

"How Do You Pay:
The Role of Incentives at the Point-of-Sale,"
by C. Arango, K. Huynh, and L. Sabetti

Discussion by Victor Aguirregabiria (Toronto)

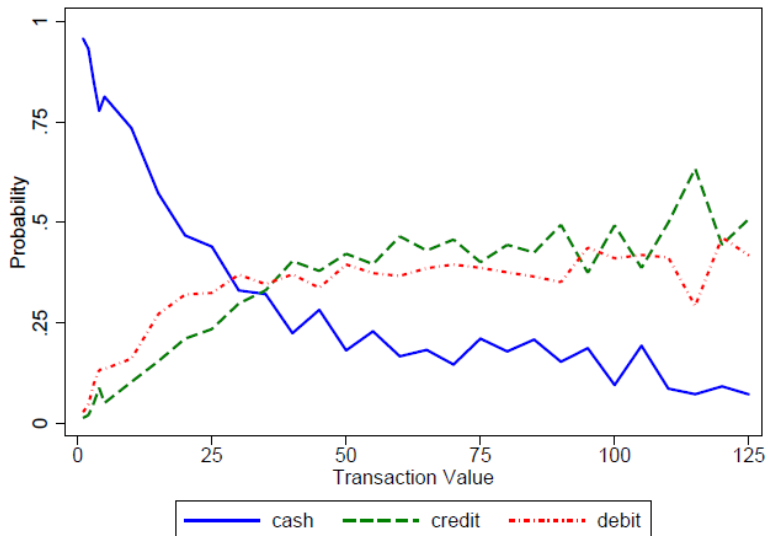
Bank of Canada. 17/11/11

General Comments

- New dataset from the Bank of Canada (**Method of Payment Survey**) to study **consumer demand of method of payment** at points-of-sale.
- Particularly interesting feature of this dataset: information on **supply conditions of methods of payment** at the specific merchant-transaction level.
- This information is key to **separately identify the contribution of demand and supply factors** to the observed market shares of the methods of payment.

Empirical Market Shares

Figure 1: Payment Frequencies



Identification of Contribution of Demand and Supply Factors

- There are good reasons to believe that supply conditions at the merchant level play an important role to explain this pattern in the market share of Cash.
- The separate identification of the contribution of demand (consumer preferences) and supply (merchant restrictions) factors is key in the analysis of important policy issues in this industry:
 - Regulation of merchant surcharges;
 - Regulation of merchant discounts (that merchants pay to banks);
 - Regulation of payment card associations "bundling" policies;
 - Regulation of interchange fees (between banks)

Model

- J methods of payment indexed by j . X_j is the vector of observable attributes of method of payment j .
- Each merchant, indexed by m , chooses his "supply" or "prices" for the usage of the different payment methods: $P_m = \{p_{jm}$ for $j = 1, 2, \dots, J\}$.
- Panel data of consumer transactions: Observation (i, t) : transaction t of consumer i .
- Observable characteristics of transaction:

$$\left\{ Z_i, V_{it}, P_{m(t)}, X, \tilde{X}_i \right\} \text{ and the choice of method } Y_{it}$$

Econometric Model

- Market shares (MNL):

$$S_j(Z, V, P, \tilde{X}) = \frac{\exp \left\{ g \left(Z, V, P, \tilde{X} \right) \beta_j \right\}}{\sum_{k=1}^J \exp \left\{ g \left(Z, V, P, \tilde{X} \right) \beta_k \right\}}$$

- Potential endogeneity problems are ignored for the moment.
- Variables used to capture supply conditions at the merchant level:
 "Perceived Card Acceptance". Answer to the question "What method of payment would not have been accepted"

Empirical Results

*** The paper does not present clearly results on the relative contribution of preferences and merchant-supply factors.

On the one hand ...

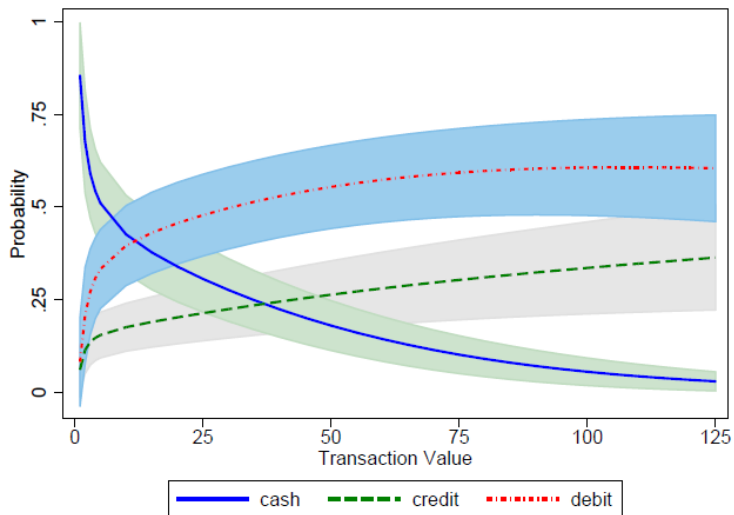
Table 9: Average Partial Effects of POS characteristics

	Cash	DC	CC
Both CC and DC accepted	-0.320***	0.154***	0.166***
	0.01	0.02	0.02

Empirical Results

On the other hand ...

Figure 3: Baseline Consumer



Comments

- I would like to see a figure with the (counterfactual) market shares in the hypothetical scenario where all the methods of payment are accepted in all the transactions and merchants.
- "Perceived Card Acceptance" variable as a standard explanatory variable in the MNL. Does it make sense? Why not restricting the choice set for those observations?
- "Perceived" \rightarrow Measurement error of a non-standard type. Correlated with the most-preferred choice. Consumers who want to use cards are more likely to perceive the restriction.
- Endogeneity of "card acceptance". Consumers may choose endogenously the merchant that accept their favorite method of payment.

Summary

- Interesting dataset and paper.
- Useful to identify separately the contribution of preferences and merchant card acceptance to the large market share of cash for small transaction values.
- Improve presentation of some results.
- Improve the way that the "perceived acceptance" variables are included in econometric model; and deal with measurement error and potential endogeneity problems.