„Denken heißt vergleichen“
„To think is to compare“
Measuring the Size of Logistics Markets and Logistics Cost

Findings from the 2011 European „Top 100“ Study
Leipzig, May 2, 2012

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Agenda

- The Nuernberg „Top 100“ Studies
- „PPP“ - a robust definition of logistics
- Idea of triangulation:
  - three independent estimation approaches
    - From the „bottom“ of transportation statistics „up“ to warehouse handling, planning and administration
    - Employment statistics, logistics value added, and national logistics expenditures
    - „Top down“ from reported industry sales to industry-specific logistics cost shares
- Current results and open ends
- Vision of a global „Logistics Expenditure and Performance Observatory“
I. The Nuernberg „Top 100“ Studies

- Started in the mid-1990’s as an effort to identify the „top 100“ logistics service providers in Germany
- Gradually developed three independent estimation approaches for „total national logistics expenditures“ comp. to US
- Annual assessment of market shares, market growth, by segments,
- … expanded estimates to other European countries – currently 27+2, Turkey, China
- still: „work in progress“
II. A robust „functional“ definition of Logistics and logistics expenditure: „TUL“ resp. „PPP“ (Placing, Pacing, Patterning)

- supply chain stage linkages included, intra-plant and –store-logistics excluded:

![Diagram showing logistics services covered by this study]

- Geographical horizon:

![Maps showing geographical horizon]

- Functional (not an „institutional“) approach:

  Logistics expenditures as the sum of (consolidated) third party and shipper/user cost
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III-1. The idea of „triangulation“:
three independent estimation approaches

I. Supply-Side Approach:
„Bottom Up“ from
Transportation
Statistics to Logistics

II. From Employment Statistics
To labor expenditure to
cumulative national
value added (GDP) and
sales/cost total

III. Demand Side
Approach:
– „Top Down“ from
industry revenue data
through logistics
expense percentages

National Logistics Bill
Germany: € 212 b
EUR 29: € 930 b
III-2. First: From the „bottom“ of transportation statistics „up“wards to estimating warehouse & inventory related and planning and admin. activity cost

- transport tonnage and tokm reports-
- National cargo vehicle statistics
- estimates of avg. annual cost per cargo vehicle * nr. vehicles = total national cargo transportation cost

- add estimate for related whse/inv., planning/admin. expenditures for total logistics expenditure estimate

- Additional take-aways: transp. productivity metrics

<table>
<thead>
<tr>
<th>Vehicle load capacity</th>
<th>Hired fleet</th>
<th>Own fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousand</td>
<td>dumper</td>
</tr>
<tr>
<td></td>
<td>vehicles</td>
<td>in thousand</td>
</tr>
<tr>
<td></td>
<td>in total</td>
<td></td>
</tr>
<tr>
<td>1.0 to 3.5 to (reported)</td>
<td>71.5</td>
<td>2.0</td>
</tr>
<tr>
<td>up to 7.5 to</td>
<td>32.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Sub total small trucks, regional traffic</td>
<td>104.2</td>
<td>4.1</td>
</tr>
<tr>
<td>up to 9.0 to</td>
<td>17.1</td>
<td>2.5</td>
</tr>
<tr>
<td>up to 14.0 to</td>
<td>39.8</td>
<td>7.3</td>
</tr>
<tr>
<td>&gt; 14.0 to</td>
<td>58.6</td>
<td>12.2</td>
</tr>
<tr>
<td>Tractors</td>
<td>154.6</td>
<td>35.0</td>
</tr>
<tr>
<td>Sub total heavy trucks, long-distance</td>
<td>270.1</td>
<td>22.1</td>
</tr>
<tr>
<td>Vehicles not registered</td>
<td>83.0</td>
<td>42.0</td>
</tr>
<tr>
<td>Sum</td>
<td>457.3</td>
<td>26.2</td>
</tr>
</tbody>
</table>

I. Supply-Side Approach: „Bottom Up“ from Transportation Statistics to Logistics
II. From Employment Statistics To Personnel Expense Cumulative National Value Added (GDP)
III. Demand Side Approach: – „Top Down“ from Industry Revenue Data through Logistics Expense Percentages

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Chart Nr. 8

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III-3. Second: from logistics employment statistics to logistics sector „value added“ and total national logistics expenditures

- National employment statistics by job category, total wages per employee and employer industry
- Estimate of logistics share for „mixed“ job classes, add self-employed etc.
- Estimate of national logistics labor cost expenditure
- Add „other“ value added components (taxes, depreciation, profits,) for logistics sector „value added“
- Add logistics sector purchases from other sectors for total national logistics spending

addit. take-aways: VA-and employment perspective, elimination of double counts
III-4. Third: „top down“ estimate from industry sales to logistics cost shares by industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Basic material bn. €</th>
<th>Logistics costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>total</td>
</tr>
<tr>
<td>1. Agriculture, forestry</td>
<td>27.6</td>
<td>11.0</td>
</tr>
<tr>
<td>2. Agriculture, forestry</td>
<td>0.0</td>
<td>45.2</td>
</tr>
<tr>
<td>3. Whole sale with agricultural basic materials</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4. Whole sale with agricultural consumer goods</td>
<td>0.4</td>
<td>9.0</td>
</tr>
<tr>
<td>5. Fishing</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>6. Construction</td>
<td>9.2</td>
<td>27.0</td>
</tr>
<tr>
<td>7. Mining</td>
<td>0.0</td>
<td>51.5</td>
</tr>
<tr>
<td>8. Whole sale with wood, construction material etc.</td>
<td>0.0</td>
<td>15.0</td>
</tr>
<tr>
<td>9. Whole sale with stones, earths etc.</td>
<td>0.0</td>
<td>89.8</td>
</tr>
<tr>
<td>10. Civil engineering</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>11. Whole sale with construction elements, metal,</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>12. Installation, crafts</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>13. Other construction services</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14. Retail DIY</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

- Industry revenues based on VAT data
- Estimates of industry-specific „downstream“ logistics spending as % of industry revenues
- Total spending of all industries

**addit. take-aways:** logistics expenditures by industry; basis for macro-ec. input-output-matrix of goods flows and interrelationships
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  Performance Observatory“
IV-1. Findings: „national logistics expenditures“ Germany/EU 29

Data status 2010

Logistics market „D/EU“

2010: € 212/930 b.
2.7/10+ m. Jobs

Logistics Industry Suppliers
40%, i.e. € 80/400 b.

Logistics-“induced“ Employment in remote industries
ca. 1,6/6 m. jobs

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IV-2. … estimation of market segment sizes

Nat. Logistics Expenditure
€ 212 b. p.a.
IV-3. … establishment of a macro-economic input-output goods flow analysis

Illustration for Germany:

€ 2600 Mrd. GDP (2010) = value at 82m

€ 8000 Mrd. cumulative goods flow value i.e. all sales

6 Mio. business „nodes“
IV-4. … (very preliminary) international comparisons

Source: Klaus, Logistik „Märkte und Marktentwicklungen weltweit“ in: Baumgarten (Hrsg.) 2008

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VI. Vision of a global „Logistics Expenditure and Performance Observatory“

- International agreement on „robust“ logistics definition
- ... estimation approaches and (minimum) data quality standards
- annual updates and publication
- definition of critical KPI‘s such as
  - logistics spending per capita
  - logistics spending per unit of GDP
  - corresponding transportation (warehousing, admin) KPI's
- Research and policy development based on input-output models: effects of industry structures, (post-industrialization) infrastructure qualities, etc.
- supported by .... ??
Thank you!