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Discussion of:

***Demand for Payment Services and Consumer Welfare:  
The Introduction of a Central Bank Digital Currency***

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Bank of Finland

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# Discussion – Fundamental issues 1

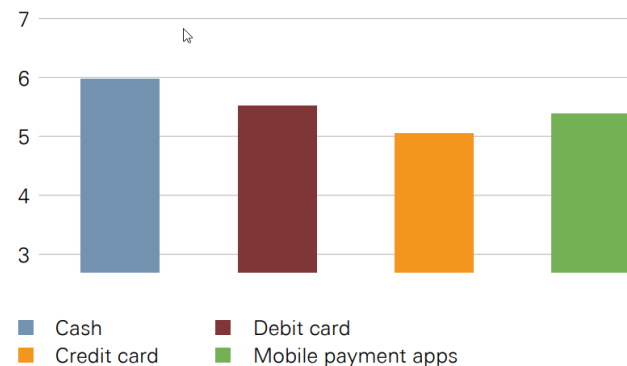
- Functional view of money suggests that next to the exchange of value function the store of value function might play an important role in at least the adoption decision (which in turn influences the usage decision)
  - Jiaqi Li (2021) considers the interest rate (which is connected to the store of value) - but there may be other dimensions to account for
  - Another dimension is certainly the safety of the store of value (which may or may not be related to security / theft consideration) (trust in banks)
  - Jiaqi Li (2021) looks at other bank services (that will likely not be offered by a central bank) - authors mention the credit availability of the credit card
- Focusing on the exchange of value function:
  - Not sure whether a goods demand model truly fits the question at hand
    - Max the utility of payment or minimize pecuniary and non-pecuniary costs subject to staying “liquid” (maximize likelihood to meet payment obligations when wished for to max consumption utility)
    - Liquidity: you do online purchases, you need a credit card...

# Discussion – Fundamental issues 2

- Payment instrument characteristics and **sociodemographic** variables are known to be explanatory factors but fall short in explaining observed heterogeneity in payment instrument usage (Bagnall et al., 2016)
  - Literature on **motives**: payment instrument usage for better budget control of non-recurring payments / current expenses such as Kalkreuth et al. (2014), Ebner et al. (2021) – accounted for in Jiaqi Li (2021)
    - **Behavioral** payment economics as the next step in the field?
      - Role of
        - Risk aversion
        - Discount factor
        - Present bias
        - ...

## ASSESSMENT OF EXPENSES MANAGEMENT ATTRIBUTE

Rating on a scale of 1 (very poor) to 7 (very good); from personal interview



Question: How do you assess the various payment methods with regard to the following aspects? It is irrelevant to your answer whether or not you own these payment methods.

Basis: All respondents (2020: 2,126 people; 2017: 1,968 people)

Source(s): SNB

# Discussion – Fundamental issues 3

- Is the past a good guide for the future?
  - Payments market is complex and subject to a lot of change these days
    - Merchant acceptance: Are merchants' bundles adequately chosen both before pandemic and during pandemic?
    - Other developments may matter: mobile payments (that are unrelated to credit card payments but tight to deposit accounts), e-commerce capability of debit cards, developments in loyalty programmes, new forms of money, ...

Before pandemic



During pandemic



After pandemic

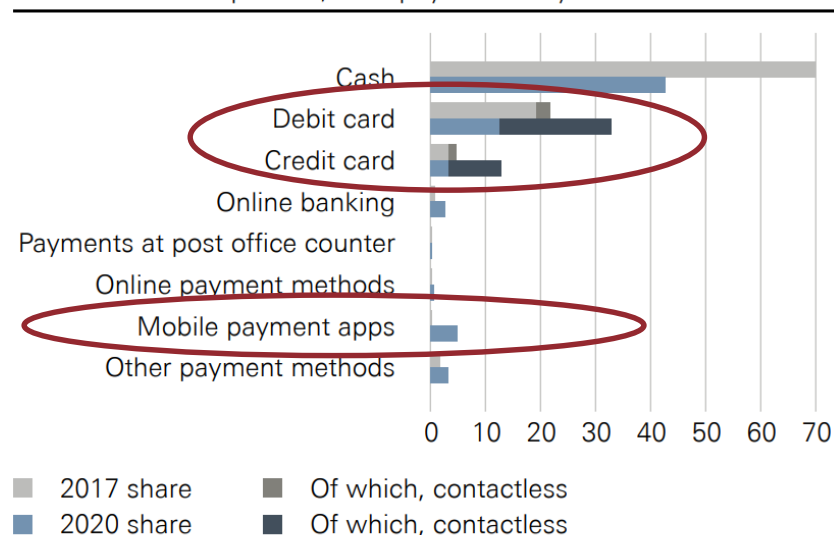


# Discussion – Alternative applications & ideas

- Related to the fundamental issues: a proof-of-concept would be a nice-to-have
  - Contactless payments (Brown et al., 2021)
  - Mobile payments

## VOLUME SHARE BY PAYMENT METHOD

Shares of basis in percent; from payment diary



Basis: 21,853 transactions (2020); 22,517 transactions (2017)

Source(s): SNB

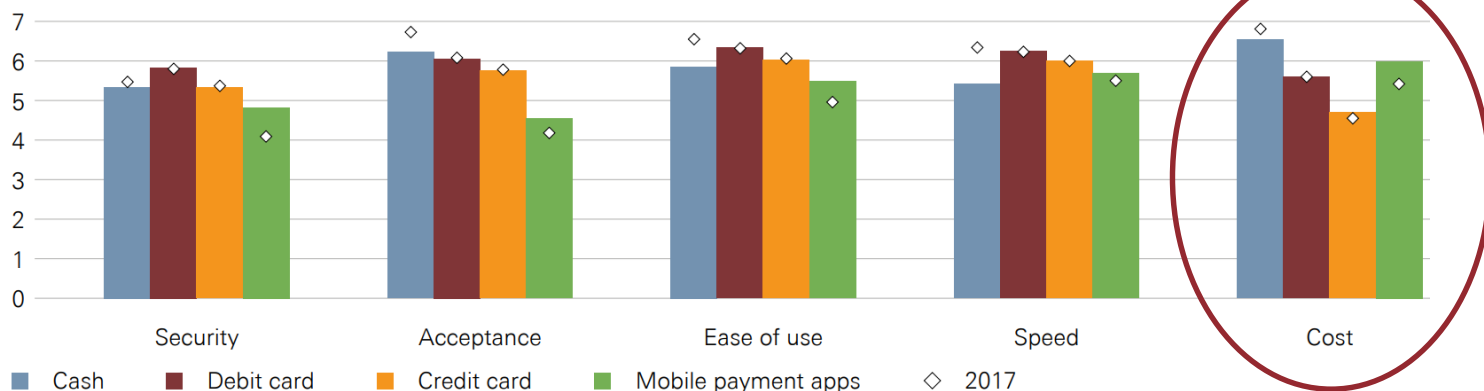
- Related: I wonder how well your model performs in predicting actual usage (you may soon have 2021 data?)

# Discussion – Methodological issues 1

- «Objective» cost estimates of payments are considered – i.e. equal and static costs for all consumers instead of variable and individual perceptions of costs that may strongly deviate from objective costs (CA: credit, cash, debit – size)...

## ASSESSMENT OF ATTRIBUTES BY PAYMENT INSTRUMENT

Rating on a scale of 1 (very poor) to 7 (very good); from personal interview



Question: How do you assess the various payment methods with regard to the following aspects? It is irrelevant to your answer whether or not you own these payment methods.

Basis: All respondents (2020: 2,126 people; 2017: 1,968 people)

Source(s): SNB

- ...relation between affordability and the objective cost estimates? What are the implications for your welfare measure if you skip objective cost estimates?

# Discussion – Methodological issues 2

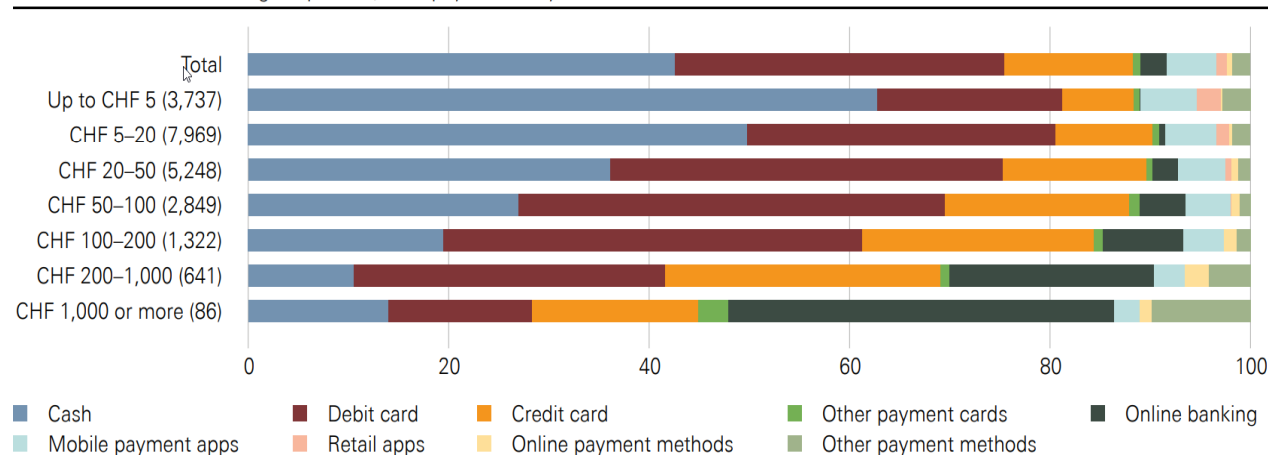
- Random matching of merchants and consumers – endogeneity: consumers may focus on merchants that accept used payment instruments
  - Solution unclear – might be of minor relevance given the data
- Transaction demand is exogenous / inelastic – looks like a strong assumption
- Not sure whether consumer bundles are fully adequate – for instance, I may choose a debit card simply to be able to withdraw cash
- Credit score to improve on estimated adoption cost: credit score might simply be a cutoff that defines eligibility to adopt a credit card? Unclear what role it plays for debit card adoption costs?
- Motivation of smartphone usage remains unclear – would this rather be a measure that informs about adoption costs? CBDC will be a digital payment instrument (old age adoption are interestingly high)
- Why pooling of 2009, 2013 and 2017 data – wouldn't it be more straightforward to answer the following question: How would a 2017 cohort have paid back in 2017, if they had CBDC of some sort available?
  - Would welfare implications be the same for all cohort? If not, why?

# Discussion - Controls

## – Payment size as an important determinant of payment instrument choice

### VOLUME SHARES OF PAYMENT METHOD BY VALUE RANGE

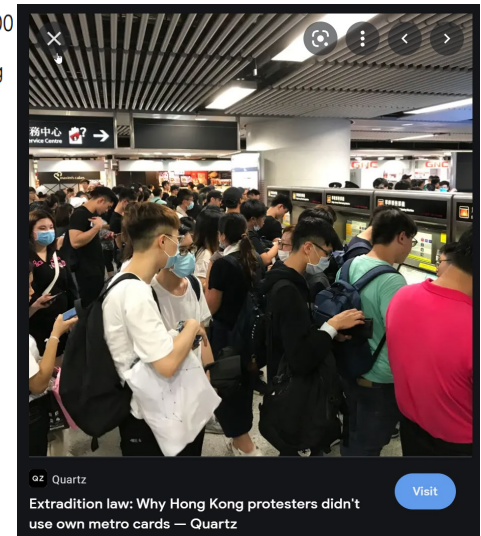
Shares of relevant value range in percent; from payment diary



Basis: 21,853 transactions amounting to CHF 1,094,780 (in total) or transactions by value range (cf. figures in brackets above)

Source(s): SNB

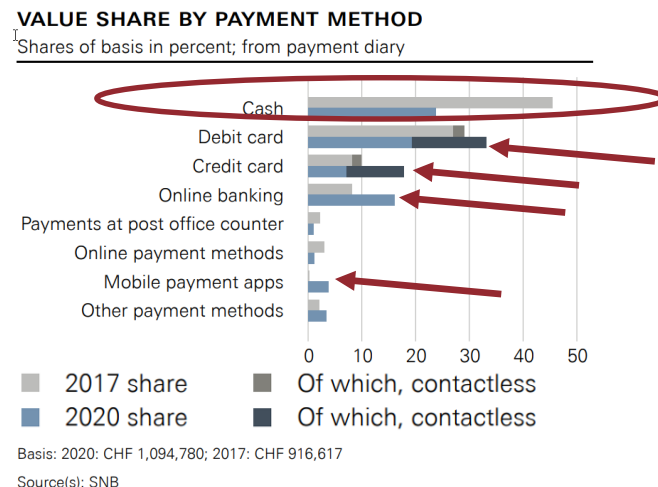
- Anonymity plays a role in many studies - Jiaqi Li (2021)
- 3-day survey in contrast to 7-day survey:
  - Not clear that consumption bundles fully control for intraweek changes in payment instrument usage





# Discussion - Policy

- Based on 2009 – 2013 – 2017 data:
  - Cash decline from 53 to 34% (#) and from 23 to 15% (\$)
  - Model predicts a similar cash decline due to the introduction of CBDC
  - Why not add a «no cash» scenario...  
...and its (distributional) welfare...  
...implications?



- What exactly is the answer to your governor in relation to the first reason to introduce CBDC (disappearance of cash)?
  - CBDC as the deathblow to cash?
- Are you sure that we face the same welfare implications in 2021 (see figure)?
  - Cash substitution by digital payments instruments lowers welfare gains!

# Discussion - Summary

- Very timely, interesting and skilful paper...
- ...that addresses a very difficult question...
- ...that may not be fully resolved with the data at hand...
- ...but the paper goes a long way in this direction and could go further...
- ...with some more work involved.

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# Thank you for your attention!

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