

Loyalty Schemes, Switching Costs and Paying Customer to Switch: Evidence from UK Credit Cards

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ABSTRACT

Using UK credit card data, a hedonic model is estimated with a nested two-level error component structure. This allows us to uniquely control for unobserved heterogeneity at issuer and card levels. Our key findings suggest: (1) the Airmiles loyalty scheme and annual fee creates switching costs and customer lock-in allowing issuers to charge higher prices and (2) issuers pay customers to switch using introductory offers on purchases. We also find no evidence that default charges are used to subsidise lower prices. Finally, customers do not pay different prices for using different payment networks.

Key Words: loyalty schemes; switching costs; introductory offers; pricing.

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Are Loyalty Schemes Effective Switching Costs? Evidence from UK Credit Cards

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Using UK credit card data, a hedonic model is estimated with a nested two-level error component structure. This allows us to uniquely control for unobserved heterogeneity at issuer and card levels. Our key findings suggest: (1) the Airmiles loyalty scheme and annual fee creates switching costs and customer lock-in allowing issuers to charge higher prices and (2) issuers pay customers to switch using introductory offers on purchases. We also find no evidence that default charges are used to subsidise lower prices. Finally, customers do not pay different prices for using different payment networks.

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1. Introduction

The UK Department for Trade and Industry found that credit card customers could save £1.9bn a year in interest payments by switching to cheaper credit cards (DTI, 2003). So why are UK credit card customers' reluctant to switch? There is an extant theoretical literature predicting that firms charge higher prices in the presence of switching costs (see Klemperer (1995) for a review). Chen (1997) argues, however, that the presence of switching costs explains the practice of paying customers to switch. This is a business practice prevalent in the UK credit card market via introductory offers on balance transfers and new purchases.

Previous empirical work on the US credit card market has sought to explain price stickiness and customers' apparent unwillingness to switch. Ausubel (1991) proposes an adverse selection model where low risk customers are less sensitive to interest rates than high risk customers. This is because the former do not intend to borrow using a credit card. Issuers will not therefore compete on price because this will only attract high risk customers. Calem and Mester (1995) and Calem *et al.*, (2006) suggest switching costs arise due to adverse selection. Customers develop a reputation with one issuer who will extend their borrowing levels; however, a rival firm will not accept a large balance transfer due to adverse selection. Thus, the size of the outstanding balance acts as a switching cost. Stango (2002) also finds that credit card prices are an increasing function of both outstanding balances and annual fees, which act as switching costs.

The current paper makes three contributions to the literature on switching costs: (1) it is the first to analyse loyalty schemes as switching costs, (2) it determines whether

introductory offers are used to pay customers to switch, (3) it is the first to capture characteristics at the *card* and *issuer* level employing a nested two-level error component model. Hausman tests indicate that capturing issuer effects in this way is preferred to a fixed effects approach. The econometric modelling approach, unlike those used in previous studies, is therefore able to control for unobserved heterogeneity at the issuer and card level. The paper also makes a contribution to the debate on default charges, determining whether they are used to subsidise lower prices. Finally, by examining whether customers pay different prices for using proprietary or cooperative payment systems the paper contributes to the antitrust debate on payment systems (Schmalensee, 2002).

The paper is organised in the following way. Section 2 outlines the pertinent characteristics of the credit card market and the characteristics of credit cards in the UK. Section 3 explains the modelling strategy linking the empirical model to theory and practice, while section 4 describes the data set. The empirical results are reported and discussed in section 5 and conclusions are in section 6.

2. The credit card market and card characteristics in the UK

2.1 A brief description of the UK credit card market

Until 1987 there was effectively only one merchant acquirer in the UK for each of the two international payment systems (MasterCard/Eurocard and Visa). In addition, a duopoly existed in relation to the supply of credit card services due to the absence of competition amongst the main issuers (Barclaycard and Access). Indeed, there was an absence of competition with respect to both pricing and product characteristics (i.e. cards offered similar terms and conditions as well as charging similar rates of interest). New

entrants began to successfully enter the UK market during the 1990s however, and included US financial institutions, internet banks and supermarkets. The new entrants typically targeted the most profitable customer segments in the most lucrative product ranges (Boss *et al.*, 2000) and invigorated competition. Some of the new entrants have been fairly successful in capturing market share with 2004 figures indicating that MBNA (a foreign entrant) accounts for about 9% of the market in outstanding balances and Egg (an internet bank) accounts for about 4% of outstanding balances. The big high street banks still dominate the market with RBS/NatWest, Barclaycard, and HSBC each having about 15% of the market and Lloyds TSB having about 10% of the market. The figures suggest that the market is not highly concentrated and that MBNA, in particular, has been successful in capturing market share (European Payment Review, 2004-05).

Credit cards are issued using the Amex, MasterCard or Visa payment systems. MasterCard and Visa dominate the UK market with a combined market share of about 90%, each having a similar market share (Hayashi and Weiner, 2006). These are bank-owned payment organisations that facilitate the exchange and settlement of transactions.¹ When the issuer's bank and the merchant's bank are different, the merchant's bank must pay an interchange fee to the issuer's bank. For Visa and MasterCard the interchange fee is set collectively by the banks which belong to a particular payment system. Schmalensee (2002) argues that the main economic role of the interchange fee is not to exploit the system's market power, but to shift costs between merchants and consumers (via their banks) to increase the value of the payment system as a whole to its owners. The level of the interchange fee determines the relative fees faced by cardholders and merchants.

¹ Good explanations of how the payment systems operate can be found in Schmalensee (2002) and Rochet and Tirole (2002).

Some card issuers seek to exploit alliances and joint ventures with non-financial institutions in order to expand market share, differentiate their product from rivals, and create customer loyalty. Thus, they use such collaborative ventures as a means of competing with rival issuers. Such collaboration typically manifests in the form of 'affinity' and co-branded cards. With affinity cards the issuer makes a payment to its partner organisation when a customer adopts and/or uses the card. Co-branded cards bear the brand of the issuer and partner organisation with cardholders receiving benefits from the partner e.g. Sony and AOL cards offer points for usage that are redeemable on their respective products and services. In 2002, 3.7% of credit cards were affinity cards while 2.5% of cards were co-branded (Kubis-Laiak, 2004).

Worthington (2001) credits the Bank of Scotland with introducing the first affinity card in the UK in 1984, which was affiliated to the AA (Automobile Association). In addition, the Bank of Scotland launched the first charity affinity card with the NSPCC (National Society for the Prevention of Cruelty to Children) in 1987. For issuers such as MBNA (the pioneer of affinity cards in the US) and the Bank of Scotland, affinity programmes are an important competitive strategy with MBNA having over 800 and the Bank of Scotland having over 600. Moreover, issuers have cards affiliated to a wide variety of organisations, including: Manchester United Football Club, World Wildlife Fund-UK, the Labour Party and the University of Nottingham. Such affiliations are important in generating loyalty and to a differentiation strategy. This is distinct from loyalty created through switching costs, which is the primary concern of this paper.

The entry of supermarkets and internet banking changed the distribution channels through which the issuers could reach customers and increased competition. Supermarkets first entered the market in 1997 with the Tesco and Sainsbury joint ventures with the Royal Bank of Scotland and Bank of Scotland, respectively. Credit cards first became available over the internet in the UK in 1999 with the introduction of Egg, Smile, Marbles and Cahoot. Apart from Egg, which has about 5% share of the customer base (Intel, 2004), the supermarket and internet credit cards have not obtained significant market shares.

2.2 Card characteristics

Premium cards (e.g. gold, platinum, and black cards) have typically been perceived as ‘status symbol’ cards aimed at high earners. Some premium cards charge an annual fee with other financial services often included with the card (e.g. free foreign exchange and travel insurance). Individuals that are offered such cards, however, are also considered by issuers to have relatively low default risks due to age and income requirements. The requirements mean that premium card types might simply reflect the risk status of a cardholder rather than being a status symbol. Indeed, such cards have become less of a status symbol with premium cards increasing in the market from 4.8% in 1985 to 25.4% in 2000 (Spencer, 2003).

Notwithstanding the use of age and income requirements for particular card types, age and income are also typically used by issuers as important determinants of default risk. Hence, in the context of risk based pricing, the interest rate available to particular customers will tend to be a function of their age and income.

Issuers have sought to create loyalty through the use of reward schemes such as discounts on selected products, point schemes and ‘cash back’. Not only are such loyalty schemes designed to promote loyalty, but they also encourage increased card usage with the amount of points accrued being determined by usage. The cash back and point schemes also create switching costs where the reward is non-transferable between cards. The fact that they create potential switching costs distinguishes them from ‘affinity’ attributes that create consumer loyalty by meeting heterogeneous preferences.

To counteract loyalty schemes, however, issuers often seek to steal rival’s market share by effectively paying customers to switch using discounts on balance transfers and new purchases for a fixed period of time (typically around 6-12months). After the discount period ends the interest rate reverts to the cards’ standard variable rate. Most providers charge fees for a balance transfer, typically 2-3% of the value that is being transferred. Such attempts to capture market share from rivals might reflect the relative maturity of the UK credit card market where growth is more likely to come from appropriating rivals’ market share rather than from new customers. Indeed, more than 66% of the adult population in the UK have a credit card with an average of 2.4 cards per cardholder (APACS, 2007).

3. Modelling strategy and hypotheses

Following the seminal work of Rosen (1974), hedonic regression models have become an established way of examining how price dispersion is determined by different product attributes. Some studies, however, have also incorporated buyer attributes (Lucas, 1977) and organisation attributes (Berndt *et al.*, 1995; Delgado and Waterson, 2003). Following

these approaches, we employ a hedonic regression model incorporating card attributes, customer attributes and the organisational attributes of the card issuers.

In order to determine and quantify how various card, organisational and customer attributes impact on the price of the j^{th} credit card, issued by the i^{th} issuer in period t we employ a multilevel mixed-effects hedonic regression of the following form:

$$\ln P_{ijt} = \beta W_{ijt} + \gamma X_{ijt} + \eta Z_{ijt} + u_i^1 + u_{ij}^2 + \varepsilon_{ijt} \quad (1)$$

where $\ln P$ is the natural logarithm of the typical Annual Percentage Rate (APR), W is a vector of customer characteristics that issuers use to screen applicants, X is a vector of card characteristics and Z is a vector of organisational characteristics, u_i^1 is a random intercept term capturing unobserved characteristics at the issuer level, u_{ij}^2 is a random intercept term at the card level (which is nested within the issuer level), ε is a stochastic error term and β , η and γ are unknown coefficients to be estimated. It is assumed that $u_i^1 \sim N(0, \sigma_1^2)$ and $u_{ij}^2 \sim N(0, \sigma_2^2)$ independently of each other. Equation (1) is, therefore, a two-level nested error components model of the form outlined by Baltagi *et al.* (2001). Panel data applications typically capture unobserved heterogeneity using an idiosyncratic error term. We employ a two-level nested error component structure in order to capture unobservable characteristics at the issuer and card level where cards are naturally grouped within issuers.

The key variables of interest to this study are included in the vector X . Namely, the points, Airmiles and cash back loyalty schemes and the introductory offers on balance transfers and new purchases. Dummy variables are used to capture cash back, points for using the card and Airmiles. Points and Airmiles schemes will generate switching costs

because customers typically use them as savings schemes. They create ‘lock-in’ while customers save points or Airmiles for particular products or services they can be redeemed against. With cash back schemes there is ‘lock-in’ via forced saving. Customers benefit from the scheme, and liquidate their savings, at the end of the year through a rebate on their outstanding balance.² These switching costs are novel features of the current paper. Ausubel (1991) and Stango (2002) suggest that the annual fee is a switching cost, which we also include. The annual fee makes it more costly for customers to switch and to carry more than one credit card. Whilst customers have choices about whether to use credit cards with switching cost attributes or not, a feature of all these attributes is that once the customer makes the choice to use such a credit card, there are costs to switching. Therefore, following Klemperer (1995), we posit that variables that capture switching costs and lock-in will be associated with higher prices.

Competitors in the credit card market seek to capture rivals’ market share with introductory offers. Chen (1997) suggests that the presence of switching costs can explain the practice of paying customers to switch. Introductory offers tend to take two forms: discounts on new purchases and discounts on balance transfers. We include two variables in our model to measure (in months) the introductory offer periods on balance transfers and new purchases. Although introductory offers are costly to issuers, if issuers are using introductory offers to pay customers to switch and are investing in market share, we predict that they will be negatively priced.

² Some cards also offer discount schemes, which exploit customers’ loyalty to certain retail outlets where the discounts are available. In this scheme customers benefit at the point of transaction at selected retail outlets. This attribute is used by issuers as a means of product differentiation, which is distinct from switching costs because customers are not locked in. Product differentiation is used to dampen price competition in the face of heterogenous consumer preferences (Shaked and Sutton, 1982).

Other interesting variables in the vector X capture payment systems and default charges. Dummies are included for cards that allow customers to use both the Mastercard and Visa payments, Mastercard and Amex. Visa is the base payment system. Ownership structure is an interesting feature of these systems with Visa and Mastercard cooperatively setting interchange fees whilst Amex is a proprietary system owned by American Express. Visa and Mastercard have consequently received attention from antitrust authorities regarding how the interchange fee is set (Schmalensee, 2002). However, Schmalensee (2002) argues that the interchange fee maximises total output, producers' and consumers' surplus. If this is the case then the interchange fee would have no significant effect on the price customers' are charged.

Default charges are a source of revenue and ultimately large profits for credit card issuers. Indeed, in April 2006 the UK Office of Fair Trading (OFT) announced that default charges were excessive (generating in excess of £300 million a year for the industry) and were significantly higher than what is legally fair. In addition, Zywicki (2000) suggests that late payment and over-limit charges are principal predictors of eventual default and that these "hidden fees" are targeted almost exclusively at high-risk card users who are the most likely to default.

The remaining control variables included in the vector X are: dummies for card type (i.e. platinum, gold, standard, student and initial), the interest free period, a fixed rate dummy and charity donations when an account is opened and via card expenditure. The vector W includes both customers' age and income attributes required to obtain a card. The vector Z includes the organisational characteristics of the issuer i.e. ownership structure, joint venture and alliance, personal loan specialist, and internet service provision.

4. Data

The data set contains an unbalanced panel of 275 credit cards which are observed over a seven month period between April 2006 and October 2006, inclusive. The data set contains a total of 1926 observations with each card being observed for a minimum of one month and a maximum of seven months. Cards were chosen on the basis of being issued by one of the top 15 credit card issuers and on the basis of data availability. The typical APR and card characteristics were collected from individual credit card issuers', websites and summary boxes. The summary box provides consumers with consistent and succinct summaries of the key features of a credit card, thus enabling consumers to compare different credit cards more easily (APACS, 2006). All integral features of the credit card product, such as the interest free period and introductory rates are included in the summary box. Pre-contract, the summary box should appear prominently on or within any application form or promotional material with the exception of television or radio promotional campaigns. With respect to the internet, a "click-through" to a page containing the summary box is available. Information on free-standing or optional product features such as loyalty programmes and payment protection insurance are not shown in the summary box and were sourced from card providers' websites.

The variables used in the empirical analysis are reported in Table 1 along with their summary statistics. In the sample period the average APR is 15.45%; however, there is some variation with the lowest priced card charging 5.9% APR and the highest charging 35.4% APR. Cash back loyalty schemes pay out an average 1.07% for cards that use such schemes and for cards that charge a fee per annum, the average is £88. Note that Visa is

the dominant payment system in the sample and that Amex has a very small market share. This possibly reflects that Amex is used by few credit cards.

5. Results

We report estimates for the two-level nested error components model (equation (1)) and for the one-level model, which includes a random intercept term for the issuers only. This one-level model is akin to a standard panel data random effects model. All models are estimated using restricted maximum likelihood estimation (Thompson, 1962).

Columns (1) and (2) report results from the estimation of a standard hedonic regression. Columns (3) and (4) report results where the hedonic regression has been augmented with organisation and consumer attributes. Chi-squared tests indicate that the consumer and organisation variables are jointly significant at greater than the 1% level. Likelihood Ratio (LR) tests indicate that the one-level and two-level nested error components are significant and that the latter is preferred.³ Furthermore, coefficients and standard errors are noticeably different, demonstrating the importance of capturing unobserved heterogeneity at both the issuer and card level. Hausman tests indicate that random effects specification is preferred to fixed effects when capturing unobserved issuer heterogeneity. Following the aforementioned tests, our discussion focuses on the results reported in column (4).

³ The nested two-level error components are u_i^1 and u_{ij}^2 with the superscripts indicating the level. The one-level error structure excludes the second level that is nested within the first level and so excludes u_{ij}^2 when estimated.

At the card level, we re-affirm the findings of previous issuer level studies (Ausubel, 1991; Stango, 2002; Heffernan, 2002) by finding results consistent with the annual fee being a significant switching cost. Indeed, Heffernan (2002) suggests that card providers who charge an annual fee are engaging in price discrimination. The coefficient estimate on FEEPA in column (4) indicates that each £1 increase in fee is associated with 0.37% higher APR.⁴

A novel feature of the current paper is the inclusion of loyalty schemes as switching costs in the model. In column (4), only the Airmiles loyalty scheme is found to be a statistically significant switching cost. Cards with an Airmiles scheme have average APRs that are 16.56% higher than cards with no loyalty scheme. This is consistent with issuers using Airmiles to create customer lock-in with switching costs and exploiting lock-in with higher prices (Klemperer, 1995).

The coefficient on LENPUR indicates that each additional day on the introductory offer for purchases is associated with an average 0.94% lower APR. This is consistent with issuers paying customers to switch in the presence of switching costs as predicted by theory (Chen, 1997). It is also consistent with issuers using the introductory offer to attract customers that are not locked in to a credit card and then locking them in with switching costs (Gehrig and Stenbacka, 2004). In any case, in a competitive environment issuers are using the offer on purchases as an investment in market share.

⁴ Given the log-linear functional form of the model, the point estimates are transformed into percentages using the formula $(e^{\beta} - 1) \cdot 100$.

In contrast to purchases, the introductory offer on balance transfers costs customers an average 0.38% for each additional day of the offer period. If customers are locked in due to switching costs, a customer accepting the offer can expect to pay a higher price when the offer period expires. If switching costs are not effective, however, customers not benefiting from the introductory offer are paying for issuers to increase market share. Though introductory offers are not available to all customers, it is interesting to incorporate them in a hedonic regression in order to determine their impact on pricing.

The robustness of our findings for the switching cost and introductory offer variables are examined by testing their stability over time. These key variables are allowed to vary over time by interacting them with time dummies. The null hypothesis that the coefficients are constant over time is rejected for CASHBACK, FEEPA, AIRMILES and LENBAL. However, coefficient estimates on these variables all have the same sign over time and the coefficients reported in Table 2 are an average of those where there is month-to-month variation. We therefore only report the results where coefficient estimates are assumed constant over time.⁵

Though not central to this study, it is interesting to note that customers do not pay significantly different prices for using different payment systems. This suggests that it does not matter to the customer whether a payment system is cooperative or proprietary. In the UK the Amex network is smaller than its Visa and MasterCard rivals that can offer greater network externalities. Gandal (1994) found customers were prepared to pay for

⁵ The results of models allowing key variables to vary on a monthly basis and tests of the equality of coefficients over time are available from the authors.

network externalities in the spreadsheet software market. However, we do not find this to be the case in the credit card market.

Critics have suggested default charges are a hidden fee. If they were used to subsidise the ‘headline’ APR on which firms compete then we would expect the default charge variable to be negatively related to price. We do not find evidence to support this. This suggests that issuers are abiding by principles on fair default charges as set out by the UK’s Office of Fair Trading in 2006.

6. Conclusions

This is the first paper to analyse the effect of switch costs and introductory offers on credit card pricing using both issuer and card level data. We make full use of this rich data by estimating a nested two-level error component model, controlling for unobserved heterogeneity at both the issuer and card levels. Indeed, tests validate the use of this modelling approach and we find it impacts on the results when comparing it with the one-level model. Our findings have implications for issuers, customers and policy-makers.

We find that the fee per annum is a switching cost, consistent with Ausubel (1991), Stango (2002), Heffernan (2002). However, our evidence also indicates that the Airmiles loyalty scheme is an attribute that issuers use to create customer lock-in. This is an attribute associated with switching costs, not considered in previous studies, which allows issuers to charge higher prices compared to credit cards that do not possess such attributes. We also find evidence suggesting that points and cash back schemes do not create switching costs. A policy intervention might require issuers to be transparent

regarding the costs of the Airmiles loyalty scheme and the fee per annum to customers, even though customers might gain products and services in return.

A novel feature of the current paper is that it empirically tests whether issuers pay customers to switch. We find evidence that issuers pay customers to switch using introductory offers on purchases. It is not clear, therefore, whether policy-makers should act to inhibit loyalty schemes because the market provides a solution to switching costs. Indeed, paying customers to switch occurs because of the presence of switching costs (Chen, 1997).

There has been policy concern regarding the potential abuse of the collectively set interchange fees of Visa and Mastercard. The main concern is with the effect on merchants, whose fees are generally affected by the interchange fee (Schmalensee, 2002). Our results confirm that customers are not affected by whether the payment system is a collective or under proprietary ownership.

In April 2006 the UK Office of Fair Trading (OFT) announced that default charges were excessive (generating in excess of £300 million a year for the industry) and were significantly higher than what is legally fair.⁶ There might be concern that revenues from default charges are used to subsidise lower ‘headline’ prices; however, we do not find evidence to support this. This might be because issuers started to set fair default charges in 2007 following principles set out by the OFT.

⁶ <http://www.of.t.gov.uk/news/press/2006/68-06>

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Table 1 - Summary statistics and variable definitions

Attribute	Variable	Definition	Mean	Standard Deviation	Min Value	Max Value
Dependent variable	PRICE	Typical APR	15.45	3.17	5.9	35.4
Card	FV	Interest rate type (0 if variable, 1 if fixed)	0.06	0.24	0	1
	TYP1	Initial credit card dummy	0.01	0.08	0	1
	TYP2	Gold credit card dummy	0.06	0.23	0	1
	TYP3	Platinum credit card dummy	0.22	0.42	0	1
	TYP4	Standard/classic credit card dummy	0.70	0.46	0	1
	TYP5	Student credit card dummy	0.01	0.11	0	1
	PAY1	AMEX payment network dummy	0.04	0.20	0	1
	PAY2	MasterCard payment network dummy	0.31	0.46	0	1
	PAY3	MasterCard or Visa payment network dummy	0.02	0.15	0	1
	PAY4	Visa payment network dummy	0.62	0.49	0	1
	LENPUR	Length of introductory offer on purchases (months)	2.89	3.08	0	12
	LENBAL	Length of introductory offer on balance transfers (months)	6.90	3.84	0	18
	MINPAY	Minimum monthly payment (%)	2.25	0.35	2	5
	FEEPA	Annual fee (£)	1.65	12.60	0	120
	INTFREE	Interest free period (days)	54.34	6.33	0	59
	DEFAULT	Average default charge (£)	16.32	6.08	8	25
	POINTS	Points scheme dummy	0.10	0.30	0	1
	CASHBACK	Annual cash back received on purchases (%)	0.04	0.27	0	3
	AIRMILES	Airmiles dummy	0.04	0.19	0	1
	DISCOUNTS	Discount scheme dummy	0.12	0.32	0	1
DONOPEN	Amount given to affinity partner when account opened (£)	3.18	6.22	0	40	
DONPUR	Amount given to affinity partner per £100 spent on card (£)	0.06	0.13	0	1.25	

Table 1 (Continued)

Attribute	Variable	Definition	Mean	Standard Deviation	Min Value	Max Value
Organisation	COMMERCIAL	Commercial partner dummy	0.18	0.38	0	1
	CONVERTED	Converted mutual dummy	0.03	0.16	0	1
	INTERNET	Internet bank dummy	0.05	0.21	0	1
	MUTUAL	Mutual dummy	0.09	0.29	0	1
	NON-PROF	Non-profit making organisation dummy	0.05	0.23	0	1
	PERSONAL	Personal loan specialist dummy	0.05	0.23	0	1
	SPORT	Sport Club dummy	0.20	0.40	0	1
	SUPERMARKET	Supermarket dummy	0.02	0.14	0	1
Consumer	MINAGE	Minimum age requirement (years)	19.14	2.43	18	25
	MININCOME	Minimum income requirement (£)	5075.81	9350.74	0	25000

Table 2 – Results (dependent variable = ln APR)

Independent variable	(1) One level R.E.		(2) Two level R.E.		(3) One level R.E.		(4) Two level R.E.	
	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.
FV	-0.3710***	(0.0195)	-0.5068***	(0.0441)	-0.2850***	(0.0194)	-0.3931***	(0.0458)
TYP1	0.7409***	(0.0468)	0.8921***	(0.1102)	0.7607***	(0.0460)	0.9074***	(0.1069)
TYP2	0.0072	(0.0159)	0.0161	(0.0400)	0.0726***	(0.0162)	0.0653*	(0.0395)
TYP3	-0.0911***	(0.0097)	-0.0738***	(0.0216)	0.0281**	(0.0121)	0.0017	(0.0245)
TYP5	0.2648***	(0.0318)	0.1822***	(0.0699)	0.2394***	(0.0311)	0.1423**	(0.0678)
PAY1	-0.0155	(0.0323)	-0.1024*	(0.0533)	0.0565*	(0.0332)	-0.0330	(0.0654)
PAY2	-0.0261***	(0.0089)	0.0016	(0.0215)	-0.0119	(0.0086)	-0.0020	(0.0219)
PAY3	-0.0828***	(0.0225)	-0.0316	(0.0562)	-0.0228	(0.0231)	0.0329	(0.0609)
LENPUR	0.0045**	(0.0020)	-0.0094***	(0.0012)	0.0049***	(0.0019)	-0.0094***	(0.0012)
LENBAL	0.0127***	(0.0017)	0.0039***	(0.0012)	0.0096***	(0.0017)	0.0038***	(0.0012)
MINPAY	0.0360**	(0.0157)	-0.1266***	(0.0140)	0.0029	(0.0179)	-0.1382***	(0.0145)
FEEPA	0.0042***	(0.0003)	0.0038***	(0.0008)	0.0040***	(0.0003)	0.0037***	(0.0007)
INTFREE	0.0046***	(0.0006)	0.0054***	(0.0016)	0.0061***	(0.0006)	0.0071***	(0.0016)
DEFAULT	0.0020**	(0.0010)	-0.0005	(0.0004)	0.0018*	(0.0009)	-0.0004	(0.0004)
POINTS	0.0579***	(0.0117)	-0.0133	(0.0105)	0.0553***	(0.0117)	-0.0145	(0.0104)
CASHBACK	0.0200	(0.0134)	0.0054	(0.0169)	0.0037	(0.0131)	0.0040	(0.0169)
AIRMILES	0.1685***	(0.0199)	0.1464***	(0.0526)	0.1743***	(0.0192)	0.1532***	(0.0509)
DISCOUNTS	0.0569***	(0.0104)	0.0624***	(0.0171)	0.0530***	(0.0104)	0.0669***	(0.0170)
DONOPEN	0.0054***	(0.0009)	0.0014	(0.0013)	0.0058***	(0.0009)	0.0017	(0.0013)
DONPUR	0.1402***	(0.0394)	0.2171**	(0.0922)	0.1883***	(0.0385)	0.2771***	(0.0936)
COMMERCIAL					0.0182	(0.0146)	-0.0047	(0.0337)
CONVERTED					-0.1038***	(0.0229)	-0.1382**	(0.0587)
INTERNET					0.0034	(0.0182)	-0.0592	(0.0458)
MUTUAL					0.0166	(0.0149)	0.0121	(0.0371)
NON-PROF					0.0337**	(0.0141)	0.0241	(0.0389)
PERSONAL					-0.0481**	(0.0225)	-0.0567	(0.0485)
SPORT					0.0099	(0.0142)	-0.0078	(0.0345)
SUPERMARKET					0.0405	(0.0276)	0.1679***	(0.0630)
MINAGE					-0.0212***	(0.0041)	-0.0260***	(0.0076)
MININCOME					-5.65e-6***	(1.16e-6)	-3.03e-6***	(1.60e-6)
Constant	2.2221***	(0.0608)	2.7248***	(0.0927)	2.6247***	(0.0974)	3.1505***	(0.1563)
<i>Time</i>	3.13	[0.79]	12.51	[0.05]	3.24	[0.78]	12.98	[0.04]
<i>Random effects</i> [Prob]	46.29	[0.00]	2619.33	[0.00]	87.17	[0.00]	2436.58	[0.00]
<i>Two vs. One level</i> [Prob]	-		2573.05	[0.00]	-		2349.42	[0.00]
<i>Fixed vs. Random effects</i> [Prob]	16.29	[0.93]	18.77	[0.81]	16.06	[0.99]	17.66	[0.99]
<i>Regressors</i> [Prob]	2600.90	[0.00]	488.58	[0.00]	3344.16	[0.00]	592.56	[0.00]
<i>Consumer</i> [Prob.]	-		-		250.5	[0.00]	36.78	[0.00]
<i>Organisation</i> [Prob]	-		-		48.22	[0.00]	19.99	[0.01]

Notes: (1) * p<0.10, ** p<0.05, *** p<0.01; (2) *Time* is a joint test statistic [probability level] of the time dummies; (3) *Random effects* is a test statistic [probability level] of the random intercept terms; (4) *Two vs. One level* is a test statistic [probability level] of the nested two-level model versus the one-level model; (5) *Fixed vs. Random* is a Hausman test statistic [probability level] of fixed issuer effects versus random issuer effects; (6) *Regressors* is a joint test statistic [probability level] of the regressors; (7) *Consumer* is a joint test statistic [probability level] of the consumer characteristics; (8) *Organisation* is a joint test statistic [probability level] of the organisation characteristics.