New experiences with scanner data in the Swiss CPI

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1. Introduction

- Early work in 2004, beginning of the project in 2005
- Use of scanner data since 2008 in the Swiss CPI
- Better source of data, cost savings for the FSO and smaller administrative burden for retail chains
- Maintaining the sampling and calculation methods
- Specific software to manage the sample
- Initially, only food and near-food groups were considered
  - “stable groups” => little range and quality changes in comparison to non-food groups
2. Food & Near-food

Inclusions

• COICOP groups: 01, 02, 05 (partly), 09 (partly), 12 (partly)

• **4 chains** already in production (75% à 80% of the market)

• **Test price collection** before inclusion

• **Emergency plan**

• Problems encountered are mostly related to the **IT-System of the retailers** and **low costs savings**
3. Non-food (I)

- Division into **stable non-food** and **dynamic non-food**
- **Concentration on the stable non-food** in order to use the same methods as for food and near-food
- Identification of the stable non-food groups based on the **lifespan** of the items, **mean ranking in terms of turnover**, suspected presence of price skimming
- **Comparison** between **conventional price collection**, **RYGEKS** and **test price collection**
  - Stable non-food can be broken down into 3 groups
  - Dynamic non-food was let aside (group 4)
3. Non-food (II)

**Group 1** (most suitable positions)

- COICOP 04.3.1 / COICOP 05.4 / COICOP 05.5.2 / COICOP 05.6.1 / COICOP 09.5.3 and 09.5.4 / COICOP 12.3.2 (partly)
- Stable ranges, little price skimming, RYGEEKS and test price collection indices close to conventional price collection
- Differences in samples
- Seasonal effects taken better into account in the scanner data price collection
- Positions will be introduced this year
3. Non-food (III)

**Group 2** (strong potential)
- COICOP 05.2 / COICOP 05.3 / COICOP 05.5.1 / COICOP 12.1.2

**Group 3** (potential for future work but lack of analysis)
- COICOP 03 (partly) / COICOP 05.1

**Group 4** (dynamic non-food => not suitable)
- Non classical clothing / bikes / electronic products (TV, computer, etc.)
Elementary Index RYGEKS vs CPI

- COICOP 09.1.1 (only TV)
- RYG COICOP 09.1.1 (only TV)
4. RYGEKS (I)

• Development of a **SAS tool** to produce indices based on the RYGEKS method

• Based on the **formula proposed by Ivancic & al. (2009)** with specific adaptations to take account of the particularities of the Swiss CPI

• Will be used as **benchmark** (analysis and comparison) and not for production
4. RYGEKS (II)

Calcul GEKS pour les premières 13 périodes :

\[
\begin{pmatrix}
F(1/1) & F(1/2) & \ldots & F(1/13) \\
F(2/1) \\
\vdots \\
F(13/1)
\end{pmatrix}
\rightarrow ps(1)(1) = MoyGéom\{F(1/1), F(1/2), \ldots, F(1/13)\}
\]

\[
\vdots
\]

\[
\rightarrow ps(1)(13) = MoyGéom\{F(13/1), \ldots, F(13/13)\}
\]

ainsi,

\[
ps(1)(t) = MoyGéom\{F(t/1), F(t/2), \ldots, F(t/13)\}
\]

RYGEKS(t) = ps(1)(t)/ps(1)(1) \quad (t = 1, \ldots, 13)

Pour t > 13 :

\[
RYGEKS(t) = RYGEKS(t-1) \cdot ps(t-12)(t)/ps(t-12)(t-1)
\]

où

\[
ps(t-12)(t) = MoyGéom\{F(t/t-12), F(t/t-11), \ldots, F(t/t)\}
\]

\[
ps(t-12)(t-1) = MoyGéom\{F(t-1/t-12), F(t-1/t-11), \ldots, F(t-1/t)\}
\]
4. RYGEKS (III)

- First results
  - tool used to produce RYGEKS indices for the non-food analysis
  - Comparison for COICOP 01 for a particular retail chain (RYGEKS vs index based on a conventional price collection with scanner data)
Chain X, Aggregated Index for COICOP 01
5. Conclusions

• **Positive conclusions** are drawn: *pragmatic use* of scanner data allowed *quality improvement* of the indices, *cost savings*, *smaller burden* of the retail chains along with *inclusion of 4 retail chains* covering 75% - 80% of the food / near-food market

• Some “stable” *non-food categories* can be included with the same methodology

• **RYGEKS** used as benchmark for analysis and comparisons

• Use of scanner data raises *many practical issues* and IT challenge
6. Contact

Contact about the Swiss approach of using scanner data for the CPI…

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Thank you for your attention!