

Sweden's experience in developing SPPI for imports

Cross cutting topic (6) - Measurement challenges for
import services

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Agenda

- **Background**
- **General methodological aspects**
- **The data frame – sampling and weights**
- **Main results**
- **Improvements and further development**

Background

- Statistics Sweden have compiled SPPI's for imports since 2020
- SPPI for imports are compiled by the *section of producer prices*
- Main challenges
 - Data frame for sampling and weight calculations
 - Price measurement issues

General methodological aspects

- SPPI for imports is an *input* price index
 - Represents the average price development for services purchased from non-residents
- Coverage of purchasers
 - Only B2B transactions
 - B2C transactions are excluded

- Coverage of services

H – Transportation and storage services
I – Accommodation and food services
J – Information and communication services
M – Professional, scientific and technical services
N – Administrative and support services

General methodological aspects

- SPPI for imports is an *input* price index
- Methodology is generalized to be consistent across SPPI's markets
 - Observation unit: a combination of enterprise and service
 - Index construction: Laspeyre-type chain index
 - Sample and weight: updated each year
- Main user: National Accounts

Data frame – sampling & weights

- Data source: **The survey of foreign trade in service**
 - Compiled by Statistics Sweden
 - > on behalf of the Riksbank (Sweden's central bank)
 - Collected variables from enterprises:
 - > *trade values, service, direction (export/import) and country*
 - Services are specified by an internal classification
 - > aggregated to EBOPS 2010

Data frame – sampling & weights

- Issue: **classification concordance**
 - SPPI follows SPIN 2015 (the national product classification based on CPA)
 - The foreign trade in statistics follows EBOPS 2010
 - Ideally, SPPI identifies services on the lowest SPIN level (7-digits)
- ... mapping the classifications to generate a data frame for sampling and weight calculations

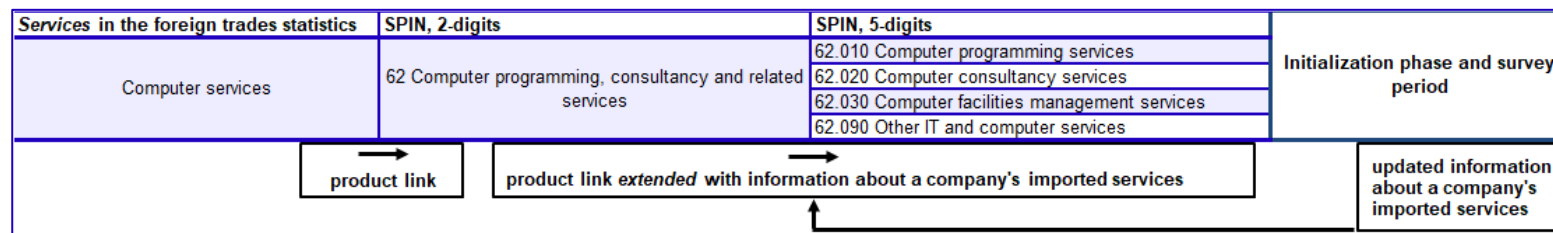
Data frame – sampling & weights

- Solution: **(1) Manual text-matching**
 - Services text-matched manually to suitable SPIN classification
 - > 1-to-1 mapping
 - Generates an "assymetric" *product link*
 - > Services are mapped to different SPIN levels

Services in the foreign trade statistics	SPIN, 2-digits	SPIN, 3-digits	SPIN, 4-digits	SPIN, 5-digits	SPIN, 7-digits
Rail transport with freight				Freight rail transport services (49.200)	
Computer services		Computer programming, consultancy and related services (62.0)			
Franchises and trademarks licensing fees					Licensing services for the right to use trademarks and franchises (77.400.02)

Data frame – sampling & weights

- Solution: **(2) Extend the product link to more detailed SPIN levels**
 - To reach more detailed SPIN levels an *extension* is sometimes needed
 - Manual allocation of enterprises
 - > based on information about the enterprises
 - > prior knowledge, internet or comments in the questionnaire



Data frame – sampling & weights

- Solution: **(2) Extend the product link to more detailed SPIN levels**
 - To reach more detailed SPIN levels an *extension* is sometimes needed
 - Manual allocation of enterprises
- How much "*extension*" is enough?
 - Ideally, lowest SPIN level (7-digits)
 - In practice, varies on a case-by-case basis...
 - > Number of enterprises? Homogeneity at the SPIN levels?
 - > Resource constraints

Data frame – sampling & weights

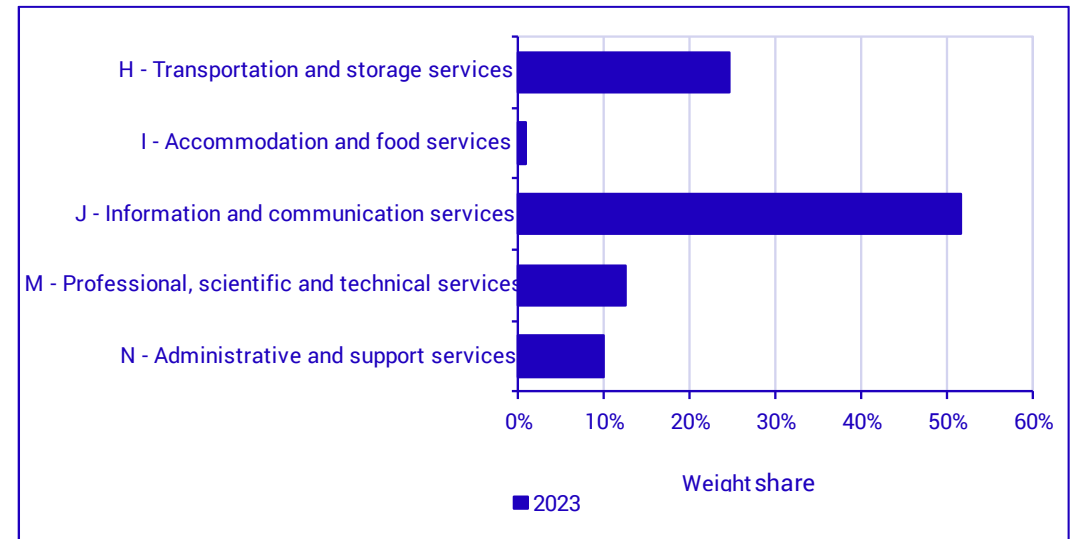
- Solution: (?) **Concordance tables**
 - What about using concordance tables between EBOPS and SPIN?
 - Could also be used, but in our case ...
 - > *Services* must be mapped to EBOPS -> might lose granularity
 - > Also generates an "asymmetric" *product link*
 - > Not apparent if concordance tables generate better mapping (e.g. correct for potential errors in manual text-matching)

Main results

- Population
 - Population (after cut-off): ~1 200 enterprises
 - > Entire Swedish economy: ~1.2 million enterprises
 - Sample frame is dominated by a few large enterprises
 - > 50% of the total import value in the sample frame is based on the 24 enterprises with the largest import values
 - Transfer prices?
 - > Accepted but closely monitored

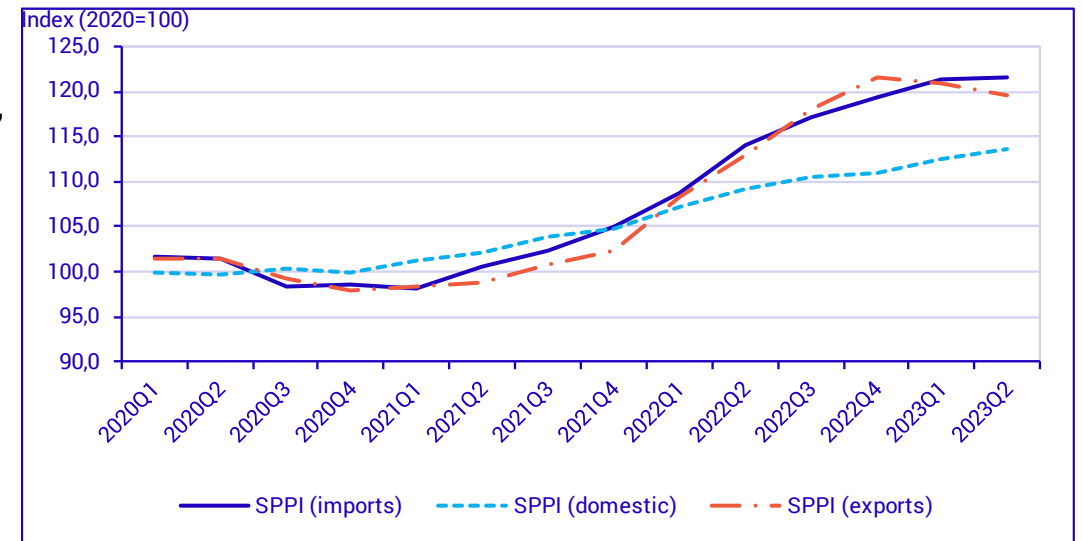
Main results

- Weights
 - Concentrated to information and communication services
 - Section I only covers accommodation services
 - > B2B constraint



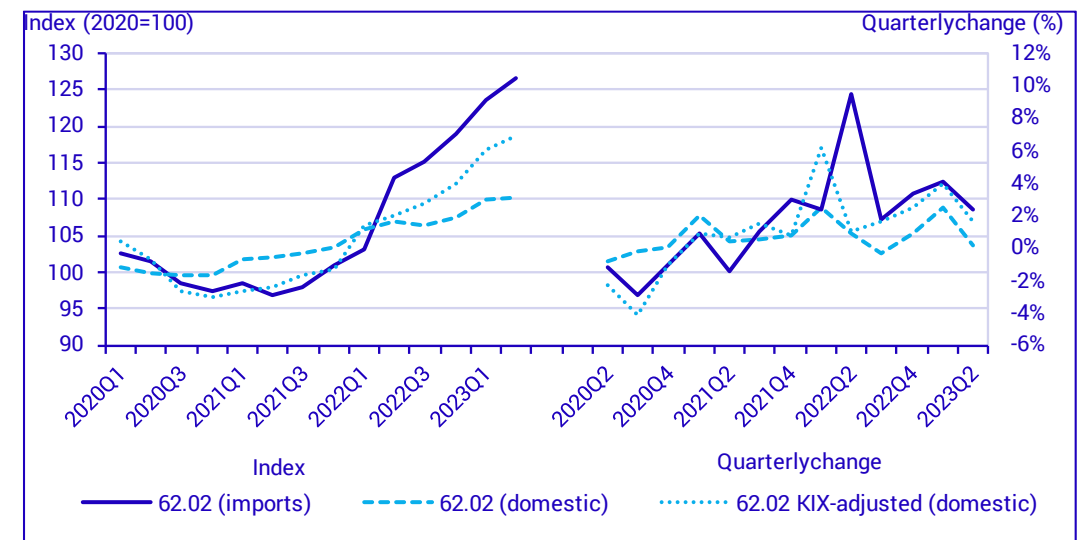
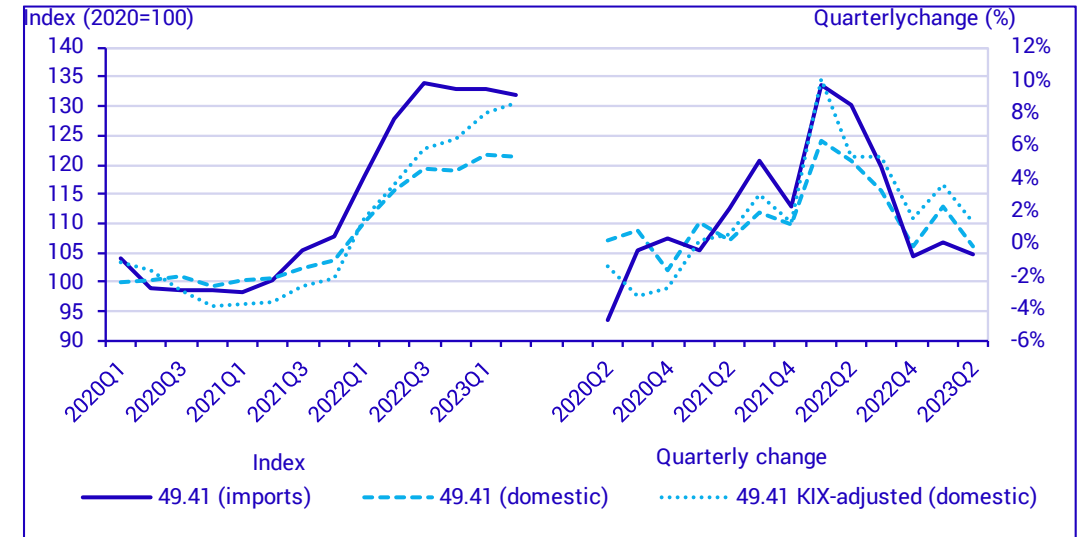
Main results

- Pricing methods
 - Contract pricing, time-based method, percentage fee method
- Specifiction
 - Up to 5 characteristics
- Quality adjustments
 - Case-by-case, mainly implicit



Main results

- Analysis
 - Import prices of some services have increased more than its domestic counterpart
 - Swedish Krona have depreciated significantly since 2022Q1



Improvements and further development

- Cooperation with National Accounts
- Development of price measurements for complex imported services
- Symmetries in trade prices (experimental)