

# Searching for a new survey design measuring household consumption for use in CPI and NA

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# Agenda

- Background
- Data sources
- Project status
- Split of turnover
- Threats and options

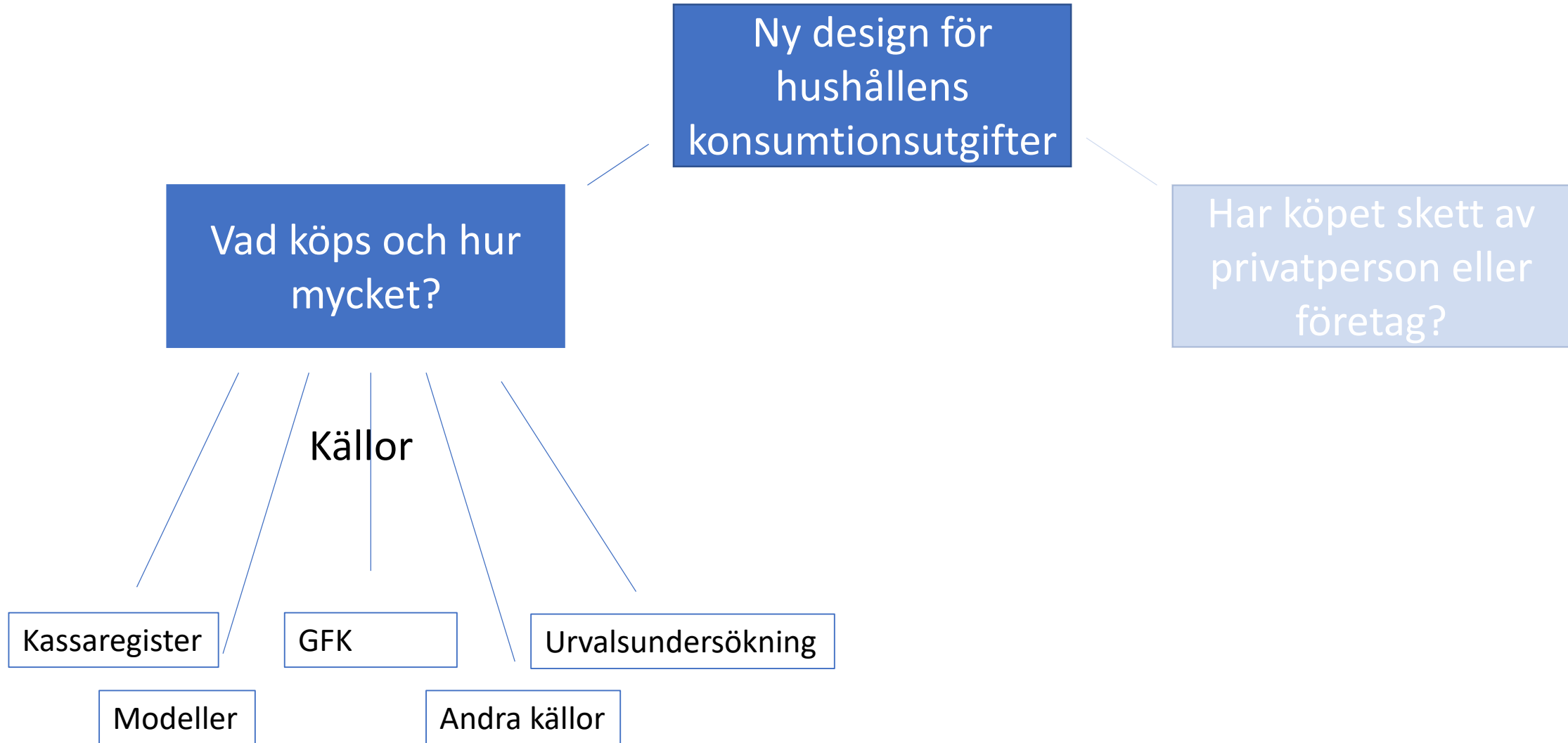
# Background

- CPI and PC in NA are among the most important statistics produced.
- An important data source for these products is the Household Budget Survey
- Traditionally, HBS in Sweden has had doable response rates.
- In 2009 the response rate was 51%,  
in 2012 38% (change in sampling design)
- An HBS was launched in 2016 but was early cancelled,  
response rate < 20%

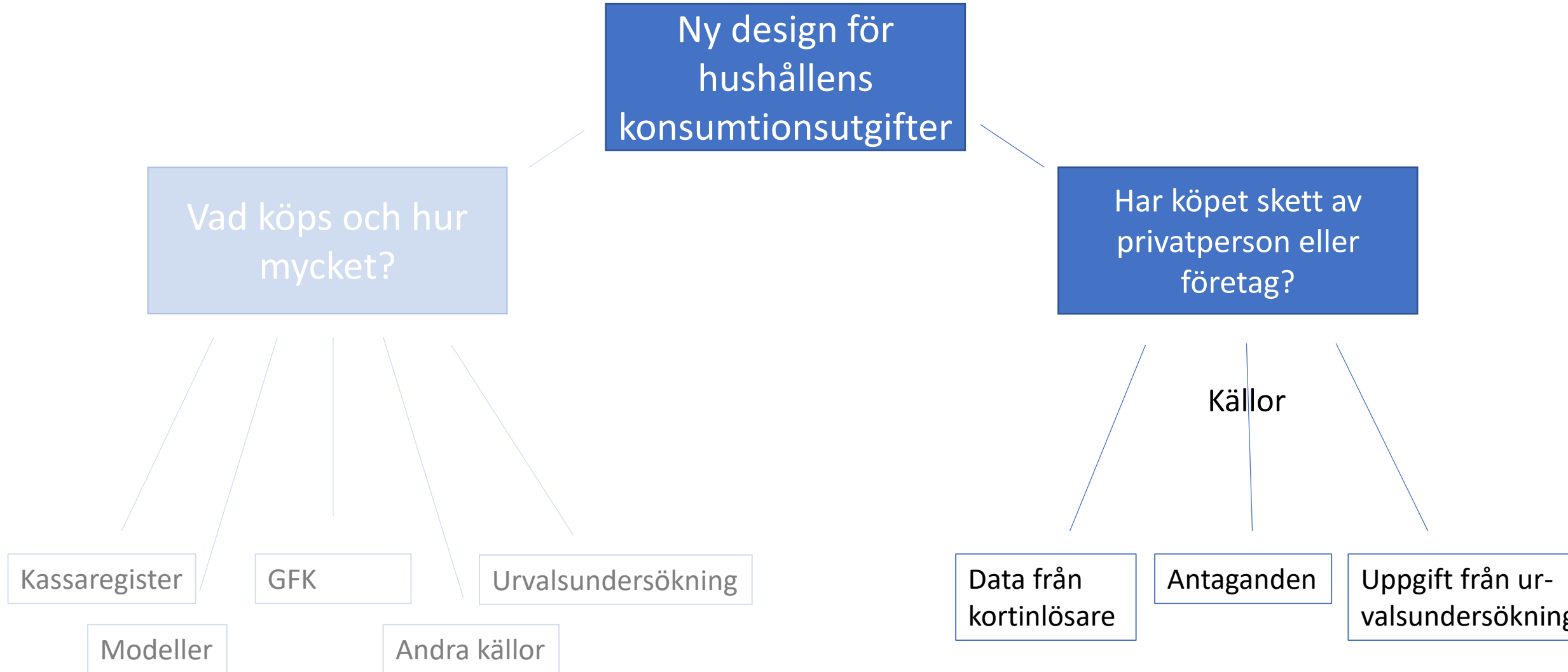
# Background

- A new design of the HBS has been developed and is presently ongoing (2021).
- The new HBS gives insufficient data for use in CPI and NA
- More detailed information is needed
- In an ongoing project, we aim for a new survey for inputs in CPI and NA
- Basic approach
  - Get data on retailers' sales on product/service level
  - Split sales on customer groups households and others (businesses)
- Design based on the ideas of SP 4.0

# Data sources



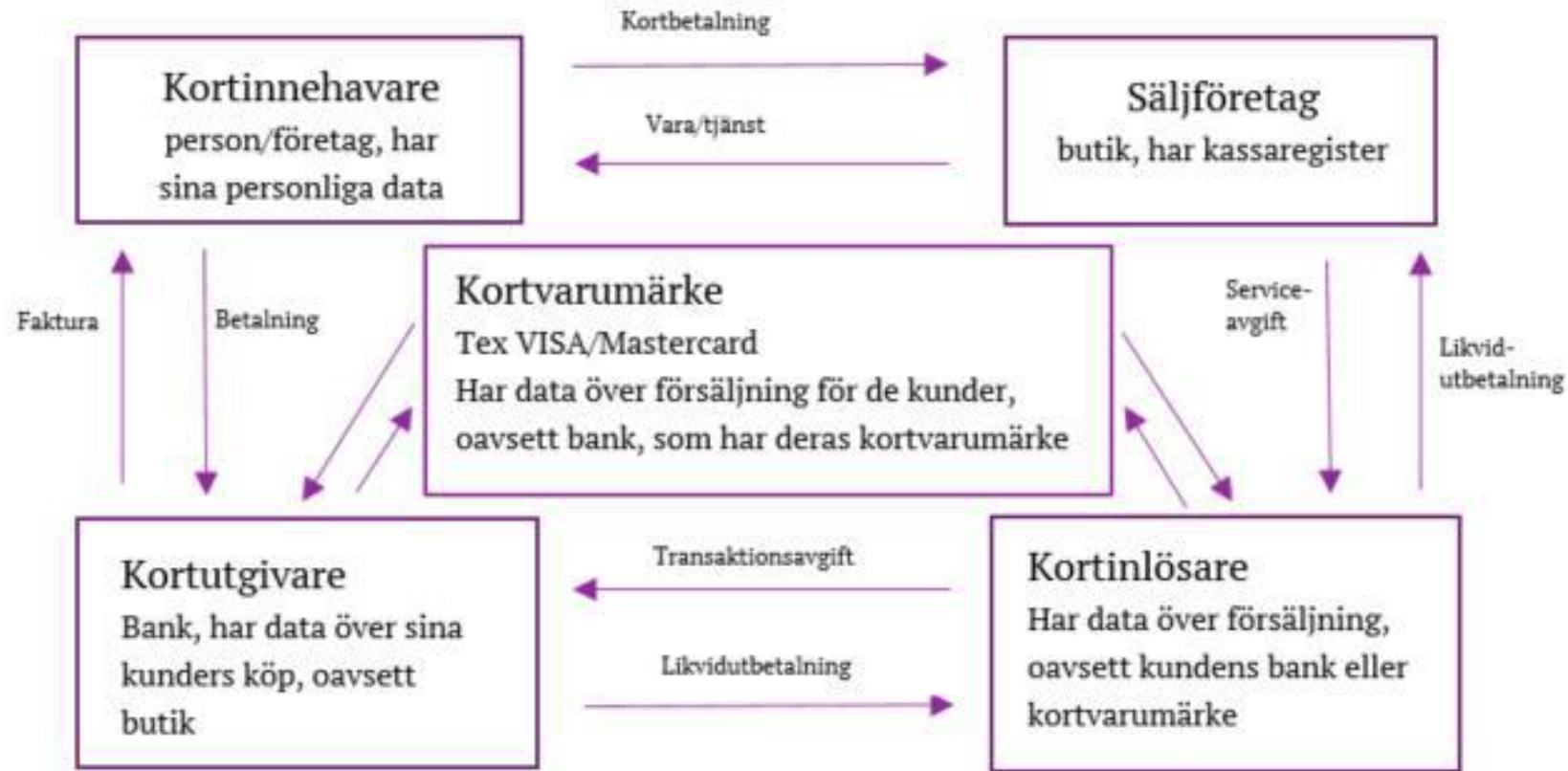
# Data sources



# Data sources

- Data sources on sales at product level, not the most difficult one
- Data sources for splitting sales numbers into household purchases is the biggest challenge
- Transaction data is one track we have followed
- Understanding the transaction system is essential

# Data sources





# Project status

Table 1: Main sources for estimation of business turnover.

<u>Source</u>	<u>N:o Industries</u>	<u>Share of PC</u>
Cash Register	13	0,19..
SBS	49	0,34..
Food sales survey	5	0,25..
GFK	3	0,02..
Other	9	0,18..
<i>Sum</i>	<i>79</i>	<i>1,00</i>

# Project status

Table 2: Main sources distributed on industries with status known/unknown “split”

<u>Main source\Split</u>	<u>Known</u>	<u>Can be calculated</u>	<u>Not known</u>
Cash Registers	2	1	10
SBS	29	6	14
Foods sales survey	5		
GFK			3
Other	7		2
<i>Sum</i>	<i>43</i>	<i>7</i>	<i>29</i>

# Project status

- Cash registers
  - Access to data from a number of major retailers on the different markets.
  - Retailers not representative in a statistical sense; for now it is not a big issue
  - Most registers not split on sales to households and others; the big problem
  - We are looking at how to utilize transaction data
- GFK
  - The same
- Food sales survey
  - OK
  - Retailers cover > 80% of the market.

# Project status

- SBS
  - OK, internal data
  - Data include an overall estimate of share of household purchases
  - Can be used for splitting sales for other industries
  - We need the share of household purchases on product levels
  - We are developing an estimation method based on the overall estimate

# Split of the 14 “SBS industries”

- In SBS, businesses estimates households share of total sale
- For a specific business and a product category  $k$

$$y_k = A_k y_H + B_k y_F \quad ; y_H, y_F = \text{Total sale to H and F}$$
$$A_k, B_k = \text{Budget shares for H, F}$$

Replacing for population budget shares

$$y_k = \bar{A}_k y_H + \bar{B}_k y_F + e_k \quad (\text{Regression ?})$$

# Split of the remaining 15?

- Main idea is to use sources of transactions data
- Card terminal data seem promising
  - Where – geographical area
  - When
  - Industry
- Add data on on-line shopping
- Utilize information from the new HBS
- Utilize information in SBS

# Need of new surveys?

- Selection problem, cash registers
- Split of sales
  - Validation of weights
- Too early do exactly define information needed

# Threats and future possibilities

- New payment services are constantly developed and introduced.
  - Phone instead of cards
  - Electronic receipts
- On-line shopping will increase
  - Use of phone as in physical stores?
- There is a standard for receipts in physical stores
- Data on each purchase in physical stores are downloaded automatically for auditing by the Tax agency.
- A standardization of download format is to be introduced in the coming years.
- Introducing the standard for receipts in E-commerce is investigated.



Thanks for listening!