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The Changing Way We Pay: Trends in Consumer Payments

Crystal Ossolinski, Tai Lam and David Emery

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Abstract

The Reserve Bank of Australia's third Survey of Consumers' Use of Payment Methods was conducted in November 2013. The survey used a diary and end-of-survey questionnaire to collect data on the use of cash, cards and a range of other payment methods, both at the point of sale and via remote channels (online, mail and telephone).

The 2013 data show that cash and cheque use has continued to fall. The use of cards has risen significantly, and there has also been an increase in the use of PayPal. The growth in the use of cards and the reduction in cash use are evident across households in all age and household income groups. The strong growth in remote payments is one contributor to the observed change in the use of cash and cards. However, the main contribution is from the increased use of cards at the point of sale, which is likely to reflect both growth in the availability of card terminals at merchants and changing consumer preferences as authentication methods have evolved. In particular, we find some indication that the adoption of contactless technology, which lowers the tender time of card payments at the point of sale, may have increased card use.

The paper presents detailed information about the use of contactless card and smartphone payments by demographic group and payment type. It also provides an update on the payment of surcharges on card payments, including information about the value of card surcharges that were paid by consumers, and the payment of ATM fees.

JEL Classification Numbers: D12, D14, E42

Keywords: method of payment, consumer payment choice, consumer survey, retail payment systems

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The Changing Way We Pay: Trends in Consumer Payments

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1. Introduction

In November 2013, the Reserve Bank of Australia conducted its third Survey of Consumers' Use of Payment Methods.¹ This seven-day diary study is one of the main sources of information about the use of cash in the Australian economy. It also provides extensive transaction-level data that can shed light on the adoption of new technologies and how the choice of payment method may be influenced by the characteristics of the payment and the demographics of the payer.

This paper explores how payment use by Australian consumers has changed across the three waves of the survey and how these trends relate to the characteristics of the payments being made and the demographic characteristics of the respondents. The trends evident between 2007 and 2010 have broadly continued. The use of cash has continued to decline as a share of all payments, as has the use of cheques, while the use of cards has increased. Comparing across age and household income groups and by location of residence indicates that the declining use of cash and increasing use of cards is widespread, although the change is somewhat more pronounced for younger individuals and respondents in low-income households or living in city areas.

The paper also examines some of the drivers of change. The trend toward greater use of remote payment options explains some of the move away from cash toward cards and other payment methods, but a larger effect is the change in the mix of payments made at the point of sale. We explore how new technologies may be influencing the mix of payments. The rollout of contactless card payment technology at the point of sale has been rapid in Australia and appears to be influencing the mix of payments at the point of sale. In contrast, the use of smartphones to make payments does not yet appear to have influenced the mix of payment methods used at the point of sale.

¹ See Emery, West and Massey (2008) for the results of the first survey, and Bagnall, Chong and Smith (2011) for the results of the second survey.

Finally, the study provides some additional insight into the effects of some of the reforms to the payments system implemented over the past decade. The paper analyses the incidence of card surcharging on Australian consumers and the value of card surcharges, a topic on which there is relatively little systematic transaction-level information. We also provide updated information about the frequency of the payment of ATM fees.

2. Details of the Survey

The 2013 Survey of Consumers' Use of Payment Methods was conducted by Colmar Brunton on behalf of the Bank during November 2013. The survey consisted of three parts: a pre-diary questionnaire capturing demographic characteristics; a seven-day diary; and an end-of-survey questionnaire asking about payment preferences and attitudes. For the first time, the survey was answered by most participants online (using a computer, tablet or smartphone). Although internet penetration in Australia is high, it is not universal. Thus, a group of respondents without access to the internet was recruited to complete the survey on paper to reduce any potential for bias arising from a purely online delivery.

The response rate to the survey was good, producing a final sample of 1 167 respondents (1 069 online and 98 who completed the paper-based survey) and around 15 500 payments worth over \$1.1 million. To ensure the results were representative, recruitment targets for age, household income, credit card ownership and regional groupings were set in line with Australian population statistics. To account for any deviation from these targets in the final sample, an individual weighting factor was applied at the respondent level to the final sample. The survey was conducted when seasonal factors were expected to be neutral.

In the diary, individuals were asked to record every payment (except automatic direct debits) made within the seven-day period.² Business payments (e.g. as part of an individual's employment) were not included, although transfers (i.e. where the payment did not support an underlying purchase) were included for the first time. For every payment and transfer, respondents reported the day and date, the

² Transaction-level information about direct debits was collected in the end-of-survey questionnaire to allow respondents to refer to financial statements.

payment amount, the payment method used and the merchant category. They were also required to select the payment channel from five options: in person, internet (desktop, laptop or tablet), smartphone, phone (voice call) or mail. For the purpose of this study, in-person payments are treated as point-of-sale payments, while payments by any other channel are considered remote payments.³

For card payments, respondents recorded the type of card used: debit, which includes payments through the eftpos network⁴ and through the MasterCard and Visa debit networks; MasterCard or Visa credit card; or American Express or Diners Club cards. Respondents also recorded the value of any surcharge paid (either as a percentage or a dollar amount) and, for point-of-sale payments, whether the payment used contactless payment technology.

Participants were also asked to record cash ‘top-ups’, that is, additions to the cash they hold on their person, for instance in a wallet or purse. Top-ups include withdrawals from the banking system as well as transfers from others or from cash stored at home. The participant recorded the amount, the source of the cash (ATM, cash-out at the point of sale, over the counter at a branch, or other) and the level of cash they held after the top-up.

3. Changing Payment Behaviour

In 2013, respondents reported making an average of 13.0 payments during the week of the study, with a total value of expenditure of around \$900 (Table 1). These results are broadly consistent with the results of the previous two surveys; although the number of payments per week and the total value of expenditure recorded in diaries has fluctuated, these movements should not be interpreted too literally because changes to the sample, delivery method and survey design have led to some changes in coverage over time. The median and mean payment values increased slightly across surveys as would be expected (Table 1) and the variety of

3 Although smartphones could be used to make point-of-sale payments at the time of the survey, the desire to ensure that the diary was easy to use and consistent across waves meant that remote and point-of-sale payments using a smartphone were not distinguished; all smartphone payments are treated as remote in this study. The small number of smartphone payments recorded in the survey suggests that this was a negligible source of error in 2013.

4 eftpos is the domestic debit network in Australia managed by eftpos Payments Australia Limited (ePAL) and owned by 12 financial institutions and 2 retailers.

purchases across merchant categories is consistent across years. Further, where a comparison is possible with statistics reported by financial institutions, the number and value of payments recorded in the survey accord reasonably well (see Appendix B).

Table 1: Consumer Payments Recorded
Per respondent per week

	2007 ^(a)	2010	2013
Number of payments	12.7	15.6	13.0
Total value of expenditure per person per week (\$) ^(b)	631	915	879
Mean payment value (\$) ^(b)	50	59	67
Median payment value (\$)	20	20	23

Notes: Figures may differ slightly from published results of the 2007 and 2010 surveys as this comparison does not adjust for differences in coverage

(a) Number of payments and values of expenditure over the two-week diary divided by two

(b) Payments of \$9 999 or more are excluded for comparability across waves because payment value was truncated at \$9 999 in the 2007 survey; further, the small number of such payments that occur during any week generates significant volatility in the average over time

Sources: Colmar Brunton; Roy Morgan Research

Table 1 includes all consumer payments recorded in the diary. The 2013 survey also collected information about transfers of funds to family and friends and between the respondent's own financial accounts (for example, to repay debt or manage finances). While transfers are far less frequent than consumer payments (respondents reported on average 0.5 transfers per person per week), transfers are on average noticeably larger than consumer payments, so the average total value of transfers equates to around 24 per cent of the value of consumer payments (Table 2). Transfers are of interest because they account for a high proportion of mobile payments and are a focus of innovation in the payments industry in Australia. Unless specified, the tables and figures in the remainder of the paper include only consumer payments as these can be compared across the three surveys, with transfers discussed separately where relevant.

The majority of payments were made using cash or a card, and the movements in the number of these two payment methods largely drive the movement in the total number of payments between surveys (Table 3). However, a more useful measure of the use of each payment instrument is the share of total payments made using that instrument. This measure abstracts from the movement in total payments, and

allows a more reliable comparison of the use of different payment methods over time.

Table 2: Transfers Recorded in Diaries – 2013

	Per cent of total consumer payments		Median value (\$)
	Number	Value	
Total	4	24	100
To family and friends	2	6	50
Between one's own accounts ^(a)	2	18	200

Note: (a) Includes repayment of loans (e.g. credit card balances and home loans)

Source: Colmar Brunton

Table 3: Number of Payments Recorded in Diaries

Per respondent per week

Payment instrument	Number of payments		
	2007 ^(a)	2010	2013
Total ^(b)	12.7	15.6	13.0
Cash	8.6	9.5	6.1
Cards	3.3	4.8	5.5
<i>Debit cards</i>	1.8	3.4	3.1
<i>Credit and charge cards</i>	1.4	1.4	2.4
BPAY	0.3	0.5	0.4
Internet or phone banking	na	0.4	0.2
PayPal	na	0.1	0.3
Cheque	0.1	0.1	0.1
Other	0.2	0.1	0.3
Memo item: direct debit	1.1	0.4	0.4

Notes: Figures may differ slightly from published results of the 2007 and 2010 surveys as this comparison does not adjust for differences in coverage

(a) Number of payments recorded over the two-week survey period divided by two

(b) Numbers do not add because for some entries respondents did not record the payment method used; excludes direct debit payments

Sources: Colmar Brunton; Roy Morgan Research

Focusing on shares, the 2013 data show that the trends evident in the use of payments between 2007 and 2010 continued into 2013 (Table 4). A further decline in the use of paper-based payment methods was reported. In particular, the share of payments made using cash fell to 47 per cent. Nonetheless, cash remained the most

used method of payment, accounting for around half of all payments by number. Cheque use also continued to decline, from an already low base. In contrast, the use of electronic payment methods increased. The share of payments made by card continued to rise and an increase in the use of PayPal was recorded. The use of other electronic payment methods was largely unchanged. Similar patterns and trends are observed when comparing the share of expenditure using each payment method.

Table 4: Use of Payment Methods over Time

Payment method	Per cent of all payments					
	Number of payments			Value of payments ^(a)		
	2007	2010	2013	2007	2010	2013
Cash	69	62	47	38	29	18
Cards	26	31	43	43	43	53
<i>Debit cards</i>	15	22	24	21	27	22
<i>Credit and charge cards</i>	11	9	19	23	16	31
BPAY	2	3	3	10	10	11
Internet or phone banking ^(b)	na	2	2	na	12	10
PayPal ^(b)	na	1	3	na	1	2
Cheque	1	1	0 ^(c)	6	3	2
Other	1	1	2	3	3	5

Notes: Excludes entries with missing payment method information

(a) Payments of \$9 999 or more are excluded for comparability across waves because payment value was truncated at \$9 999 in the 2007 survey; further, the small number of such payments that occur during any week generates significant volatility in shares over time

(b) Not collected in 2007

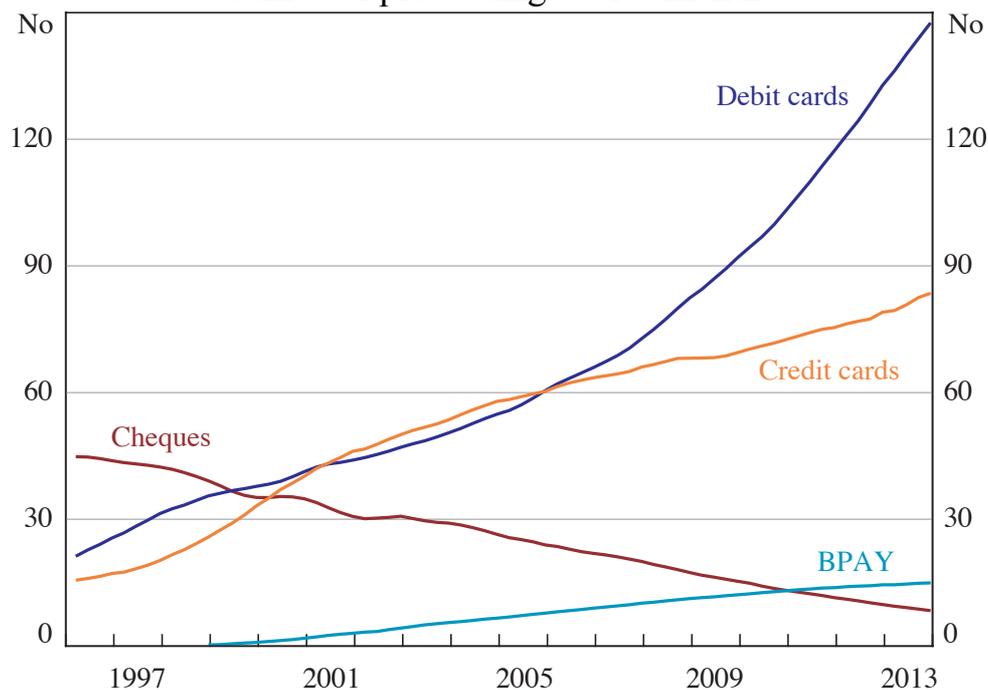
(c) Rounds to zero

Sources: Colmar Brunton; Roy Morgan Research

The main trends evident in the consumer survey are consistent with the Retail Payments Statistics (RPS) data collected from financial institutions by the Reserve Bank. These aggregate data on non-cash payments indicate that card payments have grown strongly, while cheque use has declined (Figure 1). Further, data on cash withdrawals suggest that the share of payments made by cash has declined; growth in the value of cash withdrawals has been consistently below the growth rate of nominal consumption throughout the period over which the three surveys have been conducted. At a more detailed level, however, certain results of the survey appear at odds with the RPS. For example, the survey suggests growth in

the number of credit card payments relative to debit card payments, which is contrary to the aggregate data in the RPS. Feedback from participants in the study suggests that some respondents may have confused debit cards from MasterCard and Visa with these schemes' credit cards, particularly when making a debit card payment over the internet or by pressing the 'credit' button on merchant terminals.⁵ A comparison with the RPS and other data also suggests that the survey may understate growth in the use of BPAY and in ATM withdrawals. Overall, however, there is a high level of consistency between the survey data and other available statistics, particularly in respect of the key themes, indicating that the survey provides a useful tool to explore changes in the pattern of payments in Australia. Appendix B contains a more detailed comparison of the survey results with other statistical sources.

Figure 1: Non-cash Payments per Capita
Sum over proceeding twelve months



Sources: ABS; APCA; BPAY; RBA

⁵ This will not affect the accuracy of the data for total cards, but suggests a slightly wider degree of error around the data when split between debit and credit cards.

Another ongoing trend is that growth in online shopping has led to an increase in the share of purchases being made remotely (i.e. not at the physical point of sale), from 6 per cent in 2007 to 14 per cent in 2013 (Table 5). Internet payments (which include smartphone payments) grew as a share of all remote payments made in the survey from just over half in 2007 to around 90 per cent in 2013, with a corresponding fall in postal and telephone payments. Growth in online retail has also been stronger for certain merchants; significant proportions of payments for holidays and travel, electrical and furniture, leisure, sport and entertainment, as well as ‘other’ were made remotely in 2013.⁶ These trends would also have had some impact on the use of payment methods.

Table 5: Payments by Channel

	Share of purchases (Per cent)			Median value (\$)
	2007	2010	2013	2013
Remote purchases as a per cent of total purchases:				
Number	6	9	14	
Value	21	29	45	
Per cent of number of remote purchases:				
By channel				
Internet	55	79	90	74
<i>of which: smartphone^(a)</i>	<i>na</i>	<i>na</i>	5	80
Telephone (voice call)	31	17	8	150
Mail (via post)	14	4	2	70

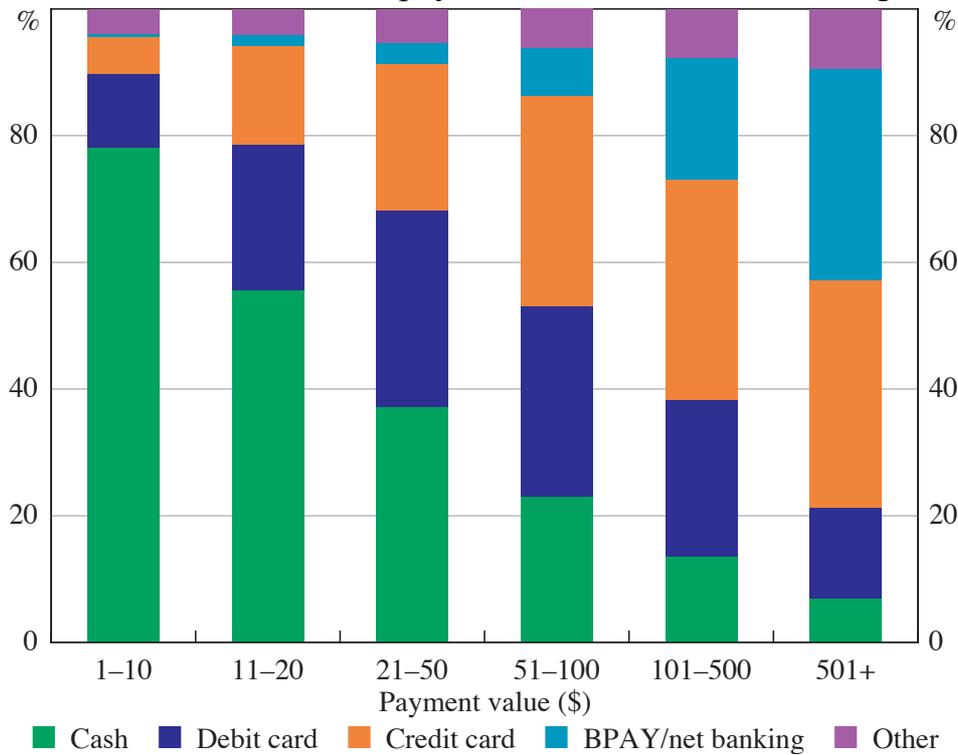
Note: (a) Smartphone payments were recorded as a separate category only in 2013

Sources: Colmar Brunton; Roy Morgan Research

In the 2013 diary, lower-value payments were typically made with cash, while card payments became more common for larger payment values and other electronic payments were typically used for only for higher-value payments (Figure 2). Over time, electronic payments have increasingly been used for lower-value payments.

⁶ This accords with ABS data that suggest that at least half of all internet users had purchased items such as travel services, tickets, music and books or clothing online in 2012/13, and that only 19 per cent had purchased supermarket goods (ABS 2014).

Figure 2: Payment Method Used by Payment Value – 2013
Per cent of number of payments within each value range



Source: Colmar Brunton

Certain payment methods were also used more often at specific merchant categories, for example, cash was more heavily used for payments to food retailers compared with holiday expenditure or bills, which were typically paid using cards or other electronic methods (Table 6). Over time, this pattern has also changed, in part driven by growth in online retail.

Table 6: Payment Method by Merchant Category – 2013

	Per cent of total no of consumer payments	Per cent of number of payments at each merchant made using: ^(a)							
		Cash	Debit card	Credit card	BPAY	Internet or phone banking	PayPal	Personal cheques	Other
Food retailers									
Pub/bar	2	76	12	12	0	0	0	0	0
Small food store	7	73	16	10	0	0	0	0	0
Take-away/fast food	10	73	17	9	0	0	0	0	0
Café/restaurant	9	70	16	13	0	0	0	0	0
Petrol/transport									
Petrol/service station	6	31	39	27	0	0	0	0	2
Transport	4	58	18	16	1	1	0	0	6
Services	3	50	21	17	2	5	1	2	1
Holiday/leisure									
Holiday travel	1	4	22	52	4	10	4	1	3
Leisure/sports/entertainment	4	49	16	20	1	3	7	1	3
Goods retailers									
Other retailers	15	41	26	21	0	0	8	0	3
Electrical/furniture	1	16	27	34	1	1	19	0	2
Supermarket	21	38	36	23	0	0	0	0	2
Bills/medical									
Household bills	8	12	14	19	37	12	1	2	3
Medical/health	3	31	27	35	2	1	0	1	2
Other	6	46	14	14	5	4	12	1	4

Note: (a) Figures may not sum to 100 due to rounding; in some cases observations have been rounded to zero

Source: Colmar Brunton

4. Cash

Cash remained the most frequently used instrument in 2013. Cash use was more common for lower-value payments and payments at small food retailers and pubs and bars, where the speed traditionally offered by cash payments may have influenced its use. Cash was used extensively at the point of sale, but was not used to make remote payments (Figure 3). Cash use tended to increase with the age of the respondent, reflecting that younger individuals appear to be more comfortable relying on newer technologies for their payment needs. Second, cash use was lower for the highest household income quartile, although research suggests this may be due to the effect of income on the consumption mix and access to financial services (such as credit cards).^{7,8}

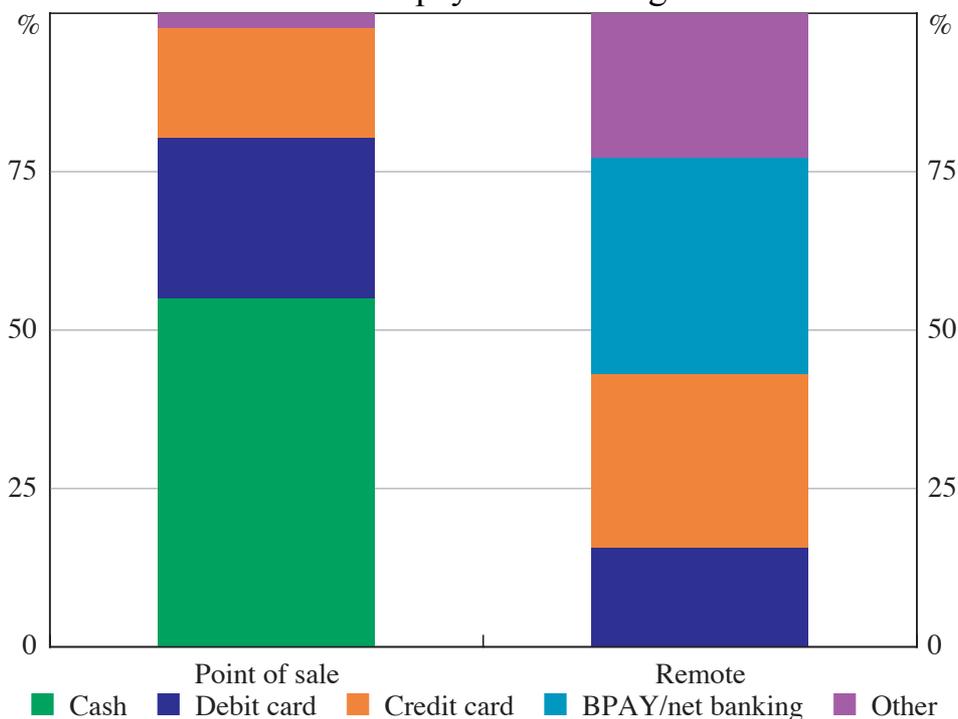
The use of cash has decreased consistently since 2007; as a share of all payments, cash fell from 69 per cent in 2007 to 47 per cent in 2013. The increased use of remote payments has contributed to this fall. Holding the share of payments made using cash at the point of sale constant at the 2007 level (73 per cent), the increase in remote payments has contributed around one-third of the reduction in cash use overall. Two-thirds of the fall can be attributed to the reduction in cash use at the point of sale, which has fallen to 55 per cent in 2013. The corollary is that card use at the point of sale has risen; developments in the acceptance and use of cards are discussed in Section 5.

7 To control for age effects and better identify the effect of income on the use of payment methods, references to household income quartiles refer to age-matched income quartiles: that is, each age group was divided into household income quartiles and then respondents in each income quartile were grouped together.

8 Meredith, Kenney and Hatzvi (forthcoming) find that income is generally not a statistically significant determinant of when cash is used once these other factors are controlled for in a regression framework.

Figure 3: Payment Method Use for Each Channel – 2013

Per cent of number of payments through each channel



Source: Colmar Brunton

The decline in cash has occurred across most types of purchases and respondents. Cash use has fallen for all payment values and across most merchant categories (Table 7). An exception to the trend is payment for services (which include a diverse group of merchants, for example music teachers, plumbers and accountants), where cash use has been fairly steady at above 50 per cent of the number of payments in all three surveys.

Consistent with the widespread decline in cash use across merchant categories and payment values, cash use declined universally across all age and household income groups (Table 8). Within this broad trend, however, the 2013 data suggest that the movement away from cash was stronger for some groups than others. Across age groups, the decline in cash use was significantly smaller for respondents aged 65 years and over, a group that has traditionally used cash much more than younger respondents. Cash use by those living in capital cities also declined by more than those living in regional areas.

Table 7: Use of Cash and Card Payments for Different Types of Purchases
Per cent of number of payments within each category

	2007		2010		2013	
	Cash	Card	Cash	Card	Cash	Card
Payment value (\$)						
1–10	95	4	91	7	78	18
11–20	77	21	71	26	56	39
21–50	55	40	50	43	37	54
51–100	36	54	29	59	23	63
101–500	30	51	20	53	14	59
501+	18	49	14	40	7	51
Broad merchant categories						
Food retailers	90	10	85	14	72	27
Services	51	27	56	33	50	38
Other	68	17	61	18	46	28
Holiday/leisure	78	19	67	25	43	40
Petrol/transport	60	36	53	43	41	54
Goods retailers	62	35	56	40	40	48
Supermarket	60	39	54	46	38	59
Bills/medical	44	33	25	32	18	42

Note: Shares for each group do not add to 100 as the shares of BPAY, phone or internet banking, personal cheque, PayPal and 'other' payments are not shown

Sources: Colmar Brunton; Roy Morgan Research

Participants were asked to record transfers of money to family or friends for the first time in the 2013 survey. By number, around half of all transfers to others recorded in the survey were made using cash and, as with consumer payments, this was the most frequently used payment method for transfers of less than \$50. Around half of transfers to family and friends were made by respondents with children, suggesting that many were likely to be payments to children. Although the sample collected is small, the data also indicate that those aged under 30 years were considerably less likely to use cash to make a transfer to others, preferring instead to use internet banking (often via smartphones).

Table 8: Use of Cash and Card Payments across Demographic Groups
Per cent of number of payments by respondents in each group

	2007		2010		2013	
	Cash	Card	Cash	Card	Cash	Card
Age (years)						
18–29	67	29	58	33	44	47
30–39	61	33	54	37	40	47
40–49	68	27	57	35	47	43
50–64	72	24	66	28	48	41
65+	78	18	73	21	60	33
Household income						
1 st quartile	72	22	67	24	49	39
2 nd quartile	69	26	59	33	50	39
3 rd quartile	70	25	59	34	49	41
4 th quartile (highest)	63	32	59	34	43	49
Location						
Capital	69	27	61	32	46	44
Regional	70	25	62	30	51	39

Note: Shares for each group do not add to 100 as the shares of BPAY, phone or internet banking, personal cheque, PayPal and ‘other’ payments are not shown

Sources: Colmar Brunton; Roy Morgan Research

4.1 Cash Holdings

The 2010 and 2013 surveys asked respondents to record not only their cash payments, but also the amount of cash they held on their person (in a wallet or purse) at the start of the survey and the value of each top-up.

Despite the decline in the use of cash, the survey showed no decline in cash holdings. While the total value of cash payments per week fell to \$183 per person (from around \$259 in 2010), the average level of cash in respondents’ wallets increased slightly to \$112 from \$93 in 2010 (Table 9). The surveyed increase in cash holdings is consistent with economy-wide data showing the value of banknotes in circulation continuing to grow at its trend pace.⁹ This highlights the

⁹ For further details of cash holdings in 2013 and cash as a store of value see Meredith *et al* (forthcoming).

fact that cash is not just used as a means of payment, but serves also as a store of value and may be held for precautionary reasons.

Respondents that used cash more often – such as older individuals – also reported holding higher amounts of cash. In 2013, more than one-third of respondents aged under 30 years of age reported holding less than \$20 in their wallet at the start of the survey in comparison to only 11 per cent of those aged 65 and over; broadly similar shares were observed in 2010.

Table 9: Cash Holdings for Transactional Purposes

	2007	2010	2013
Cash held in wallet			
Mean (\$)	na	93	112
Median (\$)	na	50	55
Number of cash top-ups per person per week			
Via ATM	0.9	0.9	0.7
Via cash-out at the point of sale ^(a)	0.3	0.4	0.4
Via bank branch ^(b)	0.1	0.1	0.1
Via other source	0.1	0.2	0.3
Mean value of top-ups			
Via ATM	180	217	125
Via cash-out at the point of sale ^(a)	182	197	138
Via bank branch ^(b)	83	78	71
Via other source	386	1 395	297
Via other source	156	85	96

Notes: (a) Available with or without a purchase at participating merchants

(b) High margin of error due to small number of payments recorded

Sources: Colmar Brunton; Roy Morgan Research

In 2013, respondents reported a similar number of cash top-ups to 2010 and 2007, though they were of lower average value (\$125). The decline in the average value is partly explained by a reduction in the use of ATMs as a means to top-up cash and an increase in the use of cash-out at the point of sale, which typically involves

a lower top-up value.¹⁰ This switch toward cash-out at the point of sale is likely to have been influenced by the unlimited number of cash-out transactions that can take place for most account holders, the convenience of obtaining cash while undertaking a purchase rather taking time to locate an ATM and the potential to pay a charge for using a ‘foreign’ ATM (see Section 8.2).

The survey suggests that around 15 per cent of cash by value was obtained from a source outside the cash distribution network of ATMs, cash-out at the point of sale and bank branches in 2013. The median value of these transfers was around the same as for cash-out at the point of sale. All age groups received cash through these alternative sources, such as cash wage payments or transfers from family and friends.

5. Cards

Between 2010 and 2013, the share of the number of payments made by card increased by 12 percentage points and the share of the value of expenditure made by card increased by 10 percentage points (Table 4). The largest contributing factor was the increase in card use at the point of sale, which rose by 6 percentage points between 2007 and 2010 and 12 percentage points between 2010 and 2013 to around 40 per cent. The shift to remote payments and the reported rise in the use of cards for remote payments also contributed, but to a much lesser degree.

Growth in the use of card payments at the point of sale was likely to have been driven by a range of factors. First, the number of card terminals over the six year period increased by 35 per cent, suggesting that the number of merchants offering the option to pay with a card increased.¹¹ In addition, new card technologies appear to have influenced consumers to make greater use of cards. Contactless card payment technology has been widely adopted in Australia since 2010 and appears

¹⁰ RPS data on the number and value of ATM withdrawals suggest a decline in their frequency and a small decrease in their value. As such that it appears the consumer survey may overestimate the decline in the average value of ATM withdrawals. Nevertheless, the ranking of top-ups via cash-out at the point of sale, ATMs and bank branches by size is consistent with the RPS.

¹¹ The pace of growth was similar between 2007 and 2010 as between 2010 and 2013. See Australian Payments Clearing Association transaction statistics at <http://www.apca.com.au/payment-statistics/transaction-statistics/atm-and-efpos>.

to have encouraged greater use of cards at the point of sale (see Section 5.1). Further, a range of other technological innovations is likely to have increased the use of cards, including the introduction of PIN authentication (which decreases the tender time of a card payment relative to using a signature) and the introduction of card-only terminals (often self-checkout machines) in supermarkets. In addition, the majority of transaction accounts on offer by financial institutions in Australia now provide an unlimited number of fee-free debit card payments.

The growth in card use has been reasonably widespread across payment types. However, growth between 2010 and 2013 was strongest for lower-value payments where cash had been (and remains) the most widely used method (Table 7). As a result, the median value of card payments at the point of sale has fallen over the six years to 2013 from \$40 to \$35, although it remains well above the median value of cash payments of \$12.

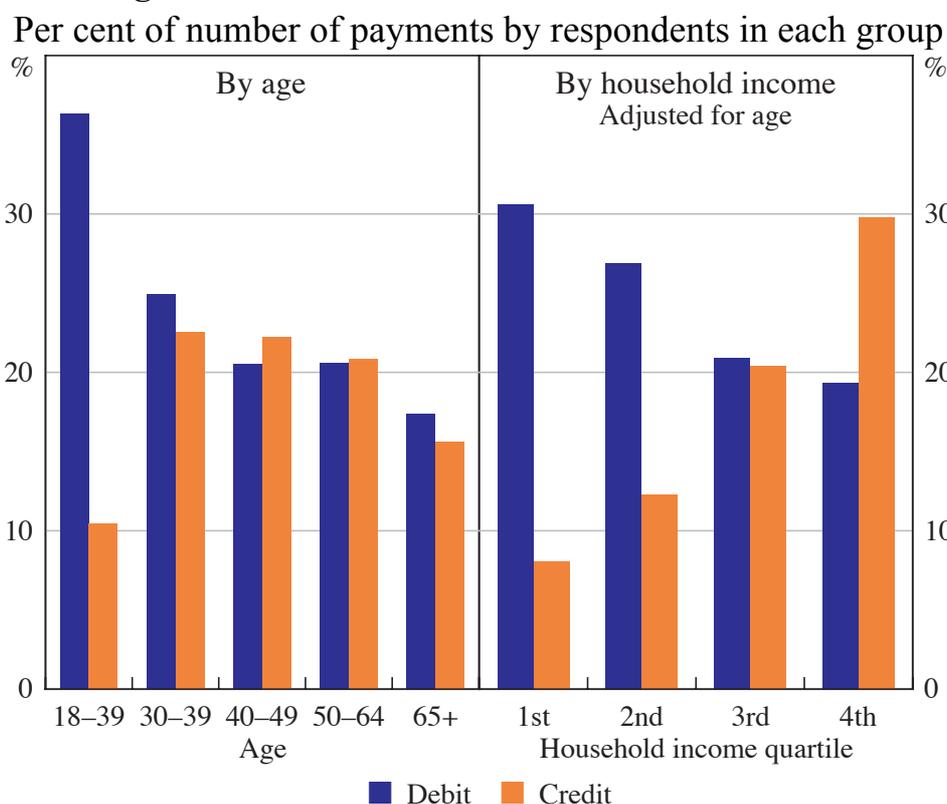
While the use of cards increased across all merchant categories, growth has been slightly stronger for supermarkets, food retailers, holiday and leisure (Table 7). The increase in the use of cards for holiday and leisure is most likely to have been linked to the shift towards remote payments. In contrast, increased card use at supermarkets and small food retailers (where 99 per cent of payments are still made at the point of sale) is likely to have been supported by the introduction of contactless card payments technology and the increase in the number of card terminals.

The switch from cash to cards resulted in cards being the most frequently used payment method for respondents aged under 40 years and for respondents in the highest household income quartile (Table 8). Cash remained the most frequently used method for other age and income groups and in regional areas, but was used for a similar number of payments as cards in capital cities.

The results of the survey also give some interesting insights into debit and credit card use for different demographic groups. Respondents aged under 30 years made around 80 per cent of their card payments using a debit card in 2013, whereas this ratio was close to 50 per cent for all other age groups (Figure 4). Similarly, households in the first and second age-adjusted household income quartiles made considerably more payments using debit cards than credit cards. A combination of limited access to credit cards and the more widespread issuance of MasterCard and

Visa debit cards (which can be used for remote payments) over recent years is likely to have contributed to the greater debit card use by lower-income respondents.

Figure 4: Use of Debit and Credit Cards – 2013



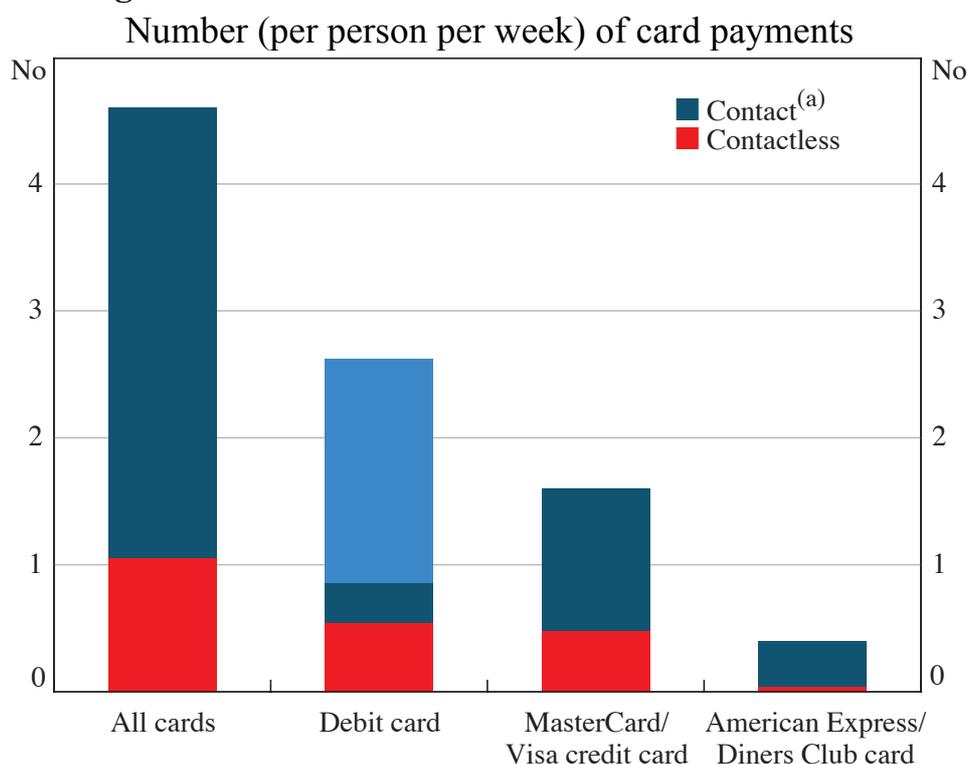
Source: Colmar Brunton

5.1 Contactless Card Use at the Point of Sale

The use of contactless card payment functionality – the ability to tap or wave a card in front of a card terminal rather than inserting or swiping the card in the card terminal – has become widespread since the 2010 survey. At that time, fewer than 8 per cent of people indicated that they had a contactless card and only 40 per cent of those had made a contactless payment in the month prior to the study. In 2013, contactless card ownership was much higher – two-thirds of people reported that they had a card that could make contactless payments – and contactless terminals

were much more widely available.¹² In the 2013 survey, three-quarters of contactless card holders reported they had made a contactless payment at some time in the past, and almost one-half recorded a contactless payment during the week of the study.

Figure 5: Card Presentation at Point of Sale – 2013



Note: (a) Lighter shade indicates payments made using the eftpos network, which did not offer contactless payments at the time of the survey

Source: Colmar Brunton

Overall, 22 per cent of point-of-sale card payments were conducted using contactless technology in the 2013 study (Figure 5).¹³ Contactless card payments made up approximately 26 per cent of credit card payments and 20 per cent of

¹² In particular, the two largest supermarket chains in Australia – Coles and Woolworths – engaged in an extensive rollout of contactless terminals across their respective stores (Woolworths 2011; Coles 2012).

¹³ The use of contactless cards in the survey is consistent with other data reported by financial institutions and large retailers on the use of contactless cards. For example, the Commonwealth Bank (2014) submission to the Financial System Inquiry noted that the share of point-of-sale card payments by Commonwealth Bank cardholders that were contactless payments increased from 7 per cent to 45 per cent in the period from August 2012 to February 2014.

debit card payments at the point of sale. The lower ratio for debit cards partly reflects the fact that the eftpos network had not yet introduced contactless cards at the time of the survey. A small number of contactless American Express payments were reported; this functionality became operational only shortly before the survey was conducted.

The rapid adoption of contactless technology is consistent with just over half of all respondents (in both 2010 and 2013) listing speed as an important factor in choosing which payment method to use. Those who reported that speed was an important factor were more likely to report holding and using a contactless card during the week of the survey. Further, contactless payments were most frequent at merchant types where the speed of the payment may be more important for the merchant, cardholder or both – e.g. at supermarkets, petrol stations and take-away food stores, where queuing at the checkout is common.

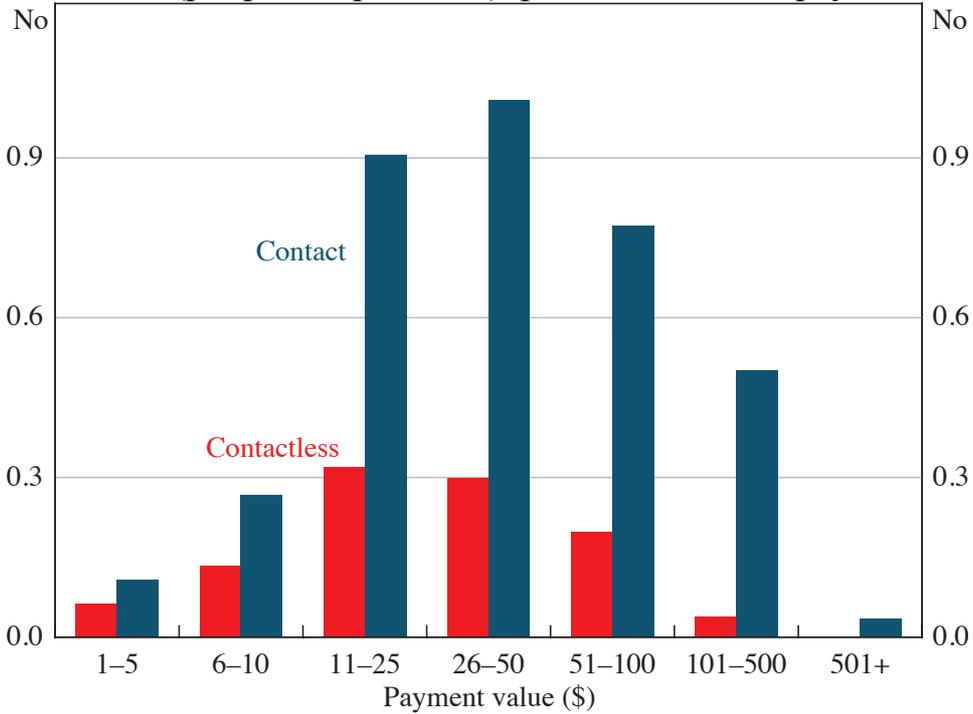
The value of the payment also appears to influence the choice of whether or not to make a contactless payment. Contactless card payments were used for a wide range of payment values, including for values above \$100 (Figure 6), which require validation by PIN or signature. The share of card payments that were made using contactless methods was highest below \$10 at 34 per cent of payments, falling to around 20 per cent of payments between \$50 and \$100. The median value of a contactless payment (\$26) was around two-thirds that of a contact payment (\$37).

As expected, contactless technology has been more readily adopted by some respondents than others. The probability of having made a contactless payment in the diary decreased with age and increased with household income, was much higher for those living in capital cities and was slightly higher for males. The age effect was the strongest: while almost half of all 18–29 year old respondents made a contactless payment during the week, only one-fifth of respondents aged over 65 years did so (Figure 7).

The question arises as to whether the growth of contactless card payments has predominantly displaced other (contact) card payments or displaced cash and thereby contributed to a rise in the overall share of card payments at the point of sale.

Figure 6: Contactless Use by Payment Value – 2013

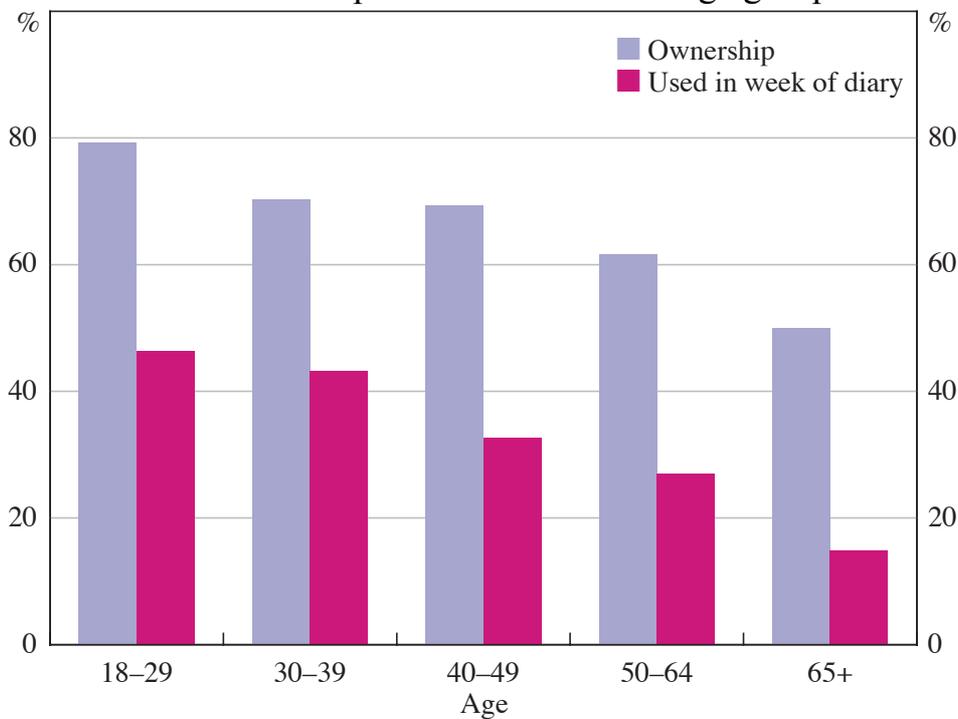
Number (per person per week), point-of-sale card payments



Source: Colmar Brunton

Figure 7: Ownership and Use of Contactless Cards by Age – 2013

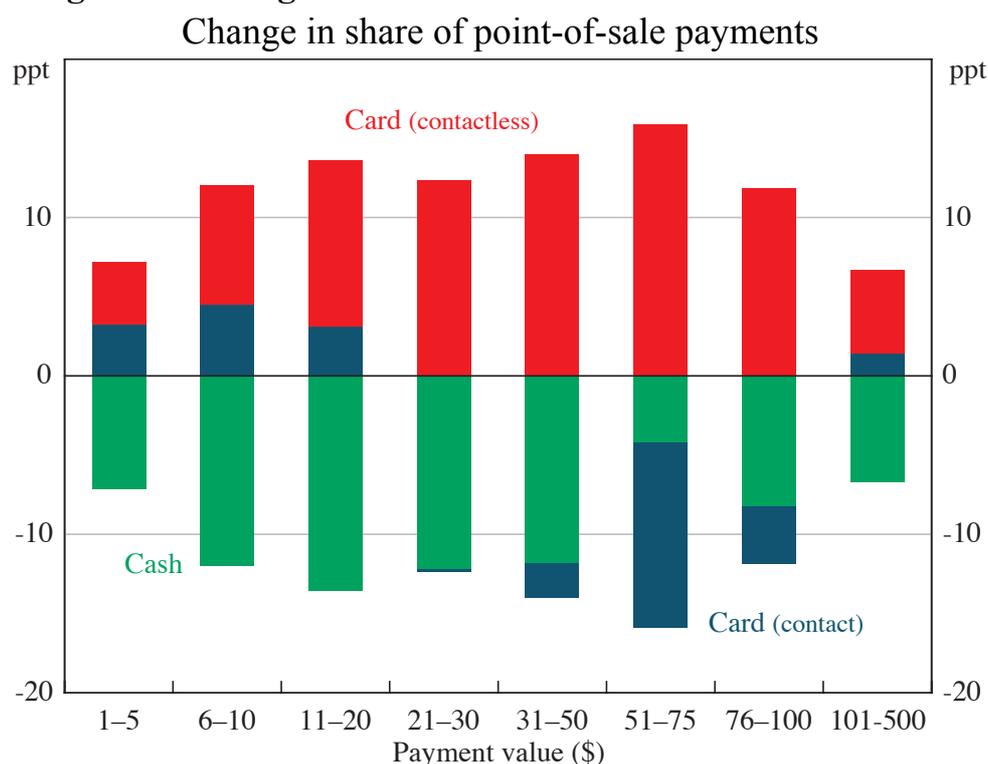
Per cent of respondents within each age group



Source: Colmar Brunton

The data provide some evidence for the displacement of cash by contactless payments in that there was a more sizeable pick-up in the use of cards for point-of-sale payments between 2010 and 2013 than there was from 2007 to 2010. The share of card payments at the point of sale increased by around 12 percentage points between 2010 and 2013, which covers the period when contactless cards became widespread, compared to an increase of 6 percentage points between 2007 and 2010. Further indications of this effect are apparent in survey data showing the change in the mix of card and cash payments by payment value. These show a decline in the use of cash across payments of all values was offset by a rise in the use of contactless card payments (Figure 8).¹⁴ The growth in contactless payments was also accompanied by a decline in the frequency of contact transactions for payments between \$25 and \$100, suggesting that contactless payments displaced both cash and contact-based card payments in this range.

Figure 8: Change in Use of Cash and Cards – 2010 to 2013



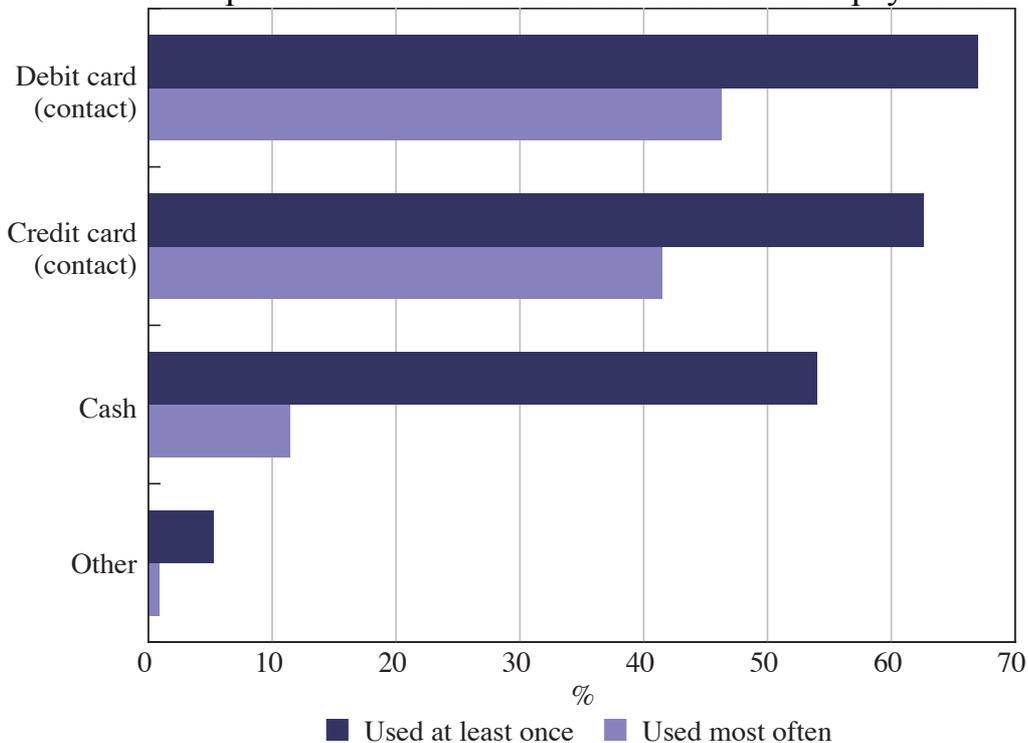
Sources: Colmar Brunton; Roy Morgan Research

¹⁴ The changes in shares in Figure 8 are based on the assumption that no contactless payments were made in 2010. The use of contactless card payments at the time was likely to be minimal, with fewer than 4 per cent of respondents indicating that they had made a contactless payment in the month of the 2010 survey.

Respondents who stated at the end of the survey that they had made contactless payments in the past were asked which alternative method they would have used prior to contactless card payments becoming available. The responses indicate that contactless card payments have replaced both cash and contact-based card payments. Around half of the respondents indicated that for at least some of the purchases they had made using a contactless card payment they would previously have used cash (Figure 9). However, only a relatively small number indicated that this was the main substitution effect. For most respondents, contactless card payments were predominantly a substitute for existing methods of card payment at the point of sale.

Figure 9: What Did Respondents Use Prior to Contactless Payments? – 2013

Per cent of respondents who have used contactless card payments



Source: Colmar Brunton

6. Personal Cheques

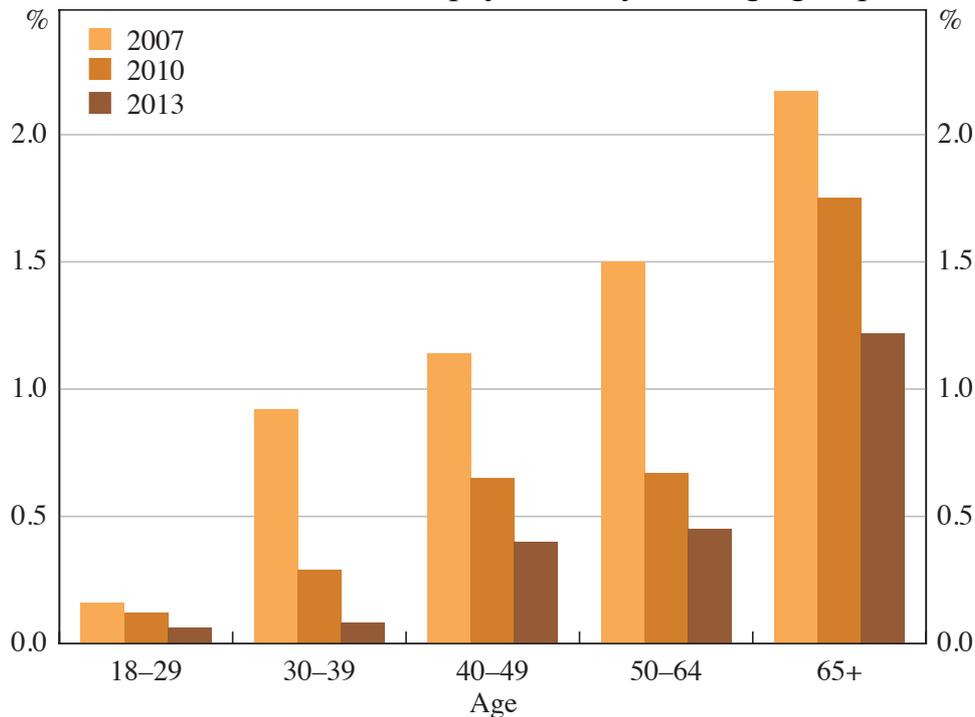
The use of personal cheques for payments has continued to decline to the equivalent of three cheque payments per person per year in 2013, from eight in 2007.¹⁵ Only one in five respondents said they had made a cheque payment in the year prior to the survey, although one in three reported having a cheque book.

Over the three studies, progressively smaller samples of cheque payments were recorded and this has made it difficult to perform a detailed analysis of trends in their use. However, the types of payment being made with cheques have remained similar over the six years. The majority of cheque payments continue to be made for household bills and for services. The remaining cheque payments were recorded as being made at merchants that respondents identified as ‘other retailers’ or ‘other’. Consistent with their use for bill payments, the median value of a cheque payment (\$160) was higher than that of cash or card payments.

The decline in the use of cheques is associated with the increasing proportion of the population that is likely to have never used cheques; around half of the cheques written during the week of the diary were by those aged over 65 years and fewer than 10 per cent by those aged under 40 years. Although cheque use was still relatively common among older respondents – 40 per cent of respondents aged over 65 years wrote a cheque during the year prior to the survey – cheque use recorded in the diary by this age group (as with all age groups) has fallen over time (Figure 10).

¹⁵ Personal cheques refer to cheques written using a personal cheque book and drawing on a chequing account. Where households have used bank (financial institution) cheques – which are often used for larger purchases such as real estate settlements and car purchases – these are included in the ‘other’ payments category of the survey. A measure of the use of cheques that includes use by businesses and governments also shows a significant decline on a per capita basis (RBA 2013, p 14).

Figure 10: Cheque Use by Age
Per cent of number of payments by each age group



Sources: Colmar Brunton; Roy Morgan Research

The decline in the use of cheques is expected to continue.¹⁶ In light of this, the payments industry in Australia has embarked on a number of initiatives to manage the decline to ensure that the payment needs of individuals and businesses continue to be met at the same time as reducing costs to financial institutions. These include: the electronic clearing of cheques in lieu of physical exchange; developing electronic systems for industries that are more reliant on cheques (e.g. property settlements and superannuation payments); addressing laws that limit the allowable forms of payment to cash and cheques; and educating consumers about the available alternatives to cheques.¹⁷

¹⁶ Declining cheque use is common across the member economies to the Committee on Payment and Settlement Systems (RBA 2013, p 17).

¹⁷ For further details see APCA (2013).

7. Other Remote Payment Methods

A range of electronic payment methods are used to make remote payments in Australia. In addition to credit and debit card payments, the survey separately identified payments made through:

- PayPal – an electronic wallet and stored-value system
- BPAY – which allows consumers to pay bills using funds from their bank or credit card account by providing a BPAY biller code and customer reference number
- direct debit – where an individual gives prior authorisation to a merchant for payments to be automatically deducted from their bank account
- internet and phone banking – where an individual instructs their bank to transfer funds out of his/her account into another account (commonly referred to as ‘pay anyone’ in online banking).¹⁸

7.1 PayPal

In the 2010 and 2013 surveys, respondents were able to separately identify PayPal payments in their diaries. PayPal allows consumers to make a payment over the internet funded by any of a number of payment methods, including debit and credit cards, direct debit and stored-value funds held in the consumer’s PayPal account. PayPal advertises itself as a trusted third-party that enables consumers to make online payments without the need to provide account details directly to merchants. PayPal is one of several options that can be used by merchants to outsource the payment function on their online retail website.

While growth rates should be viewed with some caution due to the small sample, PayPal was used for around 3 per cent of consumer purchases in 2013, a notable

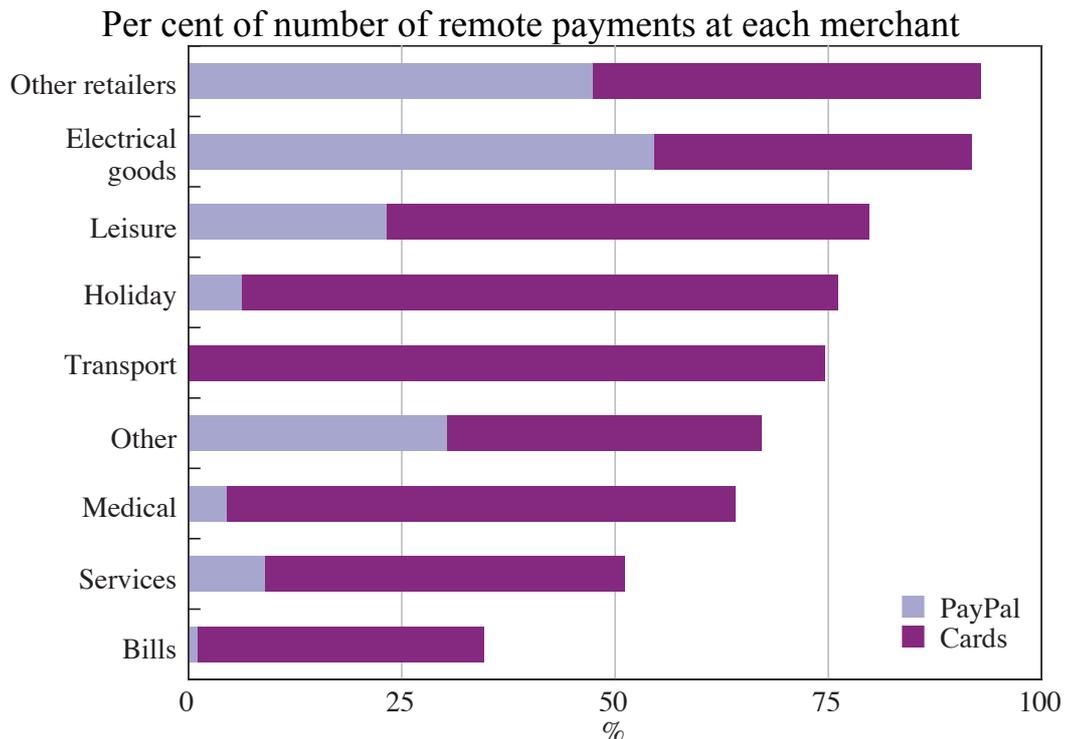
¹⁸ Payments made using less common electronic payment methods were likely to be captured in the survey as ‘other’ payment methods. However, given the small sample of all ‘other’ payments (2 per cent of all payments), it is difficult to draw conclusions about particular trends in their use.

increase from 1 per cent in 2010. One factor driving growth in the use of PayPal is likely to be the growth in online retail in Australia; ABS data show that the proportion of adults making online purchases increased over the two years to 2012/13 by around 10 percentage points (ABS 2011a, 2014). Additionally, the use of PayPal for online shopping has increased as its use has extended beyond eBay (its original source of transaction growth). PayPal payments accounted for around 17 per cent of all remote payments recorded in the diary in 2013, an increase from 8 per cent in 2010.

While point-of-sale payments using PayPal on smartphones were possible at a limited number of merchants in 2013, the survey suggests that these were not commonplace; 96 per cent of PayPal payments were made using a computer or tablet in the survey, while only 4 per cent were made on a smartphone (accounting for 9 per cent of smartphone payments).

As in 2010, PayPal payments tended to be for values between \$10 and \$50, towards the lower end of the distribution of payments conducted remotely by card (which had a median value of \$79). Respondents reported using PayPal at a range of merchants with an online presence, but use tended to be concentrated at electrical and 'other' retailers where PayPal payments made up around half of all remote payments (Figure 11).

PayPal payments were used more frequently by those aged under 40 years, consistent with faster adoption of new technology by younger respondents. However, the share of all PayPal payments recorded in the diary by those aged over 40 years also increased, to 46 per cent in 2013 from 30 per cent in 2010.

Figure 11: Use of Remote Card Payments at Selected Merchants – 2013

Source: Colmar Brunton

7.2 Other Electronic Payment Methods

Unlike PayPal (and debit and credit cards), the other electronic payment methods separately identified in the survey are primarily tailored towards, and used for, bill payments and transfers.¹⁹ BPAY and direct debit together account for around half of all bill payments; internet and phone banking are used to a lesser degree (Table 10). All three are used only very infrequently for payments other than bill payments. Comparing across the three payment methods, the median value of direct debit payments (\$66) tended to be lower than that of BPAY (\$100) or internet or phone banking payments (\$140), which may indicate that consumers' preferences for automatic payments are limited to lower-value payments.

¹⁹ The growth in 'other' electronic payments – BPAY, direct debit and direct credit – suggested by the survey over 2007 to 2013 is somewhat slower than growth rates recorded by the RPS data. While the coverage of the two sources is not directly comparable for electronic payment methods due to the inclusion of some business payments in the RPS data, the survey appears to under-report growth in these payment methods. This may in part reflect that bill payments, which are low frequency, are difficult to collect in a seven-day survey.

Table 10: Use of Other Electronic Payments and Transfers – 2013

Purpose of payment	Share of total number of payments of each purpose ^(a) (%)		
	BPAY	Direct debit	Internet or phone banking
Consumer payments			
Bills	28	23	9
Non-bill purchases	1	1	1
Transfers			
Between one's own accounts	11	32	40
To family and friends	3	0	35

Notes: Numbers differ to those in Table 6 because direct debits are included here but excluded from Table 6
(a) Rows do not add to 100 per cent as cash, cheque, card PayPal and 'other' payments are not shown
Source: Colmar Brunton

The survey suggests that transfers between respondents' own accounts were almost entirely made using BPAY, direct debit or internet/phone banking (Table 10).²⁰ The median value of transfers between own accounts (\$178) was larger than the median payment for bills (\$97) or non-bill purchases (\$67) using these methods, consistent with transfers being used to repay debt (e.g. credit card or mortgage repayments). Internet/phone banking was relatively more important in making transfers to family and friends, accounting for just over one-third of all such transactions. Its use increased with the value of the transfer; around 60 per cent of transfers between family and friends of over \$100 were made using internet/phone banking.

Given the relatively small number of transactions of this nature reported, inferences about the preferences of different demographic groups can only be drawn with caution. Broadly, survey respondents aged 30 years and under made comparatively less use of BPAY and direct debits, which is consistent with these respondents making fewer bill payments. This age group made a larger share of their transfers to others using internet banking, which may reflect that younger

²⁰ BPAY transfers are likely to represent the repayment of credit card debt where the consumer holds a credit card issued by one financial institution and a transactional bank account with a different institution.

respondents have more readily adopted new technologies, such as online and mobile banking applications ('apps') that facilitate person-to-person payments.

7.3 Smartphone Payments

Smartphone payments, that is, payments through an app, webpage or by SMS, are a focus area of innovation in the payments system and a goal of the survey was to obtain some baseline data regarding their use.²¹ The 2013 diary data indicate that smartphone payments were not yet a significant share of consumer payments (less than 1 per cent), or even of remote consumer payments (6 per cent), at the time of the survey. Smartphone payments were used more often for transfers, accounting for around 9 per cent of transfers to family and friends and between one's own accounts.

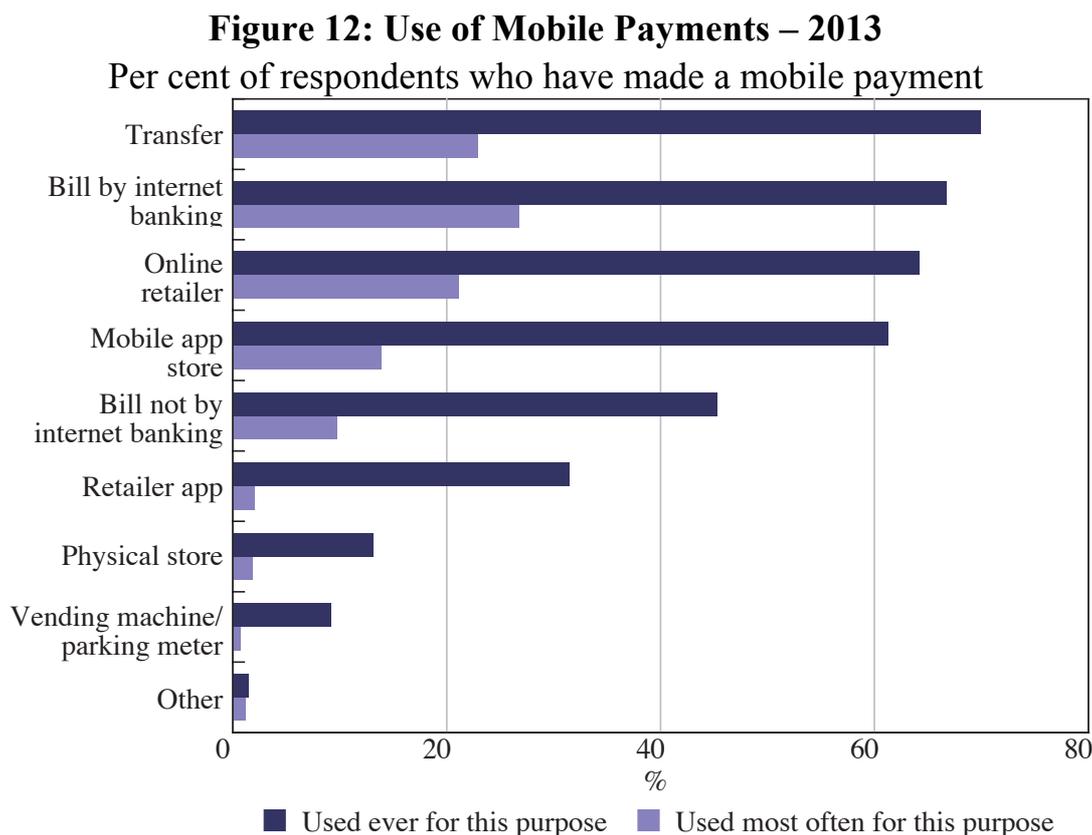
The survey results indicate strong growth in smartphone payments between 2010 and 2013, albeit from a low base. In 2013, 28 per cent of respondents had made a payment or transfer with their mobile phone, up from around 10 per cent in 2010.²² People who had adopted the practice of making smartphone payments or transfers appeared to do so relatively frequently, with around one-third of people who made smartphone payments making at least one during the week of the survey. Around half of smartphone payments were made by respondents aged under 30 years, 40 per cent by respondents in the top household income quartile, and 80 per cent were made by respondents living in capital cities.

There has been a relative shift toward using smartphones to conduct banking tasks, which is likely to be associated with the increased availability of smartphone-specific banking apps. In 2013, the main uses of mobile payments were to make an

21 In the Australian context, smartphone payments are generally traditional card payments or electronic transfers that are initiated over the internet or by SMS using a smartphone. This should be distinguished from the use of 'mobile money' (phone-based stored-value payment systems prominent in developing economies), which is not a significant feature of the Australian payments system where bank account use is almost universal (Flood, West and Wheadon 2013). Further, at the time of the 2013 survey, the technology to make point-of-sale payments through near field communication by a smartphone with a contactless terminal was in the early stages of development and it is highly unlikely that such payments were captured.

22 Mobile penetration is high in Australia; 95 per cent of survey respondents reported owning a mobile phone (75 per cent owned a smartphone) compared with 91 per cent in 2010.

online transfer to another person or pay a bill (Figure 12), whereas the primary reason in 2010 was to make a purchase from a mobile app store.²³ Linked to their use for transfers and bills, smartphone payments recorded in the diary tended to be larger than other consumer payments. Together, internet banking and BPAY accounted for half of all smartphone payments in the diary, with card payments accounting for a further 40 per cent.



Source: Colmar Brunton

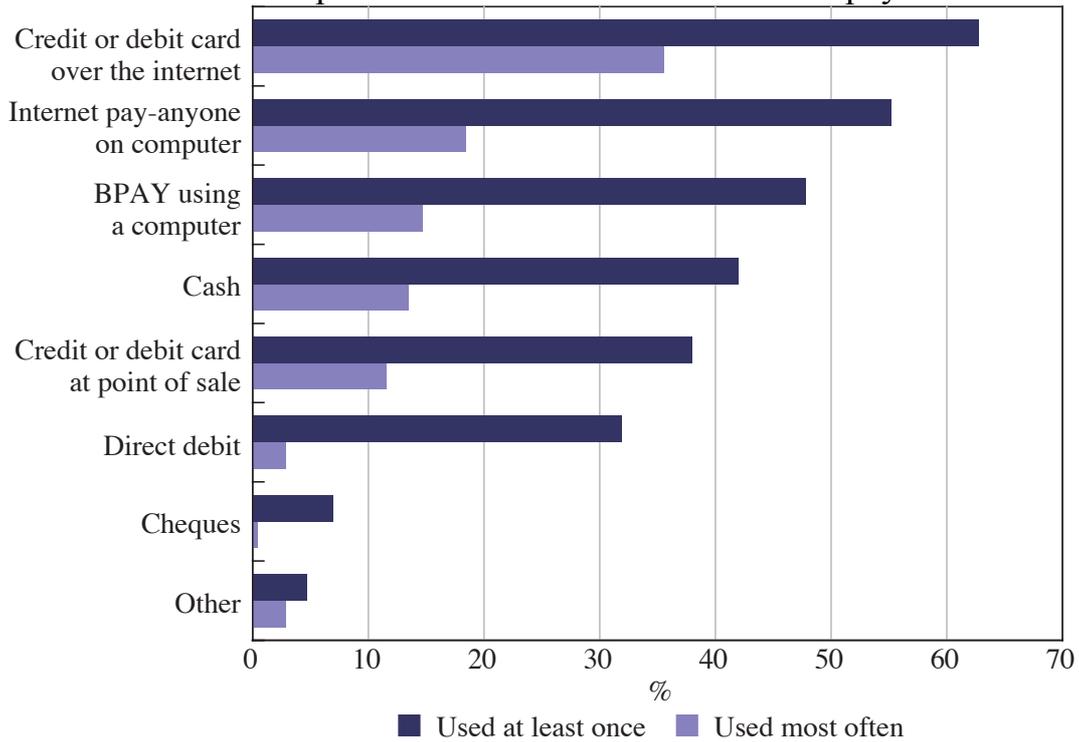
The growth in the use of smartphones raises the question as to which types of payments have been replaced by smartphone payments. Reflecting the fact that innovation allowing point-of-sale payments using smartphones is still at an early stage in Australia at this time, respondents' answers to an end-of-survey questionnaire indicate that most smartphone payments they had made had substituted for a payment being made over the internet (Figure 13). Further, the

²³ These results from the end-of-survey question line up well with the results from the 2013 diary itself, where the top reasons for making a smartphone payment were to pay a bill (32 per cent of respondents), to transfer money to another person (19 per cent), to purchase goods from 'other' (16 per cent) or to transfer funds between one's own accounts (13 per cent).

distribution of the value of payments made using smartphones was more similar to the distribution of payments made over the internet using a computer than payments made in person (Figure 14). At this time, smartphone payments appear to be a convenient alternative method of internet access for bill payment and other internet banking tasks, but not yet widely used for point-of-sale payments.

Figure 13: What have Mobile Payments Replaced? – 2013

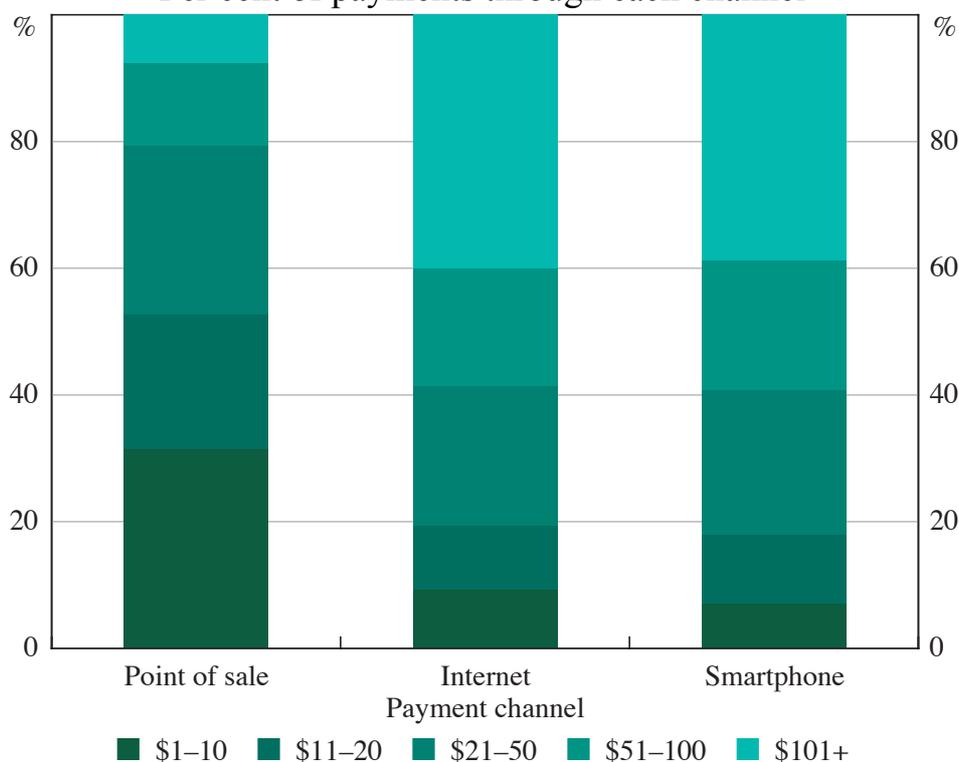
Per cent of respondents who have made a mobile payment



Source: Colmar Brunton

Figure 14: Value of Payments by Channel – 2013

Per cent of payments through each channel

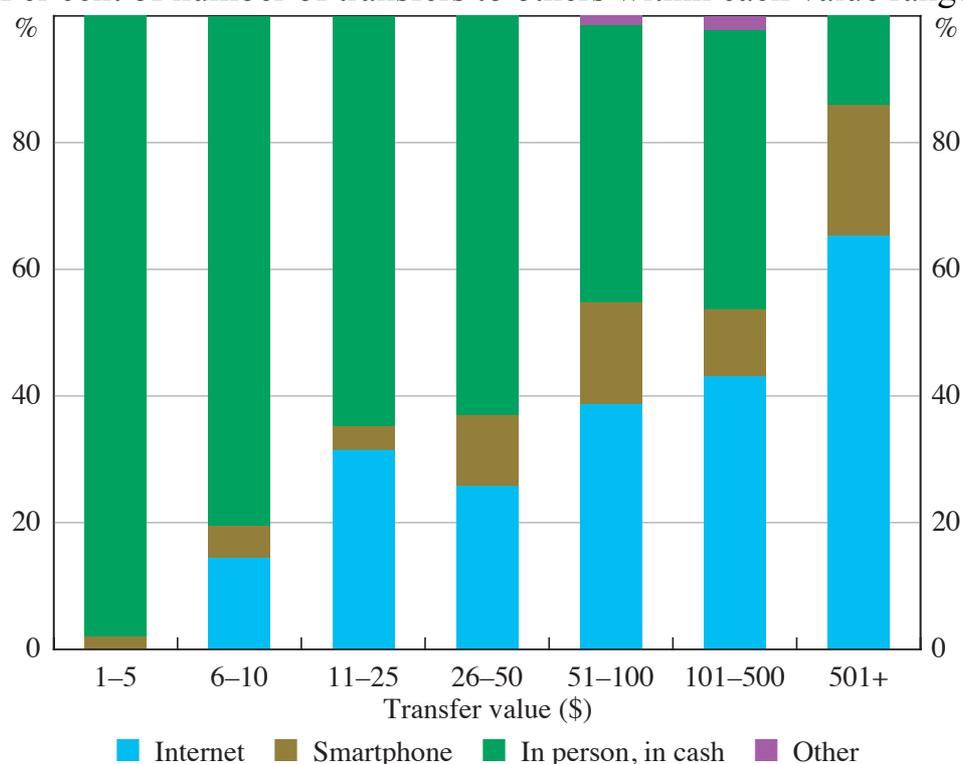


Source: Colmar Brunton

Another area of interest – particularly given the focus on innovation in the person-to-person transfer market over recent years and ongoing initiatives to improve the addressing of such transfers – is the potential for smartphone transfers to take the place of cash transfers to family and friends. The diary data show that smartphones are already an important channel for transfers between family and friends, accounting for one in ten transfers. However, the data also suggest that cash and smartphones were used for different types of transfers at the time of the survey. Smartphone transfers were used more often for larger values, similar to the distribution of the value of transfers made over the internet using a computer, while cash was overwhelmingly used for smaller payments (Figure 15). In part, this may reflect that a portion of the transfers captured by the survey appeared to be from parents to children, who are unlikely to have bank accounts. Not surprisingly, smartphone transfers to family and friends were disproportionately used by those aged under 30 years.

Figure 15: Channel used to Transfer Funds to Others – 2013

Per cent of number of transfers to others within each value range



Source: Colmar Brunton

8. Evidence on Policy Reforms

In addition to providing information on trends in retail payments, the study provides further insight into the effects of some of the reforms to the payments system implemented over the past decade. In particular, information was collected on merchants' surcharging of card payments and on the payment of direct charges at ATMs.

8.1 Surcharges Paid on Card Payments

Card surcharges are a charge that merchants may levy on cardholders for using a card to make a payment. In 2003, as part of a wider reform program, the Bank introduced reforms that removed restrictions imposed by the international card schemes that had prevented merchants from surcharging for credit card

payments.²⁴ This reform allows merchants to recoup the reasonable cost of accepting a card payment, which mainly consists of merchant service fees and other costs paid to financial institutions. These costs can vary across merchants considerably and are likely to influence a merchant's decision to surcharge and at what level. The ability to surcharge allows merchants to provide a price signal to consumers about the cost to the merchant of the various payment methods.

The payment diary provides information about the frequency and (for the first time in 2013) the value of card surcharges paid by consumers. A surcharge was recorded in the diary if the respondent completed a payment where a surcharge applied. This required that the respondent both encountered a prospective surcharge and continued with the card payment. Accordingly, the survey provides no information about situations where a consumer switched away from a card payment (or purchased from an alternative vendor) due to a surcharge, nor if they switched between types of cards as a result of different levels of surcharging for different cards. Keeping this in mind, the most recent data for 2013 show that a surcharge was paid on around 4 per cent of all card payments (Table 11) – a similar level to that recorded by the first two studies. The median value of surcharges paid was 1.8 per cent of the value of the payment.

The channel through which a card payment is made – namely, whether at the point of sale or remotely – plays an important role in the incidence of card surcharges.²⁵ While 2 per cent of card payments at the point of sale involved a surcharge, 13 per cent of remote card payments involved a card surcharge. Several factors may contribute to this finding. First, alternatives to cards for remote payments may have been more limited or more difficult to use compared to at the point of sale, where cash is typically a surcharge-free alternative. Further, merchant acceptance costs may have been higher in the case of merchants that receive online payments, reflecting higher interchange rates on average and the higher risks that may arise

24 Similar reforms were put in place for the Visa debit card system effective January 2007, with MasterCard providing a voluntary undertaking to comply with the Visa Debit standard. Effective March 2013, the standards were varied to allow the card schemes to put in place rules that capped card surcharges at the reasonable cost of card acceptance.

25 The Commonwealth Consumer Affairs Advisory Council (2013) study reported that many of the submissions that it had received related to surcharges charged by airlines and those charged in an online environment.

from card-not-present fraud.²⁶ In addition, the nature of internet-based payments may have made surcharging more likely, including the lack of person-to-person interaction and the possibility that consumers' use of headline price comparisons across merchant websites encourages internet merchants to keep base prices down, but then apply payment surcharges.

Table 11: Distribution of Card Surcharges – 2013

Payment type	Share of payments where a surcharge was paid (%)	Median value of payment		Median level of surcharge paid
		Not incurring surcharge (\$)	Incurring surcharge (\$)	Per cent of payment value ^(a)
All card payments	4.1	37	70	1.8
By network used for card payment				
eftpos	1.5	32	42	\$2.00 ^(b)
MasterCard and Visa debit	3.1	30	70	1.5
MasterCard and Visa credit	6.9	45	85	1.5
American Express and Diners Club	4.8	46	50	2.0

Notes: (a) Respondents were given the option of reporting the value of surcharges paid as a dollar amount or as a percentage of the payment value; dollar surcharges paid have been converted to percentage value for reporting

(b) Nearly all surcharges paid on eftpos payments were reported as a dollar surcharge and so the dollar value is shown here

Source: Colmar Brunton

Surcharges were more often paid on credit card payments (7 per cent) than debit card payments (2 per cent). The difference is likely to reflect two things. First, merchants may be more likely to surcharge credit card payments (as typically credit card payments have higher merchant service fees than debit card payments). Second, individuals may be more willing to pay credit card surcharges as credit cards often offer reward points (which contributes to their higher cost to

²⁶ Interchange fees are typically a major determinant of the per-transaction merchant service fees charged by financial institutions. Published interchange fees in 2013 ranged from 0.20 or 0.23 per cent for strategic merchants, up to 2.0 per cent. The rates set by Visa and MasterCard are available at <http://www.visa.com.au/aboutvisa/interchange/interchange.shtml> and http://www.mastercard.com.au/merchant/getting_started/interchange_rates.html.

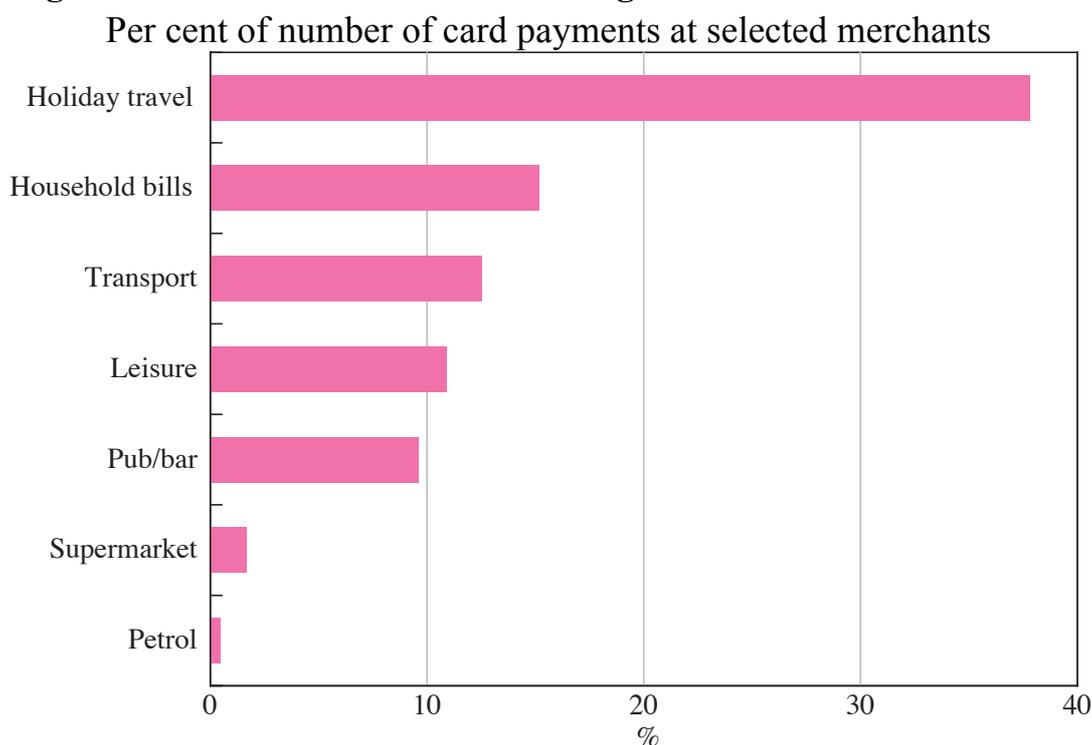
merchants). Regardless of the type of card, the median value of surcharged payments was larger than the median for payments that did not incur a surcharge.

A surcharge was paid on 6.9 per cent of MasterCard and Visa credit card payments (Table 11). The survey indicated a somewhat lower frequency of surcharges paid on American Express and Diners Club card payments of 4.8 per cent, despite the comparatively higher merchant service fees on these cards (which would imply that merchants are more likely to surcharge payments using these cards, and to do so at higher rates).²⁷ This result would be consistent with American Express and Diners Club cardholders finding it relatively easy to switch to an alternative payment method when faced with a surcharge; the survey indicates that over 90 per cent of American Express and Diners Club cardholders also held a credit card from another network.

There was a wide range in the incidence of surcharging across different types of merchants (Figure 16). Surcharges were more often paid for card payments at merchants where credit cards were more likely to be used than debit cards. These included payments for holidays (where payments were likely to have been large or may have involved a deposit) or leisure and purchases at pubs and bars. The fact that many card payments made for holidays and leisure were made remotely also increased the probability of paying a surcharge for these card payments. In contrast, surcharging on card payments was infrequent at supermarkets. This is not surprising given that the larger supermarket chains face lower card acceptance costs, in part reflecting the benefits of favourable lower (or ‘strategic’) interchange rates set by card schemes.

Around one-quarter of all card surcharges were in relation to bill payments (15 per cent of card payments for household bills incurred a surcharge). While this was relatively high compared to other merchant categories, card payments were not the main means of payment of bills. As a share of all bill payments, the incidence of surcharges paid was around 5 per cent.

²⁷ The average merchant service fee for American Express cards is approximately 1.7 per cent, while the average merchant service fee for MasterCard and Visa debit and credit cards is 0.8 per cent; there is, however, significant variation across merchants.

Figure 16: Incidence of Card Surcharges Paid at Merchants – 2013

Source: Colmar Brunton

In general, demographic characteristics did not appear to play a significant role in the likelihood of paying a card surcharge. However, respondents aged over 65 years paid surcharges on a slightly smaller share (2.8 per cent) of their card payments than for other age groups. This age group's preference for cash and debit cards over credit cards may mean that these respondents were less likely to encounter, and pay, card surcharges.

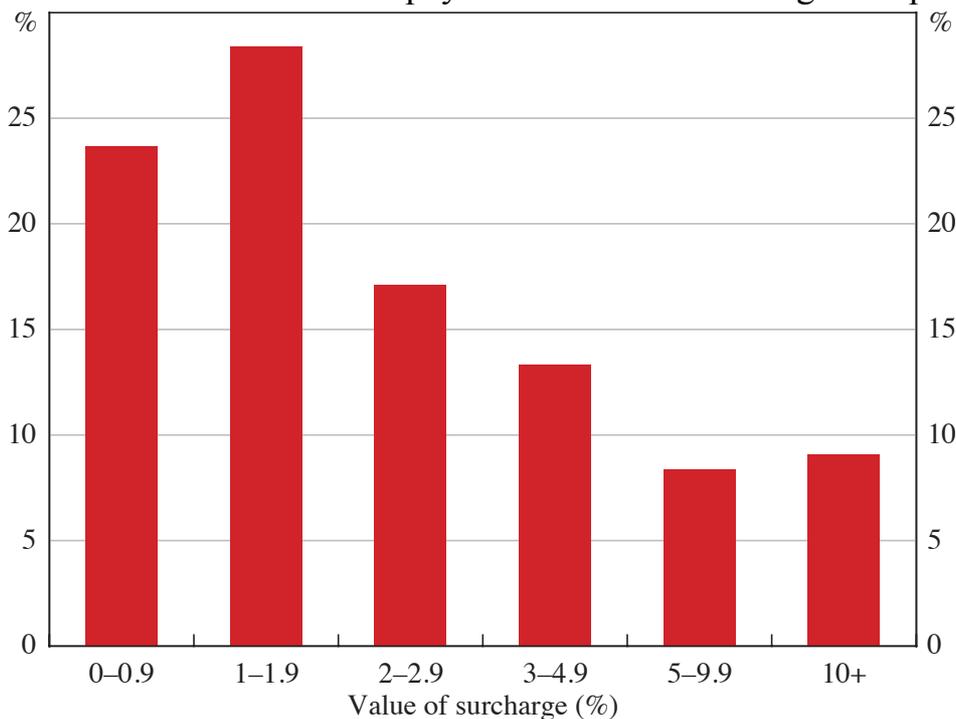
Rather, preferences and incentives linked to card features were more important in the payment of card surcharges. Linking payment behaviour in the diary to respondents' answers to end-of-survey questions about preferences shows that card surcharges were paid more often by individuals who stated that reward points were an important factor in choosing their payment method. Similarly, those who claimed a preference to use credit also paid more card surcharges. However, individuals who tend to 'revolve' their credit card balances, which may indicate a reliance on credit, were no more likely to pay card surcharges.

The median level of a surcharge paid by respondents was 1.8 per cent, with the median on payments using American Express and Diners Club cards (2.0 per cent) higher than that on MasterCard and Visa cards (1.5 per cent). Based on other

information about the range of merchant service fees, surcharges up to around these levels would not seem obviously at odds with the card acceptance costs of many merchants. However, card surcharges were distributed across a relatively wide range, with a small proportion of the reported surcharges being for 10 per cent or more of the payment value (Figure 17). Around one-third of these were 10 per cent surcharges for transportation (with such surcharges prevalent in the taxi industry). The majority of the high-percentage non-transport card surcharges were for payments of \$20 or less and were reported as flat dollar surcharges; where the dollar value of purchases is small, the flat dollar surcharge results in a high percentage surcharge relative to the payment value. Consistent with this, the percentage surcharge recorded in the diary tended to decrease with the value of the payment.

Figure 17: Distribution of Value of Card Surcharges Paid – 2013

Per cent of number of card payments where a surcharge was paid



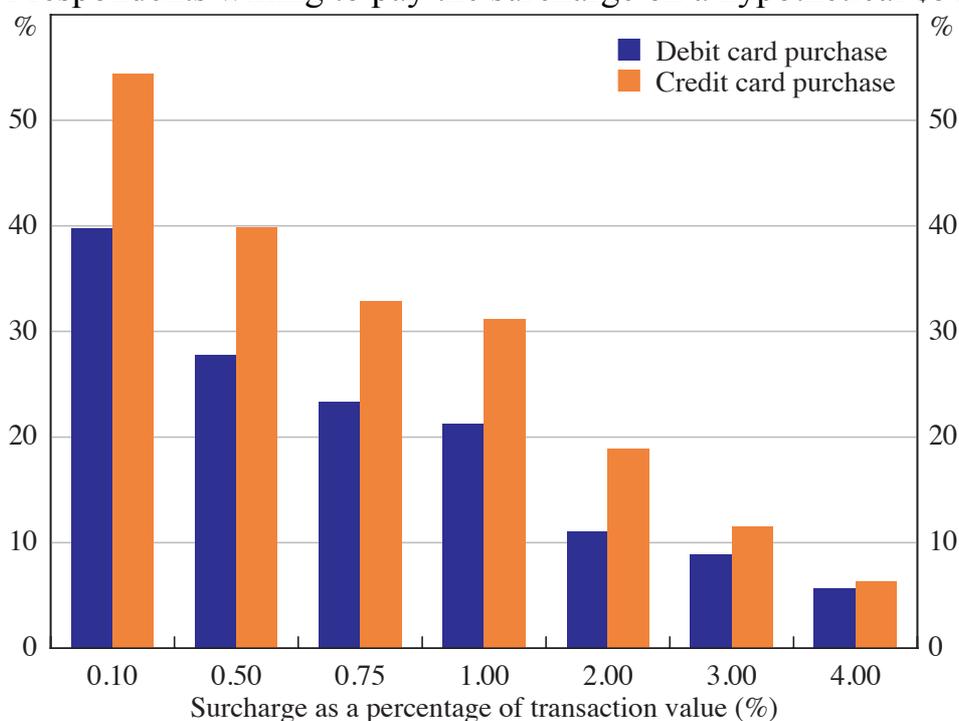
Note: Surcharges reported in dollars have been converted to percentage values

Source: Colmar Brunton

In the 2013 survey, participants were asked hypothetical questions to measure how large a card surcharge they would be willing to pay if the only alternative was to pay with cash.²⁸ Around 30 per cent of respondents reported that they would be willing to pay a 1 per cent surcharge to use a credit card if the only alternative were cash, while 20 per cent of respondents would be willing to pay the same surcharge to pay by debit card if the only alternative were cash (Figure 18).²⁹ In general, for a given surcharge, more respondents were willing to pay to use a credit card than a debit card in the place of cash, possibly because credit cards often offer reward points. The proportion of people who would pay a card surcharge to avoid using cash decreased as the value of the surcharge increased.

Figure 18: Willingness to Pay Card Surcharges – 2013

Per cent of respondents willing to pay the surcharge on a hypothetical \$50 payment



Note: Only includes respondents who held both credit cards and debit cards and who answered both hypothetical questions

Source: Colmar Brunton

²⁸ See Appendix A for details of the hypothetical situation.

²⁹ This is consistent with the results of the 2010 survey, which asked how the individual would respond to a hypothetical 1 per cent surcharge on a \$100 credit card payment. Around 30 per cent said that they would pay the surcharge, another 60 per cent would pay with debit card or cash and 10 per cent said that they would leave the store.

8.2 Direct Charges at ATMs

Reforms to the ATM system were implemented in March 2009 in order to increase transparency and allow ATM owners to better recover costs. Prior to this time, whenever a cardholder used an ATM not owned by their own financial institution (a ‘foreign’ ATM), they were charged a ‘foreign fee’ (typically of around two dollars) by their own institution, part of which was paid to the ATM owner. The reforms removed these fee flows, allowing ATM owners to charge cardholders directly for the use of the ATM. Cardholders must now be advised of the charge payable prior to completing the withdrawal, in contrast to the previous arrangements where notification of the foreign fee appeared only on the customer’s monthly statement. Thus, from the cardholder’s perspective, the foreign fee was replaced by a more transparent ‘direct charge’ levied by the owner.

The reforms had the effect of encouraging people to use ATMs provided free of charge by their own financial institution in order to avoid paying the now more transparent fee. The 2010 study found that a year and a half after the reforms, a fee was paid on 23 per cent of ATM withdrawals. The 2013 study indicates a significant decline in this proportion, with only 15 per cent of ATM withdrawals attracting a fee (Table 12).

The number of ATM withdrawals recorded is much smaller than for payments, and so results split by demographic groupings should be viewed with more caution. However, the data suggest that the decline in the payment of fees is driven by respondents aged under 50 years, who appear to have increased their use of cash-out at the point of sale since 2010. (The apparent increase in the proportion of charged ATM withdrawals for respondents aged 50 years and over, who make fewer ATM withdrawals than younger cohorts, is curious and might reflect noise in the data.) Across income groups, the decline in the proportion of charged ATM withdrawals was largest for households in the lowest two quartiles.

Table 12: ATM Withdrawals – 2013

	Number of ATM withdrawals (per person per week)		Share of ATM withdrawals where a fee was paid (%)	
	2010	2013	2010	2013
All respondents	0.9	0.7	23	15
Age (years)				
18–29	1.1	0.9	30	14
30–49	1.0	0.8	26	13
50+	0.7	0.6	12	17
Household income				
1 st quartile	1.0	0.8	27	11
2 nd quartile	1.0	0.7	20	10
3 rd quartile	0.8	0.7	26	15
4 th quartile (highest)	0.8	0.8	21	21

Sources: Colmar Brunton; Roy Morgan Research

9. Conclusion

The Reserve Bank’s third Survey of Consumers’ Use of Payment Methods allows an evaluation of the changing use of consumer payment methods and is one of the only direct sources of data on the use of cash by Australian consumers. The 2013 survey indicates that the main trends evident between 2007 and 2010 have continued; the share of payments made using cash continued to decline, associated with a significant rise in the share of card payments. In addition, the use of cheques declined further and there was an increase in the share of payments made using PayPal.

Cash remains a key payment method, particularly for lower-value payments and for older or lower-income respondents. However, the share of the number of payments made using cash has fallen rapidly over the six years, from 69 per cent to 47 per cent. The decline in the use of cash is evident across all payment values, and has occurred across all age and household income groups.

Cash use has fallen in line with the growth in online retail payments and also due to the continuing increase in the use of cards at the point of sale. The latter reflects

both the continued growth in the availability of card terminals at merchants and innovations in card acceptance technology, such as the widespread adoption of contactless card payments, which have a shorter tender time than PIN or signature card payments.

While new card technologies are being adopted rapidly, the take-up of other new technologies has been somewhat slower. The use of smartphones to make payments at the point of sale was not widespread at the time of the survey; this technology was being used primarily for established online banking tasks. The shift to online retail payments, however, has been associated with greater use of PayPal by respondents.

The survey can also shed light on some of the effects of recent reforms to the payments system. In the 2009 ATM reforms, the requirement to notify a user of a foreign ATM fee at the time of the withdrawal was intended to increase the transparency of costs. Over time, this reform has encouraged people to use ATMs provided free of charge by their own financial institution, with the 2013 data indicating a fall since 2010 in the proportion of ATM withdrawals attracting a fee.

The removal of ‘no-surcharge’ rules a decade ago was also designed to improve transparency and provide a price signal to customers as to the cost to the merchant of accepting card payments. Despite the strong growth in card use and online retail sales between 2010 and 2013, the frequency of surcharges was stable at around 4 per cent of card payments, indicating that individuals were typically able to use alternative methods of payment if they were not willing to pay the surcharge. Furthermore, there is evidence that consumers who pay surcharges are more likely to place a value on rewards programs than those who do not pay surcharges.

While this paper has provided an overview of the key results of the latest Survey of Consumers’ Use of Payment Methods, some issues warrant further investigation. Such topics include the determinants of the choice of payment method, how individuals value the use of different payment methods, and the effect that new technologies have on the use of existing payment methods. The three waves of this survey provide a rich dataset for future analysis of such issues.

Appendix A: Further Details of the Survey

The 2013 survey was conducted by Colmar Brunton on behalf of the Bank in November 2013, well before the peak Christmas shopping period and when seasonal factors are thought to be of low influence. To engage participants to the week-long study, a \$100 incentive payment was paid for full completion.

For the first time, the survey was delivered over the internet via computer, tablet and smartphone to 1 500 subscribers. While internet penetration in Australia was above 80 per cent of households in 2011 (ABS 2011b), to reduce the potential for survey bias approximately 150 additional participants without access to the internet were recruited by telephone to complete a paper-based survey. The final sample of 1 167 respondents consisted of 1 069 online respondents and 98 who completed the paper-based survey. Those who completed the survey online were also provided with a paper diary to use as a memory device to improve recall of smaller value payments relative to periodic online entry.³⁰

The demographic information collected in the pre-diary questionnaire was the same as that collected in 2007 and 2010 and included gender, age, personal and household income, family status and household size, and location of residence (both postcode and whether the respondent lived in a capital city or rest-of-state area). Information about the financial services used by the participant was collected, including a list of the credit cards and debit cards held by the participant and which of these were the primary credit and debit cards. Each respondent also answered questions about whether he or she typically paid off their credit card balance every month (a ‘transactor’) or let the balance roll over from month to month (a ‘revolver’).

The diary was slightly different from that used in 2007 and 2010, although every effort was made to ensure comparability of the data across surveys. To capture the use of contactless card technology, respondents reported whether they inserted the card into the reader or tapped/waved the card on/over the reader. The range of possible channels was expanded to include smartphones, which are treated as

³⁰ Jonker and Kosse (2009) find that use of a payment diary improves recall of small-value cash payments relative to solely filling in a retrospective online survey.

internet payments when a cross-survey comparison is conducted. Respondents also reported the value of card surcharges where one was paid, and could report either the dollar value or the percentage value. Fields used in 2013 are laid out in Table A1.

The scope of the payments section of the diary was also expanded to include transfers, that is the movement of funds without a corresponding purchase, for the payment of money to a friend or family member or the movement of funds between the individual's own financial accounts at different financial institutions (such as to repay debt).³¹

The scope of other 'top-ups' was also clarified to include any cash received by the person, including such items as wages paid in cash.

In 2013, qualitative questions in the end-of-survey questionnaire focused on the use of and substitution between cash, contactless card and mobile payments. Repeat questions regarding attitudes to the use of different payment methods and the use of cheques were included. A series of questions on respondents' willingness to pay for surcharges were also included. The first question asked respondents if they would be willing to pay a 1 per cent surcharge to use their main credit card instead of cash when conducting a \$50 payment. The value of the surcharge was then increased or decreased in two follow-up questions to narrow down the range for which the respondent would be willing to pay the surcharge. An identical set of questions was asked to determine what respondents would be willing to pay to use their main debit card instead of cash.

The recruitment targets for age, household income, gender and location of residence were sourced from the Australian Bureau of Statistics 2011 Census. The target for credit card holding was sourced from the Household, Income and Labour Dynamics in Australia Survey for 2012. A technique called raking (or iterative proportional fitting) was used to calculate the respondent-level weighting

³¹ Certain figures in tables may differ to those published in the 2007 and 2010 reports due to reweighting of the 2007 dataset and different methodologies adopted across publications. In particular, this study includes all payment methods captured in each survey, in line with the expanded coverage of the 2010 and 2013 surveys, rather than limiting coverage to methods captured in the 2007 survey.

factors using population benchmarks for age groups of each gender, household income, credit card ownership and whether the individual lives in a capital city or a regional area.

Table A1: Fields in the 2013 Payments Diary

Payments	
Date	Payment purpose:
Day of week	1 – Supermarket/bottle shop
Payment amount (nearest dollar)	2 – Small food store
Card surcharge paid (dollar/per cent)	3 – Electrical/furniture
Payment method:	4 – Other retailer
1 – Cash	5 – Take-away food/fast-food
2 – Debit card	6 – Café/restaurant
3 – MasterCard/Visa credit card	7 – Pub/bar
4 – American Express/Diners Club	8 – Petrol/service station
5 – Personal cheque	9 – Transport
6 – BPAY	10 – Leisure/sports/entertainment
7 – Internet/telephone banking transfer	11 – Holiday travel
8 – PayPal	12 – Household bills
9 – Other	13 – Medical/health
Card action:	14 – Services
1 – Tap/wave card over card reader	15 – Transfers to family member or friend
2 – Insert card and press ‘CR’ button	16 – Transfer within own accounts
3 – Insert card and press ‘CHQ’/‘SAV’ button	17 – Other
Payment channel:	
1 – In person	
2 – Internet (PC/tablet)	
3 – Smartphone/SMS	
4 – Telephone	
5 – Mail	
Cash top-ups	
Date	Source of cash:
Day of week	1 – ATM
Cash top-up amount (nearest dollar)	2 – eftpos cash-out
ATM operator fee paid (yes/no)	3 – Over the counter at a bank branch
	4 – Other source
	Total value of banknotes in wallet after top-up (nearest dollar)

Appendix B: Comparison with Other Data Sources

The number of payments recorded in the 2013 Survey of Consumers' Use of Payment Methods matches the aggregate data fairly well for those payment instruments – cash, cards, BPAY and cheques – where a comparison is possible.³² To provide an estimate of aggregate payments over the month, the diary data are scaled by the population aged over 18 years and by the number of weeks in November. Comparison data are sourced from the RPS (except for cash) and represent personal payments to match the definition used in the survey. Personal payments are available in the RPS only for card, BPAY and cheque payments. The volume of cash payment is estimated (see below). Summing across cash, cards, BPAY and cheques, the total number of payments recorded in the survey is within 5 per cent of the total suggested by the alternative estimates (Table B1). For the individual payment methods, the deviation was only slightly larger, ranging from less than 10 per cent for cards to around 20 per cent for cheques.

One caveat is warranted. The survey appears to record fewer debit card payments and more credit and charge card payments than would be expected given the RPS data. One reason for this is that some consumers may have incorrectly reported the type of card payment being made, with MasterCard and Visa debit payments possibly mistaken for credit card payments due to card terminal design or confusion over the use of debit cards in the online environment. The survey was designed to minimise this confusion, but it is nonetheless likely to affect the results to a small degree.

Unlike electronic payments and cheques, there are no official estimates of the number or value of cash payments; obtaining information regarding cash payments is one motivation for running the survey. The comparison data for cash in Table B1 is an estimate calculated by dividing the value of cash withdrawals from the banking system by the average value of cash payments, a common method in the literature.³³ The value of cash withdrawals is equal to withdrawals from ATMs,

³² A comparison is not possible for direct debit or direct credit payments as the RPS data on payment volumes of these payment methods include large numbers of business payments that are not separately identified.

³³ For example, see Schmiedel, Kostova and Ruttenberg (2012).

cash advances and eftpos cash-out as published in the RPS.³⁴ Over-the-counter withdrawals are excluded as these tend to be larger and may reflect a desire to hold cash as a store of value or make large irregular payments. The average cash payment value is estimated from the survey data and equal to \$28 in 2007 and \$26 in 2013. As a crosscheck, the measure is useful but it should not be interpreted too strictly as it rests on the strong assumption that each dollar withdrawn is used to make one dollar of consumer payments before returning to the banking system.

Table B1: Comparing Survey Data to Alternative Sources

Payment instrument	Implied number of payments November 2013 (millions)		Change in share (percentage points)	
	Alternative data source	Survey data	Alternative data 2008–2013 ^(a)	Survey data 2007–2013
Total	1 045	1 017		
Cash ^(b)	561	471	–11.8	–19.2
Cards	449	417	12.0	18.8
<i>Debit</i>	298	225	10.9	9.5
<i>MasterCard/Visa credit</i>	130	158	0.6	6.6
<i>American Express/Diners Card^(c)</i>	21	35	0.5	2.7
BPAY	29	34	0.3	1.4
Cheque	5	4	–0.5	–1.0

Notes: (a) Aggregate data for MasterCard/Visa debit payments only available from 2008

(b) Aggregate cash payment estimated using the cash withdrawal method

(c) Aggregate American Express and Diners Club card payments include business payments made on companion cards

Sources: BPAY; Colmar Brunton; RBA; Roy Morgan Research; authors' calculations

34 At RBA website, <http://www.rba.gov.au/statistics/tables/index.html>.

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