French imports to the Baltic, 1670-1850

Dr. Werner Scheltjens, University of Leipzig
werner.scheltjens@uni-leipzig.de
Content

- 1. Introduction
- 2. Sound toll registers online
- 3. Converted STRO
  - 3.1. Homogenization and standardization of products
  - 3.2. Conversion of weights and measures
- 4. Analysis
- 5. Assessment
1. Introduction

- The commercial relations between France and the Baltic in the early modern period have received considerable attention from the French as well as from the international scholarly community.
  - Pierre Jeannin
  - More recently: Pierrick Pourchasse
- Most research on French-Baltic commercial relations: case-studies
  - specific product or product group,
  - trade at one or a few ports or
  - bilateral trade relations between France and one of the Baltic States
- Focus on the seventeenth and eighteenth centuries
- Very few scholars have looked beyond the Napoleonic era
1. Introduction

- Partial explanation: Tabellerne og skibsfart (Bang & Korst)
  - Seven-volume statistical summary of the original Danish Sound toll registers, published 1906-1953.
  - Have been the foremost important basis for research on Baltic trade ever since
  - End in 1783 – so part of the original registers is missing (1784-1857)
    - Partial relief: Johansen 1983 and “discovery" of the Sound Toll Accounts (1773-1856), used by Ahonen (2005) and Rönnbäck (2010; 2012)
- This situation has changed since 2013
2. Sound toll registers online

- 2.1. The original source and the electronic database
- 2.2. Current state
2. Sound toll registers online

2.1. The original source and the electronic database

The Sound Toll Registers are the records of the toll levied by the king of Denmark on the passage of ships through the Sound, the strait between Denmark and Sweden connecting the North and Baltic Seas.

They are stored by the Danish National Archives.

A practically uninterrupted series from 1574 to 1857 and some scattered records for the period between 1497 and 1574.

Information on about 1.8 million passages. For each individual passage, both westward and eastward, the Sound toll registers contain the passage date, the name of the shipmaster, his domicile, his port of departure and – from the mid-1660s – his port of destination, the composition of the cargo and the toll paid.
2. Sound toll registers online

2.1. The original source and the electronic database
2. Sound toll registers online

2.2. Current state

- 1634 – 1857 published online
- „Simple“ interface available
- 95% of all names of places is standardized
- Not standardized: weights and measures, cargo items, names of shipmasters
2. Sound toll registers online

2.3. My participation in the project

- Standardization of weights and measures and cargo items
- Conversion to metric equivalents
- Preliminary research executed for 1784-1795
- Now in the final stage: 1670-1850
  - This dataset forms the basis of my senior doctorate (Habilitation) on „The discovery of logistics: a revision of European trade with the Baltic, 1670-1850“ (working title)
3. Converted STRO

- 3.1. Homogenization and standardization of products
- 3.2. Conversion of weights and measures
- 3.3. Product – measure – origin combinations
- 3.4. Results
3. Converted STRO

3.1. Homogenization and standardization of products

Reduction of the amount of variation in the „raw“ data

French imports to the Baltic in STRO between 1670 and 1850:
162,856 “raw” cargo registrations
8,654 unique cargo descriptions

Unequal distribution:
Top 10% of unique cargo descriptions = 92.4% of all “raw” cargo registrations
66% of unique cargo descriptions appear only once = 3.5% of all “raw” cargo registrations
3. Converted STRO

3.1. Homogenization and standardization of products

<table>
<thead>
<tr>
<th>Original ID</th>
<th>Bordeus win a 52 Rd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Indication of size, mostly for timber products, as found in the original product description</td>
</tr>
<tr>
<td>Unit of size</td>
<td>Type of wood, type of skin, etc., as found in the original product description</td>
</tr>
<tr>
<td>Basic material</td>
<td>Geographical indications of origin, as found in the original product description</td>
</tr>
<tr>
<td>Origin</td>
<td>Bordeaux</td>
</tr>
<tr>
<td>Type</td>
<td>Indications in the original product description such as big, small, dry, fine, green, etc. Mostly applicable to textiles</td>
</tr>
<tr>
<td>Product</td>
<td>Wine</td>
</tr>
<tr>
<td>Use</td>
<td>The core of the product description, as registered in STRO</td>
</tr>
<tr>
<td>Amount per package</td>
<td>Indications of the use of the product, e.g. with glass: “for windows”, with timber: “for construction”</td>
</tr>
<tr>
<td>Unit of packaging</td>
<td>e.g. For cases of wine: 50</td>
</tr>
<tr>
<td>Price</td>
<td>52</td>
</tr>
<tr>
<td>Currency</td>
<td>Rd.</td>
</tr>
<tr>
<td>Remarks</td>
<td>Price of one unit as found in the original cargo description</td>
</tr>
<tr>
<td></td>
<td>Currency of one unit as found in the original cargo description</td>
</tr>
</tbody>
</table>
3. Converted STRO

3.1. Homogenization and standardization of products

In total, 5,350 of the 8,654 unique cargo descriptions concerning French imports to the Baltic could be homogenized, simplified and converted.

The missing items account for about 14% of all relevant cargo registrations.
3. Converted STRO
3.2. Conversion of weights and measures

- 82 different weights and measures were applied to French imports to the Baltic.
- Top 25 shown in table
- Semantic equivalents of French weights and measures
- Different minimum and maximum values reflect pre-modern praxis:
  - Local differences
  - Different values per product

<table>
<thead>
<tr>
<th>Measure</th>
<th>Min. Value</th>
<th>Max. Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>pund</td>
<td>0,40655</td>
<td>0,5091</td>
<td>33735</td>
</tr>
<tr>
<td>fad</td>
<td>226,2</td>
<td>304,39</td>
<td>26134</td>
</tr>
<tr>
<td>oksehovede</td>
<td>197,57</td>
<td>304,39</td>
<td>15902</td>
</tr>
<tr>
<td>læst</td>
<td>2503,98</td>
<td>2918</td>
<td>13164</td>
</tr>
<tr>
<td>stk.</td>
<td>0,01</td>
<td>304,39</td>
<td>11859</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>4000</td>
<td>9224</td>
</tr>
<tr>
<td>skippund</td>
<td>122,38</td>
<td>148,32</td>
<td>7239</td>
</tr>
<tr>
<td>rigsdaler</td>
<td></td>
<td></td>
<td>4380</td>
</tr>
<tr>
<td>pipe</td>
<td>377</td>
<td>608,77</td>
<td>3863</td>
</tr>
<tr>
<td>ris</td>
<td>3</td>
<td>3</td>
<td>3043</td>
</tr>
<tr>
<td>fiere</td>
<td>150,8</td>
<td>150,8</td>
<td>1576</td>
</tr>
<tr>
<td>tønde</td>
<td>13,6</td>
<td>139,11</td>
<td>1413</td>
</tr>
<tr>
<td>bouteljer</td>
<td>0,905</td>
<td>0,905</td>
<td>1230</td>
</tr>
<tr>
<td>liter</td>
<td>1</td>
<td>1</td>
<td>932</td>
</tr>
<tr>
<td>viertel</td>
<td>7,544</td>
<td>7,544</td>
<td>811</td>
</tr>
<tr>
<td>balle</td>
<td>30</td>
<td>108,85</td>
<td>731</td>
</tr>
<tr>
<td>kiste</td>
<td>40</td>
<td>40</td>
<td>667</td>
</tr>
<tr>
<td>anker</td>
<td>38,09</td>
<td>38,09</td>
<td>544</td>
</tr>
<tr>
<td>kurv</td>
<td>40</td>
<td>40</td>
<td>508</td>
</tr>
<tr>
<td>kasse</td>
<td>40</td>
<td>40</td>
<td>487</td>
</tr>
<tr>
<td>1/2 bouteljer</td>
<td>0,452</td>
<td>0,452</td>
<td>389</td>
</tr>
<tr>
<td>1/2 oksehovede</td>
<td>114,255</td>
<td>114,255</td>
<td>372</td>
</tr>
<tr>
<td>boisseau</td>
<td>13,01</td>
<td>27,02</td>
<td>186</td>
</tr>
<tr>
<td>par</td>
<td>0,031</td>
<td>0,031</td>
<td>170</td>
</tr>
<tr>
<td>sække</td>
<td>81,06</td>
<td>81,06</td>
<td>163</td>
</tr>
</tbody>
</table>
3. Converted STRO

3.3. Product – measure – origin combinations

- 8.654 combinations of product – measure – origin
- 5.350 were converted to metric equivalents
  - Main source: Doursther, Dictionnaire des poids et mesures anciennes et modernes (Bruxelles 1840)
3. Converted STRO
3.3. Product – measure – origin combinations

- Several assumptions had to be made in order to deal with
  - (1) places that are not mentioned in Doursther
  - (2) cargo items that are counted
- Often, there was no real solution available, so the best I could do was try to find (or calculate) a metric value, that could be substantiated in historiography.
3. Converted STRO

3.3. Product – measure – origin combinations

- In order to streamline the matching process of STRO and Doursther, the following rules were applied:
  - Boolean matching
  - matching based on identical measure and location, with product similarity (using type of good as matching category)
  - matching based on identical measure and product, with geographical similarity (using region as matching category)
  - matching based on identical measure, with location selected according to a pre-defined set of rules and product specifications either missing, similar or considered irrelevant
  - standardization and conversion of non-weights and non-measures
    - Boxes and cases
    - Pieces (stykker, tylt, dusin, skok, etc.)
3. Converted STRO

3.3. Product – measure – origin combinations

- Example dusin (12 pieces)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Origin</th>
<th>Product</th>
<th>Metric value</th>
<th>Frequency</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dusin</td>
<td>Le Havre de Grace</td>
<td>Socks</td>
<td>0.375</td>
<td>5</td>
<td>Weight is based on indication by Doursther, that a dozen socks were estimated at ¼ pound for the payment of the Sound dues.</td>
</tr>
<tr>
<td>dusin</td>
<td>Dieppe, Rouen</td>
<td>Cardes</td>
<td>3.792</td>
<td>1</td>
<td>Estimated weight of 0.316 kg is a <em>guessimate</em>, equal to the weight of one square yard of cloth. “bandes de cuir de veau pour manufactures de fil de laine, soie, etc. (...) de 4-5 pouces de largeur et 8-10 pouces de longueur“ (Encyclopédie du Commercant)</td>
</tr>
<tr>
<td>dusin</td>
<td>Le Havre de Grace</td>
<td>Skins</td>
<td>106.2</td>
<td>1</td>
<td>The weight of one piece of skin is based on the average weight of several types of skins, mentioned in the 2013 Compendium of the FAO. The calculated average is 8.85 kg.</td>
</tr>
</tbody>
</table>
### 3. Converted STRO

#### 3.3. Product – measure – origin combinations

**Example fad / barrique**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Stednavn</th>
<th>Product</th>
<th>Metric value</th>
<th>Frequency</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>fad</td>
<td>Bordeaux</td>
<td>Vin</td>
<td>226.29</td>
<td>24199</td>
<td>Doursther 1840: 49</td>
</tr>
<tr>
<td>fad</td>
<td>Nantes</td>
<td>Vin</td>
<td>240</td>
<td>470</td>
<td>Doursther 1840: 50</td>
</tr>
<tr>
<td>fad</td>
<td>St. Martin</td>
<td>Vin</td>
<td>226.29</td>
<td>424</td>
<td>Like Vin – Barrique – Bordeaux</td>
</tr>
<tr>
<td>fad</td>
<td>Bayonne</td>
<td>Vin</td>
<td>304.39</td>
<td>297</td>
<td>Doursther 1840: 48</td>
</tr>
<tr>
<td>fad</td>
<td>Seudre</td>
<td>Vin</td>
<td>240</td>
<td>139</td>
<td>Like Vin – Barrique – Bordeaux</td>
</tr>
<tr>
<td>fad</td>
<td>Libourne</td>
<td>Vin</td>
<td>226.29</td>
<td>97</td>
<td>Like Vin – Barrique – Bordeaux</td>
</tr>
<tr>
<td>fad</td>
<td>Dunkerque</td>
<td>Vin</td>
<td>226.29</td>
<td>69</td>
<td>Like Vin – Barrique – Bordeaux</td>
</tr>
<tr>
<td>fad</td>
<td>La Rochelle</td>
<td>Vin</td>
<td>228.29</td>
<td>62</td>
<td>Doursther 1840: 50</td>
</tr>
<tr>
<td>fad</td>
<td>Other ports</td>
<td>Vin</td>
<td>226.29</td>
<td>377</td>
<td>Like Vin – Barrique – Bordeaux</td>
</tr>
</tbody>
</table>
3. Converted STRO

3.4. Results

<table>
<thead>
<tr>
<th></th>
<th>passages matched</th>
<th>cargo items missing</th>
<th>cargo items matched</th>
<th>average number of cargo items</th>
</tr>
</thead>
<tbody>
<tr>
<td>complete</td>
<td>27.087</td>
<td>8.654</td>
<td>55.585</td>
<td>2.05</td>
</tr>
<tr>
<td>missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 item</td>
<td>2.832</td>
<td>5.664</td>
<td>20.706</td>
<td>9.31</td>
</tr>
<tr>
<td>2 items</td>
<td>874</td>
<td>2.622</td>
<td>8.219</td>
<td>12.40</td>
</tr>
<tr>
<td>3 items</td>
<td>525</td>
<td>2.684</td>
<td>6.978</td>
<td>18.40</td>
</tr>
<tr>
<td>4+ items</td>
<td>3.104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>all items</td>
<td><strong>39.972</strong></td>
<td><strong>22.728</strong></td>
<td><strong>140.128</strong></td>
<td><strong>3.92</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>missing passages</td>
<td>1.604</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>total passages</td>
<td><strong>41.576</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>total cargo items</td>
<td></td>
<td></td>
<td></td>
<td><strong>162.856</strong></td>
</tr>
<tr>
<td>matching score</td>
<td>96.37%</td>
<td></td>
<td></td>
<td>86.04%</td>
</tr>
</tbody>
</table>
4. Analysis

- 4.1. General overview
- 4.2. Salt
- 4.3. Wine, fruits and overseas products
- 4.4. The rise of „New“ products after 1815
4. Analysis

4.1. General overview

French imports to the Baltic, 1670-1850. In tonnes. Based on STRO.
4. Analysis

4.2. Salt

Ports of origin:
- St. Martin
- Le Croisic
- Seudres
- Bourgneuf
- Cette (after 1800)

Ports of destination:
- Danzig (until 1800)
- Königsberg (until 1800)
- Riga
4. Analysis

4.2. Salt

Substitution of French salt with British salt
Mostly from Liverpool
Spanish, Portuguese and Italian salt maintain their position in the 19th century
4. Analysis

4.3. Wine, fruits and overseas products

- Ports of origin
  - Bordeaux
  - Cette (wine, after 1760)
  - Marseille (fruits, after 1750)
  - Nantes (overseas goods, after 1750)

- Ports of destination
  - Lübeck
  - Stettin
  - St. Petersburg
  - Copenhagen
  - Stockholm
  - Danzig (until 1772)
4. Analysis

4.3. Wine, fruits and overseas products

- Overseas goods substituted with British imports to the Baltic after 1793
- Relation with Revolutionary Wars and sugar imports to Bordeaux being cut off due to Revolt on Saint-Domingue
- No recovery in the 19th century
After 1815, the French imports of salt, fruits and wine were complemented increasingly with imports of:

- organic dye stuffs
- oils, such as olive oil and terpentins
- gips-, wine- and brimstone (sulphur)
- lead
- cotton wool, skins and linen
- soap
- caoutchouc (gummi)
- paper
5. Assessment

- Converting STRO – and by analogy: all premodern trade statistics that are standardised and converted to metric values – has made possible a comprehensive approach to French imports to the Baltic over a long period of time.

- Moreover, the nature of STRO also offers many opportunities for comparative analysis of trade streams.

- Big challenges ahead:
  - continuation of proofs and extensions of converted STRO
  - description of all decisions made with regard to standardisation
  - interpretation of the results
  - linking and cross-checking converted STRO with similar premodern data sets