OESTERREICHISCHE NATIONALBANK
EUROSYSTEM

Discussion of „Changing payment patterns at point-of-sale: their drivers”

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Summary

Uses individual-level survey data from NL from 2004 and 2014 to study

- changes in adoption
- changes in use
- changes in factors driving adoption and use, i.e., socio-demographics and perceived attributes

<u>Main Findings:</u>

- DC adoption remained very high
- Cash use went down
- CC adoption only slight increase
- Drivers:
  - Usual suspects are important (age, income, education, attributes)
  - Surprising: not much differences for DC use (except for age)
  - Differences across point-of-sales

Summary

Very interesting results

- still need more knowledge about how consumers make decisions on payment instruments
- paper gives us the chance to look how payment behavior has changed from 2004 to 2014.

- Also very interesting because of institutional background
  - stimulation of DC payments in NL
  - universal dissemination of DC already in 2004
  - how does market for payment instruments (cash) evolve in such an environment?

Interesting policy questions:

- What factors have brought about the observed changes?

Main Comments

- Some comments on underlying choice model
- Some comments on dependent and explanatory variables
- Policy conclusions: Why has behavior changed? What can be expected to happen?

Choice Model

Adoption and use of PIs → economic decision

→ Recommendation: be more explicit about the choice model you have in mind

<u>Prototypical choice model</u>

- Outcome variable: “good” measure of payment behavior
- All relevant factors that affect outcome
  - Relative costs
  - Pecuniary and non-pecuniary aspects
    - **Shoe-leather costs, shadow value of time, costs, risk of theft…**
    - **Behavioral aspects: habit, comfort-with-technology, social norms, expenditure control, …**
- Account for choice
  - Acceptance
  - Available portfolio of payment instruments

Choice Model

- Change in use of payment instruments could have been caused by changes in any of these factors
  - Change in acceptance, change in relative costs (e.g. density of ATMs), change in non-pecuniary aspects (e.g. comfort-with-technology, ….)
- All these changes might be captured by socio-demographic variables

Possible Extension:

- Hold some factors constant ("pseudo-experiment")
  - Hold acceptance constant and analyze how use has changed → large supermarket
  - Hold relative costs constant and analyze how increase in acceptance has affected payment instrument use → focus on narrow socio-demographic subgroup and their use at specialized food stores

Dependent variable

Defined as “the share of POS where a payment instrument is the most often used payment instrument”

→ seems that POS are not weighted by expenditure shares

Example:

	Survey: most often payment instrument	Expenditure share
Supermarket	DC	0.90
Candy & drink machine	Cash	0.10
Cash share	**1/2**	**1/10**

- How biased are results? Discuss this
- Work-around:
  - use information from diary data (tedious)
  - focus on selected (and important) POS

Perceptions

- Paper emphasizes perceptions: literature has shown that substantial amount of variation can be explained by perceptions of payment instrument attributes
- Very interesting to observe changes over time

Questions/remarks:

- Seems that absolute perceptions are used → might use relative perceptions → choice
  - **e.g. rating from 1 (worst) to 7 (best), speed cash 6, speed card 7 → relative advantage of debit cards**
- Are perceptions endogenous? Change in perceptions when a consumers uses a payment instrument more intensively
- Are differences between cash & debit card significant?
- Assessment of "speed" has deteriorated for cash from 2004 to 2014
- Is information on importance of attributes available?
  - **E.g., for some consumers speed might not be important**

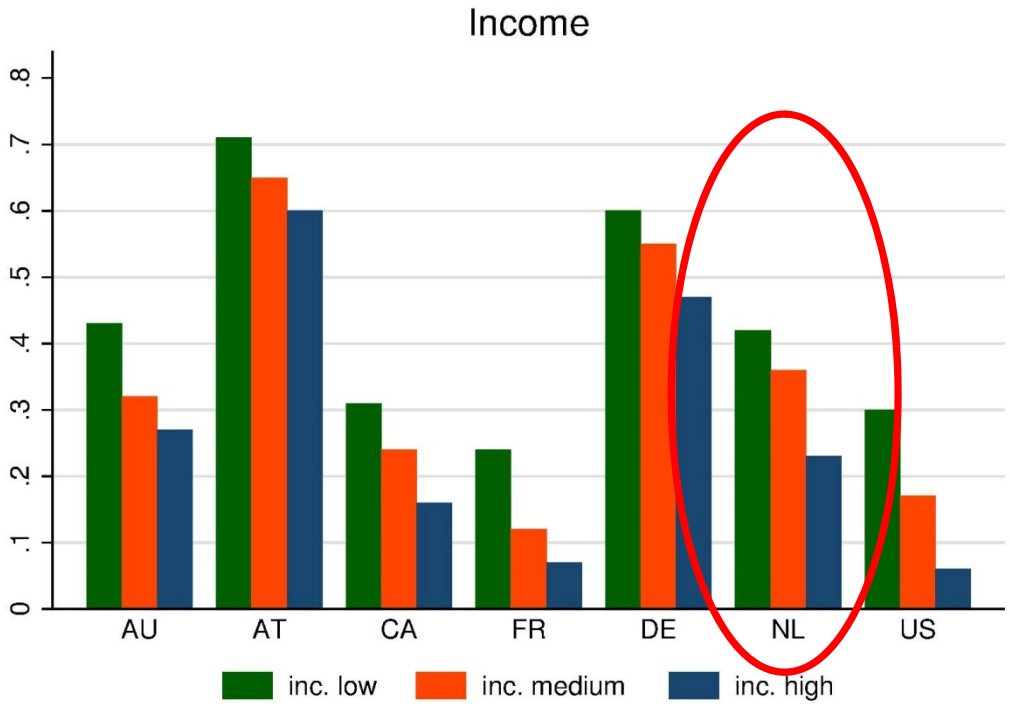
Socio-demographic variables

- Without explicit choice model, coefficients can reflect various effects
  - E.g. higher income, more debit card use
    - **Generic effect (relative costs, different consumption bundles)**
    - **High income people shop in stores with higher acceptance**

- Very interesting results: (almost) no effect of socio-demographics & perceptions for DC use in 2014 (not even user-friendliness)
  - What does this mean?
    - **No heterogeneity**
    - **There is heterogeneity but it is not captured by model (e.g. omitted variables, etc.)**
  - Results from NL payment diary suggests some heterogeneity

Socio-demographic variables

Cash share (in value) by income



Source: Bagnall, John, Bounie et al. (2014), Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data, ECB Working Paper 1685.

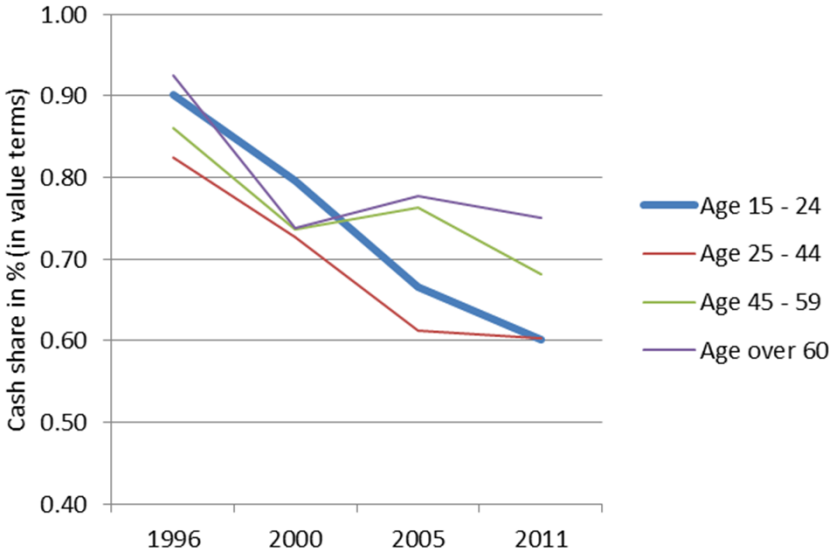
also difference by education, by transaction values

→Reconcile these findings with paper‘s results

Socio-demographic variables

- Interesting result:
  - Relatively older still use more cash. Why? (habit, more time, lower income, less technology affine, different composition of expenditures, …)
  - Young → strong shift to debit cards

- Similar finding for Austria



Source: Mooslechner et al. (2012). The figure shows the cash share in value terms derived from four Austrian payment diaries. The first diary was in 1996 and the last in 2011.

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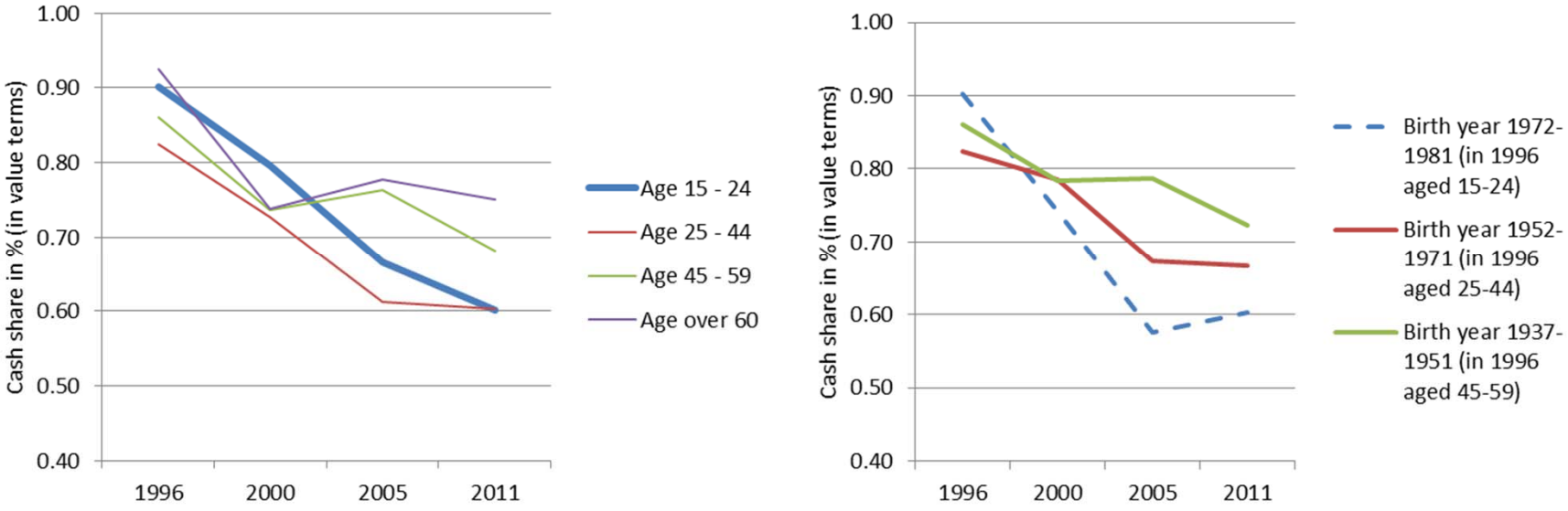

Source: Mooslechner/Stix/Wagner (2012). The figure shows the cash share in value terms derived from four Austrian payment diaries. The first diary was in 1996 and the last in 2011.

Socio-demographic variables

- Use results from age groups to analyze what can be expected in the near future

- Why not use data from 1983 and 1990 (Boeschoten)?
  - Even descriptive account could be very interesting.

References

Bagnall, John, Bounie, David, Huynh, Kim P., Kosse, Anneke, Schmidt, Tobias, Schuh, Scott and Helmut Stix (2014): Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data, European Central Bank Working Paper No. 1685.

Mooslechner, Peter, Stix, Helmut and Karin Wagner (2012). The Use of Payment Instruments in Austria, Monetary Policy & the Economy, Oesterreichische Nationalbank (Austrian Central Bank), issue 4, pages 53–77.