25th Voorburg Group Meeting
SPPI Mini Presentation
Developing a Producer Price Index for Banking Services

Solutions for Mitigating the Incidence of Negative Prices in an SPPI for Banking Based on Administrative Data

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Outline

- Background

- Methodology

- Data and data limitations

- Causes of negative prices

- Experimental methods for mitigating negative prices

- Conclusion

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Background

- NAICS 52211 (Banking), accepting deposits and issuing loans

- Main users: CSNA, Bank of Canada, Finance, Industry Canada

- Purposes
  - Deflate output (FISIM) in the CSNA
  - Policy and regulation
  - Productivity analysis
  - Aggregate overall PPI

User Cost of Money Approach

- Deposit prices:

$$p_{di} = (r_i - \rho_{li}) + \gamma_{di}$$

- Loan prices:

$$p_{lj} = (r_{lj} - \rho_j) + \gamma_{lj}$$

- Discount the outstanding balances

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Data

- OSFI returns for chartered banks (booked worldwide), Statistics Canada IOFD data (booked in Canada)

- Quarterly income statements and balance sheets

- Six product lines, focus on nine biggest banks

- Reference rates: from CANSIM or financial statements

Data Limitations

- Missing data
- Reporting errors
- Accounting anomalies
- Explicit fees not disaggregated
- Format changes

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Causes of Negative Prices

- Choice of reference rate

- Mismatching of income statement and balance sheet

- Accounting anomalies

- Lags between changes in reference rate and effective rate

- Service bundling

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Experimental Solutions

- ## Data screening and imputation
  - Missing data
  - Errors and anomalies

- ## Reducing the frequency of the index

- ## Use of a different reference rate
  - Risk and maturity
  - The cases of short-term and long-term deposit

- ## Correction for mismatch in financial statements
  - Partial adjustment
  - Smoothes effective rates

Experimental Solutions (Continued)

- Moving averages
  - Moving average of reference rates
  - Moving average of effective rates

- Product aggregation
  - Service bundling/loss leaders
  - Reference rate not reflecting product characteristics

- Use of the mid-point reference rate
  - Effective and consistent with current SNA approach
  - Not product specific

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Conclusions

- Reduced occurrence of negative prices and lower volatility

  - Choice of reference rate has the largest impact on prices and remains the key issue

- The quality improvement from using survey data remains to be assessed (new lending return)

- Changes in monetary policy & market conditions challenge the methodology

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