Consumer Payment Choice: Measurement Topics
Commentary

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I feel very privileged to be able to discuss this detailed review that Marc Rysman has just given us.

In my comments today, I want to draw on some Australian data to hopefully illustrate some of the points Marc has talked about in his paper. And I also want to use these data to give you some insight into where there currently has not been much data available elsewhere. I then want to turn my attention to the role of costs and prices. As Marc has just shown with the tollway example, these can be very important in consumer payment choice.

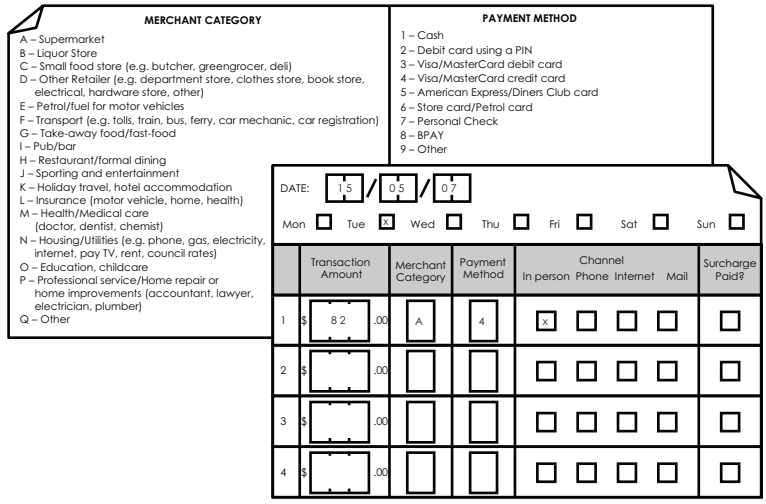
The general sense I get from reading Marc's paper is that the current literature seems to be going down a path of focusing on behavioral-type factors. It is saying we cannot get a good handle on consumer payment choice because these behavioral factors are important, but they are difficult to measure. But I still think there is a lot to be done on cost and prices, which are also difficult to measure because they do not tend to vary much over time or across consumers or payment instruments. Hence, what I want to do in this discussion is build upon the toll example Marc gave by giving you some Australian examples to show significant price changes do matter.

I will start off with a few brief comments on data to give you some insight into the type of data we have collected in Australia.

In 2007, the Reserve Bank of Australia (RBA) conducted two extensive studies. One was on consumer payment use and the other was on costs.

For the consumer payment use study, the approach we took was to do a diary study of individuals. Sample diary pages are shown in Figure 1. For this study, consumers reported details of each transaction they made over a two-week period. We have found this to be a neat way to capture consumer behavior.

Figure 1
Example Diary Page



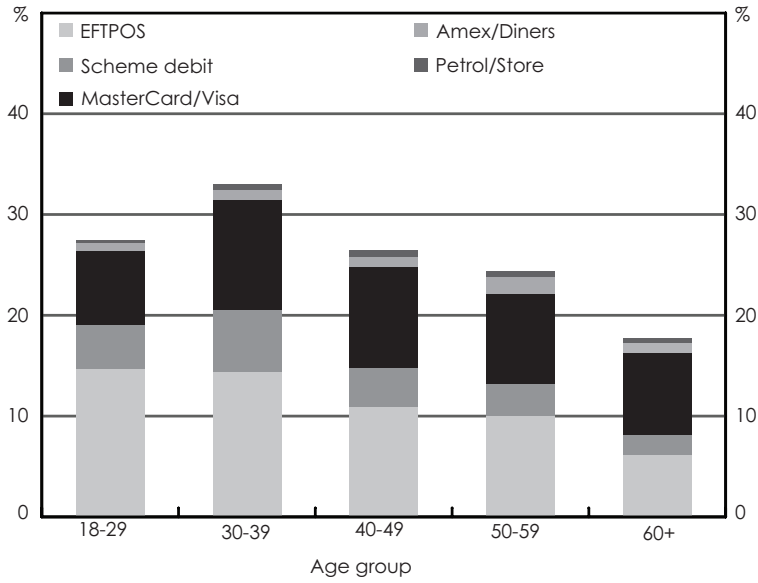
As Marc mentioned, most other studies tend to use surveys that ask consumers questions like "What is your most frequently used payment method?" But, we have found that with transaction-level data, you can use information on, for example, the transaction size or the merchant category to give insight into why consumers might choose different payment instruments in different payment situations. Hence, you do not need to rely on more general behavioral-type variables, such as whether a consumer *typically* used a particular payment instrument because they *perceived* it to be quick or convenient.[1] Yet these are the types of variables a lot of the literature now is trying to incorporate into empirical work.

Just a brief remark on cost studies. Collecting data on costs is a lot more difficult than collecting data on consumer payment use. The reason for this is, if you want to get a detailed picture of costs, you need to ask each participant in the payments system what those costs are. The importance of obtaining cost data though is that it can also tell you important information about consumer behavior. For example, in our cost study we collected data on tender time from merchants. This can probably provide more specific information on consumer behavior than asking the consumer the more general question, "Do you value this payment instrument because of the speed of the transaction?"

That is all I wanted to say on data. Now I will walk through a couple of charts which provide an overview of payment behavior in Australia.

Chart 1 is the use of cards by age. We find age does play a role in explaining consumer payment choice. In Australia, consistent with other studies, we find debit cards are used most by the youngest age groups with use tending to decline with age.

Chart 1
Use of Cards by Age Group



Source: Roy Morgan Research

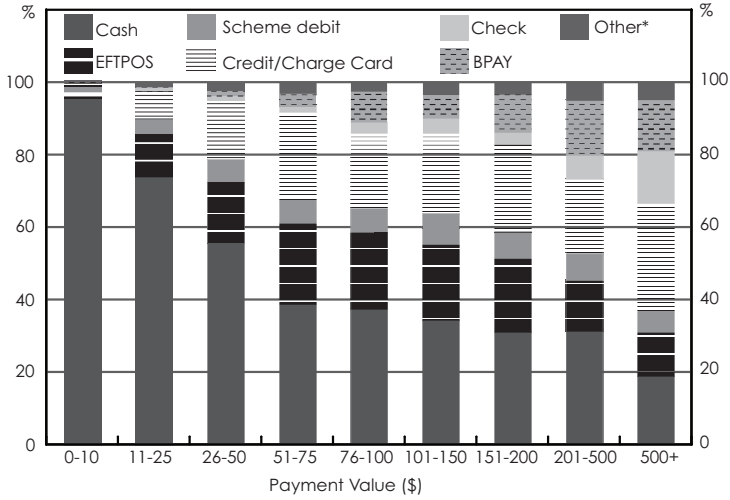
Chart 2 is the share of payments by transaction value. We also find transaction value to have a strong effect on payment instrument use. For example, cash is by far the most commonly used payment method for low-value payments, accounting for almost all transactions under $10. Card payments are used extensively across all but very low payments, and checks are mostly reserved for high-value payments.

So, the main purpose of showing these two graphs is to point out that payment behavior in Australia is not too different from the results being found overseas.

I want to hopefully add to Marc's discussion by giving you some examples of variables that have not received much attention in the literature, yet can give some useful insights into consumer payment behavior.

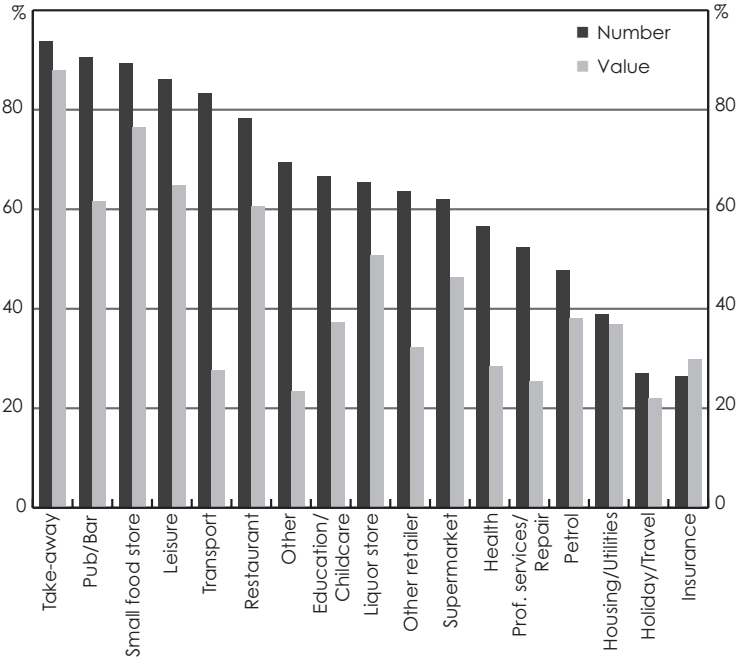
The first is merchant category. Chart 3 shows cash is more likely to be used than other payment instruments in merchants such as take-away stores or pubs and bars. Although the graph only shows raw data, even in our empirical analysis—controlling for factors such as transaction size—we still find a high probability of cash use for these merchants. And, here we are likely to be picking up some behavioral effects: the effect of consumers' desire for quick transaction times at these quite busy merchants. You cannot imagine someone typically waiting around in a take-away store or a pub to sign for their credit card when they have a queue of customers behind them.

Chart 2
Share of Payments
Percent of number of payments



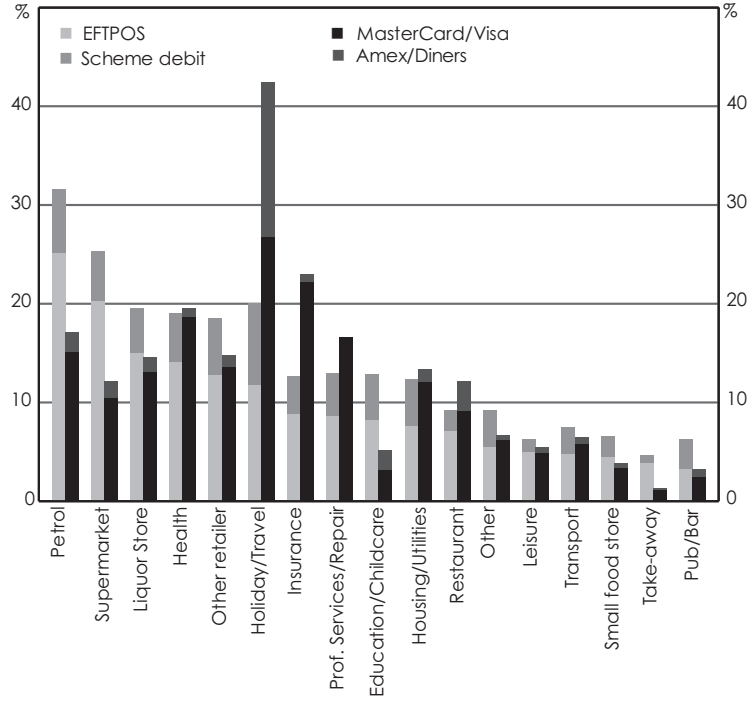
*Includes petrol/store cards and "other" payment methods
Source: Roy Morgan Research

Chart 3
Cash Use Across Merchant Categories
Percent of payments



Source: Roy Morgan Research

Chart 4
Card Use Across Merchant Categories
Percent of number of payments



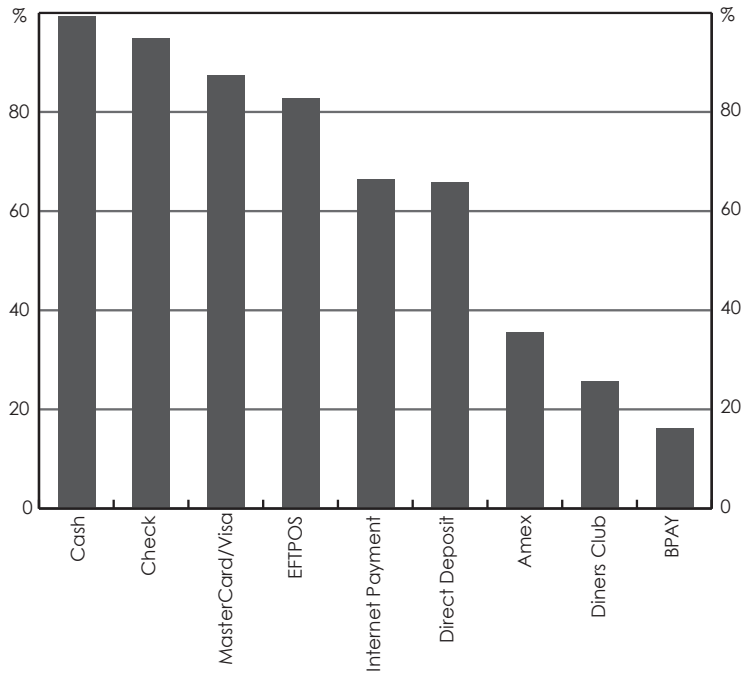
Source: Roy Morgan Research

Chart 4 shows a different type of behavioral effect. We find debit cards are more likely to be used than other payment instruments in merchants like petrol stations and supermarkets. Marc talked about some of the mental accounting theories: consumers might have a desire to consume or purchase certain items out of current income. But we also know in Australia that some petrol stations and supermarkets tend to offer cash-out facilities. So, the behavioral effect we are likely to be picking up here is that consumers value the fact that debit cards save time; they do not need to make a special trip to the ATM to make a cash withdrawal.

Another variable that does not receive that much attention in the literature is merchant acceptance. Admittedly, data on this are quite difficult to obtain. We collected some data on merchant acceptance from small businesses as part of our use study. And from this we find the reason cash is probably used most extensively for small-value transactions in Australia is because it is accepted almost universally. As Chart 5 shows, cash is accepted by almost all small businesses, but not as many accept credit cards or EFTPOS (our domestic debit card system).

Having talked about consumer behavior and some alternatives to subjective preference-type variables, I now want to talk about consumer costs. Marc

Chart 5
Payment Methods Accepted by Small Businesses
Percent of respondents



Source: RBA Small Business Survey

mentioned costs briefly, but I want to highlight their importance because we have observed some interesting consumer responses to costs in Australia. Again, information on costs can also be used to demonstrate some of the behavioral theories Marc has talked about.

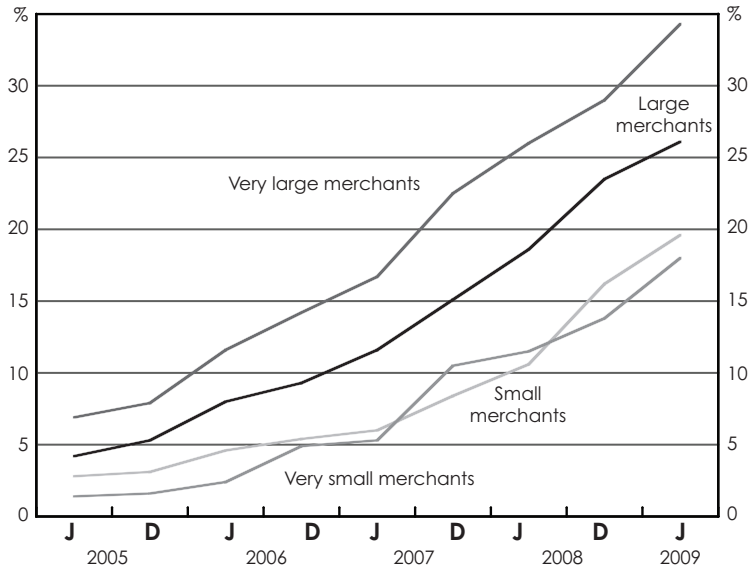
I'll start by looking at time costs. In Table 1, I've included data from our cost study showing the various time costs to a consumer of making a payment. Tender time is a particularly important consideration because it makes up such a large component of these costs. And, we can use these data to observe consumer behavior, though we would also need to consider interactions with merchant categories. For example, tender time might matter to consumers for purchases made at supermarkets, but maybe not at other merchants such as the corner store because they can catch up with the local small-business operator.

Moving on to explicit costs: the fees and charges consumers might face. I mentioned at the start there is some difficulty in capturing price effects empirically because prices do not tend to vary. But in Australia there have been some changes to the price structure—either pricing or the pricing regime—of various payments instruments, and the evidence suggests that these changes do seem to matter for consumer payment behavior.

Table 1
Consumer Time—Point-of-Sale Payments
Seconds per transaction

	Credit card	EFTPOS	Cash	Check
Tender time	45	35	20	90
ATM withdrawal time	—	—	9-16	—
Statement reconcilliation	5	5	1	5
Bill payment	13	—	—	—
Total	**63**	**40**	**30-37**	**95**

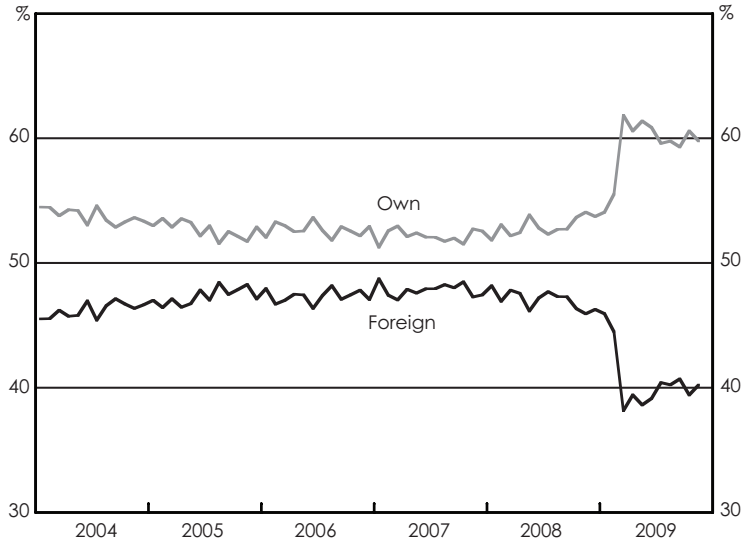
Chart 6
Merchants Surcharging Credit Cards*
Percent of surveyed merchants



* Very large merchants are those with annual turnover greater than $340 million, large merchants $20 million to $340 million, small merchants $5 million to $20 million, and very small merchants $1 million to $5 million.
Source: East & Partners Pty Ltd.

The first example is merchant surcharging. At the start of 2003, the RBA introduced a standard requiring the removal of scheme rules that prevented merchants from surcharging for credit card transactions. Chart 6 shows that while there was a slow uptake of surcharging by merchants, currently around a third of very large merchants impose a surcharge. In terms of the consumer response, we received some confidential data from one of the schemes that showed when a surcharge is imposed on one particular type of card, or if it is higher on a particular type of card, use of that card declines dramatically.

Chart 7
Composition of ATM Withdrawals
Percent of total withdrawals



Source: RBA

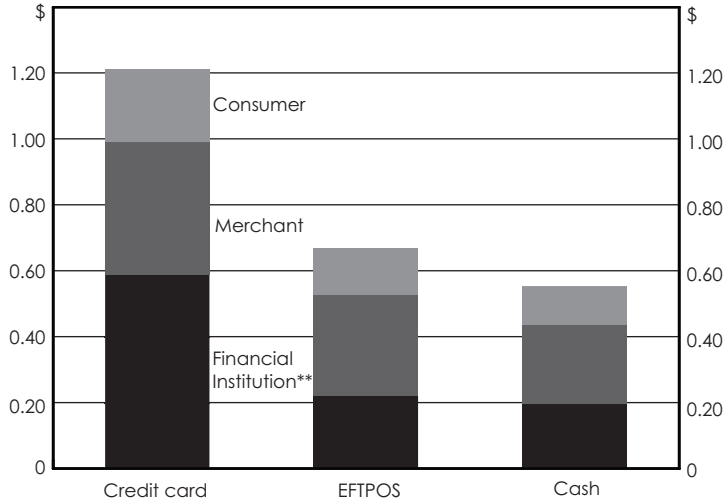
Chart 7 shows a second example of costs where noticeable effect on payment behavior was observed with the recent reforms to the ATM system in Australia. In March 2009, we introduced reforms that increased the transparency of prices to consumers. Prior to the reforms, consumers were charged what was called a foreign fee from their bank if they made a transaction at a foreign ATM—that is, an ATM owned by another bank. This fee was not transparent; it appeared on the customer's account statement at the end of the month.

In contrast, since the reforms, the ATM owner now charges the consumer directly—in place of the foreign fee—with the charge showing up on the ATM screen at the time the withdrawal is made.

The interesting thing about this change in the regime, though, is that prices to consumers have remained virtually unchanged. Before the reforms, the foreign fee was about $2, and now the direct charge is also generally around $2. The only thing that has changed is the transparency of the price. However, changing the way the price was displayed to consumers changed their behavior immediately. The graph shows that the share of foreign transactions consumers make—that is, transactions at ATMs not owned by their own bank—fell immediately in March when the reforms were introduced. And it has remained virtually unchanged at this lower share since.

To sum up on costs, the purpose of showing these examples was to demonstrate that costs do play a big role in explaining consumer payment behavior and can also give some insight into behavioral/preference effects.

Chart 8
Total Payment Costs*
Percent average transaction for each payment method



* Resource costs excluding account overhead costs
**Including costs of currency production for cash

I will finish now by making a brief comment on a point Marc made during the introduction of his paper. He stated that understanding the determinants of consumer choice is important because every government has a responsibility for an efficient and effective payments system. I do agree with this statement, but consumer choices are only one part of efficiency. Another important part is the costs of those payment instruments to society as a whole. Chart 8 demonstrates the extent to which costs can vary across various payment instruments. And what we found to be important when we looked at efficiency during our reforms over the past seven years was whether or not these costs were broadly reflected in the relative prices that consumers face.

To wrap up, I agree that further research on behavioral theories and consumer payment choice is an interesting topic, but I still think there is more work to be done on examining the role of costs in explaining payment choice. There have been a few studies, as Marc pointed out, but there are also difficulties in finding effects of costs empirically because there is often little variation in prices.

Hopefully, by showing a couple of examples from Australia (and building upon the toll example that Marc pointed out), we can see that price changes can result in some interesting consumer payment behavior, and importantly, we can even use these kinds of responses to inform us about those behavioral/preference effects that might otherwise be difficult to measure.

Endnote

[1]To define, I group all qualitative-type variables into the category of behavioral or preference variables.