Treatment of seasonal products

CPI WORKSHOP BRUSSELS, OCTOBER 29 - 31

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Missing items

Reason	Option	Method
Temporary	Omit/ Estimate prices	Omit, carry forward, imputation
Seasonality	Estimate prices	Carry forward, imputation
Permanent	Replacement	Find a substitute, quality adjustment
Shop closed	Sampling issues	Replace the shop? Follow the new location?

Seasonality in a CPI

- Prices of some products vary through the year, often following a seasonal pattern

- Consumers buy products in varying quantities, often following a seasonal pattern

- **Products not available for purchase in shops (or only in negligible quantities) in certain months of the year, in a typical seasonal pattern**

  - Strong seasonal products

  - Examples: Vegetables, fruits, fish, clothing, footwear

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Treatment (strong) seasonal products

- Fixed weights: Seasonal imputation method

  ◦ The weights of the products remain fixed during the year

  ◦ Impute non-available prices

  ◦ Carry forward in-season price

- Variable weights: Seasonal weights method

  ◦ The weights of the products vary during the year within a specific COICOP group

  ◦ The seasonal product will have zero weight off-season

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Treatment (strong) seasonal products, cont.

- No perfect solution exists

  ◦ Advantages and disadvantages should be evaluated

- The two methods should generate approximately the same result

- The final choice likely lies on efficiency grounds

Seasonal imputation method

- **Advantages:**

- Easy to implement

- Price-imputed seasonal items treated as regular products

- Consistent use of weights across all items in the basket

- **Disadvantages :**

- Annual fixed weights may not be representative of true monthly consumption patterns

- Incidence of imputations can be quite high in each month

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Seasonal weights method

- **Advantages:**

- Seasonal availability patterns are consistent with observed consumption behaviors

- Price imputations are kept to a minimum

- **Disadvantages :**

- Monthly price change reflects changes in consumption patterns

- Obtaining the monthly weights data can be challenging

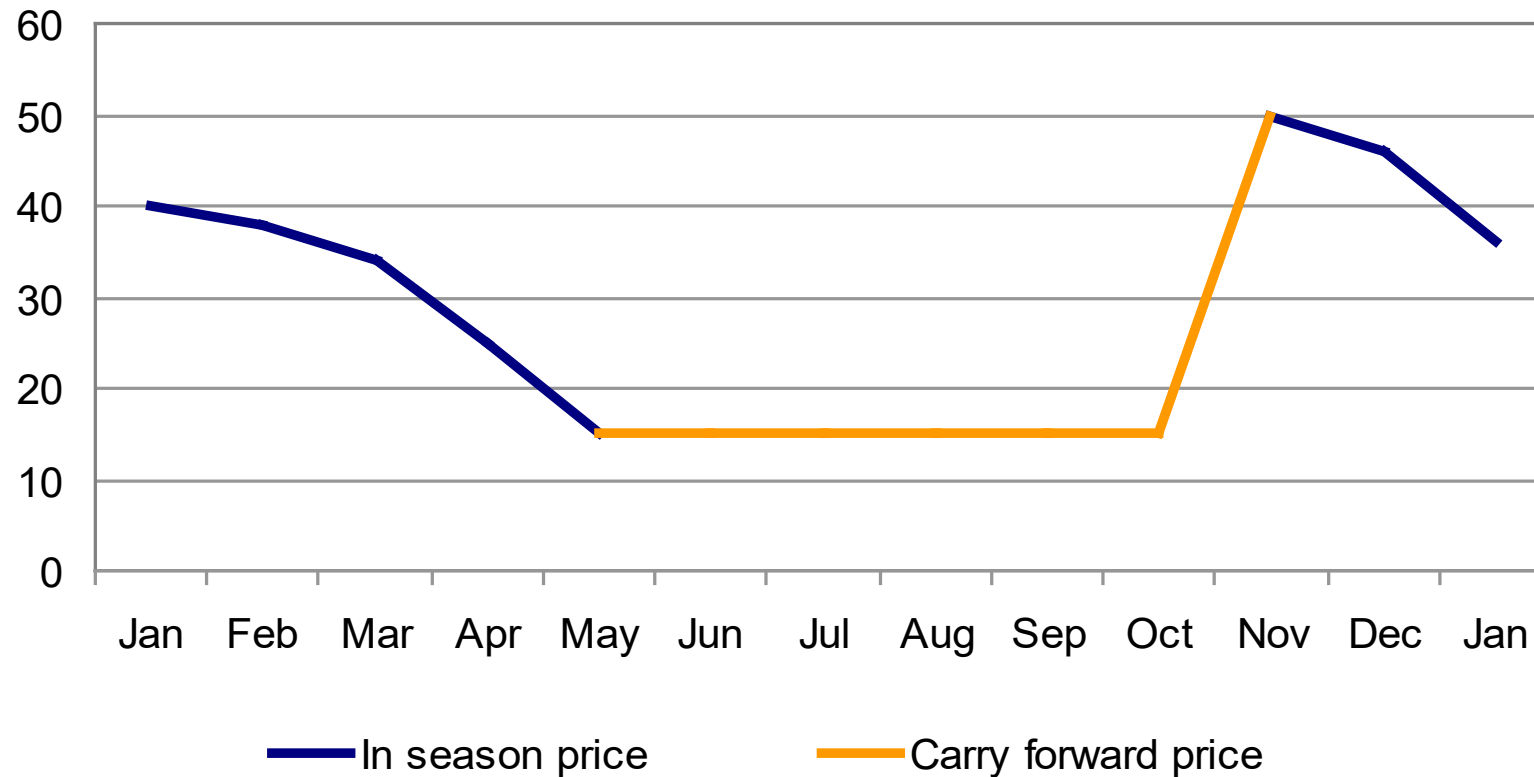- Inconsistent: variables weights for seasonal items, fixed weights for non-seasonal items

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Estimated prices - seasonal products

- Carry forward the last observed price until product reappear

- Bring price back to "normal" and <u>carry forward</u> until the product reappear

- Bring price back to "normal" and <u>impute</u> the missing price until the product reappears

  ◦ This is the treatment in the HICP regulation

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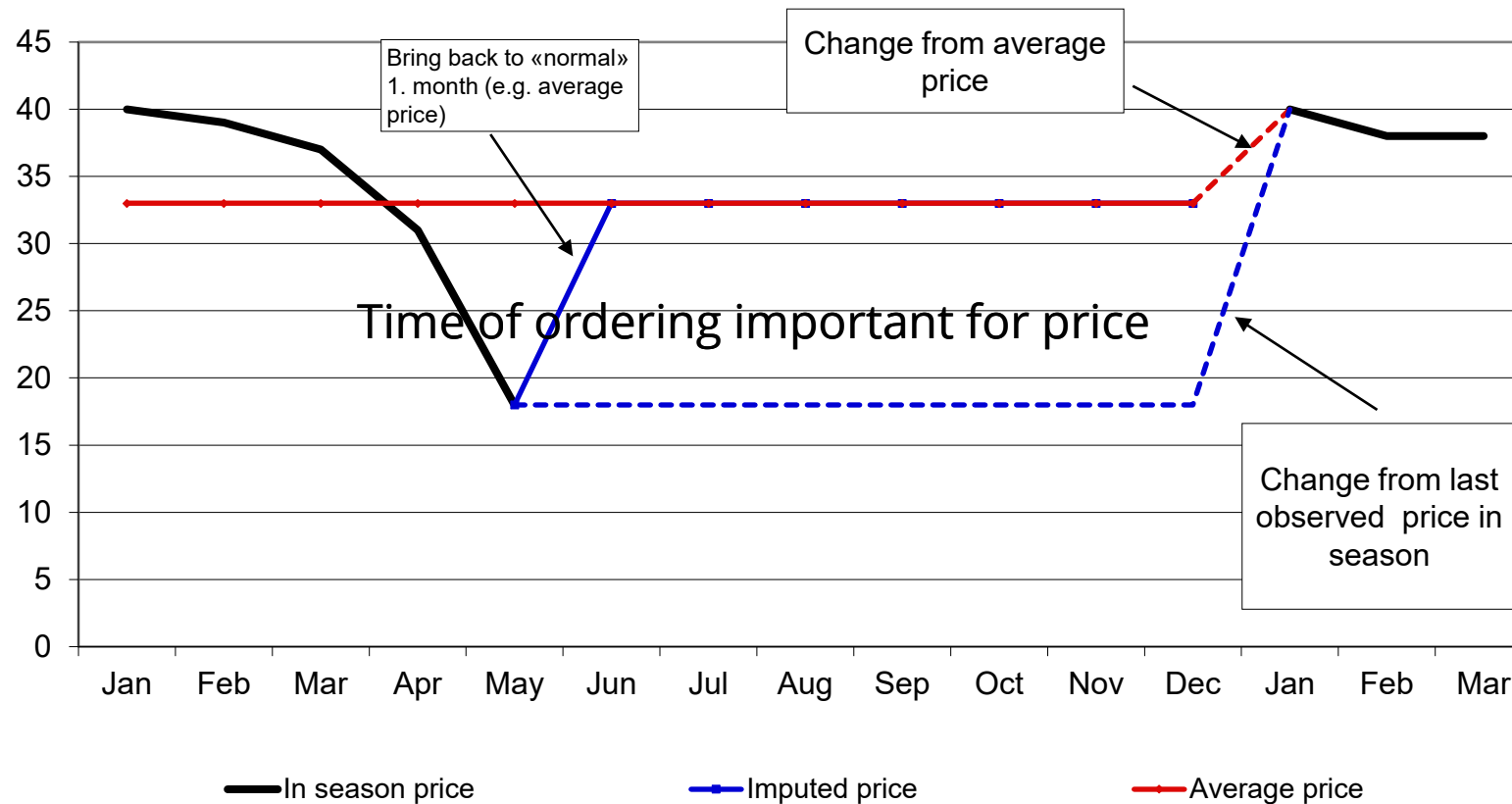
Carry forward last observed price

Bring back to "normal"?

- Typical price: estimated price for a seasonal product

- The price in the last month of the season

  ◦ Too low due end-of-season sales price ? (Clothing)

- The last price before the sales period

- The average observed price in the past season

  ◦ E.g. if prices are volatile also within the season (fruits, vegetables)

- Typical price: not exceptional such as an end-of-season sales price

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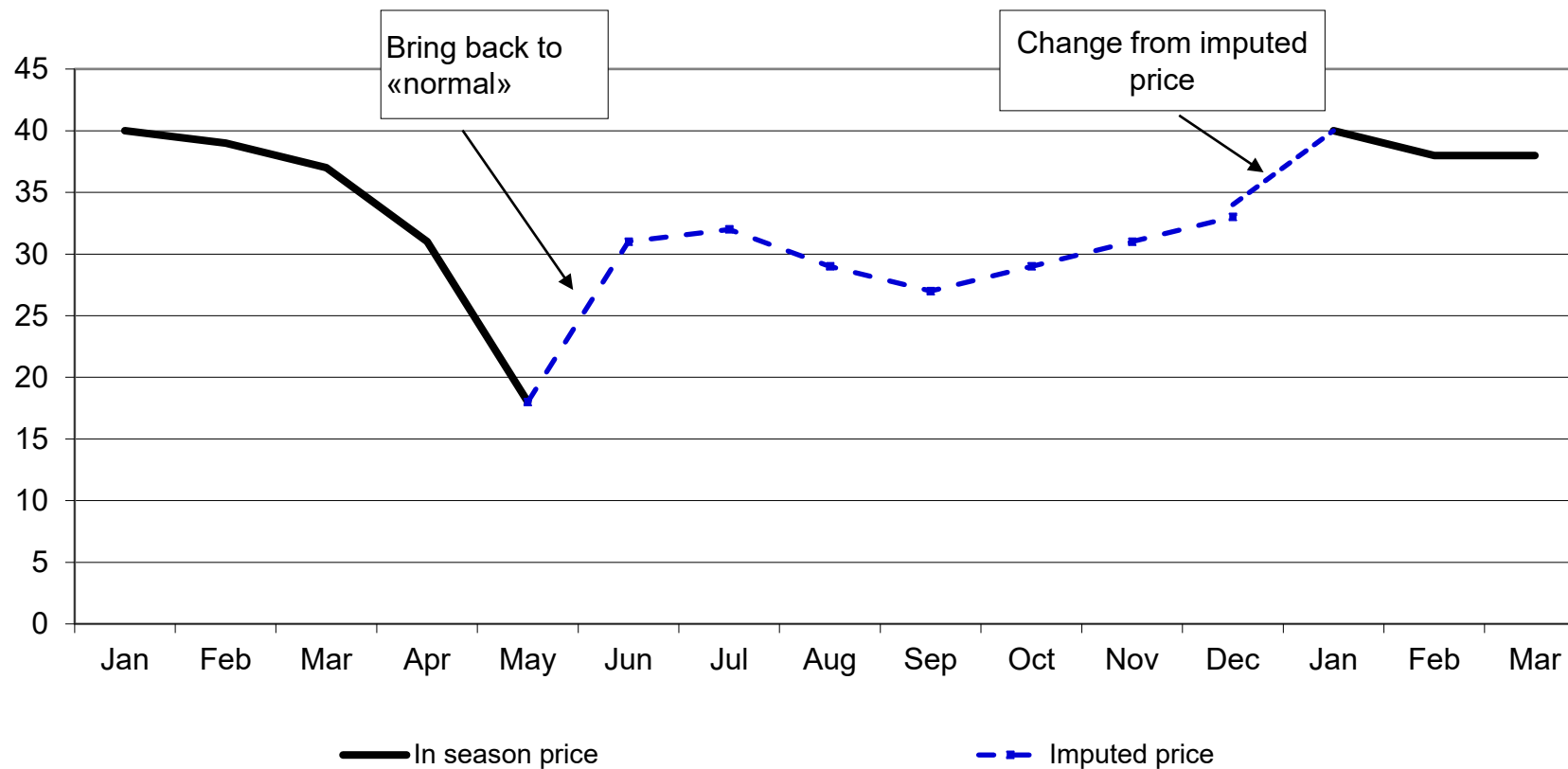
Carry forward average price

Seasonal imputation

- Impute the prices of off-season products by using the price development of in-season products within the same COICOP group

- Two methods:
  - All products in the COICOP group (All-seasonal estimation)
  - Some of the products in the COICOP group (Counter-seasonal estimation)

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Imputation based on products in season

All-seasonal estimation

- Use price development of all products

Coicop 0116	**Fruit**
Coicop 01161	**Fresh fruit**
	Bananas
	Apples
	Pears
	Grapes
	Melon (seasonal product)
	Oranges

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Counter seasonal estimation

- Use price development of seasonal products in-season

Coicop 0312	Clothing	
Coicop 03121	**Men's clothing**	
	Socks	
	T-shirt	
	Sweater, cotton	
	Suit	
	Shirt, long sleeves	
	Shirt, short sleeves	
	Jeans	
	Pyjamas	
	Shorts	(Seasonal product)
	Summer trousers	

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All- or counter seasonal estimation?

- **Counter-seasonal:** consumption groups that contain both seasonal and non-seasonal products

- Typically, two seasons for the seasonal products

    ◦ E.g. summer and winter clothing

- **All-seasonal** may be preferred in other cases

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