

Scanner data research: handling outlets and store types

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Prices

Purpose

- update the panel with latest analysis of options for treatment of different outlets and store types within retailers

Actions

1. advise on the suggested approach to accounting for different outlets and/or store-types, within retailers.
2. advise on how to investigate the observed differences between indices created using outlet-level prices and the other scenarios

Product definition and stratification

The problem

- Can calculate average prices at individual outlet level, across each store type or across all stores in a region (we stratify by UK region)
- Which method is best?
- Context: Number of outlets is in the low-thousands.
Number of store types is 2+

Options:

Option		[Stratification] + product defining variables
1	Whole retailer	[consumption segment + region + retailer] + SKU + UoM
2	Store type stratification	[consumption segment + region + retailer + store type] + SKU + UoM
3	Store type in product ID	[consumption segment + region + retailer] + store type + SKU + UoM
4	Outlet in product ID	[consumption segment + region + retailer] + outlet id + SKU + UoM

Options: comparison

Option	Assurance of homogeneity	Protected from compositional effects if there is substitution between stores	Allows weights in elementary aggregates to change with substitution between stores	Robust to store types converting mid-year	Can easily see contributions of different store types to index	Level of churn	Relative size of data for index calculations	
1	Whole retailer	Lowest*	No	Yes	Yes	No	Lowest	Lowest
2	Store type stratification	Medium/high*	Yes, between store types	No	No	Yes	Low	Medium
3	Store type in product ID	Medium/high*	Yes, between store types	Yes	No	No	Low	Medium
4	Outlet in product ID	Highest	Yes, between any outlets	Yes	Yes	No	Higher? (Not quantified)	Highest

*[REDACTED]

Aggregate price index for food, drink and tobacco in three retailers: REDACTED

Annual growth for food, drink and tobacco in three retailers: REDACTED

Monthly growth for food, drink and tobacco in three retailers: REDACTED

Discussion

- The price index and growth rates calculated using averaged prices at the individual outlet level showed small divergences from the indices and growth rates calculated using averaged prices without any store-type or outlet breakdown, and those with a store-type breakdown. The latter two scenarios produce similar indices and growth rates.
- We are seeking to understand the reasons for the differences and determine which scenario provides the best measure of inflation
- Indices at lower levels of aggregation calculated at the outlet level do not show noticeably greater volatility than for the other scenarios
- Possible future work could include investigating churn in the different scenarios