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The Austrian Scanner Data Project

Accessing Scanner Data (SD)

- **Ongoing discussions with Austrian Retailers since 2011**
- **Establishment of a ‚Scanner Data Working Group' with stakeholders**
- **Main concern of stakeholders: Use of SD for other purposes than price index compilation**
- **Compromise:**
  Aggregated historical Scanner Data provided by a market research company

Data Delivery

- **Sales information for ‘non-alcoholic beverages’**
- **Restricted representativity of SD:**
  - **Aggregated over supermarket chains**
  - **For three metropolitan regions only**
  - **15 Calendar weeks**
  - **Restricted representativity of SD but acceptable quality**
- **Data permits the majority of actions planned for scanner data project →Acceptable quality**

Scanner Data Acquisition

Cooperation with Market Research Company:

Advantages	**Disadvantages**
-high data quality	-expensive
-edited and quality controlled	-no realistic ‚raw' SD
-no complex data management required	-import and processing of SD from retailers probably very different

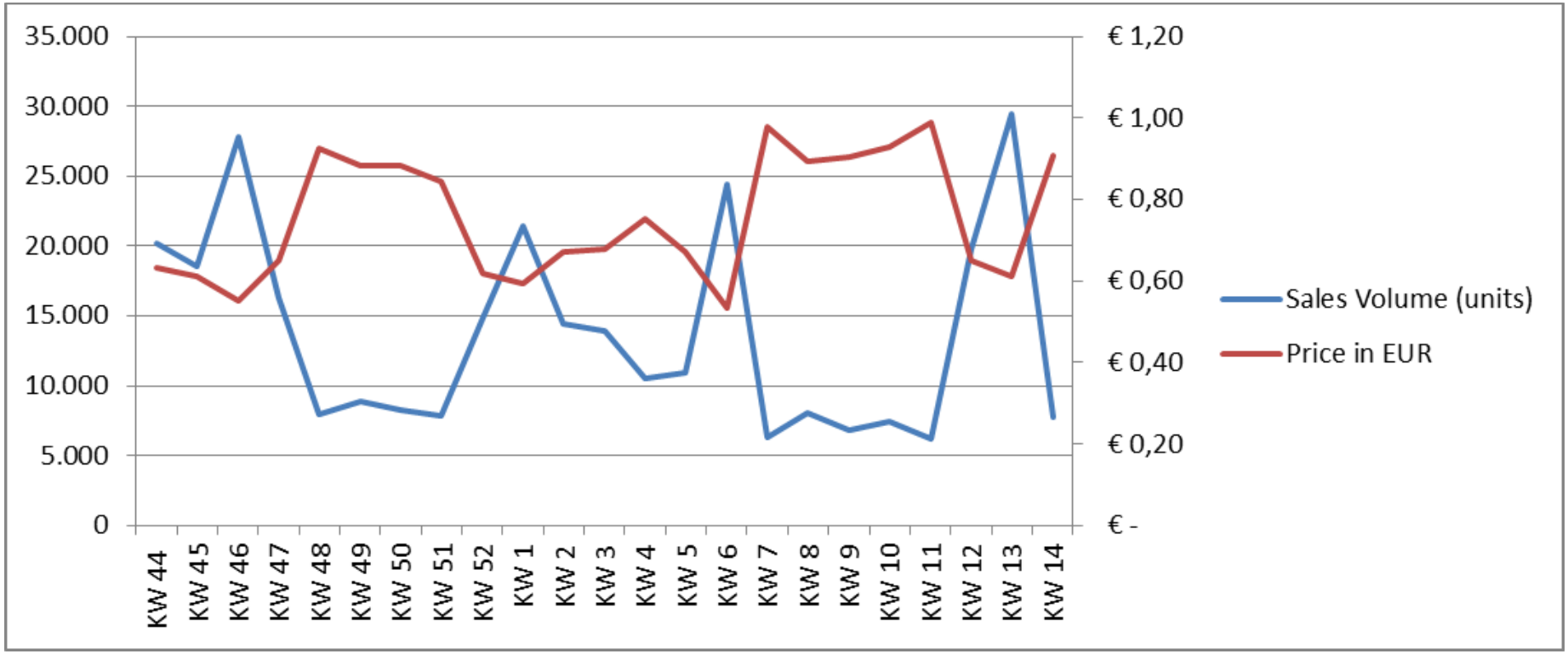
Potential Index Improvement with SD

Example: Energy drink

Conventional Price Collection	Scanner Data
About 100 Prices	> 1000 Unit Values per month
About 12 different products	> 50 products sampled for index compilation (min. market share)
Steady product sample	Dynamic product sample
Price collection in one week of each month	Price information for all 4 weeks of each month

Better coverage of promotion activities

Chart 1 – *Energy drink. Sales in Euro and volume in units. Nov 2011 – March 2012*



SOURCE: Statistics Austria – Scanner data project

Computation of a price index using SD

1) The unweighted fixed base geometric mean (gm) of prices

$$\text{t1} : P_{i,fix\_gm}^{t1} = \prod_{i=1}^{n} \left(\frac{p_i^{t1}}{p_i^{to}} \right)^{\frac{1}{n}}$$

$$\text{t2} : P_{i,fix\_gm}^{t1} = \prod_{i=1}^{n} \left(\frac{p_i^{t2}}{p_i^{to}} \right)^{\frac{1}{n}}$$

+ In compliance with HICP regulation
- Problem of attrition rate(about 40% in our SD in 5 months)
- A lot of work for manual product replacement + quality adjustment

Computation of a price index using SD

2) unweighted monthly chained Jevons Index*

$$\text{t1} : P^{t1}_{i,chained\_Jevons} = \prod_{i=1}^{n} \left(\frac{p_i^{t1}}{p_i^{to}}\right)^{\frac{1}{n}}$$

$$\text{t2} : P^{t2}_{i,chained\_Jevons} = \prod_{i=1}^{n} \left(\frac{p_i^{t1}}{p_i^{to}}\right)^{\frac{1}{n}} * \prod_{i=1}^{n} \left(\frac{p_i^{t2}}{p_i^{t1}}\right)^{\frac{1}{n}}$$

+ no attrition problematic through dynamic matched items approach

- No direct price comparison with Dec t-1

*based on methods used by Statistics Netherlands. Jan de Haan and Heymerik van der Grient. 2009.

Computation of a price index using SD

3) Chained Törnqvist

$$\text{t1}: P^{t1}_{i,chained\ T\ddot{o}.} = \prod\left(\frac{p_i^{t1}}{p_i^{t0}}\right)^{\frac{(s_i^{t0}+s_i^{t1})}{2}}$$

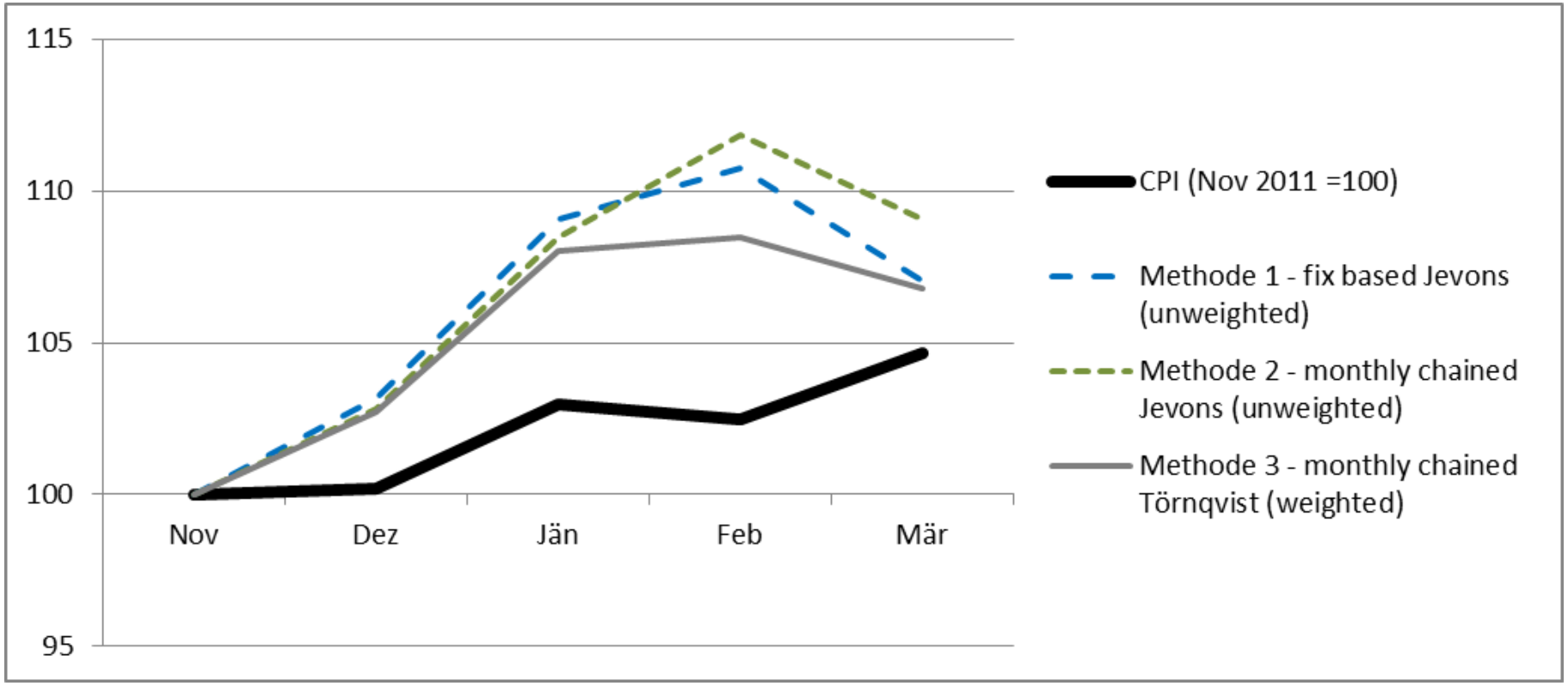
$$\text{t2}: P^{t2}_{i,chained\ T\ddot{o}.} = \prod\left(\frac{p_i^{t1}}{p_i^{t0}}\right)^{\frac{(s_i^{t0}+s_i^{t1})}{2}} * \prod\left(\frac{p_i^{t2}}{p_i^{t1}}\right)^{\frac{(s_i^{t1}+s_i^{t}}{2}}$$

+ use of expenditure information

- Chain drift
- No direct price comparison with Dec t-1

Results – Non alcoholic beverages

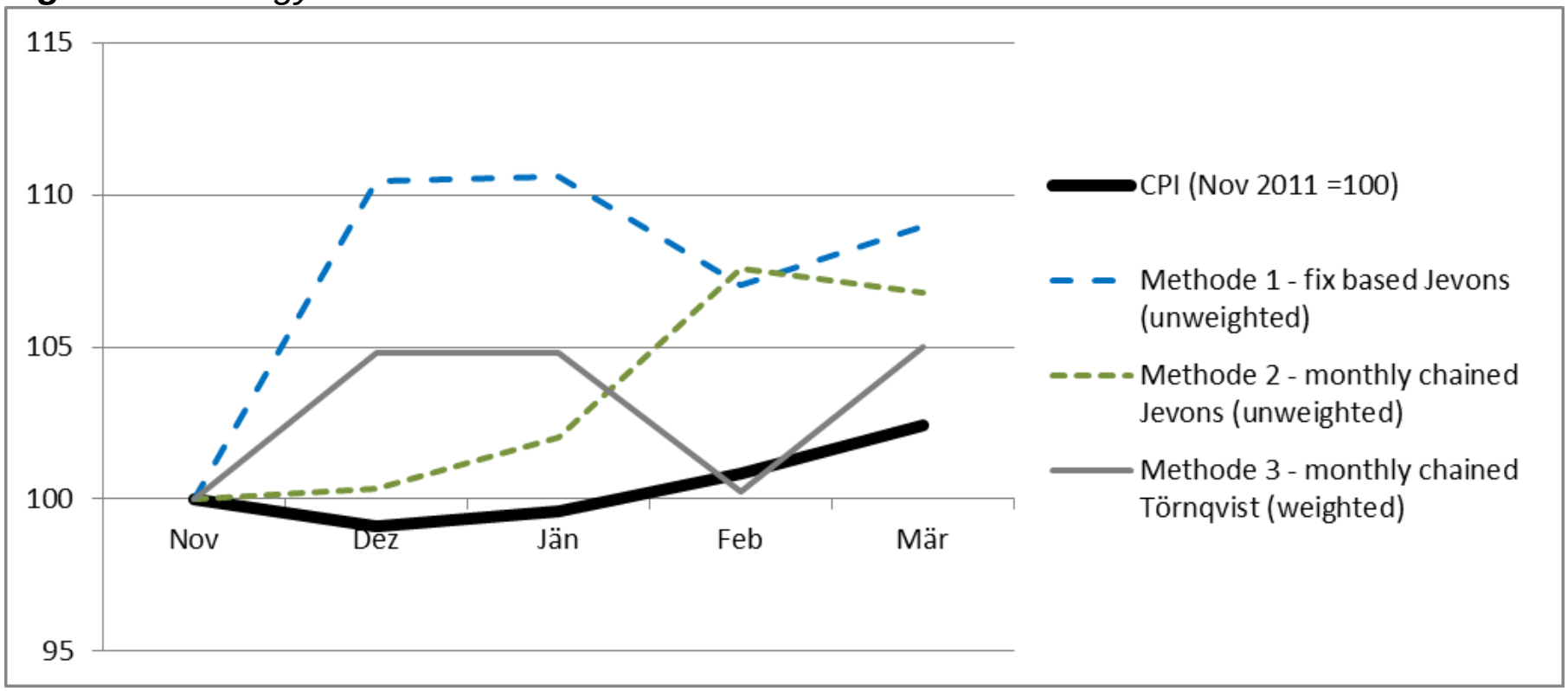
Figure 1– *01.2.2. non-alcoholic beverages. Price indexes from CPI and Scanner data.*



SOURCE: Statistics Austria – Scanner data project

Results – Sub-index „Energy Drinks“

Figure 2 *– Energy drinks. Price indexes from CPI and Scanner data.*



SOURCE: Statistics Austria – Scanner data project

Outlook

- **Priority: Obtaining more detailed Scanner Data from retailers**
- **Set up of index compilation procedure alternatives**
  - **→ need for international benchmarks**
- **Preparation of Road Map**
  - **Data processing infrastructure**
  - **Employee training**

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