

JOUKO TOSSAVAINEN

Dutch Forest Products' Trade In The Baltic from the Late Middle Ages to the Peace of Munster in 1648

Master's thesis in General History
at the University of Jyväskylä
13.12.1994

JYVÄSKYLÄN YLIOPISTO

Tiedekunta HUMANISTINEN	Laitos Historian laitos
Tekijä Jouko Tossavainen	
Työn nimi Dutch Forest Products' Trade in the Baltic from the Late Middle Ages to the Peace of Munster in 1648	
Oppiaine Yleinen historia	Työn laji pro gradu
Aika syksy 1994	Sivumäärä 149 s.
Tiivistelmä - Abstract <p>Työssä käsitellään metsätuotekaupan alkua Itämerellä Alankomaiden näkökulmasta myöhäiskeskiajalta alkaen. Tutkittava aika alkaa 1200-luvulta, jolloin ensimmäisten alkuperäislähteiden perusteella on Itämeren alueelta tuotu ensimmäisiä metsätuoteeriä Alankomaihin, ja käsiteltävä aika päättyy vuoteen 1648, jolloin Alankomaiden itsenäisyys tunnustettiin Munsterin rauhansopimuksessa.</p> <p>Myöhäiskeskiajalta vuoteen 1562 lähdeaineistona ovat lähdejulkaisut, joiden perusteella työ täältä ajanjaksolta rakentuu kuvailevalle pohjalle, mutta vuodesta 1562 lähtien Juutinrauman tullitilastot tekevät mahdolliseksi kvantitatiivisen käsittelytavan. Painettujen Juutinrauman tullitilastojen perusteella saadut aikasarjat muodostavat siten lähdejulkaisujen ohella keskeisen lähdemateriaalin työn loppuajalle vuodesta 1562 vuoteen 1648. Aikaperiodin laajuus on vaatinut myös laajan kirjallisuusmäärän hyödyntämistä.</p> <p>Työn keskeisenä teemana on metsätuotekaupan kehittyminen vähäisestä alusta siten, että 1600-luvulla Alankomaat olivat jo suurin metsätuotteiden ostaja Itämereltä. Teemaa on käsitelty sekä kysynnän lisäksi myös jälleenvienti ja sen merkitys ovat tulleet tutkimuksen kohteeksi. Eri metsätuotteiden erilainen kysyntä ja sen muotoutuminen on työn loppupuolella voitu tuoda esiin graafisien kuvaajien avulla. Metsätuotteet on jaettu päälaatuisten perusteella puutavaraan ja jalostettuihin metsätuotteisiin: terva, tuhka ja piki.</p> <p>Itämeren metsätuotteiden tarjontaa on käsitelty työssä tärkeimpien hankinta-alueiden näkökulmasta, jolloin kvantitatiivinen aineisto on sallinut myös metsätuotteiden määrissä tapahtuneen muutoksen seuraamisen tärkeimpien hankinta-alueiden osalta.</p> <p>Metsätuotekaupan strategisen luonteen esiinnouseminen etenkin laivanrakennustuotteiden osalla aiheutti sen, että aikakauden poliittinen kehitys oli sidottava osaksi taloudelliseen kehitykseen painottuvassa työssäni. Tämän vuoksi vuodesta 1648 muodostui työlleni luonteva loppuvuosi. Alankomaat olivat tuolloin saavuttaneet johtoaseman maailmankaupassa ja Itämeren metsätuotekaupan osuus tässä kehityksessä oli tullut näkyviin etenkin laivanrakennustuotteiden strategisen arvon takia. Espanjan ja Alankomaiden rauhansopimus salli kaupan rajoituksettoman jatkumisen ja poisti samalla esteet jälleenvienniltä.</p>	
Asiasanat Alankomaat, Itämeri, metsätuotteet, puutavara, yleinen taloushistoria	
Säilytyspaikka Historian laitos, yliopiston kirjasto	
Muita tietoja englanninkielinen pro gradu	

CONTENTS

1. INTRODUCTION	4
1.1. Towards "De Gouden Eeuw" - Setting the frames	4
1.2. The importance of forest products in the pre-industrial era	5
1.3. Topic and sources	7
2. DUTCH TRADE TO THE BALTIC UNTIL THE PEACE OF COPENHAGEN IN 1441	13
2.1. Northern Netherlands in the Late Middle Ages	13
2.2. Indirect methods to track the timber trade in the Late Middle Ages	16
2.3. The Hanseatic passageway to Flanders and England	18
2.4. Shippers for the Hanseatic League - the first Dutch contacts to the Baltic	21
2.5. "Mare clausum" - Hanseatic efforts to monopolise the Baltic Sea	26
3. THE BREAKTHROUGH IN THE BALTIC FROM THE END OF THE 15TH CENTURY	33
3.1. The rise of Amsterdam and the Zuiderzee region	33
3.2. The end of "mare clausum" in forest products' trade	37
3.3. The Hanseatic defeat in the light of the statistics	41
3.4. The politico-commercial situation in the Baltic during the 16th century	44
3.5. The structure of the "moedernegotie"	47
3.6. Dutch domestic demand for forest products in the 16th and 17th centuries	49
3.6.1. The demographic factors	49
3.6.2. The scarcity of fuel	50
3.6.3. Dutch shipbuilding	52
4. FOREST PRODUCTS TRADE UNTIL THE FIRST SPANISH EMBARGO IN 1585	57
4.1. The division of the Low Countries	57
4.2. General weaknesses in the Sound Toll Records	59
4.3. forest products trade from 1560s to the fall of Antwerp in 1585	61
4.3.1. Timber trade	61
4.3.2. The refined forest products	67
4.3.4. The overall development of the Baltic forest products trade until 1585	71
5. THE DIFFUSION PERIOD IN THE TRADE UNTIL THE TWELVE YEARS' TRUCE IN 1609	75
5.1. The merchant takes the lead	75
5.2. The forest products' trade from 1586 until the truce in 1609	77
5.2.1. Timber trade in 1586-1609	77
5.2.2. The refined forest products in the period 1586-1609	82
5.3. The general development of the forest products' trade until 1609	85
6. FOREST PRODUCTS' TRADE UNTIL THE MIDDLE OF THE 17TH CENTURY	90
6.1. The effects of the Twelve Years' Truce	90
6.2. The forest products trade until the embargo in 1621	92

6.2.1. The peak of timber trade during the truce	92
6.2.2. The refined forest products' trade in 1610-1621	95
6.2.3. The overall development of the forest products' trade until 1621	99
6.3. The reshaping of the Dutch Baltic trade after 1622	101
6.4. The collapse of Danzig's timber export	103
6.5. Baltic timber trade in 1622-1648	106
6.6. Dutch trade with refined forest products in 1622-1648	110
6.7. The effects of the war era to the forest products' trade	115

7. SUMMARY	118
------------------	-----

BIBLIOGRAPHY	125
--------------------	-----

LIST OF GRAPHS, MAPS, PICTURES AND TABLES

MAPS

2.1. Dutch towns and trade routes around 1300	13
3.1. Low countries in the 16th century	44

GRAPHS AND TABLES

Dutch and German Hanseatic passages through the Sound in 1497-1560	42
Timber to the west through the Sound in 1562-1585	62
Waynscoot to the west through the Sound in 1562-1585	63
Clapboards through the Sound in 1562-1585	65
Dutch shipments of refined forest products in 1562-1585	67
Ashes through the Sound in 1562-1585	68
Timber through the Sound in 1586-1609	78
Clapboards through the Sound in 1586-1609	79
Waynscoot through the Sound in 1586-1609	80
Ashes through the Sound in 1586-1609	82
Pitch through the Sound in 1586-1609	84
Tar through the Sound in 1586-1609	85
Timber through the Sound in 1610-1648	92
Waynscoot through the Sound in 1610-1621	93
Clapboards through the Sound in 1610-1621	94
Ashes through the Sound in 1610-1621	96
Pitch through the Sound in 1610-1621	98
Tar through the Sound in 1610-1621	99
Timber through the Sound in 1622-1648	105
Waynscoot through the Sound in 1622-1648	106
Clapboards through the Sound in 1622-1648	107
Ashes through the Sound in 1622-1648	109
The value of Dutch shipments of ashes in 1622-1648	110
Pitch through the Sound in 1622-1648	112
Tar through the Sound in 1622-1648	114
Yearly shipments of timber in pieces in 1562-1648	121
Total shipments of refined forest products in 1562-1648	123

PICTURES

3.1. Amsterdam around 1200	33
3.2. Amsterdam in 1544	50
3.3. Fluyt ship	54
4.1. The Northern Europe around 1560	72
5.1. The port of Amsterdam in 1606	76
5.2. Prussian coast at the end of the 16th century.....	81
6.1. The Baltic in 1622	100
6.2. Danzig in 1617	103

APPENDIX

Dutch Yearly shipments of waynscoot through the Sound in 1562-1648	134
Dutch Yearly shipments of Clapboards through the Sound in 1562-1648	135
Dutch Yearly shipments of Deals and Planks through the Sound in 1562-1648.....	136
Total Yearly shipments of Waynscoot through the Sound in 1562-1648.....	137
Total Yearly shipments of Clapboards through the Sound in 1562-1648.....	138
Dutch Yearly shipments of ashes through the Sound in 1562-1648.....	139
Dutch Yearly shipments of Pitch through the Sound in 1562-1648	140
Dutch Yearly shipments of Tar through the Sound in 1562-1648.....	141
Total Yearly shipments of ashes through the Sound in 1562-1648.....	142
Total Yearly shipments of Pitch through the Sound in 1562-1648.....	143
Total Yearly shipments of Tar through the Sound in 1562-1648	144
Dutch Yearly shipments of Undefined Ash, Pitch, and tar through the Sound.....	145
Total Yearly shipments of Undefined Ash, Pitch, and tar through the Sound	146
Dutch Yearly shipments of Potash through the Sound in 1562-1648.....	147
Dutch Shipping figures in the Sound in 1562-1648.....	148
The lastage of Baltic commodities in the Sound.....	149

1. INTRODUCTION

1.1. TOWARDS "DE GOUDEN EEUW"
- SETTING THE FRAMES

In the Middle Ages the southern parts of the Low Countries together with northern Italy were the utmost prosperous parts of Western Europe. Their wealth was largely dependent on commerce and trade, and these two areas exceeded the rest of Europe in the relative volume of trade and even in the industrial output. Flourishing towns and their active business connections were a signal of this wealth. The Hanseatic League, which operated mainly in the Baltic area, was only a humble apprentice compared with the wealthy towns of Northern Italy and Southern Low Countries.

The Hanseatic League emerged slowly from a loose net of traders to a disciplined organisation which gained control over trade in Northern Europe. The advanced business techniques and methods of the Italians were transferred from south to north and the Hanseatic League took advantage of them in their effort to build up the links needed in continuous business. The staple town of Bruges was the meeting point for southern and northern traders.

In the Low Countries the two coastal provinces of Holland and Zeeland hardly took any part in these

transactions between north and south. In the Late Middle Ages there were only a few second-rank Hanseatic towns in the northern parts of Netherlands, and their importance in the League was minimal.

In the 17th century the situation was totally the opposite. The southern Low Countries, Northern Italy and the Hanseatic League had lost their influence in trade and had almost no possibilities to retain their former well-being, while Holland and Zeeland together with the other northern provinces outstripped the rest of Europe in almost every phase of economic development. This particular area was the world's commercial centre, and the Dutch flag was flying over every ocean. The Northern Provinces had started from virtually nothing and developed a world-wide network in trade. How could this tiny spot of reclaimed land with almost no natural resources win a hard competition against states and organisations with immense resources and population?

The progress from a passageway of traders to a trade empire has interested many historians who have given several explanations to it. Every researcher has his personal way to press the importance of single parts. Some of them, like Fernand Braudel, claim that the phenomenon depended

largely on the bulk trade, while for instance Jonaḥan I. Israel gives credit to the combination of both bulk and rich trades. Yet, historians generally agree that the mass products' trade was an essential part of the success, and the trade to the Baltic Sea an invaluable part of it, the "*moeder-negotie*", i.e. the mother of all trade.

The Dutch dominance of trade in the 17th century was largely based on the great size of their merchant fleet, the exceptionally low freight charges, and the capacity to transport bulky goods cheaply and in large quantity. The great entrepot of northern Europe, Amsterdam build up its position by combining these three means with the dealings in commodities, in futures, and in shares, the methods which it copied from its predecessor and developed them further. Also the organisation of banking, the establishment of advanced credit transactions, and the overseas investments in raw material acquisition and production were a part of this highly refined system. These methods were later copied by England and other developed countries.

The merchant fleet's competitiveness was not possible without a continuous flow of cheap raw materials for vessels, and advanced techniques in shipbuilding, which were both connected especially to the Baltic region where the most

important single type of timber in shipbuilding, i.e. oak, was accessible. The forests of the northern parts of Europe, especially in Norway, were also an important source of timber, but they supplied mainly other species, for example fir. Oak did not survive as well in the northern forests. The most important commodity the Baltic area supplied was grain, but the second in significance were the forest products. The supplies of Baltic timber and other forest products were one cornerstone of "*de Gouden Eeuw*". Yet, the history of Baltic forest products' trade has not been a serious task for historians, probably because of the great economic value of grain trade. The strategic value of forest products may have been underrated in historical research.

1.2. THE IMPORTANCE OF FOREST PRODUCTS IN THE PRE-INDUSTRIAL ERA

For centuries, timber had an exceptionally important role, but it had no economic value. Forests were for common use and there was enough wood everywhere. The extent of the forests compared to the population was vast, and therefore timber was a so-called "free" commodity. Forests supplied wood and were also a reserve area for pasture and arable land. The multiple forest use went hand in hand with the development of Western society, and there was a certain equilibrium of man and forest. Yet, the relationship often turned

hostile, when man felt that his culture was threatened. Forests easily took over an even slightly neglected pasture or field.

Before the Industrial Revolution the technique of metal-processing was in an almost archaic stage, and everyday equipment had to be made from the materials easy to process. One of the most important raw material was timber, a versatile material for constructing houses, boats and ships, as well as everyday tools. In house-construction wood was much cheaper and easier to handle than stone and bricks; the vessels could only be made from timber, and most of the everyday tools needed to be easily replaced in case they wore out or broke.

Wood was almost the only source of energy accessible everywhere. In some regions it was replaced with peat and later also with coal, but those combustible materials were usually only substitutes for wood in areas where firewood was rare. Consumers preferred wood, because the technique of building smokestacks was not perfect, and the smell of coal and peat was irritating. It was essential to have enough wood for such primary purposes as heating. Timber was a necessity, which had to be in adequate supply for even the poorest to afford. Yet, the transport of timber was hard work, and thus

the price of firewood was occasionally very high.

Apart from the many uses of timber as such, it was also an important raw material in processes where wood was refined for other purposes. In shipbuilding tar and pitch were used to get the vessels seaworthy, the refining of iron was not possible without charcoal, and ash was almost the sole chemical in textile finishing and glass making. These reasons were among several others to cause the start of the forest products' trade as early as in the Middle Ages, because suitable timber types were often not available.

The period during which forest products gained economic value and became a commodity varies in different parts of Europe. In some areas the population growth was fast and the nearby forests were felled very early. Yet, the trade and transportation of forest products does not necessarily mean that these areas were badly deforested. It was a question of the possibilities to sell and transport forest products economically to the consumer. Sometimes great forest resources were left in peace because they were too distant from the rivers or the sea. Water transport was the most economical way to deliver goods.

In the Netherlands economically exploitable forests were felled very early, and the trade with forest

products was essential from the Late Middle Ages on. The close regions of France and Germany were the first ones to supply the needed timber. As time went by, the acquisition area stretched far below new horizons, among them was the Baltic region.

The location of the forests in the Netherlands was the determining question, but not the existence of the forests itself. The price of timber was not as crucial as the transport costs. Moreover, it was also a question of the suitable type of timber, because the available species could only be used for some of the applications. These two factors showed the direction of the timber trade development.

In the Baltic, however, there is an important difference between the grain trade and the timber trade. The grain demand depended on the harvest of the consuming countries. In critical situations the cost of the transportation was not important in the grain trade. The supplies were transported at any cost, and under any circumstances, if the starving population only had the money to buy the grain. Forest products were not so vital. If the transportation costs rose too high or if the politico-economical situation was too critical, the supplies of forest products could be left waiting for better times.

1.3. TOPIC AND SOURCES

There were three important regions for the Netherlands to acquire the forest products: Norway, the Rhine area, and the Baltic. For example, Alexander Bugge and Johan Schreiner have described the Norwegian timber trade in their works, and, for example, U. Rodenwaldt has done research on the Rhine area, but the Baltic region has remained a tabula rasa as far as a collective work of the trade with forest products is concerned. Grain has often been the primary target of research, and the supplementary role of the forest products has left them without an independent study from the Dutch point of view. Yet, there are general surveys on the forest products' trade within many research works as separate chapters.

My aim in this work is to study the Dutch forest products' trade in the Baltic region from its beginning in the Late Middle Ages to the Peace Treaty of Munster in 1648. I had to describe the period before the data available in the Sound Toll Records on a narrative basis, because the lack of quantitative series, but from the middle of the 16th century onwards the work got a detailed character. I have limited my work to consist of the northern provinces of the Netherlands, which gained their independence from Spain in the Eighty Years' War in the 16th and 17th centuries. The northern parts of

the Netherlands, especially the province of Holland, developed into the centre of the forest products' trade while the Southern provinces remained passive.

There is no collective quantitative data to indicate the volume or value of forest products' shipments from the Baltic until 1562, from which year onwards the Sound Toll Records have been preserved for most of the years. Only occasionally the data of a year is missing. For this reason the first centuries from 13th century to the middle of the 16th century has limited space in my work. This gives an appearance of two separate parts, but it could not be avoided. The "first part" without quantitative data describes the shaping of the Dutch Baltic trade and sketches the demographic and political framework of this era, the basis to the Dutch success in trade. The scarce data concerning the forest products' trade is presented as a part of the text.

From 1562 onwards it is possible to use the quantitative methods and follow the development of the forest products trade with a better accuracy, and therefore the "second part" of my work contains several graphs, which illustrate the fluctuation of shipments in a yearly basis. I have used the term Dutch trade in quite a collective meaning, because the printed Sound Toll Records do not define the owner of cargo. The division to Dutch and

other trade was made on the basis of the Sound Toll Records through a part of forest products recorded Dutch in the toll accounts were transported for other merchants, i.e. the term Dutch trade represents the forest products, which were transported through the Sound in Dutch vessels. The period of 1562-1648 is divided into three chapters, though there was also the possibility to divide this period in another way, i.e. to study the political development separately from the development of the forest product's trade, and to separate the most important product to own chapters. The main lines of the political and economic framework were impossible to avoid, because the forest products' trade was closely related to the development of Dutch shipping and shipbuilding. The economic competition was often a prelude to a war, and Dutch shipping and shipbuilding had utmost high strategic value. Therefore I decided to keep the coherence by combining the political framework with the development of forest products' trade through this obliged me to make the division to three chapters.

There were several other sectors in the Dutch economy connected to the forest products' trade. For instance, the textile industry was an important customer for the ashes, and the fisheries were the biggest user of clapboards, but these branches were not as tightly connected to the

development of the forest products' trade. These branches were almost solely creating demand for forest products, while the shipping capacity created possibilities to develop the forest products' trade itself.

The supplying regions of the forest products in the Baltic and the swift of importance was another topic in my work. About the time before Sound Toll Records it was impossible to compare the individual regions on a quantitative basis, but the scattered data from the local customs accounts in several books and articles helped to draw the main lines. This part of work had to be limited to the most elementary parts of the vast field of research, because a covering survey should have been done in the archives containing the original documents, which was beyond the resources of this project. However, the available material gave a glue that such a covering work would be worth an effort. Individual articles about the problemacy do exist, but there is no collective work of the Baltic forest products' trade covering both the supply and demand sides of this subject.

The main sources in my work for the period before the Sound Toll Records were the documents concerning the Dutch trade to the Baltic and the documents concerning the Hanseatic League, which are available in the printed form. The

most important source of the Dutch side was *Bronnen tot de Geschiedenis van den Oostzeehandel*, which contains invaluable information about the dawn of the Dutch trade to the Baltic. *Hanserecessen* and *Hansische Urkundenbuch* were also necessary, but in my topic the development of the Northern Provinces was a central issue. *Hanserecessen* and *Hansische Urkundenbuch* were of less importance as sources, because the Hanse was dominated by the Wendish towns and the Dutch towns had only a secondary role. The *Sound Toll Records* were the most important source for the second part of my work. The limitations of this source are discussed in the text.

The charter-parties, like *Bronnen voor de Geschiedenis van de Nederlandse Oostzeehandel in de zeventiende eeuw, Deel II, Amsterdamse Bevrachtings-contrachten van notaris Jan Franssen Bryuningh 1593-1600*, and the other original documents concerning the Baltic trade, like *Bronnen voor de Geschiedenis van de Nederlands Oostzeehandel in de zeventiende eeuw, Deel III, Acten uit de notariële archieven van Amsterdam en het noorderkwartier van Holland 1585-1600, Het koopmansarchief van Claes van Adriachem*, which were available in printed form, were also an important source for my work due to the price information they contained, and also because of the directions of the trade routes. Since there are only a few charter parties

for every year and there were hundreds of ships crossing the Sound, the quantitative part of my work had to be done on the basis of the Sound Toll Records.

Secondary literature in my work contains quite different types of books. For instance, the *Inquiry into the History of Prices in Holland* by N.W. Posthumus contains invaluable information about the price fluctuations in the Amsterdam Exchange, and it could be counted almost as a primary source. On the other hand, there are a lot of works that contained contradictory information. In these cases I have tried to express both views with my comments.

Moreover, the reliability of the older books is sometimes questionable. For instance, it seems that *Alexander Bugge* might have overestimated some of his proposals in *Den Norske Trælasthandels Historie, Fra de Ældste Tider Indtil Freden i Speier 1544*. The importance of Norwegian timber export compared to the other regions feels a bit nationalistic. For instance, Bugge stresses the importance of the Norwegian timber export to the staple in Dordrecht, though the preserved documents from the Late Middle Ages do not always support his proposals. This does not mean that only the latest research is worth reading. On the contrary, for

example the work of E. Daenell, *Die Blütezeit der Deutschen Hanse*, still seems to contain much invaluable information of the Hanseatic League, and its attitude towards the competitors, the Dutch traders and shippers.

The dissertation work of Aksel E. Christiansen, *Dutch Trade to the Baltic about 1600* helped to orientate to the value of the Sound Toll Records, and to the freight contracts preserved in the notarial archives in Amsterdam. Christiansen also describes the limitations of the material, which helped to weigh their value. The shipping figures from the original documents in Copenhagen had helped Christiansen to study the nationality and number of ships more precisely than could be done from the printed documents. These results were of much help when I had to follow the development of ships sailing to the Baltic in ballast.

From the more recent books J.A. van Houtte's *An Economic History of The Low Countries, 800-1800* is worth mentioning. It draws explicitly the main lines of the Dutch economy's evolution. Van Houtte's main subject in his other works is the period from the 14th to 16th centuries. Therefore his book contains useful detailed information of that period in spite of the customary approach in other parts.

The domestic supply of timber and the forest degrees in the Netherlands were one task of my work. The book *Historia Forestis* by Jaap Buis and the article *Dat Ging over zijn Fiout* by J.C.G.M. Jansen, & *Wvande Westerir gh* were valuable sources for this part of my study. Especially Buis helped me to orientate to these problems. Buis also criticised the previous research, for instance, the proposals of Bugge, and he even had good arguments to do so.

The four essay collections: *Baltic Affairs, relations between the Netherlands and the North-Eastern Europe 1500-1800*; *Interactions of Amsterdam and Antwerp with the Baltic Region 1400-1800*, *The North Sea, A Highway of Economic and Cultural Change, Character-History* and *From Dunkirk to Danzig: Shipping and trade in the North Sea and the Baltic 1350-1850*, were of utmost importance, because they contain important new views of the problemacy, and also sometimes corrected errors of earlier authors. Especially the essays of Maria Bogucka were of much assistance. Bogucka had studied the relationship between the Dutch merchants and Danzig in several essays, which described the business methods and the structure of trade with a great accuracy. The role of capitalism was probably a bit overestimated in her works, but the general appearance of the essays was of high quality.

Michael North's article *Baltic Wood Trade* in the book *The Baltic as a trade road. Timber Trade in the Baltic area, Competition between steam and sails* described briefly the role of the Baltic timber trade, but he neglected the importance of the Sound Toll Records and relied more on the preserved documents of the loading ports. North's work, *The export trade of Royal Prussia and Ducal Prussia*, in the collection *From Dunkirk to Danzig* shared the same attitude towards the Sound Toll Records, and he paid more attention to the work of Anthony Mackzac concerning the export statistics of loading ports in Southern Baltic area. Rolf Gelius had the same somewhat negative attitude towards the Sound Toll Records, because he stressed the importance of other sources in his article *Der Europäische Seehandel mit Waidasche und Pottasche von 1500 bis 1650*. Surprisingly this was the case in most of the works related to the forest products' trade. The hard criticism does not feel totally acceptable. The risks of the Sound Toll Records have been discussed several times and the possibility to cross-check the data from other sources is always possible.

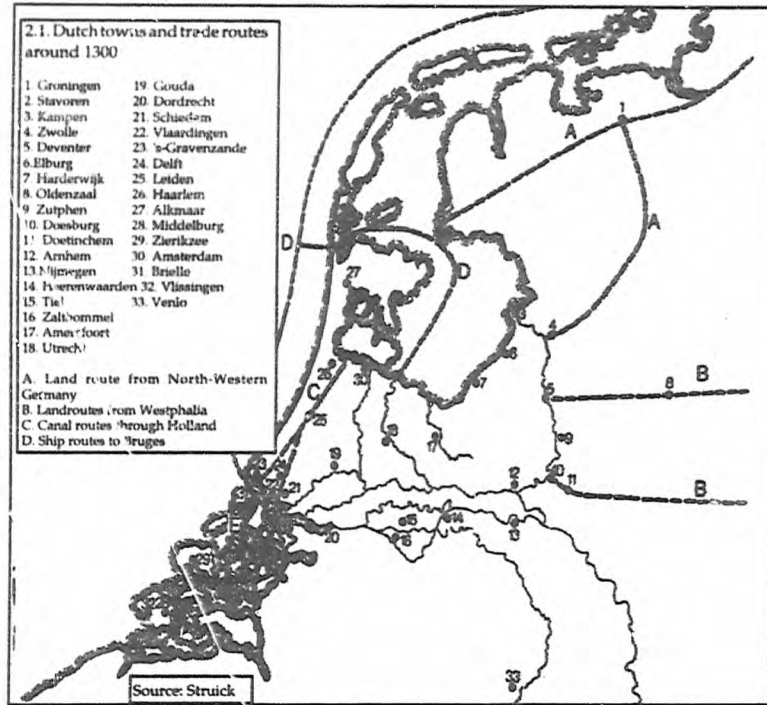
Jaap Bruijn's article, *The Timber Trade, The Case of Dutch-Norwegian Relations in the 17th Century*, in the collection *The North Sea* contained important details about the timber auctions in Holland. In the same book *Detlev Ellmers* described the

Medieval trade routes in the Baltic in his article *Frisian and Hanseatic Merchants sailed the Cog*, which helped me to understand the continuity of the Baltic trade, and the role of the Frisian trade system, which the Hanseatic adopted.

J.A. Faber's work *Friesland and the Baltic Trade* and C.M. Lesger's work *Amsterdam, Harlingen and Hoorn* in the book *From Dunkirk to Danzig* explained the importance of regional towns in the Baltic trade and also discussed the division of tasks between Amsterdam and the other parts of the Northern Provinces, which helped me to understand the many sides of the phenomenon.

Dutch Primacy in World Trade 1585-1740 by Jonathan I. Israel was useful since it enlightens the time scope also beyond my work. Israel's critical attitude towards Braudel's view (that everything in history is based on economy) was one of the most important impulses to inquire the "moedernegotie". The aim to build connections between the economic and political events was the central idea of Israel and I have tried to share this attitude in my work. Yet, the statistical approach grows in importance in the last chapters of the text.

2. DUTCH TRADE TO THE BALTIC UNTIL THE PEACE OF COPENHAGEN IN 1441



2.1. NORTHERN NETHERLANDS IN THE LATE MIDDLE AGES

Historians have often emphasised the geographical location of the Netherlands, when searching for the roots of Dutch dominance in trade. The estuaries of the rivers Scheldt, Maas and Rhine, which connected the Netherlands with the hinterlands of Germany, the position in the centre between the great corn and timber areas of the Baltic region and the

markets of southern Europe have been mentioned as primary causes for the success. Yet, long before the Dutch dominance in trade the same geographical factors existed.

The landscape in the northern provinces of Low Countries is almost entirely flat. It is characterized by dunes and dikes protecting the most populated parts of the area, which would otherwise be drowned, because of the storms of the North

Sea. The only exception is the area of Limburg in the border zone of Ardennes with some hills and small mountains. Limburg was also the only region, where forests were abundant during the Late Middle Ages. In other parts of the region the internal colonization had exhausted most of the forests as early as in the 11th century.

There was a lot of defense work against the storms, but soon the dikes took considerable areas of land from the sea. The construction of dikes dates back to the Carolingian era, but grew especially during the Late Middle Ages when the population growth was rapid. The system itself consisted of digging drainage ditches, which lowered the water level, and left the ground first to cattle grazing and later even to arable farming. The building of dikes and their maintenance needed immense quantities of timber, which at first were available from the local forests, but later on had to be brought from the German hinterlands, from Norway and even from the Baltic region. The progress in building dikes went hand in hand with the knowledge in canal-construction, but the improvement of dikes also caused the silting of waterways by barring the natural flow of water. Therefore the canals had to be dug when the earlier navigable rivers were ruined. The reclamation of land for farming had the same effect on rivers.¹

The co-operation in building dikes and polders at the coastal regions taught the inhabitants to share the responsibility of administration. These time-honoured rights together with local institutions were powerful enough to struggle feudalism, which remained much more limited in the Netherlands than in several other parts of Europe.² The area was divided to several provinces, and there were continuous struggles between the provinces, partly caused by the neighbouring "great powers" who were eager to secure their own interests, and partly because of the local grievances. For example, in the 13th century Brabant and Guelders had struggled for the control over Limburg.³

These small local principalities were in a backward stage, if we measure their political or economic performance. The privileges of older towns were a model for the new ones, the town privileges of Middelburg from 1217 were used as an example in Zeeland, and the town privileges of Haarlem from 1245 were often an example in Holland.⁴

The town privileges of Holland gave a good start for the market-oriented merchants, because they were inspired by the idea of helping the merchants. The counts had taken into account the business needs instead of just taking care of the needs of the landlords, who originally

possessed the territory where a town was built.⁵ However, Friedel Vollbehr has the opposite view, when he points out that most of these towns were founded only for strategic, administrative, and fiscal reasons.⁶ That might also be an explanation, since the feudal lords found it profitable to grant town privileges to almost every applicant and approximately 200 new privileges were sold.⁷ Especially eager to grant the town privileges was Willem I, the count of Holland in 1203-1222, who understood the economic possibilities of the canals from Zuiderzee to the estuaries in Southern Netherlands.⁸

The development of towns was slow and their capacity to trade was limited, because of the lack of suitable merchandise, but the geographical position gave them some possibilities. Groningen was the link of the land routes between Weser and Elbe, and the IJssel region towns Kampen, Zwolle and Deventer were connected to Germany through the Rhine. The first record of a tradesman from Deventer in Riga dates back to 1224. For a short period in the 13th century Utrecht was the trade centre of the Northern parts of Netherlands. The traders of nearby countries visited Utrecht where fish and salt was traded to wine and other commodities of the visitors. Approximately around 1250 Utrecht had also organised its herring fishery in Skania. The importance of Utrecht was based on the canals which

connected the rivers Lek and Vecht to the Zeeland region, and gave the traders a safe journey compared to the English Channel. The route through Utrecht was abandoned in the 13th century because of the silting of canals. Instead, there were other routes from Dordrecht in Zeeland through Gouda, Leiden, Haarlem, or Amsterdam to the Zuiderzee, and from there to Kampen.⁹

After the great flood in 1287, northern parts of Holland had been surrounded on three sides by the sea, and the southern coastline of Zuiderzee got a new shape.¹⁰ Many small villages found out that they were from now on equipped with a suitable place for a harbour.

The membership of the Hanseatic League was one of the most important possibilities for a town and its merchants to join in the big business. Towns like Zwolle, Kampen, Harderwijk and Deventer among others were eager to participate in the Hanseatic League. Their example was soon followed and it has been counted that approximately 20 towns from Friesland, Overijssel, Groningen and Guelders were members of the League. The possibility to join in could also have depended on the sovereign, but Groningen and Friesland did not have any sovereign; the bishops of Utrecht had only a formal power over the towns of IJssel region, while the power of the counts of Guelders

developed much later. Therefore it was a decision of the town itself, whether it would like to apply for the membership or not.¹¹ Participation to the Hanseatic League also meant change in the trading system of some towns as they had to give up their previous staple functions, but for old trading centres like Utrecht, Deventer, and Groningen the development was slow.¹²

2.2. INDIRECT METHODS TO TRACK THE TIMBER TRADE IN THE LATE MIDDLE AGES

Establishing new towns meant constructing new houses, the expansion of trade caused the rise of shipbuilding, and the continuous fight against the sea meant continuous building and maintenance of dikes. These things among many others were clear signs of the growth in demand for forest products. Yet, the internal colonization had exhausted most of the economically exploitable forests in the Northern Netherlands already in the 11th century. The need of energy was also an important task for the forest products, but this was the task where price was the most critical factor, and therefore it is quite natural, that the long distance trade was not the first source to meet the need. In Holland there was another source of energy which competed with wood. That was peat, abundant in the marshy areas taken from the

sea. The price of these two sources of energy, however, went up quite early, and therefore the use of coal started already in the beginning of the 14th century for domestic purposes and also for the energy needed e.g. in brewing, which was very common in the Northern Provinces already in 1325.¹³ Anyway, in certain tasks there was no substitute for timber and therefore it is obvious that timber and other forest products had to be brought from somewhere else.

In Flanders there was still another particular need for forest products, which becomes clear when we think about the most important industry of that era, i.e. cloth production. In the dyeing process potash was used to fix the colour, and the most important source of potash was the Baltic region.¹⁴ Dutch towns adopted the textile finishing techniques of the Southern Netherlands as early as in the 13th century, and therefore it is obvious that they were also using potash from the Baltic region. The first document of this dates back to 1280, as pitch and ash bound to the Netherlands are mentioned among the products to be cleared in Stralsund that year.¹⁵ However, it is not certain that the Netherlands in this document means the northern part of the area.

The preserved documents of the 13th century are so scarce that we must find other means to track the role of the Baltic region in the forest

products' trade. One of these mediums is the use of linguistics. Until the middle of the 13th century the Pipe Rolls in England had been using the Latin-based word "lambruscata" for timber products, but around 1250 it was replaced by the word "waynescote" which came from German and was used by the Hanseatic merchants.¹⁶ Waynscot was mainly used for construction purposes, both in buildings and in ships. The word itself is a proof for the Baltic timber trade, and the same word was also used in the first Dutch documents concerning timber trade.¹⁷

Another way to get into the problems of scarcity of a commodity is to check what the authorities have done; in this case it means the public degrees concerning forests and the administration of overseeing forests. Those were the measures the rulers took to ensure that sufficient forests remained to obtain timber and safeguard the general living conditions of the population. Lack of timber like that of any commodity was a hazard to public safety. Ordinances on the use and protection of forests have been known since the Antiquity, but the oldest regulations concerning forest economy in the north of the Alps date from the Carolingian times. In the Netherlands, the oldest document of the forest administration dates back to 670.¹⁸ This document, like the following preserved ones, discuss

only the administration and the use of forest, i.e. who was allowed to fell the trees, et cetera. In most cases the use of forests was free and the economic value of timber was neglected, but there was a certain division of the forests if they were in common land or in an area which belonged to the local magnate.¹⁹

The growth of population and the need to cultivate new soil resulted the diminishing of the forested land, and the forest degrees in the beginning of the 12th century have a different character compared to the previous ones. There was pressure towards regulation, and the degrees and ordinances listed quite precisely who was entitled to use the forests, and they also mentioned different types of use. For example, in the degrees concerning the province of Limburg - the area with greatest forests - the inhabitants of the villages were allowed to use forests for certain tasks, which included the right to fell trees to construct their own houses, to fetch firewood, and so on, but already in 1121 a degree in Burtscheid prohibited the inhabitants to sell the timber to buyers who came from other regions. Another degree from 1261 explains that the exportation of timber was only allowed when the abbot, the bailiff, and the local community together made the decision to sell.²⁰

2.3. THE HANSEATIC PASSAGEWAY TO FLANDERS AND ENGLAND

The growth of population was rapid also in Limburg already in the middle of the 12th century, and the authorities feared that the population of the region would use more timber than the forests could supply. Therefore the degrees were controlling the use of forest products more and more. The use for own purposes remained free, but only the withered trees were allowed to be consumed as firewood, and the use of living trees as firewood was strictly forbidden already in the 13th century. Local inhabitants were not allowed to sell firewood.²¹ Yet, the situation was not the same all over the region, for example in Echt there was enough timber to be sold to buyers coming from other regions. Between 1253 and 1274 local authorities made decisions that the incomes of selling timber had to be shared between the inhabitants of Echt.²² Anyhow, in most cases in Limburg, the forests were reserved mainly for local needs.

It is too brave to make a conclusion that the situation in Limburg reflects the general state of the Dutch forests, but compared to the other regions in the Netherlands Limburg was the area of dense forests. Therefore the areas with less timber must have had serious problems in filling the gap between supply and demand, and the economic value of timber could not be neglected anymore.

In the beginning of the 13th century the traders of Hanseatic League used Holland and Zeeland almost solely as a passing route to Flanders and England. The Northern Provinces had nothing to supply for these travellers, who were after western commodities, especially cloth, wine, and herring which they sold to the Baltic area. The economic activities of the Northern Provinces were mainly limited to the traditional local staple markets of towns like Groningen, Kampen and Deventer, which also participated in the Hanseatic League, but had only a modest influence in it.²³ The active Frisian trade of the 11th century had already lost its position because of the lack of suitable merchandise in the region.²⁴ The Frisian trade organization with the idea of trade privileges was inherited by the Hanseatic League, which developed it further and widened the net of the trade communications from Nowgorod in the east to Flanders in the west.²⁵

Medieval shippers tried to avoid sailing on an open sea, and therefore the coastal route through Holland, and the river routes to the estuaries of Rhine and Meuse were preferred.²⁶ To guarantee the routes Hanseatic merchants tried to gain protection and customs exemptions from the counts of Holland. In 17 August 1243,

Willem II, count of Holland *geeft den kooplieden van Lubeck en van Hamburg met hun goederen een veilig geleide in zijn landen, bepaalt voor hen den tol te betalen*.²⁷ The same privileges were granted to other Hanseatic towns a couple of years later, e.g., to Dortmund (1248), Bremen and Stade (1252).²⁸ Yet, these privileges are not a proof of active business connections of the Dutch, because the traders were after commodities the Dutch could not supply. The earliest custom ordinances for Flanders mention also timber,²⁹ and in 1262 timber is mentioned among the goods that came to Dordrecht from Holstein or the Elbe area and were reshipped to Flanders or England.³⁰

The passive trade was not enough for Floris V, the new count of Holland, because in 1277 he gave the Hanseatic traders the first privileges in Dordrecht.³¹ The location of the town in the estuaries of Maas and Rhine helped it to develop trade, which was at first only barter with the commodities, but developed to a full-scale business with all the mediums that were used during that era. The merchants of Dordrecht sailed along the rivers to Germany, where they traded salt from Zeeland and textiles from Flanders and Brabant to Rhine wines and metal ores. This way the Dutch inherited not only the trade of Utrecht, but also the trade of the Flemings, because the abundance of the foreign traders in Flanders made

it a passive market place.³² Dordrecht's trade to the Baltic also dates back to the same period. Rye from Rostock was mentioned in the town's accounts of 1284.³³ For political reasons Dordrecht was selected the staple town of English wool in 1294, but it kept the staple only for one year.³⁴ From 1299 onwards the town was also the centre of the river customs where all merchandise going up and down the Lek and Waal rivers, the main outlets of Rhine, should be unloaded, cleared and reloaded.³⁵ The clear purpose of the counts of Holland was to compete with Bruges.

The first tracks of Dutch trade with forest products date back to the period when the counts tried to centralize the trade to Dordrecht. In a customs ordinance of 1285 it was noted that the timber carried on board ships was duty-free.³⁶ The wide variety of forest products is visible in a custom account of forest products brought to Dordrecht in 1287.³⁷ River transport and sea transport were also separated in these accounts. Among the commodities brought along the rivers Lek and Merwede which had to be cleared in Dordrecht was also timber mentioned in the staple privileges of 1298 and 1299.³⁸ As the river Lek was connected with canals to the Zuiderzee, it is possible that some of this timber came from the Baltic region, though historians have had different opinions of the importance of Baltic forest products in the Dordrecht staple.

Jaap Buis suggests that most of the timber sold in Dordrecht during that time came from the Rhine area,³⁹ while *Alexander Bugge* earlier suggested that more timber might have been brought by sea, because by river routes it was not possible to transport e.g. masts. He also claims that most of the timber products brought by sea went to Flanders though there is also evidence that timber products were sold to the Northern Provinces,⁴⁰ e.g., in 1294 the war between France and England caused seizures of vessels visiting English ports bound to Flanders, which at that time belonged to France. Among them were also ships from Stavoren andriesland loaded with boards, ash and pitch. Some of these ships were coming from Norway and some from the Baltic area.⁴¹ This is the first direct evidence of the Baltic forest products coming to the west. Documents also show that the Hanseatic League was the primary intermediary in the long-distance trade of forest products in the North Sea and in the Baltic Sea at the end of the 13th century. Timber and other products were equally suitable cargo on board their ships as any other goods, because there was demand for timber in Western Europe.

The organizational superiority of the Hanseatic League helped it to gain a commanding position in the timber trade. The Dutch were not prepared to trade due to the lack of experience, organisation, and

financial means. E.g. the first moneylenders met in Utrecht in the Northern Netherlands were from Lombardy in Italy as late as 1260, and because of the decisions of the consilium of Lyons the count of Holland expelled them. They were back latest in 1283.⁴² At the same time the Hanseatic League already had expanded its commercial links from Flanders to Russia and the merchants had a well-organised credit system, which allowed them to expand their operations far beyond the resources of the Dutch. The merchants of Dordrecht were probably the only exception in the Northern Provinces, because the earliest reference to credit in trade with the Baltic area is in the town accounts in Dordrecht concerning the years 1284-85.⁴³

The Baltic Sea was a natural area of acquisition for the Hanseatic League, but they seem to have taken control over the Norwegian export of timber in the North Sea area, too. A clear indication of this is the decree of the King in 1302 concerning the trade of Bergen: a foreigner was only allowed to export blocks, boards, and rafters out of the town if they were purchased from the Royal Demesne, the councilmen or the burghers of Bergen.⁴⁴ The Hanseatic League had a "*handelskantoor*" in Bergen and in practice controlled the export from Bergen. We have to remember that among these merchants were also the Hanseatics from the Dutch towns,

but Lubeck in fact had the dominant position in Norway.⁴⁵

In 1323 the count of Flanders gave Bruges great staple privileges, which the Hanseatic League used also in the Baltic trade. Merchants from southern Europe were not allowed to trade directly with the Baltic area. Therefore Bruges became the centre of the north-south trade. The counts of Holland tried to get the Hanseatic League to move the staple from Bruges to Dordrecht. For example, in 1338, *Willem IV, graaf van Heynegouwen, van Holland, enz. bepaalt, dat voor alle schepen, die uit Oestland ... komen, de stapel te Dordrecht is.*⁴⁶ The staple privileges of Dordrecht were confirmed and even extended in 1344.⁴⁷ The Hanseatic League used the eagerness of the counts and moved the staple to Dordrecht when they needed to punish the hard-headed Bruges, e.g., in 1358 and 1382.⁴⁸ The Hanseatic staple was transferred back to Bruges immediately after the council of town acted as the League said. The timber staple, however, was designated to Sluis in Flanders in 1323, in 1367, and in 1390, because of the disputes between the Hanseatic League and Flanders.⁴⁹ Sluis was well-connected to Bruges via canal, and the bulky timber was better located in Sluis for transportation reasons.

In the trade to Holland Dordrecht held the staple privileges, and as the burghers did well with the staple

profits, they were no longer interested in investing in shipping and shipbuilding. Therefore the Hanseatic League controlled also the timber trade to Holland. In the customs tariffs for the Hanse in 1358 there is no mention of timber, but in the customs documents in 1363 *knorhout* (thick oak boards) and *koggenbord* (timber for shipbuilding) are noted. The same commodities were also mentioned in the privileges and customs tariffs which the count of Holland gave to the Hanse in 1389.⁵⁰

2.4. SHIPPERS FOR THE HANSEATIC LEAGUE - THE FIRST DUTCH CONTACTS TO THE BALTIC

The last centuries of the Middle Ages saw an important change in the structure of sea transport. The importance of bulky mass products grew and the need of loading capacity multiplied. In the trade with expensive products such as fur or cloth the transport costs were not decisive, but the bulk transportation was based on cheap freight rates. The waterways were the only suitable mean to transport heavy articles, but the river tolls of local magnates were a severe hindrance to the use of rivers. The sea was open for the brave ones.

In the northern parts of the Netherlands the need for transport capacity gave birth to the small towns, which grew along the coasts of Zuiderzee. Only a few of these

newborn towns survived. Among them was Amsterdam, which got the first tax exemptions in 1275,⁵¹ and the town privileges in 1300.⁵² Most of these towns were originally small fishing villages and to them shipbuilding and shipping were the most natural steps towards riches. Fishing boats were used for transportation when there was no fishing season.⁵³

The growth of seafaring activities was also possible because of the development of naval technology, like the introduction of compass, and the new inventions in cartography, especially the new "portolan" maps. The Hanseatic League had no chartmaking tradition and the ban for Southern sailors to visit the Baltic reduced the possibilities to make reliable maps.⁵⁴ Sailors had to rely on inadequate information, for example, the peninsula of Jutland almost reached the Oslo fjord in these maps.⁵⁵ Ships were usually built as cargoeship which were armed when necessary.⁵⁶

Dutch shipbuilders had adopted cog as the most usual ship type and they developed this angular type of boat with its stern-post rudder further so that it was possible to use the vessel in dangerous waters with a heavy load and even sail against the wind. In the middle of the 13th century the displacement of a cog could reach 200 tons. The ship was perfect for the "ommelandvaert"

around the peninsula of Jutland.⁵⁷ The technical advances themselves were not the decisive factors to select this dangerous route, but they helped the new traders to invade the growing market, which the Hanseatic League tried to control.

The dominating town in the Hanseatic League was Lubeck whose position was based on the fact that most of the traffic between the Baltic and the North Sea went through the town. Commodities from Baltic were shipped to Lubeck, unloaded and transported across the base of Jutland with pack horses to Hamburg where they were loaded to ships and brought to Flanders or England. Lubeck's effort to monopolize the trade to the Baltic by limiting other towns the use of the routes through the peninsula of Jutland pressed the competitors to search for other routes.⁵⁸

The earliest specific reference to the "Umlandfahrt" occurs in a Kampen source of 1251. King Abel of Denmark gave tax exemptions to the traders who used the sea-route.⁵⁹ The Danish straits became one of the most important highways in the European trade. The unloading and reloading in the Elbe estuaries, and in Lubeck were not necessary anymore. Traders avoided the road tolls in Holstein, too. The merchants of Groningen, Friesland, IJssel and Zuiderzee region and even those from Guelders were eager to use the new route, but the

rivalry of the competing towns remained. In the end of the 1290s the Dutch members of the Hanseatic League, especially Kampen and Zwolle, together with Lubeck tried to thwart the Frisian and Flemish traders from the Baltic and to prevent the shippers of Gotland from sailing to the North Sea.⁶⁰ For example in 1294 the authorities of Zwolle sent a letter to the authorities of Lubeck: *dankt voor hetgeen Lubeck gedaan heeft tot nu van alle zeevarende kooplieden van het Roomsche rijk en tot herstel van het oude recht, waarbij Friezen noch Flaamingen de Oostzee en Gotland, de Goten de Westzee niet bezoeken mogen; belooft de maatregelen, door Lubeck genomen, in acht te zullen nemen.*⁶¹

There was also a change in the trading system in the Baltic region during the Late Middle Ages. Earlier merchants sailed to a port and traded their goods in the local market and then continued their trip probably to another harbour, but the members of the Hanseatic League established steady settlements for their merchants all over the Baltic and also participated in the administration of the towns. Already in the 13th century the Baltic was surrounded by a chain of towns, which were trading centres for their own hinterlands.⁶² The German participants of the Hanseatic League were followed by other members, e.g. already in 1313, Herman and Nicolaus Enze, burghers from Zutphen, bought a house in Rostock.⁶³

According to the sources, the towns of the southern coast of the Baltic Sea, east of Lubeck continuing up to Danzig, were the most important shipping localities for timber products. The towns competed over these goods among themselves and attempted to gain the possession of markets especially with the instrument of regional staple degrees. The areas of the acquisition of these towns were determined by economic and political causes. One important meeting point for the buyers and sellers of timber and other forest products was the Skania region located in the southern part of Sweden, which belonged to the king of Denmark at that time. The Skania market was important already in the 13th century.⁶⁴

The herring market in Skanör and Falsterbro in Skania was a cornerstone of the Hanseatic Leagues' wealth. It was also the first international trade fair in the Baltic region, where merchants from various towns and regions gathered to do business. Herring was naturally the most important commodity, but there were a lot of other products available, among them grain and forest products from Prussia and Livonia.⁶⁵

Utrecht had established its fishing colony in Skania already in the middle of the 13th century, but also other Dutch towns participated in the herring fisheries of Skania in the 13th

century. For example, Kampen, a member of the Hanseatic League, got its previous rights confirmed in 1307 in Helsingborg when *Koning Eric Menved van Denemarken bevestigt alle privilegiën en voorrechten, door hem en zijn voorgangers aan Kampen verleen voor haar Vitte op Skanör*. Also the right to have a continuous settlement in Skanör was confirmed to Kampen in 1307.⁶⁶ The same privileges were guaranteed for Harderwijk and Zutphen in 1316, and for Stavoren in 1326.⁶⁷ The fishermen of Brill, Dordrecht, Schiedam, Amsterdam, Enkhuizen, and Wieringen had also established themselves in Skanör at the latest in 1368.⁶⁸

During that era it was a custom that every regent ratified agreements only for his own reign, and therefore the same privileges for the first Dutch towns were confirmed again in 1320, when king Christopher succeeded to the throne.⁶⁹ The towns who already had their fishing organised in Skania were naturally not interested in having competitors, but for the king it was a matter of income. The towns had to pay a certain duty for every last of fish they caught, e.g. in 1314 the duty was set for Kampen *sex denarios novorum et legalium sterlingorum voor ieder last haring, en dit voor den tijd van 10 jaren*.⁷⁰ The more the merchants traded with other commodities, the more the king also profited. This was one of the reasons why the Skania market was a distribution place for various

commodities⁷¹, too. Among them were also timber and other forest products.

By the acquisition of the sea route around the Skaw the volume of trade grew, and the new route, while reducing transport costs, encouraged expansion in business such as timber trade, where transports costs were significant. The Baltic timber trade was also much more varied than that of Norway, supplying not merely hewn and sawn timber, but many artefacts made of wood, such as bowstaves, spade shafts, barrel staves, gates, troughs, tables, and chairs, as well as resins and ashes.⁷² Anyway, timber, pitch and tar for shipbuilding and construction were of greatest economic importance. The origin of the timber brought to west by the Hanseatics can be traced from the documents, because timber was specified according to its port of loading. For instance in the customs ordinance given by the count of Flanders for German traders in 1360, "*Wiker sparren*", "*Berger sparren*" and "*Ghotense sparren*" are mentioned by name.⁷³ At least "*Ghotense sparren*" were from the Baltic Sea, but probably also "*Wiker sparren*".

The Hanseatic League had been controlling the Baltic shipping for ages, but competitors were already taking their first steps. The routes of Dutch fishermen were followed by Dutch traders and shippers. During this era the shippers of Waterland, the

area north of Amsterdam, were participating in the beer trade of Hamburg and other German towns in the North Sea. Some merchants of Amsterdam were involved in the trade, too. The first Dutch contacts with the Baltic economic life may also have taken place in Hamburg, because the ships from Prussia and Livonia did not manage to transport bulky commodities, such as wheat, timber, tar, pitch, and potash. In the middle of the 14th century vessels from Holland were loading these commodities in the eastern parts of the Baltic region.⁷⁴ Dutch shippers also maintained cargo traffic between the ports of the Baltic Sea, though there was the ban for the western shippers to operate within the Baltic. The merchants of Lubeck were using these shippers e.g. in the route from Lubeck to Stockholm. The tramp traffic for the Hanseatic towns taught the Dutch how to operate in the Baltic. They also adopted the system of a joint ownership of the vessel, which was common among the Hanse towns.⁷⁵ It was documented in 1352 in Kampen, where some shippers took a partnership loan to finance their shipping in the Baltic Sea.⁷⁶

The Hanseatic methods to finance the trade were also adopted by the Dutch in the 14th century. In the case of trade credit the usual habit was to fix a date and place for the debts to be settled. Quite often it

happened during some religious feasts in Bruges, which was a centre of such transactions. For instance, in August 1350 Symon Verragher senior, Symon Verragher junior, and Willekinus vor Greten, burghers of Zutphen, agreed to pay their debts of 120 golden shillings to Peter Kremer, consul of Rostock, to Kremer's representant in Bruges *in proximo festo purificationis marie nunc affuturi* (i.e. 2, February) in 1351.⁷⁷ Several documents described the continuous commercial relations between Dutch traders and the burghers of the Eastern Hanseatic towns already in the middle of the 14th century.

In the beginning of the 14th century the Hanseatic League was so superior in the Baltic trade that the towns did not have to worry about the petty competitors who occasionally visited the Baltic ports. Non-hanseatic traders were treated the same way as merchants from other Hanseatic towns.⁷⁸ However, the traffic of aliens grew rapidly from the middle of the 14th century onwards. English, Flemish, and Dutch traders were a threat to the profits of the Hanseatic merchants, and the League had to do something. E.g., in 1361 Lubeck wrote to Reval and stressed the importance of measures against the non-hanseatic merchants, especially the ones from the Zuiderzee area and Flanders, who were trading in a Hanseatic town and who did not pay the dues.⁷⁹

2.5. "MARE CLAUSUM" - HANSEATIC EFFORTS TO MONOPOLISE THE BALTIC SEA

In the beginning of the 14th century the Dutch and Hanseatic towns often blamed each other for omissions of taxes and duties, capture of ships, harassment of trade and confiscation of the goods. For instance, in the 1350s Kampen waged war against Stralsund, Rostock and Wismar. The truce was made in 1353 and Kampen returned the goods belonging to Stralsund.⁸⁰ It was everyone's advantage to trade in peace. Yet, such quarrels happened so often that the traders usually sailed in convoys.

In 1360s the Hanseatic League got a serious stroke to the whole trading system. King Waldemar IV Atterdag pressed the Hanseatic League to pay him 4000 marks for the privileges in the Skania fishing grounds in 1361⁸¹, and attacked and plundered the staple town of Visby. It took only six weeks to conclude a confederation of the Hanseatic League, Norway, Sweden, Holstein and the German Order.⁸² The king of Denmark managed easily to tear apart the first confederation and the belligerents made an "eternal" peace in 1365.⁸³

The King of Denmark tried to gain more customs incomes by supporting the trade of Dutch and Prussian towns, which were trembled underfoot by the restrictions of the

Wendish Hanse towns, but the ally between the Prussian and Dutch towns only mobilized the Hanseatic League into another effort.⁸⁴ On 11 November 1367 the Confederation of Cologne was settled, and the Dutch and Prussian towns participated in the campaign against Waldemar.⁸⁵ Lubeck promised to pay over one quarter of the expenses.⁸⁶ By 1370 the confederation had won and the peace of Stralsund was made. The control over the fortresses Skanor, Falsterbro, Malmo and Helsingborg was given to the Hanseatic League.⁸⁷ The Hanseatic League could now supervise the traffic in the Danish straits. The League used this advantage for its commercial benefit and tried to restrict the non-Hanseatic traders access to the Baltic.⁸⁸

The Hanseatic League had good measures to build a "mare clausum" in the Baltic area. In 1376 the Hanseatic dominance was also stretched over Norway, when the treaty of Kalundborg gave them the trade monopoly there. Also the Dutch towns Kampen and Amsterdam had sent their representatives, and some other towns had authorized Amsterdam and Kampen to represent them in the negotiations.⁸⁹ Anyway, Lubeck took the dominating position after the negotiations and also in practice controlled the dues collected in the Danish Straits. In Marienburg on September 29th, 1376 the disputes between Lubeck and other Hanseatic

towns were settled.⁹⁰ The unity of the Hanseatic League was saved, but the forthcoming years showed that competition between towns made it difficult to keep the order, when the interests of towns clashed.

The Dutch traders appeared in Prussia in the beginning of 1370s with Flemish, English, and Dutch cloth; fish from their own fisheries, wine, and especially salt which they brought from the Loire estuaries.⁹¹ They were after the Baltic commodities which the Dutch shippers had already been transporting for the Hanseatic League. Yet, the Hanseatic towns of South East Baltic area were not interested in the newcomers, especially because they had been organising the trade to Western Europe themselves. The Danzig merchants had organised and financed timber acquisition from Poland, and already in 1378 Danzig was an official staple to some types of timber meant for export.⁹² Danzig had a very large area of acquisition, because the "hinterland" of it was the waterway of the Vistula, which was the route to the Carpathian mountains, too. The lands of the Teutonic Order even supplied sawn timber at the very same year in 1379.⁹³ Also the merchants from Cracow sold forest products like pitch and ashes to Flanders as early as the 14th century.⁹⁴ It is obvious that the merchants wanted to keep the profits to themselves.

The total volume of the timber trade is impossible to trace, but e.g. in 1374 an inventory document from Königsberg mentions 108,000 pieces of waynscot, which the Teutonic Order did not manage to sell. In 1392 another inventory document informs that 252,000 pieces of waynscot were ready for shipment, and in 1397 273,600 pieces of waynscot were stored for export in Danzig.⁹⁵ These documents concern only the export of the Teutonic Order and the amount of waynscot in these documents is quite high if we compare it to the volume in the 16th century. For example, the highest yearly figure in 1566 in the Sound Toll Records is 527,100 pieces of waynscot.⁹⁶ The territories of the Teutonic Order were not the only areas to acquire waynscot.

The Hanseatic trade to Western Europe grew effectively from 1392 when the Hanseatic League had stabilized its relations to Flanders and with the Russians. The great eastern trade area consisted of Northern and Western Russia, Lithuania and Poland, where the population was scarce, but raw materials abundant. Furs were the greatest in value, but also the forest products, such as timber, ash, tar, and pitch gained an important position.⁹⁷ The rivers emptying into the Baltic Sea from the South were transport routes for timber products even though customs duties were an encumbrance. In 1390

Vladislav II, King of Poland and Lithuania, granted German traders a privilege for trade in Poland with the provision that the trading route is the Warthe, a tributary of the Oder. The privilege extended up to Cracow. The river, however, does not extend that far, but as privilege otherwise gave customs duties for exported timber and other forest products, this fact was an indication of the possibility that the acquisition area of the Hanseatic towns mentioned extended all the way to the Carpathian mountains.⁹⁸

The Hanseatic towns found soon that the servant wanted to be the master. Foreign shippers started to trade on their own behalf and the Hanseatic League had to develop several measures to restrict the competition. In the end of the 14th century the Hanseatic League banned sailing during winter⁹⁹, in the spring 1403 the Prussian towns threatened the Dutch merchants with arrests¹⁰⁰, and in 1417 the Hanseatic towns banned the grain transport with Dutch ships.¹⁰¹ It was also forbidden to sell ships to non-hanseatic customers, and the Dutch were not allowed to stay in Livonia, or to study the Russian language.¹⁰² One of the most important destinations in the Baltic area for the Dutch merchants was Danzig, an important port of shipping for timber and forest products, but Danzig was especially eager to prevent their passage.¹⁰³ It was not

only the existence of the competitors that irritated the Hanseatic League. Dutch shippers sailed to small harbours and traded directly with the landowners though the Hanseatic League had banned this in 1417.¹⁰⁴ In direct trade the loser was the Hanseatic merchant who did not gain his profit.

The Dutch ports were free of ice earlier than the harbours in the Baltic. Therefore the Dutch had an advantage to start the sailing season earlier in the spring. Yet, this was not an advantage if the Dutch did not have anything else to promise. But they had. It was the price competitiveness, which was especially true with the most needed commodity in the Baltic area, i.e. salt. The Bay salt was cheaper than the salt from the mines of Lüneburg which the Hanseatic League had traditionally been selling in the Baltic area.

The Hanseatic League was also on tiptoes because of the competition of the Dutch herring fisheries in the North Sea. Traditionally the fish to the Baltic was brought from the Skania fisheries. The importance of this trade e.g. to Lübeck is clearly shown in the customs lists of 1368. Herring is the second in importance after the textiles, making 15 per cent of the value of Lübeck's sea trade.¹⁰⁵ Around 1400 the Dutch introduced a new ship type, *haringbuis*, where

the fish was cleaned, salted and conserved on the spot. In 1416 the Dutch also started to use a big drag net in fishing and the hauls increased remarkably.¹⁰⁶ This gave the Dutch great advantages in the herring trade. The *haringbuis* stayed on the fishing ground the whole fishing season and smaller vessels were used to transport the casks ashore. The need for new fishing vessels and also the need for casks stimulated the demand for forest products. There is information about the acquisition of timber and other forest products from Norway and the Baltic Sea by the Dutch from the very beginning of the 15th century, but thereafter it does not show any increase. The Hanseatic restrictions were an important reason for this, but it was also a question of diminishing demand in the west.

Competition between the Wendish towns of Hanse and the Dutch led to a war, in which Amsterdam and Lubeck were the principal belligerents,¹⁰⁷ though a great confederation was involved on both sides. The Dutch began hostilities in April 1438 claiming that the enemies were only the duchy of Holstein and the towns of Hamburg, Lubeck, Rostock, Wismar, Stralsund and Lüneberg. Yet, in spite of the declared neutrality of the Prussian towns, 22 or 23 Prussian ships returning from the Bay were seized in the early stages

of the war. The blockade of the Sound by the Dutch in the western side to the straits and by the Wendish towns in the eastern side of the straits caused the blocking in the trade. The confiscation of the Prussian and Livonian ships also caused a ban for the Dutch trade in Danzig.¹⁰⁸

In 1441 the Prussian towns managed to arrange a peace conference in Copenhagen.¹⁰⁹ In the peace treaties of Copenhagen Dutch towns promised to pay or return the 22 lost ships of Prussian and Livonian towns¹¹⁰ and pay 5,000 Rhinish guildens to the Danish king for the continuity of previous privileges in Denmark.¹¹¹ With the Wendish towns there was an armistice agreement of 10 years. The Dutch had to pay the damages they had caused to the Wendish towns¹¹², but the Baltic Sea was open to Dutch traders.

Yet, the preserved documents show that in spite of the formal armistice there was an ever-growing flood of claims against both parties. Seizures of goods and ships and claims of breaking the staple rules were constant. Freedom to trade in peace was worth the piece of paper and the Wendish Hanse continued their efforts to control the Baltic trade.¹¹³ Especially the Danzig merchants were bitter towards the Dutch. They were afraid of losing their position as the middlemen in

the trade between the buyers and producers. Some regions, e.g. Birkenau and Thorn wanted to trade directly with the Dutch, because free trade could have given them better profits. This quarrel also pressed down the prices of commodities, among them the price of timber and other forest products. In 1443 Dutch ships were seized in Danzig and the shippers and sailors were arrested.¹¹⁴

Notes to chapter 2:

¹ Bosscher, Philippus Meesse, "... except through the Agency and Intermediary of the Aforementioned Sea ...", Some Observations on the Development of Dutch Sea Power and the Diffusion of Dutch Influence in North-Western Europe, in *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985, p. 98.

² Vlekke, Bernard H. M., *Evolution of the Dutch Nation*. Netherlands 1963, p. 37.

³ Blok, P. J. Germany, 1273-1313, in: *The Cambridge Medieval History Volume VII, Decline of Empire and papacy*. Cambridge 1964 p. 85.

⁴ Daenell, Ernst, *Holland und die Hanse im 15. Jahrhundert*, *Hansische Geschichtsblätter* 1903, p. 4.

⁵ Oppermann, Otto, *Opmerkingen over Hollandsche Stadsrechten der XIIIe Eeuw, met een Aanhangel over de Wording der Legende van St Jeroen*, *Bijdragen van het Instituut voor Middeleeuwse Geschiedenis der Rijks-Universiteit te Utrecht*, Utrecht 1923, p. 22.

⁶ Vollbehr, Friedel, *Die Holländer und die Deutsche Hanse*, *Pfingstblätter des Hansischen Geschichtsvereins*, Blatt XXI., Lübeck 1930, p. 6.

⁷ Struick, J.E.A.L., *De Hanze en de Nederlanden*, in *Spiegel Historiaal* nr. 9, 1974, p. 667.

⁸ Struick 1974, p. 665.

⁹ Houtte, J.A. van, *An Economic History of The Low Countries 800-1800*, London and Edinburgh 1977, p. 45.

¹⁰ Gutkind, E.A., *International History of City development, Volume VI, Urban Development in Western Europe: The Netherlands and Great Britain*, New York 1971, p. 60.

¹¹ Houtte 1977, p. 92.

¹² Struick 1974, p. 665.

¹³ Houtte 1977, p. 89.

¹⁴ Postan, M.M., *Medieval Trade and Finance*, Cambridge 1973, p. 100.

¹⁵ *Hansisches Urkundenbuch*, Hrsg. vom Verein Für Hansische Geschichte, bearbeitet von Konstantin Höhlbaum, Karl Kunze und Walther Stein, Halle, Munich and Leipzig 1876-1916) I, p. 300.

¹⁶ Latham, Bryan, *Timber, Its Development and Distribution, A Historical Survey*, London 1957, p. 24.

¹⁷ HUB I, nr. 992.

¹⁸ Buis, Jaap, *Historia Forestis, Nederlandse bosgeschiedenis I, Bosgebruik, bosbeheer en boswetgeving tot het midden van de negentiende eeuw*, Utrecht 1985, p. 223.

¹⁹ Buis 1985 A, p. 228-232.

²⁰ Jansen, J.C.G.M. & van de Westeringh, W., *Dat Ging over zijn Hout, Overmatig gebruik van bossen in het Zuiden van Limburg van de Hoge Middeleeuwen tot in de 20e Eeuw, Studies over de Sociaal-economische Geschiedenis van Limburg* 28, 1983, p. 24-26.

²¹ Jansen & van de Westeringh, 1983, p. 32.

²² Jansen & van de Westeringh 1983, p. 53.

²³ Houtte 1977, p. 39-46.

²⁴ Struick 1974, p. 665.

²⁵ Ellmers, Detlev, *Frisian and Hanseatic Merchants sailed the Cog*, in: *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, editors: Arne Bang-Andersen, Basil Greenhill, Egil Harald Grude, Oslo 1985, p. 90-91.

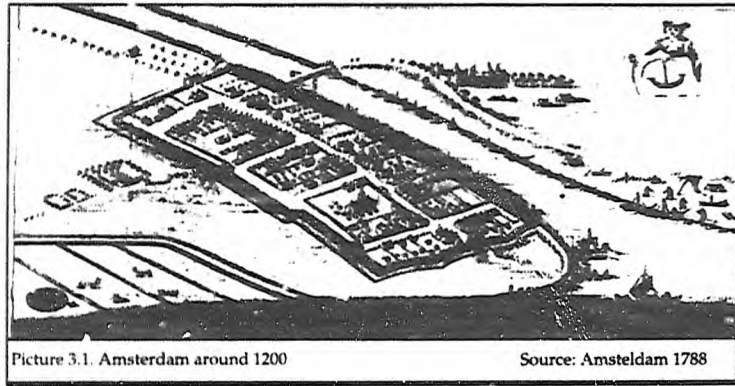
²⁶ Daenell 1903, p. 4.

²⁷ Bronnen tot de Geschiedenis van den Oostzeehandel. Verzameld door H.A. Poelman, *Eerste Deel 1122- 1499*, 'S-Gravenhage, 1917, p. 1. translation: gave to the merchants of Lubeck and Hamburg, with their merchandise, protection in his lands and granted an exemption of custom duties.

- ²⁸ Spading, Klaus, *Holland und die Hanse im 15. Jahrhundert, Zur Problematik des Übergangs vom Feudalismus zum Kapitalismus*, Weimar 1973, p. 1.
- ²⁹ HUB I nr.436.
- ³⁰ HUB I, nr. 573.
- ³¹ BGO p. 6.
- ³² Houtte 1977, p. 45.
- ³³ BGO p. 8.
- ³⁴ Houtte 1977, p.95.
- ³⁵ Daenell 1903, p. 7; Struick 1974, p. 667.
- ³⁶ HUB I, nr. 992.
- ³⁷ HUB I, nr. 1033. informs the types of timber: een cleen hondert sparren 4d. Holl., Elc hondert kercsparren 12d. Holl., Enen cleinen mast 2.d Holl., enen groten mast 9d. Holl., eenen kocghenmast 4s. Holl.
- ³⁸ Vogel, Walther, *Geschichte der deutschen Seeschiffahrt*, I Band, Von der Urzeit bis zum Ende des XV. Jahrhunderts, Berlin 1915, Reprint Netherlands 1973, p. 232.
- ³⁹ Buis, Jaap, *Historia Forestis, Nederlandse bosgeschiedenis II, Houtmarkt en houtteelt tot het midden van de negentiende eeuw*, Utrecht 1985, p. 505-513.
- ⁴⁰ Bugge, Alexander, *Den Norske Trælasthandels Historie, I, Fra de Ældste Tider Indtil Freden i Speier 1544*, Skier. 1925, p. 120.
- ⁴¹ Bugge 1925, p. 121-122.
- ⁴² Houtte 1977, p. 56.
- ⁴³ BGO, p. 8.
- ⁴⁴ HUB II, nr. 18.
- ⁴⁵ Bouma, H.H., *De Hanze en Zwolle, Spiegel Historiae*, nr.15, 1980, p. 387-390.
- ⁴⁶ BGO, p. 32.
- ⁴⁷ Bronnen voor de geschiedenis der dagvaarten van de Staten en steden van Holland voor 1544, deel I: 1276-1433, tweede stuk: Teksten, bewerkt door W.Prevenier en J.G. Smit, 's-Gravenhage 1987, p. 37.
- ⁴⁸ Struick 1974, p. 668.
- ⁴⁹ HUB IV nr. 234 and HUB V nr 379.
- ⁵⁰ Bugge 1925, p. 204.
- ⁵¹ Daenell 1903, p. 4.
- ⁵² *Amsterdam en zyne Geschiedenissen*, in 't kort., Eerste deel, Amsterdam (Johannes Allart), 1788, p. 22.
- ⁵³ Lloyd, T.H., *England and the German Hanse, 1157- 1611, A study of their trade and commercial diplomacy*, Cambridge 1991, p. 41-42.
- ⁵⁴ Campbell, Tony, *Portolan Charts from the Late Thirteenth Century to 1500*, in *The History of Cartography, Volume I, Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, edited by J.B. Harley and David Woodward, Chicago 1987, p.411.
- ⁵⁵ Von den Brincken, Anna-Dorothee, *Die Kartographische Darstellung Nordeuropas durch Italienische und Mallorquinische Portolanzeichner in 14. und in der Ersten Hälfte des 15. Jahrhunderts*, *Hansische Geschichtsblätter*, 92, 1974, p. 53.
- ⁵⁶ Dollinger, Philippe, *The German Hansa*, Bristol 1970, p.142-143.
- ⁵⁷ Houtte 1977, p. 91.
- ⁵⁸ Houtte 1977, p. 39.
- ⁵⁹ BGO, p. 3. (nr.11); Struick 1974, p. 665.
- ⁶⁰ Houtte 1977, p. 91.
- ⁶¹ BGO, p. 11.
- ⁶² Ellmers 1985, p. 94.
- ⁶³ BGO p. 16.
- ⁶⁴ Dollinger, Philippe, *Die Bedeutung des Stralsunder Friedens in der Geschichte der Hanse*, *Hansische Geschichtsblätter*, 88, Teil I, 1970, p. 151.
- ⁶⁵ Houtte 1977, p. 96.
- ⁶⁶ BGO, p. 15.
- ⁶⁷ BGO p. 16-21.
- ⁶⁸ *Hanserecessen, Die Reccesse und andere Akten der Hansetage von 1256-1430*, Band I, Leipzig 1870, Reprinted in Hildesheim 1975, p. 181.
- ⁶⁹ BGO, p. 18.
- ⁷⁰ BGO, p. 16.
- ⁷¹ Houtte 1977, p. 92-96.
- ⁷² Friedland, Klaus, *Dänemark 1350-1650, Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts, Stuttgart 1986, p. 463.
- ⁷³ HUB III nr. 499.
- ⁷⁴ Don, Johann, *Das niederländische Kampen als althansische Schiffarts- und Reederstadt - eine Parallelfall zu Bremen*, *Bremische Jahrbuch* nr.51, 1969, p. 69.
- ⁷⁵ Koppe, Wilhelm, *Lübeck-Stockholmer Handelsgeschichte im. 14. Jahrhundert*, *Abhandlungen zur Handels- und*

- Seegesichte im Auftrage des Hansischen Geschichtsvereins* Herausgeben von Fritz Rörig und Walther Vogel, *Neue Folge der Abhandlungen zur Verkehrs- und Seegeschichte* Herausgeben von Dietrich Schäfer, Band II, Neumünster 1933, p. 16-17.
- ⁷⁶ BGO, p. 43.
- ⁷⁷ BGO, p. 43.
- ⁷⁸ Daenell, E, *Die Blütezeit der Deutschen Hanse, Hansische Geschichte von der zweiten Hälfte des XIV. bis zum letzten Viertel des XV. Jahrhunderts*, Berlin 1905, Reprint Berlin-New York 1973, p. 60-61.
- ⁷⁹ BGO p. 54.
- ⁸⁰ BGO, p. 45.
- ⁸¹ Weiner, M.A., *The Hansa, in the Cambridge Medieval History, Volume VII, Decline of Empire and Papacy*, Cambridge 1964, p. 221.
- ⁸² BGO, p. 62-63.
- ⁸³ Dollinger 1970 B, p. 151.
- ⁸⁴ BGS, p. 241.; Weiner 1964, p. 222.
- ⁸⁵ HR I, p. 372.
- ⁸⁶ HR I p. 428-430.
- ⁸⁷ HR II, p. 35-36.
- ⁸⁸ Daenell 1973, p. 89.
- ⁸⁹ HR II, p. 135-136.
- ⁹⁰ HR II, p. 149-153.
- ⁹¹ Houtte 1977, p. 96.
- ⁹² Kuhn, Walter, *Geschichte der Deutschen Ostsiedlung in der Neuzeit*, 1. Band, Das 15. bis 17. Jahrhundert, Allgemeiner Teil, Köln 1955, p.178.
- ⁹³ Mager, Friedrich, *Der Wald in Altpreußen als Wirtschaftsraum*, I. Band, Köln 1960, p. 263.
- ⁹⁴ Kuhn, 1955 A, p.179.
- ⁹⁵ Mager, Friedrich, *Der Wald in Altpreußen als Wirtschaftsraum*, II. Band, Köln 1960, p. 11.
- ⁹⁶ Bang, Nina Ellinger, *Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660*, Anden Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, p. 66.
- ⁹⁷ Daenell 1973, p.89.
- ⁹⁸ HUB IV nr. 1034.
- ⁹⁹ Houtte 1977, p.96.
- ¹⁰⁰ Lloyd 1991, p. 114.
- ¹⁰¹ BGO, p. 236.
- ¹⁰² Houtte 1977, p. 96.
- ¹⁰³ HUB V nr. 659
- ¹⁰⁴ Snapper, F. *Commerce, ships and war in the Baltic from the rise of the Hanseatic League till the French Revolution*, in *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 415.
- ¹⁰⁵ Dollinger 1970 B, p. 150
- ¹⁰⁶ Unger, Richard W., *Dutch Shipbuilding before 1800*, Assen & Amsterdam 1978, p. 29.
- ¹⁰⁷ BGO, p. 414-415; Lloyd 1991, p. 174.
- ¹⁰⁸ Lloyd 1991, p. 222.
- ¹⁰⁹ BGO, p. 420.
- ¹¹⁰ BGO, p. 418.
- ¹¹¹ BGO, p. 418.
- ¹¹² BGO, p. 418
- ¹¹³ Daenell 1903, p. 25.
- ¹¹⁴ BGO, p. 471-472.

3. THE BREAKTHROUGH IN THE BALTIC FROM THE END OF THE 15TH CENTURY



3.1. THE RISE OF AMSTERDAM AND THE ZUIDERZEE REGION

Bruges had been the trade centre of the north-south trade from the 14th century onwards. The efforts of the counts of Holland to support Dordrecht as the trade centre had been in vain. The flood of 1421 made Dordrecht an island in an inner sea of water and morass. Therefore Dordrecht lost its favourable situation as the main route from Holland to Brabant and the town declined.¹ For instance, when the Hanseatic League had a new blockade against Flanders in 1451-57, the staple was not transferred to Dordrecht as was the case before. Instead the staple was at first located officially in Deventer and after that in Utrecht, but the merchants chose Amsterdam as the trade centre.² There are several reasons for the change.

Traditional staple towns were specialists in the trade on expensive commodities that needed a lot of capital and were relatively easy to handle. Bulky products like grain and timber brought only low profit, and the flow of these commodities demanded a totally different organisation compared to the luxury trade. In Amsterdam, the town council managed to take care of the merchants' interests and get several duty and customs exemptions or reductions very early. For example, in 1360 Amsterdam was bought free from the toll of Wassenaar. Amsterdam was also involved in the herring fisheries of Skania as early as in 1368.³ Furthermore, Amsterdam was a member of the Hanseatic League, but the growing activity of the town led to a conflict with the Wendish towns, which were afraid of competition.

Therefore in 1396 Amsterdam sent its representatives to the Hanse meeting for the last time.⁴ The town followed its own policy and negotiated bilateral agreements with the regions, e.g. in 1414 Amsterdam gained the privileges to trade in Saxen, Engeren, and Westphalen.⁵ After the Dutch-Hanseatic War Amsterdam's road to primacy in Holland was helped by the privileges gained in 1443 in the trade to Norway⁶ which had previously been monopolized by the Hanseatic League.

The Dutch shippers had worked as sub-contractors and carriers for the Hanse for decades and by using them as carriers Amsterdam had good possibilities to expand its operations quite fast. In Amsterdam several production branches were developed under the influence of the Flemish and German methods in the 15th century. In the town itself there were e.g. weaving works, breweries, soap makers, and also the shipping equipment production flourished. An important difference to the old production regions was that there were no strong and well-organised guilds in Amsterdam, and therefore it was easier for Amsterdam to adopt and develop new effective production methods. The diffusion of tasks in production had also started during the 15th century and the town could concentrate on the most profitable activities.⁷

The resources of Amsterdam were still limited in the 15th century, and in the first decades of the 16th century. It could not gain the dominance in all branches of production. The other parts of the Northern Netherlands could develop their economy in spite of the slowly emerged dominance of Amsterdam. For example, in 1514 Leiden was the centre of the textile industry in which the yearly production of cloth was bigger than the total volume of the three next biggest centres, Amsterdam, Haarlem and Naarden together. Also in beer export Amsterdam had only a minor share compared to Haarlem, which was the most important brewing town in the Netherlands.⁸ The same was true with fishing vessels and bulk-carrying ships, which were split all over the Northern Netherlands in small ports.⁹ Yet, this decentralisation and specialisation was not a disadvantage. The development in the future showed that the provincial co-operation helped the development of the whole Dutch economy.

The specialisation was especially important in the bulk products' trade. It was not possible to handle the voluminous flow of commodities alone. Amsterdam and its neighbouring ports were not afraid of splitting the job. Instead of concentrating all the activities on one town, there are indications that along the west coast of the Zuiderzee there was a certain division of tasks

between the ports. Some products never came to Amsterdam, because it was easier to handle them at the regional ports. Forest products were an example of this. Large quantities of wood were used in shipbuilding and construction industries, but the construction and maintenance of dikes also required a constant supply of timber.¹⁰

There is also another reason why Amsterdam's success supported the growth of the neighbouring towns of the Waterland area. In 1477 the town council gave an ordinance that ships registered in Amsterdam had to load and unload there. Therefore the merchants of Amsterdam invested in ships registered outside of Amsterdam.¹¹

The remarkable thing about the trade privileges Amsterdam had been searching for was that they were not meant to support only the trade of luxuries. The structure of the Dutch trade differed radically from the traditional Hanseatic trade and the trade of Antwerp. The Northern Provinces concentrated on cheap and bulky basic commodities which needed more ships, more sailors and more shipping services.¹² Amsterdam used the possibility left to it by the traditional merchants towns, which were not interested in investing on such business that demanded specialisation and rationalisation in order to transport the bulky products

cheaply.¹³ Leading merchants of Amsterdam targeted their interests in the simple transaction in goods. They started first in the beginning of the 16th century with the corn-market; long before the establishment of the Amsterdam exchange quotation of prices exceeded the importance of money and ships as the principal medium in Dutch businessmen's operations.¹⁴

What was good for Amsterdam was probably not always good for the other parts of the Northern Provinces. In the 16th century the import to smaller ports like Hoorn and Harlingen consisted mainly of the bulky goods, such as timber and cereals, but the situation had been totally different earlier. Before the rise of Amsterdam these small towns had developed their own trading systems and business connections. Hoorn is a good example of these towns that lost their diversified economic structure and almost became servants of Amsterdam. Timber and timber products to Hoorn were brought from Norway and from the Baltic area. As early as in 1391 a trader from Hoorn visited Danzig together with some other Dutch merchants,¹⁵ and in 1390 and 1391 they were selling waynscot to England, among other more valuable commodities, like several types of cloth.¹⁶ During the 15th century Hoorn was a local trade and production centre in West Friesland.

The inhabitants of Hoorn were involved in textile weaving, fishing, shipping, and trade. In 1477 there were about 6,500 inhabitants and together with the neighbouring villages it had a fleet of almost 150 small and big vessels.¹⁷ The downfall begun at the very end of the 15th century, because these small towns like Hoorn did not have the required capital to invest in trade and they had to operate with cheaper commodities. The more valuable goods were mainly imported to Amsterdam which was the distribution centre for the other cities in the Zuiderzee region. Anyhow, Amsterdam did not become the crushingly dominating centre of the whole region, because the other parts of Holland and Zeeland could participate in decisions.¹⁸ The merchants were ready to split the job and invest in the smaller towns, but this was not enough for the city authorities of Amsterdam, who were alarmed by the flow of capital outside the town.

By strictly prohibiting Amsterdam's citizens to be owners of the ships commanded by Waterland skippers Amsterdam managed to suppress the neighbouring towns, but as a whole the city authorities did not manage in their aims. According to the Sound Toll Records, in the 1530s the proportion of Low Countries' ships with their home port in Amsterdam and crossing the Sound had risen from 12 per cent around 1540 to

Alunau wiaia?
- wauit / lul
- wiaia

17 per cent around 1565, while the share of the town's immediate surroundings declined from 44 to 17 per cent. Therefore the restrictions of the authorities in Amsterdam also helped the other regions of Northern Provinces to get a larger share of the traffic. A lot of shipowners avoided to move to the expensive Amsterdam and chose North Holland, where the share of traffic rose from 23 to 33.5 per cent. Also the ports of the right-hand shore of the Zuiderzee made a remarkable revival, from 16.5 per cent to 27 per cent. Ships from Zeeland made the rest of the crossings.¹⁹

The decentralisation of the shipping and trade activities is a new phenomenon, which also partly explains the success of the Northern Provinces. It was not only a decentralization of the activities, but the structure of the entire economic life that helped this success. There were no great merchants, and therefore the small capitals had to be put together. For example, a ship could have been divided into 64 shares in the Northern Provinces, which is a high number compared to the Hanseatic or Flemish towns where there were no more than 3 or 4 owners at the maximum.²⁰ This also reduced the risks of the partners who could have invested in several ships.²¹ For the first time in history a lot of the small investors had nothing to do with the sea. They just considered the ship's shares profitable for investing

with seat

?

their savings.²² The risk of losing one's wealth in a shipwreck was also smaller, when the capital was divided into several investments. The joint-ownership worked as a primitive form of insurance, because the maritime insurance had not yet been developed.²³

The economic activities were one side of the coin, the concentration of capital the other. The production of commodities, shipping, and all other branches of economy were placed in several towns and villages, but in case of the capital needed to the trade there was only one address, Amsterdam. The information of Dordrecht, the only possible competitor to Amsterdam in the Northern Provinces is missing in the statistics concerning the tax on merchant capital in 1543, but Dordrecht had lost its economic gravity in the middle of the 15th century and therefore it could not reach the sums levied to Amsterdam's merchants who paid 194,000 florins in taxes. The next biggest tax was collected in Middelburg, where the merchant capital was taxed with 33,000 florins, far less than Amsterdam.²⁴

3.2. THE END OF "MARE CLAUSUM" IN FOREST PRODUCTS' TRADE

King Kristoffer confirmed in Copenhagen 23 November 1447 the merchants from Holland, Zeeland, and Friesland the same privileges as his predecessors had given,²⁵ and in 1453 the Danish king allowed the

traders from Holland and Zeeland to sail without any restrictions through the Sound if they just paid the duties and did not transport English commodities.²⁶ Even the Hanseatics were giving up little by little. In 1474 Dutch traders were released from the Hanseatic order to trade only with the staple of Bruges.²⁷ Also the Hanseatic monopoly in Norway ended in 1483.²⁸ The gates were open for the Dutch invasion, which then occurred during the last decades of the 15th century.

For several reasons there was a delay in the flow of Dutch merchants to the Baltic. The population of Western Europe had diminished because of famines caused by three bad harvests in 1437-39,²⁹ and the demand for grain in the West was limited. Besides the payment of war indemnities restricted the purchasing power.³⁰ Moreover, the extremely high prices due to the war and depression in the Dutch textile production were hindrances to the Baltic trade.³¹ The shippers did not have the same problems as the merchants, because they could work also for the other traders who needed cargo capacity. Therefore they were the first ones to start.

There were several areas in the Baltic region which supplied forest products to the west during the 15th century. In Prussia there was oak, beech, and pine, brought mainly from

the duchy of Mazovia, floating down the rivers Memel, Bug, and Vistula. Ash and yew came from the Carpathians. Anyway, Danzig was the most important loading port at that time, and the steadily increasing demand for timber in the west seems to have caused increased felling and traffic until about 1450. There are figures only for the second half of the fifteenth century and they just tell the total numbers. In 1460 Danzig was exporting 3,161 hundreds of planks, in 1475 2,160 hundreds and in 1499 only 1,466 hundreds. Over the same period the volume of boards fluctuated between 265 and 400 hundreds. These figures suggest that the Prussian timber trade was already declining in the 15th century. In contrast, the by-products of the Polish forests appear to have enjoyed an ever-increasing demand. Perhaps the most important were ashes. During the same period exports exceeded 1,000 lasts, and they increased considerably in the 16th century. The production of pitch and tar, used in caulking, was not quite so high, because together these commodities reached 1,000 lasts.³²

The Dutch share of the forest products' export from Danzig in the first decades of the 15th century could not have been very impressive, because the Danzig merchants themselves were shipping timber as far as Portugal, where there was a constant need of ship-building

material. The Danzig ships also brought timber and ashes to France and they brought several types of timber, ashes, pitch and tar to England, too. They even shipped forest products to the Netherlands. Merchants of Danzig controlled the forest products' acquisition effectively, because they even had their own purchasing office in Kolno on the territory of the German Order. The profits of the forest product trade were high, e.g. one great hundred of clapboards had a price of a bit over 7 marks in Danzig, but in England the price was 34 marks in the beginning of the 15th century.³³ In the 15th century the Danzig merchants had good prospects for the trade of ashes, because, in 1457, king Casimir II gave the privilege to bring ashes from Poland, Lithuania, and Russia without paying any duties. In practice the privileges included also other forest products.³⁴ The profits made it possible for the Danzig merchants to invest in shipbuilding, which was one of the most profitable branches in the 15th century in Danzig.³⁵

The Dutch role in the Danzig export trade can be indirectly traced from the preserved lists of customs revenues concerning Danzig's imports in the second half of the 15th century. In 1460 only 13 Dutch ships brought goods to Danzig and their share of the value in total import was only 1.8 per cent, but since then the rise was constant. According to Klaus

Spading, in 1468, there were 16 ships visiting Danzig, in 1470 18, in 1471 55, in 1472 45, in 1474 14, in 1475 38 in 1476 120, but in 1488-89 already over 400 ships, which brought over 50 per cent of the total imports of Danzig.³⁶ However, we can not be sure about the exact number of ships. For instance, in 1474, – according to Friedel Vollbehr – there were 23 ships visiting Danzig and in 1476 156.³⁷ Whatever the exact number, the fact remains the same. Dutch trade developed extremely well in the last decades of the 15th century. The most important commodity the Dutch purchased from Danzig was grain, but it is possible that some of the ships also brought forest products on a return cargo. The value of the trade is, however, impossible to trace. We must also remember that only some of these ships transported the goods of Dutch traders. The shippers were often working for the Danzig merchants.

While the Dutch merchants could not properly compete with the timber staple of Danzig in the middle of the 15th century, the shippers could. In forest products trade the freight expenses were relatively high compared to the value of the cargo. For example, the statistics collected by Walther Vogel indicate that the freight rate for timber shipped from Danzig to Flanders or to England in the 15th century varied from 22 per cent to even 135 per cent of the loading

price of timber in Danzig.³⁸ Forest products were also bulky commodities and a lot of cargo capacity was needed. The Dutch had built a great fishing fleet and these ships were suitable also for the cargo. The shippers were unemployed many months of the year because of the limited fishing season; they could seek extra income by transporting the commodities to the Western markets.³⁹ The competition of the shippers pressed the freight rates down. The low fares of the Dutch shippers was a severe threat to the Hanseatic League, and they tried to stop the competition by deciding in 1461 that the Hanse towns were not allowed to transport goods on non-hanseatic vessels.⁴⁰

The negligible performance of the Dutch traders in the 1460s and the first years of the 1470s has yet another issue worth pointing out. The previously mentioned Hanseatic League's decision in 1461 to ban the shipping of goods on non-hanseatic ships was renewed in 1470 together with other restrictions. In 1472 the restrictions were directed especially towards the Dutch.⁴¹ The armistice from 1443 also run out without a renewal in 1471 and officially the Dutch were in war against the Wendish Hanse towns though the belligerents did not fight openly, because the Hanseatic side was at the same time waging a war against England.⁴² Anyway, it took eight

years altogether, until 1479, before the diplomacy of the Burgundian house made it possible to renew the treaty for 24 years.⁴³ Therefore in 1470s the risk of loosing the cargo was high because of the seizures.

Danzig held an important position in the forest products' trade in the middle of the 15th century, but the competition was getting harder. Norwegian timber trade in Bergen was opened to the Dutch towns as early as in the 1440s⁴⁴, but also other towns of South Eastern area of the Baltic Sea were thronging to the market. The rivalry between Danzig and the towns of the Teutonic Order was connected with the Dutch, because the Dutch supplied the Teutonic Order with war material in the 1450s and 1460s. The Dutch were paid by grain and forest products from the Livonian hinterlands. As a result of this the Dutch started to bring forest products through the ports of Königsberg, Memel, Riga, Reval, Dorpat, and Pernau. The Dutch also had the possibility to stay through the winter in these towns and establish direct contacts to the hinterlands.⁴⁵ Local nobility and peasants also established organisations, which sold timber directly to the Dutch.⁴⁶ The seller got a better price and the buyer got the commodities cheaper. The Dutch had a promising position to avoid the Danzig staple and to supply forest products to the west with better

profits. They could even expand their operations on the forest products' trade because of the competitive prices. Forest products were at first hand ment for domestic use, but as early as in the end of the 15th century there are tracks of Dutch re-export. For example, the Dutch had been selling Baltic timber to Scotland where the Crowns accounts in 1496 inform that £ 16 to one Dutchman callit Henri Swanke was paid for 200 Eastland boards.⁴⁷

The acquisition area for forest products moved a bit to the north in the Baltic region during the 15th century, but the transportation costs were a hindrance for the most northern parts of the Baltic region to participate in the forest products' trade. Therefore their role was negligible during this era. The immense Swedish and Finnish forests had to wait for a while before the felling for the Dutch started. Yet, there are some documents of the Finnish timber export during the 15th century, but the destination was Reval.⁴⁸ The destiny of the famous South-West Finnish barrels used for packing the even more famous Dutch herring remains a mere guess because of the lack of any documentary evidence.

As mentioned earlier, the most important commodity the Dutch purchased in the Baltic region was grain. The soil of the Northern Provinces suited better to forage

crops, like oil cakes, and to horticulture. The rapid growth of population supported the demand of grain as well. The second in importance were the forest products, which both in value and in bulk challenged the grain. Both commodities, grain and timber, were originally bought for instant use, but the comparison William Abel makes between the prices of these products gives a hint that the speculative trade with grain and timber existed as early as in the beginning of the 16th century.⁴⁹ Dutch merchants were eager to trade everything for an adequate profit. The development of Dutch towns gave good prospects for the Baltic trade, because the growing population had to be fed and provided with houses.

3.3. THE HANSEATIC DEFEAT IN THE LIGHT OF THE STATISTICS

The Dutch had been organising their trade system in the 15th century and they had slowly developed the network of commercial routes from east to west and from north to south. The Baltic region was, however, probably the most important piece of this puzzle. The general development in the Baltic area built a framework for the Dutch merchants and shippers, because they were more dependent on the breakthrough in the Baltic than e.g. the merchants of Antwerp to whom Baltic was only one investment among many others. The Dutch had

to get rid of a good many obstacles in their way before the trade could flourish. The Hanseatic League was probably the biggest problem, but also the rulers of the Baltic countries and the English competitors threatened the Dutch success.

It was not only a general competition for primacy, but to Lübeck it was also a struggle for life: to keep its monopoly as the centre of the transit trade by the combined sea- and land-route via Hamburg to Flanders, which the Dutch threatened by using the direct sea-route. In the case of heavy articles resistance on the part of Lübeck was hopeless, but in the case of lighter and more expensive staple goods Lübeck kept its invaluable staple privileges until the 1480s. Due to the lack of sources, it is not possible to estimate how far the change from the land route to the route through the Sound had reached during the 15th century.⁵⁰

However, from 1497 onwards, the possibilities to calculate the importance of the sea-route grows because of the preserved Sound Toll data. It shows clearly that in the passages through the Sound the Dutch had already gained a predominance, as in 1497, 567 ships came from the Netherlands, and only 202 were from Northern Germany.⁵¹ The figures do not, however, give information about the total of the shipping within the Baltic, because a

number of ships that sailed in the Baltic probably never left that sea. Some ships also used the forbidden route through the Belts, but in 1542 some Danish ships were ordered to control these straits and, in 1560 a customs office was established in the Belt.⁵²

There is also another problem, which we have to take into account when trying to get a picture of the volume of shipping. In the Sound Toll data there is the black point that there were a lot of ships which were not registered in the very beginning, because they were duty-free. These boats belonged to the Hanseatic

toll registers in a much larger number, whereas formerly a number got off free. Anyway, the Dutch predominance is clear. Even with only half of the passages, Dutch sailors nonetheless held the chief place, with 1262 yearly crossings of the Sound on an average between 1557 and 1570.⁵³

To get the picture about the volume of the trade we must also compare the cargo capacity of the most important sea-faring nations of the era. It is not an easy task, because the size of the ships was measured in lasts and the last was not a fixed measure. Originally a last was equal to four cartloads, but it varied

Table 3.1. Dutch and German Hanseatic passages through the Sound in 1497-1560

Year	Index numbers		Percentages of total of passages			
	Dutch	German-H.	Dutch	German-H.	Other	In all
1497/1503	100	100	71	25	4	100
1537/1540	137	200	55	28	16	99
1545/1547	130	256	51	35	14	100
1557/1560	177	327	52	34	14	100

Note: Included among the German Hanseatic ships are the heads of the Wendish towns (Hamburg, Lübeck, Rostock, Wismar, Stralsund) and Eastern Hanseatic towns (total areas), which are listed in: Bang, Nina Ellinger, *Tabeller over Skibfart og Varetransport gennem Øresund 1497-1660*, 1. Del, *Tabeller over skibsfarten*, under numbers 11-20, total percentage of 1537/1540 is 99 because of the unused decimals.

towns and when they were left out of the statistics, the share of the Dutch ships looks too large. The following statistics (table 3.1.) give an idea of this development.

The relative loss of the Dutch share is partly explained by the change in the book-keeping of the Sound Toll Registers. The specially privileged Wendish towns were entered in the

according to the commodity.⁵⁴ The mess with the measures does not aid in getting the right picture, but according to *W. Vogel* a quite reliable average can be counted so that a ship of 100 lasts is equal to 133 modern register tons. Using this estimate he has counted the tonnages of the most important merchant fleets of West Europe of the year 1570. According to *Vogel*, the German towns had a

fleet with the total capacity of 110,000 tons, and the Dutch fleet had the capacity of 232,000 tons. Other nations had far less cargo capacity: the English ships with 42,000 tons, Scotland could gather only 10,000 tons and France 80,000 tons.⁵⁵ The figures show that the Dutch fleet was almost as large as the four other fleets put together.

According to the shipping figures in the Sound Toll Records the Dutch mercantile marine was powerful enough to control the exchange of commodities between east and west as far as sea trade was concerned. The competitors were not giving up easily. Especially Lubeck still tried to harass the Dutch trade either by arms, as in 1510-12, 1533-4 and 1542-4, or by persuading the king of Denmark to close the Straits more or less completely from the Dutch shipping.⁵⁶ In some cases the Dutch were not even participating in the wars, but the Dutch ships were stopped, for instance due to the pretext that the Dutch vessels were transporting contraband.⁵⁷ The crossing of Sound was often a risk because of the seizures. For example, in 1537 the Dutch got compensation for the ships Denmark had seized in the Sound.⁵⁸ The Dutch often used the influence of their new master, the emperor, in their negotiations. For instance, in 1537, Charles V ratified a four-year truce between the Netherlands and Lübeck and the extension of the

truce until 1542.⁵⁹ For short periods in the beginning of the 16th century the Dutch were effectively hindered in their trade to the Baltic, but the Treaty of Copenhagen in 1532⁶⁰ and the confirmation of the principles of that treaty at the peace of Speyer in 1544 gave the Dutch a permanent security of free and unhindered passage through the Danish waters.⁶¹

Anyhow, we have to remember that the Hanseatic merchants and especially those of Lubeck did not actually make it any worse in the 16th century compared to their success in those branches where they had succeeded in the 15th century, and the Dutch traders developed their trade in the 16th century within the same fields of activity where they had made well in the 15th century.⁶² The merchants of Lubeck could still control the luxury trade and the Dutch were mainly concentrating on the bulky commodities like forest products and grain.

The sharing of markets must have been clear also for the Hanseatic merchants, but in the middle of the 16th century they made again an attempt to cut down the influence of Amsterdam. The flow of American silver gave Spain the possibility to increase her purchases in the Baltic, and the Hanseatic League tried to cut down the influence of Amsterdam.

A new "factory", was established to Antwerp in 1553, because the one at Bruges had been in decay since the latter half of the 15th century. Yet, the old method of having a compulsory staple was not flexible enough to beat the new trading techniques, and Amsterdam's lead in the Baltic trade only grew. Antwerp managed to export more Flemish and Brabantine manufactures, but the great Scheld market could not survive without the Dutch supplies of Baltic grain and other bulky commodities.⁶³

3.4. THE POLITICO-COMMERCIAL SITUATION IN THE BALTIC DURING THE 16TH CENTURY

The king of Denmark ruled Finland, Sweden and Norway after the Union of Kalmar in 1397. In the beginning of the 16th century the Swedes were rebelling against the Danish rule. The campaign was also

a part of the competition for the economic dominance in the Baltic. In 1520 Christian II, the king of Denmark, proposed soon after the *Stockholm Bloodbath* that Denmark, Sweden and Finland should establish together with the Dutch a Nordic company for the trade in the Baltic area. This plan was aimed against the Hanseatic League, but it failed because King Christian could not keep Sweden and Finland under his control. According to his plan there should have been factors for Scandinavian products in Copenhagen, Stockholm, somewhere in the Netherlands, and also in Finland in a place close to the Russian border.⁶⁴

The new king of Sweden and Finland, Gustavus Vasa, had financed his campaign with the money and supplies from Lubeck, and he had been forced to hand out the economic control of his territories to Lubeck in the privileges of Strangnas. The Swedes also seized some Dutch ships in the Baltic in 1523 and 1524, but these manoeuvres were probably more an idea of Lubeck and not of the Swedish king.⁶⁵ Otherwise we could not explain Gustavus Vasa's next moves. He was soon eager to build up connections with the Dutch traders, and to get rid of the Lübeck dominance in the trade. To have something to offer to the Dutch he wanted to gather taxes, which were collected in kind, in such products which could be suitable commodities



Map 3.1. Low countries in the 16th century
Source: Israel 1990

for the Dutch. In 1526 he sent a letter to bishops, concerning the tithes and ordered that the bailiffs should collect grain, tar, barks and other commodities in which the Dutch could be interested. Same kind of a letter was sent to the high-rank nobility as Ivar Fleming, Nils Grabbe and to some others.⁶⁶

The Teutonic Order had been middlemen in the Russian trade since the Middle Ages. Originally this trade had consisted of valuable commodities like furs and wax, but the change of the trade structure had started in the 15th century, when the need of shipbuilding materials, e.g. flax, hemp, tar, and timber, and other bulky commodities had taken their position first in volume and later also in value.⁶⁷ In 1494 the Russians had closed the Hanseatic commercial agency in Novgorod, which was a defeat especially to Lubeck. The Livonian Hanse towns wanted to get the monopoly in the trade with Russia, but Lubeck and other Wendish towns wanted the reopening of Novgorod trade or a substitute for it in Narva, because they wanted trade directly with the Russians.⁶⁸ Also the Russian ruler, Ivan IV, wanted to get direct contacts with the Hanseatic and Dutch traders. Sweden and Russia had waged a war in 1555 - 1557 and for Ivan IV Wiborg felt too much of a military bridgehead for Sweden and therefore the neutral towns of Reval and Dorpat were better trading places than the Russians.⁶⁹

The Dutch merchants had been buying Russian goods from Reval, but the Dutch were also welcomed to Reval, because the local merchants had only a few larger ships, and depended on foreign shippers.⁷⁰ In 1558, Ivan I conquered Narva and in 1559 he made it as the staple of Russian commodities.⁷¹ In 1561 the next Swedish king, Erik, acquired the town of Reval from the control of the Teutonic Order and banned all trade with Narva in order to channel the trade to Reval and Wiborg.⁷² The Russian commodities had been an important part of the trade in Reval and Wiborg and the new staple in Narva for Russian goods diminished the Dutch shippers interest to sail to the other towns in the Finnish Gulf.⁷³

The Dutch got a new competitor in their trade to the Baltic in the middle of the 16th century, when the English merchants established the Muscovy Company in 1555. The company had a monopoly on all the trade with Russia and the English merchants were after the same commodities as the Dutch, e.g. grain for the English domestic demand and naval supplies for their own vessels.⁷⁴ England did not manage to exclude the Dutch traders, who did not only buy to meet the Dutch domestic needs alone, but also supplied the Baltic commodities all around Europe. The role of various trade routes in the 16th century was an important part of the Dutch success, because in the beginning of the 16th century the traders were not

specialised in certain commodities, but in certain routes.⁷⁵ The trader with the best contacts also made the best profits.

The volume of the forest product deliveries from the Baltic region to the west in the beginning of the 16th century is quite impossible to define, because the data is scattered and sporadic. From 1562 the situation changes because of the Sound Toll Records, which are in printed form from that year onwards. Therefore it is possible to draw a rather consistent picture of the development of the trade.

The situation in Sweden and Finland in the northern parts of the Baltic serves as a good example of the era before the Sound Toll Records. The evidence of selling forest products directly to the Dutch remains scarce, because the almost only signs of it are the authoritative orders of Gustavus Vasa.⁷⁶ Yet, there is some indirect evidence about Finnish and Swedish timber, which could have ended to the Dutch hands with the intermediary of Danzig, Reval, Riga and also from other Livonian towns. The realm of the Swedish king had to purchase grain from these places and among the suitable commodities to barter with were the forest products. E.g. in 1533 the king allowed the burghers of Turku to sail to Reval and Riga vessels loaded with boards and other timber products in order to purchase grain and in 1543 the inhabitants in the province of Wiborg got the permission

to ship timber products to Danzig, Riga and Reval in order to fetch grain which was scarce due to a bad harvest.⁷⁷ There are also lists of the exported timber, which include masts, boards, barks, oak and so on. Southern and central parts of Sweden were responsible of the greatest volume in export. The total volume is difficult to define, but some scattered data from the biggest export towns are available. According to these figures the greatest yearly quantity was reached in Kalmar in 1551, when the export of timber was 418 in dozens and 331,520 in single pieces.⁷⁸ Anyhow, we must remember that most of the Swedish export at this time went to Lubeck and Danzig.⁷⁹ Also the Sound Toll Records tell us that the volume of Swedish and Finnish timber bound to the Netherlands was negligible. In the first year, 1562, only 1900 pieces of deals and planks went to the Netherlands from Sweden and from Finland none.⁸⁰ The volume of the Swedish and Finnish forest products which were sold to the Netherlands by the merchants of Danzig, Riga or Reval remains only as a guess.

It was also easier for the Dutch shippers and traders to buy the needed forest products from the towns in which they had operated since the 14th century. Both Norway and the Baltic had been important areas for them and the Dutch had established connections to these regions, but in the Baltic the shipper could get a broader variety of commodities, among them the oak,

which was essential for shipbuilding and was also more expensive.⁶¹ The Southern banks of the Baltic were also the most important source of oak. For instance, the king of Denmark had banned the export of oak from Norway and only temporarily, as in 1550, did the Dutch get an exempt to purchase it. Usually oak was used only for the domestic use in Denmark.⁶²

Dutch shippers sailed to other ports only if they could not get the supplies from the traditional supplying area. Norway developed into an important source of timber, but in some cases even Norway was only a secondary destination. E.g. in 1535 the bishop Hans Reff of Oslo wrote to the archbishop Olav: "*vijj Hollandske skib ære i these dage kommen ind i Dram aff Ørsund som haffue lenge været ther opholdnæ oc motte icke segle østwert ... The Lubske haffue nogre orlogs skib her i Vestersæen vacterides po the Norske oc Svenske skib oc haffue taræt meged gotz fro Hollendere som ville løbe hiid tiill landet effter tybmer.*"⁶³ The restrictions of the Danish kings were a hindrance to the timber trade from Norway and therefore the Dutch were willingly purchasing timber from the Baltic region.

3.5. THE STRUCTURE OF THE "MOEDERNEGOTIE"

English traders were mainly interested in supplying the domestic market, the Hanseatic merchants were trying to concentrate the trade

to their staples, but the Dutch developed a totally new concept to trade. The shipping system of the Dutch had taken shape already in the 14th and 15th centuries, but it was completed in the beginning of the 16th century. The sphere of it was the trading area of the whole Northern and Western Europe. The extremes were Gibraltar in the south, Bergen in the north, the Gulf of Finland in the east and the British Isles in the west.

The backbone of the system were the so-called "*deurgaende vaerten*", combining the two principal groups of the shipping trade: the "*westerse*" voyages, including the south-westerly routes to France and Portugal-Spain, *westwaerts*, and the "*oosterse*" voyages, the nucleus of which was the Baltic trade, *oostwaerts* or *Sondvaert*. Professor Ahvenainen has defined the most important of these routes on the basis of the preserved documents in the notarial archives of Amsterdam:

1) From Amsterdam carrying timber or other goods southward to the bay of Biscay or as far as Setúbal (St. Uvis) in Portugal. From these waters loaded with salt or other cargo through the Sound to Danzig, Königsberg, Riga or other towns on the Baltic Sea. From there, with cargo to Amsterdam. It is evident that the cargo was unloaded in Holland and then the same timber, possibly somehow processed, for example sawed was forwarded to the south.

2) From Amsterdam to the ports on the Baltic Sea, from there a cargo of timber was taken, most usually circumnavigating the British Isles, in the same manner to the Bay of Biscay or the Portuguese coast. Carrying a cargo of salt back to Amsterdam, and possibly on to the Baltic Sea again.

3) From Amsterdam to the coast of Southern Norway, and on to the south with a cargo of timber as in the previous routes.⁶⁴

The documents are from the end of the 16th century, but some of these routes were mentioned for the first time already in the 14th century. The traders of Kampen had been the first in the Atlantic coast of France, where they had bought wine and salt.⁶⁵ The system was not new and, in principle, the other merchants could also have done the same thing. There were some advantages on the Dutch side, which made it impossible for the other merchants to beat the Dutch. Historians have been arguing about the most essential factors, but most of them have agreed that one of the reasons was the technical efficiency of the Dutch ships which lowered the transport costs radically. For instance, they could have one third cheaper freight rates than the ships from Danzig. Other generally accepted explanations have been the modern trade methods and well organised credit systems.⁶⁶ The cheapness of ship construction, and the Dutch habit to use the ships until they were virtually wrecks could explain part of the success, too.

In bulky commodities like the forest products' trade, the costs of transport were more critical than in the trade with luxuries. Timber could be moved economically only if the greater part of its journey was by water. Accessible timber, therefore, was that which grew close to the sea or to a fair-sized river. The Baltic forests were particularly well placed in this respect, with many navigable rivers, and well equipped harbours at their mouths. The Vistula and the Dwina were the major timber rivers, Danzig, Königsberg, and Riga the principal ports.⁶⁷

We must also remember one important feature in the Dutch trade to the Baltic during the first decades of the 16th century, i.e. the great number of ships in ballast. The Dutch were purchasing bulky goods from the Baltic, and the goods they sold needed much less space. Even the transport of salt did not change the general situation. Aksel E. Christensen had counted the Dutch ship figures from the original Sound Toll Records for the years 1567-1639. According to these figures the majority of the ships were passing the Sound eastwards in ballast.⁶⁸ (See appendix O for the Dutch shipping figures.) This kind of phenomenon feels uneconomical, but it also explains us the importance of the Baltic commodities to the Dutch economy. Otherwise they would not have sent that many ships without any cargo.

3.6. DUTCH DOMESTIC DEMAND FOR FOREST PRODUCTS IN THE 16TH AND 17TH CENTURIES

3.6.1. THE DEMOGRAPHIC FACTORS

The Low Countries were already in the 15th century one of the most densely populated areas in Europe, the population probably exceeding 50 inhabitants for a square kilometer.⁸⁹ This was an important demand factor also for the forest products and the seriously exhausted Dutch forests had no possibility to supply the needed timber for shipbuilding, house-construction, heating and other purposes. The data concerning the value or volume of the domestic demand in forest products is only sporadic and therefore it is impossible to give any exact information, but the preserved documents can help us to find some trends.

The demand for timber for construction purposes was rising. The growth of population and the concentration of capital to Amsterdam meant that the town itself grew fast and the construction of new houses demanded a lot of timber. The population of Amsterdam was about 11,000 in the beginning of the 16th century, but 40 years later it was over 30,000 probably even 40,000.⁹⁰ The growth of Amsterdam was even faster in the last decades of the 16th century and in the beginning of the 17th century, because in 1622 the town

had already 105,000 inhabitants and 15 years later, in 1637, 145,000 inhabitants.⁹¹ Even a lower estimate means that on an average there were approximately 500 new inhabitants every year in the beginning of the 16th century, and in the 17th century the town got over 2,500 new inhabitants every year. They also had to be furnished with houses, and timber was a handy material for it. Yet, the city authorities were not supporting the use of timber as construction material, but other construction materials were so much more expensive. Wooden houses with thatched roofs were a source of repeated fires and the authorities tried to restrict the use of timber as a construction material, but the ordinance of 1521, which ordered the demolition of all wooden structures and thatched roofs encountered considerable difficulties in practice.⁹²

Amsterdam grew faster than other towns, but also the total population of the provinces rose, though there were regional differences, which were connected with the overall development of the province. The provinces of Holland and Friesland were the regions, where the growth of population was fastest in the 16th century and in the first half of the 17th century. The urbanisation was fast especially in the province of Holland. Between 1525 and 1650 the population almost

four-folded in those towns, which had over 10,000 inhabitants. In 1650 around 40 per cent of the total population lived in towns. The eastern parts of the Northern Provinces were not as densely populated as the west, and the Eighty Years' War also disturbed the population growth more in the east. The total population of the Northern Provinces in 1500 was from approximately 0,9 to 1,0 millions and in 1650 from approximately 1,85 to 1,9 millions.⁹³



Picture 3.2. Amsterdam in 1544
Source: The North Sea 1985

The Dutch house-construction became a large-scale business and new methods were introduced. One of them was the idea of building elements which were constructed in a manufacturing plant and transported to the building site and assembled there. This method was so economical that wooden element houses were even exported. E.g. in the 17th century Dutch houses were sold to Bristol in England.⁹⁴

The demand for other forest products was also stimulated by the growth of population. For instance, the textile industry needed more ashes, especially in the beginning of the 17th century, when the Dutch textile weavers stopped the production of cheap bulk cloth and concentrated in the finishing of more expensive qualities which also needed more dyestuffs and therefore also more ashes to fix the colours.⁹⁵

3.6.2. THE SCARCITY OF FUEL

Naturally, all of the timber used in Netherlands was not imported. Firewood was supplied from the domestic forests and material for house-construction was transported from the Dutch forests as well. Longterm exploitation seriously reduced the forests which provided pasturage especially for pigs, as well as the timber needed for building, heating and for several kinds of tools. Several branches of industry were using more and more timber for the heat needed in the manufacturing process. In the 16th century count Henry of Nassau called in experts from Nuremberg to plant pine wood in his lands near Breda. The planting was a new method against forest exhaustion.⁹⁶ This habit was introduced to other regions. For instance, in 1613 in the county of Zutphen several decrees ordered that the one who felled trees was obliged to plant as many new plants as he had felled.⁹⁷

In the beginning of the 16th century emperor Charles V and thereafter his successors also tried to reduce the rights of usage. E.g., in Limburg Charles V gave the ordinances in 1554.⁹⁸ Sometimes the villagers cultivating a certain area of land were only allowed to use the forests, and other people were excluded. Sometimes the forest was divided between the owner and the communal users, which also partly protected it. Also the number of animals allowed into the woods was limited, and sheep and goats were often totally excluded. Sometimes the forests were divided into cantons only one of which could be used in any one year.⁹⁹

Peat was the main fuel in the Dutch maritime provinces, although elsewhere wood was more common. According to Buis, from the information he has gathered from the statistics collected by N.W. Posthumus, the prices for these two competing fuels in the Western parts of the Netherlands were fluctuating almost hand in hand until the middle of the 16th century. When the relative price of peat went up also the price of wood went up. In the long run the relative price index had also continuous upward trend and the relative price over doubled from the middle of the 15th century to the middle of the 16th century. Thereafter the prices of wood and peat take a different course. The relative price of peat rises faster

than that of wood. The difference is especially great in the 1620s.¹⁰⁰ This development tells that the demand of fuel was rising all the time and therefore the supplies had to be secured in one way or another. It also explains that the supplies of wood were secured better than the supplies of peat. The difference between these fuels was that wood was a commodity which the Dutch had been importing, but the peat was a domestic commodity, which the Dutch exported. In 1620s peat was included in the war-list and the export of it was forbidden.¹⁰¹

There was also the third possibility of fuels, coal, but compared to peat and wood it was relatively expansive even for institutions¹⁰² using fuel a lot more than an ordinary consumer. Anyhow, the growth of techniques based on heat, and the diminishing local supplies of peat and timber stimulated the use of coal. Coal from Liège was carried down the Meuse to Holland. The deliveries from Liège rose constantly in the first decades of the 16th century and, the rise was especially high from the 1540s to the 1560s. The preserved documents of taxation show that 48,300 tons were produced in 1545-46, while the production was approximately 90,000 tons in 1562-63. Yet, this development ended in the middle of the 1560s, because of the severe economic crises caused by the war in the Baltic and the

iconoclastic revolt. The production in 1566-67 reached only 37,000 tons. Coal was mainly transported to the Netherlands, but some of it ended up to other destinations and therefore these figures give us only the trend of the development.¹⁰³

3.6.3. DUTCH SHIPBUILDING

The situation in Dutch domestic demand for forest products in shipbuilding was totally different from the needs of house-construction or the need of energy. In shipbuilding it was not only a question of timber, but of a certain type of timber. Oak was the most important type of timber in shipbuilding, and the softer types of timber could only be used as a replacement in the inner parts of the ship.

Dutch shipbuilding was originally a combination of two totally different traditions. Small vessels were constructed almost in every village. Shipbuilders did not need any special equipment, such as cranes or other time-saving constructions. Usually these boats were constructed for personal use and they were seldom sold, but the rise of shipping activities stimulated the rural ship-building and more and more ships were constructed for buyers. The other tradition were the town-built ships, ment for sale and built after the customer's wishes. These shipyards were larger and they often used

labour-saving equipment, because the wages were higher in the towns than on the countryside. The rural and urban shipbuilders had continuous struggles until 1531, when the rural shipbuilding for commercial purposes was totally forbidden. These regulations did not stop the rural shipbuilding, but they helped the centralisation of shipbuilding to towns. Yet, during the revolt against Spain the orders limiting rural industry were removed.¹⁰⁴

The development of bulk carriage was an important demand factor for the shipyards. Except the "haringbuis" in the beginning of the 15th century, Dutch vessels did not have any particular technical advances, but the constant need for ships with a great cargo capacity gave the shipyards the possibility to develop new designs. The aim was to lower the shipping costs and Dutch shipbuilders succeeded on this task. The new ship types; *buyscarvee*, *vlieboot* and especially the *fluyt* could provide more trips for a time period than the earlier boats, and they also required a smaller crew. The third advantage of these superior ships was their relatively high cargo capacity.¹⁰⁵ The *fluyt* was a flexible vessel for various tasks, and the shippers could therefore use them in the bulk carriage of the Baltic or in a journey to the Far East to fetch a load of spices.

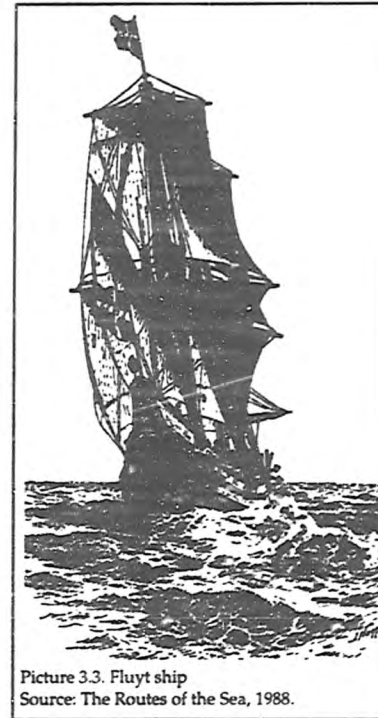
The first important centres in industrial shipbuilding were Amsterdam, Rotterdam, Enkhuizen, Hoorn and Edam, but around 1600 the region of Zaan became one of the most famous shipbuilding centres.¹⁰⁶ The shipyards supplied for domestic customers, but also for the foreign buyers. Dutch ships were exported to several countries. Even during the Eighty Years' War Dutch shipyards delivered boats to Spain. Some of these agreements were immense both in quantity and in value, for example, in 1628-29 all the warships Richelieu obtained for the French navy were purchased from the Netherlands. The reason for this was simple. The Dutch could sell a ship at half of the price of a French shipyard, and the domestic shipbuilders in Spain were asking for even more to build a ship. Especially the small Dutch towns were inexpensive purchasing places for a ship.¹⁰⁷ Yet, there was a disadvantage with the cheap prices, which the buyer probably recognised only after years. Dutch ships were built more lightly than other ships and they did not last as long.¹⁰⁸

The cheapness of the Dutch shipwrights was based on their technical skills. Technical innovation was a part of the success. The windmill-driven sawmill was introduced in 1591¹⁰⁹ and the invention was also introduced to other sections of industry. The hard-headed resistance of Amsterdam

sawyers to the installation of the windmills meant that the Zaan region became the area where windmills were most widespread. In Zaan wind-power was also used to make other parts of the shipbuilding less time-consuming, like the production of rigging, ropes, and canvas sails. In 1630 there were 128 industrial windmills in Zaan. 53 of them were industrial saw mills, which processed timber for shipbuilding and also for re-export.¹¹⁰ The relative share of Zaan is remarkable, because in Holland around 1630 there were all together 83 wood saw mills, which means that most of them were located in the Zaan region. Next in number was Hoorn with 11 saw mills.¹¹¹ The shipyards were also equipped with large cranes¹¹², which reduced the need of man-power and gave a further advantage in the competition.

A timber staple with large amounts of raw material was an essential part of the story. Timber was sold in public auctions especially in Amsterdam, where auctions were held once or twice a week. There were also local auctions in several places, like in the Zaan area and in Dordrecht.¹¹³ This indicates that the merchants also speculated with the shipbuilding materials. Timber itself was not listed in the Amsterdam Produce Exchange but tar was, though the price quotations are available only from the end of the 17th century onwards.¹¹⁴

The yearly production of Dutch shipyards is difficult to verify, because it depended on the size of the Dutch fleet, the export volume of the shipwrights and the replacement rate of the old ships. In 1532 there were approximately 400 seagoing vessels, but in 1636 the number was at least 2,500, probably even 3,000 of which 500 were fishing boats. Richard W. Unger counted from these figures that for the Dutch fleet alone shipyards had to build 300 to 400 ships per year



Picture 3.3. Fluyt ship
Source: *The Routes of the Sea*, 1988.

and over half of them were over 100 tons in capacity. He also estimated that the export was approximately 50 per cent of the domestic demand,

which makes the total production of some 450 to 600 ships a year.¹¹⁵ The number could be even bigger if we trust the numbers given by Johan E. Elias, who claims that the size of the Dutch fleet in the 1630s was from approximately 4,500 to 4,800 ships with the total capacity of 350,000 lasts when all the big and small vessels were put together.¹¹⁶ Anyway, shipbuilding was the most important single industrial branch in the Netherlands in the 17th century. Its success highly supported the demand for forest products.

Notes to chapter 3:

- ¹ Gutkind 1971, p. 93.
- ² Houtte 1977, p. 98.
- ³ Amsterdam 1788, p. 82; Dollinger 1970 A, p. 150.
- ⁴ Spading 1973, p. 97.
- ⁵ Amsterdam 1788, p. 100.
- ⁶ Bugge 1925, p. 267; Houtte 1977, p. 97.
- ⁷ Spading 1973, p. 99.
- ⁸ Spading 1973, p. 126-127.
- ⁹ Israel, Jonathan, *Dutch Primacy in World Trade, 1585-1740*. Frome & London 1990, p. 24.
- ¹⁰ Lesger, C.M., *Amsterdam, Harlingen and Hoorn. Port functions in the Zuiderzee region during the middle of the seventeenth century, in: From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp. L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 352.
- ¹¹ Houtte 1977, p. 97.
- ¹² Israel 1990, p. 18.
- ¹³ Israel 1990, p. 21.
- ¹⁴ Christensen, Aksel E., *Dutch Trade to the Baltic about 1600, Studies in the Sound Toll Register and Dutch Shipping Records, Copenhagen - The Hague 1941*, p. 250.
- ¹⁵ Lesger 1988, p. 347-348.
- ¹⁶ *Bronnen tot de geschiedenis van den handel met Engeland, Schotland en Ierland I, verzameld door H.J. Smit, s-Gravenhage 1928*, nr. 716.
- ¹⁷ Lesger 1988 347-348.
- ¹⁸ Israel 1990, p. 24-25.
- ¹⁹ Bang, Nina Ellinger, *Tabeller over Skibfart og Varetransport gennem Øresund 1497-1660*, 1. Del, *Tabeller over skibsfarten*, Copenhagen 1912, shipping accounts for

respective years.

- ²⁰ Israel 1990, p. 21.
²¹ Christensen 1941, p. 106.
²² Barbour, Violet, Dutch and English Merchant Shipping in the Seventeenth Century, in: *Essays in Economic History*, Volume One, edited by E.M. Carus-Wilson, London & Bradford 1966, p. 242-243.
²³ Christensen 1941, p. 110.
²⁴ Houtte 1977, p. 185.
²⁵ Finlands Medeltidsurkunder, III, 1431-1450, edited by Reinhold Hauser, Helsinki 1921, p. 429; Bugge 1925, p. 267.
²⁶ Bugge 1925, p. 268.
²⁷ Daenell 1903, p. 38.
²⁸ Vogel 1973, p. 342.; Friedland, Klaus, Norwegen 1350-1650, in *Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts, Stuttgart 1986, p. 497.
²⁹ Lloyd 1991, p. 222.
³⁰ Ahvenainen, Jorma, Eräitä näkökohtia Itämeren kauppapolitiittisen tilanteen muuttumisesta 1400-luvulla, *Eripainos Historiallisesta Aikakauskirjasta* n:o 3, 1963, p. 176.
³¹ Daenell 1903, p. 26.
³² Dollinger 1970 A, p. 232.
³³ Mager B, p. 269-271.
³⁴ Gelius, Rolf, *Der Europäische Seehandel mit Waidasche und Pottasche von 1500 bis 1650*, Jahrbuch für Wirtschaftsgeschichte, 3, 1985, p. 64.
³⁵ Bogucka, Maria, Danzig an der Wende zur Neuzeit: Von der aktiven Handelsstadt zum Stapel und Produktionszentrum, *Hansische Geschichtsblätter*, 102, 1984, p. 93.
³⁶ Spading 1973, p. 50.
³⁷ Vollbehr 1930, p. 49.
³⁸ Vogel 1973, p. 413-414.
³⁹ Unger, Richard W., *The Ship in the Medieval Economy, 600-1600*, Trowbridge & Esher 1980, p. 206.
⁴⁰ Daenell 1903, p. 31.
⁴¹ Daenell 1903, p. 32.
⁴² Spading 1973, p. 35.
⁴³ Daenell 1903, p. 40-41.
⁴⁴ Bugge 1925, p. 267.
⁴⁵ Spading 1973, p. 48-49.
⁴⁶ Dollinger 1970 A, p. 198.
⁴⁷ Bugge 1925, p. 258.
⁴⁸ Ahvenainen, Jorma, *Suomen Sahateoili-suuden Historia*, Porvoo 1984, p. 20.
⁴⁹ Abel, Wilhelm, *Geschichte der deutschen Landwirtschaft, vom frühen Mittelalter bis zum 19. Jahrhundert*, Stuttgart 1962, p. 156.
⁵⁰ Christensen 1941, p. 34.
⁵¹ Bang 1912, ships in respective columns for 1497.
⁵² Christensen 1941, p. 328.
⁵³ Bang 1912.
⁵⁴ Dunsdorfs, Edgar, *Merchant Shipping in the Baltic During the 17th Century*, Contributions of Baltic University Nr. 40, Pinneberg 1947, p. 8.

⁵⁵ Kellenbenz, Hermann, *Wirtschaft und Gesellschaft Europas 1350-1650*, handbuch der Europäischen Wirtschafts- und Sozialgeschichte, Band 3, Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts, Stuttgart 1986, p. 295.

- ⁵⁶ Christensen 1941, p. 43.
⁵⁷ Faber, J.A., Friesland and the Baltic trade, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 17.
⁵⁸ HR IV, p. 453-455.
⁵⁹ HR IV, p. 457.
⁶⁰ Tjaden, Anja J., Frederic II of Denmark, Lord of Holland and Zealand?, *Diplomats in Action (1584-1587)*, in *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S., Lemmink & J.S.A.M. van Koningsbrugge, Nijmegen 1990, p. 356.
⁶¹ HR IV, p. 549.
⁶² Mickwitz, Gunnar, *Die Hansakaufleute in Wiborg 1558-1559*, *Historiallinen Arkisto* 45, Helsinki 1939, p. 193.
⁶³ Houtte 1977, p. 182.
⁶⁴ Falk, Albert, *Gustaf Vasas Utrikespolitik med afseende på handeln*, Stockholm 1907, p. 22.
⁶⁵ Lundkvist, Sven, *Sverige och Nederländerna 1524-1534*, in *Scandia, Tidskrift för Historisk Forskning*, Band 27, 1961, p. 10.
⁶⁶ Konung Gustaf den förstes registratur, III, 1526, *Handlingar rörande Sveriges Historia med undersod af statsmedel i tryck utgifna af Kongl. Riks-Archivet, Första Serien*, Stockholm 1865-1916, p. 117-118.
⁶⁷ Attman, Artur, *The Russian and Polish Markets in international trade 1500-1650*, Göteborg 1973, p. 15-16.
⁶⁸ Lundkvist, Sven, *Gustav Vasa och Europa, Svensk handels- och utrikespolitik 1534-1537*, *Studia Historica Upsaliensia II*, Uppsala 1960, p. 8.
⁶⁹ Mickwitz 1939, p. 108-109.
⁷⁰ Kivimäe Jüri, *Reval-Lübeck-Amsterdam: The triangle of trade on the eve of the Livonian War (1554-1557)* in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 310.
⁷¹ Mickwitz, Gunnar, *Kahden tallinnalaisen kauppiiaan kaupankäynti viipurilaisten kanssa Kustaa Waasan aikana*, *Historiallinen Arkisto XLIV*, Helsinki 1938, p. 29; Attman, Artur, *Swedish Aspirations in the Russian Market during the 17th century*, Uppsala 1985, p. 10.
⁷² Carlsson Sten & Rosén Jerker, *Svensk Historia I. Tiden före 1718*, Lund 1978, s. 346-347.
⁷³ Mickwitz 1939, p. 186.
⁷⁴ Jensen, Birgit Bjerre, *Jakob I's Østersøpolitik*

- 1603-25, *Historie*, Ny Række XII, 1-2, 1977, p. 2.
⁷⁵ Mickwitz 1938, p. 22.
⁷⁶ E.g. GIR IV, p. 31 GIR III, p. 117.
⁷⁷ GIR VIII, p. 221.
⁷⁸ *Kulturhistoriska lexikon för nordisk medeltid, från vikingatid till reformationstid*, Band XVIII, edited by Helge Pohjolan-Pirhonen, Helsinki 1974, p. 596.
⁷⁹ Lundkvist 1960, p. 24.
⁸⁰ Bang, Nina Ellinger & Korst Knud, *Tabeller over Skibvaart og Varetransport gennem Øresund 1497-1660, Anden Del: Tabeller over Varetransporter: B., Copenhagen - Leipzig 1933*, p. 160 for Finland, p. 162 for Sweden.
⁸¹ Asaert, G., *Antwerp ships in English harbours in the fifteenth century*, *Acta Historiae Neerlandicae*, XII, 1979, p. 39.
⁸² KHL XVIII, 1974, p. 592.
⁸³ Bugge 1925, p. 285.
⁸⁴ Ahvenainen Jorma, *Forest Economy and Timber Trade, 1300-1800*, (unprinted), p. 26.
⁸⁵ Houtte 1977, p. 93.
⁸⁶ Bogucka 1984, p. 92.
⁸⁷ Parry, J.H., *Transport and Trade Routes*, *The Cambridge Economic History of Europe*, Volume IV, *The Economy of Expanding Europe in the Sixteenth and Seventeenth Centuries* editors E.E. Rich and C.H. Wilson, Cambridge 1967, p. 172.
⁸⁸ Christensen 1941, p. 446-447.
⁸⁹ Pounds, N.J.G., *An Economic History Of Medieval Europe*, Hong Kong 1978, p. 160-161.
⁹⁰ Spading 1973, p. 103.
⁹¹ Baasch, Ernst, *Holländische Wirtschaftsgeschichte*, Jena 1927, p. 24.
⁹² Gutkind 1971, p. 60.
⁹³ DeVries, Jan, *The Population and Economy of Preindustrial Netherlands*, *Journal of Interdisciplinary History*, XV:4, Spring 1988, p. 666.
⁹⁴ Wilson, Charles, *The Dutch Republic and the civilisation of the seventeenth century*, Verona 1968, p. 91.
⁹⁵ Israel 1990, p. 192-195.
⁹⁶ Houtte 1977, p. 148.
⁹⁷ Buis 1985 A, p. 280.
⁹⁸ Jansen & van de Westeringh 1983, p. 30.
⁹⁹ Houtte 1977, p. 148-149; Jansen & van de Westeringh 1983, p. 29-31.
¹⁰⁰ Buis 1985 B, p. 928-930.
¹⁰¹ Israel 1990, p. 193.
¹⁰² Posthumus, N.W., *Inquiry into the History of Prices in Holland*, Vol. II, Leiden, 1946, respective columns for peat, wood and coal.
¹⁰³ Houtte 1977, p. 169.
¹⁰⁴ Unger 1978, p. 3-4.
¹⁰⁵ Unger 1980, p. 262-263.
¹⁰⁶ Baasch 1927, p. 105-106.
¹⁰⁷ Elias, Johan E, *Het voorspel van den eersten Engleschen oorlog I: Het Britisch-Nederlandsche antagonisme, 's-Gravenhage 1920*, p. 67 - 68.
¹⁰⁸ Cederlund, Carl Olof, *Shipbuilding in the 17th and 18th Centuries*, *The Wasa as a*

- Product of Dutch Shipbuilding*, in *The North Sea, A Highway of Economic and Cultural Exchange. Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985, p. 168.
¹⁰⁹ Bruijn, Jaap, *The Timber Trade, The Case of Dutch-Norwegian Relations in the 17th Century*, in *The North Sea, A Highway of Economic and Cultural Exchange. Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985, p. 128.
¹¹⁰ Israel 1990, p. 114.
¹¹¹ Lesger 1988, p. 349.
¹¹² Kellenbenz, Hermann, *The Organization of Industrial Production*, *The Cambridge Economic History of Europe*, Volume V, *The Economic Organization of Early Modern Europe* editors E.E. Rich & C.H. Wilson, Cambridge 1978, p. 531.
¹¹³ Bruijn 1985, p. 128-129.
¹¹⁴ Posthumus, N.W., *Inquiry into the History of Prices in Holland*, Vol. I, Leiden 1946, p. 473.
¹¹⁵ Unger 1978, p. 11.
¹¹⁶ Elias 1920, p. 61.

4. FOREST PRODUCTS TRADE UNTIL THE FIRST SPANISH EMBARGO IN 1585

4.1. THE DIVISION OF THE LOW COUNTRIES

The Netherlands had been under the Burgundian house from the beginning of the 15th century, but the Habsburgs annexed the provinces to their vast empire in 1496. Charles V, who inherited the Netherlands in 1506, tried to centralize the administration of the provinces to Bruxelles. The aim was to unify the laws of the provinces and to reduce the privileges of separate towns and regions. The obstinate provinces opposed until 1543, when the last refractory, Guelders, gave up.¹

The abdication of Charles took place in 1555 and the Habsburg lands were divided. Philip, the son of Charles, inherited Spain and the Netherlands, but he also inherited his father's war with France. Philip tried to put the Netherlands to pay the expenses of war. The "*Staten Generaal*" accepted reluctantly to pay 800 000 florins a year, but only if the money was treated as a public revenue and not a king's revenue.² Philip thought that he need not listen anybody in such matters. The economic weakness of the Spanish crown was clearly seen when the

crown had to announce the first bankrupt of Philip in 1557. The bankrupt caused several disturbances in Antwerp, which was the main market of the crown's promissory notes (the so-called *juro*).³

The disagreement of administration, the economic recession, and the religious intolerance were the reasons to an outburst of the angry mobs in 1566. The nobility and the bourgeoisie stayed aside and let the rioting people channel their anger to the churches. Philip II sent his best general, duke of Alva, to the Netherlands to suppress the revolt. The process to punish the rioting inhabitants turned to a full scale terror. The courts which Alva established were named "*Bloedraad*".⁴

Several merchants fled from Amsterdam due to Alva's strict measures. One of the most important destinations for the merchants were the United Provinces, because the trade connections were guaranteed by the Sea Beggars who dominated the sea. The traditional co-operation of northern and southern provinces was an advance, too. The southerners were also allowed to use their own language, and the Calvinists were attracted because of the freedom of faith. A part

of the refugees went to Middelburg after this town joined the revolt in 1574, or to Dordrecht, or to Rotterdam before Amsterdam joined in.⁵ Yet, a part of the merchants and shippers had escaped to the North Sea ports of Germany, because they did not feel the rebellious provinces safe enough to continue their activities.⁶

The Dutch trade had developed to a complex network where everything depended on all the other parts of the system. Therefore it is not a surprise that the first blow of the rebel era to the Baltic trade nearly caused a total interruption of the trade: 1569 is the disastrous year with only 16 loaded ships passing the Sound eastwards. The figure of ships in ballast did not drop as dramatically only from 1,057 in 1568 to 929 in 1569. At that time the Dutch purchasing power was chiefly based on the salt they shipped to the Baltic, and the low figure of salt ships indicates that the needed Baltic products had to be paid with money. Unfortunately no accounts have been preserved of the Sound Tolls of the years of crisis, 1570-1573, at the beginning of the Dutch revolt, but in 1574 the continuous series begins with comparatively small figures.⁷ (See appendix O). Also the "*paalgeld*", which is a duty collected from the ships by the town of Amsterdam, sunk almost one third from 1566 to 1572. At this time it was not a question of any embargoes. The shippers just did not want to risk the boats by taking them to the sea.⁸

Antwerp had joined the rebel, but in 1576 the Spanish troops captured and plundered the town. Thereafter Amsterdam became Antwerp's main successor and its commercial horizons were widened to include countries where Antwerp had shown the way before. Amsterdam also took over business methods and techniques used in Antwerp. Earlier there had been a division between the tasks of these two towns: Antwerp in general distributed the commodities from England and the south, Amsterdam operated with the bulky merchandise from the Baltic and the Atlantic coasts. The two towns had functioned as distribution centres for each other. Yet, there was an important difference in the structure of the business classes of these two towns. Foreigners were dominant in Antwerp, but in Amsterdam local merchants had been controlling the business life.⁹ In spite of the influence of the Antwerp merchants' trade connections the Baltic trade continued to be the most important part of Amsterdam's trade, the *moedernegotie*.¹⁰ The Duke of Alva had promised Amsterdam tax and customs exemptions and rights to trade with Spain without any restrictions if the town remained loyal to the Spanish Crown.¹¹ The Sea Beggars ("*zeegeusen*") harassed the trade of Amsterdam and it was obliged to join in the rebel in 1578. In 1579 the Northern Provinces made a union in Utrecht and continued the struggle against Spain, while most of the South remained loyal to the

crown. Antwerp stayed in the hands of the rebellious folks until 1585, but the Spanish troops took over again and at this time the merchants found it safer to abandon the town. In 1585 Spain also declared the first embargo against the Dutch.

4.2. GENERAL WEAKNESSES IN THE SOUND TOLL RECORDS

The quantity of timber and other forest products passing from the Baltic to the west through the Sound was possible to derive from the Sound Toll Records, but before doing so one must be aware of certain difficulties. The problems exist in two levels: in the original customs accounts and in the printed Sound Toll Records. This work is based on the printed Sound Toll Records and therefore the problems of the original documents are not noted. However, we must remember that in some cases the data from the original documents has been converted to fit into the columns of the printed Sound Toll Records with some inaccuracy.

The first thing to remember is that the tariffs for the forest products were rather low compared to other goods and therefore the shippers were easily tempted to inform that they were transporting timber though the ships were loaded with grain or with something even more valuable. There were only a few officers in Elsinore where the ships had to be cleared.

Sometimes there were hundreds of ships at the same time and it was not possible to inspect a single ship.¹² There is no possibility to track how many shippers were involved in this kind of misbehavior, but according to Axel Christensen it was quite common at least in those cases where the Sound Toll Records could be cross-checked with the preserved shipping agreements of the Delft ships. The comparison between these two sources gives the result that in the shipping accounts e.g. the quantity of corn was 1,510 lasts, but only 603 lasts were declared in Elsinore. The situation with wood is just the opposite, according to the shipping accounts the vessels brought 24.5 great hundreds of claps and 25 hundreds of waynscots and other types of timber, but in the Straits 56.5 great hundreds of claps and 20.5 hundreds of other timber were cleared.¹³

There were also other possible sources of error, like smuggling, which was difficult to control because there were so many ships passing the Danish Straits. The re-export was also not noted in the Sound Toll Records and Danish products were exempted from the dues, but in the case of forest products this was probably not a problem, because of the lack of timber in Denmark. Moreover, Scandinavian nationalities and some Hanse towns had special privileges to transport commodities without paying the lastage, and the

cargoes brought in their vessels were not entered to the accounts. For instance, the quantity of Swedish tar export has to be checked from other sources as well, because in some years Swedish ships were toll-free.¹⁴ Besides, part of the tar was loaded in Swedish ports west of the Sound.

There was another serious problem concerning the quantities and volumes of forest products in the Sound Toll Records. The customs clearing documents were represented in pieces and there was no possibility to convert them to cubic measures, because the size of timber has varied. Also the conversion to a single unit was a bit problematic, because some of the timber is recorded as pieces, some of it in other measures like lesser and greater hundreds. For the purposes of calculation everything must be converted to pieces, because otherwise the comparison between the areas of dispatch is not possible at all. Yet, this again gave some extra trouble. The data of clapboards (*klapholt*) is normally recorded in great hundreds, i.e. 2,880 pieces¹⁵, but in some years not all the figures inside the very same column are in great hundreds. For instance, in 1585 the clapboards to other ports were counted in great hundreds, but in case of the timber brought to Denmark among the total quantity of mentioned 37.5 hundreds of claps, only 23.5 hundreds of claps are in great hundreds and 14 of the

documented hundreds for some reason or other are "smaa Hundrede", i.e. 120 pieces.¹⁶ This leaves some uncertainty also to other figures which were not detailed in the printed tables and the only way to check them is make an inquiry to the original documents. However, the development of the forest products' trade in general is possible to follow in spite of these problems if we concentrate on the main lines.

The timber products brought through the Sound were divided into several columns in the printed Sound Toll Records, but only the most important products: waynscot, clapboards, and deals and planks were noted for every year. Columns for other types of timber - staves for casks and pipes, oars, masts, shovels, chests and so on - were printed only for every tenth year and some of them only sporadically for some years. However, these three columns, which were listed for every year, also contained most of the timber and the share of the timber in other columns was under 5 per cent of the total quantity counted in pieces. Therefore these other columns were left out of this presentation.

In case of the refined forest products, ashes, pitch and tar, there is also a serious problem in the Sound Toll Records. The column of unspecified refined forest products represents a relatively high share of the total volume of commodities brought through the

Sound until the end of 1580s and therefore it is difficult to draw conclusions without a certain margin of error. In some years the relative share is over 50 per cent. The reliability of the Sound Toll Records improves remarkably in 1590s, because the share of unspecified refined forest products is marginal and remains under 5 per cents of the total quantity.

We must also pay attention to the fact that the total quantity of commodities does not define the owner of the cargo in the printed Sound Toll Records, and the list of the ships with commodities owned by other than the shipper are presented only for every tenth year from 1565 onwards and there is no specification of foreign cargo. Especially in years 1565 and 1575 the foreign cargo shipped on Dutch vessels from the principal ports of the Baltic forest product export is remarkably high, but drops thereafter. In 1565 there were 268 Dutch vessels transporting goods for the Danzig merchants, 33 ships with goods belonging to the merchants of Konigsberg and 43 ships transporting goods for the merchants of Riga. However, some of the ships transported commodities from various ports and therefore it is not possible to define the exact figure of ships which transported goods for the merchants of these towns. The printed Sound Toll Records tell only that there were 423 ships which transported foreign commodities, but the total number counted was 436 and the difference

comes from the ships which were carrying commodities from various ports.¹⁷ In 1575 the figures were 112 from Danzig, 13 from Konigsberg, and 68 from Riga.¹⁸ As a comparison, in 1585 the figures were only 7 from Danzig and 4 from Riga.¹⁹ There was no possibility to find out if the listed vessels transported forest products and therefore the ownership of the commodities transported to west during these years was left without any attention. Anyway, the drop in goods transported for other merchants also explains that the Dutch merchants gained a dominant role in the Baltic forest products' trade during the last decades of the 16th century.

We must not have an implicit confidence on the Sound Toll Records especially if we want to determine the value of certain commodities transported to the east or to the west, but we can determine the relative importance of various commodities in a broad perspective.

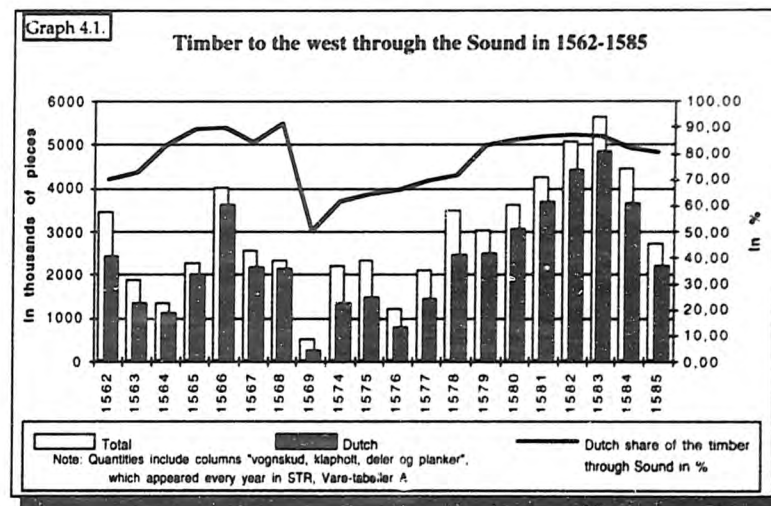
4.3. FOREST PRODUCT TRADE FROM 1560S TO THE FALL OF ANTWERP IN 1585

4.3.1. TIMBER TRADE

During the 1560s the Dutch trade to the Baltic met both internal and external difficulties. The war between Denmark, Sweden and Poland in 1563-70 harassed particularly the grain shipments. Due to the rough

winter in 1564 there was a bad harvest in the Low Countries. The famine with general economic decline caused partly the uprisings, iconoclastic riots in August 1566. The disturbances were a pretext to the repression of heresy. In fact, it was more an attempt to restore the king's control over the Low Countries.²⁰

revolt had seriously harassed the timber trade. It seems that the disturbances in the Baltic region caused more troubles for the forest products' trade before the Dutch revolt started. 1566 was a year of serious riots in the Low Countries, but the timber trade reached the highest peak of 1560s at the very same year.



The timber trade reacted to the state of unrest as the following graph shows (graph 4.1.). The total quantity of timber brought by the Dutch from the Baltic was almost 2,500,000 pieces in 1562, but it hardly exceeded 1,000,000 pieces in 1564. In 1566 the quantity reached a peak of approximately 3,500,000 pieces, but started to fall thereafter and the last recorded quantity, under 500,000 pieces in 1569 before the 5 years break in the Sound Toll Records indicates that the Dutch

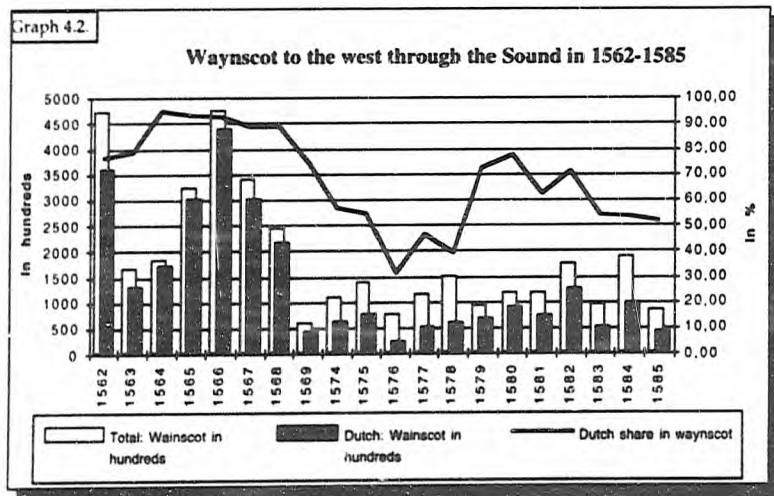
The first years of 1570s are missing from the data and therefore it is impossible to know how the campaign of the Sea-Beggars effected the timber trade. The first year after the break in data, 1574, shows that the timber trade was still far behind the average of the 1560s. The situation changed the same year, when Amsterdam joined the rebel. From 1578 onwards the total volume of timber through the Sound grew, and even in 1585 - when the Spanish started the

first embargo against the Northern Provinces - the total quantity of timber was approximately the same as in the 1560s. The average quantity was higher before the fall of Antwerp in 1585 than the quantity of 1560s, but there was a difference between these two periods, which we can see from the graphs of waynscoot and clapboards.

Timber trade was dominated by the Dutch as the graph 4.1. shows. The curve of the total quantity of timber brought through the Sound in this period follows the development of the Dutch timber shipments and when revolt starts the total quantity also drops seriously. The relative share of the Dutch was below the average in the first years of the revolt, but grew towards the end of the period. This means that in timber the Dutch were dominating the market and the drop of Dutch shipments

reflected directly on the total quantity. However, there was a significant difference between waynscoot and clapboards. The greatest volume in waynscoot during this period was reached in 1566 (graph 4.2.). This was never reached after the revolt started. The graph shows that also the relative share of the Dutch fell. Timber for shipbuilding had been an important part of the Baltic trade, but nobody wanted to take the risk of building a new ship which could be seized or sunk during the dangerous period.

The total value of the Baltic forest products trade is impossible to trace, but the development in two principal ports, Danzig and Königsberg, gives us a trend. There is only information about the total export value of timber and ashes and the development of the trade with pitch and tar is missing. During this period Danzig was dominating the timber trade and the



export value of timber and ashes was much higher than in Königsberg. However, it seems that towards the end of the period Königsberg was making advance while Danzig seemed to be in decline. In 1565 the value of Danzig's timber exports was 91,000 rix-dollars, but in 1575 it had dropped to 41,000 rix-dollars and in 1585 it had risen a little, to 55,000 rix-dollars. The timber export from Königsberg was modest in 1565, when the value of it was only 3,000 rix-dollars, but in 1575 the export was 11,000 and in 1585 already 21,000 rix-dollars.²¹

The exact share of the Dutch trade is difficult to count from these figures, because especially in 1565 and 1575 Dutch shippers were transporting commodities for the merchants of Danzig and Königsberg, too. Some of these products were also shipped to other ports within the Baltic. The Dutch share of the shipments explains only that they were far ahead of their competitors, because e.g. in 1565 the total shipments of waynscoot from the Baltic were 3,250.5 hundreds and the Dutch shipped 3,026 hundreds of them. In clapboards the Dutch shipped 573.75 great hundreds of the total 649.75 great hundreds.²² Danzig had a lion's share of the total quantity with 2,776 hundreds, but Königsberg exported only 205.5 hundreds of waynscoot. These two ports together shipped almost 92 per cent of the waynscoot. The situation with

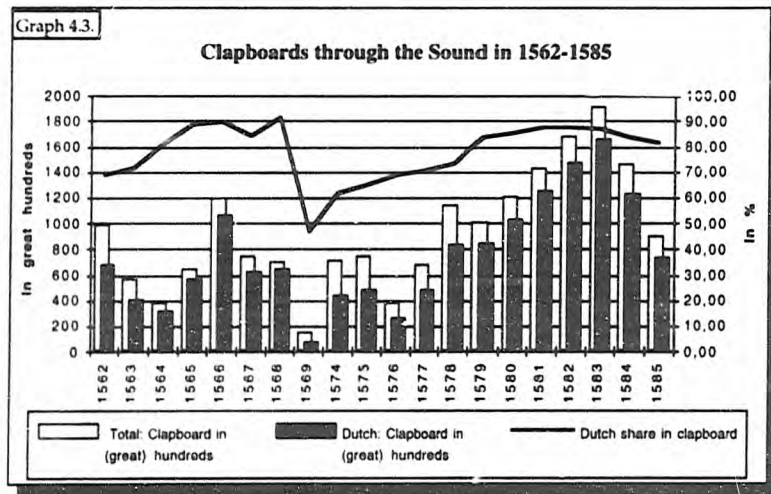
clapboards was about the same: Danzig's exports reached 572.25 great hundreds and Königsberg's export was only 59.5 great hundreds, but together these two towns had a share of 98 per cent.²³

In 1575 the total quantity of waynscoot had dropped to 1,410.5 hundreds and Danzig still held the dominant position with 1,030 hundreds against Königsberg's 185 hundreds, but the Dutch revolt had effected more on the export of Danzig, which was only 37 per cent of the volume in 1565. The share of these two towns was still 86 per cent of the total volume. In clapboards Danzig had lost less, because the export was 532.25 great hundreds, i.e. 93 per cent of the volume in 1565, but the export of Königsberg had almost three-folded to 185 great hundreds and the share of these two towns was 95 per cent of the total volume, 752 great hundreds.²⁴ The total volume of clapboards had also risen, which is directly related to the political situation. Clapboards were meant for domestic use in the Netherlands and the war did not disturb the clapboard trade as much as was the case in waynscoot (graph 4.3.).

In 1585 there was a new phenomenon in the timber trade. In the export of waynscoot Danzig still held its leading position, but the duchy of Courland had taken the place of Königsberg as the second

important exporter. The total volume had further dropped from the already low figure in 1575 to 866.75 hundreds in 1585 and the Dutch shipped only 447 hundreds from the total volume, i.e. 51 per cent.²⁵ Danzig's share was 458.75 hundreds and Courland exported 172 hundreds, but Königsberg only 81 hundreds. Even the Hanseatic towns Lubeck with 43 hundreds and Stralsund with 78.5 hundreds were participating in the trade with waynscoot.²⁶ The Hanseatic merchants were obviously supplying the timber for the Spanish navy. The total quantity of exported clapboards had slightly risen in ten years from

It is remarkable that the dominating Hanse town Lubeck participated in the timber trade throughout the whole period, but usually the quantities were modest. Only in the transport of waynscoot the town did have some share. From 1562 to 1585 the yearly average of waynscoot shipments transported in the ships from Lubeck was only a bit more than 100 hundreds, when the yearly average of total shipments was over 1,800 hundreds. Moreover, Lubeck was an unimportant loading port for waynscoot with the yearly average of approximately 80 hundreds.²⁹ In other types of timber the share of Lubeck was even smaller.



1575 to 1585 and it was 907.5 great hundreds from which the Dutch share was 740.5 great hundreds.²⁷ Danzig with 541.25 great hundreds and Königsberg with 252 great hundreds were still dominating the market.²⁸

There is contradictory information about the value of Danzig's timber export in 1585, which we can obtain with some calculation. The information Michael North gives about the value of Danzig's timber export (55,000 rix-dollars in 1585) was

calculated from the tables A Maczak had compiled from the customs lists of Danzig.³⁰ However, the comparison between North's figures and the price quotations in the preserved merchant correspondence from Danzig to Delft in 1585 combined with the data from the Sound Toll Records gives conflicting information. The letters from Huych Adriaenszoon in Danzig to Claes Adriaenszoon van Adrichem in Delft in 1585 explain that the price of clapboards in Danzig was from 72 to 75 guilders per great hundred³¹, i.e. in rix-dollars from 31.3 to 32.6.³² The export value of clapboards was 17,644 rix-dollars, if we use the highest price given by Huych Adriaenszoon. There is no price information about waynscoot in 1585, but the price in 1588 was from 46 to 56 guilders per hundred and at the same year the price of clapboards was from 66 to 72 guilders,³³ i.e. the lowest price of clapboards in 1585 was the highest in 1588. The margin of error is quite small if we use 56 guilders as the lowest price of waynscoot in 1585 especially as we used the highest price of clapboards in 1585 to get the export value. The calculation gives an export value 11,169 rix-dollars to waynscoot in 1585, which added to the value of clapboards makes the total of 28,813 rix-dollars. There is the difference of 26,187 rix-dollars between the total export value of Danzig given by Michael North and the export value of clapboards and waynscoot counted from the Sound Toll Records and the

preserved price quotations. The export of other types of timber can not explain the difference.³⁴ It is obvious that almost half of Danzig's timber export could not end within the Baltic Sea, but it is also impossible to assume that so much timber could be smuggled through the Sound, or declared as other commodity in the customs office. The tariff of timber was the lowest of all³⁵ and therefore a shipper had no reason to make a false declaration. Also the price of timber in Danzig could not change so much that the error could be explained. This example shows that the export values and the export quantities indicate some uncertainty. Without studying the original documents it is impossible to find an explanation to the difference.

The exact value of timber export from the Baltic region is impossible to calculate, because the only price information was from Danzig and only for some types of timber. Moreover, it is obvious that the prices were fluctuating from port to port. Anyway, for the comparison of the values we can estimate a rough figure about the value of clapboard and waynscoot exports in 1585 by using the prices in Danzig; 72 guilders (approximately 31.3 rix-dollars) as the price for a great hundred of clapboards and 56 guilders (approximately 24.35 rix-dollars) as the price for a hundred of waynscoot. The total export value of clapboards

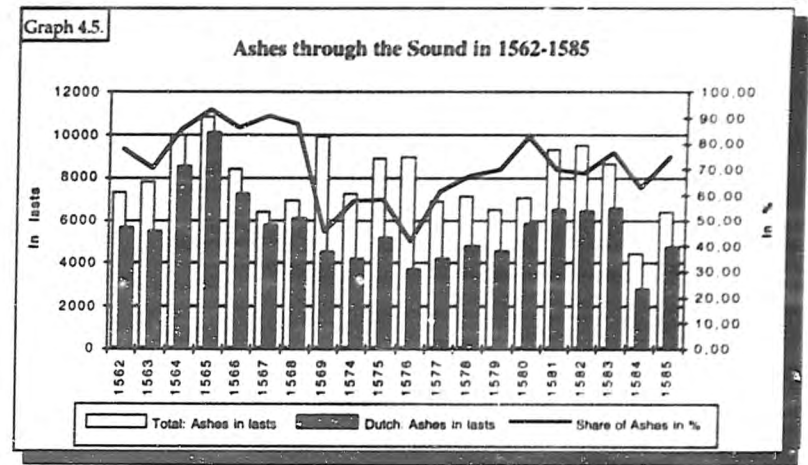
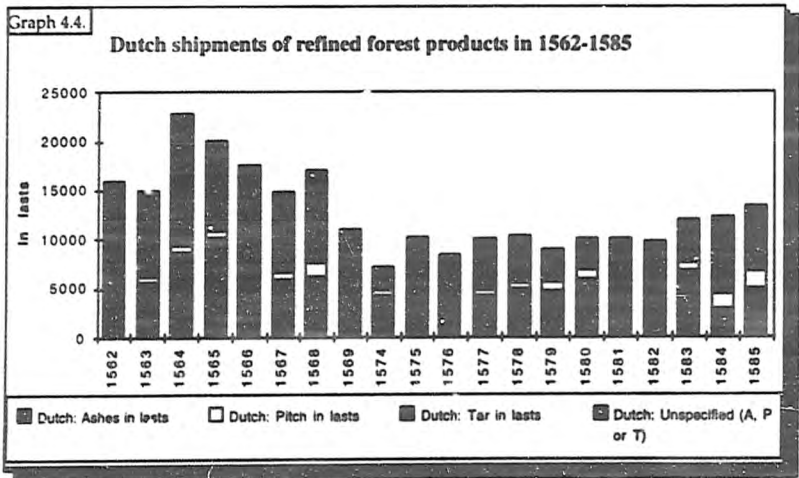
from the Baltic was over 28,000 rix-dollars, but the value of waynscot exceeded only 21,000 rix-dollars. There is a huge margin of error in these figures, but the difference in export values is also quite big. Therefore we can assume that clapboards were the most important single type of timber from the Baltic region during this period.

4.3.2. THE REFINED FOREST PRODUCTS

The development of the trade with the refined forest products during this period differs from the development of the timber trade. The overall development of refined products shows that the peak was reached in 1564, but unfortunately the share of unspecified refined products is so high that it is impossible to draw absolute conclusions (graph 4.4). The notes concerning these figures in Sound Toll Records explain that the total quantity of 12,541,5 lasts

of unspecified refined forest products contains 975,5 lasts of ashes and pitch, 289,5 lasts of ashes, pitch and tar, 10,668,5 lasts of ashes and tar and 608 lasts of pitch and tar.³⁶ This indicates that most of the unspecified goods were ashes and tar. The comparison between ashes and tar shows that the deviation in 1564 is remarkable in tar, but the curve in ashes is more stabile. With great probability these figures can explain the small relative share of tar in 1564 compared to the previous year and it also explains the remarkable drop in the curve of the tar shipments, but as mentioned before it is too brave to fill the gap without any further research.

The individual graphs for ashes, pitch and tar are not totally reliable without the share of the undefined refined products, but they show the general line of development. The Dutch revolt was a bigger threat to the tar trade, because the volume in



the 1560s was not reached in the later part of this period. Ashes remained in a relatively stable stage through the whole period. The relative share of the Dutch shipments fell after the start of the revolt, but rose again at the end of the period (graph 4.5). The Dutch loss in 1569 was probably partly caused by the fact that some Dutch shippers fled to Eastern Friesland, which was the neighbouring region in the German side of the border. At least there is a significant rise in the East Frisian trade with ashes. In 1568 the East Frisians transported only 115 lasts of ashes³⁷, but in 1569 the quantity was 1,655 lasts. Also the share of Danzig and East Prussia rose remarkably,³⁸ which indicates that some of the Dutch transportation in previous years had been on behalf of the Danzig merchants, who had to use the local shippers when not so many Dutch vessels arrived to the Eastern part of the Baltic in 1569.

The curve of pitch deliveries in the graph 4.4. shows that the Dutch relative share reached its peak before the revolt, but fell thereafter. This indicates that the demand for shipbuilding could be met by other traders if the Dutch could not serve the market. Also the total volume of pitch was highest at the end of the period, but the great share of the undefined refined forest products in this period makes it too brave to draw definite conclusions of the development. Yet, compared to tar and ashes, the Dutch relative share was the lowest in pitch for the whole period.

The value of the trade with ashes is possible to acquire from Konigsberg and Danzig, two principal timber ports of the Baltic Sea, but the export value of Riga, the third important port for refined forest products is not available. The export value of ashes was much higher than the export value of timber during this period

both in Danzig and in Königsberg. In Danzig it was 140,000 rix-dollars in 1565, 80,000 rix-dollars in 1575 and 97,000 rix-dollars in 1585. The figures for Königsberg are 29,000 rix-dollars in 1565, 42,000 in 1575 and 97,000 in 1585. The trend of Königsberg was upwards through the whole period, while was Danzig deteriorating. In 1585 these two towns gained exactly the same amount from the export of ashes. It is also remarkable, that in 1585 Elbing exported ashes for 44,000 rix-dollars though earlier it had virtually no role in the trade.³⁹ The English Eastland Company had chosen Elbing as its staple⁴⁰ and therefore it is obvious, that at least the 380 lasts of ashes the English shipped in 1585 were from Elbing.

Danzig held a major role in timber trade and the same phenomenon was generally true with the refined forest products. The role of Königsberg as the second important port was threatened by Riga, which was already in 1565 an important port for refined forest products, but in the timber trade it had virtually no role at all. Over half of the tar brought through the Sound in 1565 came from Riga, i.e. 1,686 lasts from the total of 3,094 lasts. For the undefined refined forest products the share of Riga was even higher, because 6,043 lasts of the total 7,685.5 lasts in this column in the Sound Toll Records was from Riga. Most of it was either ashes or tar. In the column of ashes Riga's

share was only minimal, 837 lasts of the total 10,842.5 lasts, but part of the goods in the column for undefined products was probably ashes. Danzig was the major exporter of ashes with 8,171 lasts and Königsberg with 1,705 lasts probably exceeded the volume of Riga as well. In case of pitch virtually everything came from Danzig.⁴¹ The Dutch shipped almost all the ashes, but in pitch their share was around 60 per cent and in tar approximately 56 per cent.⁴²

In 1575 Riga's export in ashes was 3,284 lasts and the town had almost reached the export quantity of Danzig, which was only 3,575.5 lasts. In case of tar Danzig was leading with 2,302 lasts against 909 lasts from Riga, but in the column of undefined products there was an extra of 3,152 lasts for Riga against 733.5 lasts for Danzig and therefore it is obvious that both in ashes and in tar these two towns had almost an equal share. The third position in ashes was held by Königsberg, but in the shipments of pitch and tar the town had only a minor role.⁴³ The revolt had effected the Dutch shipping and their role in the transport of ashes had dropped under 60 per cent and in case of pitch and tar the share was even lower, with 33 per cent in pitch and 43 per cent in tar.⁴⁴

The previous suppliers of refined forest products had got new competitors in 1585. In case of ashes, from the total shipments of 6,382 lasts

of ashes Königsberg was the biggest exporter with 1,989.5 lasts, but Danzig was close behind with 1,984 lasts and the share of undefined loads for Danzig was 2,478 lasts against 296 lasts of Königsberg, which obviously gives the first place to Danzig. Riga was still the third with 1,250 lasts and the undefined 3,252 lasts of Riga export consisted of some ash. Anyway, the ports of West Prussia were the fourth with 921.5 lasts.⁴⁵

According to the preserved letters from Huych Adriaenszoon (in Danzig) to Claes Adriaenszoon van Adrichem (in Delft), about the price of ashes in Danzig in 1585, a last of ashes cost 45-46 guilders⁴⁶, approximately 19.5 to 20 rix-dollars.⁴⁷ If all of the ash was sold with that price, the export volume of ashes should have been at least 4,850 lasts to reach Danzig's export value of ashes, 97,000 rix-dollars. The figure of Sound Toll Records, 1984 lasts, gives an export value under 40,000 rix-dollars for the ashes brought through the Sound. Even if all of the unspecified refined forest products from Danzig were ashes the export through the Sound was only 4462 lasts, i.e. worth approximately 89,000 rix-dollars. However, the price of ashes depended on the quality and pureness of the ash, and the fluctuation of prices from year to year was also remarkable, e.g. in 1579 the best "bear's foot"⁴⁸ ashes

did cost 78.00 guilders per last.⁴⁹

In 1585 the role of the West Prussian towns in the export of pitch was even more important than in the case of ashes. Danzig held the dominating position with 2,767 lasts from the total of 4,168 lasts, but the other West Prussian towns were the second with an export of 1,166 lasts and Königsberg was the third with 209.5 lasts.⁵⁰ A rough estimate about the value of Danzig's export with pitch is possible to obtain from the price information in the letters of Huych Adriaenszoon. The price of pitch was 14 guilders for a last in January 1585,⁵¹ but it fell slowly to 12 guilders in June 1585.⁵² The average price of 13 guilders for a last converted to rix-dollars gives us an export value of 15,639 rix-dollars, which is almost as much as the export value of clapboards, but it is far behind the export value of ashes and also far behind the total value of timber export.

The export of tar was even more divided into several suppliers in 1585. Danzig and Riga were still ahead with 803.5 lasts and 821.5 lasts respectively, but the diffusion of the market had started. West Prussia reached 666 lasts, Courland 345.5 lasts and the new competitors in the market were the ports of Finland with 441.5 lasts and Sweden with 310 lasts. The total quantity was 3749 lasts, from which the two biggest suppliers delivered

approximately 43 per cents.⁵³ Huych Adriaenszoon's letters give us the possibility to estimate the value of Danzig's export in tar.⁵⁴ The average price was 10 guilders for a last, which gives us 3,493 rix-dollars for the export value of tar in 1585, which is the lowest figure of the forest products, only 22 per cent of the export value of pitch. There is no accurate information about the price of tar in other places, but with the average price of Danzig the total value of tar deliveries would have been only 16,300 rix-dollars, which is only some hundred rix-dollars more than Danzig's export in pitch. Naturally, this is just a rough estimate without the exact prices from other loading ports, but it indicates the relative unimportance of tar export compared to other forest products.

The Wendish towns of the Hanseatic League shipped also some refined forest products, but their relative share was usually minimal. Until 1569 Hamburg held a small share of the deliveries of ashes, but thereafter it participated only occasionally on the trade. In pitch and tar Hamburg made a bit better, but only in 1578 Hamburg's share rose close to 20 per cent of the deliveries in pitch and in 1569 Hamburg had the highest relative share in tar with 12 per cent. The performance of Lubeck was not more satisfactory and even the shippers from England

and France made it better.⁵⁵

4.3.4. THE OVERALL DEVELOPMENT OF THE BALTIC FOREST PRODUCTS TRADE UNTIL 1585

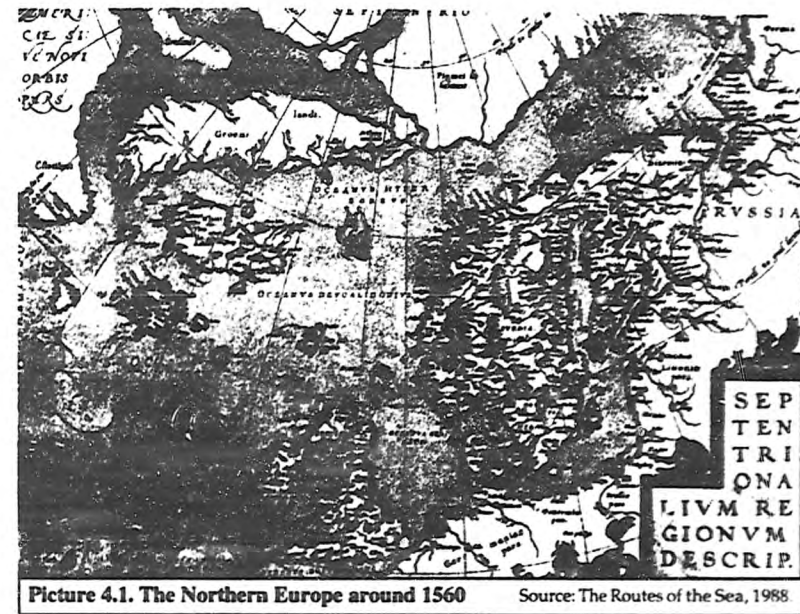
The development in the trade with the forest products from the Baltic region during the period from 1562 to 1585 headed to different directions in respect of the individual commodities. The average of yearly volume in the timber trade rose towards the end of the period, when the quantities are counted by piece. The situation was about the same, when we consider the shipments of clapboards. This type of wood was mainly used in the Netherlands and therefore the demand was not dependent on the re-export. The Dutch also held a dominant position in the transport of the clapboards for the whole period. Only in 1569 there was a serious drop, but the total quantity of clapboards shipped to the Western Europe in 1569 was also minimal. Waynscot had a different story, because the highest quantities were shipped in the years before the Dutch revolt and the outburst of war severely harassed the trade and the yearly quantity of waynscot from 1569 to 1585 was less than one third of the average volume of the previous years. In the 1560s the Dutch had a remarkable share of the waynscot deliveries to the west, but thereafter their relative share fell. This type of wood was used mainly for

shipbuilding and the disturbances hampered the trade when the revolt started in 1568. However, the competitors could not gain advance and the volume of total deliveries fell considerably. Not even the Hanseatic League could fill the gap.

The refined forest products reached the peak in the 1560s and a drop occurred when the Dutch revolt started. The transport of ashes did not suffer as much as the deliveries of pitch and tar. The Dutch held a dominant position in the shipments of ashes and their share drop only occasionally under 50 per cent of the total deliveries. The supplies of tar were transported with other ships if the Dutch were not able to do it, because tar was needed in shipbuilding all over Europe. The

relative share of the Dutch shipments was over 50 per cent before the revolt started, but thereafter their share was approximately 40 to 50 per cent. However, the total shipments fell considerably, when the Dutch shippers were out of business. The situation in the pitch shipments followed the pattern of tar, but the relative share of the Dutch was even smaller and the yearly average in total shipments of pitch rose after 1568 though the Dutch were not involved.

The importance of the forest products in the Baltic trade can also be traced from *the lastage dues* the shippers paid at the customs office in the Sound. Grain was naturally the most important commodity, but the relative share of forest products rose



Picture 4.1. The Northern Europe around 1560

Source: The Routes of the Sea, 1988

during this period. In 1565 9 per cent of the lastage came from timber and 11 per cent from ashes, pitch, and tar, but in 1575 the share of timber was 10 per cent and the share of the refined forest products was 20 per cent. In 1585 the share of timber was again 10 per cent, but the lastage dues for ashes, pitch, and tar reached 25 per cent. In comparison, the percentage of grain was 65 in 1565, 63 in 1575 and 52 in 1585. These figures indicate that the importance of forest products in the Baltic trade rose towards the end of this period, but the absolute figures in lastage show that the relative growth can partly be explained by the drop of grain deliveries.⁵⁶ (See appendix P)

In general, during the period from 1562 to 1585 the largest port in timber shipments was Danzig and Königsberg usually held the second position. The situation with ashes and tar was different, because already in 1565 Riga had an important share. The diffusion of market in the deliveries of tar started earlier than in other forest products, because the northern parts of the Baltic Sea were penetrating to the market already in 1585. However, we must remember that timber and other forest products arrived to the dominating export ports also from the northern parts of the Baltic Sea already in the 15th century. For instance, Sweden and Finland had active trade connections to Danzig, but the Swedish kings were

eager to open direct trade connections in the last decades of the 16th century and they also slightly succeeded. E.g. the tar export of Wiborg in 1558 was only 30 barrels, but in the 1580s around 4,000 to 5,000 barrels.⁵⁷ The preserved documents in Riga make it clear that the ashes and tar came from Russia. Therefore it is obvious that part of the forest products shipped from the major ports was supplied from the northern parts of the Baltic Sea already in 1565. Especially the Dutch were interested in purchasing the goods without any intermediaries and therefore they tried to sail directly to the supplier.

Notes to chapter 4:

¹ Koenigsberger, H. *Western Europe and the Power of Spain*, in: Wernham R.B. (ed.), *The New Cambridge Modern History, Volume III The Counter-Reformation and Price Revolution 1559-1610*. Cambridge 1968, p. 264.

² Vlekke 1963, p. 127.

³ Wallerstein, Immanuel, *The Modern World-System, Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*, New York 1974, p. 77.

⁴ *Quellen zur Allgemeinen Geschichte*, edited by Gottfried Guggenbühl & Hans C. Huber: Herzog Albas "Rat der Unruhen", 1568, Zürich 1956, p. 153.

⁵ Houtte 1977, p. 191.

⁶ Israel 1990, p. 26.

⁷ Christensen 1941, p. 87.

⁸ Heeres, W.G., *De Heffing van het Paalgeld door Kampen en Amsterdam, Economisch en Sociaal-Historisch Jaarboek*, 46, 1983, p. 138-139.

⁹ Braudel, Fernand, *Civilization and Capitalism 15th-18th Century, Volume III, Perspectives of the World*, New York 1984, p. 144-145.

¹⁰ Houtte 1977, p. 191.

¹¹ Amsterdam 1788, p. 128.

¹² Christensen 1941, p. 319.

¹³ Christensen 1941, p. 352.

¹⁴ Lindblad, J. Thomas, *Evidence of Dutch-Swedish Trade in the 17th Century*, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990, p.208.

¹⁵ Bang 1922, p. 614.

¹⁶ Bang 1922, p. 115.

¹⁷ Bang 1922, p. 22.

¹⁸ Bang 1922, p. 54.

¹⁹ Bang 1922, p. 110.

²⁰ Houtte 1977, p. 187-188.

²¹ North, Michael, *The export trade of Royal Prussia and Ducal Prussia, in From Dunkirk to Danzig: Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres & L.M.J.B Heesp & L. Nordegraaf & R.C.W. van der Voort Hilversum 1988, p. 387-388.

²² Bang 1922, p. 17.

²³ Bang 1922, p. 21.

²⁴ Bang 1922, p. 53.

²⁵ Bang 1922, p. 103.

²⁶ Bang 1922, p. 107.

²⁷ Bang 1922, p. 103.

²⁸ Bang 1922, p. 108.

²⁹ Bang 1922, column "Vognskud" in respective years.

³⁰ North refers to Anthony Maczak's tables in *Miedzcy Gdanskimi a Sundem. Studia nad handlem baltyckim od polowy XVI do polowy XVII w.*, Warszawa 1972, mentioned in the footnote 15 in North's article, North 1988, p. 388.

³¹ nr. 780-783., *Bronnen voor de Geschiedenis van de Nederlands Oostzeehandel in de zeventiende eeuw, Deel III, Acten uit de notariële archieven van Amsterdam en het noorderkwartier van Holland 1585-1600, Het koopmansarchie van Claes van Adriachem*, edited by P.H. Winkelman, 's-Gravenhage 1981, p. 474-477.

³² 1 rix-dollar (rijksdaalder) was 46 stuivers, 20 stuivers were 1 guilder, which makes 1 rix-dollar worth 2.3 guilders, BGNO B p. XXVII.

³³ nr. 791 BGNO B, p.482.

³⁴ "Fad- og Pibeholt" 19.5 hundreds, "Deler og Planker" 175 shocks, "Aarer og Master" 2692 and "Kister" 20 lasts, (the note of oars and masts in page 115 also explains that most of the 2692 pieces were oars) Bang

1922, p. 108.

³⁵ Christensen 1941, p. 308-309

³⁶ Bang 1922, p. 11

³⁷ Bang 1922, p. 57

³⁸ Bang 1922, p. 41.

³⁹ North 1988, p. 387-389.

⁴⁰ Jensen 1977, p. 4

⁴¹ Bang 1922, p. 21.

⁴² Bang 1922, p. 17.

⁴³ Bang 1922, p. 53.

⁴⁴ Bang 1922, p. 45.

⁴⁵ Bang 1922, p. 109.

⁴⁶ BGNO B, p.482.

⁴⁷ BGNO B, p.XXVII.

⁴⁸ originally "bear's foot" was a quality seal from Königsberg, but soon it was used in all Prussian and Polish ashes, which were refined before they came to the loading port, Gelius 1985, p. 61.

⁴⁹ The price indication only from July 1579. Column 207 Bear's Foot ashes, Posthumus, 1946 A, p. 455.

⁵⁰ Bang 1922, p. 109.

⁵¹ BGNO B, p.469.

⁵² BGNO B, p. 479.

⁵³ Bang 1922, p. 109.

⁵⁴ BGNO B, p. 469-479.

⁵⁵ Bang 1922, columns "Aske", "Beg", "Tjære" and "Aske, Beg og Tjære" in respective years.

⁵⁶ Christensen 1941, p. 466.

⁵⁷ Ruuth, J.W., *Wiipurin kaupungin historia*, I, Wiipuri 1908, p. 203.

5. THE DIFFUSION PERIOD IN THE TRADE UNTIL THE TWELVE YEARS' TRUCE IN 1609

5.1. THE MERCHANT TAKES THE LEAD

The Northern Provinces had developed the Baltic bulk trade - the "*moedernegotie*" - from a modest nucleus in the 14th century to a flexible network of routes. In the middle of the 16th century the shipmaster also acted as a trader in most of the Baltic region. Sometimes the shipmaster was only working for the "*reederij*", but he could also own a part of the ship. According to the preserved "*bevrachtingscontracten*" there were only general directions for the shipper to operate with regard to routes and conditions, but execution in of details was left to the shipmasters. An ordinary contract in the forest products' trade could include the destinations, e.g. salt from France to the Baltic, the wanted commodity and the freight rate, but the shipmaster could select the harbour where he fetched the salt and whether he sailed to Danzig, Riga, or Königsberg.

There was also one peculiarity in the Baltic trade techniques, which had almost totally disappeared in other parts of Europe. There were no permanent factors in smaller ports and therefore in some cases the trade itself was a direct barter, in which

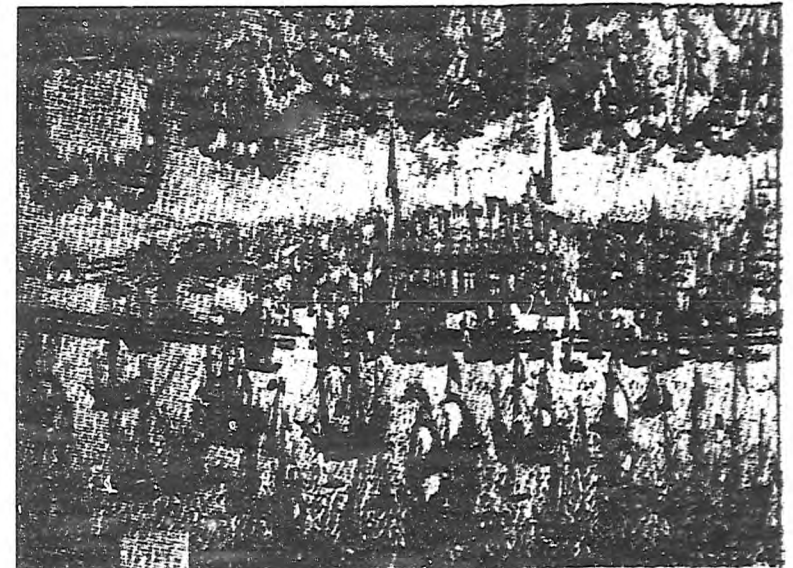
price was noted for direct value relations e.g. between rye and salt without money involved in the whole transaction. The next step in trading techniques was the direct exchange of goods, but with the value of these goods in money. This method was used in Finland and Sweden still in the 17th century.¹ However, the situation in the old trade towns of the Baltic region was almost totally different. E.g. Danzig had adopted the modern trade and banking methods from the Dutch and it was common, for instance, to settle the payment with a draft "*wisselbrief*" already in the end of the 16th century.² Yet, most of the transactions in Danzig were based on money. The most important mediums were the Spanish silver coins and the *rix-daalder* (rix-dollar) of Spanish Netherlands, but the Dutch revolt diminished the access to the Spanish currency and therefore already in 1584 the first own *rix-daalders* from the Northern Provinces were introduced in Danzig.³

The old method of a shipper operating as a trader started to vanish in the 16th century. The influence of the Antwerp merchants was an important part of this, because they introduced new techniques to the

Dutch and after the fall of Antwerp in 1585 some of the Antwerp merchants brought their business connections to the Northern Provinces. The influence of the new methods was enormous. All the traditional routes were carried further. The first expansion was towards the north, because of the North Atlantic fisheries. Moreover, there was a new trade connection to Archangel, where from the 1570s the Dutch had become keen competitors of the English and soon outdistanced the pioneers. Of much greater importance, however, were those routes that started and rapidly developed during the 1590s. Just about 1590 the Dutch trade found a new direction, the *straatvaert*, i.e. the trade beyond Gibraltar. At first the farthest point of the route was in

Italy, but some decades later the Dutch sailed to the farther Mediterranean, the Levant. ⁴The first steps of this new route followed the pattern of the Baltic trade, because the Dutch were operating only as carriers to the Italian merchants of Genoa, Venice and Tuscany. ⁵ For instance, in 1591 Giraldo and Julio de Chiaro made a "*bevrachtingscontract*" with Jouchem Cramer. The shipper should bring wheat and rye to Leghorn (Livorno) in Italy, but in this case the shipper cheated the owners of the cargo and he never transported the commodities to Italy.⁶

A shipper could not have the possibility to know the demand at the both ends of this vast network. In the Baltic trade the role of the old



Picture 5.1. The port of Amsterdam in 1606. Source: The North Sea 1985.

techniques remained a longer time, but even there a cargo that was carried solely for the account of the ship only occurred until 1600.⁷ The opening of the building for Amsterdam Exchange in 1611 was a sign of the new era, though the speculative trade with commodities had developed as early as in the 16th century.⁸ The merchant who got the best information about the prospects for production, about the market-prices and sales' conditions could easily beat his less well-informed competitors, who were in danger of suffering severe losses.⁹ For example, the preserved correspondence of Claes Adriaenszoon van Adrichem shows that he kept a close eye on the development of prices in the Baltic area.¹⁰

5.2. THE FOREST PRODUCTS' TRADE FROM 1586 UNTIL THE TRUCE IN 1609

The average of the Dutch ships involved in the Baltic trade in the 1570s had been approximately 1,000 ingoing ships per year and during the 80s between 1,000 and 1,500 (average 1,300), but there was an intense increase in 1593-95 with an average of about 1,800 ships after which the preliminary climax was reached in 1597 with 1,953 voyages to the Baltic, nearly a double since the 1570s.¹¹ The result is considerable if we think about the situation where the merchants had a risk of seizures of their goods. Especially the

privateers of Dunkirk were a serious threat against the Dutch shipping¹², but the merchant vessels had also other troubles. The English ships were a risk, because England did not want Spain to get grain and naval supplies after the defeat of the Armada. The merchants of Amsterdam themselves did not hesitate to supply the enemy.¹³ Though there were a lot of seizures in the Iberian ports the Spanish Embargo was leaking all the time. There was a simple reason for this. The Spaniards had ran out of suitable timber for masts, which had to be imported from the Baltic. Also logs for keels and stem and stern posts became increasingly difficult to find and costly to transport from the inlands of Spain.¹⁴ War or not, the naval supplies had to be delivered.

5.2.1. TIMBER TRADE IN 1586-1609

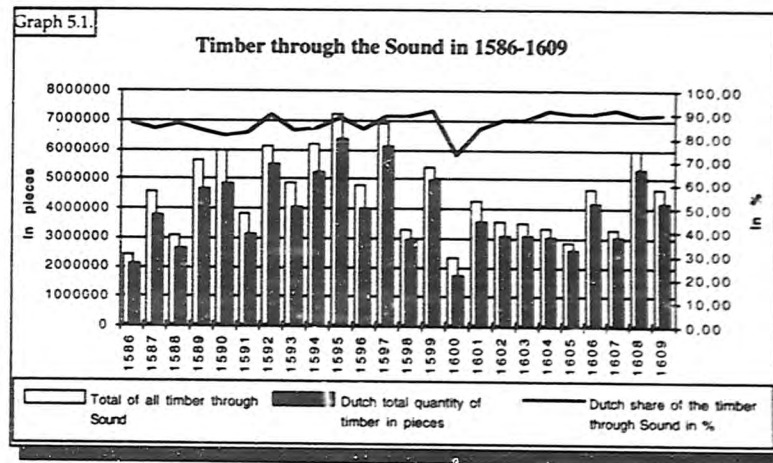
The Spanish military operations against the revolting provinces and the embargo in 1585 had a destructive effect on the timber trade, but there was also an economic depression which diminished the demand in general. The traditional trade routes were cut in pieces as the "*deurgaeude*" voyages with a salt load from Spain to the Baltic Sea were not possible. In 1584 there were 93 direct Dutch voyages from the Iberian peninsula to the Baltic, but in 1586 only 22 Dutch ships made the trip and in the last year of the embargo, in 1589 only 3 ships took the risk of sailing to an

Iberian port. The first year after the embargo, 1590 saw a quick revival of the trade and 101 Dutch ships visited Spain and Portugal.¹⁵

The shipments of Baltic timber through the Sound were a bit over 2,000,000 pieces in 1586, which was the level also in the first year of the embargo, but the total shipments started to grow already in 1587, when almost 4,000,000 pieces were transported. After a downfall in 1588 the total quantity almost reached 5,000,000 pieces in 1589 and 1590 and exceeded this in 1592 and in 1594. In 1595 the highest level of timber shipments was reached with the total volume of over 6,000,000 pieces and in 1597 the quantity was almost as great (graph 5.1.). These figures were the highest peak during the whole period before the Twelve Years' Truce in 1609. The overall economic activity in these years explains part of the peak, because the deliveries of timber are closely related to the total quantity

of Dutch ships visiting the Baltic Sea though most of the ships naturally transported grain. For instance, in 1586 only 1,626 Dutch ships towards the west passed the Sound with commodities whereas in 1597 the total quantity of ships to the west was 2,244.¹⁶

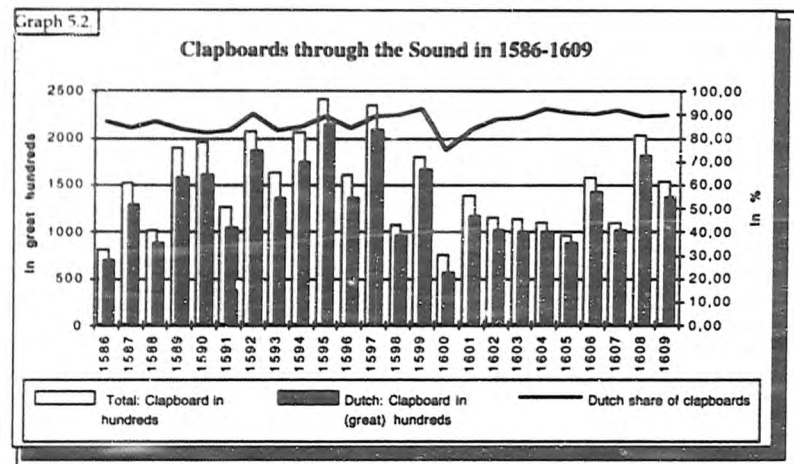
The effects of the Spanish new embargo in 1598 seem about the same, because there was another drop in 1598. The lowest point in the period, when the total quantity of timber dropped under 2,000,000 pieces was reached in 1600. The embargo lasted until 1608, but in this particular year, 1608, the total quantity was over 5,000,000 pieces, while the first year of truce 1609 was worse with only a bit more than 4,000,000 pieces. The shipping figures in Sound Toll Records tell that there was a serious drop from 1608 to 1609 in the quantity of Dutch ships passing the Sound towards the west, from 2,315 ships to 1,510 ships.¹⁷ One explanation to this



serious drop is that the naval expenditure was cut down both in the Dutch navy and in the Spanish Atlantic fleet directly after the truce in April 1609.¹⁸

The total volume of timber actually hides remarkable difference between

the Sound Toll Records clearly explain that especially Lubeck was eager to replace the Dutch. In 1584 the Dutch shipped six times as much waynskot as Lubeck, i.e. 1,004.75 hundreds against 169.25 hundreds²⁰, but in 1587 the Dutch shipments reached only 487.25 hundreds while Lubeck



the most important types of timber, waynskot and clapboard. The graph of clapboard (graph 5.2.) shows that this type of timber was brought through the Sound in large quantities even in 1589, when the Spanish embargo still hampered the trade with waynskot (graph 5.3.). The curve of Dutch share in waynskot also explains that other suppliers could transport the goods, when the Dutch shippers were not able to do it.

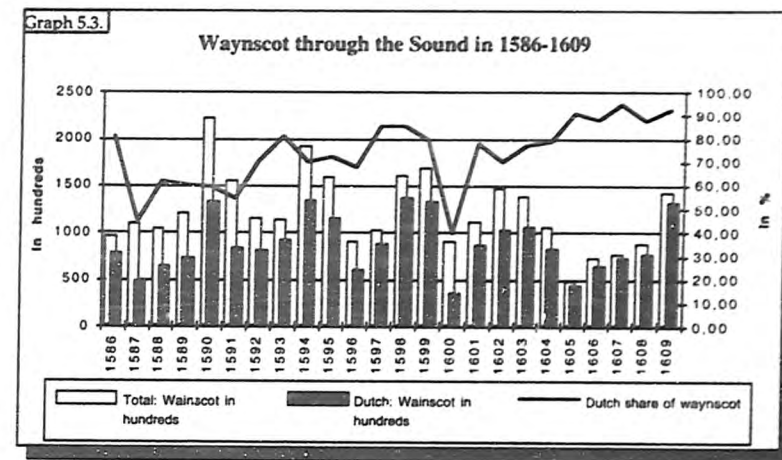
During the Spanish embargo in 1585-1589 there was a revival of the Hanseatic shipments to Spain¹⁹ and

shipped 294.25 hundreds.²¹ However, even in waynskot the Hanseatic shippers could not replace the Dutch merchant fleet, because they simply did not have enough vessels and their freight rates were much higher even during the war years. The English privateers were a threat also to the Hanseatic ships sailing to Spain.

In the years 1598 - 1599 the Dutch shippers held a dominating role in the transport of waynskot. In 1598 the Dutch shipments of waynskot were 1,371 hundreds, while other nations together transported only 242.25

hundreds. Yet, 1598 the new king of Spain, Philip III, had ordered all Dutch ships to be seized in the Iberian ports and approximately 500 Dutch ships were confiscated.²² Unfortunately there is no adequate information on the

preserved carrying contracts that it is too brave to count directly any share of timber cargoes seized in the Iberian ports, but it seems obvious that most of the seized ships were loaded with other commodities. Therefore the



cargoes of these ships, but for instance in the preserved carrying contracts written by Jan Franssen Bruyningh, a notary of Amsterdam, only 4 contracts in 1598 included timber to the Iberian Peninsula and only 2 of those contracts told about timber from the Baltic region.²³ This is quite a negligible share of the contracts, because in 1598 Bruyningh's contracts include 42 trips from the Baltic to Spain and 46 contracts from Spain to the Baltic.²⁴ Also the contracts made by notary Jacob Ghijsbertszoon in Amsterdam and the contracts made by notary Willem Corneliszoon in Enkhuizen do not include forest products bound to the Iberian Peninsula.²⁵ There are so few

waynskot from the Baltic have ended to other destinations.

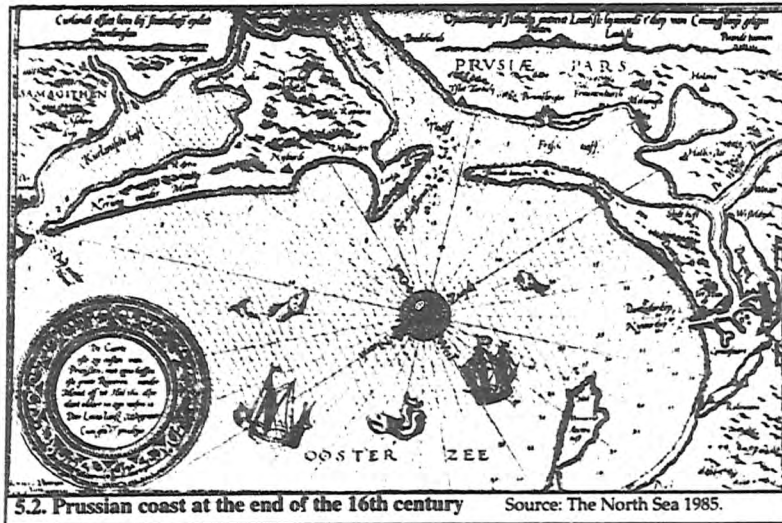
There are two phenomenons which can partly explain the high quantity of waynskot transports in 1598 and 1599, i.e. the introduction of the "fluytschip" and the higher effectivity of sawing with the wind-power. The price of a ship was cheaper when building it could be done faster and the price of sawing was also cheaper. Yet, there must also be a buyer for these ships. Suddenly there were many. The Spanish embargo had also excluded the Dutch from the spice market in Lisbon and therefore several Dutch companies sent expeditions directly to the Far East, which caused a boom in the shipbuilding

industry. The first great boom of the Dutch enterprise in East Indies occurred between 1598-1599.²⁶ In 1602 the competing companies were dissolved and the *Verenigde Oost-Indische Compagnie* was established.²⁷

The scarce data of the value of timber export from the Baltic ports during this period explains, that in 1595 the value of timber export in Danzig was 130,000 rix-dollars and in Königsberg almost as great, 124,000 rix-dollars. The value of timber export rose remarkably from the previous period of 1562-1585 and it also exceeded the export value of the ashes. Yet, there was a setback in 1605, when the export value of timber was only 56,000 rix-dollars in Danzig and 49,000 rix-dollars in Königsberg. The drop of export obviously reflected on the western demand, because in 1595 the Dutch could ship timber to the Iberian

ports for free, but in 1605 there was an embargo. The inquiry into the individual types of wood also supports this idea, because the transport of waynscoot was especially small in 1605, but the shipments of clapboards were about the same as in previous years. Moreover, the share of the Dutch shipments was approximately 90 per cent both in clapboards and in waynscoot. Some other shippers could have transported the goods, if there was an urgent need of timber in the Western Europe.

In the total volume of timber Danzig held the status of the leading timber port in the Baltic in 1595 with Königsberg as the second biggest port in shipments of clapboards, but Courland was already the biggest purchasing area for waynscoot with 542 hundreds against Danzig's 522.75 hundreds.²⁸



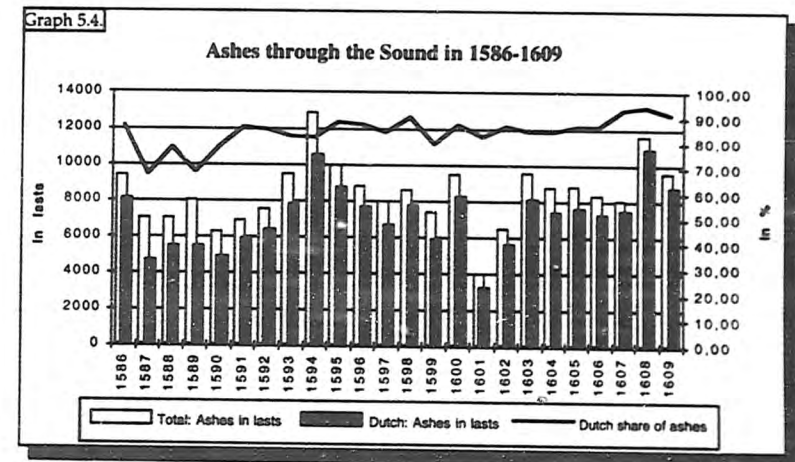
The Dutch shipped the majority of timber, but Lubeck had managed to take the share of 11 per cent in waynscoot though in other types of timber it played virtually no role.²⁹

In 1605 the modest shipments of waynscoot were divided into three shares, but at this time Königsberg was the biggest exporter with 164.75 hundreds against Courland's 150 hundreds and Danzig's 141.5 hundreds. In case of clapboards Danzig with 504.25 great hundreds (i.e. 1,452,240 pieces) and Königsberg with 408.5 great hundreds (i.e. 1,176,480 pieces) virtually controlled the market. A new phenomenon was the Swedish export of deals and planks. With 10,924 pieces Sweden reached the first place against Königsberg's 5,910 pieces, but compared to the other types of timber the export of deals and planks was still unimportant.³⁰

5.2.2. THE REFINED FOREST PRODUCTS IN THE PERIOD 1586-1609

The reliability of the data concerning the transport of refined forest products was hindered in the previous period, because the share of undefined loads was respectively high. In this respect the accuracy of the Sound Toll Records during the period 1586-1609 is much better. Only in the first years the relative share of undefined commodities exceeds 10 per cent and towards the end of the period the share of undefined products is statistically unimportant. Therefore it is possible to examine the development of trade in each commodity without a risk of error in quantity.

Measured in lasts, the ashes were overwhelmingly dominating refined wood products during the whole period. The total shipments of ashes were also on a higher level compared



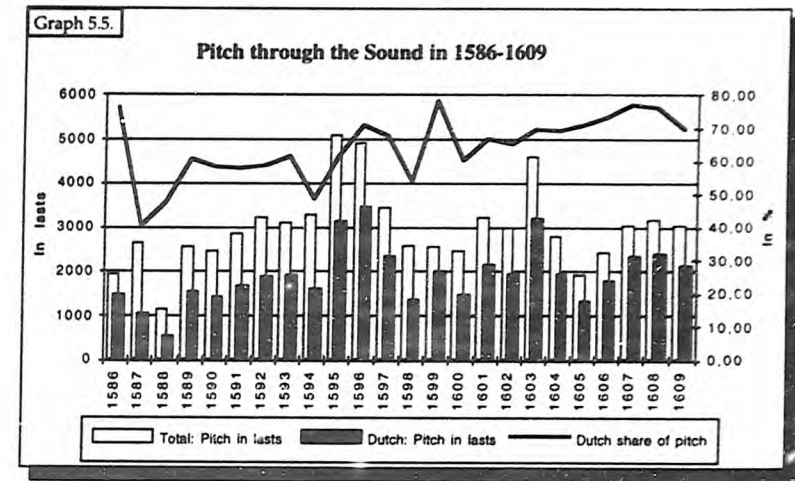
to the average level of the previous period, if we count only the specified cargoes. The average for the period 1586-1609 is 6,831 lasts per year and the average for the period 1562-1585 only 5,659 lasts per year.³¹ Yet, it is impossible to draw the conclusion that the shipments of ashes had risen, because in the previous period 1562-1585 the yearly average of unspecified refined forest products was approximately 4,300 lasts³² and therefore the development of total volume remains questionable. However, the development of Dutch textile industry supports the idea of a rising trend in the shipment of ashes, because until the fall of Antwerp in 1585 the Dutch textile industry had been in decay. Among the refugees from Antwerp were thousands of textile workers from Flanders and Brabant whose skills supported the rise of Dutch textile production.³³

The yearly fluctuation in the period 1586-1609 indicates that the first Spanish embargo from 1585 onwards effected more on the Dutch relative share of the shipments of ashes than the embargo in 1598-1608, but there was also another reason for the decay. In 1586-1587 the Governor-General of the Northern Provinces, the Earl of Leicester, had prohibited the trade with the Spanish Netherlands³⁴ and the Flemish and Brabantine textile mills were an important customer of ashes. It is remarkable that in 1587 the English shippers suddenly were

transporting much more ashes than in previous or succeeding years.³⁵ The Dutch merchants blamed Earl of Leicester for hampering the Dutch trade with the prohibitions. In the end of 1587 Earl of Leicester lost his position as the General-Governor of the Northern Provinces and he returned to England. After the end of the first Spanish embargo in 1589 the quantity of ashes exceeds 6,000 lasts almost every year. It is also remarkable that the fluctuation of the quantities were quite small except in the year 1601. This indirectly indicates that the industries using ashes did not seriously suffer from the war.

The situation with the other refined forest products, pitch and tar, was different from that of ashes if we consider their supply in 1586-1609. The Dutch were dominating the transportation of ashes and their relative share only occasionally fell under 80 per cent, but pitch and tar had a larger network of customers and therefore the curve of the Dutch relative share both in pitch and tar fluctuates much more. Both of these commodities were used mainly for boats and the demand of pitch and tar also reflects the activity of shipbuilding industry.

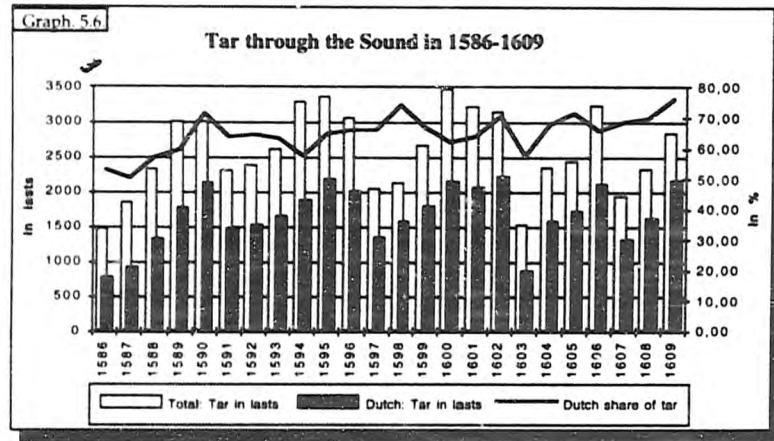
It seems that the average of yearly pitch shipments rose remarkably during the period of 1586-1609 compared to the years 1562-1585, but here we must remember the high



share of the undefined loads. The lowest relative share of the Dutch shipments in pitch occurred in 1587, when they shipped only 40 per cent of the commodity. In the Sound Toll Records of 1586 there is no sign of French pitch shipments, but in 1587 the French shippers were shipping 527 lasts of pitch through the Sound. Moreover, the share of Scottish and English shipments rose, but not as dramatically.³⁶ Especially the shippers of Calais were trying to take their share of the Leicester's prohibition on the Dutch to trade with the Southern Netherlands and Spain.³⁷ The absolute quantity of pitch transportation was at its lowest in 1588 when the total quantity of all shipments barely exceeded the Dutch shipments in 1587, probably because in 1588 the struggle between England and Spain made the sea too dangerous. Thereafter the Dutch shipments seem to stabilise to a yearly

average of 2,000 lasts, which is exceeded remarkably only in 1595, 1596 and 1603.

The shipments of tar during the period 1586-1609 seem to have had a cyclical development where the growth of a few succeeding years regularly met a serious check. The phenomenon occurred in the total deliveries of tar and also in the Dutch shipments, but the Dutch relative share of the tar shipments did not follow the cycle. This indicates that the total demand for tar depended on the European demand and if the Dutch could not meet the need then the others took care of the supply. However, the connection with the Dutch supplies was strong, because the drop of Dutch supplies effected heavily on the total quantity. This is natural, because the Dutch shipyards were the biggest customers of tar in Europe.



Danzig's and Königsberg's export of ashes did not reach the value of timber exports in 1595 and the export of ashes in 1585 had also brought more money to both of the towns. In 1595 Königsberg also made a bit better than Danzig, because the export value of Königsberg was 79,000 rix-dollars compared to Danzig's 76,000 rix-dollars.³⁸ However, the greatest exporter of ashes to the west in 1595 was Riga with 4,529 lasts, which was a lot more than the quantity of Königsberg, 2,601 lasts or the quantity of Danzig, 2,571 lasts.³⁹ These three towns together had a share of 97 per cent of the export of ashes, while in the export of pitch Danzig alone held the share of 76 per cent, i.e. 3,914 lasts from the total quantity of 5,096 lasts. Königsberg was far behind with 1,017 lasts. The three dominating suppliers of the tar trade were

Danzig with 794 lasts, Courland with 711.5 lasts and Riga with 577.5 lasts. Sweden with 460 lasts and Finland with 236 lasts were the next in line and even Lübeck managed to supply 131 lasts.⁴⁰ The trade with ashes and pitch was heavily concentrated to a few supplying regions, but there were many places from where the needed tar could be fetched.

5.3. THE GENERAL DEVELOPMENT OF THE FOREST PRODUCTS' TRADE UNTIL 1609

The first Spanish embargo from 1585 onwards could not hamper the overall development of the Dutch timber trade, because after the first shock the general trend had an upward curve. The average yearly quantity of timber shipments almost doubled compared to the period between 1562 and 1585 and it was almost 4,000,000 pieces a year in 1586-1609. The Dutch share of timber

transport was almost 90 per cent on an average, while the relative share had been a bit over 80 per cent during the previous period. The deliveries of clapboards had their peak in the 1590s and the total shipments reached 2,000 great hundreds in some years. The first years of the second Spanish embargo did not disturb the trade, but in 1600 there was a considerable drop in the deliveries. However, the Dutch shipping capacity had diminished in the seizures and some of the ships were occupied in more profitable voyages to the Far East. Also the secondary role of timber compared to grain can explain part of the drop, because the shipments of grain rose approximately 13 per cent from the previous year⁴¹, though the quantity of Dutch ships westwards through the Sound in 1600 dropped 15 per cent from 1599.⁴² After 1600 the quantity of clapboards started to rise again, but the volumes of the previous decade were not reached.

In 1586-1609 the total shipments of waynscot were approximately one third less than the average in the previous period and even the first Spanish embargo diminished the Dutch relative share of waynscot deliveries. In 1590s the new inventions in timber processing and shipbuilding supported the growth of demand for waynscot, but the Baltic shipments rose only a little. There are some explanations to the modest

growth. During this period the authorities in the Baltic acquisition regions started to be worried about the exhaustion of forests.⁴³ Moreover, new supplying areas using the Rhine river started to compete with the Baltic deliveries. The first agreements concerning timber deliveries from the Black Forest (Schwarzwald) region dates back to 1593.⁴⁴ The Norwegian timber shipments also reached a high level from the 1580s, but oak was scarce in Norway. Especially the war ships ordered by "*Staaten Generaal*" from 1589 onwards were constructed solely from oak, which replaced the softer types of wood even in inner parts of a vessel.⁴⁵ The shipments of waynscot were especially small in 1600 and the phenomenon obviously have the same explanation as in case of clapboards, but it is also remarkable that in this particular year the shipments of Lübeck (212.5 hundreds) and Danzig (178.25 hundreds) together exceeded the Dutch shipments of 360.5 hundreds.⁴⁶ In the last years of this period the shipments of waynscot remained on a lower level than in 1590s. The Spanish embargo was highly responsible for this. For example, the Dutch direct voyages from the Iberian Peninsula to the Baltic stopped totally in the beginning of the 17th century and the Hanseatic ships replaced the Dutch, but the revival occurred after the truce.⁴⁷

In case of refined forest products the yearly average sunk in 1586-1609, but the drop was only approximately 10 per cent compared to the previous period of 1562-1585. It is impossible to define exactly, whether the drop was in the trade of ashes, pitch or tar, because the share of undefined category in the Sound Toll Records in 1562-1585 is so big. Most of these undefined loads in 1562-1585 were ashes and tar, which supports the idea that the drop occurred in these commodities. However, the development of these two commodities differs in 1586-1609. The ash shipments in 1586-1609 were yearly approximately 1000 lasts bigger than in the previous period, if we leave out the undefined loads, while the tar shipments diminished slightly. Therefore the relative loser was obviously tar. This idea is also supported by the fact that the other suppliers continuously had an important share of tar deliveries. Besides, the Spanish embargo harassed the tar trade more than the trade with ashes.

The shipments of the third refined forest product, pitch, grew remarkably during this period, if we consider the shipments that could be defined in the Sound Toll Records, but again the problem of undefined loads casts a shadow over this conclusion. The yearly fluctuation of shipments in all categories remained much smaller

during this period, which indicates that the demand was quite constant. There is no continuous data about the prices of refined forest products in 1586-1609, but the exchange quotation for "bear's foot" ashes, 198.00 guilders per last in 1594 and 204.00 guilders in 1609⁴⁸ gives a hint that the prices of refined forest products had risen enormously compared to the previous period. However, we do not know how much the prices in Danzig differed from the price quotations in the Amsterdam Exchange, and therefore it is impossible to give any certain figures.

There was a drop in the relative share of lastage paid in the Sound for the refined forest products from 25 per cent in 1585 to 15 per cent in 1595, but a part of this drop occurred because the absolute lastage for grain more than doubled. The absolute figures for ashes, pitch and tar were 4,300 daalers in 1585 and 4,900 daalers in 1595. The growth of the timber trade in 1590s doubled the lastage of timber from 1,600 in 1585 daalers to 4,100 daalers in 1595, but the relative share grew only from 10 to 12 percent. The troubles in timber trade in the beginning of the 17th century dropped the lastage to 1,900 daalers and the relative share fell to 7 per cent. The refined forest products still had a share of 14 per cent in 1605.⁴⁹ (See appendix P) These figures partly explain one difference between the two branches of forest products trade.

The timber was usually brought for direct consumption, but the refined forest products could also be stored for future needs.

In the period from 1586 to 1609 Danzig and Königsberg were still dominating the timber trade, but the duchy of Courland had gained an important share especially in the shipments of waynscot. Towards the end of this period Riga also started to participate in the waynscot deliveries. This development indicates that the Southern parts of the Baltic area was already running out of the heavier types of timber. The Dutch held a dominating role in the timber transport, but in some years the troubles in navigation to Spain caused a drop in the quantities. The Spanish needs were met by the Hanseatic shippers, especially with the ships from Lubeck, but also the Danzig ships transported timber occasionally.

In the trade with refined forest products Danzig, Königsberg and Riga were almost equal, though the total quantity of Danzig was usually a bit bigger compared to Riga and Königsberg. Riga did especially well in ashes and tar, but in the shipments of pitch it had virtually no share.

The transformation of market was fastest in the tar trade, because Courland, Finland and Sweden were penetrating to the market towards

the end of this period and in some years they exceeded the export of traditional supplying areas. We must also remember, that some of the Swedish tar was loaded at the ports west from the Sound. The lack of sources is a hindrance to an exact inquiry of the total volume in this export. For instance, according to Hallberg Sweden exported altogether 4,080 barrels of tar to Amsterdam in 1600⁵⁰, but it is not sure if these barrels were included in the 633 lasts of tar, which were recorded in the Sound in 1600.⁵¹

Notes to chapter 5:

¹ Christensen 1941, p.380-381

² BGNO B, p. XVI-XVII; Bogucka 1984, p. 94.

³ Berkenvelder, F.C., Some unknown Dutch archivalia in the Gdansk archives, in: From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850, editors W.G. Heeres & L.M.J.B Heesp & L. Nordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 157.

⁴ Christensen 1941, p. 17.

⁵ Braudel, Fernand, The Mediterranean and the Mediterranean World in the age of Philip II, Vol I, New York 1976, (revised version, original 1966) p. 629-631.

⁶ BGNO B, p. 7.

⁷ Christensen 1941, p. 167.

⁸ Posthumus 1946 A, p. XIX.

⁹ Christensen 1941, p. 178.

¹⁰ BGNO B Hoofdstuk III, Correspondentie en rekeningen van Nicolaes Adriaensz van Adrichem, koopman te Delft Eerste Afdeling, Correspondentie nrs. 772-791.

¹¹ Christensen 1941, p. 87.

¹² Schreiner, Johan, Nederland og Norge 1625-1650, Trelastutførsel og Handelspolitikk, Oslo 1933, p. 45.

¹³ Wolf, Eric R., Europe and the People without History, Berkeley and Los Angeles 1982, p. 116; Lloyd 1991, p. 341.

- ¹⁴ Parry 1967, p. 182.
¹⁵ Israel 1990, p. 31.
¹⁶ Christensen 1941, p. 446.
¹⁷ Christensen 1941, p. 447.
¹⁸ Israel, Jonathan I., *The Dutch Republic and the Hispanic World 1606-1661*, Oxford 1986, p. 43.
¹⁹ Israel 1990, p. 31.
²⁰ Bang 1922, p. 90.
²¹ Bang 1922, p. 124.
²² Parry 1967, p. 170.
²³ Bronnen voor de Geschiedenis van de Nederlandse Oostzeehandel in de zeventiende eeuw, Deel II, Amsterdamse Bevrachtingscontracten van notaris Jan Franssen Bryuningh 1593-1600, edited by P.H. Winkelman, 's-Gravenhage 1977, nr 533, 549, 579, 613.
²⁴ BGNO A p. XXIII.
²⁵ nr 422-431. BGNO B, p.259-263.
²⁶ Israel 1990, p. 67-68.
²⁷ Israel 1990, p. 70.
²⁸ Bang 1922, p. 169.
²⁹ Bang 1922, p. 164.
³⁰ Bang 1922, p. 233.
³¹ Bang 1922, column "Aske" in respective years.
³² Bang 1922, p. column "Aske, Beg og Tjære" in respective years.
³³ Israel 1990, p. 35.
³⁴ Israel 1990, p. 31.
³⁵ Bang 1922, p. column "Aske" in 1585 the English shipments were 380 lasts, in 1586 443.5 lasts, in 1587 990.5 lasts, in 1588 202 lasts, in 1589 693 lasts.
³⁶ Bang 1922, column "Beg" in respective years.
³⁷ Israel 1990, p. 36.
³⁸ North 1988, p. 387-388.
³⁹ Bang, 1922, p. 170.
⁴⁰ Bang 1922, p. 170.
⁴¹ Bang 1922, p. 193 and 197.
⁴² Christensen 1941, p. 446.
⁴³ Mager 1960B, p. 124 and 148-149.
⁴⁴ Buis 1985 B, Utrecht 1985, p. 506.
⁴⁵ Unger 1978, p. 38.
⁴⁶ Bang 1922, p.198.
⁴⁷ Israel 1990, p. 57.
⁴⁸ 198.00 guilders: price of May 1594, 204.00 guilders: price of November 1609, Posthumus Leiden 1946 A, p.455.
⁴⁹ Christensen 1941, p. 466.
⁵⁰ Hallberg, Annagreta, Tjäreexport och tjärhandelskompanier under stormaktstiden, Historiska och Litteraturhistoriska Studier, 34 Helsinki 1959, p. 173.
⁵¹ Bang 1922, p. 199.

6. FOREST PRODUCTS' TRADE UNTIL THE MIDDLE OF THE 17TH CENTURY

6.1. THE EFFECTS OF THE TWELVE YEARS' TRUCE

The Dutch society had been diverted in two factions, which were quarrelling about the peace negotiations with Spain in 1606-1609. One of the most important arguments on both sides were the economic effects of a lasting peace. The expansion of trade to new destinations had brought enormous wealth to some merchants and they were afraid of losing fortunes if the Dutch had to give up their trade links to America and Asia. Spain was willing to give a recognition of complete independence if the Dutch dissolved the *Verenigde Oost-Indische Compagnie* and promised not to establish such a company for the trade in America and accepted that Spain and Portugal had the sole domination in the Indies, both east and west.¹ The ones who had invested in the far-trade were naturally opposing such plans. Another argument for the war party was the blockade of Scheld, which had stopped the development of textile industry in Flanders and Brabant. According to the war party the end of the blockade was also the end of the Dutch textile industry.² We must also remember an important argument for the war party. Many of these were businessmen and religious extremists, who had connected their faith with their way to do business.

One of them was Reinier Pauw. He and his Calvinist partners had a dominating role in the VOC and the company's future would be endangered if the Spanish suggestions were accepted. Therefore the Calvinist merchants combined the religious arguments and the business interests to a fanatic campaign against the peace negotiations.³ A peace treaty was not possible under these circumstances, but both of the belligerents had exhausted their resources and the Twelve Years' Truce was concluded in April 1609.

The first effects of the truce were as horrible as the war party had thought, because there was a serious downfall in the value of the VOC shares and many small and big investors lost their fortune.⁴ The end of naval warfare also released plenty of seamen and therefore the salaries were dropping when the unemployed sailors were struggling for a job. Also the demand for naval stores fell, which caused a drop in the prices.⁵ However, the damages for the economy were only temporary and the reshaping of the trade systems occurred fast. The revival of the trade was possible, because the lower freight rates and drop in the price level of the commodities made it possible for the Dutch to conquer the forest product markets.

The Baltic trade was restructured after the Twelve Years' Truce, because the commodities from the Baltic region were meant mainly for the Spanish, Portuguese and Italian markets, which had been to a great extent controlled by other merchants during the war. The Dutch were allowed to visit these ports without the risk of seizures and soon the competitors were swept from the market. The Baltic commodities also ended much farther off than before. In the years 1609-1620 many more Dutch ships sailed directly from the Baltic to the Mediterranean than before or after the truce.⁶ The effectivity of the Dutch ships was gained with the simple construction of the *fluyt*, which meant that the vessel needed only a small crew, like an English writer explains in 1620:

" though an English Ship of two hundred tun. and a Holland, ... of the same burthen be at Danske, or any other place beyond the Seas, or in England, they do serve the Merchant better cheap by one hundred pounds in his freight than we can, by reason he hath but nine or ten Marriners, and we near thirty; thus he saveth twenty mens meat and wages in a voyage."⁷

However, the War of Kalmar between Sweden and Denmark in 1611-1613 harassed the Dutch crossings through the Sound, because the Danish king forbade sailing to the Finnish and Swedish ports, and Denmark seized the Dutch ships, which did not obey the ban. The Baltic

supplies were vital to the Dutch, and the shipping business had a serious slump during the war years. Moreover, the customs tariffs in the Sound were raised remarkably, and the Danish king did not reduce the dues even after the Peace of Knäred. The Dutch negotiated successfully with Lubeck and Sweden in order to reduce the power of the Danish king. The old overland route from Lubeck to Hamburg was improved, and grain shipments started from Älfsborg in Western Sweden to Amsterdam.⁸ The alliance of Sweden, Hanseatic towns, and the Dutch Republic forced the Danish king to cancel the additional Sound dues, and thereafter the Dutch traders had a free access to the Baltic.⁹

The reshaping of the market and the unhindered sailing to the southern ports also had effects on the shipping. In the Baltic area this meant a revival after a the disturbances in the period of 1610-1613 and the average of ships towards west in 1614-1620 was 1,920, which means that the growth was over 30 per cent compared with the depression in the beginning of the 17th century.¹⁰ After this peak the number of ships dropped remarkably and the yearly average of ships commanded by Dutch towards west was approximately 1100 until the middle of the century.¹¹ The drop in shipping was connected with the troubles of the Thirty Years' War, but compared to its competitors the drop of Dutch shipping was much

smaller.¹² We must, however, remember that the number of ships does not explain the overall development, because the size of the ships was growing in the 17th century. The average size of ships is not possible to calculate from the printed Sound Toll Records, but according to Aksel E. Christensen the average carrying capacity rose from 73 lasts in 1594 to 133 lasts in 1639 in the ships, which could be identified both in the Sound Toll Records and in the preserved "*bevractingscontracten*."¹³ The introduction of *fluytschip* in the end of the 16th century supports this development, because the *fluyt* was bigger than the ships used in the Baltic earlier and it also replaced the other ship types in the Baltic trade.

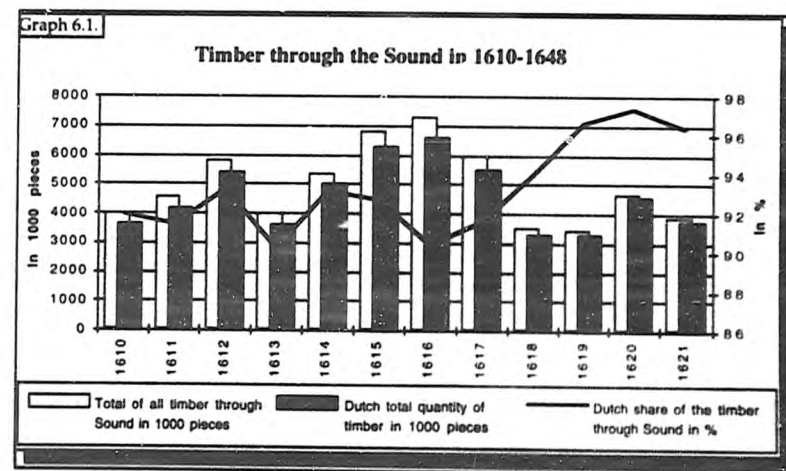
In spring 1621 the peaceful period ended, when the new king of Spain, Philip IV, started the new embargo against Dutch trade and shipping. At this time the ban covered the Iberian

Peninsula and also the southern parts of Italy, which belonged to the Spanish crown. The successful years of the Dutch trade seemed to be over again.

6.2. THE FOREST PRODUCTS TRADE UNTIL THE EMBARGO IN 1621.

6.2.1. THE PEAK OF TIMBER TRADE DURING THE TRUCE

The Twelve Years' Truce was also a turning point in the timber trade, because the opening of the re-export markets and the rise of domestic demand supported the growth. The Dutch were dominating the market, and their relative share of timber shipments was over 90 per cent for the whole period (Graph 6.1.). The drop in timber demand in the year of truce 1609 was already mentioned in the previous chapter, but in the first year of this period, 1610, the total shipments of timber did not even reach the quantity of 1609. This is

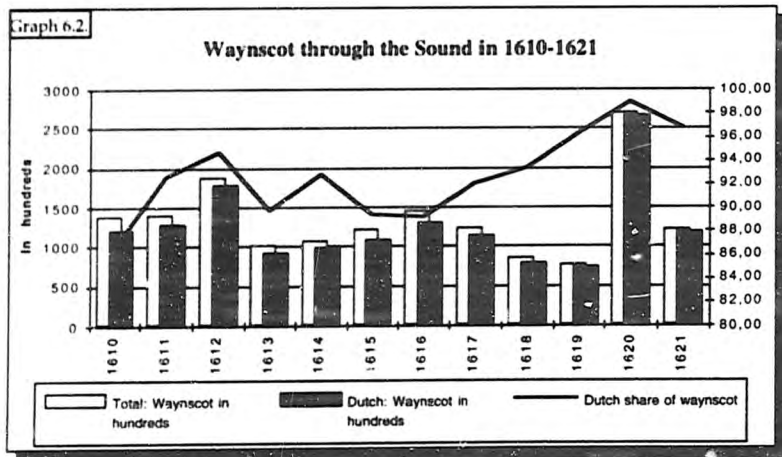


self-evidently caused by the cuts in naval expenditures. Thereafter the total volume grew from 3,995,000 pieces in 1610 to 7,391,000 pieces in 1616. The Dutch shipments rose from 3,674,000 pieces to 6,589,000 pieces, and even the average of shipments in this period was over 4,600,000 pieces a year. The War of Kalmar in 1611-1613, and the hostilities of the Thirty Years' War from 1618 onwards reduced the deliveries of timber, but the growth of shipbuilding industry in the Dutch Republic guaranteed a buyer for every last of timber that could be brought from the Baltic.

The demand for shipbuilding material was so urgent that even the long route from Archaengel was worth trying. The English traders had tried to transport naval stores from the Kola Peninsula already in the 1550s, but the transportation costs had been too high for a profitable business. The Dutch had been

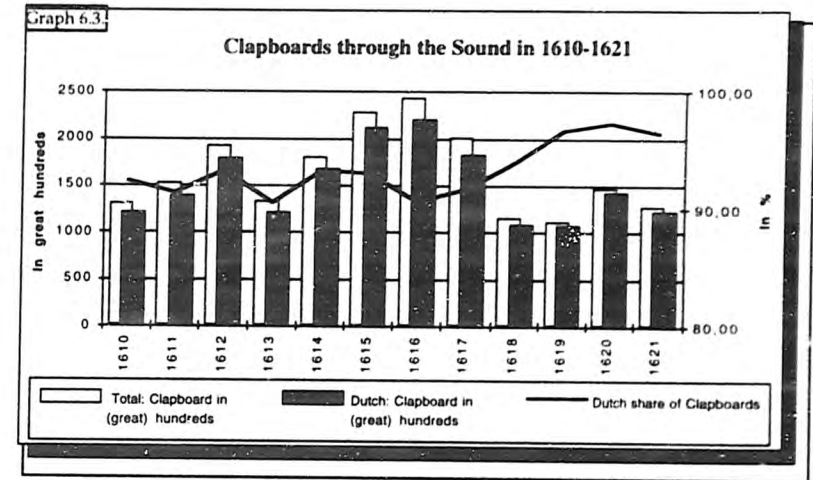
exporting valuable commodities and some herring through the Northern ports of Russia in the 16th century, but around 1610 they started to use the route also for shipbuilding material.¹⁴ However, the Baltic supplies exceeded the quantities brought from Northern Russia and the Archaengel route remained unimportant in the trade with bulky commodities due to the high transportation costs.

The success of Dutch shipbuilding supported especially the demand for waynscoot. The yearly average of waynscoot during the period 1610-1621 was around 1250 great hundreds. It rose approximately one third from the period 1586-1609, and it was almost as high as in 1562-1585. However, the yearly shipments did not follow the general trend of timber transport, because the fluctuation of yearly shipments was quite small except for the high peak in 1620.



The lowest figures appear in 1618-1619, which self-evidently is connected to the opening of Thirty Years' War (graph 6.2.). The Baltic deliveries of waynscoot were very important for the Dutch, because the Danish king had again banned the export of oak in 1602 due to the need of domestic shipbuilding, and the supplies from the German

1621 almost reached 1,500 great hundreds, i.e. approximately 4,300,000 pieces. However, the growth of clapboard deliveries was not as big as in the case of waynscoot during this period, and the quantities were fluctuating from year to year. The peaceful period from 1614 to 1617 was the peak in clapboard deliveries, and the quantity exceeded 1,500 great



Rhineland were also threatened because of the Thirty Years' War.¹⁵ The especially large quantities of waynscoot shipped through the Sound in 1620 came mainly from

The yearly fluctuation in the Baltic timber deliveries was highly connected to the shipments of clapboard. It was the greatest single type of timber when counted in pieces. The yearly average in 1610-

hundreds every single year. The highest peak in 1616 was over 2,200 great hundreds, in pieces approximately 6,350,000 (graph 6.3.). The expansion of the Dutch economy gave also new customers to clapboard merchants. The Twelve Years' Truce supported the growth of herring industry, which was one of the biggest customers for clapboards. Moreover, the re-export of clapboards in a processed form grew, because the effectiveness of wind power-driven sawmills was applied even to the production of barrel-staves.¹⁶ Also

the rapid expansion of whaling and walrus hunting supported the demand for packing material.¹⁷

An important phenomenon in 1610-1621 was also the growth of shipments in deals and planks. The Dutch brought yearly around 67,400 pieces of deals and planks from the Baltic.¹⁸ When the total shipments of timber are converted into pieces, the relative share of deals and planks remains marginal and even in the best years the share of deals and planks in the Dutch total shipments rose to a few percents. Since this type of timber was larger in dimension than the largest group, clapboards, the volume of deals and planks is bigger than the piecemeal figures express. The conversion to cubic metres would show the real volumes, but there is no reliable way to do it.

According to the export values in 1615 Konigsberg had exceeded the importance of Danzig as the most important loading port of timber in the Baltic. The value of Konigsberg's timber export was 139,000 rix-dollars, while Danzig made only 119,000 rix-dollars.¹⁹ However, these figures can be a bit misleading, because in 1610-1621 Danzig was still dominating the shipments of waynscoot with the total of 6686.25 hundreds against Konigsberg's 3829.25 hundreds, i.e. the yearly average of Danzig was almost 560 hundreds against Konigsberg's export around 320 hundreds. In the deliveries of clapboard Konigsberg was

leading clearly with 10,060 great hundreds against Danzig's 5,966.75 great hundreds, which means a yearly average of approximately 840 great hundreds for Konigsberg and around 500 great hundreds for Danzig. In other types of timber Danzig and Konigsberg had an almost equal share year after year. These two towns were superior compared to other acquiring areas, but it is impossible to know, which was bigger, because we do not have adequate information about the prices of yearly shipments. Courland was still a remarkable supplier in waynscoot and it shipped clapboards in some years. Stettin participated occasionally in the trade with clapboards, but in general the Hanseatic towns had virtually no role in timber trade. The most remarkable new phenomenon was Sweden's participation in trade with deals and planks. Sweden did not have oak to deliver, but in 1610-1621 it shipped almost 250,000 pieces of deals and planks, which is a remarkable result, because Sweden was waging a war against Denmark during this period.²⁰

6.2.2. THE REFINED FOREST PRODUCTS' TRADE IN 1610-1621

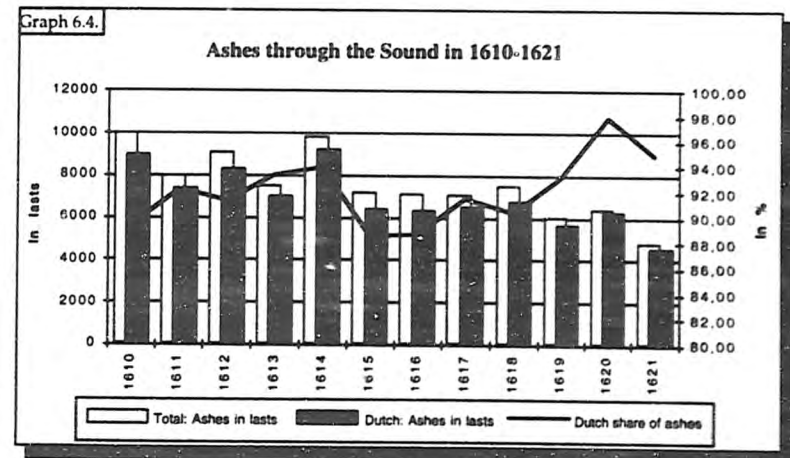
The growth of Dutch shipbuilding, textile production, and the expansion of new industries supported the demand for refined forest products in 1610-1621. The expansion to new markets supported this growth, and the policy of the Dutch Republic

helped the merchants and industrialists to succeed even in the luxury trade earlier dominated by competitors. Especially the Dutch textile industry developed towards refining of semi-finished products, which were brought in most cases from England. The English authorities banned the export of unfinished cloth in 1609 in order to reduce the Dutch competition, but this so-called Cockayne Project did not work because of the Dutch countermeasures. The *Staten Generaal* forbade the import of finished cloth and the English textile production suffered. England expanded the textile export in the Baltic, but the growth could not compensate the lost markets in the Dutch Republic and in the German hinterlands. In 1617 England gave up and allowed the export of unfinished cloth, but the Dutch ban remained in force.²¹

The deliveries of ashes from the Baltic in 1610-1621 remained approximately the same as in 1586-

1609. The yearly average of ordinary ashes was around 7,000 lasts, and the deliveries were quite stable through the whole period until 1618, but thereafter the quantities begun to drop. The Dutch share of the total quantity was over 90 per cent almost every year, and it is obvious that most of the ashes were meant for domestic consumption in this period (graph 6.4.). Moreover, there was a new type of ash, potash²², which penetrated effectively into the market during the end of this period.

Potash was far more expensive than ordinary ashes, and therefore it is misleading to combine the quantity of potash with the deliveries of ashes. In most cases potash was entered to the Sound Toll Records in shippounds, and the quantities have to be converted to lasts in order to make a rough comparison. From 1610 to 1617 the average shipments of potash were around 60 lasts a year (almost 2,200 shippounds), but in



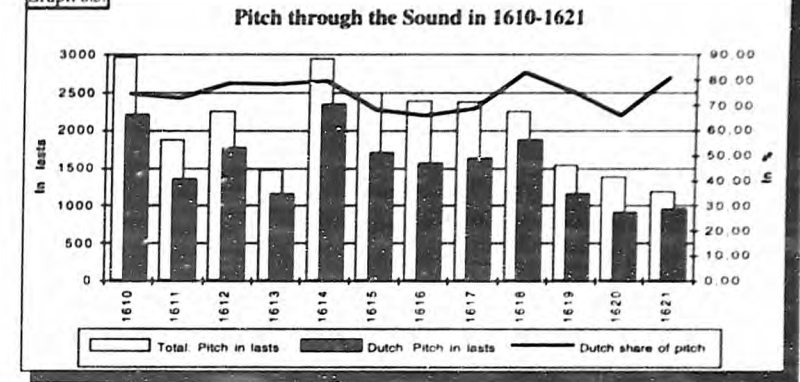
1618-1621 the average rises to over 400 lasts (around 14400 shippounds).²³ There is no indication of the exact price in potash from this period, but an arithmetical average of 40 guilders²⁴ for a shippound gives a yearly value of 88,000 guilders for 1610-1617 and in 1618-1621 the export of potash was worth some 570,000 guilders. The yearly average of 7,000 lasts of ordinary ashes with an average price of 227 guilders²⁵ gives the value of approximately 1,589,000 guilders, i.e. with these figures the export value of potash was approximately 35 per cent of ashes. However, this must be taken with certain reservations. The prices were fluctuating year by year, and especially the quality of ashes varied a lot, which reflected directly on the price. The yearly average volume of ashes was the same as in 1586-1609, but the value of the export had risen enormously, because the price had multiplied.

According to the export values in 1615 Danzig was far ahead of Königsberg in the ash trade. The export value of Danzig was 169,000 rix-dollars, but Königsberg made only 97,000 rix-dollars.²⁶ The third important place to fetch ashes was Riga, but unfortunately there is no information about the export values of Riga. In the shipments of ordinary ashes Danzig was not superior, because the yearly average of shipments was only a bit bigger than

the average of the competitors. Danzig shipped approximately 2,700 lasts of ashes a year and the average of Königsberg and Riga was around 2,300 lasts. The difference in the export values was obviously caused by the superiority in the trade with the most expensive type of ashes, potash. In 1610-1621 Danzig exported over 51,000 shippounds of this valuable commodity whereas Königsberg managed to supply only around 28,000 shippounds, and Riga shipped virtually nothing. It is also remarkable that there was a dramatic drop in the deliveries of ashes from Danzig in the end of this period, but almost 37,000 shippounds of potash were delivered in the very same years, 1619-1621.²⁷ This indicates that Danzig was trying to earn more by refining the product itself.

The yearly average of pitch deliveries sunk from the period 1586-1609, but the relative share of the Dutch deliveries rose during 1610-1621. The average of total shipments was a bit over 2,000 lasts and the Dutch share was usually over 70 per cent. The yearly volume of pitch fluctuated more than the deliveries of ashes, but the Dutch share was quite constant, which indicates that the trade was firmly in Dutch hands. Likewise it is obvious that the political situation in the Baltic hampered the pitch trade more than in the case of ashes, because the difference between the peaceful peak years and the

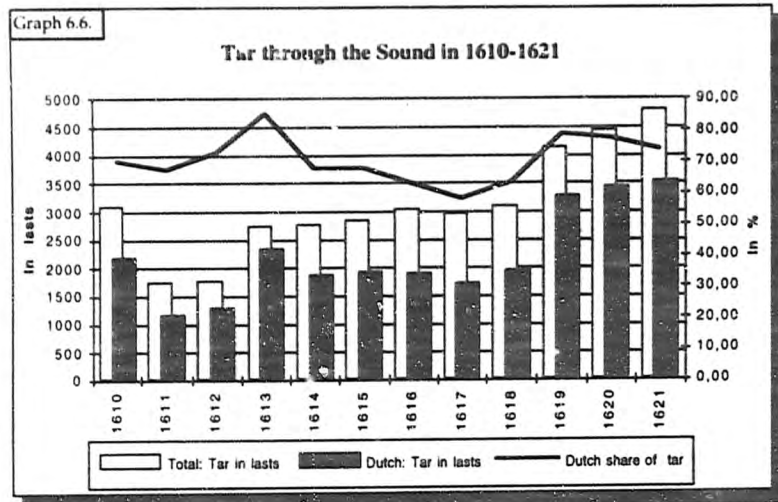
Graph 6.5.



restless years of slack was significant (graph 6.5.). The yearly deliveries of pitch were diminishing towards the end of the period, but it is not sure whether it was due to the Thirty Year's War or due to diminishing supply or demand. The rising trend of tar deliveries support the idea of smaller markets either in the supply side or in the demand side. Danzig held a lion's share in the supplies with approximately two thirds of the deliveries, and the other West Prussian towns were the second in significance. Königsberg managed only modestly and other suppliers had no importance.

The tar deliveries had a rising trend both in the yearly average compared to the previous period, and within this period. The yearly average of total deliveries in 1610-1621 exceeded 3,000 lasts and even the yearly average of Dutch deliveries was over 2,000 lasts. The relative share of the Dutch deliveries fluctuated more than in the case of ashes or pitch, which indicates

that the other traders could throng into the market easier than in other commodities (graph 6.6). There were probably more customers for the tar. The opening of the War of Kalmar caused a drop in quantity, but the peak occurred during the time when the Thirty Year's War had already started. This obviously was connected to the transformation of the acquisition areas, because the northern parts of the Baltic were penetrating effectively to the market during this period, and especially the Swedish export was hampered more because of the War of Kalmar. Danish king restricted the trade with Sweden and Finland and therefore it was difficult to fetch tar from the northern ports. Moreover, the seizures of Dutch ships transporting Finnish and Swedish commodities were a threat to the deliveries. During this period The Dutch Republic and Sweden built close connections, which were based on mutual interests. The Swedish shipments of tar were one cornerstone of this relationship, but even in the peak year of Swedish tar shipments to



the Netherlands, in 1616, tar had only a share of 11 per cent of the Dutch purchases from Sweden.²⁸ Dutch businessmen were heavily involved in several other branches of the Swedish economy, and the Swedish expansionist policy was financed notably by Dutch capital.²⁹

Until 1616 Danzig was the biggest exporter, but in 1616 a rapid change occurred in the supplies of tar. Finland and Sweden were excluded from the market during the War of Kalmar, but the commercial links with the Dutch opened a vast growing market for the Swedish and Finnish tar. In 1610-1621 Finland's export of tar was almost 11,000 lasts and most of this quantity was shipped after 1616. Danzig was still the second biggest supplier with approximately 8,000 lasts, but the deliveries were getting smaller year after year since 1616. Sweden was the third in importance with deliveries of

some 6,600 lasts. Several other areas participated in the trade, but they were far behind these three major suppliers. It is remarkable that Königsberg and Riga had almost totally lost their position in the tar trade. Obviously their hinterlands could not supply tar anymore, because the timber was needed for other purposes.

6.2.3. THE OVERALL DEVELOPMENT OF THE FOREST PRODUCTS' TRADE UNTIL 1621

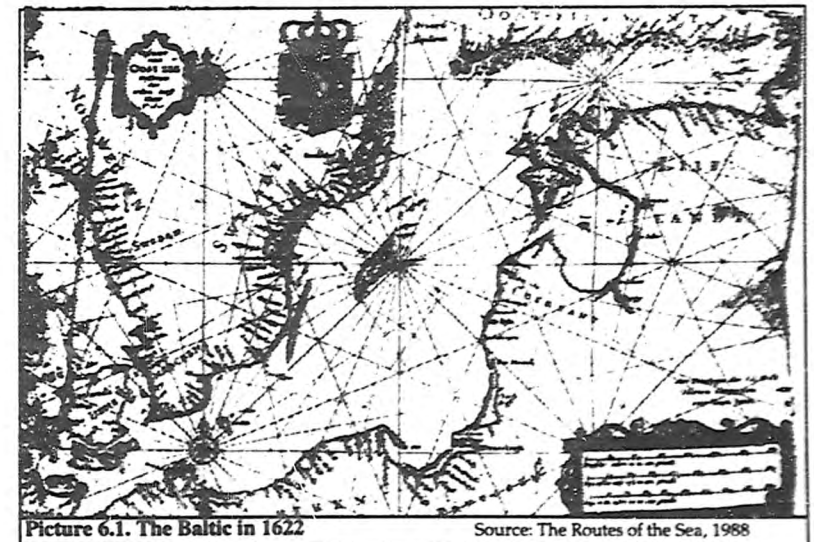
The Dutch forest products' trade in the Baltic in 1610-1621 exceeded the period 1586-1609 in volume and obviously also in value. The total quantity of timber trade made a new record compared to the previous periods, and the growth was remarkable in both major types of timber. However, the yearly average of waynscoot deliveries did not reach the level of 1562-1585, but the rose

from the previous period was remarkable. In case of clapboards this period was the absolute peak and the Dutch dominance was crushing. The trade with ashes grew especially in value, because of the potash exports. Tar trade exceeded previous periods, too, but pitch was losing its importance towards the end of this period.

Measured in absolute figures, the lastage dues in the Sound were at their highest level in the case of timber, and the lastage of timber exceeded the lastage of refined forest products. However, the shipments of grain from the Baltic had grown and the relative share of lastage for the forest products was less than in the previous period. (See appendix P).

Previous major suppliers held their position in the timber trade, but a transformation had already started.

The northern forests were connected to the Dutch commercial network and shipments with heavier types of soft timber were penetrating to the market. In the case of refined forest products, the southern shores of the Baltic were losing their share, though in the case of ashes they still dominated the market. The transformation of tar trade occurred quite precisely in the middle of this period, and the Dutch alliance with Sweden caused an enormous restructuring in the tar trade. Sweden became a promising target for Dutch investments, and the Dutch capital started to play an ever growing role in the Baltic as a whole. The previous petty shippers were replaced by ambitious businessmen, who used the political influence of the Dutch Republic in order to make profit. The expiration of the truce in April 1621 caused a drop in the



Picture 6.1. The Baltic in 1622

Source: The Routes of the Sea, 1988

shipments of the forest products though the military operations started in the autumn, when the sailing season to Baltic was almost over. The Spanish embargo cut the Dutch trade connections to the Southern Europe in pieces, but in the Baltic region the Dutch dominance of trade continued.

6.3. THE RESHAPING OF THE DUTCH BALTIC TRADE AFTER 1622

A depression in the Baltic trade begun in 1622, and it struck the Dutch economy especially in the latter half of the 1620s with the warlike events in Danzig and all the Eastern Baltic territories. In 1625-1630 the yearly average of the Dutch ships sailing westwards through the Sound was approximately 850, while the average had been 1920 ships ten years before. In 1631 the number of traders to the Baltic again rises above 1000, and in the 30s the number is exceptionally stable, around 1000 ships a year. The stable period continued to the 1640s, and it is somewhat above the periods of depression, though considerably below the average of previous decades.³⁰

The Dutch merchants were quickly restructuring their business emporium. The markets of the Southern Europe were blocked, but world was open to other directions. Some of the merchants concentrated their efforts on the supplying end of the

business network, like those operating in the Baltic region. A good example is the high proportion of the Dutch businessmen in the Swedish economy. Merchants like Hugo Muys van Holy, Louis de Geer, Pieter and Elias Trip controlled the shipments of Swedish export commodities like copper, iron, and tar to Amsterdam, and arranged Dutch military supplies and capital to the Swedish state.³¹ Some other businessmen targeted their operations to the customer side of the trade links, like the Poulle family, who arranged the shipments of the Baltic commodities to the northwestern ports of France.³² Yet, when counted by the number of businessmen involved in the trade, Danzig was the most important target of operations. In the first half of the 17th century over 300 merchants of Amsterdam were engaged in the Danzig trade.³³

Advanced technology was also an important part in the restructuring process of the Dutch business life. The windmill driven saw was a serious threat to the sawyers and there were continuous complaints about unemployment. The sawyers also tried to get restrictions to the wind mill sawing. For instance in 1633, one argument in the quarrel was the poor quality of clapboards and deals, which were sawed with wind power.³⁴ In 1643 there were 60 saw mills in the town area of Amsterdam, and the authorities of Amsterdam

added the burden of the saw mill owners with a yearly payment of 16 guilders "*in de kosten der door de stad an het land verschuldigde verponding*".³⁵ These kinds of actions supported the eagerness of the Dutch businessmen to establish Dutch type of saw mills to the timber supplying regions in the Baltic. The Dutch windmill technology had already been used in drainage in the beginning of the 15th century, but in the 17th century Dutch experts constructed several windmills in the North-Eastern Europe.³⁶

During the previous periods many ships sailed towards the Baltic under ballast, but when Amsterdam developed its European and colonial trade the ships could be loaded in Holland with a broad variety of commodities, and such cargoes were the majority until the middle of the 17th century, after which the balance between ships leaving with cargoes and those under ballast was restored. Moreover, during the first decades of the 17th century virtually all charterparties connected with the Baltic trade referred to combined voyages to or from the southern parts of Europe, and the "*enkelt oosterse*" voyages were an exception. During later decades of the period chartering for non-combined voyages to the Baltic ports shows a colossal growth, for instance in 1625 and 1639 of almost 50 per cent. At the same time the shipper lost his role as the seller and buyer of

the load.³⁷ The merchants had built up a "*factoor*" network even to the smaller loading ports, and the shipper-traders disappeared. In the 1640s the shippers were again working more and more for the Baltic merchants, for instance, the merchants of Riga organised purchases of timber from the Polish and Lithuanian magnates.³⁸ In 1646 the shipping figures of the Sound Toll Records show clearly that the majority of this timber was delivered to the west with Dutch ships. 180 ships from the total of 184 ships chartered by the Riga merchants were Dutch.³⁹

The Dutch goods- and freight-market was especially concentrated on Amsterdam, whose economic predominance was very marked and ever increasing during this period. The concentration around Amsterdam did not lead to the formation of an independent Amsterdam mercantile marine. The Dutch shipmasters, also those who had been chartered in Amsterdam were widely spread all over the Dutch coastal areas, and even though the large capitals of Amsterdam were invested in the shares of ships, no particular endeavours to create a big mercantile marine especially connected with Amsterdam can be traced. The fact that Amsterdam still became the leading sea-port in the Netherlands and hence in Europe is a direct consequence of Amsterdam being the

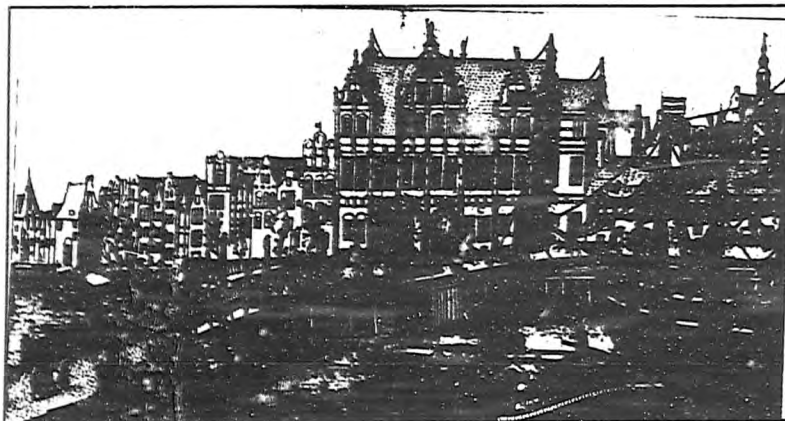
chief trading place for bulky commodities in the east-western interchange of goods, like corn, timber and naval stores. Under cover of the Amsterdam commodity market a freight-market for both Dutch and foreign ships developed here. The Amsterdam merchants never had to suffer from the need of tonnage, which was sent to the direction where the profit was the best. A part of the merchants could even take the risk of sending chartered ships to the Iberian ports, either with false documents or with a permission bought from the Spanish authorities.⁴⁰

The willingness to take the risk of seizure was based on the fact that salt was still dominating the volume of the Dutch exports to the Baltic. However, due to the embargo the Iberian salt was difficult to fetch, and Dutch ships were transporting salt mainly from France. In 1622-1648 approximately 60 per cent of the salt

the Dutch brought to the Baltic came from France.⁴¹ The export to France partly compensated the lost Iberian markets. For instance, in 1631-62 Dutch ships visited Nantes, and 11 of them were loaded with commodities, which probably came directly from the Baltic Sea. One of these ships was transporting grain and the others were loaded with naval stores, especially planks.⁴² The restructuring of the trade routes could not bring back the boom of the peaceful years. In the case of the Baltic forest products' trade there could have been more demand, if the troubles in the traditional supplying areas had not been a hindrance.

6.4. THE COLLAPSE OF DANZIG'S TIMBER EXPORT

The profits in grain and forest products' exports had helped Danzig to develop to the biggest production centre in Poland and even in the whole



Picture 6.2. Danzig in 1617

Source: The North Sea 1985

Baltic region. Polish nobility sold their agrarian products to Danzig, and purchased luxuries and everyday utensils there. Moreover, Danzig's development was supported by the immigrants whose skills and capital supported the expansion of Danzig's business activities. Especially important was the impetus of the Dutch immigrants, who brought the modern business techniques with them. Moreover, Danzig was a destination for all kinds of workers, whose skills were needed in Danzig's versatile production sector. For instance, the craftsmanship of a Dutch ship carpenter was highly respected in the town.⁴³ In 1630s there was even a plan to establish a public bank to Danzig following the model of Amsterdam's *Wisselbank*, but the private bankers sitting in the city council stopped the project of Anthony Cuipers.⁴⁴ Even the English trading organisation, the Eastland Company, negotiated with the city authorities several times in order to move their staple from Elbing to Danzig.⁴⁵ Yet, the success of the English was far from that of the Dutch, since in the 1640s some 80 per cent of Danzig's foreign trade was controlled by Dutch merchants, either directly or through mixed Dutch-Danzig companies.⁴⁶

The ravages of the Thirty Years' War, and Sweden's expansionist policy caused troubles to timber export all around the Baltic Sea, but

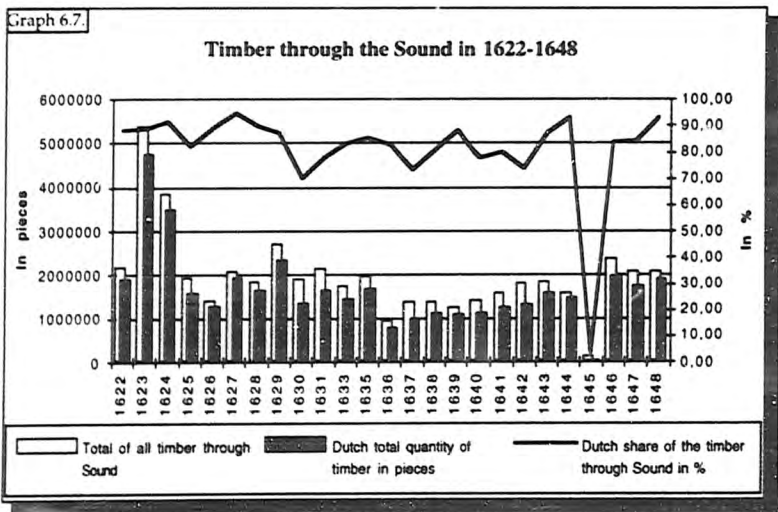
the Danzig timber export collapsed almost totally. Some historians have stressed the export tax of 3.5 per cent, which Sweden levied after it gained the control over Danzig's export. This could not be the sole reason, because the tax was collected for the first time in 1627-1628, and the drop of timber export had occurred earlier.⁴⁷ For instance, in 1615 the value of Danzig's timber exports was 119,000 rix-dollars, but in the years 1625, 1635, and 1646, it was under one tenth of this reaching only 16,000 rix-dollars in 1625, 13,000 rix-dollars in 1635, and 15,000 rix-dollars in 1646. The Swedish blockade of Danzig and the overall disturbances of the Thirty Year's War were only one part of the explanation. The seeds of this collapse were spread wider.

It is also easy to blame the exhaustion of oak in Poland for the collapse of Danzig's timber trade. To a certain extent the exhaustion of the oak forests was true, because the increased felling had cleared huge areas from the oak. However, the intensive internal colonisation had caused a widespread clearing of forests to arable land, which also diminished the accessibility of oak. Nevertheless, the extensive felling and the wartime were only a partial explanation. The growth of Polish towns was also one part of the story, because the internal demand in building material also reduced the availability of timber.⁴⁸

Yet, even with these pieces the puzzle is not complete. The change in the structure of Danzig's economical life is also one important part of the collapse in the timber trade, but the same phenomenon happened in other loading ports, too. The merchants wanted to make better profit. In the forest product sector ashes and potash were commodities, which gave to a middleman especially high profit compared to the export of timber. For instance, in the middle of the 17th century the middleman in a loading port had a profit from 40 to 90 per cent in the trade with potash, while in the timber trade the most important single type of timber, clapboard gave only 16 per cent's profit.⁴⁹

Danzig merchants were using either subcontractors who felled the timber and burned the ordinary ashes needed in the refining process of potash, or the local magnate got an advance payment

of a certain quantity of potash delivered to Danzig. The subcontractors and landowners did not care about the future of the forests. They felled large areas totally empty of hard wood such as oak and beech, which suited best for potash production. When the forest was cleared, the subcontractor simply made an agreement with another landowner who still had suitable types of timber. This was especially disastrous to the oak, because it takes decades before oak is big enough to be used for waynscot. Around 60 barrels of raw ash was needed to refine one barrel of the best potash,⁵⁰ and, according to *North*, around 177 cubic metres of leaf trees were needed to one pound of potash⁵¹, i.e. over 50,000 cubic metres for a shippound. Danzig's export with potash started on a large scale during 1620s, and from 1622 to 1648 Danzig exported almost 370,000 shippounds of potash. The yearly average of deliveries was over 15,000



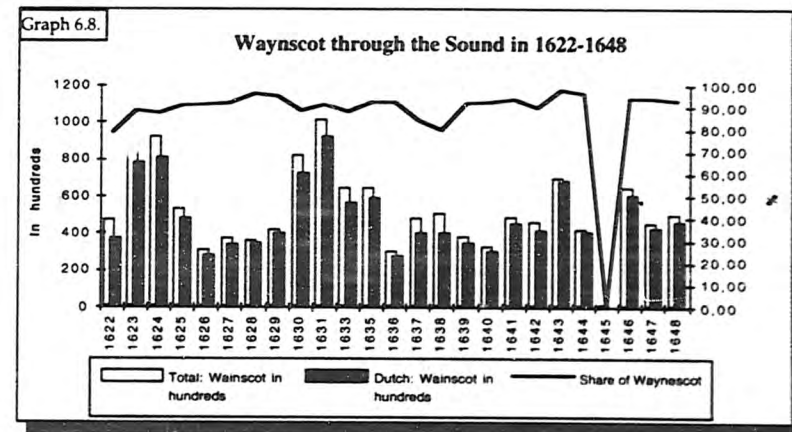
shippounds⁵², though during the war the Swedish blockade reduced the export. In the 1630 the yearly average of potash shipments was almost 20,000 shippounds, which meant that around 3,500,000 cubic metres of timber was needed for the yearly average shipments of potash.⁵³ The short-sighted clear cutting of forests together with the internal and external factors already mentioned were enough to cause a disaster in Danzig's timber trade.

6.5. BALTIC TIMBER TRADE IN 1622-1648

In 1622-1648 the Baltic timber trade declined catastrophically due to the economic disturbances caused by war all over Europe. From 1620s to the middle of the 17th century around 250 vessels shipped Baltic timber yearly to the Dutch Republic. However, a war in the supplying regions, especially the Polish-Swedish War, reduced the availability of timber in the Prussian and Polish

loading ports. A part of the demand could be met with the Norwegian supplies particularly in the 1620s and in the 1630s, and in 1628 the king of Denmark even allowed the export of oak to the Netherlands. Yet, the close relations between the Dutch Republic and Sweden irritated Denmark, and in 1640 the export of masts and other big stocks was banned from Norway under the pretext of Norway running out of timber.⁵⁴ The Dutch waged war against Denmark in 1645 and Denmark blocked the Sound from Dutch shipping, but the Dutch navy sailed to the Sound and kept it open until November.⁵⁵ 688 ships passed the Sound westwards without paying any toll. 168 of these ships were loaded solely with timber, and 132 ships had a mixed load including some timber.⁵⁶

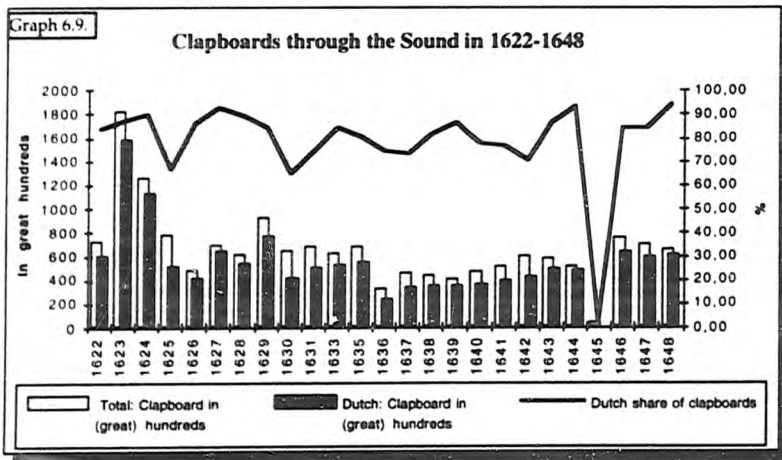
The timber shipments from the Baltic were at the highest level in the beginning of this period reaching almost 5,000,000 pieces in 1623, but in 1625 the Polish-Swedish hostilities



caused a serious drop in the deliveries. The yearly average of shipments exceeded only 1,500,000 pieces, i.e. only approximately one third of the average quantity in 1610-1621. The total deliveries fluctuated only a little from 1625 onwards (graph 6.7).

The Dutch held a dominating position in the limited shipments, and their share was over 80 per cent in most years, but even the relative share dropped slightly from the previous period. The total volume of timber deliveries in 1645 is impossible to achieve from the Sound Toll Records, because the Dutch navy controlled the Sound. Since the total quantity of ships passing westwards in 1645 was only 688 ships compared to 1031 in 1644 and 1039 in 1646⁵⁷, and since the grain was more urgently needed than timber, it is obvious that the volume in 1645 was much smaller than in other years during this period.

In waynscoot trade the yearly average of shipments was only around 450 hundreds, i.e. approximately one third of the period 1610-1621. The shipments fluctuated minimally year by year, and the only peaks were in 1623-1624 and in 1630-1631 (graph 6.8). The Dutch share of the shipments was also quite constant, usually around 90 per cent, which was about the same as in the previous period. The troubled years in the Baltic and the war with Spain were naturally the most important reasons for the decline, but even the overproduction of ships during the Twelve Years' Truce was reducing the demand for waynscoot in the 1620s.⁵⁸ Moreover, during this period the transformation of the overall structure in the Dutch trade headed towards more expensive commodities, which needed less cargo capacity. This development released vessels even to carrying traffic for other merchants, and therefore



waynscoot was not needed for shipbuilding as in 1610-1621.

The collapse of Danzig's timber export was clear in waynscoot, because in 1622-1648 Danzig shipped yearly less than 75 hundreds of waynscoot. Riga had acquired the role of the biggest shipper in waynscoot with a yearly average of 190 hundreds, but Konigsberg was still close behind with an average around 180 hundreds. There was also a peculiarity in the waynscoot shipments from Riga. In some years the town shipped nothing, but in Riga's peak year, in 1631, shipments were 585.75 hundreds, almost 60 per cent of the total deliveries westwards through the Sound. The fourth important waynscoot supplier until the last years of 1630s was the duchy of Courland, but in 1640s it had no share of the shipments.⁵⁹

As in the case of waynscoot, also the shipments of clapboards in 1622-1648 dropped to approximately one third of the period of 1610-1621. The Dutch relative share of the shipments fell, but it was still around 85 per cent on an average. The only peak in clapboard deliveries occurred in 1623-1624. In other years the shipments were fluctuating from around 300 to 600 great hundreds a year (graph 6.9).

In the total shipments Riga with a yearly average around 330 great hundreds, was a bit ahead of

Konigsberg with approximately 320 great hundreds a year. Konigsberg delivered the biggest quantities in the beginning of the period, but around 1640 Riga became the main supplier of clapboards. The drop of Danzig was as dramatic in clapboards as in waynscoot. The yearly average was only some 60 great hundreds, and after 1624 Danzig had only sporadic importance in the deliveries of clapboards. Courland occasionally shipped some clapboards, but from 1630s it started to vanish from the statistics. Stettin delivered some clapboards in the beginning of this period, but in the overall development it had virtually no role.⁶⁰

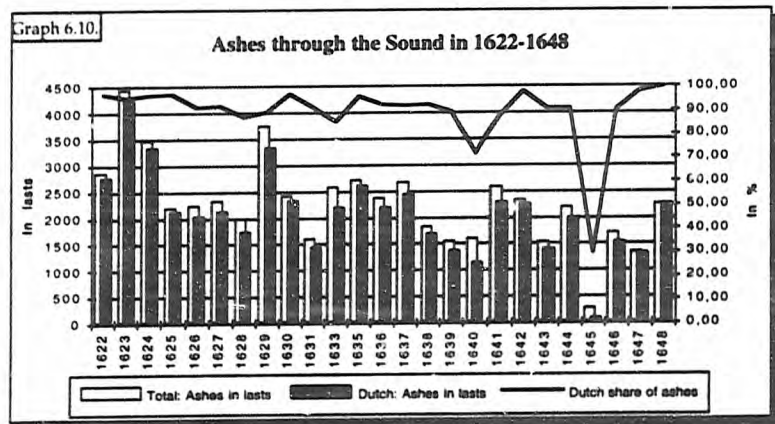
Since the acquisition area of oak did not reach the northern parts of the Baltic Sea, the swift of importance towards the northern parts of the Baltic in the timber trade can only be traced from the shipments of other timber types. During this period the importance of other timber types rose. This was obviously due to the scarcity of oak. The Dutch ships transported the majority of the deals and planks to the west during this period. The yearly average of the Dutch shipments was around 67,000 pieces.⁶¹ Measured in volume the transport of deals and planks was more than its percentage of the quantity counted in pieces, because even in the peak year of deals' and planks' shipments, in 1624, the total quantity of 145,458

pieces was under 5 per cent of the Dutch total shipments. Only occasionally other nations surpassed the Dutch quantity. For instance, in 1625 the shipments of Wendish Hanseatic towns exceeded 52,000 pieces and the Dutch brought only some 43,000 pieces.⁶²

Sweden gained special importance in the trade with deals and planks. A good deal of Swedish timber ended to Lubeck within the Baltic, and Gothenburg was the most important loading port for timber to the Western Europe with a share of approximately 50 per cent of the total export of timber from Sweden.⁶³ For these reasons the total quantity of Swedish timber export is impossible to define from the Souns Toll Records, and the other preserved documents contain only scattered data about this export.⁶⁴ Yet, even in the Sound Toll Records the total quantity of deals and planks brought westwards directly from Sweden was over 700,000 pieces in 1622-1648, i.e. the average

was almost 30,000 pieces a year. The second in quantity in 1622-1648 was Königsberg with some 540,000 pieces, which means a yearly average of around 21,400 pieces. During this period Lubeck was the third important loading port for deals and planks with a total quantity over 415,000 pieces in 1622-1648, i.e. around 17,300 pieces as a yearly average.⁶⁵ The yearly shipments of Lubeck fluctuated quite a lot. The highest quantities were reached during the years, when the Dutch shipments were at a low level. This indicates that a great deal of timber was brought to those destinations, where the Dutch ships were not accepted. Since Lubeck was one of the biggest partners of the Swedish foreign trade⁶⁶, it is obvious that a part of timber shipped from Lubeck was of Swedish origin.

As mentioned earlier, the export value of Danzig fell under 10 per cent compared to the year 1615, but Königsberg could still present decent



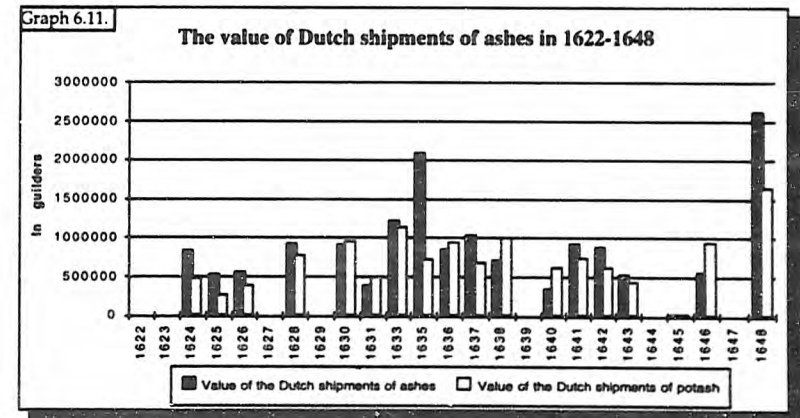
export values. In 1625 the export of timber was worth 67,000 rix-dollars, almost a half of the value in 1615, and towards the end of this period the value even rose. In 1635 Königsberg gained 85,000 rix-dollars and in 1646 the value of the timber export was 109,000 rix-dollars.⁶⁷ We have no information about the total export value of Sweden or Riga, but it is obvious that in some years Riga's export value has exceeded that of Königsberg's. In the case of Sweden the export value could not reach this level, because the ships were loaded with cheaper types of timber.

6.6. DUTCH TRADE WITH REFINED FOREST PRODUCTS IN 1622-1648

The total shipments of ashes fell considerably in 1622-1648, but the Dutch relative share of the shipments remained approximately on the same level as in the previous period, and usually it was over 90 per cent (graph 6.10). We must also bear in mind that the drop in volume was compensated with the growth of potash export,

because the value of potash considerably exceeded the value of ordinary ashes. The yearly average of Dutch shipments exceeded some 2,000 lasts, which was less than 30 per cent compared to the shipments in 1610-1621. The yearly volume of Dutch shipments had a decreasing trend towards the end of this period, but at the same time the export of potash grew slightly. In 1620s the yearly shipments of potash were usually only around 10,000 shippounds, but in 1630s and 1640s the volume was normally around 15,000 shippounds and at the peak year, 1644, it exceeded 25,000 shippounds.⁶⁸

For some years there is quite reliable price information for ashes and potash from this period, i.e. the preserved price quotations of the Amsterdam Exchange. In the case of ashes the prices are quoted for the best bear's foot ash, and it is obviously misleading to calculate the value of shipments directly from these prices, because there is no information about



the quality of the shipments. However, with this reservation the broad lines of development can be expressed (graph 6.11.). For instance, in 1624 the bear's foot ash was quoted to 252 guilders per last⁶⁹, which gives a value of 843,444 guilders (i.e. some 366,700 rix-dollars) for the Dutch shipments of ashes, 3,347 lasts⁷⁰. At the same year the annual average of the potash price was 10.92 guilders per 100 pounds⁷¹, which gives the value of 481,309 guilders (around 210,000 rix-dollars) for potash shipments of 14,692 shippounds⁷². In the few next years the volume of ash shipments declined, but the price level remained around this level, but in 1628 the price of bear's foot ashes jumped to 540 guilders per last⁷³. The Dutch shipments of 1,730 lasts⁷⁴ give a value of 934,200 guilders (some 406,000 rix-dollars), while the 10,268 shippounds of potash with a price of 25 guilders per 100 pounds⁷⁵ make 770100 guilders (almost 335,000 rix-dollars). In 1630 and in 1631 potash exceeded other ashes in the value of Dutch deliveries, but already in 1633 the situation had changed and in 1635 the total value of ash shipments jumped over 2,000,000 guilders. However, this should be taken with some reservations as the average price for bear's foot ashes in 1635 was 804.00 guilders for a last, and the price quotations were presented only from June, July and August. The highest peak in the value of the ash deliveries is in 1648, over 2,500,000 guilders, and

about that year the price quotations have preserved from May to December.⁷⁶ If most of the ashes shipped in 1648 were bear's foot ashes, then the value is quite correct, because virtually all of the ashes were shipped during the sailing season in the Baltic. The value of potash in 1648, around 1,600,000 guilders, is not as reliable, because the prices are quoted only from August to November.⁷⁷

The graph must be taken with reservations, but in general we can assume that the small volume of relatively expensive potash could compensate quite well the drop of volume in ashes. We must also bear in mind that these prices were price quotations in the Amsterdam Exchange, and they do not represent the price level in the supplying area. Anyhow, the rise in prices of refined forest products supports the idea that the supplying regions in the Baltic area were trying to earn more by refining the commodities, and to gain a better profit in that way. Even new areas were quickly adopting the production of ashes. For example in Estonia, Jacob de la Gardie ordered ash to be burned in his feud in Viljandi in 1629,⁷⁸ and in 1630s started boyar B.I. Mozorov to refine potash in his lands south-east from Niznij-Novgorod.⁷⁹

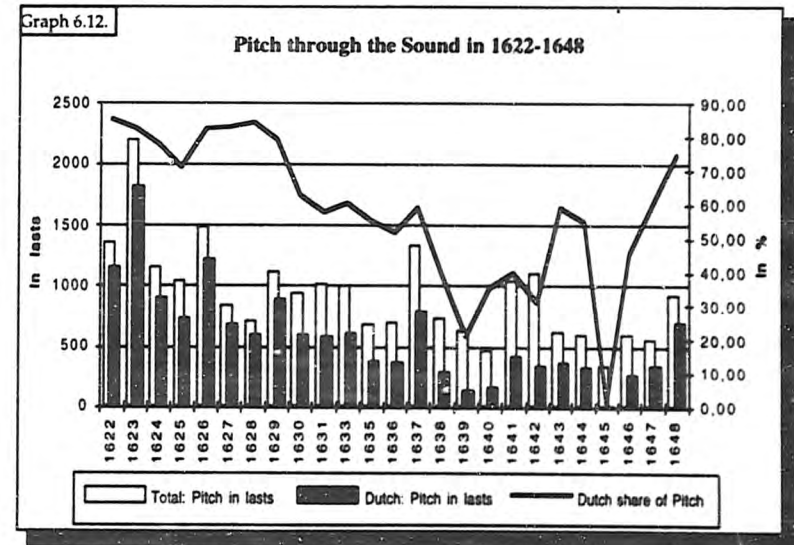
The traditional loading ports of ashes, Danzig and Königsberg, held their dominating position in the trade.

Riga came usually behind them, but towards the end of this period Riga was shipping bigger quantities of ordinary ashes than Danzig.⁸⁰ At the same time the potash shipments of Danzig were growing, and this growth compensated the loss in ordinary ashes. Measured with the total export value, Danzig generally held the dominating position, but in the volume of ordinary ashes Königsberg was usually the biggest supplier. In 1625 the total value of Danzig's ash export was 100,000 rix-dollars, and in this year Königsberg was ahead with 125,000 rix-dollars, but in 1635 Danzig had again acquired the leading position with 234,000 rix-dollars against Königsberg's 131,000 rix-dollars, and the situation was the same in 1646, when Danzig reached 171,000 rix-dollars against Königsberg's 118,000 rix-dollars.⁸¹ The Polish-Swedish war was self-

evidently the reason for Danzig's low figure in 1625.

In 1635 Danzig merchants earned the total of 247,000 rix-dollars in the forest products trade, which was only 15 per cent less than in the peak year of Danzig's forest product export, 1615, when the total value rose to 288,000 rix-dollars. Even during the war in 1625 the total value of forest products export was 116,000 rix-dollars, which was only some 4 per cent less than in 1575, when the total export was 121,000 rix-dollars.⁸² The timber trade declined, but the drop could in large scale be replaced with the export of refined forest products, especially with that of potash.

In the case of pitch the period from 1622-1648 was a time of almost continuous downfall. The total shipments fell, the Dutch shipments

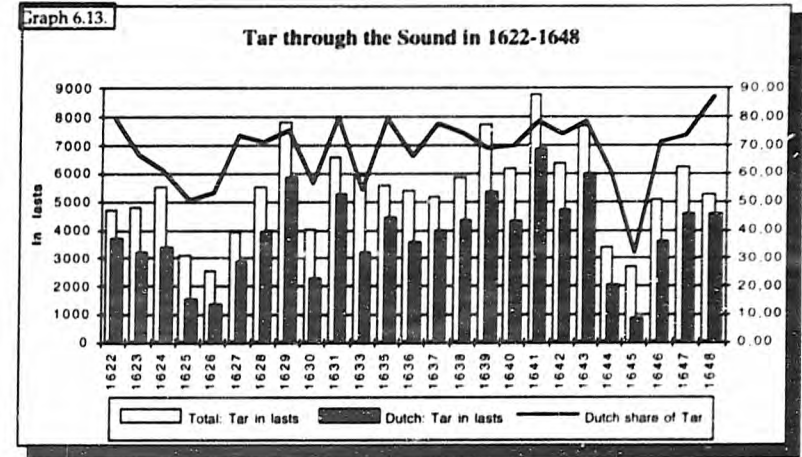


fell, and even the Dutch relative share of the shipments went down from almost 90 per cent in 1622 to some 20 per cents in 1639. Thereafter the relative share started to grow and exceeded 70 per cent in 1648. The yearly average of the Dutch shipments reached only some 600 lasts, which was less than 40 per cent compared of the previous period. The peak was reached in 1623, when the Dutch shipments were around 1,800 lasts, but thereafter the quantity fluctuated around 500 lasts until 1637 and fell even from that towards the end of this period. In the year of peace, 1648, the quantity started to grow, and it is obvious that most of this was due to the revival of Dutch-Spanish trade (graph 6.12.). The Dutch could once again sweep the Hanseatic and English traders from the Iberian markets.⁸¹ The Hanseatic League had not been an important shipper for pitch, but in some years England was the second biggest shipper of pitch, and in 1640 they even were a bit ahead of the Dutch. Also France fetched quite remarkable quantities of pitch in some years,⁸⁴ obviously to meet the domestic need.

Danzig shipped a lion's share of the diminished pitch quantities in 1622-1648 with total shipments of almost 9,000 lasts. The yearly average was around 370 lasts, but the deliveries from Danzig fluctuated remarkably. It is also worth mentioning that in 1626 Danzig

shipped virtually nothing, but the other ports of West Prussia loaded 758 lasts of pitch in that year. This was approximately one third of the total deliveries of some 2300 lasts from the West Prussian ports (Danzig excluded) in 1622-1648. Most of this pitch was shipped on Dutch vessels. It is highly possible that this kind of peak was due to the blockade of Danzig's port by the Swedish navy. In the other years of the 1620s the export of West Prussian ports was almost the same as the English shipments of pitch from the Baltic, which indicates that most of the pitch was obviously loaded in Elbing to the ships of the Eastland Company.⁸⁵ In 1630s the export of other West Prussian towns started to decline, but the English quantities did not drop as much, which indicates that the English merchants had managed in their negotiations with Danzig. During the first decades of the 17th century there had been continuous quarrels between the Eastland Company and Danzig, and even the kings of England and Poland had been involved.⁸⁶

Konigsberg was the second biggest supplier in the total volume with some 4,400 lasts, but the shipments of Konigsberg started to drop around 1640. The yearly average of shipments was around 180 lasts, which was less than the average of Sweden's shipments. During this period Sweden penetrated to the market around



1630 and in 1640s it was the biggest supplier in 1642, 1643, and 1646 exceeding the shipments of Danzig and other ports. The total quantity of Swedish supplies through the Sound was around 3,600 last, but the yearly average from 1630 onwards was over 220 lasts a year.⁸⁷ We must bear in mind that the shipments of pitch from Gothenburg were not recorded. In the peace treaty of Brömsebro in 1645 Sweden gained an exemption from the Sound dues⁸⁸, and the deliveries with Swedish ships were not recorded in the Sound. For instance, scattered information from other sources indicate that at least 450 lasts of pitch were transported from Stockholm to Amsterdam in 1645-1646.⁸⁹ Around 1630 Finland also started to ship pitch, but the total quantity reached only some 1,900 lasts with a yearly average of some 120 lasts. However, in the 1640s Finnish shipments were on quite a low level,⁹⁰ which obviously indicates

that some of the Finnish shipments were directed to Stockholm.

Tar was the commodity, which did not suffer from the economic disturbances or from the war, if we consider the total quantity shipped through the Sound in 1622-1648 (graph 6.13.). The yearly average of Dutch shipments almost doubled to some 4,000 lasts compared to the average of a bit more than 2,000 lasts in 1610-1621. The fluctuation in the yearly shipments clearly express that during the Polish-Swedish war the tar shipments were related to the economic and political development. However, a part of the low figures in 1620s could also be explained by the slump in the Dutch shipyards. Other suppliers could transport tar to the Iberian shipyards, when the Dutch ships were expelled. On an average the Dutch share of the shipments remained around 70 per cent, which was about the same level as in 1610-

1621. The total shipments to the Dutch tar merchants could reach an even higher percentage, because in some years other ships were involved in the tar transport. For instance, in 1646 488 lasts of tar were transported to the Netherlands with a vessel, which had its home port east of the Sound. Unfortunately the Sound Toll Records do not specify these ships.⁹¹

In some years England, Lubeck, and some other Hanseatic towns shipped remarkable quantities of tar,⁹² obviously a great deal of it to the Iberian Peninsula and to other parts of Southern Europe. Majority of the tar shipped by England and Lubeck came from Stockholm, because the Swedish authorities were concentrating the tar trade in large scale on the capital. E.g. in the middle of the 17th century 64 per cent of the tar from Stockholm was shipped by the Dutch, but England and Lubeck both had a share of 15 per cent of the total shipments from Stockholm.⁹³

During this period there were two suppliers, who almost totally supplied the tar to the west. Finland had a dominating position with a total of almost 59,000 lasts in 1622-1648, and the average shipments were 2,450 lasts a year. Sweden exceeded 52,000 lasts with a yearly average of 2,180 lasts.⁹⁴ However, the figures for Sweden do not include the shipments transported on Swedish vessels which were exempted from the toll in the

Sound from 1645 onwards. For instance, in 1645-1646 Swedish ships delivered around 5,400 lasts of tar to Amsterdam,⁹⁵ which indicates that the total shipments from Sweden and Finland were almost at the same level. Danzig, Königsberg, and other previous major suppliers reached only occasionally a slight share of the shipments.

6.7. THE EFFECTS OF THE WAR ERA TO THE FOREST PRODUCTS' TRADE

The Dutch trading network was disturbed because of the Spanish embargo and the troubles in the Baltic. This was felt especially in the timber trade, because the boom of shipbuilding was over after the hostilities begun and the overcapacity in shipping did not allow to launch new ships. The Iberian Peninsula could buy more timber than France, and therefore the structure of routes changed. In earlier phases the Baltic goods were shipped directly to Spain or Portugal, but now the Dutch ships stopped in the Netherlands and loaded domestic products to supplement the delivery. Otherwise they could not have enough money to buy the demanded salt.

The problems in the supplying area were another hindrance in the trade, and the Dutch had to find new ports to load the needed timber. Moreover, the export of timber was profitable only when the domestic demand in

the producing areas made less profit, and during this era the house-construction needed large amounts of timber. The Thirty Years' War had stopped the deliveries along the Rhine, and the only possibility was the Norwegian oak. The "*Staat en Generaal*" persuaded the Danish king to allow the deliveries, but it helped only for a short period.

The Baltic supplies of refined forest products went down apart from the shipments of tar. However, in the case of ashes the refining process of potash guaranteed adequate income to the Danzig merchants. We must also bear in mind that the domestic industry in Danzig needed ashes, and therefore the price level had an upward trend in most years. The deliveries of tar were important to the Swedish king, but the Dutch made profit, too. The control over the trade could sometimes lead to speculation over the prices, and Dutch merchants were specialists in speculative trade.

Notes to chapter 6.

¹ Israel 1990, p. 81.

² Israel 1990, p. 84.

³ Beard, Miriam, *A History of the Business Man*, New York 1938, p. 272-274.

⁴ Israel 1990, p. 86.

⁵ Israel 1990, p. 89.

⁶ Bogucka, Maria, *Amsterdam and the Baltic in the First Half of the Seventeenth Century*, in *Economic History Review*, 2nd ser. nr 26, 1973, p. 436-439.

⁷ Barbour 1966, p. 246.

⁸ Bowman, F.J., *Dutch Diplomacy and the Baltic Grain Trade, 1600-1660*, *The Pacific Historical Review*, 5, 1936, p. 341.

⁹ Israel 1990, p. 95.

¹⁰ Christensen, 1941, p. 446-447.

¹¹ Snapper 1988, p. 421.

¹² Christensen 1941, p. 90.

¹³ Christensen 1941, p. 346.

¹⁴ Parry 1967, p. 180.

¹⁵ Willemssen, R.Th.H., *Dutch sea trade with Norway in the seventeenth century*, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, edited by W.G. Heeres & L.M.J.B. Hesp & L. Nordegraaf & R.C.W. van der Voort Hilversum 1988, p.471-473.

¹⁶ Israel 1990, p. 114.

¹⁷ Israel 1990, p. 111-112.

¹⁸ Bang 1922, table 2, column "Deler og planker" in 1610-1621

¹⁹ North 1988, p. 387-388.

²⁰ Columns "Vongskud", "Klapholt" and "Deler og Planker" in respective years, Bang 1922, p. 262-330.

²¹ Israel 1990, p. 119-120.

²² Potash was a further refined type of ash with alkalinity from 50 to 80 per cent, and it was more expensive than the ordinary ashes with alkalinity from 25 to 50 per cent. The higher alkalinity the more effect the chemical had in the chemical process, (a last of potash = 12 barrels each containing 3 shippounds, Gelius p.71) Gelius 1985, p. 59

²³ Bang 1922, column potash in respective years.

²⁴ in 1609 the price was 15.90 guilders for 100 pounds, i.e. 47.70 guilders for a shippound, and the average price of 1624 was 10.92 guilders per 100 pounds, i.e. 32.76 guilders for a shippound, a shippound was 300 pounds, Posthumus 1946 A, p.458.

²⁵ arithmetical average of the prices 204 guilders per last in 1609, and 252 guilders in 1624, Posthumus 1946A, p.455-456.

²⁶ North 1988, p. 387-388.

²⁷ Bang 1922, columns for ashes and potash in respective years.

²⁸ Sandström, Åke, *Mellan Torneå och Amsterdam, En undersökning av Stockholms roll som förmedlare av varor i regional- och utrikeshandel 1600-1650*, Borås 1990, p. 351.

²⁹ Lindblad 1990, p. 211.

³⁰ Snapper 1988, p. 421.

³¹ Lindblad 1990, p.211-212.

³² Van der Laan, P.H.J., *The Pouille brothers of Amsterdam and the North Sea and Baltic trade, 1590-1620 in: From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988, p. 322-323.

³³ Bogucka, Maria, *The Baltic and Amsterdam in the first half of the 17th century, in The Interactions of Amsterdam and Antwerp*

with the Baltic Region, 1400-1800, Leiden 1983, p. 52.

³⁴ Bronnen tot de geschiedenis van het Bedrijfsleven en het Gildewezen van Amsterdam, derde deel 1633-1672, uitgegeven door J.G. van Dillen, 's-Gravenhage 1974, p. 25.

³⁵ BGBG 1974, p. 382.

³⁶ Davids, Carel A, The Transfer of Windmill Technology from The Netherlands to North-Eastern Europe from the 16th to the early 19th Century, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990, p.211-212.

³⁷ Christensen 1941, p. 176-177.

³⁸ Loit, Aleksander, Sverige och Östersjöhandeln under 1600-talet. Översikt över nyare litteratur, *Historisk tidskrift* 1964, s. 328-329.

³⁹ Bang 1922, p. 518.

⁴⁰ Israel 1986, p. 284-285.

⁴¹ Collins, James B., The Role of Atlantic France in the Baltic Trade: Dutch Traders and Polish Grain at Nantes, 1625-1675, *Journal of European Economic History*, 13, 1984, p. 241-243.

⁴² Collins 1984, p. 252-255.

⁴³ BGBG .nr. 18.

⁴⁴ Bogucka 1984, p. 95.

⁴⁵ Jensen 1977, p. 19.

⁴⁶ Bogucka, Maria, Dutch Merchants' Activities in Gdansk in the First half of the 17th Century, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990, p. 25.

⁴⁷ Bowman 1935, p. 343.

⁴⁸ North 1988, p. 388.

⁴⁹ North, H., Waldwarenhandel und -produktion, Ein beispiel für die Beziehungen Königsberg - Amsterdam im 17. Jahrhundert, in: *The Interactions of Amsterdam and Antwerp with the Baltic Region, 1400-1800*, Leiden 1983, p. 81.

⁵⁰ Mager B, 1960, p. 41.

⁵¹ North Michael Baltic Wood Trade, in: *The Baltic as a trade road, Timber trade in the Baltic area, Competition between steam and sails*, Porvoo 1989, p. 11.

⁵² Bang 1922, column "Pottaske" in table 4. in respective years

⁵³ North 1991, p. 12.

⁵⁴ Schreiner 1933, p. 17-19.

⁵⁵ Houtte 1977, p. 194.

⁵⁶ Schreiner 1933, p. 15.

⁵⁷ Snapper 1988, p. 421.

⁵⁸ Barbour 1966, p. 245.

⁵⁹ Bang 1922, column "Vognskud" in respective years 1622-1648.

⁶⁰ Bang 1922, table 4, column "Klapholt" in 1622-1648.

⁶¹ Bang 1922, table 2, column "Deler og Planker" in 1622-1648.

⁶² Bang 1922, p. 358.

⁶³ Sandström 1990, p. 366.

⁶⁴ Lindblad 1990, p. 210.

⁶⁵ Bang 1922, table 4, column "deler og planker" in 1622-1648

⁶⁶ Lindblad 1990, p. 210.

⁶⁷ North 1988, p. 387.

⁶⁸ Bang 1922, table 2, column "Potaske" in 1622-1648.

⁶⁹ Posthumus 1946 A, p. 456.

⁷⁰ Bang 1922, p. 343.

⁷¹ Posthumus 1946A, p. 458.

⁷² Bang 1922, p. 343.

⁷³ Posthumus 1946A, p. 456.

⁷⁴ Bang 1922, p. 387.

⁷⁵ Posthumus 1946A, p. 458.

⁷⁶ Posthumus 1946A, p. 456.

⁷⁷ Posthumus 1946A, p. 458.

⁷⁸ Soom, Arnold, Der Herrenhof in Estland in 17. Jahrhundert, Lund 1954, p. 170.

⁷⁹ Goehrke, Carsten, Das Moskauer Reich, 1400-1650, *Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts, Stuttgart 1986, p. 1056.

⁸⁰ Bang 1922, table 4, column "Aske" in 1622-1648.

⁸¹ North 1988, p. 387-388.

⁸² North 1988, p. 387-388.

⁸³ Israel 1990, p. 199.

⁸⁴ Bang 1922, column "Beg" in table 4.

⁸⁵ Bang 1922, column "Beg" in respective years, table 3 for the nationality of ships, table 4 for the loading port.

⁸⁶ Jensen, 1977, p. 14-19.

⁸⁷ Bang 1922, column "Beg" in respective years.

⁸⁸ Lindblad 1990, p. 208.

⁸⁹ Lindblad 1990, p. 225-226.

⁹⁰ Bang 1922, column "Beg" in respective years.

⁹¹ Bang 1922, table 4b. page 517.

⁹² Bang 1922, table 3 in 1622-1648.

⁹³ Sandström 1990, p. 352.

⁹⁴ Bang 1922, column "Tjære" in table 4. in 1622-1648.

⁹⁵ Lindblad 1990, p. 225-226.

7. SUMMARY

It is possible to divide the Dutch trade to the Baltic into few phases according to the main characters of each period. However, the swift from one phase to another was not a rapid change. A more developed stage slowly emerged and replaced a previous one. Some characters from an earlier formula were transformed to the succeeding phase. For instance the enterprising attitude of the merchants and shippers followed throughout the whole era. The Dutch operating in the Baltic area were relatively petty merchants, who had to make their profit wherever it was possible. The town authorities especially in Amsterdam co-operated with the merchants to guarantee the best possible circumstances for business. The political relationships built a framework that contributed to the Baltic trade's development by setting the limits in which the individual merchants could operate.

The first phase started with the passive trade and the Dutch purchased modest quantities of the merchandise the Hanseatic traders transported. In this period the counts of Holland were not strong enough to support the Dutch merchants to gain a more active role in the trade. Towards the end of this period some Dutch shippers and traders took the first steps in the Baltic trade. Their

efforts were met by increasingly strict Hanseatic measures. The Hanseatic domination of fortresses in the Sound locked the Baltic effectively from the Dutch. This phase could be called the "subcontractor period", because most of the Dutch operations in the Baltic had merely an assisting role, like the shipping for the Hanseatic League or some minor business transactions. The trade domination was firmly held by the Hanse.

The first tracks of the Dutch trade with forest products from the Baltic region also dated back to the *subcontractor period*, when some shippers started to transport timber and other forest products on their own behalf. The preserved data is scarce, but it is obvious that until the 15th century the majority of the Baltic forest products were shipped for other merchants, who were superior in their financial and organisational skills. Dutch shippers could not be sure of adequate profits, if they took the risk of loading a cargo with forest products in the Baltic Sea. A load of grain was always easy to sell somewhere, but the limited knowledge of the markets was a hindrance in the forest products' trade. Dutch shipyards were an unimportant customer in the 14th and 15th centuries compared to the wharfs of Spain, Italy and the Hanseatic League.

The refined forest products were in most cases meant for the textile regions of Flanders and Brabant. These commodities were mainly sold in the staple of Bruges, which was controlled by the Hanseatic League. The emergence of the Dutch textile weaving in the 14th century gave some opportunities to the trade with refined forest products, but in these commodities the Hanse could not be beaten. The most important areas of acquisition were strictly controlled by the merchants of the Hanse towns.

In the beginning of the 15th century there was a change in the political framework, when the Hanseatic League was disunited. The Prussian and Dutch towns had common interests and the efforts of Lübeck and other Wendish towns led to a conflict. The Dutch had to pay, but they also opened the seal. The aid of the new sovereign, the Burgundian House, helped to settle the dispute and the Dutch merchants were allowed to push in. In the beginning of the 16th century the Habsburgs played the same role as the protector for the Dutch.

The Dutch way to operate differed from the Hanseatic pattern and the importance of the bulky mass products grew. Dutch merchants were working with smaller capital resources, and their success was based on efficient transport and sales activities. They could survive with a lower

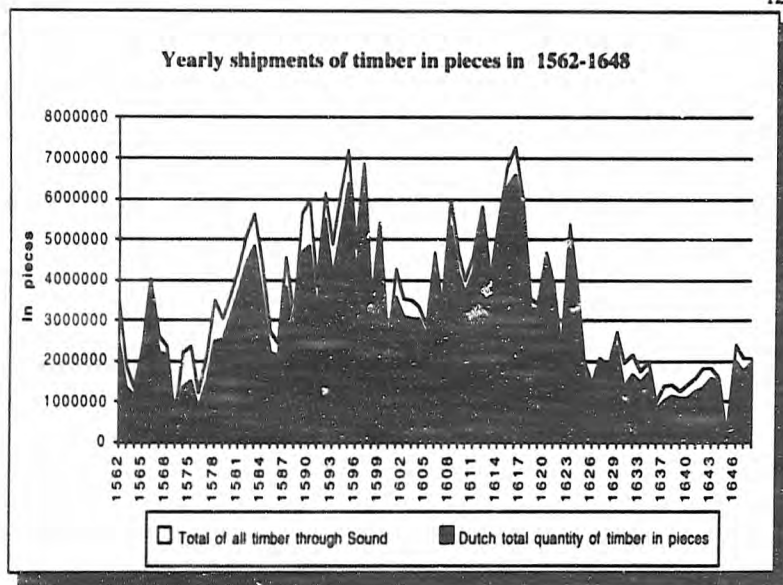
profit and expand their business in the fields that others had left open. Also the role of regional specialisation grew when the Zuiderzee area started to build a network of co-operation. This second phase started some time in the beginning of the 15th century, but it was mature in the 16th century. The phase could be called the "*shipper-trader-period*", because the tasks were still combined, though the role of the speculative and intermediary trade grew towards the end of the 16th century.

The introduction of open sea fishing and the new inventions in fish conserving highly effected to the demand of clapboards for the barrels and the rise of Dutch shipbuilding supported the growth of timber trade. The new weaving centres in the Northern Provinces adopted the methods from the southern parts of the Low Countries, but in the 15th century they were still far behind, and the total quantity of ash shipments could therefore reach only a modest level. After the peace of Copenhagen in 1441 the Dutch had the possibility to acquire the needed waynscoot from the southern parts of the Baltic Sea. However, local merchants were irritated with the new competitor, because the Dutch often avoided the staple towns, and sailed directly to the producer. The quarrels often caused seizures of Dutch ships, but the flow could not be stopped.

The Dutch operated in the charter traffic and the Baltic suppliers depended on their cargo capacity, because Dutch shippers were much cheaper than the local ones. Quantitative research of Dutch forest product shipments is not possible to derive because of the lack of suitable data, but the shipping figures in the Sound Toll Records from 1497 onwards clearly express that the Dutch had gained a dominating position in the shipping trade already in the 15th century. The role of the merchant is more difficult to formulate, but the low level of capital accumulation is a sure sign that the Hanseatic League still was overwhelmingly dominant in the Baltic. In case of bulky commodities, like the forest products, the Dutch were able to do some business. Unfortunately the preserved data is too sporadic, and therefore it is better not to make hasty conclusions about the level of the Dutch forest products' trade in the Baltic from the time before the introduction of the Sound Toll Records. The development of "*deurgaende vaerten*" in the 15th and 16th centuries helped the Dutch to gain reasonable quantities of cheap salt, the most needed commodity in the Baltic. These loads were often bartered directly to the commodities the Dutch needed. In volume grain was naturally the most important item, but the forest products were the second in importance.

The alliance of political and economic constituents started to crack when the economic, cultural and administrative differences between the Dutch Provinces and the Spanish crown were bubbling on the surface. The military superiority of the Spanish crown was not enough when the state economy was in disorder. The Dutch merchant towns managed to survive and even to grow in importance in spite of the war. The period from 1585 to 1609 showed that the Republic was able to mobilise all available resources to a successful effort. Even the shipments of forest products could be used in order to create new resources as the development of the Dutch shipbuilding showed. The Spanish could harass the Dutch shipping, but new routes were developed to replace the ruined ones.

The third phase of the development could be called the "*diffusion period*". It was tested in the end of the 16th century, but after the Twelve Years' Truce in 1609 the Dutch ships swept the competitors from the market with a more effective shipping and trading system. The tasks of the trader and shipper had effectively cut loose and the trade to the Baltic was a part of a wider context that was advancing in its full speed towards new playgrounds all over the world. The expiration of the truce in 1621 could not stop this development, though in some parts of the trading system the Spanish embargo caused troubles.



The combination of the graphs in the text concerning the volume of timber shipments from 1562 to 1648 shows the development in the Dutch timber trade to the Baltic, but it also shows the crushing superiority of the Dutch in the timber trade. The share of other shippers is almost invisible in the graph. Only in some years the tops of these "mountains" have some snow, i.e. the curve of total deliveries often disappears because of the negligible share of other suppliers.

The highest level was reached, when the Dutch trade network could operate without any harassments. Even during the war era there were some years, when the total shipments could reach some 5,000,000 pieces in total deliveries, like in 1583, and in 1623. However, the greatest volume

by numbers came from the clapboards, which were mainly meant for domestic consumption. The deliveries of waynscoot were more vulnerable to the external difficulties in the end of the 16th century. When the Dutch shipbuilding grew in the beginning of the 17th century, the shipping of waynscoot was reacting more and more to the domestic demand. The disturbances in the supply area were a hindrance to the trade, as was the clear cutting of hard wood in the Polish and Prussian forests. Other supplying regions could not transport enough oak. Therefore it is obvious that the growth of shipments in other timber types from 1620s onwards was connected closely to the exhaustion of oak. Yet, the overall growth of timber demand made it possible for the northern parts

of the Baltic to participate in the trade. The effectivity of the Dutch shipping reduced the costs of shipping timber from the northern parts of the Baltic, but we must also remember the political connections, especially the close ties between Sweden and the Dutch Republic.

The yearly deliveries of waynscoot had their absolute peak in the first years recorded in the Sound Toll Records. This obviously indicates that the shipments of waynscoot had been on a high level during the previous years, but without any documentary evidence it remains concealed. The Dutch revolt caused a serious drop in the quantity, and the Dutch relative share of the total deliveries was smaller than it had been. Until the early 17th century other suppliers had a relatively good share of the shipments. The development of the Dutch shipbuilding and the unhampered sailing to the Iberian Peninsula helped the Dutch to regain their overwhelmingly dominating position. Yet, the exhaustion of oak forests in the Baltic, and the growth of the Norwegian timber shipments reduced the possibility to reach the level of 1560s. The disturbances after the expiration of the truce in 1621, and the war in the Baltic dropped the shipments on an even lower stage. Waynscoot deliveries tended to have a high correlation to the political and economic development of the Dutch emporium.

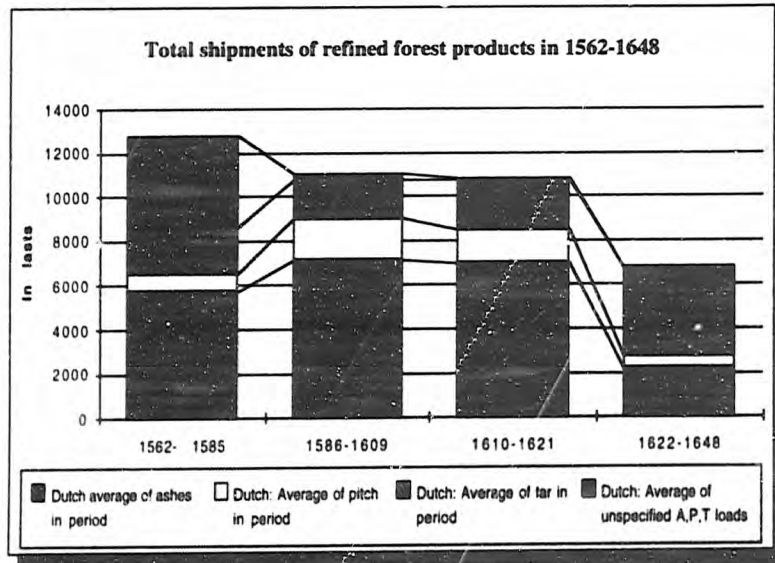
After the first difficult years the disturbances of the Dutch revolt did not hamper the trade with clapboards. There was abundant timber to fetch in the Baltic, and herring had to be packed. The shipments of clapboards started to grow at the same time, when Amsterdam joined in the revolt, and - with some slack years - remained on a high level until the Baltic suppliers found it difficult to find enough oak. Obviously the demand for clapboards was connected with the overall situation in regard to the production and distribution of provisions, i.e. the fish had to be conserved and people had to be fed. The shipments of waynscoot could probably wait for better times, but the increased population supported constant supplies of clapboards.

Deals and planks had virtually no share of the total shipments of timber counted by piece, but a good deal of this timber was bigger in dimension. It would obviously have had a bigger share of the Dutch shipments, if a suitable conversion method to cubic metres could be found. The volume of shipments with deals and planks started to grow in the first decades of the 17th century.

The refined forest products were mainly brought to the west from the southern parts of the Baltic Sea in the 16th century, but in the 17th century the growth of tar shipments caused a swift in the gravity, and the northern

shores of the Baltic were penetrating into the market. Measured in volume ashes were the biggest single group of the refined forest products from the Baltic until the 1620s, when tar started to replace it. The political development did not effect the trade with ashes as much as in the naval stores, pitch and tar, because the demand for ashes was more connected to the economic development, especially to the stage of the industrial development. The Dutch relative share of ash deliveries grew from an average of some 80 per cent in the 1560s to some 90 per cents in the middle of the 17th century, in other types of refined forest products the Dutch share was continuously smaller. The development in the trade with ashes headed towards a more

refined product in Danzig and in Königsberg, which were the traditional loading ports of ashes. This indicates that these towns were trying to make more profit of the trade. The increased volume of potash shipments could at least partially compensate the loss of the timber trade. Pitch had a minor share of the shipments through the whole period, and the volume was dropping towards the middle of the 17th century. In the case of tar the total shipments were growing constantly in the 17th century. The economic value of tar was closely connected with the political importance of the Swedish realm in the Dutch plans to have a status quo in the Baltic in order to have a free access to the sources of important raw materials.



As a whole, the Dutch economic position in the middle of the seventeenth century was so crushing that its competitors could not survive without the state authorities' involvement. The mercantilistic measures of several countries starting in the middle of the 17th century were aimed against the Dutch primacy. The first against the Dutch was England with the Navigation Act, but many more were to follow. The effect of these measures, however, is beyond the frames of this work.

because the Dutch navy and the Dutch commercial fleet were irreplaceable parts of the Dutch success in the world trade, and without constant supplies of naval stores the wealth of "*De Gouden Eeuw*" could have vanished far beyond the horizon.

When the treaty of Munster in 1648 finally ended the Eighty Years' War, a new leader in the world trade had already reached its zenith. The prosperity was gathered from several areas of activity. One of the cornerstones of this wealth was the Baltic trade, which stimulated many other forms of the economic activity in the Northern Provinces. The success of the trade to the Southern and Western Europe depended on it, because part of the Baltic grain and forest products were re-exported from Amsterdam to those regions. The cheap return freight rates promoted not only the trade itself, but also other crafts and industries. The commodities were cheaply carried in ballast to the Baltic. The total value of the Baltic trade and its direct and indirect effects on the Dutch economy can be only vaguely estimated. Moreover, the forest products had a strategic value,

BIBLIOGRAPHY

PRINTED PRIMARY SOURCES

Bang, Nina Ellinger, *Tabeller over Skibfart og Varetransport gennem Øresund 1497-1660*, 1. Del: *Tabeller over skibsfarten*, Copenhagen 1912.

Bang, Nina Ellinger, *Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660*, 2. Del: *Tabeller over Varetransporten, Varetabeller A.*, Copenhagen 1922.

Bang, Nina Ellinger & Korst Knud, *Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660*, Anden Del: *Tabeller over Varetransporten B.*, Copenhagen - Leipzig 1933.

Bronnen tot de geschiedenis van den handel met Engeland, Schotland en Ierland I, verzamelt door H.J. Smit, s-Gravenhage 1928. (BGE)

Bronnen tot de geschiedenis van het Bedrijfsleven en het Gildewezen van Amsterdam, derde deel 1633-1672, uitgegeven door J.G. van Dillen, 's-Gravenhage 1974, (BGBG).

Bronnen tot de geschiedenis van den Oostzeehandel. Verzameld door H.A. Poelman, *Eerste Deel 1122- 1499*, 'S-Gravenhage, 1917. (BGO)

Bronnen voor de geschiedenis der dagvaarten van de Staten en steden van Holland voor 1544, deel I: 1276-1433, tweede stuk: *Teksten*, bewerkt door W.Prevenier en J.G. Smit, 's-Gravenhage 1987, (BGS).

Bronnen voor de Geschiedenis van de Nederlandse Oostzeehandel in de zeventiende eeuw, Deel II, *Amsterdamse Bevrachtingscontracten van notaris Jan Franssen Bryuningh 1593-1600*, edited by P.H. Winkelman, 's-Gravenhage 1977, (BGNO A).

Bronnen voor de Geschiedenis van de Nederlands Oostzeehandel in de zeventiende eeuw, Deel III, *Acten uit de notariële archieven van Amsterdam en het noorderkwartier van Holland 1585-1600*, *Het koopmansarchieff van Claes van Adriachem*, edited by P.H. Winkelman, 's-Gravenhage 1981, (BGNO B).

Finlands Medeltidsurkunder, III, 1431-1450, edited by Reinhold Hausen, Helsinki 1921, (FMU).

Hanserecessen, *Die Recesse und andere Akten der Hansetage von 1256-1560*, Erste Abteilung von 1256-1430, Zweite Abteilung von 1431-1476, Dritte Abteilung von 1477-1530, Vierte abteilung von 1531-1560. Leipzig & München 1870-1930, Reprinted in Hildesheim 1975, (HR).

Hansisches Urkundenbuch, Hrsg. vom Verein Für Hansische Geschichte, bearbeitet von Konstantin Höhlbaum, Karl Kunze und Walther Stein, Halle, Murich and Leipzig 1876-1916). (HUB)

Konung Gustaf den förstes registratur, III, 1526, *Handlingar rörande Sveriges Historia med undersök af statsmedel i tryck utgifna af Kongl. Riks-Archivet*, Stockholm 1865 1916, (GIR).

Posthumus, N.W., *Inquiry into the History of Prices in Holland*, Vol. I, Leiden 1946

Posthumus, N.W., *Inquiry into the History of Prices in Holland*, Vol. II, Leiden 1946.

Quellen zur Allgemeinen Geschichte: Herzog Albas "Rat der Unruhen", 1568. Zürich 1956.

LITERATURE

Abel, Wilhelm, *Geschichte der deutschen Landwirtschaft, vom frühen Mittelalter bis zum 19. Jahrhundert*, Stuttgart 1962.

Ahvenainen, Jorma, *Eräitä näkökohtia Itämeren kauppapoliittisen tilanteen muuttumisesta 1400-luvulla, Eripainos Historiallisesta Aikakauskirjasta n:o 3*, 1963.

Ahvenainen, Jorma, *Suomen Sahateollisuuden Historia*, Porvoo 1984.

Amsteldam en zyne Geschiedenissen, in 't kort., *Eerste deel*, Amsterdam (Johannes Allart), 1788.

Asaert, G., *Antwerp ships in English harbours in the fifteenth century*, *Acta Historiae Neerlandicae*, XII, 1979.

Attman, Artur, *The Russian and Polish Markets in international trade 1500-1650*, Göteborg 1973.

Attman, Artur, *Swedish Aspirations in the Russian Market during the 17th century*, Uppsala 1985.

Baasch, Ernst, *Holländische Wirtschaftsgeschichte*, Jena 1927.

Barbour, Violet, *Dutch and English Merchant Shipping in the Seventeenth Century*, in *Essays in Economic History, Volume One*, edited by E.M. Carus-Wilson, London & Bradford 1966.

Beard, Miriam, *A History of the Business Man*, New York 1938.

Berkenvelde, F.C., Some unknown Dutch archivalia in the Gdansk archives, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres & L.M.J.B. Heesp & L. Nordegraaf & R.C.W. van der Voort, Hilversum 1988.

Bogucka, Maria, Amsterdam and the Baltic in the First Half of the Seventeenth Century, in *Economic History Review*, 2nd ser. nr 26, 1973.

Bogucka, Maria, The Baltic and Amsterdam in the first half of the 17th century, in *The Interactions of Amsterdam and Antwerp with the Baltic Region, 1400-1800*, Leiden 1983.

Bogucka, Maria, Danzig an der Wende zur Neuzeit: Von der aktiven Handelsstadt zum Stapel und Produktionszentrum, *Hansische Geschichtsblätter*, 102, 1984.

Bogucka, Maria, Dutch Merchants' Activities in Gdansk in the First half of the 17th Century, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990.

Bouma, H.H., *De Hanze en Zwolle*, Spiegel Historiae, nr.15, 1980.

Bosscher, Philippus Meesse, "... except through the Agency and Intermediary of the Aforementioned Sea ... ", Some Observations on the Development of Dutch Sea Power and the Diffusion of Dutch Influence in North-Western Europe, in *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985.

Bowman, F.J., Dutch Diplomacy and the Baltic Grain Trade, 1600-1660, *The Pacific Historical Review*, 5, 1936.

Braudel, Fernand, *Civilization and Capitalism 15th-18th Century*, Volume III, Perspectives of the World, New York 1984.

Braudel, Fernand, *The Mediterranean and the Mediterranean World in the age of Philip II*, Vol I, New York 1976, (revised version, original 1966).

Bugge, Alexander, *Den Norske Trælasthandels Historie*, I, Fra de Ældste Tider Indtil Freden i Speier 1544, Skien 1925.

Buis, Jaap, *Historia Forestis, Nederlandse bosgeschiedenis I, Bosgebruik, bosbeheer en boswetgeving tot het midden van de negentiende eeuw*, Utrecht 1985, (Buis 1985 A).

Buis, Jaap, *Historia Forestis, Nederlandse bosgeschiedenis II, Houtmarkt en houtteelt tot het midden van de negentiende eeuw*, Utrecht 1985, (Buis 1985 B).

Bruijn, Jaap, *The Timber Trade, The Case of Dutch-Norwegian Relations in the 17th Century*, in *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985.

Campbell, Tony, *Portolan Charts from the Late Thirteenth Century to 1500*, in *The History of Cartography, Volume I, Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, edited by J.B. Harley and David Woodward, Chicago 1987.

Carlsson Sten & Rosén Jerker, *Svensk Historia I. Tiden före 1718*. Lund 1978.

Cederlund, Carl Olof, *Shipbuilding in the 17th and 18th Centuries, The Wasa as a Product of Dutch Shipbuilding*, in *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, edited by Arne Bang-Andersen & Basil Greenhill & Egil Harald Grude, Oslo 1985.

Christensen, Aksel E., *Dutch Trade to the Baltic about 1600, Studies in the Sound Toll Register and Dutch Shipping Records*, Copenhagen - The Hague 1941.

Collins, James B., *The Role of Atlantic France in the Baltic Trade: Dutch Traders and Polish Grain at Nantes, 1625-1675*, *Journal of European Economic History*, 13, 1984.

Daenell, E, *Die Blütezeit der Deutschen Hanse, Hansische Geschichte von der zweiten Hälfte des XIV. bis zum letzten Viertel des XV. Jahrhunderts*, Berlin 1905, Reprint Berlin-New York 1973.

Daenell, Ernst, *Holland und die Hanse im 15. Jahrhundert*, *Hansische Geschichtsblätter* 1903.

Dauids, Carel A, *The Transfer of Windmill Technology from The Netherlands to North-Eastern Europe from the 16th to the early 19th Century*, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990.

DeVries, Jan, *The Population and Economy of Preindustrial Netherlands*, *Journal of Interdisciplinary History*, XV:4, Spring 1988.

Dollinger, Philippe, *The German Hansa*, Bristol 1970, (Dollinger A).

Dollinger, Philippe, *Die Bedeutung des Stralsunder Friedens in der Geschichte der Hanse*, *Hansische Geschichtsblätter*, 88, Teil I, 1970 (Dollinger B).

Don, Johann, *Das niederländische Kampen als althansische Schifffarts- und Reederstadt - eine Parallellfall zu Bremen*, *Bremische Jahrbuch* nr.51, 1969.

Dunsdorfs, Edgar, *Merchant Shipping in the Baltic During the 17th Century*, *Contributions of Baltic University* Nr. 40, Pinneberg 1947.

Elias, Johan E, *Het voorspeel van den eersten Engleschen oorlog I: Het Britisch-Nederlandsche antagonisme*, 's-Gravenhage 1920.

Ellmers, Detlev, *Frisian and Hanseatic Merchants sailed the Cog*, in: *The North Sea, A Highway of Economic and Cultural Exchange, Character - History*, editors: Arne Bang-Andersen, Basil Greenhill, Egil Harald Grude, Oslo 1985.

Faber, J.A., *Friesland and the Baltic trade*, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988.

Falk, Albert, *Gustaf Vasas Utrikespolitik med afseende på handeln*, Stockholm 1907.

Friedland, Klaus, *Dänemark 1350-1650*, *Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, *Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts*, Stuttgart 1986.

Friedland, Klaus, *Norwegen 1350-1650*, in *Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, *Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts*, Stuttgart 1986.

Gelius, Rolf, *Der Europäische Seehandel mit Waidasche und Pottasche von 1500 bis 1650*, *Jahrbuch für Wirtschaftsgeschichte*, 3, 1985.

Goehrke, Carsten, *Das Moskauer Reich, 1400-1650*, *Handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, *Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts*, Stuttgart 1986.

Gutkind, E.A., *International History of City development, Volume VI, Urban Development in Western Europe: The Netherlands and Great Britain*, New York 1971.

Hallberg, Annagreta, *Tjärexport och tjärhandelskompanier under stormaktstiden*, *Historiska och Litteraturhistoriska Studier*, 34, Helsinki 1959.

Heeres, W.G., *De Heffing van het Paalgeld door Kampen en Amsterdam*, *Economisch- en Sociaal-Historisch Jaarboek*, 46, 1983.

Houtte, J.A. van, *An Economic History of The Low Countries 800-1800*, London and Edinburgh 1977.

Israel, Jonathan, *Dutch Primacy in World Trade, 1585-1740*, Frome & London 1990.

Israel, Jonathan L, *The Dutch Republic and the Hispanic World 1606-1661*, Oxford 1986.

Jansen, J.C.G.M. & van de Westeringh, W, *Dat Ging over zijn Hout, Overmatig gebruik van bossen in het Zuiden van Limburg van de Hoge Middeleeuwen tot in de 20e Eeuw*, *Studies over de Sociaal-economische Geschiedenis van Limburg* 28, 1983.

Jensen, Birgit Bjerre, *Jakob I's Østersøpolitik 1603-25*, *Historie, Ny Række XII*, 1-2, 1977.

Kellenbenz, Hermann, *The Organization of Industrial Production*, *The Cambridge Economic History of Europe, Volume V, The Economic Organization of Early Modern Europe* editors E.E. Rich & C.H. Wilson, Cambridge 1978.

Kellenbenz, Hermann, *Wirtschaft und Gesellschaft Europas 1350 -1650*, *handbuch der Europäischen Wirtschafts- und Sozialgeschichte*, Band 3, *Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts*, Stuttgart 1986.

Kivimäe Jüri, *Reval-Lübeck-Amsterdam: The triangle of trade on the eve of the Livonian War (1554-1557)* in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988.

Koenigsberger, H, *Western Europe and the Power of Spain*, in: Wernham R.B. (ed.), *The New Cambridge Modern History, Volume III The Counter-Reformation and Price Revolution 1559-1610*. Cambridge 1968.

Koppe, Wilhelm, *Lübeck-Stockholmer Handelsgeschichte im 14. Jahrhundert*, *Abhandlungen zur Handels- und Seegeschichte im Auftrage des Hansischen Geschichtsvereins* Herausgeben von Fritz Rösig und Walther Vogel, *Neue Folge der Abhandlungen zur Verkehrs- und Seegeschichte* Herausgeben von Dietrich Schäfer, Band II, Neumünster 1933.

Kuhn, Walter, *Geschichte der Deutschen Ostsiedlung in der Neuzeit*, 1. Band, *Das 15. bis 17. Jahrhundert*, *Allgemeiner Teil*, Köln 1955. (Kuhn 1955 A)

Kulturhistoriska lexikon för nordisk medeltid, från vikingatid till reformationstid, edited by Helge Pohjolan-Pirhonen, Helsinki 1974 (KHL).

Latham, Bryan, *Timber, Its Development and Distribution, A Historical Survey*, London 1957.

Lesger, C.M., *Amsterdam, Harlingen and Hoorn. Port functions in the Zuiderzee region during the middle of the seventeenth century*, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988.

Lindblad, J. Thomas, Evidence of Dutch-Swedish Trade in the 17th Century, in: *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S. Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990.

Lloyd, T.H., *England and the German Hanse, 1157 - 1611, A study of their trade and commercial diplomacy*, Cambridge 1991.

Loit, Aleksander, Sverige och Östersjöhandeln under 1600-talet. Översikt över nyare litteratur, *Historisk tidskrift* 1964.

Lundkvist, Sven, Gustav Vasa och Europa, Svensk handels- och utrikespolitik 1534-1537, *Studia Historica Upsaliensia II*, Uppsala 1960.

Lundkvist, Sven, Sverige och Nederländerna 1524-1534, in *Scandia, Tidskrift för Historisk Forskning*, Band 27, 1961.

Mager, Friedrich, *Der Wald in Altpreußen als Wirtschaftsraum*, I. Band, Köln 1960 (Mager 1960 A).

Mager, Friedrich, *Der Wald in Altpreußen als Wirtschaftsraum*, II. Band, Köln 1960, (Mager 1960 B).

Mickwitz, Gunnar, Die Hansakaufleute in Wiborg 1558-1559, *Historiallinen Arkisto* 45, Helsinki 1939.

Mickwitz, Gunnar, Kahden tallinnalaisen kauppiaan kaupankäynti viipurilaisten kanssa Kustaa Waasan aikana, *Historiallinen Arkisto XLIV*, Helsinki 1938.

North, H., Waldwarenhandel und -produktion, Ein beispiel für die Beziehungen Königsberg - Amsterdam im 17. Jahrhundert, in: *The Interactions of Amsterdam and Antwerp with the Baltic Region, 1400-1800*, Leiden 1983.

North, Michael, Baltic Wood Trade, in: *The Baltic as a trade road, Timber trade in the Baltic area, competition between steam and sails*, Porvoo 1989.

North, Michael, The export trade of Royal Prussia and Ducal Prussia, in *From Dunkirk to Danzig: Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres & L.M.J.B Heesp & L. Nordegraaf & R.C.W. van der Voort Hilversum 1988.

Oppermann, Otto, Opmerkingen over Hollandsche Stadsrechten der XIIIe Eeuw, met een Aanhangsel over de Wording der Legende van St Jeroen, Bijdragen van het Instituut voor Middeleeuwsche Geschiedenis der Rijks-Universiteit te Utrecht, Utrecht 1923.

Parry, J.H., Transport and Trade Routes, *The Cambridge Economic History of Europe*, Volume IV, The Economy of Expanding Europe in the Sixteenth and Seventeenth Centuries editors E.E. Rich and C.H. Wilson, Cambridge 1967.

Postan, M.M., *Medieval Trade and Finance*, Cambridge 1973.

Pounds, N.J.G., *An Economic History Of Medieval Europe*, Hong Kong 1978.

The Routes of the Sea, Sea Chart from the 16th century to present times, edited by Christoffer H. Ericsson, Leena Miekkaavaara, Juha Nurminen and Nils-Erik Raurala, Mänttä 1988.

Ruuth, J.W., *Wiipurin kaupungin historia*, I, Wiipuri 1908.

Sandström, Åke, Mellan Torneå och Amsterdam, En undersökning av Stockholms roll som förmedlare av varor i regional- och utrikeshandel 1600-1650, Borås 1990.

Schreiner, Johan, *Nederland og Norge 1625-1650, Trelastutførsel og Handelspolitikk*, Oslo 1933.

Snapper, F. Commerce, ships and war in the Baltic from the rise of the Hanseatic League till the French Revolution, in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988.

Soom, Arnold, *Der Herrenhof in Estland in 17. Jahrhundert*, Lund 1954.

Spading, Klaus, *Holland und die Hanse im 15. Jahrhundert, Zur Problematik des Übergangs vom Feudalismus zum Kapitalismus*, Weimar 1973.

Struick, J.E.A.L., *De Hanze en de Nederlanden, Spiegel Historiaal*, nr. 9, 1974.

Tjaden, Anja J., Frederic II of Denmark, Lord of Holland and Zealand?, *Diplomats in Action (1584-1587)*, in *Baltic Affairs, Relations between the Netherlands and North-Eastern Europe 1500-1800*, edited by J.Ph.S., Lemmink & J.S.A.M. van Konigsbrugge, Nijmegen 1990.

Unger, Richard W., *Dutch Shipbuilding before 1800*, Assen & Amsterdam 1978.

Unger, Richard W., *The Ship in the Medieval Economy, 600-1600*, Trowbridge & Esher 1980.

Wallerstein, Immanuel, *The Modern World-System, Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*, New York 1974.

Van der Laan, P.H.J., The Poulle brothers of Amsterdam and the North Sea and Baltic trade, 1590-1620 in: *From Dunkirk to Danzig, Shipping and Trade in the North Sea and the Baltic, 1350-1850*, editors W.G. Heeres, L.M.J.B. Hesp, L. Noordegraaf & R.C.W. van der Voort, Hilversum 1988.

Weiner, M.A., *The Hansa, in the Cambridge Medieval History, Volume VII, Decline of Empire and Papacy*, Cambridge 1964.

Willemsen, R.Th.H., Dutch sea trade with Norway in the seventeenth century, in: *From Dunkirk to Danzig, Shipping and Trade in the North sea and the Baltic, 1350-1850*, edited by W.G. Heeres & L.M.J.B. Hesp & L. Nordegraaf & R.C.W. van der Voort Hilversum 1988.

Wilson, Charles, *The Dutch Republic and the civilisation of the seventeenth century*, Verona 1968.

Vlekke, Bernard H. M., *Evolution of the Dutch Nation*. Netherlands 1963.

Vogel, Walther, *Geschichte der deutschen Seeschifffahrt, I Band, Von der Urzeit bis zum Ende des XV. Jahrhunderts*, Berlin 1915, Reprint Netherlands 1973.

Wolf, Eric R., *Europe and the People without History*, Berkeley and Los Angeles 1982.

Vollbeh, Friedel, *Die Holländer und die Deutsche Hanse, Pfingstblätter des Hansischen Geschichtsvereins, Blatt XXI*, Lübeck 1930.

Von den Brincken, Anna-Dorothee, *Die Kartographische Darstellung Nordeuropas durch Italienische und Mallorquinische Portolanzeichner in 14. und in der Ersten Hälfte des 15. Jahrhunderts, Hansische Geschichtsblätter, 92*, 1974.

UNPRINTED MANUSCRIPT

Ahvenainen Jorma, *Forest Economy and Timber Trade, 1300-1800*.

DUTCH YEARLY SHIPMENTS OF WAYNSCOT THROUGH THE SOUND IN 1562-1648

YEAR	HUNDREDS	YEAR	HUNDREDS
1562	3616	1607	727,5
1563	1332	1608	770,75
1564	1742	1609	1325
1565	3026	1610	1205,25
1566	4392,5	1611	1291,5
1567	3015,5	1612	1775
1568	2173	1613	920,5
1569	449,5	1614	997,75
1574	629,25	1615	1095
1575	768	1616	1299
1576	239	1617	1135,25
1577	532,5	1618	799
1578	596,75	1619	750
1579	681,5	1620	2673,5
1580	925	1621	1181,75
1581	734,25	1622	374,25
1582	1259	1623	783,75
1583	518,5	1624	809,25
1584	1004,75	1625	485,5
1585	447	1626	283,75
1586	778,75	1627	345
1587	487,25	1628	352,25
1588	646,5	1629	404
1589	724,75	1630	727
1590	1330,75	1631	926,75
1591	846,75	1633	568,5
1592	814,25	1635	597
1593	920,5	1636	279,75
1594	1343,25	1637	404,5
1595	1157,75	1638	405,75
1596	608,5	1639	353,75
1597	876,5	1640	306
1598	1371	1641	456,75
1599	1334,75	1642	418
1600	360,5	1643	685,75
1601	865,5	1644	408,75
1602	1032,5	1645	-
1603	1065,5	1646	609
1604	829,75	1647	429,5
1605	436	1648	464
1606	646		

Source: Bang, Nina Ellinger, *Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A.*, Copenhagen 1922, column Vognskud in respective years. Note: Waynscot from other columns (than hundreds) converted to hundreds.

DUTCH YEARLY SHIPMENTS OF CLAPBOARDS THROUGH THE SOUND IN 1562-1648

YEAR	GREATHUNDREDS	YEAR	GREATHUNDREDS
1562	686	1607	1013,75
1563	413	1608	1812,25
1564	315,75	1609	1375,75
1565	573,75	1610	1210,25
1566	1072,75	1611	1389,25
1567	628,25	1612	1794,25
1568	648,75	1613	1207
1569	74,95	1614	1677
1574	443	1615	2123,5
1575	488	1616	2205,75
1576	266	1617	1833,75
1577	484,25	1618	1083,75
1578	839,5	1619	1073,75
1579	844,75	1620	1433,75
1580	1031	1621	1228
1581	1250,5	1622	611,25
1582	1477	1623	1580,75
1583	1662	1624	1135,5
1584	1229,75	1625	521,25
1585	740,5	1626	419
1586	700,25	1627	647
1587	1293,25	1628	544,5
1588	886,5	1629	773,75
1589	1587,75	1630	423
1590	1608	1631	509,75
1591	1049,5	1633	524
1592	1865,25	1635	546
1593	1357,5	1636	248,25
1594	1746,5	1637	338
1595	2150,25	1638	357,75
1596	1359	1639	353
1597	2084,25	1640	367
1598	960,75	1641	393,25
1599	1658	1642	427,5
1600	572	1643	499,5
1601	1168,5	1644	485,5
1602	1024	1645	1
1603	1007,5	1646	637
1604	1011,5	1647	591
1605	877	1648	622
1606	1427,25		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Klapholt in respective years. Note: Clapboards from other columns (than great hundreds) converted to hundreds.

DUTCH YEARLY SHIPMENTS OF DEALS AND PLANKS THROUGH THE SOUND IN 1562-1648

YEAR	In Pieces	YEAR	In Pieces
1562	30995	1607	23990
1563	5205	1608	28406
1564	5500	1609	57270
1565	7080	1610	43830
1566	7250	1611	29635
1567	10610	1612	32757
1568	14640	1613	43402
1569	30	1614	55980
1574	480	1615	55636
1575	3840	1616	80620
1576	3690	1617	65540
1577	1350	1618	95760
1578	1440	1619	119604
1579	6570	1620	111297
1580	6765	1621	75060
1581	1410	1622	120249
1582	5020	1623	105079
1583	3990	1624	145458
1584	9260	1625	43224
1585	16500	1626	41384
1586	4305	1627	46760
1587	21225	1628	41464
1588	9935	1629	81706
1589	20935	1630	43350
1590	30710	1631	87290
1591	21480	1633	57247
1592	16388	1635	55570
1593	24765	1636	61789
1594	30300	1637	52224
1595	38265	1638	51030
1596	29800	1639	46293
1597	12690	1640	20828
1598	24630	1641	77588
1599	23262	1642	65998
1600	20540	1643	79733
1601	94560	1644	27680
1602	25890	1645	2120
1603	38390	1646	97297
1604	28005	1647	71545
1605	21910	1648	87399
1606	13240		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Deler og Planker in respective years. Note: All columns converted to pieces.

TOTAL YEARLY SHIPMENTS OF WAYNSCOT THROUGH THE SOUND IN 1562-1648

YEAR	In hundreds	YEAR	In hundreds
1562	4727,5	1607	771
1563	1690,25	1608	883,75
1564	1841,5	1609	1430,75
1565	3250,5	1610	1391,5
1566	4753,5	1611	1395,5
1567	3397	1612	1876,75
1568	2447,75	1613	1025,75
1569	603,5	1614	1075,5
1574	1114,75	1615	1225
1575	1410,5	1616	1457,5
1576	762,5	1617	1234
1577	1147,5	1618	856
1578	1526,25	1619	779,25
1579	945,25	1620	2704
1580	1189,25	1621	1221,75
1581	1185	1622	475,5
1582	1775	1623	885,5
1583	963	1624	923
1584	1888	1625	536,5
1585	866,75	1626	310
1586	965,5	1627	374,75
1587	1097	1628	366,75
1588	1045,75	1629	425,75
1589	1211,75	1630	822
1590	2231	1631	1013
1591	1550,25	1633	646,25
1592	1157,25	1635	644,5
1593	1141,75	1636	303,5
1594	1923,75	1637	479,25
1595	1601	1638	510,5
1596	903	1639	385,5
1597	1026,75	1640	331
1598	1613,25	1641	488,75
1599	1687,5	1642	465,5
1600	908,25	1643	701,25
1601	1114,5	1644	424,25
1602	1472,5	1645	16,25
1603	1383	1646	647,45
1604	1054,5	1647	456,25
1605	481,5	1648	499
1606	732,75		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Vogns kud in respective years. Note: All columns converted to hundreds.

TOTAL YEARLY SHIPMENTS OF CLAPBOARDS THROUGH THE SOUND IN 1562-1648

YEAR	In great hundreds	YEAR	In great hundreds
1562	995,5	1607	1102,5
1563	577,25	1608	2029
1564	391	1609	1539,25
1565	649,75	1610	1311,5
1566	1198,5	1611	1521
1567	748,75	1612	1926,25
1568	708,75	1613	1335
1569	160,75	1614	1799,25
1574	717,5	1615	2284,25
1575	752	1616	2435,25
1576	387,25	1617	2000,5
1577	685,5	1618	1152,75
1578	1144,75	1619	1111,75
1579	1011,5	1620	1473,5
1580	1206,25	1621	1273,75
1581	1433,5	1622	729,5
1582	1684,75	1623	1821
1583	1913,25	1624	1266,25
1584	1468,25	1625	783
1585	907,5	1626	488
1586	807,25	1627	699,5
1587	1532,5	1628	613
1588	1023,5	1629	919,75
1589	1893,5	1630	654,25
1590	1968,75	1631	684,25
1591	1263	1633	624,25
1592	2072	1635	680,75
1593	1638,75	1636	333,25
1594	2058	1637	460,5
1595	2419,25	1638	441
1596	1614,25	1639	407,75
1597	2345	1640	473
1598	1075	1641	513,5
1599	1800	1642	609
1600	762	1643	579,75
1601	1394	1644	523
1602	1160,5	1645	48,5
1603	1136,5	1646	754,75
1604	1098,25	1647	700,5
1605	968,75	1648	663
1606	1585,75		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Klapholt in respective years. Note: All columns converted to great hundreds.

YEAR	In Lasts	YEAR	In lasts
1562	5698,5	1607	7461
1563	5467,5	1608	10887
1564	8559,5	1609	8724
1565	10117,5	1610	8953
1566	7236	1611	7372
1567	5809,5	1612	8307
1568	6085	1613	7006
1569	4510	1614	9249
1574	4177,5	1615	6385,5
1575	5187	1616	6342
1576	3742	1617	6503
1577	4176	1618	6761,5
1578	4805	1619	5644
1579	4576	1620	6254
1580	5853	1621	4568
1581	6522	1622	2768
1582	6497	1623	4232
1583	6604	1624	3347
1584	2784	1625	2121,75
1585	4785	1626	2035
1586	8130	1627	2135
1587	4703,5	1628	1730
1588	5470	1629	3345
1589	5442	1630	2335
1590	4896	1631	1450
1591	5925,5	1633	2188
1592	6394,5	1635	2608
1593	7816	1636	2193
1594	10536	1637	2459
1595	8752,5	1638	1691
1596	7713	1639	1379
1597	6676	1640	1140
1598	7769	1641	2277
1599	5880,5	1642	2272
1600	8239,5	1643	1383
1601	3263,5	1644	1980
1602	5595,5	1645	77
1603	8099,5	1646	1535
1604	7415	1647	1319
1605	7614	1648	2254
1606	7226,5		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1860, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Aske in respective years. Note: Does not include the ashes, which were included in the column for undefined Aske, Beg og Tjære.

YEAR	In Lasts	YEAR	In lasts
1562	395	1607	2352,5
1563	725,5	1608	2403
1564	768,5	1609	2131,5
1565	806	1610	2220,5
1566	531	1611	1363
1567	776,5	1612	1774,5
1568	1448	1613	1164,5
1569	378	1614	2348,5
1574	636	1615	1704,5
1575	255,5	1616	1577
1576	201	1617	1634,5
1577	629	1618	1874
1578	680	1619	1159
1579	1047	1620	913
1580	1075	1621	964,5
1581	414	1622	1161,5
1582	457	1623	1821
1583	958	1624	904,5
1584	1678	1625	738,5
1585	1978,5	1626	1225
1586	1485,5	1627	689
1587	1071	1628	596
1588	556	1629	883
1589	1560	1630	593
1590	1434,5	1631	586
1591	1663	1633	604
1592	1893,5	1635	379
1593	1916	1636	361
1594	1608	1637	785
1595	3131,5	1638	295
1596	3473	1639	133
1597	2335,5	1640	165
1598	1384,5	1641	417
1599	1997	1642	345
1600	1480	1643	368
1601	2159	1644	331
1602	1956	1645	4
1603	3215	1646	270
1604	1957	1647	342
1605	1352	1648	695
1606	1793,5		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Beg in respective years. Note: Does not include the pitch, which was included in the column for undefined Aske, Beg og Tjære.

YEAR	In Lasts	YEAR	In lasts
1562	3446	1607	1320,5
1563	2686,5	1608	1627
1564	944	1609	2167
1565	1733	1610	2177,5
1566	4762,5	1611	1174
1567	4390,5	1612	1297
1568	3468,5	1613	2345
1569	861,5	1614	1874,5
1574	1054	1615	1939
1575	1794,5	1616	1907
1576	1539,5	1617	1727,5
1577	1619,5	1618	1947
1578	2879	1619	3275,5
1579	1387	1620	3434,5
1580	1183,5	1621	3542
1581	656	1622	3726
1582	1127,5	1623	3188,5
1583	2150	1624	3371
1584	2516	1625	1565
1585	1867,5	1626	1346
1586	778	1627	2895
1587	928	1628	3932
1588	1332,5	1629	5861
1589	1785,5	1630	2275
1590	2142,5	1631	5255
1591	1468	1633	3200
1592	1538	1635	4434,5
1593	1650,5	1636	3563
1594	1894,75	1637	3983
1595	2185	1638	4334
1596	2019	1639	5341
1597	1352	1640	4318
1598	1586	1641	6871
1599	1790	1642	4707
1600	2155,5	1643	5995
1601	2065,5	1644	2060
1602	2216,5	1645	843
1603	878	1646	3605
1604	1588,25	1647	4561
1605	1734,5	1648	4566
1606	2122		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Tjære in respective years. Note: Does not include the tar, which was included in the column for undefined Aske, Beg og Tjære.

YEAR	In Lasts	YEAR	In lasts
1562	7326,5	1607	8026,5
1563	7792	1608	11577,5
1564	10042	1609	9560,5
1565	10842,5	1610	10014,5
1566	8409,5	1611	7999
1567	6404	1612	9104,5
1568	6949	1613	7509,5
1569	9944,5	1614	9848
1574	7291	1615	7212
1575	8908,5	1616	7155,5
1576	8961,5	1617	7105,5
1577	6866,5	1618	7479,5
1578	7147	1619	6060
1579	6553	1620	6386
1580	7107,5	1621	4817
1581	9341	1622	2867
1582	9548	1623	4437,5
1583	8656,5	1624	3487
1584	4444,75	1625	2199,25
1585	6382	1626	2239
1586	9426	1627	2334
1587	7026,5	1628	1985
1588	7046,25	1629	3765
1589	8011,5	1630	2416
1590	6245	1631	1593
1591	6894	1633	2575
1592	7543,25	1635	2726,5
1593	9480,5	1636	2381
1594	12870	1637	2687
1595	9953	1638	1832
1596	8862,5	1639	1549
1597	7957	1640	1599
1598	8621,5	1641	2597
1599	7385,5	1642	2325
1600	9463,5	1643	1527
1601	3963	1644	2188
1602	6486,5	1645	263
1603	9570	1646	1705,5
1604	8754,75	1647	1350
1605	8807	1648	2260
1606	8337,5		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Aske in respective years. Note: Does not include the ashes, which were included in the column for undefined Aske, Beg og Tjære.

TOTAL YEARLY SHIPMENTS OF PITCH THROUGH THE SOUND IN 1562-1648

YEAR	In Lasts	YEAR	In lasts
1562	1188,5	1607	3049,5
1563	1233,5	1608	3163,5
1564	1335,5	1609	3059
1565	1365,5	1610	2972,5
1566	850,5	1611	1876
1567	1629	1612	2256
1568	2350,5	1613	1483
1569	1202	1614	2952,5
1574	1887	1615	2503,5
1575	809,5	1616	2395,5
1576	1139,5	1617	2380,5
1577	1735	1618	2261,5
1578	2812,5	1619	1548
1579	2654	1620	1384,5
1580	2180,5	1621	1192,5
1581	1622	1622	1363,5
1582	1214	1623	2205
1583	1856,5	1624	1161
1584	3471,75	1625	1043,25
1585	4168	1626	1482
1586	1949,5	1627	832
1587	2665	1628	709
1588	1164	1629	1115
1589	2568	1630	944
1590	2462,5	1631	1017
1591	2875,5	1633	1002
1592	3222	1635	681,5
1593	3111	1636	698
1594	3307,5	1637	1330
1595	5096	1638	740
1596	4908,5	1639	634
1597	3463	1640	469
1598	2579	1641	1045
1599	2559	1642	1102
1600	2460,5	1643	622
1601	3230	1644	602
1602	2997	1645	344
1603	4620,5	1646	597
1604	2820	1647	564
1605	1913,75	1648	933
1606	2445		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Beg in respective years. Note: Does not include the pitch, which was included in the column for undefined Aske, Beg og Tjære.

TOTAL YEARLY SHIPMENTS OF TAR THROUGH THE SOUND IN 1562-1648

YEAR	In Lasts	YEAR	In lasts
1562	5737,5	1607	1935
1563	4935,5	1608	2335,5
1564	1776,5	1609	2848
1565	3094,5	1610	3102
1566	5938,5	1611	1743,5
1567	5448	1612	1781,5
1568	4421,5	1613	2754
1569	2996	1614	2768
1574	2443	1615	2855,5
1575	3510	1616	3040,5
1576	4264,5	1617	2977,5
1577	3454,5	1618	3092
1578	6038,5	1619	4155
1579	3560	1620	4446
1580	2658	1621	4801
1581	1763,5	1622	4696
1582	2268,5	1623	4814
1583	4210,5	1624	5533
1584	4417	1625	3101
1585	3749	1626	2545
1586	1472,5	1627	3946
1587	1855,75	1628	5531
1588	2339	1629	7820
1589	3014	1630	4032
1590	3012,5	1631	6594
1591	2317,5	1633	5944
1592	2388	1635	5607
1593	2618	1636	5398
1594	3299,25	1637	5157
1595	3375	1638	5848
1596	3055	1639	7756
1597	2046	1640	6192
1598	2142	1641	8793
1599	2675	1642	6377
1600	3475	1643	7673
1601	3227	1644	3401
1602	3150	1645	2676
1603	1533	1646	5081
1604	2351,75	1647	6219
1605	2438	1648	5258
1606	3237,5		

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeller A., Copenhagen 1922, column Tjære in respective years. Note: Does not include the tar, which was included in the column for undefined Aske, Beg og Tjære.

DUTCH YEARLY SHIPMENTS OF UNDEFINED ASH, PITCH, AND TAR THROUGH THE SOUND

1562-1648			
YEAR	In Lasts	YEAR	In lasts
1562	6345	1607	
1563	6152,5	1608	
1564	12541,5	1609	
1565	7437	1610	
1566	5119	1611	114
1567	3937,5	1612	122
1568	6096	1613	70,5
1569	5245,5	1614	104
1574	1244	1615	34
1575	2916	1616	58
1576	2861,5	1617	49
1577	3682	1618	40
1578	2017	1619	117
1579	1920	1620	122
1580	1946	1621	
1581	2495	1622	57
1582	1729	1623	
1583	2312,5	1624	10
1584	5239	1625	37,5
1585	4748	1626	
1586	1428	1627	
1587	1358	1628	
1588	794	1629	
1589	1618	1630	
1590	918	1631	
1591	373	1633	
1592	261	1635	
1593	312	1636	
1594	259	1637	
1595	157	1638	
1596	90	1639	
1597	98	1640	
1598	30	1641	
1599	319	1642	
1600	60	1643	
1601	39	1644	
1602		1645	
1603	44	1646	481,5
1604		1647	
1605	50	1648	
1606			

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeler A., Copenhagen 1922, column Aske, Beg, og Tjære in respective years.

TOTAL YEARLY SHIPMENTS OF UNDEFINED ASH, PITCH, AND TAR THROUGH THE SOUND

1562-1648			
YEAR	In Lasts	YEAR	In lasts
1562	8869,5	1607	9,5
1563	7165,5	1608	
1564	16024	1609	
1565	7685,5	1610	
1566	5825	1611	114
1567	4837,5	1612	122
1568	6697	1613	114,5
1569	10508,5	1614	104
1574	2571	1615	100
1575	3930,5	1616	116
1576	4113	1617	94,5
1577	4574	1618	40
1578	2608	1619	159
1579	2782	1620	122
1580	2345	1621	
1581	3359	1622	117
1582	2636,5	1623	5
1583	3064,5	1624	55
1584	6175	1625	87,5
1585	6279	1626	
1586	1565	1627	
1587	1942	1628	
1588	964	1629	
1589	2095	1630	
1590	1124	1631	
1591	678,5	1633	
1592	468	1635	4
1593	657	1636	
1594	524	1637	
1595	172	1638	
1596	322	1639	
1597	198	1640	
1598	146	1641	
1599	520	1642	
1600	67,5	1643	
1601	49	1644	
1602	24	1645	
1603	44	1646	681,5
1604		1647	
1605	62	1648	
1606			

Source: Bang, Nina Ellinger, Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660, 2. Del: Tabeller over Varetransporten, Varetabeler A., Copenhagen 1922, column Aske, Beg, og Tjære in respective years.

DUTCH YEARLY SHIPMENTS OF POTASH THROUGH THE SOUND IN 1562-1648

YEAR	In Lasts	YEAR	In lasts
1562	0,00	1607	70,39
1563	0,00	1608	112,50
1564	0,00	1609	54,08
1565	0,00	1610	69,33
1566	0,00	1611	50,97
1567	0,00	1612	61,43
1568	0,00	1613	46,81
1569	0,00	1614	55,53
1574	0,00	1615	64,33
1575	0,00	1616	82,14
1576	0,00	1617	69,22
1577	0,00	1618	264,97
1578	0,00	1619	369,85
1579	0,00	1620	460,97
1580	0,00	1621	558,35
1581	0,00	1622	268,78
1582	0,00	1623	300,28
1583	0,00	1624	408,11
1584	0,00	1625	245,56
1585	0,00	1626	319,17
1586	0,00	1627	489,08
1587	0,00	1628	285,22
1588	0,00	1629	269,08
1589	0,00	1630	441,67
1590	0,00	1631	344,14
1591	0,00	1633	564,97
1592	0,00	1635	391,92
1593	0,00	1636	572,17
1594	0,00	1637	383,75
1595	0,00	1638	570,72
1596	0,00	1639	589,39
1597	0,00	1640	414,33
1598	47,50	1641	526,17
1599	29,78	1642	461,19
1600	23,06	1643	387,33
1601	60,89	1644	697,11
1602	25,50	1645	16,44
1603	34,00	1646	592,53
1604	51,56	1647	465,14
1605	34,58	1648	271,97
1606	13,36		

Source: Bang, Nina Ellinger, *Tabeller over Skibvart og Varetransport gennem Øresund 1497-1660*, 2. Del: *Tabeller over Varetransporten, Varetabeller A.*, Copenhagen 1922, column Pottaske in respective years. Note: Shippounds converted to lasts due to the need of comparison.

DUTCH SHIPPING FIGURES IN THE SOUND IN 1562-1648

YEAR	Ships in ballast eastwards	All ships eastwards	Loaded ships westwards	Year	Ships in ballast eastwards	All ships eastwards	Loaded ships westwards
1562				1607	1524	1695	1674
1563				1608	2046	2354	2315
1564				1609	1208	1578	1510
1565				1610	1164	1407	1390
1566				1611	1193	1445	1408
1567	1224	1468	1459	1612	1635	1840	1824
1568	1057	1372	1373	1613	1076	1370	1356
1569	929	945	957	1614	1658	2027	2009
1574	1447	1494	1464	1615	1488	1818	1780
1575	1196	1216	1216	1616	1441	1747	1722
1576	1026	1168	1150	1617	1249	1627	1609
1577	1512	1620	1554	1618	1941	2317	2279
1578	1286	1601	1615	1619	1809	2059	2032
1579	918	1190	1182	1620	1775	2050	2013
1580	885	1212	1209	1621	1729	1944	1893
1581	1097	1352	1334	1622	1138	1330	1285
1582	1475	1678	1684	1623	1138	1587	1503
1583	1699	1830	1810	1624	940	1253	1265
1584	1264	1547	1543	1625	720	904	888
1585	1027	1160	1148	1626	815	1091	1064
1586	1620	1647	1628	1627	826	1000	984
1587	1316	1488	1758	1628	642	678	692
1588	1129	1310	1471	1629	816	1045	1017
1589	1707	2010	1674	1630	737	785	754
1590	1088	1440	1646	1631	1047	1138	1151
1591	1528	1763	1449	1633			1035
1592	1543	1828	1830	1635		1274	1281
1593	1899	2140	2132	1636		1103	1091
1594	1836	2125	2111	1637		1004	948
1595	1799	2149	2089	1638		974	1011
1596	1553	1810	1822	1639		879	990
1597	2167	2278	2244	1640			897
1598	1882	2018	1985	1641			1118
1599	1310	1596	1538	1642			1015
1600	996	1353	1365	1643			1157
1601	1212	1500	1498	1644			1031
1602	1179	1300	1267	1645			
1603	1212	1423	1455	1646			1039
1604	988	1158	1150	1647			1045
1605	1003	1213	1203	1648			1126
1606	1188	1416	1393				

Source: Years until 1639: Christensen 1941, p. 446-447, from the Shipping figures Christensen has compiled from the original Sound Toll Records, Years 1640-1648: Snapper 1988, p. 416-417.

Appendix P

THE LASTAGE OF BALTIC COMMODITIES IN THE SOUND

Dutch lastage in absolute figures for corn, timber, and refined forest products

Year	Corn	Timber	Refined
1565	30,900	4,200	5,300
1575	9,600	1,500	3,100
1585	8,600	1,600	4,300
1595	19,100	4,100	4,900
1605	16,500	1,900	3,500
1615	22,100	4,700	3,400
1625	16,100	2,000	2,400
1635	33,400	2,800	4,900

Dutch lastage in percentages for corn, timber, and refined forest products

Year	Corn	Timber	Refined
1565	65	9	11
1575	63	10	20
1585	52	10	25
1595	58	12	15
1605	64	7	14
1615	62	13	10
1625	50	6	7
1635	53	4	8

Source: Christensen 1941, p. 466. The absolute figures are given in Danish rix-thalers.
 Note: The calculations have been made from the lastage tariffs on the basis of the complete lists of quantities of goods carried in the Dutch ships as stated in the Sound Toll Records for every tenth year (Serial numbers 1-4).