

Studia Fennica
Historica 29

THE FINNISH LITERATURE SOCIETY (SKS) was founded in 1831 and began publishing books in 1834. Now, the society publishes scholarly literature on ethnology and folkloristics, linguistics, literary studies, and history.

The first volume in the *Studia Fennica* series was published in 1933.

Studia Fennica consists of six subseries: (since 1992) *Ethnologica*, *Folkloristica*, *Linguistica*, (since 2002) *Historica*, *Litteraria*, and (since 2007) *Anthropologica*.

In addition to publishing, the Finnish Literature Society conducts research, maintains a research library and an archive containing folklore and literary collections, and promotes Finnish literature abroad.

SERIES EDITOR FOR THIS VOLUME

Sari Katajala-Peltomaa

STUDIA FENNICA EDITORIAL BOARD

SF ANTHROPOLOGICA

Timo Kallinen, Professor, University of Eastern Finland, Finland

Kenneth Sillander, Title of Docent, University of Helsinki, Finland

SF ETHNOLOGICA

Arja Turunen, Title of Docent, University of Jyväskylä, Finland

Anna Rauhala, PhD, University of Helsinki, Finland

SF FOLKLORISTICA

Karina Lukin, Title of Docent, University of Helsinki, Finland

Kaarina Koski, Title of Docent, University of Helsinki, Finland

SF HISTORICA

Sari Katajala-Peltomaa, Professor, University of Turku, Finland

Heini Hakosalo, Title of Docent, University of Oulu, Finland

SF LINGUISTICA

Salla Kurhila, Professor, University of Helsinki, Finland

Suvi Honkanen, PhD, University Lecturer, University of Helsinki, Finland

SF LITTERARIA

Viola Parente-Čapková, Professor, University of Turku, Finland

Kati Mikkola, Secretary General, Title of Docent, Finnish Literature Society, Finland

Kirsi Keravuori, Director of Scholarly Publishing, PhD, Finnish Literature Society, Finland

Maija Yli-Kätkä, Secretary of the Board, Finnish Literature Society, Finland

oa.finlit.fi

EDITORIAL OFFICE

SKS

P.O. Box 259

FI-00171 Helsinki

tiedekirjat@finlit.fi

YRJÖ KAUKIAINEN

Shipping and Commodity Flows in the Late Eighteenth-Century Baltic



The publication has undergone a peer review.



Inscribed on
the National Register
Memory of the World

The collection of archived publications
of the Finnish Literature Society is included
in UNESCO's Memory of the World Register.

STUDIA FENNICA HISTORICA 29

© 2025 Yrjö Kaukiainen and SKS

Cover: Eija Hukka | Series Cover Design: Timo Numminen
Layout: Maija Räisänen | Series Layout Design: Markus Itkonen
EPUB: Tero Salmén

ISBN 978-951-858-835-4 (Print)

ISBN 978-951-858-836-1 (EPUB)

ISBN 978-951-858-837-8 (PDF)

ISSN 0085-6835 (Studia Fennica. Print)

ISSN 2669-9605 (Studia Fennica. Online)

ISSN 1458-526X (Studia Fennica Historica. Print)

ISSN 2669-9591 (Studia Fennica Historica. Online)

DOI <https://doi.org/10.21435/sfh.29>

This work is licensed under a Creative Commons BY-NC-ND 4.0
International License, unless otherwise specified.
(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)



A free open access version of the book is available at
<https://doi.org/10.21435/sfh.29> or by scanning this
QR code with your mobile device.

Contents

Preface 7

Introduction 9

1. A maritime road to economic transition 9
2. The legacy of Sound Toll Registers 11
3. From passages to commodity flows: the aims and methods of this study 14
4. A puzzle with missing pieces 16

Shipping through the sound: structures and trends 20

5. The big picture 20
6. The westward main stream: passages and cargo volumes, 1751–1787 26
7. The west–east counter currents: passages and cargo volumes, 1751–1787 33
8. Concluding remarks 41

Intra-Baltic shipping 44

9. Insiders and outsiders in Baltic ports 44
10. Sweden and the Baltic 46
11. Lübeck and the German Baltic 53
12. Copenhagen and the Danish monarchy 59
13. Assembling the puzzle 64

Coastal Trade 69

14. Lines drawn in water 69
15. Copenhagen 70
16. Stockholm 74
17. St. Petersburg 76
18. On the margin 80

The Baltic Fortunes Of War 83

19. From the French Revolution to the Continental Blockade 83
20. The Sound in the shadow of war 84
21. The Nordic boom in Mediterranean trades 91
22. What happened within the Baltic? 94

Drawing Conclusions 99

- 23. The Northern Mediterranean in the 18th century – a longer view 99
- 24. The economic impacts of shipping 103
- 25. Foreign trade, shipping and economic development 110
- 26. By way of summary 113

Appendices 116

- Appendix 1. Estimate of late eighteenth-century stowage factors 116
- Appendix table 1. East–west passages: Estimated cargo space required by the main commodity groups, 1751–1787 121
- Appendix table 2. West–east passages: Estimated cargo space required by the main commodity groups, 1751–1787 124
- Appendix tables 3: A–H. Comparisons of Baltic and other departures from 1750s to 1780s 125
- Appendix tables 4: A–B. Swedish exports and imports to and from Baltic countries: Estimated cargo space required by the main commodities 127

Appendix 2. Nomenclature 130

Sources 131

Author 138

Abstract 139

Index 140



Kiøbenhavn A:o 1786. M. Bang. Maritime Museum of Denmark.

Preface

I first became acquainted with the awe-inspiring thick volumes of the Sound Toll Records in the Danish National Archives some fifty years ago. Since then, I have exploited this data several times and in different modes, from the printed Sound Toll Tables to the modern digital resources. These earlier studies, however, concerned rather limited and less ambitious topics; in fact, my interests were mainly devoted to 19th-century shipping developments and more recent periods for which more sources are available. However, around 2020, I was involved in research trying to establish the identity of an unknown ship, wrecked on the skerries of southwest Finland in the 1740s. That work became a kind of turning point which plunged me deeply into the Sound Toll Records as well as most other relevant 18th-century Baltic shipping sources. It also encouraged me to delve deeper into the interesting developments and international dimensions of the Northern European shipping of this period. Subsequently, these new research interests resulted in three published articles on the shipping of three major Baltic ports: St. Petersburg, Lübeck and Copenhagen. Gradually, the interesting results of this research led my thoughts towards a more ambitious macro-level approach to the 18th-century shipping and maritime trade in the Baltic Sea area, a study to estimate its actual overall volume, scope and international importance.

Now as these pipe dreams are materializing in the form of this concise book, I would like to thank the publisher, *Suomalaisen Kirjallisuuden Seura (SKS)*, for accepting my study in their series *Studia Fennica Historica*. My special thanks are due to the Editor of the series, professor Sari Katajala-Peltomaa for her editorial input and for taking care of the arduous pre-publication process. I also thank the two anonymous referees for their useful, sometimes even provoking, comments. Last but not least, I thank the staff of *SKS* for the efficient and professional running of the publication process.

Helsinki, November 2025

Yrjö Kaukiainen

Introduction

1. A maritime road to economic transition

For a long time, the significant role of overseas trade has been taken for granted in the historical study of the 'Industrial Revolution', or the 'modern economic growth' (as the transition is nowadays usually called). In fact, Adam Smith was among the first to emphasize the significance of good maritime connections as a precondition for dynamic economic development.¹ In the 1960s, however, a new school of thought emerged claiming that domestic demand was more important in the British industrial breakthrough. This view also underlined the key role of mechanical inventions and manufacturing industries.²

Over the past three decades, however, a counter-current with a fresh interest in international trade has become apparent. This change in emphasis is connected with new research on the 'prehistory' of modern economic growth. It has been claimed that signs of a transition towards more dynamic economic development, above all an almost continuous (albeit modest) growth of real wages, can be found in the regions bordering the North Sea (i.e. the Dutch Republic and Britain) a century or two before the actual British Industrial Revolution.³

Such view of 'the long road to the industrial revolution' (an expression coined by Jan Luiten van Zanden) naturally implies a revision of the earlier emphasis on domestic demand and manufacturing. Instead, factors like foreign trade and maritime transport are gaining new ground in serious scholarly discussion. Robert C. Allen, in particular, has contributed to the debate with a number of important papers in which he finds that international trade had a significant impact on the early modern development of northwestern Europe.⁴

Such conclusions, however, have been based on indirect or circumstantial evidence: hardly any consistent statistics of European merchant tonnages and maritime trade can be found before the second quarter of the 19th century. For the late 18th century,

1. Cf. Smith 1776, Book I, Ch. III.

2. See e.g. Davis 1979, 9.

3. See e.g. van Zanden 2009.

4. Allen 2003, 432; see also Allen 2009.

there are just a few sporadic datasets which can be used to sketch a rough picture of the contemporary ocean and short-sea shipping. One of them are the results of a survey undertaken by the French government in 1786–1787 (Table 1). While it covers Europe fairly well, several of its figures may be classified as educated guesses; for example, the British tonnage is about ten percent lower than in some other sources and both the Danish and Swedish tonnages seem to have been overestimated.⁵

Table 1. European merchant marines in 1786–1787.

Thousand tons

Britain	889
France	729
The Dutch Republic	398
German North Sea and Baltic ports	155
Denmark-Norway	386
Sweden	169
Spain and Portugal	234
The Two Sicilies, Venice, Genoa	414

Source: Unger 1997, 261–262; Johansen 1992, 482.

Tonnage data naturally does not tell us how the respective merchant marines were utilized. Such pieces of information can only be roughly outlined from a few late eighteenth-century foreign-trade statistics, such as the British and Dutch ones. Unfortunately, they do not inform us about ship passages but rather of trade values. Still, they are able to reveal which were the main directions of the respective maritime trades. The statistics in question recorded the cash values of exports as well as imports but, as far as the focus is in sea transports, the latter are more interesting since the values of imported goods also included the costs of maritime (and other) freight.

Table 2. Dutch and British imports in the late 18th century by origin.

Percent of total value of imports (excl. colonial re-exports)

Importing country and period	Origin of imports					
	Northern Europe	N-western Europe	Southern Europe	Asia	The West Indies	North America
Dutch Republic, 1770s	18.6	21.2*	19.5	16.9	15.3**	
Britain, 1784–1786	16.7	9.9	12.6	21.8	20.1	6.6
Britain, 1794–1796	18.0	9.5	12.2	19.4	22.7	6.6

* Including Mediterranean France. ** The West Indies and North America.

Source: de Vries and van der Woude 1997, 497; Davis 1979, 92–93.

5. In these two cases the numbers of ships, at least, are some 20% higher than those in the respective national data. It is not certain that different national measures of ship sizes have been correctly converted.

Import values, however, present a biased picture of trade volumes. The well-known gravity model of trade postulates (by default) that trade costs (above all those for transport) increase with distance. On long distances they may grow to such an extent that cheap mass-produced goods cannot cover the price of haulage. In consequence, goods coming from the other side of the globe tend to be, on average, of higher value than those on board short-sea vessels. Thus, we may expect that the share of long-range imports would, in terms of volume, have been substantially lower than what their values suggest. In actual fact, northern Europe (in practice Norway and the Baltic region) may have equalled, if not exceeded, Asia or the West Indies in terms of material commodity flows to Britain and the Netherlands.

Harder evidence of ships, their voyages and cargoes can certainly be found in the archives of numerous seaports or respective regional and national archives. Collecting such data and piecing it together is, however, a very labour-intensive way to paint a bigger picture. Quite recently the current digital ‘revolution’ seems to have created new possibilities for the incorporation of vast numbers of scattered cases into a large consolidated database. The French-initiated Navigocorpus (‘Corpus itineraries of merchant ships xvii-xix c.’) is an interesting example of such a project.⁶ So far, however, none of the new databases can compete with an old archival (now even digitized) resource: the Sound Toll Records. Covering over three centuries of shipping between the North Sea and the Baltic, they relate to a very interesting period in the economic development of northwestern Europe. Of course, this data cannot be taken as a representative sample of all ‘western’ maritime trade but, as seen above, it presents a substantial element of it. Thus, it should be able to illuminate, in addition to the specific developments across the entire Baltic region, a few global trends. Moreover, it has already attracted vast amounts of solid historical research, upon which fresh study can be built.

2. *The legacy of Sound Toll Registers*

From 1429 to 1857, Denmark levied a toll of all vessels sailing through the Danish Sound (*Øresund*). This toll became a very important source of income for Denmark and, across all these years, the toll’s bureaucrats recorded not only the relevant income but also information about the ships which paid the fees, thus preserving for the future the traces from four centuries of shipping.⁷

The accumulated data eventually comprised over 700 volumes of accounts, which occupied some sixty metres of shelf space in the Danish National Archives.⁸ Indeed, it was too large to be exploited in the same manner as conventional historical sources. Therefore, a veritable milestone in the early historiography of Baltic shipping was set in 1906, when Nina Ellinger Bang⁹ presented a ‘key’ to this data repository by

6. Navigocorpus.huma-num.fr.

7. For an overview, see Scherer 1875, 1–55; Degn (ed.) 2010, passim; Gøbel 2010, 306–308.

8. Gøbel 2010b, 308.

9. Although Georg Fredrich Sartorius’ *Geschichte des hanseatischen Bundes* I-III (Göttingen 1802–1808) can be credited as the start of modern historical research of Baltic trade, Nina Bang (1866–1928) was probably the first historian to fully appreciate the source value of the

publishing the first volume of the *Sound Toll Tables*. Sixteen years later, it was followed by volume two, and subsequently, after her death in 1928, four more volumes were added to the series, finished by Knud Korst (1930–1953).¹⁰ Altogether, they present data from 1497 to 1783 (from the 1560s onwards without gaps), thus opening up for research, albeit in condensed form, this unique source material for late medieval and early modern shipping between the Baltic and the North Sea.

As generally understood, *Sound Toll Tables* (hereafter STT) are not proper source publications but excerpts and compilations from the original registers. While they record frequencies and quantities of several important variables, like the numbers of ships and the volumes of many commodities, they also omit lots of data which was regarded less essential. Not surprisingly, some of the editor's choices and interpretations were criticized soon after the first publication. The most persistent criticism and discussion has surrounded the question of whether shipmaster's home port also indicate the home port and nationality of the ship, as Nina Bang claimed. Time and again, examples of contrary cases have been presented but the relevance of the problem – at least with regard to nationalities – declines gradually as the record books started to classify ships in different categories according to their flags.¹¹

The printed *Sound Toll Tables* have also been criticized for tabulating ports of departures and arrivals in separate categories, thus making it impossible to reconstruct the actual trading routes. Even the tables of transported goods have been regarded as unsatisfactory as they only present annual data for a limited number of major commodities.¹² However, the STT have also been defended and – above all – persistently exploited for the economic and maritime history of the early modern era and have even been termed 'the Baltic historian's Bible'.¹³

The publishing of the tables beyond 1783 ceased due to lack of funding; thus, the toll registers for the last 73–74 years were left without the 'short-hand key' provided

Sound Toll Registers. While the publication project seems to have occupied her heavily from the mid-1890s onwards, she was also an active left-wing politician and became in 1924 the minister of education (as well as the first female minister in Denmark) in the country's first social democrat government (see *Dansk Biografisk Leksikon*: https://biografiskleksikon.lex.dk/Nina_Bang).

10. Nina Ellinger Bang, *Tabeller over skibsfart og varetransport gennem Øresund 1497–1660*, 2 vols., København 1906–1922; Nina Ellinger Bang og Knud Korst, *Tabeller over skibsfart og varetransport gennem Øresund 1661–1783 og gennem Storebælt 1701–1748*, 4 vols., København 1930–1953.
11. See e.g. Knoppers 1976, 13–15; Gøbel 2010, 321–322; Johansen 1983, 17–22. In the 18th century, there were six categories: Danish, Dutch, British, Swedish, non-privileged (ships from Prussia, Portugal, Lübeck, Danzig and Bremen) and others; thus, the captain's home port is important in just the categories five and six.
12. Knoppers 1976, 14; Gøbel 2010, 322.
13. Kumar 2018, 343–348; quotation from van Tielhof 2002, 344. Among the examples of earlier research that exploited STT, we can mention Walter Vogel, *Beiträge zur Statistik der deutschen Seeschiffahrt* (1928); Axel E. Christensen, *Dutch Trade to the Baltic about 1600* (1941); W. S. Unger, *Trade Through the Sound in the Seventeenth and Eighteenth Centuries* (1959); Sven-Erik Åström, *From Cloth to Iron I-II* (1963–1965); Artur Attman, *The Russian and Polish Markets in International Trade* (1973); Knoppers, *Dutch Trade with Russia* (1976).

by this ‘Bible’. If there were plans to continue the tabulated compilations further,¹⁴ they did not materialize before the development of computer technology outdated this traditional mode of source-publishing.

The ‘next-generation’ Sound Toll database was born in the age of punched cards and magnetic tapes. In the early 1970s, Danish economic historian Hans Chr. Johansen initiated a project to produce a digital reproduction of all the shipping data contained in the Sound Toll Records from 1784 to 1795. Only the names of skippers were entered as plain text but the other non-numerical data (such as nationality, home ports, ports of departure and destinations, loaded/ballasted condition, commodities) was recorded in 3–6 -digit codes. The new database was finished in 1983 and was introduced in a concise book by Johansen: this contained both source criticism and fundamental analyses, as well as directions for use and a collection of statistics as a microfiche appendix. The Odense Sound Toll database was designed in an era before the internet and could only be accessed via the Danish Data Archives – until a revised internet version was published.¹⁵

The ‘third-generation’ Sound Toll database was made possible by the rapid development of computer processors and data storage technologies which have gradually opened totally new opportunities to create really big databases. Simultaneously, the rapid diffusion of personal computers and the internet increased the demand for online access to the data. The journey towards the present Sound Toll Registers Online (hereafter STRO) began in 2009 when the University of Groningen and the Frisian Historical and Literary Centre (Tresoar) united forces to create a new huge electronic database, comprising all the Sound Toll Registers from beginning to end. The Danish National Archives provided scans of the original records from which the data entry was undertaken by around fifty volunteers, supervised by a group of Dutch historians. All the passage data was entered according to an input template and the plain text was in some cases supplemented with special codes (such as codes for geographic names); in addition, the data was supplemented with scans of the original registers. The database was declared finished in 2020¹⁶ but already before that date scholars in maritime and economic history began to exploit those sections which became operational in the 2010s.¹⁷

At present the STRO comprises information about some 1.8 million passages through the Sound, and all of them can be browsed online. The user interface contains a fair selection of tools for searching, combining and classifying data: it even includes a system of standard geographic names which are linked with all known name variables and are also collected under the umbrella terms of ‘small regions’ and ‘big regions’. Unfortunately, at the time of writing, all of these umbrella terms were not functioning correctly¹⁸ – obviously some ‘finishing touches’ are still needed.

14. According to Scheltjens and Veluwenkamp 2012, 302, a group of French historians planned an extension to the STT in the 1950s but no results of any such efforts have ever been published.

15. Gøbel 2010b, 322; Johansen 1983, 115–123.

16. Gøbel 2010b, 322–324; Scheltjens and Veluwenkamp 2012, 301–330; Veluwenkamp, Scheltjens and van der Woude 2021, 147–160.

17. As a representative sample see Veluwenkamp and Scheltjens (eds.), *Early Modern Shipping and Trade* (2018), a collection of ten independent essays.

18. For example, ‘Russia around St. Petersburg’ only yielded data on Narva, ‘Esthonia’ none at all, and ‘South Baltic: East Prussia to Lubeck’ did not yield any data from regions east of Swedish

3. From passages to commodity flows: the aims and methods of this study

The main goal of this study is to produce a well-founded overview, a macro-level analysis, of the Baltic trade in the latter half of the 18th century. On a practical level, this requires the collation of realistic series of actual cargo volumes or commodity flows. As ship sizes varied widely across different international trades, cargo volumes remain the only practical yardstick if we want to set Baltic shipping into a wider quantitative context.

As excellent source as the Sound Toll Registers are, they are not able to provide systematic macro-level data of commodity flows. While they do reveal the numbers of eastward and westward ship passages as well as the respective ports of departure and destination, they did not record the sizes of vessels visiting Elsinore – it was only from 1842 onwards that the tonnages were recorded. This means that such basic indicators of ship sizes, or transport capacities, are not systematically available for the period of this study.¹⁹

Numbers of passages can be considered to reflect, at least crudely, transport volumes; however, this correlation only holds good as long as vessel sizes remained more or less unchanged. Of course, such stability cannot be taken for granted: several earlier studies have suggested that the average sizes of ships transiting the Sound had already experienced a modest growth in the 17th century and the growth seems to have even continued during the next century. However, in a fleet of several thousand vessels such developments could not have been very fast. Thus, the average sizes of ships visiting Copenhagen seem to have increased by a quarter or a third from the 1750s to the 1780s while that of all westbound ships only grew by just a fifth during the same period.²⁰ These were not dramatic rates of change: in the case of Copenhagen about one percent a year, on average, and only half of that for the westward cargoes. With such low growth rates, the numbers of passages present tolerably realistic images of short-term fluctuations. However, across longer periods, these figures tend to lag behind the growth of actual commodity flows.

There is even another aspect to the problem of missing tonnages. Typical ship sizes did vary substantially across different ports, depending e.g. on the depth of fairways and the nature of the commodities traded. As can be seen from the figures in Table 3,

Pomerania. A strange thing is that the small regions 'Iceland', 'Greenland' and 'The Faroe Islands' which were fully operational in the previous (-2022) user interface yield unreasonably few results within the present interface. By far the most awkward problem is the fact that the search for big region 'The Baltic' (destination) retrieves far too low numbers of hits (e.g. for 1783 just 2151 while STT records 5564 eastwards passages for the same year); this means that there is no reasonable means of finding separate totals for eastward respectively westward passages. It should also be noted that in the STRO all of Schleswig (Da. Slesvig) is included in the small region of Denmark and the free city of Hamburg in the small region of Holstein. The STRO standard names should always be checked by browsing the relevant lists, found as an appendix in the database.

Examples of erratic data have even been found: for example, westbound passages have occasionally been recorded as eastbound and vice versa (Kaukiainen 2021, 492, footnote 7 – however, it seems that most of them have been subsequently corrected).

19. Johansen 1983, 14. Lastages (Danish commercial lasts) were only registered for Danish vessels in domestic traffic and Swedish ships of less than 20 lasts.

20. Knoppers 1976, 284–288; Kaukiainen 2025, 19 (Table 2); Table 6, below.

there could be some really big differences in sizes between the Swedish herring-trade vessels and British and Dutch bulk-carriers. Accordingly, research of port-specific trends, or cargo volumes, would be a challenging task. For a macro-level analysis like this, however, such computing of local volumes was regarded as superfluous.

Table 3. Average sizes of ships from various countries or in different trades.
Danish commercial lasts (c. 2.4 British tons)

Region	1751–1760	1781–1790
Swedish west coast*	9	28
Norway	25	22
German North Sea	57	34
Great Britain	84	101
Netherlands	116	105
France, Iberia, Italy	54	74
North America	–	64
West Indies	100	116
Far East	250	236

* Herring-trade vessels.

Source: Periodical and regional random samples from STRO; Johansen 1983, 92–95; Swedish National Archives, Kommerskollegiet, Kammarkontoret, Dd Handelsflottan 1783–1798.

While the Sound Toll Records fail to reveal the sizes of ships, it offers, as a trade-off, a resource which helps to circumvent this limitation. The collection of duties produced very detailed documentation of the cargoes onboard (non-Danish) ships and such data can now be accessed online in the STRO. The only drawback is the huge volume of records: transforming hundreds and thousands of individual receipts into annual or commodity-specific totals would involve a lot of labour and/or computer time. Fortunately, there is a shortcut: summary annual data of the main commodities recorded in the Sound was printed in the Sound Toll Tables (STT, *Varetransportvolumes*), and similar data was also published by the Odense Sound Toll project for 1784–1795. It is true that the Sound Tables have been criticized for only presenting data on a high level of aggregation ('so that individual passages have disappeared from sight') and only for the most important categories of goods.²¹ However, such

21. See e.g. Veluwenkamp, Scheltjens and Van der Woude 2021, 153. The data on commodities is the most awkward element of the Sound Toll Registers. Not only is there a wide variety of different goods (for example, the index of commodities in Johansen's *Shipping and Trade* contains over 400 items), but it is further increased by variations in orthography. This means that the identification and classification of commodities can be a real challenge, in particular for those who don't have a good command of the Danish language. The STT is particularly useful because such tasks have already been performed by experienced Danish archivists with a good knowledge of relevant goods and measures. The Odense data, again, attached three-digits codes for different commodities.

The article by Veluwenkamp et al. (p. 153) even blame the Tables for the 'haphazard' combining of commodities into categories. This is so serious an accusation that it should be substantiated; however, no examples have been presented. Neither can such criticisms be found in the source they are referring to (Göbel, The Sound Toll Registers Online project, 321–322).

a high level of aggregation is not a disadvantage in a study seeking to undertake a macro-level assessment - quite on the contrary. But there is still a downside: neither the summary tables of the STT nor the Odense-tables classify commodity volumes by port of departure or destination.

The eastward and westward commodity volumes were estimated from the Tables and the Odense data by first converting the different 18th-century weights and measures to metric tons and, subsequently, by applying so-called stowage factors (cubic volumes per ton), the commodity volumes are given in contemporary measures of shipping capacity (British tons and Nordic lasts, see Appendix I). Even if the summary data mentioned above does not include the full hundred percent of all goods transported through the Sound, the resulting estimates present a fairly comprehensive picture of these commodity flows. As calculating such estimates is a labour-intensive process, it seemed reasonable to accomplish this through a series of representative samples, instead of trying to create continuous annual data. This period of some thirty years (1751–1787) was covered by three five-year samples plus an ‘follow-up’ examination for 1801–1805 (see chapter 6, below). They should suffice to identify correctly the main trends for the overall growth as well as for different commodities and regions. (The results of these estimates can be found in chapters 6, 7 and 20–21.)

4. A puzzle with missing pieces

For decades, the study of Baltic shipping has been almost synonymous with the Sound Toll Registers. According to this research tradition, northern European shipping has been examined through the peephole of the Sound Toll. While this peephole is fairly wide, the resulting general picture is bound to be distorted. Thus, both the STT and STRO only tell us about Baltic exports of raw materials and capital goods destined to big West-European economies, Great Britain and the Dutch Republic, and to a lesser degree also to Atlantic France and the so-called ‘Latin market’ (swe. *latinska marknaden*). Yet there also were intra-Baltic markets for the same products: Swedish timber and tar were taken to Copenhagen and Lübeck, as well as iron to Danzig and East Prussia; on the other hand, hemp, flax, potash and tallow were exported from East Baltic ports to Sweden, eastern Denmark and German Baltic ports. Nor was all the East Baltic ‘surplus’ grain exported to the Netherlands, France and Iberia – there was also a steady market for it in Sweden and Norway, and occasionally even in Copenhagen. There also were intra-Baltic markets for imported consumer goods: wine as well as diverse handicraft and industrial products also came along German river routes to Lübeck and other outlets, from which they were re-exported all around the Baltic seaboards. Thus, Baltic exports and imports could even have both destinations and origins within the ‘Northern Mediterranean’.

The Sound Toll Registers are not able to tell us much about intra-Baltic shipping and commodity flows. When a ship left Elsinore (Helsingør), it also vanished from the horizon of the toll officers. It is, of course, common knowledge that the Baltic Sea has for long been a venue for busy shipping, a lot of which never went beyond the Sound – in fact some Baltic states like Sweden actually forbade ships hailing from minor ports sailing outside the Baltic Sea. Unfortunately, no all-inclusive sources like the Sound Toll Records have ever existed on intra-Baltic shipping – quite the contrary: