What can we learn about payment choice from seeing all retail transaction?
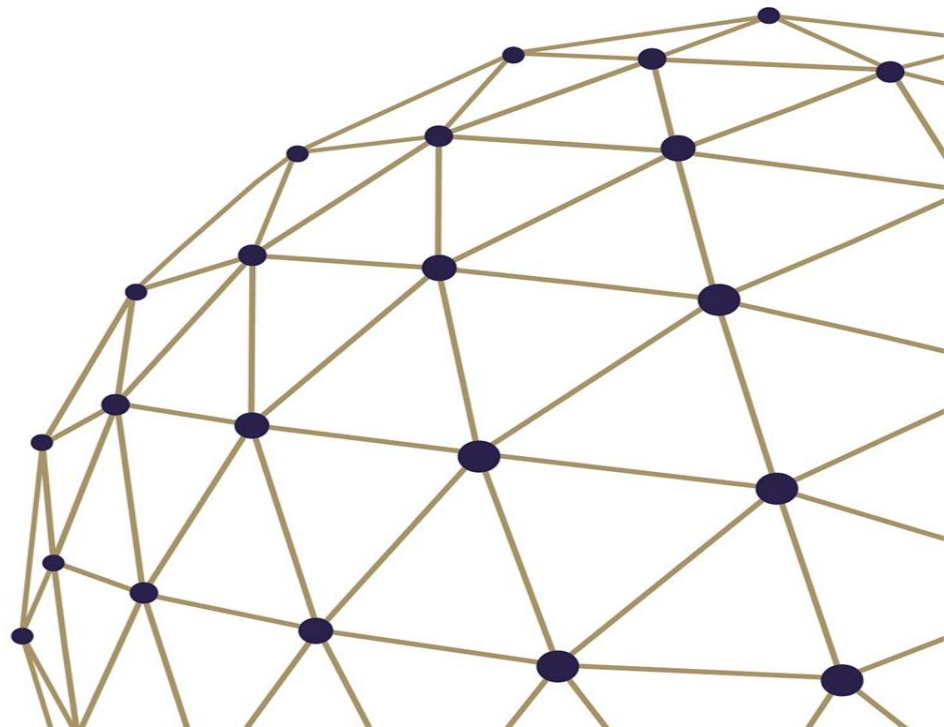
Tamás Ilyés, Central Bank of Hungary

Banca d'Italia, Rome

2017.12.01.

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
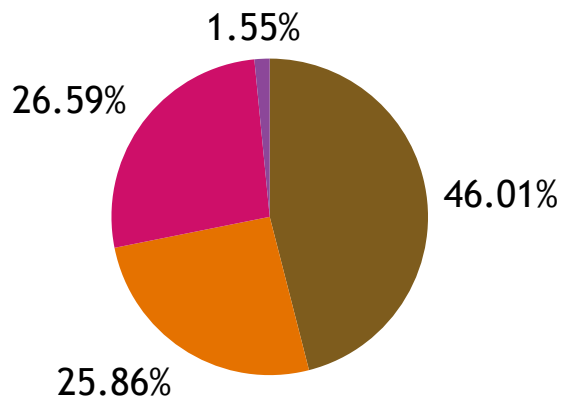- Cash/GDP slightly higher than in the eurozone

No cheques

Good payment infrastructure
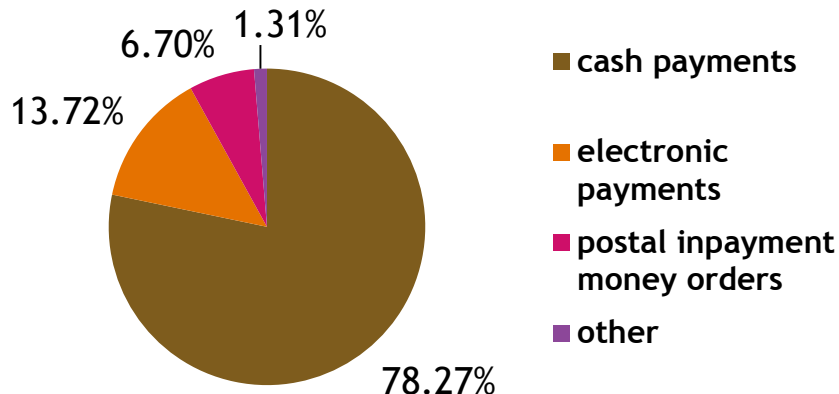- 82.7 % account coverage
- 80.1 % card coverage

But a low share of electronic payments

By value of transactions

1.55%
26.59%
46.01%
25.86%

By number of transactions

6.70%   1.31%
13.72%
78.27%

- 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
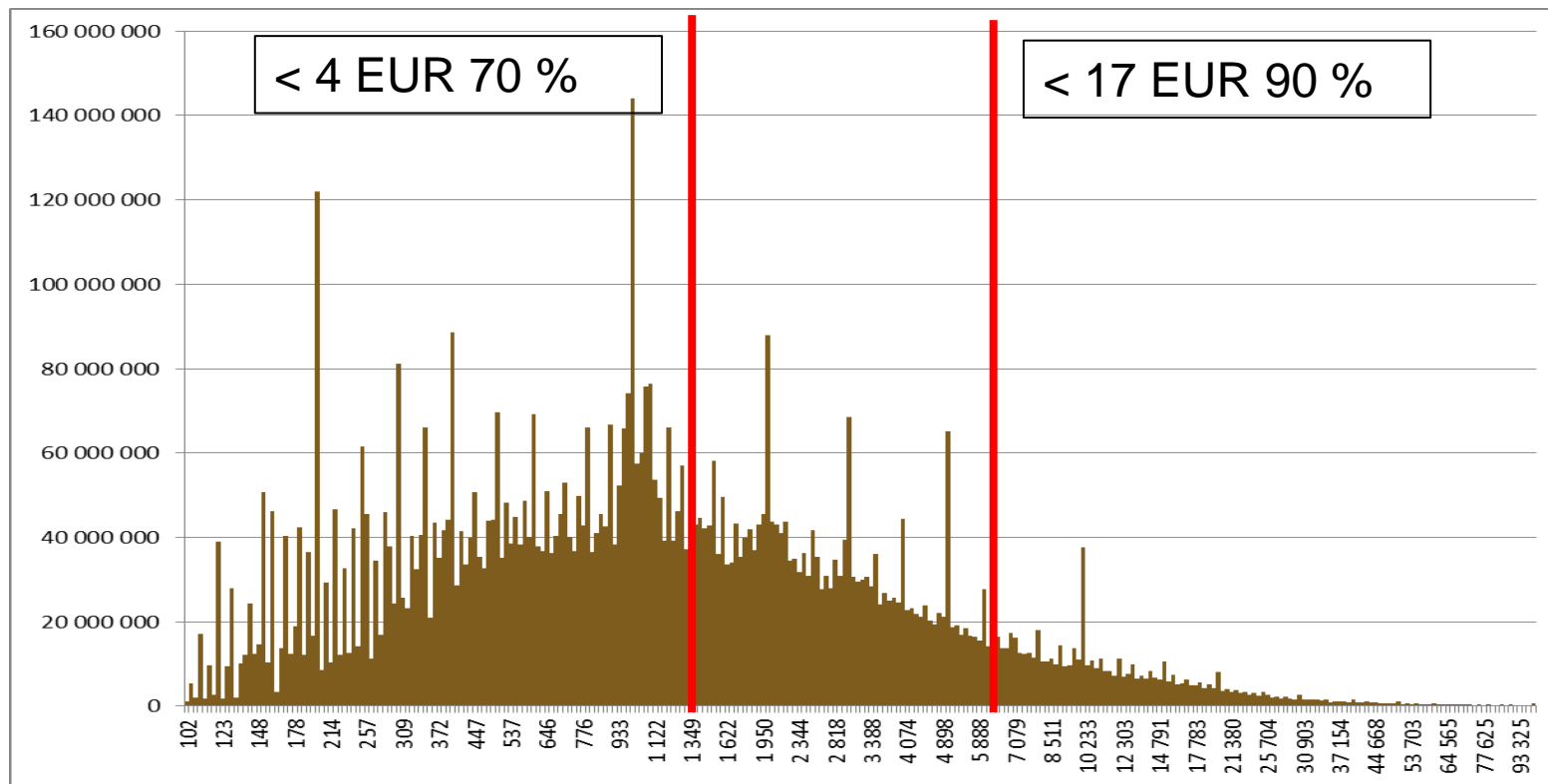
Primary goal is combatting tax evasion

> 200,000 cashier machines

> 7.3 billion transactions

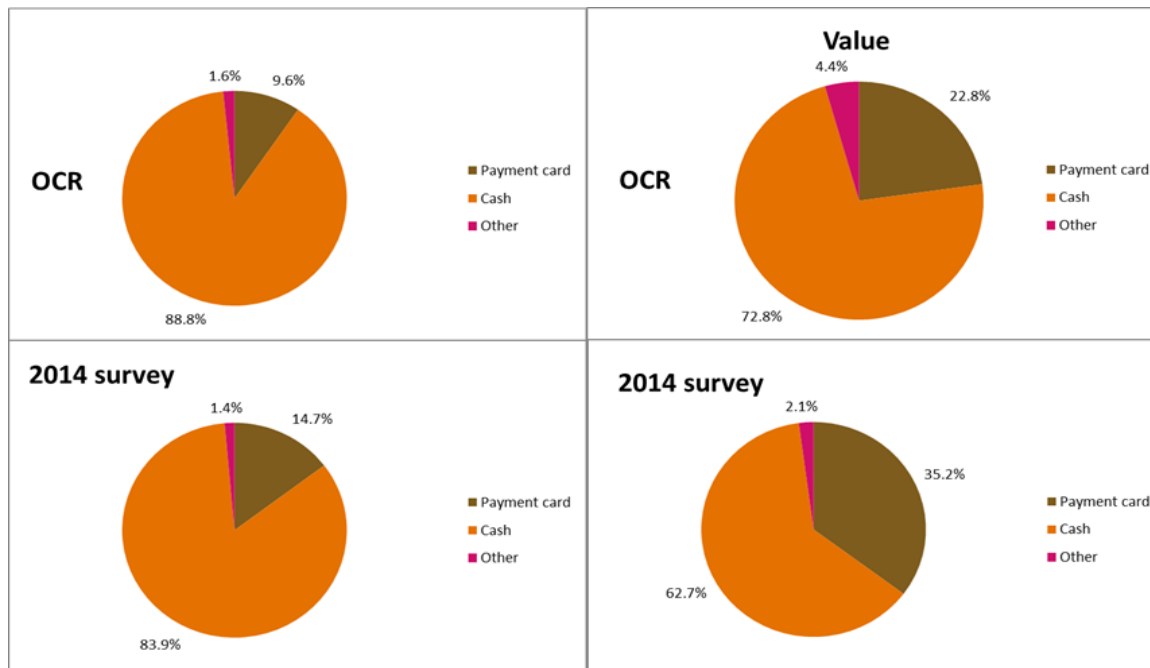From 2017 extended for most of service sector as well

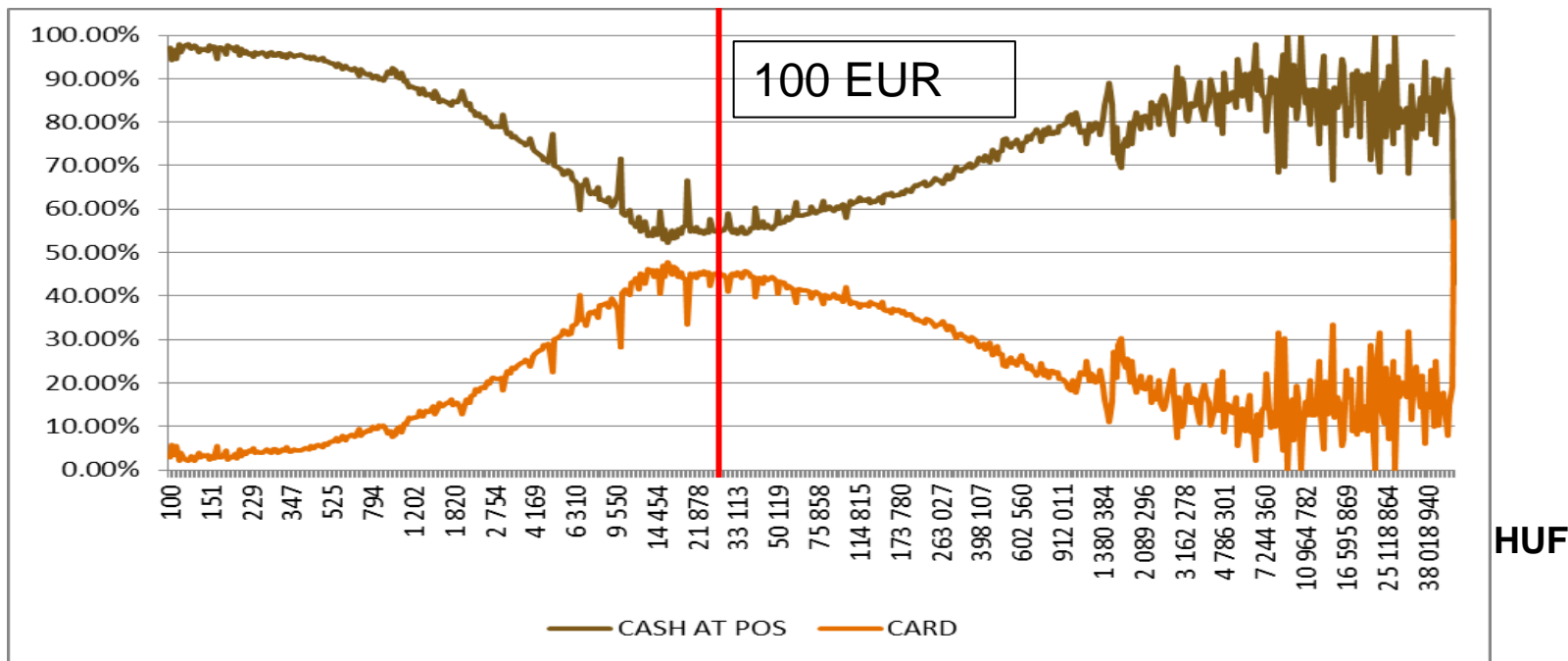# The empirical distribution is heavily concentrated on small value payments

< 4 EUR 70 %

< 17 EUR 90 %

HUF

The lack of small transactions in surveys distorts the studies ….

Household payment habits based on the OCR and Ilyés-Varga [2015]
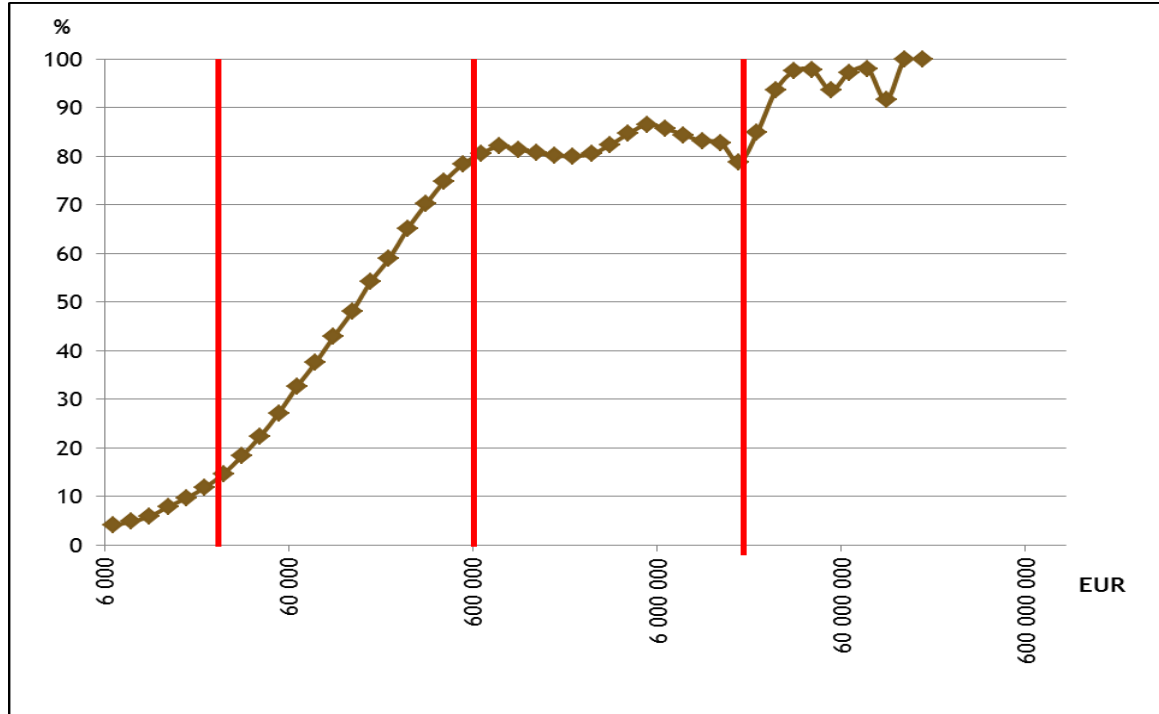
Card usage ratio drops after a certain value

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
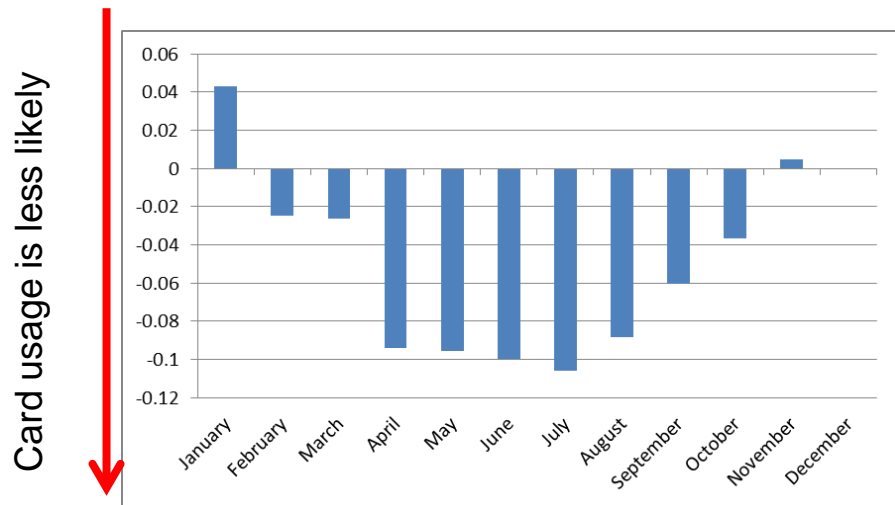

Card usage is more likely

100 EUR

HUF
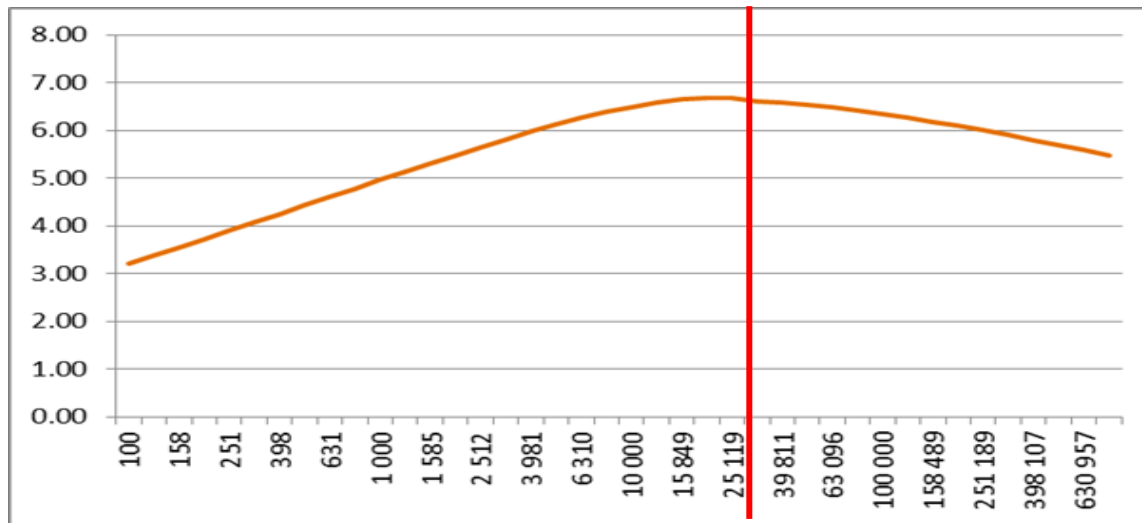
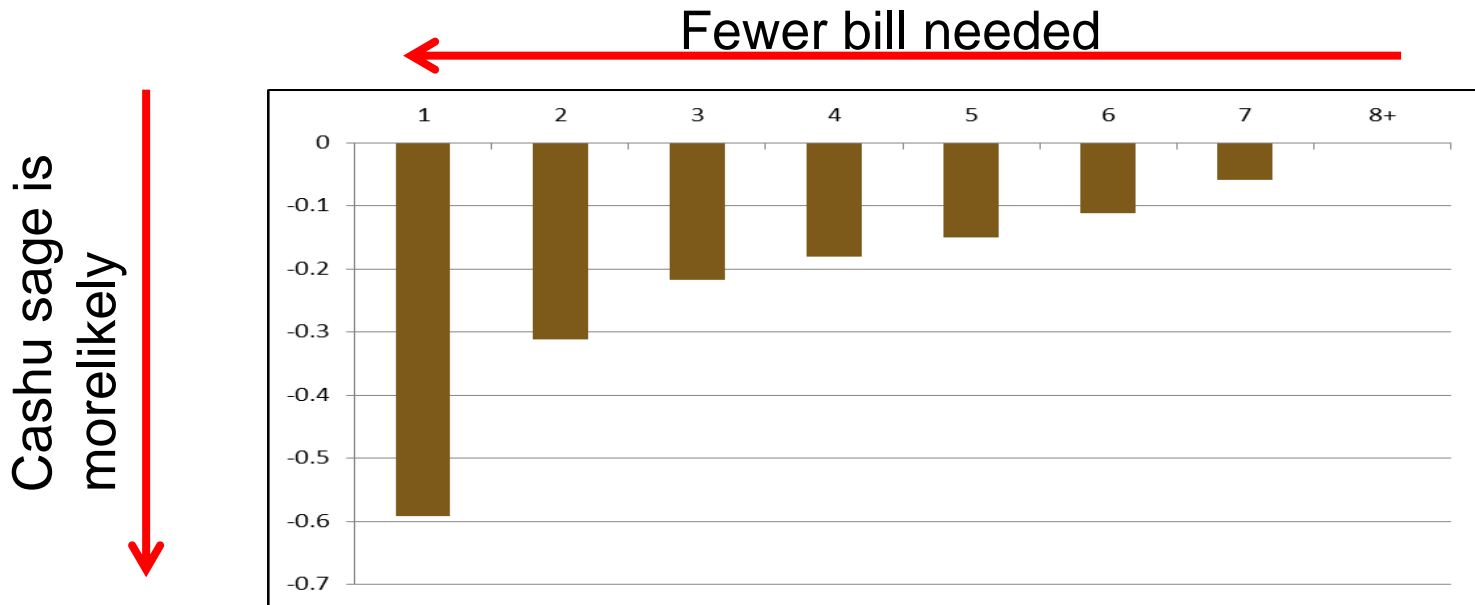Transaction size sum effect on the scale of the predictor variables

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 dummyes

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 charateristics of the payment is more important than customer habits

Thank you for your attention!