

# Card acceptance and surcharging: the role of costs and competition

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# Motivation

## Netherlands

- Costs of debit card payments are declining→debit card also attractive from social cost perspective for low amounts
- Consumers face limitations card usage because of non-acceptance and surcharging

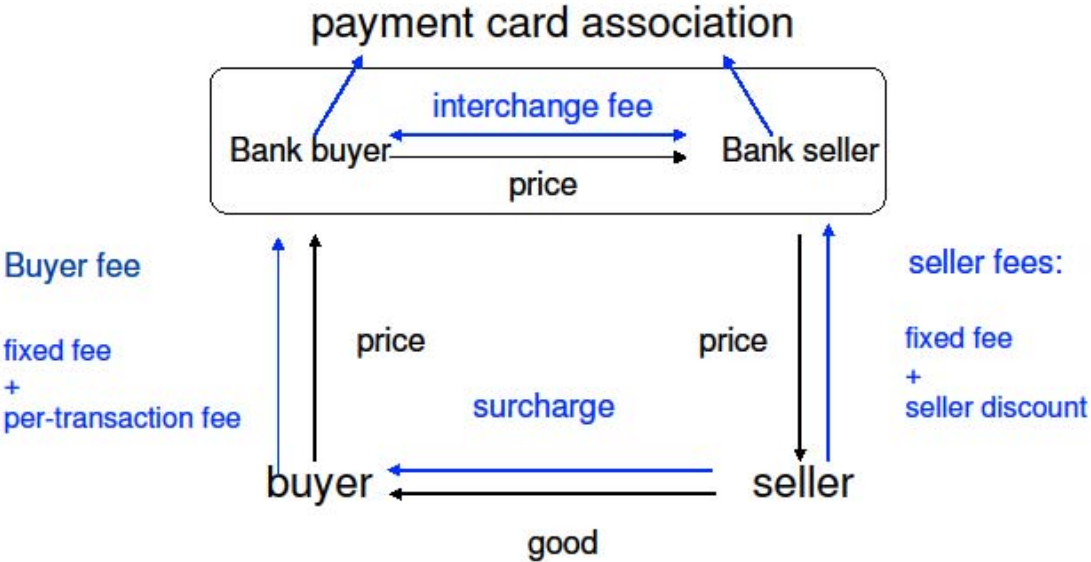
## International

- The 'No surcharge rule' of card payments is under pressure by antitrust and competition authorities
- Price sensitivity card holders relative to retailers key issue in MIF debate

# Key figures NL POS payments 2010

Payment instrument	# of transactions (in millions)	Value (billions of euro's)	Avg. trx value (euro's)
Cash (estimate!)	± 4,700	±60	±12.50
Debit card	2,101	78.9	37.55
E-purse	178	0.5	2.61
Credit card	36	4	± 111.00

# Key definitions card payment system



# Overview theoretical literature (1)

**Baxter 83; Bolt & Chakravorti 08**, overview of papers:

Consumers and merchants are homogenous.

Impact differences in cost sensitivity card services between retailers and consumers on optimal pricing (rationale interchange fee).

**Rochet & Tirole 02; Hayashi 06; Guthri & Wright 07**

R&T introduce strategic behaviour in merchants' card acceptance decision. Only (local) monopolists may decide to turn down card payments.

**Wright 03**

Merchants with monopoly power, who are allowed to surcharge, will do so excessively

# Overview theoretical literature (2)

## Wright 04

Trade off benefits and cost of card acceptance may differ by sector => consequently card acceptance differs by sector.

## McAndrews & Wang 08

Intro fixed cost, next to variable cost in card acceptance decision.

Impact card acceptance on unit transaction cost.

Large merchants or merchants who sell high value products will adopt payment cards first. As costs fall other merchants will follow.

# Hypotheses (1)

H 1: If accepting card payments increases average unit transaction costs, a merchant will be less inclined to accept card payments;

H 2: If accepting card payments increases average unit transaction costs, a card-accepting merchant will be more likely to surcharge card payments.



# Hypotheses (2)

## Testing hypotheses 1 and 2: impact cost on card acceptance and surcharging

*Subjective information:*

1. Dummies indicating fixed/variable cost debit (credit) card are high;

*Objective information:*

2. Firm size;
3. Sector.

Assessment test result depends on expected sign and significance of the 3 sets of vars.

3 out of 3 OK: full support for hypothesis;

2 out of 3 OK: strong support;

1 out of 3 OK: mild support;

0 out of three: no support.

# Hypotheses (3)

H 3a: A merchant who is a local monopolist will be less likely to accept a card payment than a merchant who faces moderate competition;

H 3b: A merchant who faces intense competition will be more likely to accept card payment than a merchant who faces moderate competition;

H 4a: A card accepting merchant who is a local monopolist will be more likely to surcharge card payments than a card-accepting merchant who faces moderate competition;

H 4b: A card accepting merchant who faces intense competition will be more likely to surcharge card payments than a card-accepting merchant who faces moderate competition.

# Hypotheses (4)

## **Testing hypotheses 3a and 4a: impact being a local monopolist on card acceptance and surcharging compared to facing moderate competition**

- Impact dummy 'No competition'

in acceptance eq. negative and significant => H3a not rejected;

In surcharging eq. positive and significant => H4a not rejected.

## **Testing hypotheses 3b and 4b: impact facing intense competition on card acceptance and surcharging compared to facing moderate competition**

- Impact dummy 'Intense competition'

in acceptance eq. positive and significant => H3b not rejected;

In surcharging eq. negative and significant => H4b not rejected.

# Data (1)

## One survey held in autumn 2007

- Interviews by telephone among 1008 retailers by TNS Nipo
- Questions on acceptance, surcharging, payment behaviour customers, reasons underlying acceptance and surcharging decisions, costs, cost perception, market condition, sales and standard firm characteristics

## Data (2)

Share of retailers accepting debit card:	70%
Share of debit card surcharging	20%
Average surcharge (fixed amount)	EUR 0.24
Average treshold amount	EUR 10.50
Share of retailers accepting credit card:	28%
Share of credit card surcharging	13%
Average surcharge	mixed results

*Results refer to reweighed data*

# Data (3)

Table 1 Acceptance and surcharging debit and credit cards in 2007  
In percentages; reweighed data

Sector	Acceptance debit card	Surcharging debit card	Acceptance credit card	Surcharging credit card
Food	76	44	14	40
Garden centre, florist, etc	73	36	22	15
Clothing, shoes	89	10	54	6
Builder's merchant	80	19	15	5
Hotels/restaurants/pubs etc	56	19	26	21
Department stores, furniture,	73	11	29	10
Media (books, DVDs, Cds)	84	32	33	4
Drugstores, perfumeries	85	29	25	17
Other retail stores	75	19	37	3
Gas stations/travel agencies	81	34	72	21
Other services	44	6	16	10
<b>Firm size (no. of employees)</b>				
1	50	23	13	19
2-4	75	22	29	15
5-9	89	19	46	7
10-19	93	9	59	9
20-49	92	4	54	24
50 and more	97	2	74	10
<b>Competitiveness market</b>				
Intense	67	26	29	14
Strong	74	15	32	10
Moderate	72	15	24	16
Weak	69	28	33	11
<u>No</u>	<u>44</u>	<u>52</u>	<u>16</u>	<u>30</u>
Total	70	20	28	13

# Data (4)

Table 2 Firm size and cost perception, 2007

reweighed data; 1=very low; 6=sufficient/just right; and 10= very high

Firm size (no. of employees)	Fixed costs			Variable costs		
	cash	debit card	credit card	cash	debit card	credit card
1	5.2	6.3	8.2	4.9	6.0	8.2
2-4	6.1	6.7	7.3	6.2	6.7	7.2
5-9	5.9	6.5	7.2	6.3	6.6	7.7
10-19	6.2	6.6	7.2	6.0	6.6	7.7
20-49	5.5	6.5	6.2	5.6	6.2	7.1
>=50	6.6	6.3	6.7	6.2	6.5	7.6
Total	5.8	6.5	7.3	5.7	6.5	7.5
Don't know (in %)	14	27	67	18	33	68
Number of respondents	1008	1008	1008	1008	1008	1008

# Econometric model (1)

## Estimating the impact of costs and competition on card acceptance and surcharging

- Sample: All retailers (n=1,008), 837 accept the debit card, 156 surcharge them. 378 accept credit card payments.
- Heckman probit selection model/ separate probit models
- Acceptance
- Surcharging
- Explanatory variables:
  - Both eqs.: fixed/variable costs debit card too high, competitiveness market, firm size, sector, annual sales, independent shop, urbanisation degree, province
  - Acceptance eq. only: regional income
  - Surcharging eq. only: cost-sales ratio



# Results (1)

## Significant results debit card payments

### Acceptance

Fixed/var. costs high	-12%p/-5%p
Firm size	+
Sector	mixed results
No competition	- 14%p
Independent shop	- 9%p
Ln regional income	+
Province	

### Surcharging

Cost-sales ratio	+
Fixed costs high	9%p
Firm size	-
Sector	
No/weak competition	25%p/8%p
Independent shop	7%p

Estimated  $r^2$  acceptance and surcharging equation: insignificant

# Results (2)

## Significant results acceptance credit card payments

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Fixed/var. costs high	- 42%p/ -26%p
Firm size small	- 25%p
Sector	
Intense/strong competition	13%p/9%p
Independent shop	- 12%p
Urbanisation degree	+

Sample: All retailers who accept the debit card (n=837)  
378 of them accept credit card payments

# Results (3)

## Table 6 Summary test results hypotheses 1- 2

	Debit card payments			Credit card payments		
	Expected sign?	Significant?	Amount of evidence?	Expected sign?	Significant?	Amount of evidence?
<b>H1: If accepting card payments increases average unit transaction costs, a merchant will be less inclined to accept card payments.</b>						
Cost perception	Yes	Yes		Yes	Yes	
Firm size	Yes	Yes		Yes	Yes	
Sector	Mixed	Yes	Strong	Yes	Yes	Full
<b>H2: If accepting card payments increases average unit transaction costs, a card accepting merchant will be more likely to surcharge card payments.</b>						
Cost perception	Mixed	Mixed		-	-	
Firm size	Yes	Yes		-	-	
Sector	Yes	Yes	Strong	-	-	-

# Results (4)

**Table 6 Summary test results hypotheses 3a- 4b**

	Debit card payments			Credit card payments		
	Expected sign	Significant	Hypothesis rejected?	Expected sign	Significant	Hypothesis rejected?
H3a: A merchant who is a local monopolist will be less likely to accept a card payment than a merchant who faces moderate competition. Dummy: No competition	Yes	Yes	Not rejected	Yes	No	Rejected
H 3b: A merchant that faces intense competition will be more likely to accept card payment than a merchant who faces moderate competition. Dummy: Intense competition	Yes	No	Rejected	Yes	Yes	Not rejected
H 4a: A card accepting merchant who is a local monopolist will be more likely to surcharge card payments than a card-accepting merchant who faces moderate competition. Dummy: No competition	Yes	Yes	Not rejected	-	-	-
H 4b: A card accepting merchant that faces intense competition will be more likely to surcharge card payments than a card-accepting merchant who faces moderate competition Dummy: Intense competition	Yes	No	Rejected	-	-	-

# Concluding

- Empirical support predictions economic theory wrt costs and competition on card acceptance;
- Decrease in unit transaction cost increases card acceptance and leads to less surcharging (debit card);
- Competition affects card acceptance and surcharging decisions...
- ...how precisely depends on the type of card. Dutch peculiarity??;
- The possibility to surcharge debit cards seems to have stimulated card acceptance among merchants who would otherwise not have accepted them;
- However, surcharging needs to be introduced carefully as it also affects consumers' payment choices.

# Thank you for your attention!

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