SPPI for NACE 71.2 Technical Testing and Analysis - Germany

- 26th Voorburg Group Meeting in Newport
- Johanna von Borstel (Destatis)
Outline

- Definition of the service
- Classification structure
- Pricing unit of the service
- Pricing methods
- Quality adjustment
- Market conditions
- Price collection
- Results
Definition of the service

- Technical testing and analysis defined by:
  - the nature of the tested object ((semi-)physical good),
  - the investigative approach (the properties of the tested object not to be altered by the testing process)
  - the intention of the test (non medical, non veterinarian).

⇒ Coverage of testing and inspection services, except:
  - certification of business processes (no physical good),
  - damage assessments (not investigative)
  - blood analysis tests (medical).
Classification structure I

- Industry classifications:
  - NACE rev.2 (referring to ISIC rev.4) 71.2 TT&A:
    - Particularities: inclusion of veterinarian tests related to food production
    - No subclasses
  - NAPCS (2007) 54.138 Testing Laboratories:
    - Particularities: exclusion of auto emissions tests
    - No subclasses
Classification structure II

- **Product classification:**
  - CPA (2008) (referring to CPC ver.2) 71.2 TT&A:
    - Subclasses:
      - Composition and purity TT&A
      - TT&A of physical properties
      - TT&A of integrated mechanical and electrical systems
  - Technical inspection of road transport vehicles
  - Other TT&A
Classification structure III

- **German activity fields based on CPA structure:**

- **Subclasses:**
  - Composition and purity TT&A
  - TT&A of physical properties
  - TT&A of integrated mechanical and electrical systems
    - TT&A of large-scale plants
    - TTA for machinery and small installations
    - TT&A for the certification of products and prototypes
  - Technical inspection of road transport vehicles
  - Other TT&A
Pricing unit of the service

Depends on the specific form and complexity of the test:

- Relatively simple, standardized and recurring tests:
  - i.e. periodic safety test (for elevators, motor vehicles, standardized chemical analyses, ...)
  - Pricing unit: single offered test or analysis

- Complex, unique and non-standard tests
  - i.e. the periodic safety testing of bridges or a test of an experimental prototype
  - Pricing unit: time (hour, month...) of provision of trained staff and/or special machinery necessary for the test
Pricing methods

- Administratively regulated
  - pricing of repeated services

- Freely negotiated
  - charge-out-rates for machinery and personnel (either list-prices, realized charge-out rates or calculative charge-out-rates)
  - model pricing (real transaction prices that can be achieved with typical clients),
  - periodically offered tests: pricing of repeated services
Quality adjustment

- Optional methods (not exclusive):
  - Improvement in efficiency: Bridged overlap method
  - Addition/omission of test components: Option pricing/indirect option pricing via expert judgement
  - Change in official regulation: Indirect option pricing via expert judgement

- Experiences in Germany:
  - Quarterly questionnaires ask for changes in characteristics
  - But very rare cases (i.e. more efficient test setup)
Market conditions I

- Highly concentrated, market liberalization since 2006
  - Still important market players: TÜVs (“technical monitoring associations”)

- High diversity of products, no single industry association

- Sensitive to B2B or B2All approach due to turnover with inspection of consumers’ road vehicles

- Size:

<table>
<thead>
<tr>
<th>NACE rev.2</th>
<th>Year</th>
<th>Turnover in bill. €</th>
<th>Number of enterprises</th>
<th>Number of employees (in k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>71.2 Technical testing and analysis</td>
<td>2008</td>
<td>7.02</td>
<td>5,540</td>
<td>68.6</td>
</tr>
<tr>
<td>71.2 Technical testing and analysis</td>
<td>2009</td>
<td>8.09</td>
<td>5,515</td>
<td>79.0</td>
</tr>
</tbody>
</table>
### Market conditions: billing modalities

<table>
<thead>
<tr>
<th>Business field</th>
<th>Billing modalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduction of periodic car tests</td>
<td>Only fix prices per test</td>
</tr>
<tr>
<td>Technical testing of large-scale plants</td>
<td>Mainly charge-out-rates (for personnel and machinery)</td>
</tr>
<tr>
<td>Testing of machinery and small installations</td>
<td>Mainly fix prices per test</td>
</tr>
<tr>
<td>Technical testing for the certification of prototypes and products</td>
<td>Charge-out-rates for personnel and machinery as well as fix prices</td>
</tr>
<tr>
<td>Physical testing (if not part of the categories above)</td>
<td>Charge-out-rates for personnel and machinery as well as fix prices</td>
</tr>
<tr>
<td>Chemical testing (if not part of the categories above)</td>
<td>Charge-out-rates for personnel and machinery as well as fix prices</td>
</tr>
<tr>
<td>Other business fields</td>
<td>Charge-out-rates for personnel and machinery as well as fix prices</td>
</tr>
</tbody>
</table>
Price collection

- Questionnaire design:
  - Fix prices (model prices, list prices)
  - Charge-out-rates
  - Main activity fields and typical services chosen in close contact with respondents

- Non-regulated market: cut-off survey with sampling
  - Turnover below 17,500 €: not questioned
  - Turnover between 17,500 € and 25 million €: sample
  - Turnover above 25 million €: exhaustive

- Regulated market: use of administrative data
Results I: SPPI weighting pattern

<table>
<thead>
<tr>
<th>Business fields of Technical testing and analysis</th>
<th>Share</th>
</tr>
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<tbody>
<tr>
<td>Composition and purity testing and analysis services (i.e. biological tests, food and environmental analyses (if not already included above) etc.</td>
<td>25.1%</td>
</tr>
<tr>
<td>Testing and analysis services of physical properties (i.e. ultrasonic, tensile and bending tests (if not already included above), etc.)</td>
<td>4.3%</td>
</tr>
<tr>
<td>Technical testing of large-scale plants (i.e. inspection of chemical or power plants, etc.)</td>
<td>8.0%</td>
</tr>
<tr>
<td>Technical testing and analysis of machinery and small installations (i.e. inspection of pressure vessels or elevators, etc.)</td>
<td>13.0%</td>
</tr>
<tr>
<td>Technical testing and analysis for the certification of products and prototypes (i.e. GS/CE certifications, etc.)</td>
<td>7.6%</td>
</tr>
<tr>
<td>Technical inspection services of road vehicles (general inspections and emissions tests for cars, motorcycles, lorries, etc.)</td>
<td>35.5%</td>
</tr>
<tr>
<td>Other technical testing and analysis services</td>
<td>6.5%</td>
</tr>
<tr>
<td><strong>Total 71.2 Technical testing and analysis</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Results II: SPPI development

SPPI Technical Testing and Analysis (Ø2006=100)

- Testing of machinery and small installations
- Technical inspection services of road vehicles
- Composition of purity testing
- Total (incl. Testing of large-scale plants, products and prototypes, physical properties, other testing)
Thank you

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