

## University of Groningen

### The prize of neutrality

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### 3 The sources: the *Paalgeld* portbooks and related sources

This study is based on the *Rekeningen van den ontfang van het Paalgeld te Amsterdam*, which from now on will be called the *Paalgeld* portbooks, the records of an eighteenth century tax-register on incoming shipping to Amsterdam. These portbooks form the **source** of this study. In its original form the mass of writing contained in this source cannot be transformed to useful information by the historian because of its quantity, but with the help of a computer the almost endless lists of entries can be mastered. But there is a price: the computer requires the data in digital form. This implies the necessity to make a digital transcript of the source to what is called a digital **meta-source**. This meta-source must be an exact digital representation of the original source as far as the medium allows. Still this digital meta-source offers only restricted facilities for analysis. To discover all the information a next step must be made: the source must be standardized and structured in a way which leaves it semantically intact while making it suited for statistical analysis, creating a digital **encoded source transcript**. In this chapter topics will be discussed that are related to the sources on which this study is based, and to the transformation from source to meta-source to encoded source transcript.

The first section will describe what the *Paalgeld* was and will deal with the origins and history of the *Paalgeld*. It will take a close look at the provisions regarding the collection of this beaconage as far as they can be determined from the "*observantie van den ontfang van 't paal-gelt*". It will then note the departures from these rules for collection of the *Paalgeld* that can be found in the port-books of this levy.

The second section will discuss the quality of the data gathered from the *Paalgeld* portbooks. To ascertain this I will compare these data with data from other sources. I will indicate how some of these sources have been of crucial importance for the image that economic historians have created of the Dutch Republic of the eighteenth century. A short description of these sources and their quality will be given. A part of this section will discuss



**Figure 1** Frontpage of the printed version of *De Observantie van den Ontfang van 't Paal-gelt* from 1747

an attempted record-linkage between entries from the *Paalgeld* portbooks with entries from a number of other sources in order to find confirmation of the data. To test the correlation the data for the year 1778 have been compared to a number of sources that I have transcribed to machine-readable form. This year was chosen because most of the sources have survived for this year. In addition the data will be compared to a number of similar sources and times series published by other authors.

### 3.1 The source: origins and history of the *Paalgeld*

The foundation for this study are the *Paalgeld* portbooks.<sup>1</sup> The *Paalgeld* was a beaconage or docking fee levied on incoming ships in the harbors along the coast of the Zuider Zee. The name of this levy, *Paalgeld*, gives an indication of its purpose. From the revenues of this tax the maintenance of beacons, buoys and the coast-fires, that had the same function as modern light-houses, was financed. But it would also be used to meet the costs of placing poles (*palen*) in the water to mark the numerous shoals of the Zuider Zee.

The origins of this tax can be traced back as far as the fourteenth century. In a charter of 1323 concerning an agreement between "*het gemene land van Terschelling*" and the city of Kampen the erection of a "*kaap*", a beacon, is mentioned. This beacon on the island of Terschelling was financed by Kampen, a city on the estuary of the river IJssel within the jurisdiction of the bishop of Utrecht. Heeres brings up a charter from Kampen from 1334 as the earliest mention of the revenues of the "*pael ghelt*". From that same year he found the declaration of expenses for placing beacons in the Vlie, a sea-entry between the isles of Vlieland and Terschelling. From an account of 1358 there is evidence of Kampen placing beacons in the Marsdiep, a sea-entry between the mainland and the isle of Texel. A beaconage of this kind was also known in some German harbors, where it was called *Pfalgelt*. It is mentioned in a judgement in a dispute between Danzig and Elbing in 1334. It is not clear if there is a real connection between the word "*paal*" (pile) and *Paalgeld*. Heeres indicates that there is no conclusive evidence for the name of the *Paalgeld*.<sup>2</sup>

The first mention of the *Paalgeld* for the city of Amsterdam comes from a charter from 1463. In 1527 Kampen en Amsterdam reached an agreement that Amsterdam would take care of the beacons from then on and would have the right to levy *Paalgeld* in all the harbors on

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<sup>1</sup> "Havenboeken in verband met de Paalgeldheffing, serie Amsterdam" 1742, 1744-1748, 1771-1810, 1814-1828, 1830-1836. 68 Volumes. Archive of Enkhuizen, inventory numbers 110 and 110a deposited at the Archiefdienst Westfriese Gemeenten te Hoorn. We have used the diapositive versions of the microfilm made of this source by Nederlandse Document Reproductie B.V (1984), which can be found in the Amsterdam City Archives, films 6577-6590.

The term "*Paalgeld*" ("*paal*"=pole or pile, "*geld*"=money, here in the meaning of tax) is rather difficult to translate, since "pole-tax" would bring associations that are not desired. Therefore I will not translate the term.

<sup>2</sup> W.G. Heeres (1983), 128-129

the Zuider Zee. Traffic to Kampen had been declining and had suffered from the war between Charles V and Charles of Guelre. Kampen ceded the right to levy *Paalgeld* on the condition that its skippers would be exempt from paying this duty for eternity. The levy was collected successfully only in Kampen and Amsterdam. Amsterdam tried several times to collect these duties in other harbors, but the supreme legal authority at that time in the Low Countries, the High Council of Mechelen denied Amsterdam the right to do so.<sup>3</sup>

Amsterdam lost the right to levy *Paalgeld* on 9th of February 1573. At the start of the Dutch revolt against Philip II, Amsterdam had remained loyal to the king of Spain. Probably as an act of economic warfare Prince William of Orange, the leader of the uprising, decided to grant the right to levy *Paalgeld* to the city of Enkhuizen, which was at that time the second most important harbor on the west coast of the Zuider Zee, situated about fifty kilometers north of Amsterdam. Even after Amsterdam changed sides in the conflict in 1578, Enkhuizen retained this privilege to levy *Paalgeld*. The States of Holland confirmed Enkhuizen's rights to do so in 1578 and even allowed the use of force if Amsterdam should refuse entrance to a *paalmeester* from Enkhuizen, the officer who was in charge of collecting this duty. Furthermore, Enkhuizen succeeded, where Amsterdam had failed, in its dispute with the Frisian harbors. It was stated explicitly that Enkhuizen had the right to levy *Paalgeld* on all goods entering the Zuider Zee via the Vlie and the Marsdiep. Enkhuizen was even successful in collecting the *Paalgeld* in the Frisian harbors. Although Enkhuizen lost its prominent place in the eighteenth century, it kept the right to levy *Paalgeld* until 1838, with a short intermission from 1810 to 1813 when the Kingdom of Holland was annexed by France, and the French took over the task of safeguarding the trade. In 1838 the national government took over the maintenance of beacons and the levy of the *Paalgeld* was stopped.<sup>4</sup>

In 1983 Heeres published series of revenue figures of the leasing of the *Paalgeld*-levy for the period 1530-1572, in which Amsterdam levied the *Paalgeld*, as he found them in the accounts of the treasurer of Amsterdam. The year before he had published the yearly revenues for 1642-1823 from the accounts of the treasurer of Enkhuizen for a number of ports along the Zuider Zee, as far as these accounts are available.<sup>5</sup>

Heeres also mentions the *Paalgeld* portbooks that have provided the core of this study. Only for a limited period these books have survived. For Amsterdam, by far the most important harbor for which we have data on the levy of the *Paalgeld*, these portbooks cover the periods 1742, a single year, 1771 to 1810, 1814 to 1828, and 1830 to 1836. For every year these books have two parts, of which the first is usually called *Rekening van den ontfang van het Paalgeld te Amsterdam over het jaar X* and the second part "*Ontvang van het Paalgeld*

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<sup>3</sup> W.G. Heeres (1983), 131

<sup>4</sup> W.G. Heeres (1983)

<sup>5</sup> W.G. Heeres (1982,1), 9-14. W.G. Heeres (1983),139

wegens de Schepen gekomen uit de West Indien gedurende het Jaar X”<sup>6</sup> These portbooks normally cover one year, except for the case of 1816-1817: for this year the first page reads: “*Rekening van de Ontvang van het Paalgeld te Amsterdam over het Jaar 1816 & de Maanden Januäry & Februäry van 't Jaar 1817*”. The reason for this is the change from a system of the guilder of 20 stuivers to the guilder of 100 cents. However, this change is not consistent. The sums paid for each part of the cargo are still expressed in stuivers, just like the sub-totals: only the grand-totals for each ship are in guilders and cents.

Except for some exceptions, which I will discuss later, in the first part of these books we find the names of all skippers, the cargoes of their ships, the dates of payment, the amounts paid per cargo, and the ports of departure. The second part, according to the title concerning the West Indies but in reality concerning the West-Indies, South and North America and the Guinea coast of Africa, only gives the names of the skippers, the names of the ships, the ports of departure and the amounts paid. For some years there is some additional information here, but I will discuss that when I will go into detail about these books.

### **3.1.1 The "*Observantie van den ontfang van 't Paal-gelt*" and the *Paalgeld* portbooks**

We know the basis for computation of the *Paalgeld*, because it was published in a printed document, the *Observantie van den ontfang van 't Paal-gelt*. There are several versions of this alphabetic lists of products and the impost to be paid for them. The oldest printed list is from 1660 and there are lists from 1695, 1710 and 1747. They differ very little: there are only additions of new products. Heeres has shown that the regulations of this list were still in valid in 1824.<sup>7</sup>

### **3.1.2 General provisions of the "*Observantie*"**

The printed version of the *Observantie*, dated 1747, which I have used for this study, is a more or less alphabetic list of products with the fees to be paid expressed in *guldens*, *stuivers* and *penningen*.<sup>8</sup> Several items have been added to this list in handwriting, like coffee, linen,

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<sup>6</sup> Translation : "Account of the reception of the *Paalgeld* in Amsterdam over the year X", and "Reception of the *Paalgeld* due to Ships coming from the West Indies in the year X"

<sup>7</sup> W.G. Heeres (1982,1)(1983). Because of its importance for this study I will give a complete transcription of the printed version of 1745 of *Observantie van den Ontfang van 't Paal-gelt* in the appendices.

<sup>8</sup> This version of the *observantie* was a xerox of the list used by Heeres in his first publication about the *Paalgeld* (1982,1).

lime, orange peels, and tea. For the last item on the list *wouw* (weld) a new measure is given in handwriting. In the list there is a provision for all goods not mentioned in the list in the final clauses, which are also very interesting for a number of other reasons.

*"Item alle andere Goederen die hier niet geschreven staan, komende van over Zee in 't Vlie of Mars-diepe; sullen geven tot Paalgeld van elk XXV guldens 1 St. uytgeseyt Goud en Silver, daaraf sal men geven van elk 50 guldens 2.*

*Item een Schipper sal zyn last niet mogen breken voor dat hy hem heeft doen schryven by den Pael-meester, en hy contrarie van dien dede, dat sal wesen tot Geregtes proeven."*<sup>9</sup>

First of all they explicitly state that all goods coming via the Vlie and the Marsdiep are subject to this duty, implicitly excluding the internal trade of the Zuider Zee. Likewise ships that entered the Zuider Zee through other arms of the sea and were capable of crossing the fords of the Wadden Zee are implicitly excluded.

The first of these last two clauses also states that of all goods not mentioned in the list the levy was 1 *stuiver* for every 25 guilders value, or 0.2% ad valorem. This is stated twice in the list, because the item on the same page the first entry for the letter W states : "*Waerdye voor de 100 guld. van Waren in de Lijst niet gespecificeert 4 st.*"<sup>10</sup> This means exactly the same. An exception is made for gold and silver, for which the impost is 2 guilders of every 50, or 4% ad valorem.<sup>11</sup>

<sup>9</sup> Translation: "Likewise all other goods that are not mentioned here coming from over Sea into the Vlie or the Marsdiep; shall give as Paalgeld of every XXV guilders 1 Stuiver, with the exception of Gold and Silver, of which one will give of every 50 guilders 2."

<sup>10</sup> Translation: "For every 100 guilders worth of goods not mentioned in the list 4 stuivers".

<sup>11</sup> W.G. Heeres (Heeres 1982,1, note 3, p.17) states that this is a 2% levy. This must be wrong. He also forgets to mention the 4% impost on Gold and Silver. It makes no sense to read "van elk 50 guldens 2" as "van elk 50 guldens 2 stuiver", because then it would be no exception to the rule and there would not have been the

**Observantie**  
van den  
**Ontfang van 't Paal-gelt**

A	Gl	sc	P
<b>A</b>			
AL Schoonfe Aal 't last van 12 ton	0	2	0
Aluyn 't last tegen 4000 pondt	0	7	0
Aluyn 't vat tegen 1600 pondt	0	2	0
Almagro of roo aarde de ton	0	0	8
Amandelen de baal	0	1	0
Amydon of Styfzel het last tegen 4000 pondt	0	2	0
Anchovis de 100 tonnetjes	0	2	0
Anijs de baal	0	1	0
Appelen voor de tonne	0	0	8
Arpuys 't last tegen 4000 pond	0	3	0
As boras 't last 4000 pondt	0	6	0
Afch Weed-afch 't last van 12 tonnen	0	0	8
Afijn 't vat van 4 Oxhooffden	0	3	0
A 2			Bayen

Figure 2 First page of the printed version of the *Observantie van den Ontfang van 't Paal-gelt* from 1747

The last paragraph indicates that it was strictly forbidden to start unloading before declaration of the cargo had been made at the office of the "*Paalmeester*", risking prosecution on offence.

The rigidity of these provisions seems to protect the researcher from the problems of changing prices of goods. However, this is not the case. A closer look at the portbooks shows that practice did not always follow the rules. Even for goods mentioned in the lists sometimes the 0.2% levy was used. For wood a levy of 8 pennies per last is mentioned in the list, but more often one finds a payment of 1 stuiver per 25 guilders.<sup>12</sup> The reasons for this practice are not clear and cannot be deduced from the source. On one and the same page of the portbooks one may find the impost as mentioned in the *Observantie* as well as the 0.2% levy.

Although it is stated that "*een Schipper sal zyn last niet mogen breken voor dat hy hem heeft doen schryven by den Pael-meester*"<sup>13</sup> it is highly unlikely that the date mentioned in the portbooks is the date of arrival or a date shortly after that date and before the unloading of the cargo. Comparison of the dates mentioned in the portbooks with other sources, indicates that it is more probable that the *Paalgeld* was paid shortly before leaving the harbor for a next trip.<sup>14</sup>

In the *observantie* we find a special provision for Dutch ships coming from Muscovy, Greenland, Iceland, the Faroese Islands, the coast of Lapland, and from London: they paid 2 stuivers for every last. Foreign ships are explicitly excluded in this provision:

*"Moscovische, Groenlandsche, Yslandsche, Feroese, en alle Schepen komende van de Lapsche kust, als mede van London, uytgesondert vreemde schepen, 't last 2 stuivers"*<sup>15</sup>

A closer look at the portbooks shows that this provision was not obeyed consistently for ships coming from London. In several places we find completely specified cargoes of ships coming from London, paying for every item on board, though there is every indication of the

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need to explicitly state it.

<sup>12</sup> The "last" was the common measure. The last (=2 ton) was a volume measure and a weight measure: the volume varied from 2800 to 3000 litres, depending on what was measured. As a weight measure it varied from about 2000 kilogram to 2400 kilogram (1 last of wheat=2400 kg, 1 last of rye=2100 kg, 1 last of linseed=2040 kg) There were great local variations in these measures.

<sup>13</sup> Translation: "A ship master shall not be allowed to open the cargo before he has made a description at the Paalmeester".

<sup>14</sup> This shall be proven in the next paragraph, where the reliability of the data will be tested. See also: Heeres continuation of his article "Het Paalgeld" which was never published, but is now available on the Internet in the appendices "Het Buitenvuurgeld", where he compares the dates in the *Paalgeld* portbooks and of the *Buitenvuurgeld* with those of the *Galjootsgeld*-registers. Heeres (1982,2)

<sup>15</sup> Translation: "Ships from Muscovy, Greenland, Island, the Faroer, and all ships coming from the Laplandic coast, as well as ships from London, with the exception of foreign ships, for every last 2 stuivers".

ships being Dutch. An example can be found on folio 118, 26 November 1788, where we find an entry for H.Roelof coming from London with a complete specification of the cargo.

Another exception was made:

*"Noordtsche Schepen 't last Hout 0.0.8"*

It is not really clear what is meant by *"Noordtsche Schepen"*<sup>16</sup>. It is obvious that the explanation "Ships coming from Norway paid 8 pennies for every last of wood" must be wrong, because there would be no need to mention this, since it is no deviation from the rule: *"Hout 't last 0.0.8"*, which is mentioned under H in the list. The most likely explanation is that ships coming from Norway paid according to the size of the ship: 8 pennies for every last. Confirmation for this interpretation can be found also on folio 118 and 119, 27 November 1788, 28 November and 29 November. On all these dates we see an entry for a ship coming from Norway; the cargo is specified as a quantity "lhout", which must mean "last hout". This may be the real cargo, but since I find the same procedure every time when the harbor of origin is *"Noorwegen"*, this is unlikely. All the more so because there are also entries for ships coming from Trontheim<sup>17</sup>, Drammen and Bergen, for which cargo specifications are given. Entering *"Noorwegen"* as harbor of origin may have been a way to get a lower levy than when the cargo would be specified. If on the other hand the cargo was of little value in relation to the size of the ship, it may have been more profitable to specify the cargo.

There is a special provision in the *observantie* for empty ships or ships sailing in ballast. These ships did not pay according to their size, but according to their origin. *"Ledige Schepen ofte geballast komende van Hamburg, Bremen, Embden, of die quartier 2 st. 8 p."*, while ships coming from *"Vrankrijk ofte andere plaatsen"* paid 6 st. The reason for this lower impost on empty ships from the *Kleine Oost* is not clear.

In the portbooks we find a special category of ships for which there is no provision in the *observantie*: the regular service of coasters to Hamburg and Bremen. A *beurtman*, a skipper on these ships, paid a fixed sum. They are listed among the other ships.

### 3.1.3 Ships of the East and West India Companies

Although there are no special provisions in the *observantie* for ships coming from the regions that fell under the monopoly of the West India Company (*WIC*), nor for the ships of the East India Company (*VOC*), in practice they were treated as special categories. The latter were not registered at all in the portbooks. However, Heeres has found yearly *Paalgeld* payments by the *VOC* in the account books of Enkhuizen. The company paid 450 guilders

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<sup>16</sup> Translation : "Northern Ships"

<sup>17</sup> Usually spelled as Drontheim.



for each ship, regardless of the cargo. This implies that the average value of the ship's cargo must have been around 225,000 guilders, since the levy was 0.2% of the value of the cargo. This seems to be rather much. Only after 1805 do I see such sums paid for ships coming from the Americas. There is no information about the VOC-ships to be found in the portbooks.<sup>18</sup> However, after 1815, long after the dissolution of the VOC, ships coming from the Dutch East Indies and China are found among the regular entries in the portbooks. It is striking that even then amounts paid seldom exceeded 200 guilders.

In the portbooks there is a special division at the end of each year's account. The header for this part of the portbooks may vary, but usually the formula is like:

*"Ontvang van het Paalgeld der Schepen onder het district van de West Indische Compagnie in het jaar 1788"*<sup>19</sup>

In this separate listing we find ships coming from those regions that once fell under the monopoly of the WIC. This included the whole western hemisphere, but also the African Guinea-coast, which was important for the slave trade, one of the major activities of the WIC.

In this part of the portbooks no cargo specification is given as in the other part of the portbooks. We only find information about the name of the ship, the name of the skipper, the ports of departure and the amount of *Paalgeld* paid. For some years a month is given in the first column. Probably this is the month of arrival, or the month in which the *Paalgeld* was paid.<sup>20</sup> However, for most of the years no date of arrival is given.<sup>21</sup> Since the *observantie* contains no special provisions for these ships, I do not know why the specification of the cargo was not given. However, there is a plausible political explanation, which I will discuss later. It is clear that the authorities that collected the *Paalgeld* were not consistent in their practices.

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<sup>18</sup> W.G. Heeres (1982,1),3

<sup>19</sup> Translation : "Receipt of the *Paalgeld* of ships under the district of the West India Company in the year 1788". This is the exact formula for 1788. There are slight variations for other years.

<sup>20</sup> We will discuss the problem concerning the dates in the portbooks in a later section.

<sup>21</sup> The years for which the month of arrival is given are: 1777, 1783-1787, 1789-1790.

### 3.1.4 Reliability of the *Paalgeld* portbooks as a source for historical studies

Tax evasion is probably as old taxes. Since the *Paalgeld* was an impost, it is to be expected that it was dodged. In his famous study about the Dutch Republic in the eighteenth century Johan de Vries estimates that evasion of the payment of the *convoyen en licenten* was quite extensive, varying from about 30% to 40% in Amsterdam and Rotterdam, to about 80% in Zeeland.<sup>22</sup> This has led Knoppers and Snapper to suppose that it might be better to concentrate on ship-movements, rather than cargo-specifications. They suppose there is a fixed relation between ship-movements and the flow of goods. In their view concentrating on cargo descriptions, which are influenced by the effects of tax-evasion, can conceal the real developments. But they also state that tax-evasion is influenced by the change of taxes.<sup>23</sup> Even if their first claim is right-which I will prove that it is not-the unchangingness of the *Paalgeld* should be a guarantee that evasion would be more or less the same over time. This might imply that the *Paalgeld*-data should be interpreted as being a reflection of a constant part of the total flow of goods.

Is there any reason to assume, that evasion of the *Paalgeld* was less frequent? Since the collection of the *Paalgeld* was carried out by the same office of the Admiralty that collected the *convoyen en licenten*, it may seem to be rather unrealistic to suggest that the *Paalgeld* was probably evaded less. It is highly unlikely that a ship master would declare a different set of cargoes for each impost to the same clerk of the admiralty.

Still there is good reason to assume that the evasion may have been of another style: declaring smaller amounts goods that were actually on board. Furthermore, the remarks about the high percentage of tax-evasion usually refer to the *Convoyen en Licenten*, of which the records were lost in a fire in 1844, which makes it impossible to verify this claim. However, the data from the *Convoyen en Licenten* concerned both imports and exports. I assume that there is good reason to believe, that tax-evasion might have been much easier and hence more common on the exports. What are the reasons to assume that the data of the *Paalgeld* portbooks are not heavily influenced by tax-evasion?

- \* First of all, the *Paalgeld* levy was a very low impost: only 0.2% ad valorem for most goods. Why would a ship master risk a costly lawsuit when so little was to be gained by successfully dodging the levy?
- \* Secondly, the *observantie* leaves some room to manoeuvre: if a good was listed for a higher impost than 0.2%, one could always use a name for the good that was not listed in the *observantie* and demand the right to pay only 0.2%. This seems to have been common practice.

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<sup>22</sup> J. de Vries (1959), 20-22

<sup>23</sup> J. Knoppers and F. Snapper (1976), 119

- \* Thirdly, it may have been very well possible to negotiate some sort of profitable settlement with the tax-collectors. This implies that this must have been true also for the *Convoyen en Licenten*, since they were collected by the same persons. Making a deal with the *convooilopers*, the collectors of this tax, was a widespread form of corruption.<sup>24</sup> This would probably have resulted in incomplete declarations, rather than complete dodging. But it is possible to speculate what would have been left out of these declarations. Common sense would suggest that large bulky goods would be rather difficult to hide, in contrast to less voluminous goods. For a very small number of cases evidence for this practice can be found. Ships were usually hired by a group of commissioners. When a ship was damaged on the voyage these commissioners were liable for repair costs according to their share in the cargo. These cases were tried before a special court, the *Kamer van Assurantie en Averij*. The verdicts of this court, which have been discussed before, the *vonnissen van avery grosse*, allow a better insight in the composition of ship cargoes. Since every person involved had to pay according to his share in the total cargo, it was of great importance to all to state precisely what their part of the shipment was. Every owner of a part of the load had to provide written proof of ownership, or, if this was missing, had to give a sworn statement of ownership. A complete listing of these statements can be found as an appendix to the verdicts. Comparing these verdicts with the data from the *Paalgeld* portbooks it is evident that the *Paalgeld* data are incomplete: items like boxes with precious stones, coins etc., are never mentioned in the portbooks, but must have been part of the cargo according to detailed lists of the *vonnissen van avery grosse*. On the other hand, these verdicts do confirm the amounts of bulky goods, as mentioned in the *Paalgeld* portbooks. There seems to have been a practice of "grey" declarations of goods, very likely with the full cooperation of the clerks involved.<sup>25</sup> Knoppers and Snapper mention a number of "conventions" to declare less than was actually on board of a ship: of every 20 lasts of grain only 17 would be declared. If these practices were common with all tax collectors, I must assume that the figures I have calculated are always too low.<sup>26</sup>
- \* Fourthly, the collectors had a double interest in collecting the tax from all ships: the received a commission over the grand-total that was collected. Furthermore, it is highly probable that they collected more than one tax at the same time. These *convooilopers* received a provision of 2½ stuiver for every ship that came to Amsterdam,<sup>27</sup> so they had

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<sup>24</sup> J. de Vries (1959), 21, (1958), 349-361

<sup>25</sup> For a concise treatment of the *vonnissen van averij grosse* see: P. de Buck (1988), 127-129

<sup>26</sup> J. Knoppers and F. Snapper (1976), 126

<sup>27</sup> W.G. Heeres (1982,1)

every reason not to miss a single ship. This leads me to believe that taxes on exports might be more influenced by tax-evasion: to collect these ships had to be visited a second time.

- \* Finally, after a close comparison with other sources the picture emerges that only very few ships could have dodged the *Paalgeld* altogether. The total number of ships found in the portbooks surpasses the number of arrivals mentioned in the ship tidings of the *Amsterdamse Courant*, which have been discussed before.

Almost all of the ships mentioned in the ship tidings, the verdicts of *avery grosse*, and in other tax-registers discussed before, like the *Galgootsgeld* and the *Buitenvuurgeld* can be traced in the portbooks of the levy of the *Paalgeld*. This justifies the conclusion that it is very likely that all ships that entered the port of Amsterdam paid some amount of *Paalgeld*. The most commonly practiced form of tax evasion may have been incomplete statements of the cargo, but dodging the levy altogether does not seem to have been the case. This implies that the data in the portbooks of the *Paalgeld* levy may not be equally reliable for all goods. There are indications in the verdicts of *avery grosse* that the data on voluminous bulk goods may be trusted, but the reliability of the data concerning small precious goods is to be doubted.

In the next sections the quality of data of the various item-categories of the *Paalgeld* portbooks will be discussed. Distinctions will be made between the item-categories in the parts of the portbooks of the *Paalgeld* concerning the European and North African trade, which from now I will call the first part, and the parts concerning the West Indian trade, which I will call the second part. In the case of the date I will give an example of using these data: the intention of this exercise is twofold. First of all to ascertain the real meaning of this piece of information, and secondly to illustrate how a very simple computer manipulation can shed light on a underexposed aspect of maritime traffic: season patterns.

### 3.1.5 The date

In the first part in the header of every folio, which are sometimes numbered, a date is mentioned. On the rest of the page the date is usually only mentioned if on the same page there are also entries to be found for following days. Then we will find the number of that day in the first column for the first entry with that date. At the end of each month there is a sum of the amounts paid that month, so each month is a clearly identifiable unit. In the second part there is

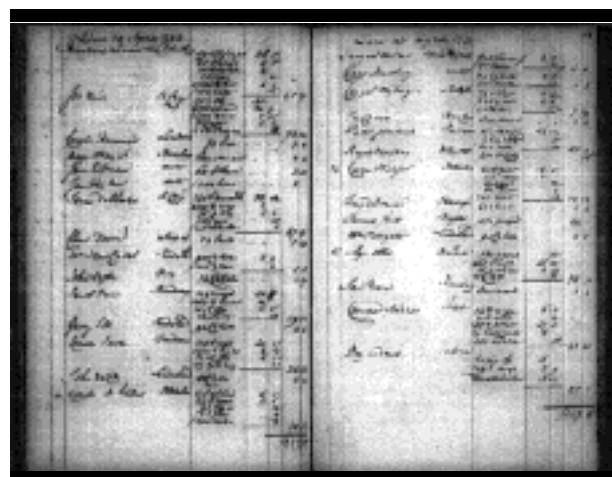


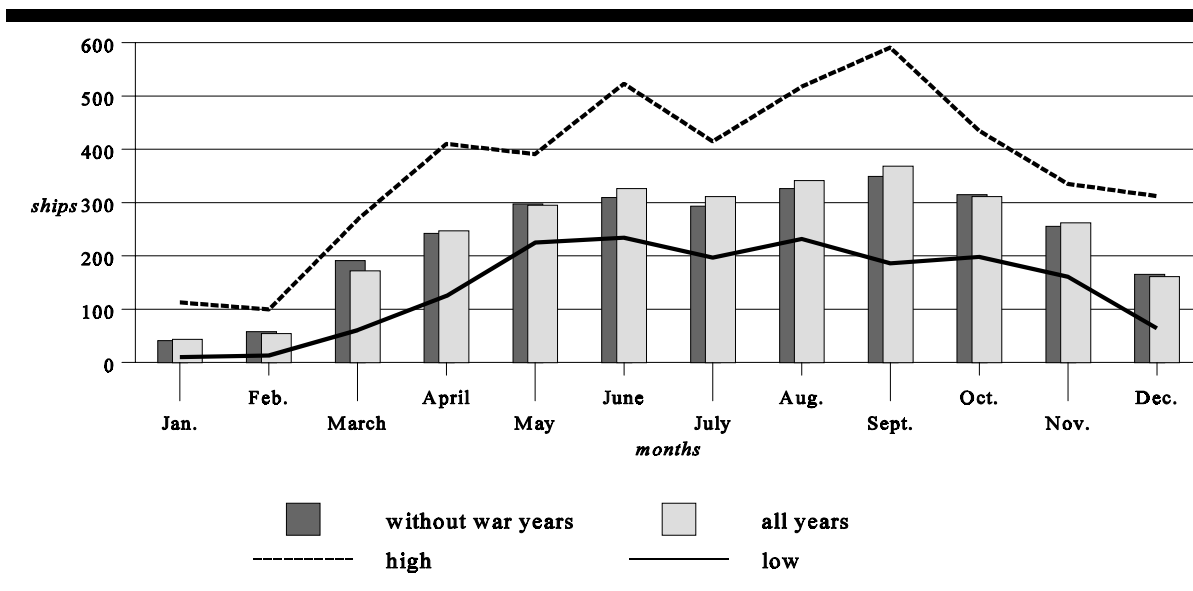
Figure 3 Scan of a page from the *Paalgeld* portbooks

no date given. Only for a short period in the 1780's is the date given. The meaning of the date mentioned in the first part is not self-evident. Since the regulations for the layout of these portbooks are not available, the only way to ascertain the meaning of this date is to consider the possibilities and compare the outcome with dates mentioned in other sources. Since this date is extremely important for further operations with the *Paalgeld*-data, I will consider all possible interpretations of this date. From the *Observantie van den ontfang van 't Paalgeld* the simple conclusion could be drawn that the date must be the date before the unloading of the ship started. Indications from other sources make this highly unlikely: some ships are mentioned in the *Zeetijdingen* arriving before Texel two months before the date given in the *Paalgeld* portbooks and the trip from Texel to Amsterdam may have take some time in special cases, but usually will not have been much longer than 10 days. Would a ship be fully loaded in the port for about 40 days, before the unloading would commence? This seems to be against the common sense of any merchant. The regulation that no unloading was to take place before the *Paalgeld* was paid seems to have been dead letter. If we accept the date in the portbooks as the date of registration of the payment of the impost, there are a number of possible meanings of this date which we must concern.

- It could be the date of arrival of the ship in the harbor. If this would be the case one would expect a more or less constant interval between the date of arrival at Texel or in the Vlie, as mentioned in the *Zeetijdingen in de Amsterdamsche Courant*, and the date in the portbooks. Indeed, there seems to be some regularity in the interval, an average of about three weeks, but the deviations from the average are so frequent and extreme, that it I reject this solution.
- It could be the date of departure from the harbor. Expecting the ship master to pay the tax due as late as possible, the last day in the harbor before departure could be expected. If this would be the case one would expect a very short and constant interval between the date of *monsterrol* of a ship, indicating that the ship was bout to leave the harbor again, and the date in the portbooks. The interval is indeed rather short for those ships for which the linkage between the portbooks and the *monsterrollen* could be made: the date in the portbooks lies between a week and four days before the date of the *monsterrol* and it is never after the date of the *monsterrol*. This evidence is corroborated by information gathered from the *cherteparthijen*: the date of contracts for a new voyage can be closely before or after the date in the portbooks. This seems logical: to make a new contract the ship master had to be present (though sometimes he was represented by others). However, this would imply that the description of the cargo must have been made before, since otherwise there would have been no way the check the correctness of the data.

From this I draw the conclusion that there is a "normal" sequence of events: first the ships arrive before Texel and are mentioned in the newspaper, then they sail for Amsterdam, where they arrive about a week later. In port they will make preparations for a new voyage, make a

contract, unload the cargo, and get supplements for the crew. Shortly before leaving the port again, ship masters would pay the *Paalgeld*, give their ship-articles to the *Waterschout* and finally leave again. This conjecture about "normal" procedure is based on evidence from a rather unsuccessful attempted record-linkage: I only succeeded in making the complete four-way link for less than 10% of the entries for 1778 using standard a name-comparison algorithm, Soundex, which is a standard feature of most commercial database management systems. However, using the same crude method, the results of a one-on-one link between two sources were much better: over 50% in all cases. Fine-tuning the Soundex-algorithm or using other string comparison algorithms might have produced better results, but would have required an irresponsible time investment in a minor problem. Still, because the more successful two-way linkage supports the hypothesis, I will accept it. Furthermore, the explanation given is historically plausible and there is no real contradicting evidence.



**Figure 4** Seasonal patterns in the number of ship arrivals in Amsterdam, 1742, 1771-1786. The lines indicate the lowest and highest number of arrivals for each month. The columns indicate the monthly averages. Source: *Paalgeld* portbooks

In the second part of the portbooks we do not find exact dates. Only for a short period months are mentioned. I expect that these date correspond to the month of registration of the tax-payment. If the same reasoning used to ascertain the nature of the date in the first part of the portbooks, it is most likely that this date should be interpreted as being some time between the arrival and the departure of the ship.

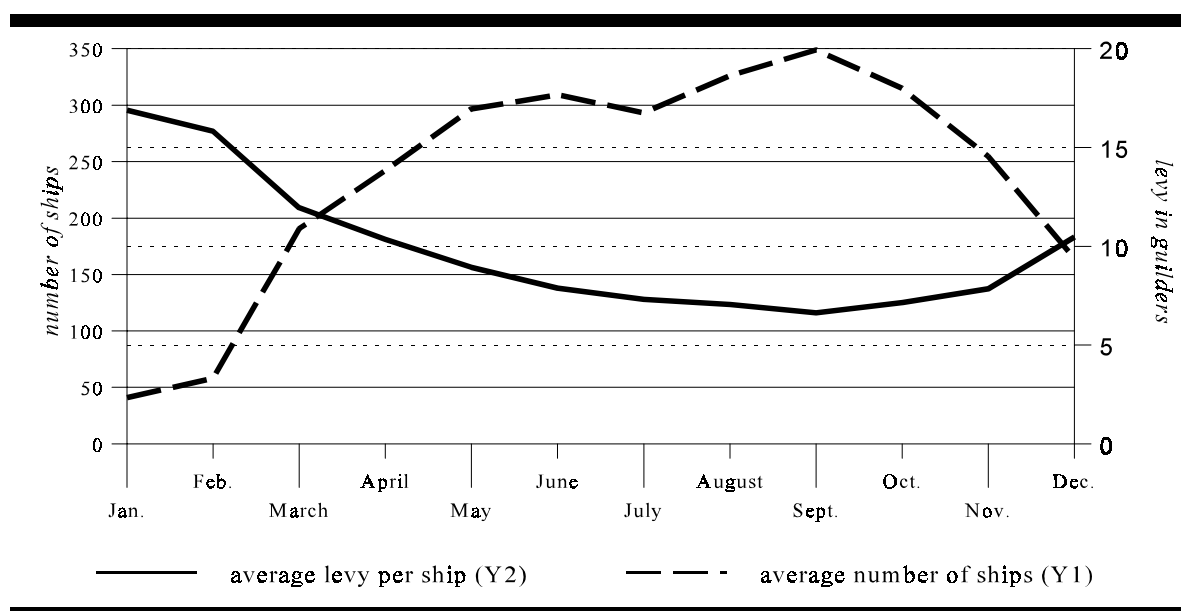
If this assumption is correct, than the data I have gathered from the first part of the portbooks of the *Paalgeld* levy should allow us to discern the rhythm of the seasons in the data, if there was one. We will perform this exercise for two reasons: first of all, if no pattern emerges from the data, we will know for sure that the date given in the portbooks has no

relation to the date of entering the port, because we know that the seasons had a decisive influence on shipping. Secondly, the simpleness of the acts needed to produce these graphs from a database of over fifty-thousand records made the execution irresistible. In table 1 the data for the 18 years for which the data have been collected are represented. One would expect that a clear pattern would be recognizable in an age of sailing ships, which depend on the changeability of the weather. But the regularity of the pattern may have been disturbed by the Fourth Anglo-Dutch War (1780-1784), so I also plotted the data without the war-years in figure 4, in which the monthly averages over the whole period are represented bars and the low and high lines represent the minimum and maximum values found for that month. The magnitude of the standard deviations, which are given for both the series with and without

<b>Year</b>	<b>Jan.</b>	<b>Feb.</b>	<b>Mar.</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sep.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec</b>	<b>total</b>
1742	22	100	222	195	297	271	197	277	303	367	279	148	2678
1771	46	15	150	209	296	361	265	270	349	340	229	241	2771
1772	42	83	181	193	255	314	311	344	480	345	216	241	3005
1773	62	51	174	206	267	301	340	308	315	219	193	312	2748
1774	70	82	242	258	323	261	285	373	415	266	305	64	2944
1775	99	76	210	198	349	312	284	340	370	289	229	102	2858
1776	31	24	223	245	309	272	319	284	458	397	320	149	3031
1777	39	16	202	344	391	329	352	364	368	344	270	152	3171
1778	30	44	268	363	355	325	353	410	399	435	276	165	3423
1779	35	53	267	249	258	356	274	420	240	402	334	160	3048
1780	19	43	165	410	333	312	377	396	293	221	304	195	3068
1781	12	37	71	125	262	386	350	518	591	291	315	168	3126
1782	85	25	134	323	343	523	415	351	495	424	335	78	3531
1783	113	96	129	235	290	341	354	298	307	265	202	180	2810
1784	10	13	120	211	225	278	291	339	408	305	251	134	2585
1785	18	73	91	188	282	390	314	297	344	269	224	139	2629
1786	17	55	61	272	244	294	256	325	186	222	161	129	2222
1787	22	86	188	227	232	234	263	232	311	198	276	139	2408
<b>average</b>	42	54	172	247	295	325	311	341	368	311	262	160	
<b>SD</b>	30	28	61	70	45	63	51	65	95	72	50	57	
<b>1781-1784 excluded</b>													
<b>average</b>	39	57	189	254	299	309	299	331	345	308	258	167	
<b>SD</b>	23	26	57	68	45	41	46	55	77	75	49	61	

**table 1** Monthly total number of ships arriving in Amsterdam according to the *Paalgeld* portbooks, 1742, 1771-1787.

the war years in table 1, indicate that the averages cannot be trusted too much. Still, the combination of both bars and lines give an indication that there indeed was a seasonal pattern, in which September was the busiest month. In the winter-months traffic was quiet, but did not come to an absolute standstill. Around the end of March the activity starts to grow until the peak in September. October and November-with just over 300 and about 250 ships-still show some activity, and even December-with about 150 ships still showed more life than smaller ports showed in a whole year. Only January and February, when in some years the ice would close off the harbor for weeks, formed a very calm period. Quite striking however is the fact that the difference between the peak of September and the minimum of January is not quite as big as one would expect. However, the uncertainty about the nature of the date in the portbooks makes it impossible to decide whether the activity reflects incoming or outgoing shipping.



**Figure 5** Relation between the number of ships and the average amount of *Paalgeld* paid. Source: *Paalgeld* portbooks, 1742, 1771-1787.

Nevertheless this approach obscures the fact that the bustle may have been spread much more evenly. Combining the data for the average number of ships per month with the data for the average levy per ship per month in figure 5, I see a very strong negative relation between the number of ships and the average levy per ship.

There are two plausible explanations, depending on the interpretation of the date as arrival or departure date. If the date is the arrival date, it suggests that during the winter-months only larger ships, which on average paid more *Paalgeld* than smaller ships, were able to deal with the caprices of winter. If the date is closer to the departure date it could also be that the curve is influenced by larger ships who spend the winter in Amsterdam and sailed again in spring.



If the first hypothesis is correct, this pattern must have had a leveling influence on the activity in the harbor: the number of ships that arrived in winter time was small, but their cargoes large, as opposed to the large number of small ships that came into port in the summer. The idea that the quays were deserted in wintertime is not supported by these data: they may not have been as busy as in summer, but there were still ships to be unloaded. Since the graph based on the dates given in the portbooks shows a pattern which can be verified from other sources, I give this as further confirmation of the conclusions from the record-linkage attempt described above.

### **3.1.6 The name of the ship**

Only in the second part of the portbooks there is a column for the name of the ship. These names have very little variation, names like *de Drie gebroeders*, *de Snelle zeilen*, or *de vrouw Anna* are so common, that at a given moment more than one ship of that name may have been in the harbor. The names can be seen as an indication of the nationality of the owner of the ship, although the tax-collectors may have translated the names. Some frequently used names like *Stella Maris* provide no clear information about the origin of the ship.

For the period 1771-1786 for which I have studied the first part of the portbooks, I have not found a single entry for a ship name. Very rarely there were remarks written between the entries, in which was mentioned that a ship carried the goods from another ship, which had been lost or seized by the English, or had itself captured goods from another ship. In these cases sometimes the name of the ship was mentioned.

### **3.1.7 The name of the ship master**

After the column in which the date is given, the name of the ship master is given in the next column in the first part of the portbooks. His family-name is always given in full and sometimes first names are given with patronyms, but usually first names are abbreviated to initials.

It is obvious from the source itself that there was no standardization of names. The name of a captain "Christaan Okken" can appear also as "Cristiaen Ocken", and can even be found as "C.Acken". These differences may have been caused by misreading of the original forms by the clerk who copied them, but it may just as well have been that the original also had the different forms for the same person. Names were taken down as they sounded by the clerks, and the same name may have sounded different to different collectors at different times. Still, the name of the ship master is the only item on which the data can be linked within the source or to other sources. A process of automated nominal record linkage of the data for one captain within the source proved to be extremely difficult, because of the spelling variations.

Linking the data to data from external sources, which was only attempted for one year of the whole data set, was even less successful. Only to ascertain the meaning of the date mentioned in the portbooks, it was necessary to link the data to other sources. A one on one linkage between two sources based on the name of the ship master could be performed with acceptable results, but as soon as more sources were involved in the process the results were disappointing: only a very small number of ship masters could be automatically linked in all sources. Since this record linkage was not necessary for the main object of this study, no further attempts have been made in this respect.

The names of the ship master have only been used to get an idea of the extent to which the share of the Dutch ship masters in the traffic declined. Using a method derived from Faber's approach to distinguish Frisian names from Dutch names, I decided whether a ship master was of Dutch origin or a foreigner.<sup>28</sup> If a name was obviously Dutch and the name of the ship was also Dutch, the ship master was categorized as Dutch. If the name of the ship master and of the ship were clearly not Dutch, he was categorized as a foreigner. All other cases were placed in the third category for ship masters of uncertain origin. The results of this analysis will be presented later.

### **3.1.8 The port of departure of the ship**

After the column with the name of the ship master a harbor-name is mentioned. This harbor seems to be the original port of departure of the ship. If a ship came via a number of other ports, only the original port is mentioned. This provides a problem for the interpretation of the origin of the cargo. In principal the goods can come from any harbor between the port of departure and Amsterdam.

There is no standardization of port-names in the portbooks. Names were taken down as the collector heard them. This has led to more than seventeen different forms for one port (Wyborg): some of these are spelling variations, but some are linguistic variations and spelling variations on these. For Wyborg I also find forms that stem from the Finnish and the Russian forms. It all depended on the pronunciation and the linguistic background of the ship masters. If they spoke a language that the collector did not know, he just guessed what they said and wrote it down.

In almost all cases the most likely original name could be traced, but a number of port names remain a complete riddle in spite of help from all over the world.<sup>29</sup>

For some port names the solution of the enigma could be found with information from the same page. The custom of sailing in convoys resulted in the portbooks in rows of entries

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<sup>28</sup> J.A. Faber (1983), 67

<sup>29</sup> I would like to express my gratitude to the participants of the following listservers : EMHIST-L, C18-L and HISTORY, that have come up with solutions to the problem of "lost harbors". See G.M. Welling (1992)

from the same region. In case of incomprehensible port names the entries above and below could give a clue concerning the region where the harbor would have to be located. In a number of cases this led to the solution.

In a considerable number of cases the name of the port is not given, but a reference to the port mentioned above is given : *idem*, meaning the same. I have consequently interpreted these "*idems*" as the port mentioned above, except for cases in which it was obvious that a later hand had inserted lines in a series of "*idems*" and the result would be absurd: in a long row of ships coming from the North German Coast, carrying cole seed an entry is found - sometimes clearly in a different hand - for one ship coming from a different region carrying the cargo that was typical for its origin. After that entry the rows of "*idems*" follow, but with cargoes typical for the North German Coast. In these cases I have decided that the "*idem*" referred to the entries mentioned earlier and not to the inserted entry. As a result of these interpretations the digital transcription of the source is not an exact copy: in this case I decided in favor of interpretation during the input-phase, because it would have provided much difficulties if these "*idems*" would have to be solved during the phase of analysis.

### **3.1.9 A specification of the cargo**

The greatest asset of the portbooks for historical research is the complete cargo information that is given in the first part, but which is sadly missing from the part concerning the Atlantic trade. With the exception of some regions for which special provisions were given in the *Observantie van de ontfang van 't Paalgeld*, the amount and measure of each cargo item is specified in the portbooks and the amount of beaconage to be paid for that quantity. Since we know the basis for the levy, entries that are difficult to read can be checked by the amount paid if the measure is illegible, or the amount paid can be reconstructed by multiplying the standard levy for that good with the actual amount. If there are more items in the cargo, the amount for each item can be checked by summing the other items of the cargo and deducting that amount from the total.

However, once again we encounter a total lack of standardization: units of measurement of a given cargo can vary. Sometimes the measures mentioned in the *Observantie van de ontfang van 't Paalgeld* are used, but other measures may be found also. Quite often the value of the cargo is indicated in guilders, usually rounded to multiples of twenty-five guilders.

year	Europe		West Indian		Paalgeld total		N.Revenue
	G. Revenu	Costs	G. Revenu	Costs	G.s Revenu	Costs	
1742	14061.95	506.55	3084.95	299.50	17146.90	806.05	16341.30
1771	24399.45	765.00	8172.10	772.00	32571.55	1537.00	31034.30
1772	24422.35	765.55	7611.80	721.50	32034.15	1487.05	30547.10
1773	23058.70	731.45	8791.50	827.80	31850.20	1559.25	30298.50
1774	24370.25	886.10	7087.45	670.95	31457.70	1557.05	29900.65
1775	25011.35	905.30	8868.20	836.00	33879.55	1741.30	32138.25
1776	24938.35	903.10	6372.15	607.35	31310.50	1510.45	29800.50
1777	23922.20	872.65	8894.15	831.65	32816.35	1704.30	31112.50
1778	26018.35	935.55	8460.20	791.20	34478.55	1726.75	32751.80
1779	24706.90	861.20	10396.50	979.75	35103.40	1840.95	33262.45
1780	24661.00	771.00	14709.10	1391.40	39370.10	2162.40	37207.20
1781	15435.75	540.90	790.70	81.95	16226.45	622.85	15603.60
1782	28618.70	1249.50	2935.50	304.75	31554.20	1554.25	29999.95
1783	28155.30	999.65	17794.90	1656.55	45950.20	2656.20	43294.00
1784	24866.85	901.00	13247.80	1653.70	38114.65	2554.70	35560.00
1785	27010.25	965.30	9980.80	933.80	36991.05	1899.10	35091.95
1786	21695.15	805.85	10802.10	1011.20	32497.25	1817.05	30680.20
1787	23945.95	908.40	9299.25	883.95	33245.20	1792.35	31452.85
1788	24213.60	881.40	7595.65	716.60	31809.25	1598.00	30211.25
1789	25632.10	923.95	11516.75	1072.90	37148.85	1996.85	35152.00
1790	24966.10	904.00	13445.20	1249.70	38411.30	2153.70	36257.60
1791	23322.10	854.60	12084.90	1129.75	35407.00	1984.35	33422.65
1792	28243.35	1002.25	10531.00	983.10	38774.35	1985.35	36789.00
1793	14694.15	595.80	6649.50	624.85	21343.65	1220.65	14098.35
1794	17738.35	687.1	15738.15	1464.80	33476.50	2151.95	31327.55
1795	11432.70	497.95	3272.10	313.45	14704.80	811.40	13893.40
1796	22341.20	825.20	8705.10	824.60	31046.30	1649.80	29396.50
1797	19610.80	743.30	5820.00	550.90	25430.80	1294.20	33289.00
1798	20054.45	756.60	2682.45	258.65	22736.90	1015.25	21721.65
1799	17772.50	688.15	406.25	44.65	18178.75	732.80	17665.50
1800	18942.85	1132.20	7268.50	674.70	26211.35	1806.90	24404.00
1801	16130.25	1030.20	15747.40	1458.75	31877.65	2488.95	29388.70
1802	24642.35	1161.15	14802.80	1361.95	39445.15	2523.10	36922.50
1803	20384.70	901.75	10411.45	967.60	30796.15	1869.35	38926.80
1804	22290.95	904.70	15596.00	1436.75	37886.95	2341.45	36245.50
1805	21270.80	920.10	20396.20	1872.35	41667.00	2792.45	38874.55
1806	11105.20	498.10	24124.30	2216.75	35229.50	2714.85	32514.65
1807	12070.35	561.60	22219.30	2039.35	34289.65	2600.95	31698.70
1808	2987.80	326.85	5244.35	484.55	8232.15	811.40	7420.75
1809	1983.55	228.10	1767.85	167.70	3751.40	395.80	3355.60
1810	2084.15	252.35	321.30	36.25	2405.45	288.60	2116.85
1814	7191.8	670.25	1010.80	96.30	18202.65	766.55	17436.10
1815	7762.55	698.85	11999.15	1130.70	29761.70	1829.55	27872.15

**table 2** Gross and net revenue in guilders of the *Paalgeld* levy in Amsterdam, 1741, 1771-1815. Source: *Paalgeld* portbooks

This practice changes the character of the levy from an impost according to the volume of the cargo to an impost according to value. This has serious implications for further research,

since it would make the levy for a number of goods sensitive to inflation and would force a complete reinterpretation of the data.

For the Atlantic trade there are no cargo-specifications given before August 1822, only the total sum paid for each ship. The only check we have here are the totals at the bottom of each page to be transported to the next page. After August 1822, when the name given on the title page of the portbooks changes to "*Ton en Baken geld, en Paalgeld Kanaal*" full cargo descriptions are also given for the Atlantic trade. The products mentioned then can give us an impression of what was carried before that time.

### **3.1.10 Totalisation of imposts per cargo**

In the last column of the portbooks we find the subtotals of the amount paid for each item of the cargo and in case of ships with a single cargo, the levy for that cargo is written in this last column.

Amounts of money are expressed in guilders, stuivers and penningen. One guilder contains 20 stuivers and one stuiver contains 16 penningen. The amount of penningen to be paid is exactly mentioned in the portbooks until 1782, after that all amounts are rounded to stuivers. In 1817 the guilder of 100 cents became the standard and the amounts are expressed in that currency from then on, though for a short time only the subtotals were expressed in the new way, while all the amounts for all the cargo entries were still expressed in the old style.

The totals for each ship are added up to a grand-total per page, which is transported to the next page. This seems to be a straightforward matter, but after a close investigation of 16 years of portbooks I must conclude that although reckoning with a non-decimal system created serious problems for the clerks of the Admiralty, the number of miscalculations is not enormous. Some of these can be explained by taking into consideration that the amounts of *penningen* were not always considered, but on the whole we can only have compassion for the poor clerks who had to these calculations without the modern devices that we have at our disposal. A serious drawback of their sometimes poor reckoning is, that it corrupts the possibility to check the correctness of dubious entries.

### **3.1.11 Monthly and yearly totals**

After the pages with the entries for a given month, we find the pages for that month summed up on a separate page in the first part of the portbooks. These monthly totals are copied to a new page after the last page of December, where they are totaled. Here we find the deduction of the commissions and of the costs that were made to collect the levy. In normal year three commissions were deducted from the revenues of the levy of the *Paalgeld*

on the European trade: a 2.5% commission, an extra commission for the "comies" of 0.5%, and a fixed sum of f125,= "commissie op 't convoy". Next to that the costs for collecting and

	According to Heeres			Computed from the Portbooks			Deviation		
	<i>A'dam</i>	<i>W.Indies</i>	<i>Total</i>	<i>A'dam</i>	<i>W.Indies</i>	<i>Total</i>	<i>A'dam</i>	<i>W.Indies</i>	<i>Total</i>
1742	14062	3085	17147	14055	3085	17140	7	0	7
1771	24399	8172	32571	24334	8183	32517	65	-11	54
1772	24422	7612	32034	24416	7582	31998	6	30	36
1773	23059	8791	31850	23119	8872	31991	-60	-81	-141
1774	24370	7087	31457	24427	7091	31518	-57	-4	-61
1775	25011	8868	33879	24959	8848	33807	52	20	72
1776	24938	6372	31310	24950	6402	31352	-12	-30	-42
1777	23922	8894	32816	23919	8897	32817	3	-3	-1
1778	26018	8460	34478	26204	8414	34618	-186	46	-140
1779	24707	10397	35104	24661	10386	35047	46	11	57
1780	24661	14709	39370	24688	14727	39415	-27	-18	-45
1781	15436	791	16227	15446	791	16237	-10	0	-10
1782	28619	2935	31554	28371	2935	31306	248	0	248
1783	28155	17795	45950	28156	17795	45951	-1	0	-1
1784	24867	13248	38115	24864	13268	38132	3	-20	-17
1785	27010	9981	36991	26879	9889	36768	131	92	223
1786	21695	10802	32497	21706	10802	32508	-11	0	-11
1787	23946	9299	33245	23951	9228	33179	-5	71	66
1788	24214	7596	31810		7598			-2	
1789	25632	11517	37149		11135			382	
1790	24966	13445	38411		12729			716	
1791	23322	12085	35407		12000			85	
1792	28243	10531	38774		10411			120	
1793	14694	6650	21344		6637			13	
1794	17738	15738	33476		15738			0	
1795	11433	3272	14705		3272			0	
1796	22341	8705	31046		8678			27	
1797	19611	5820	25431		5776			44	
1798	20054	2682	22736		2660			22	
1799	17772	406	18178		406			0	
1800	18943	7268	26211		7583			-315	
1801	16130	15747	31877		15678			69	
1802	24642	14803	39445		14477			326	
1803	20385	10411	30796		10229			182	
1804	22291	15596	37887		15101			495	
1805	21271	20396	41667		20032			364	
1806	11105	24124	35229		24145			-21	
1807	12070	22219	34289		22287			-68	
1808	2988	5244	8232		4944			300	
1809	1984	1768	3752		1768			0	
1810	321	2084	2405		321			1763	
1814	17192	1011	18203		1007			4	
1815	17763	11999	29762		11961			38	
1816	19574	15757	35331		15762			-5	

**table 3** Deviations between the revenues in guilders computed from the *Paalgeld* portbooks from the net-revenu figures published by Heeres, 1742, 1771-1816 (no data for 1811-1813)

administering the levy were deducted, a fixed amount of f30.= for mail costs, and varying other cost for bags and printing leaflets. These costs had a varying influence on the net revenue of the levy. In table 2 the gross revenues and the deducted costs are given. This are the figures taken from the totalisations in the portbooks and hence may differ from the figures given in table 3, which are computed from all entries. From the revenue of the levy on the West-Indian trade a commission of 6% and after 1782 of 9% was deducted and the costs of collecting and administering the levy were deducted: a fixed amount of f3,60 for a copy of the bill and varying other costs. From the figures of the gross and net revenues of the levy of the *Paalgeld*, it is clear that the costs varied considerably.

In table 3 the figures of the net revenue that Heeres published<sup>30</sup> and the figures computed from the imposts on every single ship are compared. Both series of figures have been rounded to guilders. Since I have only processed the data of the first part of the portbooks until 1787, I cannot compare the totals after that year. It is clear that the deviations are of minor importance, except for the year 1810. However, I assume that sometime in the preparation of Heeres' publication the data for the two columns Amsterdam and West-Indies have been switched for that single year. If that would be the case, the deviation would be zero.

Is there a good explanation for these deviations? First of all, they might be caused by my errors. In spite of all the validations and checks built into the input programs, a project of these dimensions will always have a number of mistakes. There is no way to avoid misreading completely. If such misreading produce figures that are within the range-checking or other validation methods of the input program, they will be accepted by the program. Filtering out these mistakes is almost impossible: I checked the data as well as I could, especially looking for unexpected deviations from the mean tax paid by one ship master. After having been through the data set a number of times I decided that the amount of possible errors was acceptable and looking any further would not be very productive. Close reading the data, I found that the most common error was to completely overlook a one-line entry. So a part of the deviations may have been caused by overlooking a number of ships. However, locating these errors is very time consuming and if a person checks his own input he is likely to overlook the same entry again. So a part of the errors may be caused by the fact that this whole project was on the whole a one-man job.<sup>31</sup>

Another explanation for the deviations maybe negligence on the part of the clerks who copied the data from the original forms into the portbooks and who did the totalisations. First of all, they may have forgotten to copy the data from some ships. Secondly they may have made errors copying the data from the forms. Finally, they may have made mistakes in the

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<sup>30</sup> W.G. Heeres (1982,1)

<sup>31</sup> Part of the input was done by Flip de Regt , Hans van Straten, and Kim Middel, to whom I am most grateful.

calculations they made. Although it seems that great care has been taken to avoid mistakes, calculations in a non-decimal system are error-prone.

### 3.2 The quality of data in the Portbooks of the Levy of the *Paalgeld*

As has been explained before, the portbooks are series of volumes for each year of which each volume consists of two parts. The first part concerns the European and North-African trade, and the second part concerns the trade of regions under the monopoly of the West India Company. The portbooks have a more or less tabular format. Every year starts with a title-page in which the year is mentioned. On the following pages we find a repeating structure for the entries: the first entry has the date fully written out, and then in a more or less column-like structure we find the name of the ship master, sometimes preceded by a number,<sup>32</sup> the port of departure, then the amount and measure of the cargo, the amount of the levy for each item of the cargo, and in the final column the total amount paid for that ship. The amounts are totaled on each folio and transported to the next. For each month subtotals are drawn up on separate pages. At the end of each year these monthly totals are summed for the yearly total. From this total the commission is deducted and a number of costs made to collect the levy. Then follow a number of pages with the data concerning the West-Indian ships. These are summed and a commission and a number of costs - including the cost of making a copy - are deducted. Then the total of the first part is summed with the total of the second part.

The legibility of the books is dependent on the hand of the clerk who took it down and varies over the period studied. The almost complete absence of crossing out of lines is explained by the yearly deduction of cost of *drukken van billetten*.<sup>33</sup> The portbooks were copied from the original forms. They were used by the Admiralty as proofs of payment and given as appendices to the final settlement with the city of Enkhuizen.

In this chapter the source itself will be examined for possible quality checks. After that the data from this source will be compared with data from other sources. This external quality check has only been carried out for a single year, 1778. The amount of work involved in this exercise made it prohibitive for the complete source. However, since 1778 was a year of above average activity, there is good reason to assume that the findings based on this year may be representative for the whole period. Since the quality check came out positive, we may safely assume that the clerks worked with the same carefulness in less busy years, when

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<sup>32</sup> See the folios for 1793 as an example. I have not been able to determine the meaning of this figure. In a private discussion Heeres has suggested that it may have been the number of the clerk who collected the money. The fact that this figure is always lower than 31 suggests however, that it may be some sort of second date information, maybe referring to the real date of entrance.

<sup>33</sup> Translation: "Printing of forms."



the work-load was a bit smaller. Furthermore, the commission the clerks received over the yearly grand-totals must have been a stimulus not to miss a single item.

### 3.2.1 Related sources

The *Paalgeld* was only one in number of levies on incoming shipping. In this section I will have a look at some of the other levies, like the *Convoyen en Licenten*, the *Buitenvuurgeld*, the *Last en Veilgelden*, and the *Galjootsgeld*. The purpose of this section is two-fold; on the one hand it will put the value of the portbooks of the levy of the *Paalgeld* in perspective and will underline the unique quality of this source, and hence the importance of the figures I will present later in this study. On the other hand it will be a survey of some other available sources and how they have been used for historical research. I will not discuss all original sources and compilations that are available or have been published. I will only discuss those that have been used for major historical studies, or those that can be used to validate the data in the *Paalgeld* portbooks. A number of these sources are reviewed because they provide additional information, like the *Vonnissen van Averij Grosse*, the *Zetijdingen in the Amsterdamsche Courant*, bills of lading, muster roles, and a number of lists that have been published by other authors.

In spite of the voluminous dimensions of the *Paalgeld* portbooks, the registers of this beaconage seem to have escaped the eyes of all historians until Heeres discovered them and published time series of the annual proceeds of the *Paalgeld* in 1982. The fact that they were located in the city archives of Enkhuizen may explain why they were not found before, but still it is rather strange that not even mention of the existence of this beaconage can be found in the classic studies on Dutch trade. When Hovy lists a number of imposts on incoming and outgoing shipping, he completely overlooks the *Paalgeld*.<sup>34</sup> De Vries complains about a lack of information, especially about the cargoes of ships.<sup>35</sup> This implies that he not only had no knowledge of the *Paalgeld*, but also must have overlooked a number of other sources, like the *Buitenvuurgeld* and the *Galjootsgeld*, which I will discuss later in this paragraph. But even after Heeres' publication, only few authors recognized the value of the *Paalgeld* data. Israel's *Dutch primacy in world trade 1585-1740* relies on data from the *Convoyen en Licenten*, although he has a reference for Faber's *Scheepvaart op Nederland in een woelige periode: 1784-1810*, in which Faber used the data published by Heeres. In this article Faber states explicitly that these must be regarded as more reliable than the *Convoyen en Licenten*.<sup>36</sup>

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<sup>34</sup> J. Hovy, (1966), 89-90. Hovy also forgets to mention the *Buitenvuurgeld* and the *Galjootsgeld*.

<sup>35</sup> J. de Vries (1959), 29

<sup>36</sup> See: J. Israel (1989), 431. where he mentions : Faber, J.A., *Scheepvaart op Nederland in een woelige periode: 1784-1810*. In: EHJB 47 (1984), 67-78. See in this article p. 69. This article was translated and published in: Heeres, W.G. a.o.(1988): Faber, J.A., *Shipping to the Netherlands during a turbulent period*

In *The Dutch Republic* Israel uses estimates of the total imports and exports which Heeres constructed based on data from the *last- en veilgeld*.<sup>37</sup> In that same article Heeres once again praises the superior quality of the *Paalgeld*-data. If Israel would have used these, his conclusions would probably have been slightly different. De Vries and Van der Woude fail to make it clear which series of data they have used for some of their conclusions: only with regard to the trade with the West-Indies they explicitly rely on the data Heeres published.<sup>38</sup> Since other sources have been the foundation for most other studies, it is necessary to describe the most important ones and compare them to the *Paalgeld* portbooks.

### 3.2.1.1 The *Convoyen en Licenten*

The annual accounts of the *Convoyen en Licenten*<sup>39</sup> have been the source of which the data have been used extensively by De Vries, Hovy and the greater part of other authors.<sup>40</sup> One might even suggest that the whole interpretation of the trade development of the eighteenth century until recently has been based on the interpretation of the data from this source. This makes it imperative to have a closer look at this impost. The *Convoyen en Licenten* were levied by Admiralties to finance their tasks. There were five departments (*colleges*) of the Admiralty: three in Holland, one in Amsterdam, one in Rotterdam called *op de Maze* (on the Meuse) and one in the Noorderkwartier, which resided alternately in Hoorn or Enkhuizen, one in Zeeland, residing in Middelburg, and one in Friesland, which initially resided in Dockum, but later in Harlingen. These *colleges* had a number of offices (*kantoren*) from where the day to day administration of the various levies that they collected was handled. The tasks of the Admiralties were manifold and included among others the maintenance of the war-fleet and holding councils concerning sea warfare. They also had the jurisdiction on number of matters, concerning privateering and piracy, bounties and prizes etc. Originally the *Licenten* were impost on exports to enemy territory, and to neutral territory bordering on enemy territory. The *Convoyen* on the other hand originally were imposts on goods from these territories, and on exports to all other countries. After the treaty of Munster

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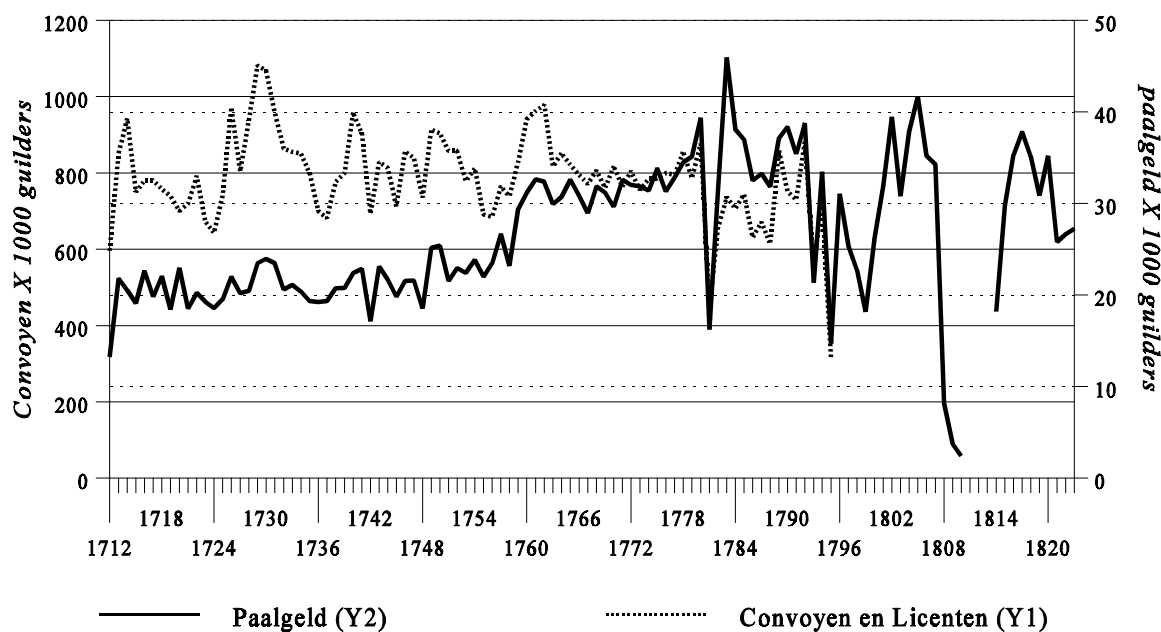
1784-1810, (pages 95-107)

<sup>37</sup> W.G. Heeres (1988)

<sup>38</sup> A. van der Woude and J. de Vries (1995), 554

<sup>39</sup> Both *Convooyen* and *Convoyen* can be found in the sources. I will use *Convoyen*.

<sup>40</sup> J. de Vries (1959), J. Hovy (1966)



**Figure 6** Revenues of the *Convoyen en Licenten* and the *Paalgeld*, 1712-1823. Sources: W.G. Heeres (1982,1) and J. de Vries (1959)

in 1648 these taxes that originally were meant to provide the funds for the war at sea against Spain, were combined to a general impost on imports and exports.<sup>41</sup>

There are three major problems that make it difficult to compare the income from the *Convoyen en Licenten* with that of the *Paalgeld*. First of all the basis for the levy of the *Convoyen en Licenten* changed several times over the period for which data are available. This makes it very difficult to compare the data for different periods and makes it even harder to compare them to the data from the *Paalgeld*, for which the basis remained the same. Secondly, for the larger part of the period for which the data are available it is not possible to separate the income from imports from the income from exports in the proceeds of the *Convoyen en Licenten*. The third problem is that the complete administration of the *convoygelden* has been lost, so that we can only study the data on an aggregate level from the yearly totals.<sup>42</sup> Heeres has shown that there is just a poor correlation coefficient between the yields of the *Convoyen en Licenten* and the *Paalgeld*,<sup>43</sup> which can be seen in Figure 6. He assumes that the data from the *Paalgeld* reflect the imports of Amsterdam more accurately than the *Convoyen en Licenten*.

<sup>41</sup> J. Hovy (1966), 89

<sup>42</sup> W.G. Heeres (1988), 269

<sup>43</sup> W.G. Heeres (1982,1), 4-7

However, we may take it for granted that there were great similarities in practice of the collection of both levies, since both were collected by the offices of the admiralty. All the wheelings and dealings and all the practices of tax-evasion that Hovy conveyed so meticulously in his description of the collection of the *Convoyen en Licenten* were most likely mirrored by the practices regarding the collection of the *Paalgeld* and must be expected for all tax collection in the period.<sup>44</sup> Even if changes in the levy of the *Convoyen en Licenten* may influence the correlation coefficient, one would expect a completely different curve for two imposts collected by the same office on the same ships. The only reasonable explanation can be found in the fact that in the figures of the *Convoyen and Licenten* the exports are included. I suppose that the inclusion of the exports in the *Convoyen en Licenten* conceals a probably good correlation coefficient between both levies on imports. Furthermore, I have argued before that there is reason to believe that tax-evasion on exports may have been higher than on imports.

### 3.2.1.2 The *Buitenvuurgeld*

Since the beginning of the seventeenth century incoming ships had to pay the *Vuurgeld*<sup>45</sup>. From the revenues of this beaconage the costs of the costal fires North of the river Meuse were paid. At the end of the seventeenth century coastal light signals were also fitted out along the shores of the *Zuider Zee*. An ordnance of the States of Holland of 19 December 1668 ordered to split levy of the *Vuurgeld* in the levy of the *Binnenvuurgeld* and the levy of the *Buitenvuurgeld*. The former was only paid by ships that sailed the *Zuider Zee* without going to the open sea. The latter can be seen as the successor to the older *Vuurgeld*.

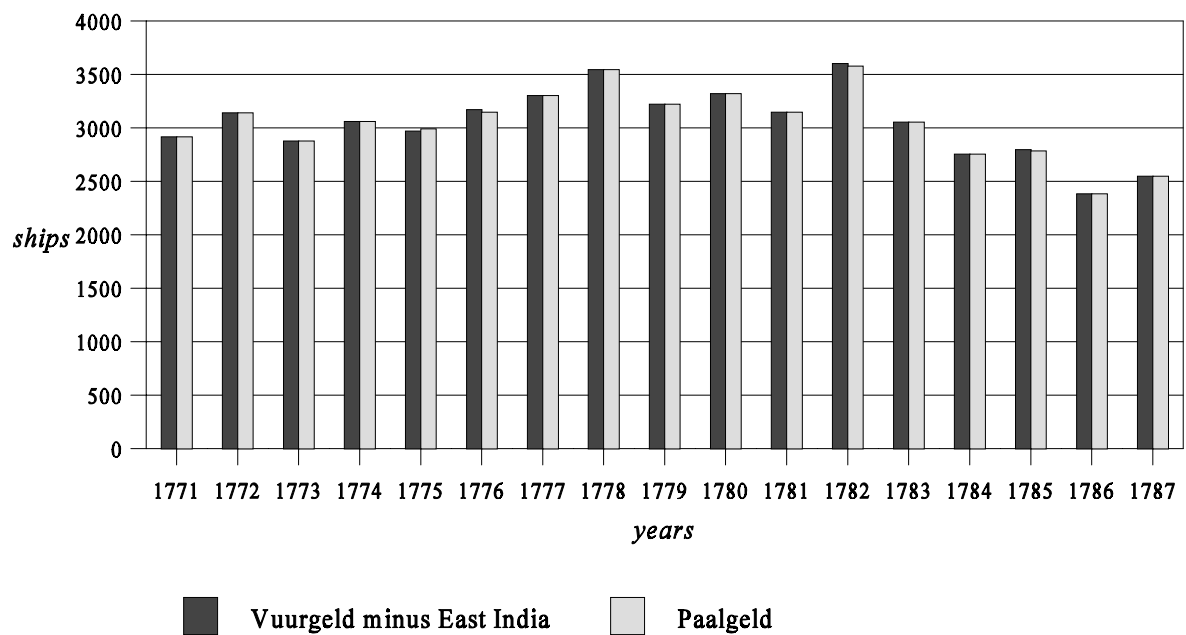
In the tariff of 1668 of the *Buitenvuurgeld* ships were classified according to port of departure and paid a given amount per ship-last, so not according to the actual cargo but to the size of the ship:

<b>Port of Departure</b>	<b>levy in stuivers per last</b>
East India	16
The Levant	12
Italy, Western Mediterranean and the Guinea Coast	10
West India	6
Spain, Portugal and those parts, and Muscovy and Greenland	4
Ships for the West	2
Ships from the east and Scandinavia	1
Ships carrying salt	2

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<sup>44</sup> J. Hovy (1966), 95-119

<sup>45</sup> This paragraph is based on W.G. Heeres, *Het Buitenvuurgeld*, an unpublished article which was meant as an addendum to his 1982 article on the *Paalgeld*. In the copy of the manuscript that Heeres allowed me to use, the last paragraphs of that article are on the same page in typescript. Since this article contains important information, he has allowed me to make it available in electronic form in the appendices. W.G. Heeres (1982,2)



**Figure 7** The number of incoming ships according to data from the *Paalgeld* portbooks compared with data from the *Vuurgeld* (minus ships from East India), 1771-1787

This categorization denies us the possibility to reconstruct the flow of trade from the data of the *Buitenvuurgeld*. The aggregate figures obscure underlying trends. First of all an increase in revenue does not necessarily imply an increase of volume of trade, since the levy was on the size of the ship and not on the actual size of the cargo. Secondly, there is no relation to the nature and the value of the ships cargo, which implies that an increase in revenue may even be caused by more ships carrying greater loads of cheaper goods.

Of the registers of the *Buitenvuurgeld* only the complete volumes of the portbooks for the years 1777 to 1780 have survived, but for the period 1777 to May-August 1795 the four-month lists of the collectors of the *Vuurgeld* have survived and have been used by Snapper.<sup>46</sup> For this study the data for the year 1778 have been manually compared to those of the *Paalgeld* portbooks and both registers matched almost perfectly.<sup>47</sup> The total numbers of ships arriving in Amsterdam according to the data of the *Vuurgeld* give an almost perfect match to the data from the *Paalgeld* portbooks. In Figure 7 the data from the *Paalgeld* portbooks have been compared to the data that Snapper collected from the *Vuurgeld* for the period that both

<sup>46</sup> The records of the *Buitenvuurgeld*: Rijksarchief Noord-Holland, *Archief van Commissarissen van de pilotage benoorden de Maze*. W.G. Heeres (1981), (1988), and F. Snapper (1985)

<sup>47</sup> In contrast to the record-linkage process that was carried out with the data from the *Zetijdingen* and the musterroles, this record-linkage (and that with data from the *Galjoetsgeld* registers) was done manually by a number of students including myself, that took part in a research project under supervision of W.G. Heeres in 1982 at the University of Amsterdam. See W.G. Heeres (1982,2)

parts of the portbooks of the *Paalgeld* were studied. To make a good comparison I have deducted the number of ships coming from East-India in these years from the total numbers of the *Vuurgeld*, since these cannot be found in the *Paalgeld* portbooks. The small differences that occur may be caused by a greater accuracy of the computer, where as Snapper did all his counting manually.<sup>48</sup> The almost perfect similarity of these figures can be interpreted as a sign of the reliability of the data of the *Paalgeld* portbooks but is not surprising, because of the fact that both levies were collected by the same office. In his unpublished sequel to his first publication about the *Paalgeld*, Heeres has gathered the yearly aggregate data of the revenues of the *Buitenvuurgeld* for the offices of the Admiralty of Holland in and near Amsterdam and in the Noorderkwartier. Since these data offer more detail than the figures Snapper published, they deserve to be implicated in further discussions about time series on Dutch trade in the eighteenth century, I am grateful that Heeres has allowed me to publish them here as an appendix.

### 3.2.1.3 The *Galjootsgeld*

The *Galjootsgeld* was a levy on two categories of ships and was collected by two different agencies. The *Directie van de Moscovische Handel* collected this impost from ship masters of ships coming from the St.Petersburg and Archangel regions in Russia. The *Directie der Oostersche Handel* collected this levy from ship masters coming from the other Baltic ports. From the proceeds of this levy the costs of convoying ships was met. This may explain why only Dutch ships had to pay this levy. Recently these registers have been used extensively for a number of studies and these will be discussed when I will describe the European trade of Amsterdam at the end of the eighteenth century.<sup>49</sup>

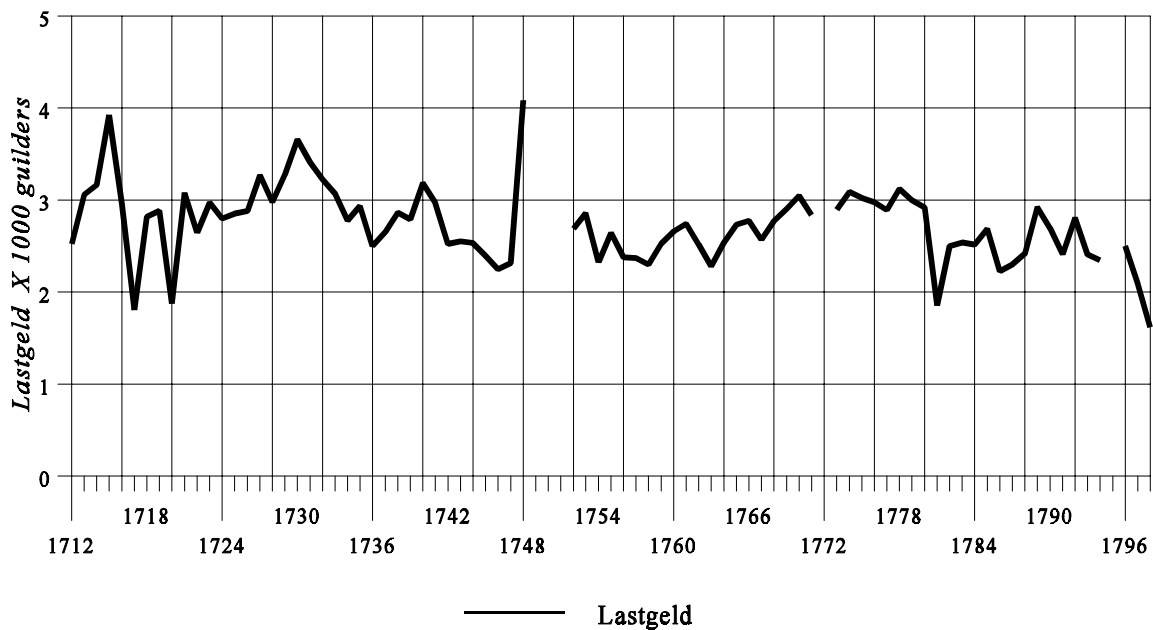
The data in the registers of this impost for the year 1778 have also been compared to those of the *Paalgeld* portbooks. A manual record linkage showed that all the approximately 900 entries could be traced in the *Paalgeld* portbooks and except for some spelling variations the data matched. The *Galjootsgeldregisters* provide valuable information concerning the size of the ship that cannot be found in the *Paalgeld* portbooks.<sup>50</sup> A serious drawback of the *Galjootsgeldregisters* is their limitation to the Baltic and a part of the Arctic trade; the availability of these data may have produced the over-emphasis of a great number of

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<sup>48</sup> F. Snapper (1985), 119-121

<sup>49</sup> translations: *Directie van de Moscovische Handel* :“Direction of the Muscovite Trade”. (G.A.Amsterdam P.A. 6, inv.nr 61). *Directie van de Oostersche Handel* : “Direction of the Baltic Trade” (G.A.Amsterdam, P.A. 78, inv.nr. 100).  
See: J. Knoppers (1976); P. de Buck and J.Th Lindblad .(1983), 536-562. J. Knoppers and F. Snapper (1978)

<sup>50</sup> In W.G. Heeres (1982,2) Heeres indicates that he also found agreement between the data of the *Paalgeld* and of the *Galjootsgeldregisters*.



**Figure 8** Revenues in guilders of the *Lastgeld* 1712-1798 according to W.F.H. Oldewelt (1953)

historical studies on Amsterdam's Baltic trade. These registers share one common problem: it is almost impossible to ascertain to what extent these taxes were evaded. Knoppers and Snapper mention the existence of *conventies* for the payment of the *Galjootsgeld*, which more or less legalized some forms of tax-evasion: of every 20 lasts of grain only 17 were declared, of some wood-carrying ships only 120 of the actual 220 lasts were declared. It is highly probable that the same practices were customary with regard to the *Paalgeld*.

### 3.2.1.4 The *Lastgeld* en *Veilgeld*

Other taxes of a comparable nature are the *Lastgeld* en *Veilgeld* which have discussed in a number of publications.<sup>51</sup> These taxes were originally of an temporary nature for special purposes, as on the one hand financing friendly privateers and on the other hand offering protection against hostile privateers, as when in 1621 a *Lastgeld* was levied to provide means for the equipage of warships to provide protection against piracy in the Mediterranean and the North-African coast.<sup>52</sup>

<sup>51</sup> W.G. Heeres (1988), F. Snapper (1990), J. Hovy (1966), W.F.H. Oldewelt (1953). In some respects these publications contradict each other: I shall rely on Heeres in these cases.

<sup>52</sup> J. Hovy (1966), 89-90

The *Lastgeld*, which according to some sources was also known as the *Waterrecht*, had to be paid by all incoming and departing ships in ratio to the ship-size expressed in "*lasten*". The origins of this tax date back to 15th century. The character of this tax changed several times in the 17th and 18th century. For the period of this research, the tax-reform of 1725 defines the details of this tax: 20 stuivers had to be paid per last by incoming ships and on their departure 10 stuivers per last were levied. Hovy states that ship masters were only required to pay this tax once a year after 1687, but the other authors do not mention this. In 1697 the States General instituted a new form of this tax, the *verhoogde last- en veilgeld*, which was levied next to the older form of this tax, which was since then called the *ordinaris*, while the new form was called the *extra-ordinaris* or *premie*. In contrast to the levy

of the *Veilgeld*, which will be discussed hereafter, the levy of the ordinary *Lastgeld* was not discontinued after the reforms of 1725. The ordinary *Lastgeld* was collected by the officers of the Admiralty, while the extra-ordinary was collected by specially appointed city officers. These officers had to do their administration however in the offices of the Admiralty, where the ordinary *Lastgeld* and also the *Convoyen en Licenten* were administrated.

The *Veilgeld* was a 1% ad valorem impost on all imports and a 0.5% ad valorem tax on all exports, though in some periods it has been twice as much. After 1725 the ordinary form of this tax was no longer collected. The word *veilgeld* is no indication that this tax was levied on auctions, but is derived from the word *veilen* which used to have the meaning "to protect".<sup>53</sup>

Only for the limited period 1754-1756 have the original registers of the *Lastgeld* impost survived. But the total revenues of the *Lastgeld* in Amsterdam can be found in the books of the *thesaurieren ordinaires* and were published by Oldewelt in 1953. He gives a time series of

Year	ad val.	total	%
1741	922	5295	17,4
1771	681	4934	13,8
1772	764	5269	14,5
1773	761	4758	16,0
1774	811	5055	16,0
1775	878	5448	16,1
1776	1003	6094	16,5
1777	1115	6044	18,4
1778	1406	6206	22,7
1779	1241	6281	19,8
1780	1446	6831	21,2
1781	1949	5453	35,7
1782	2230	7059	31,6
1783	1531	6485	23,6
1784	1226	5980	20,5
1785	1253	5954	21,0
1786	967	5158	18,7
1787	1007	5654	17,8

**table 4** Percentage of "ad valorem" imposts of all cargoes mentioned in the *Paalgeld* portbooks.

<sup>53</sup> W.G. Heeres (1988), 264



this *Lastgeld* running from 1643 to 1798 and for the period 1662-1747 he also provides the total number of ships that arrived in Amsterdam.<sup>54</sup>

The *Convoyen en Licenten*, the *Galjootsgeld*, the *Vuurgeld*, the *Lastgeld* and the *Paalgeld* are all tax-registers and therefore should be comparable. However, for some the basis for these imposts changed over time, and in the case of the *Convoyen en Licenten* it is hard to distinguish imports from exports. Some were imposts 'ad valorem', others related to the size of the ship. This makes it rather difficult to compare the figures of the revenues of these imposts. Tax-evasion was common practice, but was it the same for every impost? We do not know now and will probably never know. The figures in the *Paalgeld* are mirrored by those of the *Buitenvuurgeld*, but this is to be expected, since they were collected by the same agency. But the *Convoyen* and *Licenten* were also collected by that agency, and the revenues of that impost show great deviations from the *Paalgeld* revenues. For most of these imposts detailed registers have not survived or have only survived for short periods and we have to make do with grand totals, that allow no closer examination of details.

Heeres has pointed out that the data from the *Convoyen en Licenten* and from the *Lastgeld* should be used with caution, since they are by their nature more influenced by fluctuations in prices, since they are "ad valorem" levies. This implies that a full understanding of the figures can only be reached by combining them with figures for prices. Heeres supposed that the *Paalgeld* data would be more both more simple and more reliable, since only a part of the *Paalgeld* levy was "ad valorem". The figures in table 4, in which the percentage of "ad valorem" imposts of all cargoes for eighteen years are given, show that about one fifth of the cargoes declared were taxed "ad valorem". The years 1777 to 1785 form a short period in which the share of "ad valorem" declaration was a bit higher, in 1783 even just over one third. At the end of the period the percentage is almost down to the level of 1742, about 17%. The practice of evading the amounts mentioned for volumes of goods in the *Observantie* and instead paying the "ad valorem" *Paalgeld* levy of 0.2% was not common. Still, since about one fifth of *Paalgeld* was levied "ad valorem" and hence is influenced by fluctuations in prices and inflation, the major part of the revenue came from impost on the volume of trade. The data in table 4 confirm Heeres' opinion and underscore the unique quality of the data from the *Paalgeld* portbooks.<sup>55</sup>

### 3.2.2 Other sources concerning maritime trade

There are a number of related sources and publications, which may help to clarify the image that we gather from these tax-sources. In this paragraph I will look at a number of

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<sup>54</sup> W.F.H. Oldewelt (1956)

<sup>55</sup> W.G. Heeres (1988), 273-274

articles on Dutch shipping in which numerical data have been published, that can be compared to the data from *Paalgeld* portbooks and I will discuss the problems of interpretation they offer.

year	The Baltic			North Sea			Arctic			Norway			Great Britain		
	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.
1742	450	693	-243	40	1039	-999	28	35	-7	238	313	-75	208	221	-13
1776	225	666	-441		1347	-1347	37	42	-5	265	234	31	266	207	59
1778	914	822	92	137	1722	-1585	56	55	1	474	208	266	313	198	115
1781	529	459	70	166	2204	-2038	22	26	-4	307	221	86	98	59	39
1783	811	770	41	72	982	-910	21	27	-6	452	273	179	281	295	-14
1784	799	737	62	95	838	-743	25	29	-4	556	313	243	311	262	49

year	France, Spain, Portugal			Mediterranean			Africa outside Mediterranean			Far East			West Indies		
	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.
1742	313	314	-1	67	56	11	2	1	1	7		7	16	22	-6
1776	338	403	-65	41	110	-69		8	-8				42	62	-20
1778	334	302	32	89	102	-13	6	7	-1	13		13	52	49	3
1781	122	132	-10	27	24	3	1	1	0				16	18	-2
1783	293	377	-84	23	78	-55		5	-5				105	129	-24
1784	336	342	-6	94	55	39	7	7	0	12		12	49	45	4

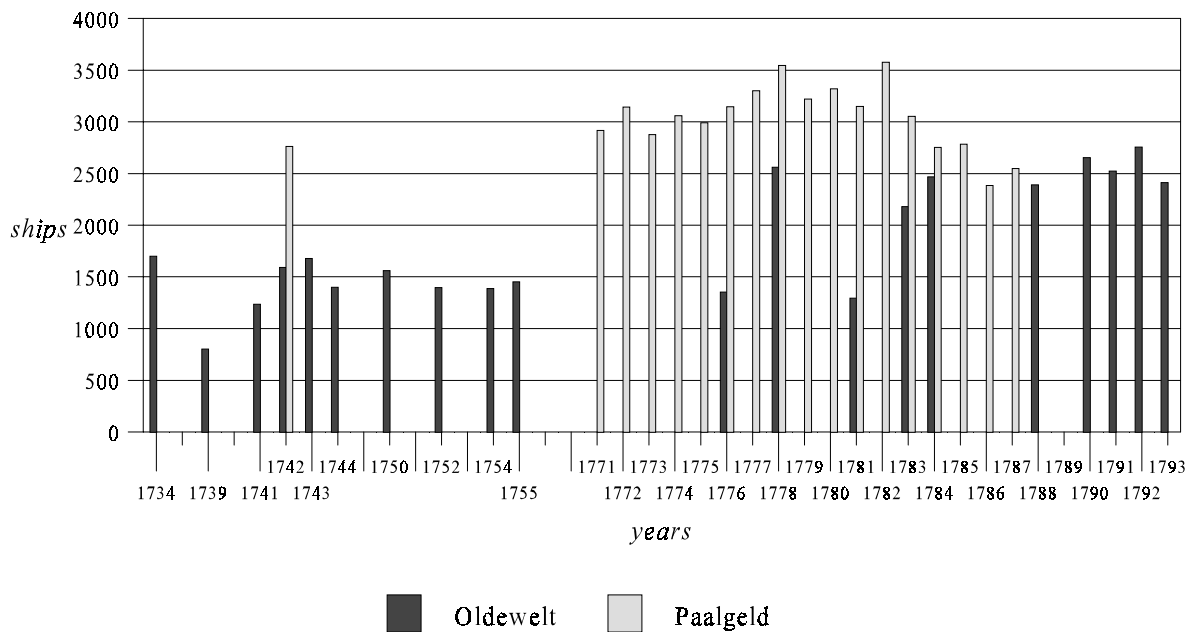
  

year	North America			South America			Central America			Other origins			Totals		
	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.	Olde.	Pg.	dif.
1742	20	20	0	39	40	-1	5	4	1	5	2	3	1591	2760	-1169
1776		2	-2	41	51	-10					15	-15	1352	3147	-1795
1778	3	3	0	70	71	-1				5	6	-1	2561	3545	-984
1781	3	3	0	1	1	0				3		3	1295	3148	-1853
1783	23	41	-18	57	74	-17				3	3	-3	2179	3054	-875
1784	53	57	-4	69	68	1				6	1	5	2468	2754	-286

**table 5** Differences between the number of ships per regio as computed from W.F.H. Oldewelt (1953) and from the *Paalgeld* portbooks

### 3.2.2.1 The *Zee tijdingen* in the *Amsterdamsche Courant*

In Oldewelt's article on shipping statistics of Amsterdam in the 17th and 18th century we find figures based on the revenues of the *Lastgeld* in the first appendix: these have been discussed above. In the second appendix he gives a long list of the ports from where ships came to Amsterdam for a number of years in the period 1734-1793. For each port he lists the number of ships that came into Amsterdam via Texel or Het Vlie. This list is compiled from



**Figure 9** Total number of ships coming to Amsterdam, computed from W.F.H. Oldewelt (1953), 131-149, and as computed from the *Paalgeld* portbooks, 1734-1793

data from the *Zee tijdingen* in the *Amsterdamsche Courant* and the *Nieuwe Nederlandsche Jaarboeken* and an electronic version of these data can be found in the appendix.<sup>56</sup>

The *Amsterdamsche Courant* published three issues each week. In every issue of this newspaper there is a section *Zee tijdingen* (ship tidings), which contains information on ships that have arrived before Texel or in Het Vlie or have sailed from there, but also messages about arrivals of Dutch ships in harbors abroad. The messages about arrivals on the Dutch coast are dated and contain the name of the ship master, the port of departure or destiny and distinguishes between ships before Texel or in Het Vlie. The messages concerning shipping abroad are usually not dated exactly, but contain the same information as the other messages.

For a number of years Oldewelt has computed simple frequency tables for all ports of departure mentioned. Although these tables provide a useful survey of the period, a number of minor shortcomings diminish their value. The most obvious shortcoming is that he had no figures for ships coming via Het Vlie before 1778. In figure 9 I have related the yearly total number of ships as published by Oldewelt with those computed from the *Paalgeld* portbooks. Since the ships of the VOC are not included in the data from the *Paalgeld*, these figures should even be a bit higher.

From this comparison I draw two conclusions: first of all, for the years for which Oldewelt had no data for ships entering via Het Vlie, the figures must be about twice as high to get a realistic impression of the number of ships. Secondly, even for the years in which the

<sup>56</sup> W.F.H. Oldewelt (1953). F. Snapper (1985) published some corrections on these data.

data for entries via Het Vlie are included, the figures never match the data from the *Paalgeld*. Since the *Paalgeld* was actually collected in Amsterdam and the *Zeetijdingen* only concern the ships that have arrived at Texel or in Het Vlie a difference in the figures is to be expected. But since the *Zeetijdingen* would also include ships going to other harbors, one would expect even higher figures here. I agree with Snapper's suggestion that the difference can be explained by the large number of rather small ships coming to Amsterdam from the *Kleine Oost*<sup>57</sup> via the Wadden Zee and the Zuider Zee and hence never appearing before Texel or in Het Vlie on one hand and a small number of ships arriving at Texel and in Het Vlie going to other Zuider Zee harbors, like Enkhuizen, Hoorn or the Frisian ports.<sup>58</sup> Both explanations may be valid, but have contrary effects.

Another problem with the data from Oldewelt is caused by his failure to categorize all the ports mentioned in the *Zeetijdingen* geographically: he simply divides them into groups of harbors from which 20 or more ships arrived, between 10 and 20, and less than 20. However, this numerical categorization is problematic because sometimes he lists the same harbor under different names, like for instance Wyborg and Wierejocke, or Figura and Vigeira. Next to that there are names of ports included that may have been misreads for other port names, that have been included in the list in another form. But there are also a number of port names, which defy any explanation or identification.<sup>59</sup>

A final problem may be the fact that Oldewelt equates arriving at Texel or in Het Vlie with arriving in Amsterdam. Figures of the revenues of the *Convoyen en Licenten* and of the revenues of the *Paalgeld* from offices outside Amsterdam show that other ports still had an important, though for some declining share of the trade. Quite a number of ships must have gone to other ports after their arrival at Texel or in Het Vlie. It is possible to compare Oldewelt's data with data computed from the *Paalgeld* portbooks. Oldewelt gives data for six years of which I have processed the *Paalgeld* data. In order to make the comparison Oldewelt's data have been entered into the computer and for all ports mentioned the same coding system was used as for the analysis of the *Paalgeld* portbooks. This allowed to examine the differences between the two time series closely. But having the data in the computer also allowed to check Oldewelt's data. It is clear that some mistakes have been made, either in the printing process or in Oldewelt's calculating process: only seldom do the totalisations match the figures that Oldewelt published as the third appendix to his article.<sup>60</sup> In table 5 I compare the figures as computed from Oldewelt's data with the figures computed

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<sup>57</sup> With this term the coastal region from around Bremen and Hamburg up to the West Coast of Denmark is meant.

<sup>58</sup> See also F. Snapper (1985)

<sup>59</sup> For a further discussion of W.F.H. Oldewelt's data, see F. Snapper (1985)

<sup>60</sup> The corrected data are given in the electronic appendices

year	North America		South America		West Indies		Total	
	Nierop	Paalgeld	Nierop	Paalgeld	Nierop	Paalgeld	Nierop	Paalgeld
1797	25	87	3	3	2	8	30	98
1798	9	39		1			9	40
1799		7						7
1800	80	70		3			80	73
1801	139	141			12		151	141
1802	115	117	7	3	23	8	145	128
1803	112	102	3	30	44	7	159	139
1804	173	160		1	15		188	161
1805	158	159			11	3	169	162
1806	3	231		2	4	2	7	235
1807	4	193			12	2	16	195
1808	1	41			1		2	41
1809	1	21					1	21
1810		5						5

**table 6** Number of trans-Atlantic ship arrivals in Amsterdam, 1797-1810, according to data in L. Van Nierop (1924) and computed from the *Paalgeld* portbooks

from the *Paalgeld* portbooks. The enormous difference in the totals is quite striking: Oldewelt's totals are always much lower than the *Paalgeld* data indicate. This is rather strange, since one would expect these to be higher, because of a number of ships arriving at the sea gates, which did not go to Amsterdam. A closer look at the figures reveals that the great difference is mainly caused by the figures for two categories: the North sea ports, which include Hamburg, Bremen and the *Kleine Oost*, and the Norwegian ports. Ships coming from the *Kleine Oost* entered the Zuider Zee via the Wadden Zee or via the Groningen and Frisian canals and never anchored at Texel or passed through Het Vlie. The same reason may explain the difference for Baltic ships in 1742 and 1776: some of them may have entered the Zuider Zee via the Wadden Zee. The great difference for some years in respect to ships coming from Norway can be explained: probably a large number of these ships carried stones for the dykes of the Zuider Zee and these ships never came to Amsterdam. The rest of the differences are harder to explain. Partly they can be caused by ships coming through the sea gates that were not bound for Amsterdam. The rest should be explained be as errors and I suggest that these were not mine.

Leonie van Nierop noted the same difference between the numbers of ships arriving in Amsterdam and at the various sea gates in her article about Amsterdam's shipping during the French hegemony.<sup>61</sup> She computed the number of ships arriving in Amsterdam from data in

<sup>61</sup> L. van Nierop (1924), 119-139

the journal *De Koophandel en Zeevaarttijdingen* for the years 1797 to 1811. Based on data from the *Nieuwe Nederlandsche Jaarboeken*, she also gave the data for the arrivals and departures from Texel, Het Vlie, Terschelling, and the Meuse and Goeree. The figures for arrivals in Amsterdam show the same marked difference with the figures for arrivals at Texel, Het Vlie and Terschelling as the data computed from the *Paalgeld* portbooks show. Since I have not processed the data of first part of the *Paalgeld* portbooks after 1787, I will rely on Van Nierop's data for the period 1797 - 1811 concerning the European trade. However this does not imply complete confidence in these figures. In table 6 I have compared the Van Nierop's figures for North-America, South-America, and the West-Indies with the one I computed from the *Paalgeld* portbooks. First of all, one should note that the data do not match for one single year. Sometimes Van Nierop's figures are a bit higher, especially for North-America and the West-Indies. Part of this can be explained from a different interpretation of harbor names that are shared by European and non European ports, like Boston and St. Martin. Since the second part of the *Paalgeld* portbooks only deals with the trans-Atlantic traffic, the data I used were unambiguous and I am confident that my interpretations are correct. However, this explanation cannot explain the huge differences for the years 1806-1809. One should note though the great difference between the figures Van Nierop gives for ships arriving at Texel and in Amsterdam for these years!

The data from the *Zeetijdingen in the Amsterdamsche Courant* and from *De Koophandel en Zeevaarttijdingen* should have one great advantage over the data from all sorts of tax-related sources: one would expect a more or less complete picture from this newspaper, since it was in the interest of all parties involved to have correct information on arrivals and departures. In contrast to tax-related sources, of which the reliability can be doubted because of tax-evasion schemes, the newspapers had an audience which had an interest in complete information. Though earlier attempts to establish a correlation between the arrival of goods on the market and their prices have not been very successful,<sup>62</sup> we may assume that reliable information must have had an influence on prices on the market.

A comparison of the *Zeetijdingen* and the *Paalgeld* portbooks reveals two problems: there is a small number of ships mentioned in the *Zeetijdingen* which cannot be traced in the *Paalgeld* portbooks and there is a large number of ships mentioned in the *Paalgeld* portbooks which cannot be found in the *Zeetijdingen*. In order to find out if the discrepancy might be caused by misinterpretation of the original sources I have tried to connect the data from the original *Zeetijdingen* from the *Amsterdamsche Courant* to the data from the portbooks of the *Paalgeld*. The full description of this process of record-linkage will be given in the next section, but the "poor" results of this exercise are not only due to problems caused by complex spelling variations: quite a number of ships that arrived at Texel or in Het Vlie simply never went to Amsterdam and another number of ships that must have traveled via Texel or Het

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<sup>62</sup> G.M. Welling (1988)

Vlie never appear in the *Zeetijdingen*. Then there may also have been a number of ships who anchored at Texel for a short period before continuing a voyage from a Northern to a Southern port or vice versa: the ships participating in the *voorbijlandvaart*.

I can only conclude that the newspapers of this period cannot be used as reliable commercial statistics for the traffic to and from Amsterdam. The reliability of newspapers of any period for historical research is a completely different matter, which I shall not discuss.<sup>63</sup>

### 3.2.2.2 The *Generale Lijsten*

In 1979 Snapper published the *Generale Lijsten*<sup>64</sup> of ships that came into Dutch ports in the period 1758-1761 and 1783-1786. Since the data from this second period overlap with the data I studied from the *Paalgeld* portbooks, comparing the data would seem the natural thing to do. However, these lists of ships that have arrived in the Republic do not concern Amsterdam exclusively and they do not allow extracting the data for Amsterdam. Next to that they seem to be extremely incomplete, compared to lists one can compile from other sources. These lists have the same sort of shortcomings as Oldewelt's list that have been discussed before: there is no regional categorization of ports, and no attempt has been made to discover the true origin of some obvious misreads. Without underrating the value of these lists, I have decided not to use them in this research project.

### 3.2.2.3 The *Monsterrollen*

To gather additional information on ships mentioned in the *Paalgeld* portbooks, I have studied the ship-articles (*monsterrollen*)<sup>65</sup> for the year 1778. In this source we can find information on the dates of the ship-articles, the name of the ship master, the name of the ship, and the size of the crew, of which each member is mentioned by name. Although this is valuable information, I have decided not to use this source for further investigation for a number of reasons. First of all these data are only available for a minority of ships: for 1778 only 650 ship-articles have been found, while over 3500 ships entered the harbor. Secondly, the sheer mass of data to be found in the archives and to be processed for all years that the *Paalgeld* portbooks have been treated, would be so time consuming that it would prolong the total project to an unacceptable length. Thirdly, since only a minority of ships mentioned in the first part of the *Paalgeld* portbooks could be traced in this source, it is to be doubted if the

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<sup>63</sup> For a further discussion of the differences in numbers between the *Zeetijdingen* of the Amsterdamse Courant and the *Paalgeld* portbooks, see: G.M. Welling (1988), 463-465

<sup>64</sup> F. Snapper (1979) Translation: "General Lists"

<sup>65</sup> Archive of the Waterschout, G.A. Amsterdam p.a. 38 inv. nrs 14 and 15

results from such a sample would have any significance. Furthermore, I found very few ship-articles for the ships mentioned in the second part of the *Paalgeld* portbooks, that deals with the "West Indian" trade and that form the core of this research project. These reasons made me decide to restrict the compilation of data from this source to the year 1778.

#### 3.2.2.4 The *Cherteparthijen*

In the *Notarieel* Archive of the City Archives of Amsterdam we can find bills of lading<sup>66</sup> (*cherteparthijen*) for a number of voyages. Since these documents provide useful additional information the data for the year 1778 have been collected and linked to the data from the *Paalgeld* portbooks. In these bills of lading we find the date of the act, the name of the principal, the name of the ship master, the name, the type and the size of the ship, the voyage, with details about the route followed, and the load to be carried on each stage of the voyage, unless the ship would sail in ballast. Although I only studied the data for a single year, this source has been of major importance to ascertain the value of the date that is mentioned in the *Paalgeld* portbooks. However, since only about 750 contracts for 1778 were found, on a total of about 3500 ships coming to Amsterdam, and since most of these contracts deal with the European trade of Amsterdam, I have decided to restrict the record linkage to that single year. The conclusions I have drawn from that exercise will be discussed in the paragraph concerning the quality of the data in the *Paalgeld* portbooks.

#### 3.2.2.5 The *Vonnissen van Avery Grosse*

The *Kamer van Assurantie en Averij*,<sup>67</sup> established in 1612 in Amsterdam, had jurisdiction in the case of *averij grosse*, by which is meant the equal sharing by the owners of the damages to the load of a ship, caused by actions from the ship master to save the ship from greater damage or complete loss.<sup>68</sup> To come to a correct verdict the court needed insight in all the official papers concerning the ship and its cargo. The reports of these verdicts provide detailed information about all the parts of the lading and their value. Since all the parties involved had a financial interest in the correctness of these data, they may be regarded as very reliable.

*Avery Grosse* only applied to a minority of ships, however and, after studying the data for the year 1778, I decided against further investigation of this source. The insights gained

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<sup>66</sup> Some authors translate *cherteparthijen* as freight contracts

<sup>67</sup> Chamber of assurance and damage. City Archive Amsterdam, Rechterlijke archieven (nr. 5061) inv.nrs 2886 and 2887)

<sup>68</sup> P. de Buck (1988)



from the study of this single year however, have been of major importance for ascertaining the quality of the data from the *Paalgeld* portbooks. No matter how unrepresentative the number of ships that ran into damage is for the whole population, it is clear that the declarations in the *Paalgeld* portbooks match those in the *vonnissen van Avery Grosse* as far as voluminous goods are concerned: only in cases of small, but sometimes very valuable cargoes, like boxes of precious stones etc., I find items that are not mentioned in the *Paalgeld* portbooks. This confirms the impression that this source is reliable for bulk goods, but may not be for smaller precious cargoes.

### 3.2.2.6 The Soundtoll registers.

The importance of the registers of the Soundtoll for the study of the history of European trade needs no emphasis on my part. Since the publication of the data from these registers by Bang and Korst almost every major social-economic study concerning the early modern period has relied heavily on these books, which provide data on ships passing the Danish sound to and from the Baltic.<sup>69</sup> Because of the assumed importance of the Baltic trade for Amsterdam - the nickname *moeder negotie* (i.e. mother-trade) is an indication of its importance - it would only be logical to link the data from the *Paalgeld* portbooks to those of the Soundtoll registers.

There have been good reasons to refrain from this exercise. To establish the reliability of the *Paalgeld* data by linking them to the data from the Soundtoll registers would only provide insights into an important, but minor part of Amsterdam's shipping. In chapter 5 I will show that the importance of this trade has been overestimated, because of the attention for the number of ships involved. However, a much greater number of ships was involved in the trade on the *Kleine Oost* and even the Norwegian trade involved great numbers of ships. However, in spite of a smaller number of ships involved, I will show that the value of the Atlantic trade was much higher than that with other regions in this period.

On the other hand, the Soundtoll registers have been studied extensively in combination with the *Galjoetsgeld* registers by Knoppers and Snapper. As has been mentioned before, the data from these registers match the data from the *Paalgeld* portbooks very well, so one may assume that their conclusions apply also to the *Paalgeld* portbooks as far as the Baltic trade is concerned.

Finally, only for a short period are the raw data of the Soundtoll available on computer-tape and this period does not cover the period for which the *Paalgeld* portbooks have been processed for the European trade.<sup>70</sup> This implies that a major effort to enter the data of the Soundtoll registers into the computer would be needed first to allow a comparison with the

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<sup>69</sup> N. E. Bang and K. Korst (eds) (1906, 1920, 1953)

<sup>70</sup> H.C. Johansen has processed the data for the years 1784-1795. See : H.C. Johansen (1983)

*Paalgeld* data. When the emphasis of this study shifted towards Atlantic and North-American trade and when the poor result of the linkage with other sources was apparent, I decided not to invest time in a project which would probably require an investment of time, which could not be justified by expected results.

### **3.2.3 Other publicated sources**

For this study a number of other source publications have been used. Posthumus published import and export data for 1774, which will be discussed in chapter 5. They shall be used as a check on the data gathered from the *Paalgeld* portbooks. Nanninga published import and export data for the period 1789-1799 and d'Alphonse published a time series of import and export data for the period 1802-1809. These data will be used as a complement to the data gathered from the *Paalgeld* portbooks and will also be used and discussed in chapter 5. The machine readable transcripts of all these sources have been made available as electronic appendices to this study.