Computer services

Vera Norrman, Statistics Sweden
Computer Services

Role and impact of computer services
Globalisation
Impact on GDP
Figures from Business Statistics
Product groups 72
SPPI as deflator of production value
Overview by National Accounts
Industry versus product groups
Remarks on papers and conclusions
Discussion
Role and impact of computer services

Provide support to production processes
The role is improve efficiency
Develop new knowledge
Circulate knowledge in the economy
Internet makes local business global
Productivity improvements
IT driven innovations
Rapid structural changes in the economy
Globalisation Increase

Threat or opportunity?

Deregulation

Increased competition

Reduced margins

Looking for new markets

Partner?
Competitor?

Where to Go?
Globalisation Increase

A more flexible labour market

Many companies lay off large number of employees

Qualified persons apply for less qualified jobs
Requested salaries lower than at former employment

Qualified employees available and on “bargain discount”

Globalisation and digitalisation transforms the sales channels
The Business Structure

We only see the tip of the iceberg

Extremely successful global players
Ericsson, IKEA, H&M, SKF, Skanska, Volvo, Scania, Tetra Pak, Astra Zeneca, Sandvik, ABB

Smaller successful international players

Domestic companies with little (growing) or no international success

Domestic companies, with no int’l aspirations
Impact on GDP

Computer services are complex
Investments
Export
Import

Please, pay higher importance to the measurement
Computer and consultancy services 2003-2007 (Int. trade)
Other business services and merchanting 2003-2007 (Int. trade)
Export of Services 2003-2007

[Graph showing export of services from 2003 to 2007 with various categories and bars representing different sectors like transport, travel and trade, etc.]
Swedish companies in Japan

120 Swedish subsidiaries in Japan
~12,000 No of employees
Export 16.8 billion SEK (2006)

Total sales in Japan ~40 billion SEK (2004)
~1,500 Swedish companies selling through 3rd parties
Figures from Business Statistics

Main figures
Turnover
Turnover by group
Type of clients
Structure of costs
Private Services in Sweden 2000

Services by Size of Enterprise
- 0 - 19 employees: 96.9%
- 20 - 49: 0.2%
- 50 - 199: 2.1%
- 200+: 0.8%

Turnover of Services by Size of Enterprise
- 0 - 19 employees: 32%
- 20 - 49: 17%
- 50 - 199: 14%
- 200+: 37%

Employees in Services by Size of Enterprise
- 0 - 19: 35%
- 20 - 49: 14%
- 50 - 199: 12%
- 200+: 39%
Private Services in Sweden 2005

Services by Size of Enterprise

Turnover in Services by Size of Enterprise

Employees in Services by Size of Enterprise
Computer Services NACE 72
Sweden 2005 (BS)

Computer services (20 largest companies)
Industry 72, main figures by BS, 2005

31,422 number of enterprises
89,800 number of employees (3.5 %)
147,900 turnover, billion SEK (2.7 %)

Operating profit 11 percent of turnover
Labour cost 18 percent of turnover
Computer Services NACE 72
Sweden 2006

Number of enterprises in Computer Services

Year

Computer Services NACE 72
Sweden 2005

The size of enterprises
Turnover by product in Computer Services Industry 2006 (BS)

72 100 – 72 600 76 %

Renting of machinery and equipment
Telecommunications services
Education
Wholesale and retail trade
Sales of other services
Others
Total 24 %
Computer Services NACE 72
Sweden 2005 (BS)

50 largest companies by group

11
1 1 0
37

72.1
72.2
72.3
72.4
72.5
72.6
Computer Services NACE 72
Expenditure structure, 2005 (BS)

The seven main costs represent 96 percent of all costs

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Other costs</td>
<td>26</td>
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<tr>
<td>Subcontract work and raw material</td>
<td>24</td>
</tr>
<tr>
<td>Goods for resale, excl merchanting</td>
<td>23</td>
</tr>
<tr>
<td>Purchased services and cost of administration</td>
<td>10</td>
</tr>
<tr>
<td>Rent for premises</td>
<td>6</td>
</tr>
<tr>
<td>Temporary manpower</td>
<td>4</td>
</tr>
<tr>
<td>Computer programmes</td>
<td>3</td>
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Computer Services NACE 72
Sweden 2005 (BS)

The distribution by type of clients
### National Accounts product groups 72

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7220</td>
<td>Software Supply</td>
</tr>
<tr>
<td>7220EG</td>
<td>Software for own use</td>
</tr>
<tr>
<td>72500</td>
<td>Maintenance and repair services</td>
</tr>
<tr>
<td>72A</td>
<td>Other data processing services</td>
</tr>
</tbody>
</table>

(72.1+72.3+72.4+72.6)
4 National Accounts product groups within 72 of industry 72

7220 Software supply and other related services  57%
7220EG Software d own use  3%
72A  Other comp services  27%
72500 Maintenance & repair  3%

7220 + 7220EG + 72A + 72500  =  90%

SPPI cover all (methods A/B)  90%
4 SPPI for product groups

Computer consultancy and related services
SPPI for services (Sweden)

Definition: Producer price index for services (index for B2B, B2G, B2C), an average per period

Client: Swedish National Accounts

Purpose: to calculate the production of services at fixed prices at product group level (130)

Period: quarter, year
National Accounts, main client (Sweden)

SPPI for NA

SPPI Business
SPPI Government
Production and Development

SPPI Household

PPI for services quarterly base: y-1 45 d

Product group level e.g. 72A, 741, 60240
A, B, C methods

A method: most appropriate methods

B method: those methods which can be used in case an A method cannot be applied

C method: those methods which shall not be used
PPI for services and EU-regulation 2223/96, annex A

2004: Real estate, Rental services
2005: Post & tele, Bank, Insurance, Support to B & I, Computer services
2006: R & D (market), Other business services, Education (market), Health & social services (market)
+ export and import of services
SPPI Key procedures of the production (Sweden)

New annual PPS sample

 Updating of the weight structure annually

 Updated questionnaires every year

 Ongoing methodological re-development of industry indices every 3rd to 4th year
Differences within NA using SPPI contra wage costs index (Sweden)

**Computer services**

<table>
<thead>
<tr>
<th>Y</th>
<th>Q</th>
<th>WI</th>
<th>TPI</th>
<th>Diff</th>
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<tr>
<td>2003</td>
<td>Q1</td>
<td>100,12</td>
<td>98,10</td>
<td>-2,0</td>
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<td>Q2</td>
<td>100,01</td>
<td>97,05</td>
<td>-3,0</td>
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<tr>
<td></td>
<td>Q3</td>
<td>99,89</td>
<td>96,55</td>
<td>-3,3</td>
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<td></td>
<td>Q4</td>
<td>100,65</td>
<td>95,91</td>
<td>-4,7</td>
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<td>2003</td>
<td></td>
<td>100,17</td>
<td>96,90</td>
<td>-3,3</td>
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<tr>
<td>2004</td>
<td>Q1</td>
<td>103,54</td>
<td>101,98</td>
<td>-1,6</td>
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<td></td>
<td>Q2</td>
<td>104,29</td>
<td>103,33</td>
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</table>
Software supply 7220, 7220EG

Average invoiced hourly rate/Q for
  Project manager
  System analyst
  IT architect/system designer
  System programmer/programmer
  System engineer
  5 experience levels
Other data processing services
72A

Support services
Supervision of servers
Information storage
Supervision of data communication
Back-up services
Placement of computers
Maintenance & repair 72500

Maintenance, repair and installation of

computers
printers
servers
Towards model pricing

Review 2006 consisted of

- Studies of international experiences
- Analysis of industry structure
- Company visits

Review of

- Representative services
- Categories of services
- Pricing methods
- Price models
- Sampling methods
- Sample sizes
Sampling

Pps sampling
Rotation
Cut-off-limit
Weights
Computer services by National Accounts (4 product groups within 72)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Production</td>
<td>87 percent</td>
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<tr>
<td>Import</td>
<td>8</td>
</tr>
<tr>
<td>Margins</td>
<td>2</td>
</tr>
<tr>
<td>Tax</td>
<td>3</td>
</tr>
<tr>
<td>Supply = Use</td>
<td></td>
</tr>
<tr>
<td>Investments</td>
<td>37</td>
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<tr>
<td>Intermediate consumption</td>
<td>42</td>
</tr>
<tr>
<td>Export</td>
<td>14</td>
</tr>
<tr>
<td>Government &amp; household</td>
<td>7</td>
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Supply-Use Table pr gr 7220
Software supply services and other related services

<table>
<thead>
<tr>
<th>Prices</th>
<th>Prod</th>
<th>Gov</th>
<th>Import</th>
<th>Margn</th>
<th>VAT</th>
<th>Pur p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>72 376</td>
<td>258</td>
<td>9 156</td>
<td>2 496</td>
<td>3 641</td>
<td>87 927</td>
</tr>
<tr>
<td>FP</td>
<td>73 508</td>
<td>255</td>
<td>9 237</td>
<td>2 462</td>
<td>3 641</td>
<td>89 103</td>
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<tr>
<td>Lx</td>
<td>98,5</td>
<td>101,2</td>
<td>99,1</td>
<td>101,4</td>
<td>100</td>
<td>98,7</td>
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<td>Vo</td>
<td>15,1</td>
<td>-12,4</td>
<td>8,2</td>
<td>9</td>
<td>6,9</td>
<td>13,7</td>
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## Supply-Use Table pr gr 7220
Software supply services and other related services

<table>
<thead>
<tr>
<th></th>
<th>IC</th>
<th>IC gov</th>
<th>Household</th>
<th>Invest - ment</th>
<th>Export</th>
<th>Sum</th>
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</thead>
<tbody>
<tr>
<td>CP</td>
<td>26 404</td>
<td>3 259</td>
<td>1 774</td>
<td>40 027</td>
<td>16 337</td>
<td>87 927</td>
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<tr>
<td>FP</td>
<td>26 957</td>
<td>3 304</td>
<td>1 521</td>
<td>40 640</td>
<td>16 554</td>
<td>89 103</td>
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<tr>
<td>Ix</td>
<td>97,9</td>
<td>98,6</td>
<td>116,6</td>
<td>98,5</td>
<td>98,7</td>
<td>98,7</td>
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<tr>
<td>Vo</td>
<td>22,8</td>
<td>14,4</td>
<td>2</td>
<td>8,7</td>
<td>13,4</td>
<td>13,7</td>
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Other NA product groups and quality of their deflators industry

72 Computer services

<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Method</th>
<th>Industry</th>
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<tbody>
<tr>
<td>30020</td>
<td>0.3%</td>
<td>method A</td>
<td></td>
</tr>
<tr>
<td>7020A</td>
<td>0.1</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>713</td>
<td>1.8</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>741</td>
<td>1.3</td>
<td>A/B</td>
<td></td>
</tr>
<tr>
<td>741A</td>
<td>4.3</td>
<td>licences, patents, royalties</td>
<td>C</td>
</tr>
<tr>
<td>804</td>
<td>0.5</td>
<td>education of adults</td>
<td>C</td>
</tr>
<tr>
<td>5AA</td>
<td>0.2</td>
<td>commissions</td>
<td>C</td>
</tr>
<tr>
<td>5AB</td>
<td>0.1</td>
<td>merchanting</td>
<td>C</td>
</tr>
<tr>
<td>5C</td>
<td>1.8</td>
<td>margins</td>
<td>C/B</td>
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NA product groups and quality of their deflators industry 72

Computer services

13 product groups in industry 72

93 percent covered by appropriate methods A or B

7 percent remain (C methods today)
Industry versus product groups

SPPI as deflator on product groups level (National Accounts)

SPPI as deflator for Computer services Industry (Structural Business Statistics)

???
Comments and conclusions

The Netherlands
France
United States
Korea
Comments and conclusions

The Netherlands
France
United States
Korea
France, The Netherlands, Sweden

European countries
EU members
Eurostat

Same regulations
NA, STS, SBS, BoPM5

different national solutions

SAME but DIFFERENT!
France, The Netherlands, Sweden

European countries
EU members
Eurostat

Same regulations
NA, STS, SBS, BoPM5

different national solutions

SAME but DIFFERENT!
Computer services by NA (The Netherlands), estimated

Production 81 percent
Import 16
Margins 2
Tax 1
Supply = Use
Investments 47
Intermediate consumption 33
Export 16
Government & household 7
## Methods used (consultancy)

<table>
<thead>
<tr>
<th>Country</th>
<th>Method</th>
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<tbody>
<tr>
<td>US</td>
<td>-</td>
</tr>
<tr>
<td>France</td>
<td>Charge out rates</td>
</tr>
<tr>
<td>NL</td>
<td>Hourly charge out rates</td>
</tr>
<tr>
<td>Korea</td>
<td>Charge out rates</td>
</tr>
<tr>
<td>Sweden</td>
<td>Average invoiced charge out rates/Q</td>
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</tbody>
</table>
No Product groups within NA

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Services</th>
<th>Computer services</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>500</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>France</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>NL</td>
<td>800</td>
<td>226</td>
<td>2</td>
</tr>
<tr>
<td>Korea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Swede</td>
<td>400</td>
<td>130</td>
<td>4</td>
</tr>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>640</td>
<td>80</td>
<td>3</td>
</tr>
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</table>
Comments and conclusions

The Netherlands
France
United States
Korea
Comments and conclusions

National Accounts
Business Statistics
Prices
International Trade Statistics

For better understanding the reality
Questions to discuss

1. How to deal with captive units?
2. Is international outsourcing a problem?
3. How to deal with production of original software on its own account?
4. How can we ensure more sensitive breakdown of comprehensive services?
5. Harmonize concepts and methods
6. Choose a publication strategy
7. Explain to clients how to use and how to interpret the data
Future strategy to discuss

Should the Voorburg Group give higher priority to industry/product groups that impact final (vs intermediate) demand?