Margins, taxes and VAT. Knowledge and/or assumptions

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Søren Larsen shl@dst.dk
SUTs with valuation layers
## Bridge column

<table>
<thead>
<tr>
<th>Transaction</th>
<th>2013</th>
<th>Current prices.</th>
<th>SUT C 2013.3.xlsx</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transaction: 1000 Output:</strong></td>
<td><strong>Product</strong></td>
<td><strong>Trans</strong></td>
<td><strong>Induct</strong></td>
</tr>
<tr>
<td>Unspecified goods and services exc.</td>
<td>601</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Unspecified food-products</td>
<td>604</td>
<td>2000</td>
<td>0</td>
</tr>
<tr>
<td>Non-perennial crops</td>
<td>611</td>
<td>1000</td>
<td>2,504.104</td>
</tr>
<tr>
<td>Perennials crops</td>
<td>612</td>
<td>1000</td>
<td>1,074.602</td>
</tr>
<tr>
<td>Planting material: live plants, bulb</td>
<td>613</td>
<td>1000</td>
<td>1,195.751</td>
</tr>
<tr>
<td>Live animals and animal products</td>
<td>614</td>
<td>1000</td>
<td>2,683.173</td>
</tr>
<tr>
<td>Agricultural and animal husbandry</td>
<td>616</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Hunting and trapping and related s</td>
<td>617</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Forest trees and nursery services</td>
<td>621</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Wood in the rough</td>
<td>623</td>
<td>1000</td>
<td>250.147</td>
</tr>
<tr>
<td>Wild growing non-wood products</td>
<td>623</td>
<td>1000</td>
<td>5.657</td>
</tr>
<tr>
<td>Support services to forestry</td>
<td>624</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Fish and other fishing products, sq</td>
<td>630</td>
<td>1000</td>
<td>1,089.286</td>
</tr>
<tr>
<td>Hard coal</td>
<td>651</td>
<td>1000</td>
<td>51.194</td>
</tr>
<tr>
<td>Lignite</td>
<td>652</td>
<td>1000</td>
<td>517</td>
</tr>
<tr>
<td>Crude petroleum</td>
<td>653</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Natural gas, liquefied or in gaseous</td>
<td>662</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Buildings: Repair, maintenance, sub</td>
<td>430</td>
<td>1000</td>
<td>-21.559.350</td>
</tr>
<tr>
<td>Sales of motor vehicles</td>
<td>450</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Maintenance and repair services of</td>
<td>452</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Wholesale</td>
<td>460</td>
<td>1000</td>
<td>-208.921.254</td>
</tr>
<tr>
<td>Retail trade services, except of mor</td>
<td>470</td>
<td>1000</td>
<td>-90.918.154</td>
</tr>
<tr>
<td>Marketing of teleworks</td>
<td>471</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Passenger rail transport services, ir</td>
<td>491</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Freight rail transport services</td>
<td>492</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Repair services of personal and nec.</td>
<td>952</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Other personal services</td>
<td>960</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Services of households as employe</td>
<td>970</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Undifferentiated services products</td>
<td>982</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Finished products/work in progress</td>
<td>999</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td><strong>Bridge column</strong></td>
<td><strong>Total</strong></td>
<td><strong>-321.397.758</strong></td>
<td><strong>217.363.765</strong></td>
</tr>
</tbody>
</table>
The “bridge column”

• The valuation table on the supply side is a single “bridge column”. For each product it shows the transformation from supply at basic prices to supply at purchasers' prices.

• For most products supply at Purchasers' prices is:
  ▪ supply at basic prices + trade and transport margins + taxes on products + non-deductible VAT.

• For products that contain output of trade- or transport margins, supply at purchasers' prices is calculated as:
  ▪ Supply at basic prices less the value of margins at basic prices (The layers for margins, taxes and VAT are here zero. These values are distributed to the products, for which they are included in purchasers’ prices)
Output of trade-margins:

- The total size of trade-margins is determined by the output of trade services from industries (ISIC 45 – 47) or from secondary activities in other industries. (It is recommended that production of trade as secondary activity of non-trade industries is moved to the relevant trade industries. This is called “redefinition”)

- However, some of this output should not be treated as margins. Auctioneers, agents etc. are usually not purchasing or on-selling the products they are trading, instead their services are paid by fees and commissions directly from owners of the products in question. In the Use-table, payment for such services are show as input or consumption in basic prices.

- Margins appear where there is a difference between the (basic) price of the seller and the purchasers' price less (taxes – subsidies) and non-deductible VAT paid by the buyer for the same product.
When trade-margin producing industries are classified as detailed as possible, their outputs can be utilized for distribution of trade margins by products.

Preferably it should be possible to distinguish between wholesale-retail trade activity as wholesale- and retail trade margins will have different distributions in the use-side valuation layers.

The output of trade-margins in each industry will need to be allocated to SUT-products. Information on the distribution of trade by product-groups may be available for some industries. Such data from department stores can be particularly useful.

The SUT’s product classification is, however, often more detailed than the industry classification and each margin-output will typically need to be distributed over a number of products.
Some countries may conduct surveys of trade margins by products.

In the absence of surveys it may be possible to collect information through contacts with enterprises within the trade industries, for instance by getting access to (confidential) price lists of big retailers.

If nothing else is known, it is possible to use average margin percentages that can be calculated from accounts statistic for the detailed trade industries.

It is, however, necessary to combine such information with knowledge or assumptions on trade channels for specific use of the product.
Wholesale and retail trade margins

• When wholesale- and retail trade margins can be distinguished, it is recommendable to show trade-margins as two separate valuation layers. At this moment there are, however, countries that do not consider their data sources to be sufficient for this purpose.

• Distribution by products on the supply side (the bridge column):
  ▪ An initial distribution of the supply trade margins by products can be entered into the SUT framework’s bridge column. This is specifically useful when a new benchmark is established from scratch.
  ▪ I should, however, be kept in mind that the distributions of each product by uses will influence the distribution of margins by products. Reconciliation with an initial version of the use of margins will probably reveal a need to adjust the bridge column’s values.
Initial values for margins in the valuation layers on the use table:

• If balanced SUTs for a previous year already exists, the initial values for trade- and transport margins can be calculated using the last year’s margin percentages. New developments in trading patterns or other changes may, however, require revisions for specific goods.

• When SUTs are created from scratch, the task is more complex. It is here necessary to fill the tables with values based on all available – often uncertain – information.

• In some areas there may exist data sources, but usually they must be supplemented by other less precise knowledge. Many margins will need to be based on assumptions.
Distribution of Wholesale trade margins by uses

- Users may know whether their purchases are bought through wholesale firms or either directly from a domestic producer or from abroad. However this information can be difficult to obtain for statistical purposes. It will usually be even more difficult to obtain information on trade margin’s share of the purchasers’ payments.

- Hence it is necessary to make assumptions on the channels through which for each specific use of each product.
Suggested rules of thumb:

- Big enterprises producing specialized equipment to other big enterprises do not need to sell through wholesale trade.
- Big enterprises may prefer to sell through wholesale trade if the buyers include many small or medium sized enterprises.
- Small and medium sized enterprises will probably sell through wholesale trade if their buyers include many small and medium sized enterprises.
- Import to big enterprises will probably include some transport margins on goods imported directly from abroad.
- Exports from big enterprises will probably include some transport margins on goods exported directly.
As a general rule it can be assumed enterprises within agriculture, manufacturing, transport and public utilities do not buy their inputs from retail trade. The same applies to service industries dominated by big or medium sized enterprises.

On the other hand will small enterprises within agriculture, construction and trade often purchase some inputs from retailers.

Household consumption, some government consumption, intermediate consumption of some industries, typically with small enterprises, will, however, be bought through retailers.

Some products that are bought in small quantities (for instance tools) are bought from retail shops, even by big enterprises.

A few inputs are bought from retail trade by most industries, for instance motor fuel for cars and trucks (with exception of big quantities acquired by transport companies).

Distribution of retail trade margins by uses. Suggestions for rules of thumb:
Transport margins

• Like trade services, transport of goods can be paid by the seller of a product and included in the seller’s intermediate consumption, in which case the purchasers' payment for the product will cover payment for transport. Adding a margin would in this case result in double counting.

• Alternatively transport may be included in the purchasers' intermediate consumption as a purchase of transport services separate from the value of the purchased good. Adding a transport margin would also here lead to double counting.

• Hence transport margins should only appear if:
  - transport is not included in the seller’s price for the good and
  - transport is included in the Purchasers' price for the transported good.

• However, differences between the CIF-values of imports and Purchasers' payment for imported goods / differences between FOB-values of exports and seller’s turnover from exported goods can require that some transport is treated as margins.
Distribution of transport margins.

- In principle the cost of transport could be removed from the buyers’ purchases of services and added to the value of the purchased goods. In practice it is difficult to make such adjustments as they will require a distribution of such transport services by products.

- The share of transport costs that should be treated as margins will depend on accounting practices of the country in question. The share will be significantly bigger if the value of purchased goods includes transport than it would be if transport is shown separately as a purchase of services in the business accounts behind the reported input structures.
Is separate valuation layer for transport margins needed?

- Transport margins will often be small compared to the domestic supply of transport services. When this is the case, there is no close correspondence to the use of transport that can be found in studies of transport patterns.

- As transport margins are usually small compared to trade margins, distribution in a separate value layer will typically be rather arbitrary. The preferred solution can here be to distribute transport margins together with wholesale trade margins.
Balancing of trade- and transport margins.

- After all initially estimated values are entered into the SUT-environment, supply and use of wholesale-, transport- and retail trade margins will usually differ for most products. These differences will need to be eliminated in the balanced SUTs.

- When a new system is created from scratch, the removal of differences will require some manual balancing. It will usually be necessary to rearrange the supply in the bridge column, but preferably without too big changes to the sum of margins within each of the wider product groups that corresponds to specific trade channels.
Taxes on products

• Taxes on products should be based on figures from government finance statistics, if necessary supplemented by more detailed information from government accounts. The values should be adjusted to accrual basis.

• Tax legislation can provide supplementary information on the products covered by each tax-complex. It will usually be necessary to distribute some “taxes” over a number of SUT-products, depending on the detail of the chosen product-classification.

• Taxes by SUT-products can be entered into the “bridge column” as supply of taxes.
Subsidies on products

- Like taxes, subsidies on products can also be found in government finance statistics, or government accounts. There may, however, be cases where these sources do not treat such expenses according to National accounts rules.

- Information on subsidies may be supplemented by information from accounts of enterprises that receive the subsidies in question.

- Subsidies will also need to be distributed by SUT-products before they can be entered as supply in the “bridge column”

- Taxes and subsidies are often distributed as two separate valuation layers. In the Danish SUTs they are, however, put together in a single layer for “net-taxes”. This is feasible, because it is very unusual that taxes and subsidies on products appears within the same product/use-combination. In fact, they are usually found in different rows of the SUT.
Distribution of taxes and subsidies on products by uses.

- Some taxes and subsidies are linked to specific inputs or final uses of the products in question. In such cases it is necessary to enter their values manually in the relevant cells of the valuation matrices.

- Some specific uses can be exempt from specific taxes. Usually exports are tax-exempt. Subsidies, on the other hand, are often linked to exports. These rules must be reflected in the valuation tables.

- The general rule, that covers most taxes and some subsidies, is that the supply-values can be distributed proportionally with the domestic uses at basic prices. These distributions can be performed automatically by software.
VAT

- According to SNA/ESA purchasers’ prices non-deductible VAT on inputs and final uses.

- Total non-deductible VAT should be the accrual based value of the revenue (due to be paid) according to government finances.

- Typically information on VAT-revenue by collecting industries is available, but information on the distribution of non-deductible VAT on the uses side is uncertain or missing. Furthermore the distribution of VAT-revenue by products is also unknown.

- As the right to deduct ingoing VAT varies among uses, non-deductible VAT for each product depends on its distribution on the uses side. Hence the estimation of VAT by products needs to be calculated based on the use-side of the valuation matrix for VAT.

- VAT liable and VAT exempt uses can be found in the legislation.
VAT-rates and VAT-exempt uses.

- The VAT-rates may differ for various product groups. Some countries use a single VAT-rate for VAT-liable products. However, the SUT’s product-classification will practically always (even in the detailed Danish system) put together some VAT-liable and VAT-exempt products with the effect that average VAT-rates for these products are nevertheless somewhere in between zero and the single VAT-rate.

- VAT liable and VAT exempt uses can be found in the legislation. In the SUT-environment some industries can deduct ingoing VAT while others cannot. SUT-industries can combine establishments that can deduct VAT with others that cannot.

- VAT on products used for specific purposes may always be deductible. Specific products may not be deductible even when used in a unit that is allowed to deduct ingoing VAT on other products.
Distribution of VAT by products and uses

- It is recommendable that the valuation-layer for non-deductible VAT is calculated by a model that mimics the VAT-legislation. Such a model requires:
  - A list of average VAT-rates for domestic supply of each product
  - The share of input in each SUT-industry for which VAT can be deducted
  - The taxable value (including or excluding specific taxes on products)
  - Exceptions. (For specific product/use –combinations):
    - deductibility of products used for specific purposes
    - Non-deductibility for specific products

- The average VAT-rates should be reduced from the official rate to take into account if legislation allows deductions, for instance for VAT on sales that cannot be expected to be paid.

- The VAT-layer in the bridge column will end up being adjusted to the row-totals of the VAT-matrix on the uses side.
Final adjustments:

• When the SUTs are balanced,
  ▪ the sums of trade and transport margins must equal the supply of each of these margin types from the supply table.
  ▪ All taxes and subsidies on products must equal their “supply”-values as found in the source data
  ▪ Total non-deductible VAT must equal the revenue from government finances.

• To solve these problems it must be possible to adjust those parts of the valuation-matrices that are considered least reliable by small correction-factors during the final balancing of the SUTs