



What can we learn about payment choice from seeing all retail transaction?

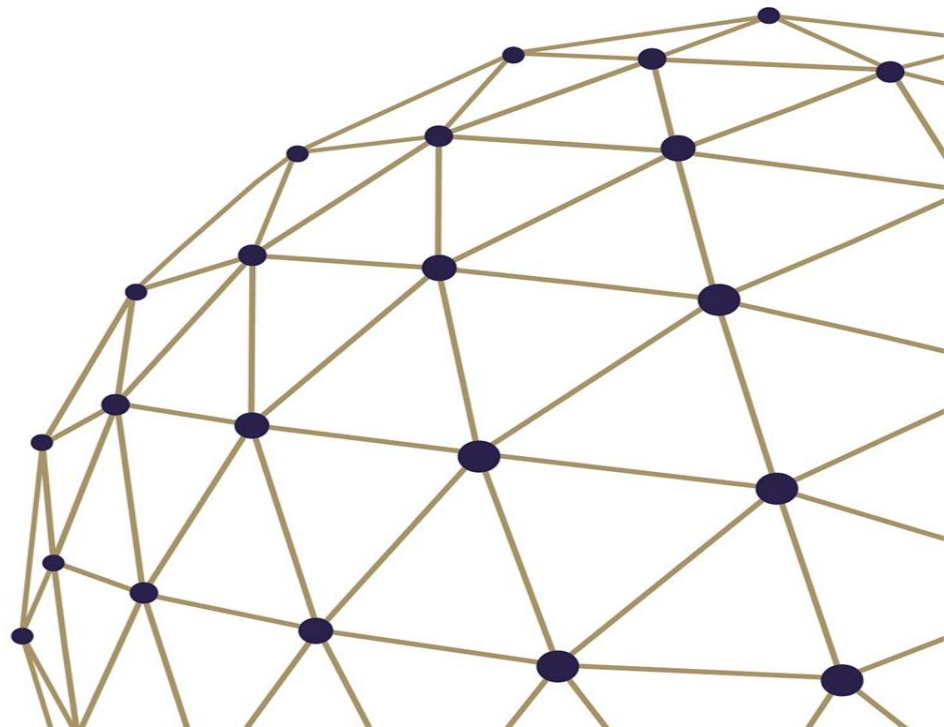
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2017.12.01.

Disclaimer:

The views expressed are those of the authors' and do not necessarily reflect the official view of the central bank of Hungary (Magyar Nemzeti Bank).





Outline of the presentation

- Hungarian payment system
- Datasource
- Descriptive observations
- Research questions
- Main results
- Conclusion



Macro situation of the Hungarian payment system

Cash intensive economy

- Cash/GDP slightly higher than in the eurozone

No cheques

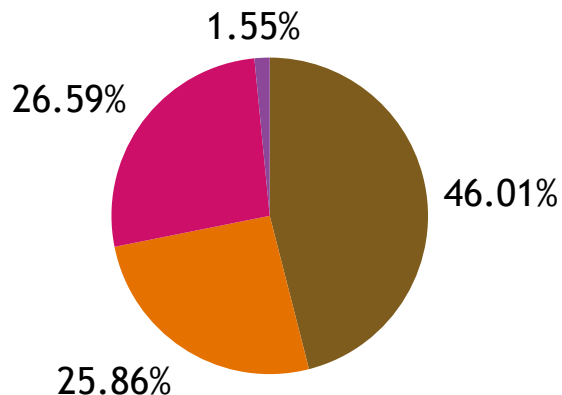
Good payment infrastructure

- 82.7 % account coverage
- 80.1 % card coverage

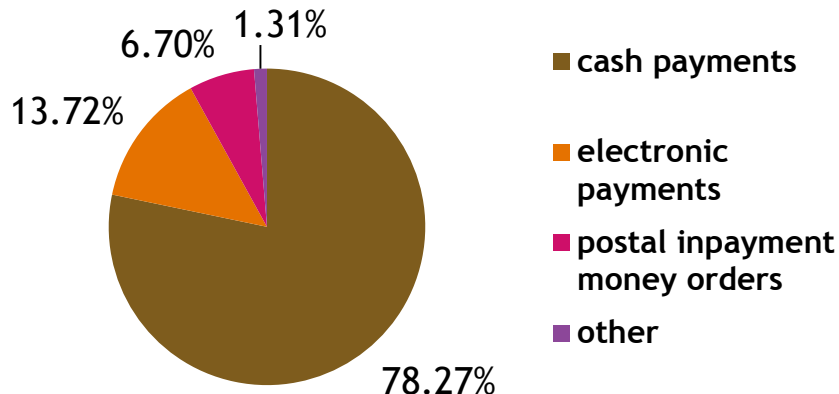


But a low share of electronic payments

By value of transactions



By number of transactions



- cash payments
- electronic payments
- postal inpayment money orders
- other



Online Cashier Register

2013 legislation by the Ministry for the National Economy

- Cashier machines connected online to the NCTA
- Obligatory for the retail sector
 - No services
 - Only physical stores

Primary goal is combatting tax evasion

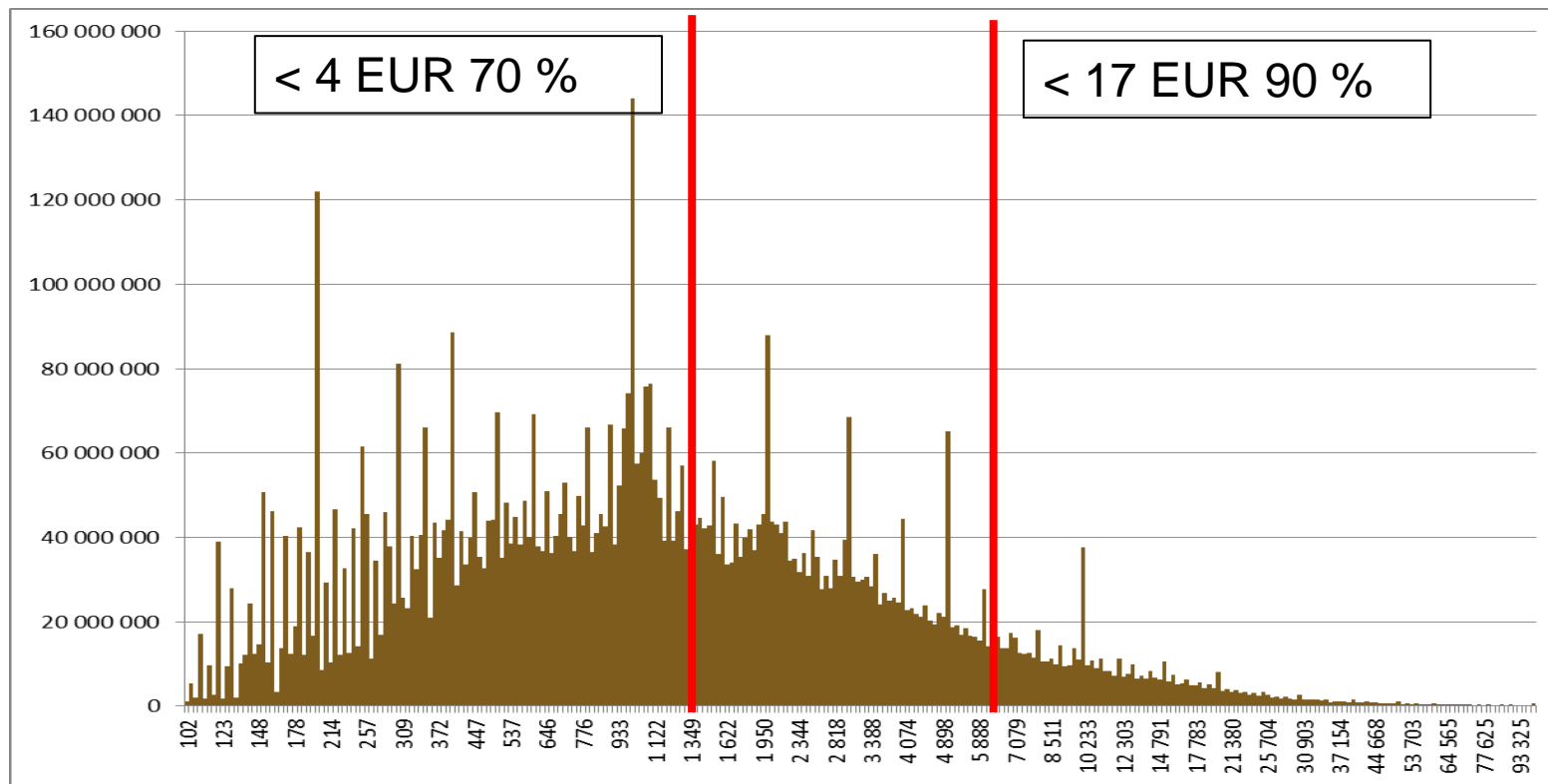
> 200,000 cashier machines

> 7.3 billion transactions

From 2017 extended for most of service sector as well



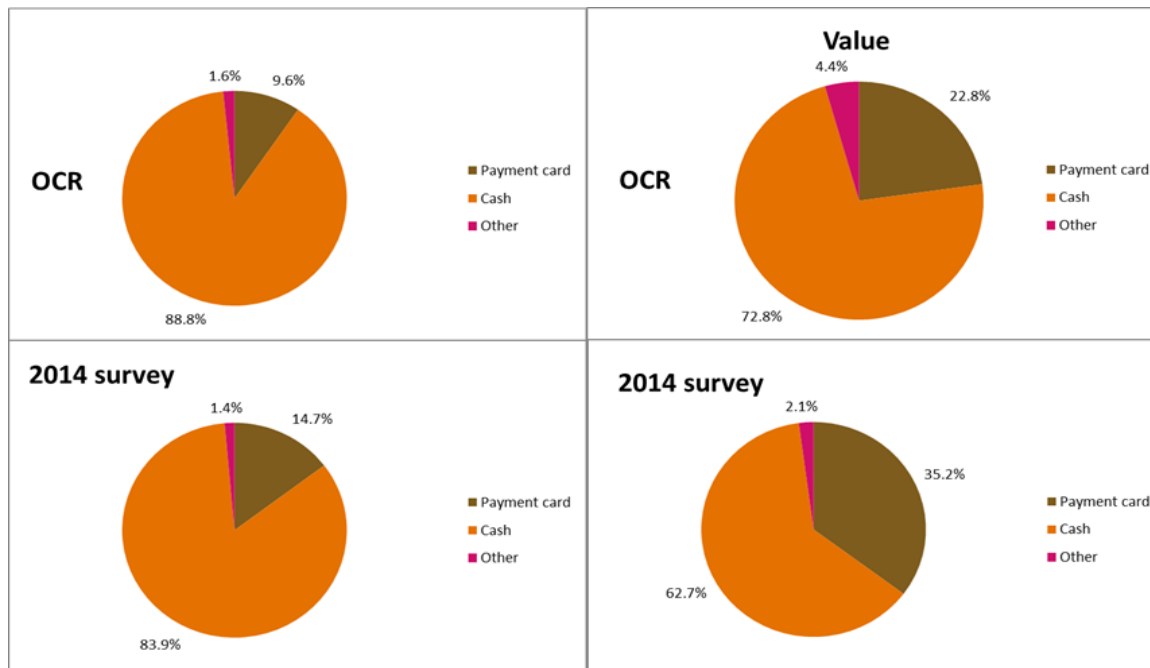
The empirical distribution is heavily concentrated on small value payments



HUF



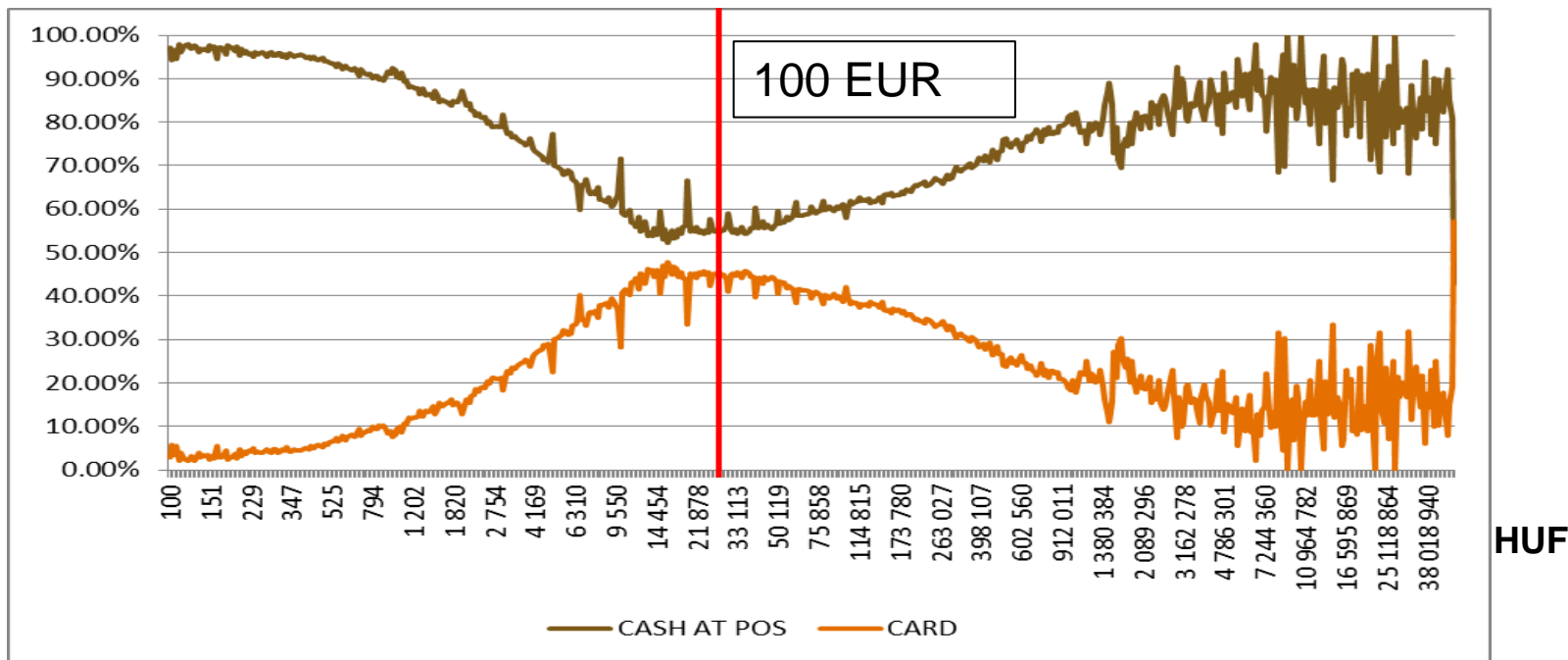
The lack of small transactions in surveys distorts the studies



Household payment habits based on the OCR and Ilyés-Varga [2015]



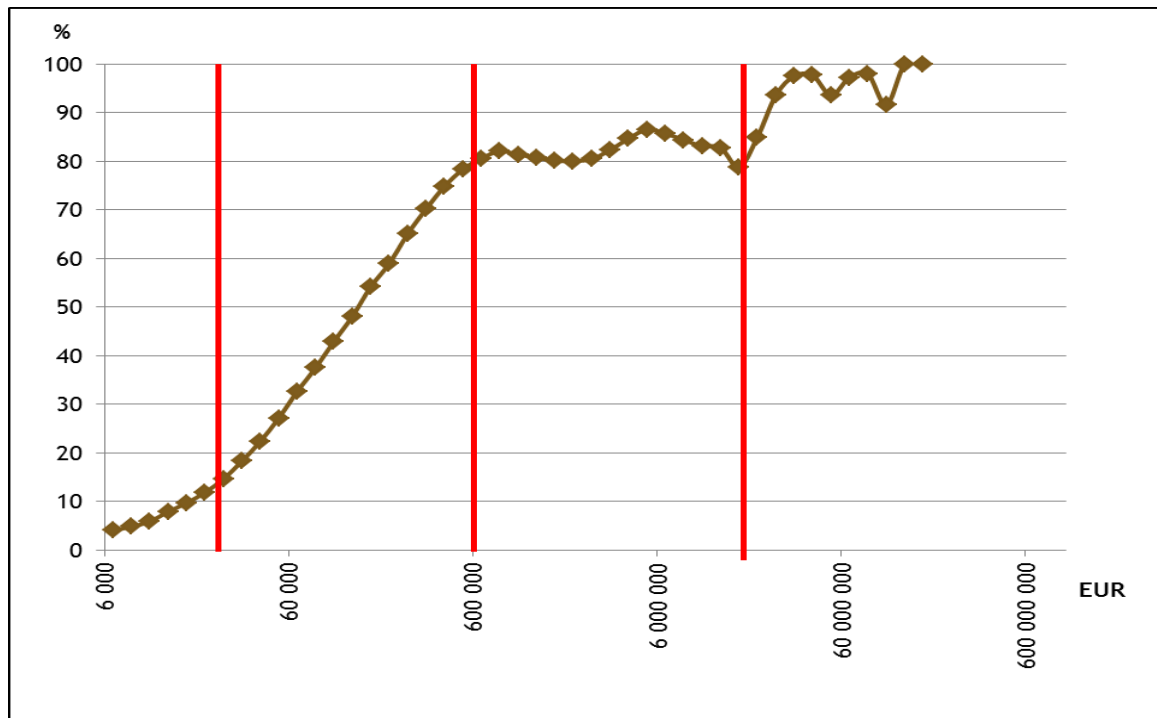
Card usage ratio drops after a certain value



Card transaction share at card accepting stores (HUF)



Payment card acceptance is mostly dependent on store size (annual revenue)



Card acceptance ratio by annual revenue (log scale)



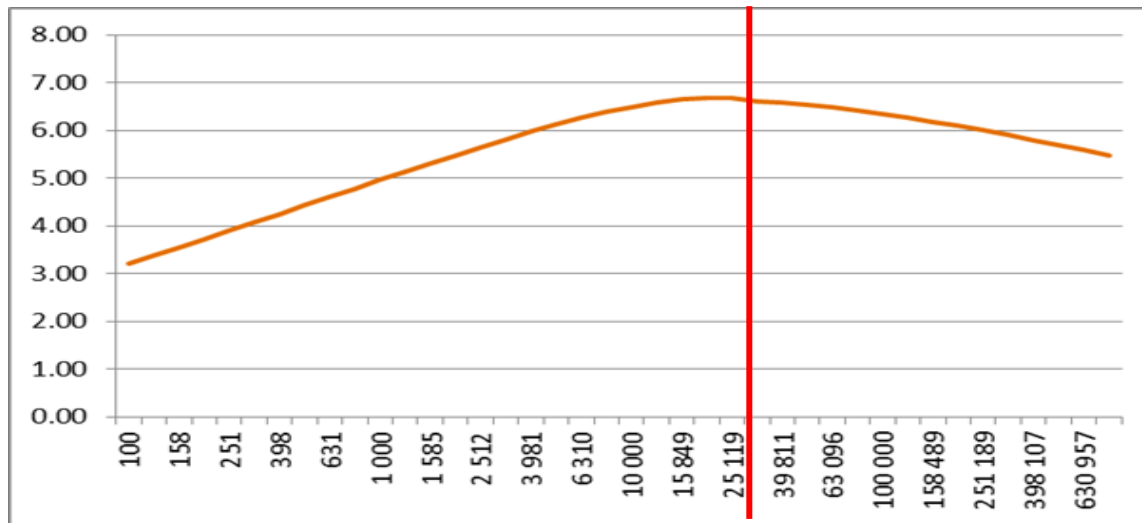
Research questions

- What are the main drivers behind card acceptance and card use?
- Can we confirm the main results of the payment literature of survey studies?
- Is ease of payment a significant factor?
- What predictory power can we reach based on only the merchant side?
- Method: logistic regression on 7.5 billion transactions



Payment card usage and transaction value have a non-monotonic relation

Card usage is more likely



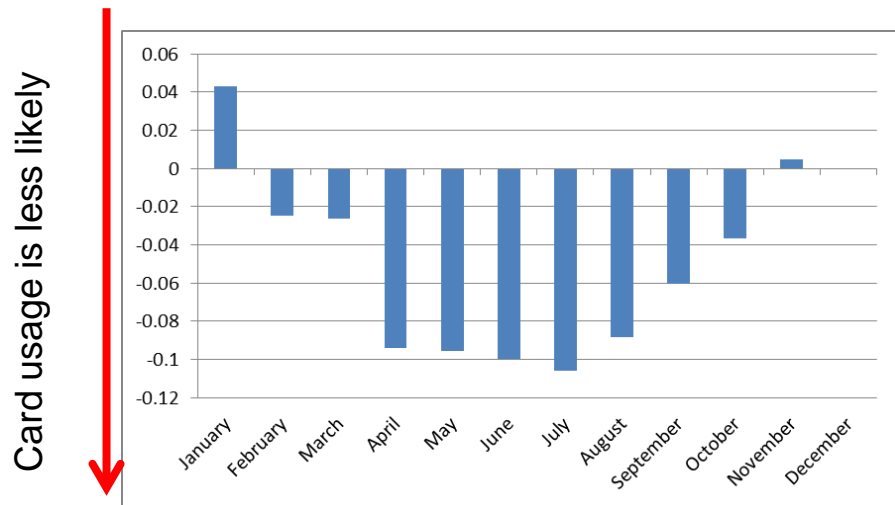
HUF

100 EUR

Transaction size sum effect on the scale of the predictor variables



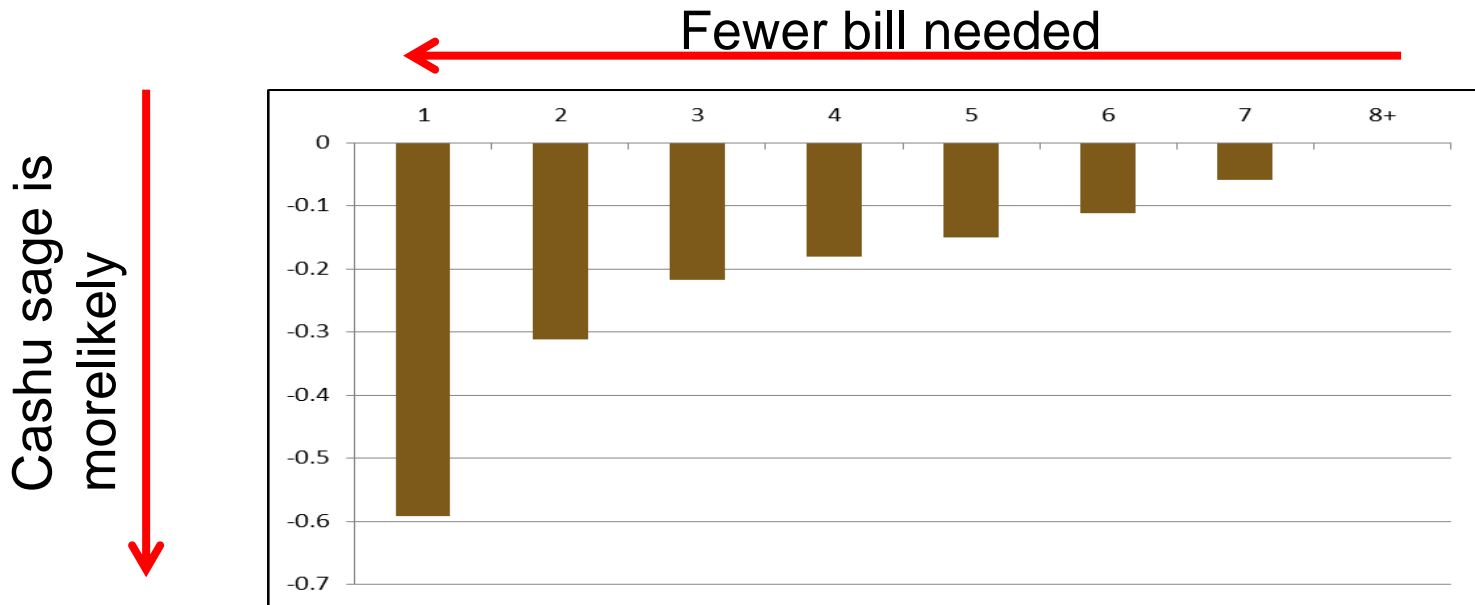
Card usage drops towards the end of the month and in the middle of the year



Month and day of the month dummy coefficients on the scale of the predictor variables



Ease of payment have a significant effect on cash usage



Coefficients in regression for number of bills needed dummies



Conclusions

- **Size is all that matters**
 - For acceptance: store size
 - For card usage: transaction value
- Its a complex and non-monotonic relation
- Ease of payment is a significant effect

- Sociodemographic effects can be confirmed even on county level data
- But!
 - Good predictive power even with very few information on the demand side
 - The basic characteristics of the payment is more important than customer habits



Thank you for your attention!