they were concerned about possible disruptions to electronic payment systems during the pandemic. For example, in March, the average value of over-the-counter cash withdrawals from banks spiked, although the amount of withdrawals were lower. This points to a precautionary motive by a subset of the community during the initial stage of the pandemic.

Holding cash also became relatively more attractive as interest rates declined, because this lowered the opportunity cost of holding cash, which pays no interest.[2] However, the scale of the response in March was much larger than lowered opportunity costs can explain, so other factors must have been at play.

Aggregate household disposable income has increased substantially, largely because of government income support policies, while loan repayment deferrals and early withdrawal of superannuation have also supported household cash flow more generally (RBA 2020b). Government income support has also assisted businesses to build considerable liquidity buffers. Given that household consumption declined significantly in 2020, it is likely that some of the higher cash flows of households and businesses have been retained in the form of physical currency, thereby contributing to the strong increase in currency held by the private non-bank sector. In addition, those earning their income in cash would have had less opportunity to spend or deposit it in their usual way.[3]

Graph 7

Ratio of Currency Holdings to Deposits*



* Deposits are calculated as M3 less currency holdings of the non-bank sector

Source: RBA

The role of precautionary cash holding in banknote demand is supported by the findings from the RBA's 2020 Online Banknotes Survey, which found that 56 per cent of respondents stored cash outside of a bank. This is higher than the almost 40 per cent of CPS participants storing cash outside of a wallet in 2019. Although the 2 surveys are not directly comparable, it suggests that precautionary demand for banknotes remains a factor in banknote demand. Of the respondents who were storing banknotes, the majority kept around the same amount of cash compared with the previous year, while 18 per cent kept more and 23 per cent kept less. This means that around 10 per cent of households held more cash, while 13 per cent reduced their cash holdings, although we do not know by how much. Nonetheless, Finlay, Staib and Wakefield (2019) argue that surveys are likely to understate cash hoarding for a range of reasons. Finally, almost one-fifth of those who stored cash outside a bank said that the pandemic – and related factors such as potential lockdowns – was one of their reasons for doing so.

The banking sector may also want to build up currency holdings to manage risks related to meeting the demands of their depositors. With strong demand for physical cash and logistical challenges in moving money around Australia, the wholesale banknote distribution system experienced increased pressure at times during the pandemic (see 'Box C: The Impact of COVID-19 on the Cash Distribution System' for more detail). Commercial banks' currency holdings were quickly run down with the sudden strong increase in demand for banknotes at the onset of the pandemic, coupled with fewer banknote deposits flowing into the banking sector. In response, the RBA opened its banknote distribution contingency site to help the banks replenish their banknote holdings. This saw cash holdings of the banking sector peak in March and again in July/August (Graph 8). Apart from these brief spikes, cash holdings at banks have mostly remained around pre-pandemic levels. This suggests that the precautionary behaviour of banks was temporary and related to banks managing their stocks to meet customer demand. Overall, cash holdings at

Table 1: Growth in Banknote Circulation during Periods of Economic Stress[a]

Event	Time Period	Peak Year-Ended Growth in Nominal Circulation (%)	Peak Year-Ended Growth in Real Circulation (%)
Dot-com bubble[b]	2000–02	26.5	22.6
COVID-19 pandemic	2020–Present	17.7	16.7
Early 1990s recession	1990–91	16.4	11.7
Global financial crisis	2007–09	15.1	8.5
1970s recession	1974–75	22.5	5.2
1980s recession	1982–83	14.6	2.7
1960s recession	1960–61	5.9	2.9
Memo item:			
1960–2019 average annualised growth		8.0	3.0

(a) Banknote data pre-1984 are at annual frequency and are quarterly and seasonally adjusted after that; real series uses the GDP deflator

(b) Changes in the banknote distribution arrangements with commercial banks also contributed to the peak growth in banknote demand during this period

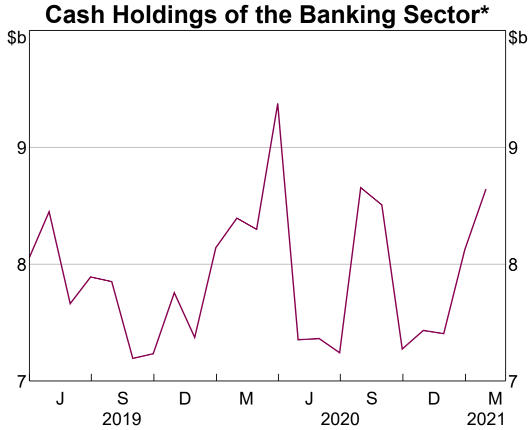
Sources: ABS; RBA

commercial banks account for a relatively small share of the extra cash in circulation since March.

A sizeable share of Australian banknotes is estimated to be held overseas, perhaps as much as 15 per cent (Finlay, Staib and Wakefield 2019). Restrictions on international travel have disrupted cash spending from tourism, so any overseas demand for banknotes since early 2020 would be mostly to hoard. Information from liaison suggests that overseas banknote demand has not been a factor in driving cash demand during the pandemic. Overseas wholesale currency shipments in March and April were not out of the ordinary, even allowing for the initial depreciation in the exchange rate. And since May there has been almost no overseas demand for Australian banknotes. As such, the usual strong relationship between $100 banknotes outstanding and the exchange rate has not held up (Flannigan and Parsons 2018).

Graph 8

Cash Holdings of the Banking Sector*



* Includes authorised deposit-taking institutions

Sources: APRA; RBA

Historical and international comparisons

Demand for cash has historically been strong during periods in which Australia has experienced economic or financial stress, such as during a recession (Cusbert and Rohling 2013). In real terms (that is, after allowing for inflation) year-ended growth in banknote demand peaked at 12 per cent during the recession in the early 1990s, and 9 per cent during the global financial crisis. This compares with growth of 3 per cent on average over 1960 to 2019. Banknote demand also increased in earlier recessions, but to a lesser extent.

These past episodes highlight that banknote demand is strong during times of economic uncertainty. Greater demand for high-denomination banknotes suggests that individuals hoard cash for precautionary and store-of-value purposes. For example, as the global financial crisis intensified, demand for high-denomination banknotes increased by around 16 per cent over the year to March 2009, compared with 4 per cent for the lower denominations. Similarly, demand for high-denomination banknotes was strong during the 1990s recession, while the amount of low denomination banknotes in circulation fell.

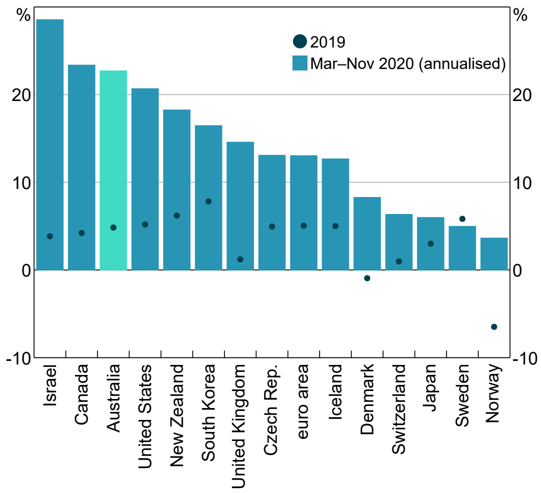
While strong cash demand is typical of periods of economic stress, the strength of demand during COVID-19 has been unprecedented. Not only has the growth in banknotes in circulation exceeded that encountered in the past, it has been the most sustained period of strong growth.

The experience of strong cash demand during the pandemic is not unique to Australia, with currency in circulation rising sharply across many economies during the pandemic (Graph 9). Across most advanced economies, currency growth has been significantly higher over 2020 than in 2019. The Anglosphere countries, including Australia, experienced particularly strong demand. Some Nordic economies that have experienced falling cash demand in the recent past saw positive growth in 2020.

Graph 9

Currency Growth During COVID-19*

Advanced OECD economies



* Includes only currency issued by a central bank

Sources: BOE; IMF; SNB

Like Australia, strong precautionary demand coupled with weak transactional cash demand have been a common experience across many economies. Reports from the central banks of Canada, the euro area, the UK, and the US all highlight a sharp decline in transactional cash use during the pandemic, with a noticeable shift towards contactless payment methods (Chen *et al* 2021; European Central Bank 2020; Caswell *et al* 2020; Kim, Raynil and O'Brien 2020). For many countries, demand for high-denomination banknotes has outstripped that for lower denominations. And there has been some survey evidence of greater cash holdings during the pandemic. There is also some evidence that lower banknote deposits have led to commercial banks maintaining an elevated level of cash holdings during the pandemic to meet consumer demand and protect against further disruptions to the cash distribution system.

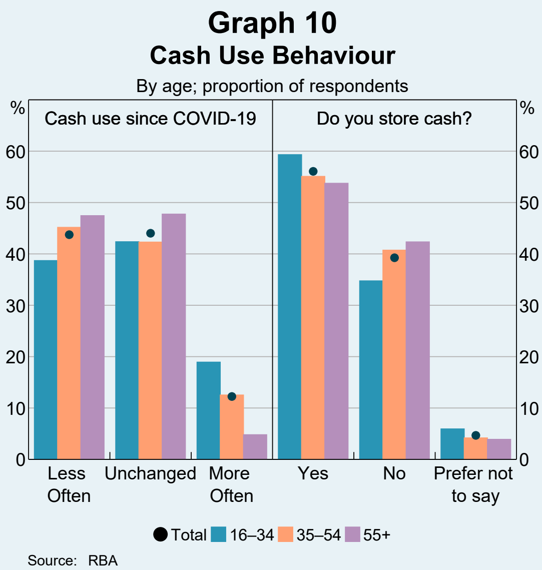
Conclusion

Demand for cash has increased substantially during the COVID-19 pandemic. The value of banknotes in circulation rose 17 per cent since mid March 2020, around the start of the pandemic uncertainty in Australia. Transactional cash demand has fallen due to lockdowns and other restrictions, a shift towards online spending, and concerns over transmission of the virus via banknotes. Against the backdrop of lower cash use for everyday transactions, the strong demand for banknotes can largely be attributed to precautionary or store-of-wealth motives. A disproportionate increase in demand for high-denomination banknotes, as well as RBA survey findings, support this. Historical experience suggests that precautionary motives tend to come to the fore during periods of economic and financial stress. Australia was also not alone in seeing a substantial increase in demand for banknotes, with many other countries experiencing similar patterns of cash demand.

Box A: Consumer Cash Use during COVID-19: Evidence from the Online Banknotes Survey

The RBA has conducted a biennial Online Banknotes Survey since 2010. The survey aims to gauge community perceptions and understanding of Australia's banknotes, experiences with counterfeit banknotes and cash use preferences. To obtain timely insight on the impacts of the pandemic on cash use, the latest survey was brought forward by 6 months to October 2020. It also included some additional questions about the effect of the COVID-19 pandemic. In total, 1,070 people participated in the survey, providing a representative sample of Australians.

The survey results reveal the dual trends of a shift away from cash use for payments and its greater use for precautionary purposes, although the results are less clear for the latter. Over 40 per cent of respondents have been using less cash since the start of the pandemic, while a significant share of them were also holding more cash for precautionary reasons. It is also of interest to look into the demographic breakdown. As might be expected, younger people (16–34-year-olds) were less likely to prefer using cash in day-to-day transactions and also less likely to use it in their most recent transaction.[4] Nonetheless, the decline in cash use during COVID-19 was more pronounced for the older age group, with 47 per cent of those aged 55 and over using less cash since the start of the pandemic, compared with 39 per cent of those aged between 16 and 34 (Graph 10). Almost one-fifth of the younger cohort were more likely to use cash.



Younger people were also a little more likely to store cash outside of banks, at 59 per cent, compared with 54 per cent for those aged above 55. Older respondents were more likely to store cash for emergency purposes and day-to-day transactions, while younger respondents reported they were more likely to store cash to keep their savings private. Young people experienced the largest declines in employment in the early part of the pandemic. As such, the change in their income source and attitude to financial security may have prompted a change in the way they stored and used cash.

Less than one-third of respondents cited cash as their preferred payment method, and this was consistent across all age groups. Nonetheless, those living in regional and non-metropolitan areas had a significantly greater preference for cash relative to those in metropolitan areas and were more likely to have used cash in their most recent transaction. Despite the differing prevalence of cash use across regions, cash acceptance was similar across metropolitan and regional areas.

Box B: Merchant Acceptance of Cash and Cards

The RBA conducted a survey in February 2020 to investigate cash and card acceptance by retail merchants (Delaney, McClure and Finlay 2020). The survey found that the vast majority of consumer-facing businesses that had a physical presence accepted both forms of payment, with 99.4 per cent and 98.3 per cent of businesses accepting cash and card, respectively.

The survey was run again in September to investigate the impact that the pandemic had on merchants' cash acceptance, given media and anecdotal reports of businesses discouraging cash use because of concerns about virus transmission. Businesses that had participated in the initial survey were asked if they were currently accepting cash and/ or card. The survey found that the vast majority of these businesses have continued to accept both forms of payment. Out of the businesses that responded, cash and card acceptance were at 95.8 and 98.8 per cent, respectively. However, the share of businesses accepting cash fell by 3.6 percentage points between February and September, a statistically significant decline in cash acceptance. In contrast, card acceptance increased slightly by (a statistically insignificant) 0.5 percentage points.

Table 2: Share of Merchants Accepting Cash and Cards

	September 2020		February 2020	
	Accept cash?	Accept card?	Accept cash?	Accept card?
Number answering 'yes'	323	333	467	462
Total number surveyed	337	337	470	470
Estimate of share (per cent)	95.8	98.8	99.4	98.3
95 per cent confidence interval (per cent)	(93.1, 97.7)	(97.0, 99.7)	(98.1, 99.9)	(96.7, 99.3)

Sources: RBA

A caveat is that the sample may no longer be representative of all Australian retail businesses. A number of businesses have closed either temporarily or permanently during the pandemic, especially in Victoria as the survey was conducted during its lockdown period. As such, the results present a snapshot of cash acceptance among a sample of businesses that have remained open during the pandemic. Nevertheless, similar results were obtained when businesses in Victoria were excluded from the sample or when we considered only those businesses who responded in both samples.

This survey and the Online Banknotes Survey of households both point to a decline is cash acceptance during the pandemic. However, the figures are not directly comparable due to differences in survey design and methodology.

Box C: The Impact of COVID-19 on the Cash Distribution System

The COVID-19 pandemic has caused significant challenges for cash distribution and processing. The RBA operates as a wholesaler of banknotes, issuing banknotes to the 4 largest commercial banks, which, in turn, have arrangements in place to distribute banknotes around the country to meet the demands of their customers. The RBA, commercial banks and their cash-in-transit companies have worked closely throughout the pandemic to meet record demand for banknotes, despite difficulties arising from the disruption to domestic travel and from physical distancing requirements.

Banknotes are typically issued from the RBA's primary distribution site – the National Banknote Site (NBS) – in Melbourne. The Bank also stands ready to distribute banknotes from Sydney as part of its contingency arrangements. The Sydney contingency distribution site has been opened twice during the COVID-19 period to assist the industry with meeting the heightened demand for banknotes in the face of domestic transport restrictions and limitations. In each instance, the Sydney distribution site was opened for a period of about 2 weeks and operated in association with the RBA's distribution activities at the NBS. It first opened in mid-to-late March to alleviate challenges arising from the sudden increase in demand for banknotes alongside transportation difficulties due to domestic travel restrictions. It opened again in July as the second wave of infections in Victoria led to renewed transportation disruptions (RBA 2020c).

The RBA has experienced some disruptions to processes as a result of lockdown restrictions and social distancing requirements, particularly as the Bank's banknote processing operations are located in Melbourne. These include: minor delays to banknote production and quality assurance testing of new banknotes; reduced banknote processing activities due to the introduction of split team arrangements, social distancing measures and government restrictions preventing non-essential work; and the temporary suspension of banknote sampling at cash-in-transit depots to measure the quality of banknotes in circulation. However, this has not impacted the RBA's ability to meet banknote demand, which has been its primary focus.

Footnotes

[*] The authors are from Note Issue Department. Thank you to the team at the National Banknote Site in Melbourne who assisted in conducting the merchant cash and card acceptance survey, and Matthew Tsikrikas for organising the Online Banknotes Survey.

[1] High denominations are also used for transactions, with the $100 note increasingly so (Flannigan and Parsons 2018). But their use as a store of value is an important driver of their growth, especially relative to low denominations.

[2] Cusbert and Rohling (2013) found that 20 per cent of the sharp increase in currency demand during the global financial crisis could be attributed to the fall in interest rates and federal government stimulus payments.

[3] If unreported for tax purposes, these payments would be part of the shadow economy. Illegal production (such as illicit drug sales) also forms part of the shadow economy; this activity was likely disrupted due to COVID-19 but it is difficult to say whether this would have increased or decreased aggregate cash holdings. Finlay, Staib and Wakefield (2019) attribute 4–8 per cent of banknotes in circulation to be part of the shadow economy.

[4] Teenagers (16–19 years old) are an exception, as they had high cash use. This could be because some of them are paid cash for casual work. However, the sample size is small, so we focus on broader age groups to draw conclusions.

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