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
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:
  \[ p_{di} = (r_i - l_i) + di \]

- Loan prices:
  \[ p_{lj} = (r_{lj} - lj) + lj \]

- Discount the outstanding balances
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
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
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
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