Sector Paper on Rail Passenger Transportation Services

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Sources for the sector paper

- Papers and discussion results of 2009 session on rail transportation
- Survey of NSI‘s (17 answers)
- Paper from previous years:
  - Palmer (2003), UK: SPPI methodology, quality adjustment
  - Richardson (2005), UK: quality adjustment
  - Hamilton-Seymour (2005), New Zealand: SPPI methodology
  - Willet (2005), USA: SPPI methodology.
Classification (1)

General distinction (ISIC, NACE, NAICS; CPC, CPA, NAPCS)

- Rail-based passenger transportation services

- Passenger rail transport, interurban
- Passenger transport, urban/suburban (including rail)

- Main classification problem: where to draw the borderline?
- Approach Germany (2009): distinction by infrastructure
  - Infrastructure according to „regular“ railway regulations
  - Infrastructure according to tramway
- No problem if clear distinction (ANZSIC, JSIC, KSIC): „system“
Classification (2)

Focus of the paper

- Rail-based passenger transportation services
- Passenger rail transport, interurban
- Passenger transport, urban/suburban (including rail)

- „Regional transportation“ is in focus as well
- The German approach is followed
- With this interpretation, ISIC/CPC etc. align with JSIC/ANZSIC etc.
- Enforcement of coherence within national statistics!
Turnover statistics (1)

Types of turnover measurement

- Overview of industry and its companies
- More variables than just turnover
- Frequency: low (e.g. annually)
- Industry-based
- Identification of economic development
- Often, turnover only published as index
- Frequency: high (e.g. monthly)
- Industry-based
- Detailed turnover breakdown by service products
- Input for SPPI (weighting scheme)
- Frequency: very low
- product-based: includes turnover of secondary activities from other sectors
Turnover statistics (2)

The core problem – how to define turnover in this sector

- Public involvement in passenger rail transport as it is a "service of general interest"
- The way public authorities ensure the offer of rail passenger transport determines the turnover
- Contents of turnover in general:
  - Service without public payments: ticket fees
  - Service with public payments: grants and, occasionally, ticket fees (depends on the contract)
  - Other factors to be regarded: public vehicle pools, down payments, bonus/malus regulations, transport associations

=> Turnover rather relates to politics than to economical development
## Turnover statistics (3)

### Options for development

<table>
<thead>
<tr>
<th>Category</th>
<th>Data Source</th>
<th>Level of Detail Collected</th>
<th>Frequency</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>Survey/Census</td>
<td>Industry turnover and product turnover detail</td>
<td>Sub-annual collection (monthly or quarterly)</td>
<td>Most expensive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Largest response burden</td>
</tr>
<tr>
<td>Good</td>
<td>Survey/Census and Administrative (tax data, industry association data etc..)</td>
<td>Industry detail only</td>
<td>Sub-annual</td>
<td>Expensive</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>High response burden</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reconciling administrative data variables with survey variables</td>
</tr>
<tr>
<td>Minimum</td>
<td>Administrative (tax data, industry association data etc..)</td>
<td>Industry detail only</td>
<td>Annual</td>
<td>Least expensive</td>
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<td></td>
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<td>Little or no respondent burden</td>
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<td>Suitability for turnover measurement must be checked carefully</td>
</tr>
</tbody>
</table>
Turnover statistics (4)

More challenges

- Small number of companies
  - Problems with confidentiality
  - In some cases (CZ, NL, F), only high level aggregates are published
  - Advantages: few respondents to observe, easy identification of companies, no misclassification

- Entity surveyed
  - Japan: Survey of establishments (stations, offices, , track and maintenance sections etc.) instead of companies
  - Problems encountered with new ways of payment by the passengers: cards that are charged at the station but the money is spent elsewhere
  - Solution: Observation only of charge paid with these cards when entering the train
SPPI (1)

Survey results – State of development

- Only 4 out of 17 countries offer an SPPI for Rail Passenger Transport
- 1 is under development
- 2009: Just one paper on this issue (Germany) => just theoretic considerations, not description of an actual implemented SPPI
- Before 2009: 4 papers
  - UK 2003: SPPI methodology, Quality Adjustment
  - UK 2005: Quality Adjustment
  - New Zealand, USA 2005: SPPI methodology (for the whole rail transport sector)
- Treatment of public grants: Only Poland includes them so far
  => If considered as turnover, observation necessary
### SPPI (2)

**Pricing methods – options for developing SPPI statistics: Passenger Fares**

<table>
<thead>
<tr>
<th>Category</th>
<th>Pricing method</th>
<th>Data type in the survey</th>
<th>Quality and Accuracy</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best</strong></td>
<td>Passenger Fares: Direct use of prices of repeated services</td>
<td>Data is based on actual prices for services offered</td>
<td>• Good data quality if especially collected for SPPI.</td>
<td>Inexpensive method – often, internet survey possible. No response burden in this case.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Detailed service specifications allow time-consistent comparisons.</td>
<td></td>
</tr>
<tr>
<td><strong>Good</strong></td>
<td>Passenger Fares: Use of CPI data (direct use of prices of repeated services)</td>
<td>Data is based on actual prices for services offered</td>
<td>• Data collected for CPI purpose: only satisfying data quality (may miss important services to business customers).</td>
<td>Least expensive method with no response burden (caused by the SPPI collection).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Detailed service specifications allow time-consistent comparisons.</td>
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</tbody>
</table>
Pricing methods – options for developing SPPI statistics: Public grants

| Best          | Public grants: Contract Pricing | Data is based on real transaction prices | • Due to bonus/malus payments no need for quality adjustment during the duration of the contract.  
• Detailed service specifications allow time-consistent comparisons. | Most expensive, with highest response burden. As many contract details need to be given, confidentiality is a crucial success factor! |
|---------------|---------------------------------|-----------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Minimum       | Public grants: Unit value price  | Price per train-kilometre laid down in the contracts as a proxy for price.                  | • If unit value refers to a group of contracts, transactions in a group must be sufficiently homogeneous (i.e. quality of individual services is unchanged and their quantities in the transactions do not vary). Otherwise, changes can be highly volatile and non-comparable.  
• Quality adjustment complex when contracts change.                                                                 | Less expensive (except when quality adjustment is needed), and less response burden (only few contract details needed). Confidentiality is a crucial success factor anyway. |
Other considerations (1): Quality Adjustment

- Situations requiring quality adjustment:
  - Changes in the quality of the train and on-board service
  - Changes in travel time, frequency, punctuality

- Treatment of changes in the train/service quality:
  - estimation of price change together with respondent
  - Use of price differences between train categories

- Treatment of changes regarding time-based quality:
  - UK (2005): application of time valuation
  - Value of time derived from Department for Transportation
  - Adjustment of delays, changes in travel time, cancellations and changes in frequency proposed
Other considerations (2): appropriate classifications for SPPI

- International classifications do not match national circumstances
- National solutions have to be found
- Examples:
  - USA:
    |   | Rail transportation, passenger |
    |---|----------------------------------|
    | 4821113 | Coach service class |
    | 482111306 | All other service classes |
  - New Zealand: industry-based index for rail transport industry
    - Rail freight transport
    - Rail passenger transport
    - Storage services
    - Plant and machinery hiring and leasing
    - Engineering services
SPPI (7)

Other considerations (2): appropriate classifications for SPPI

- Examples (cont’d):
  - Germany: different turnover sources

- Korea, Japan: weighting based on I-O-tables (?)
Other considerations (3): More challenges

- Confidentiality and ability to publish
  - Only few companies involved
  - Politics involved as well (public authorities), confidential contracts
  - Implementing and publishing of SPPI needs backing of politics and respondents

- Use of CPI (or similar) data: things to consider
  - Exclusion of taxes
  - Need for different weighting scheme and (probably) additional data reflecting business customer behaviour
  - Inclusion of services not offered to private customers

⇒ Same challenges as for air transport
⇒ Still a decrease in workload
Summary and further suggestions

- Large public involvement: complications in definition of turnover and service
- Main problem: inclusion of public grants in turnover/price measurement
- Classification: Problem in drawing the line between interurban and urban/suburban rail transportation => assuring national coherence
- National markets with national particularities need national solutions
- Few respondents, involvement of politics => problems with confidentiality and publication
- Quality adjustment: valuation of time innovative approach; can probably used for other sectors where time matters
Reference to Peter Roemer:
Discussion ?!

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