From the eleventh century to the present day various regions in the Low Countries have occupied core positions in the Western economic system. After the earliest progressive activities located in the Meuse valley, the eleventh century saw the development of urban commercial networks in Artois and Flanders, followed by Brabant, the IJssel and Zuiderzee region and Holland. The Meuse valley made a vigorous come-back in the early industrial era, and Flemish and Dutch ports and their hinterlands underwent a revival during the last century.

The ongoing shifting of the locus of economic leadership is one of the fascinating themes about which Herman Van der Wee has formulated inspiring theories. He refers, for example, to the opposite development in maritime regions during the depression of the fourteenth and fifteenth centuries, as compared to the landlocked areas. Technological innovations in navigation and shipbuilding lowered transport costs, stimulated a new specific demand for services and supply industries which in their turn fastened the transfer of labour force from the traditional to the modern, expansive sector. Van der Wee elaborated this model and explained the successful restructuring of urban activities in Flanders, Brabant, Holland and Zeeland through product innovation, institutional conditions and demand in particular. Recently, Stephen Epstein has shown the importance of the process of regional differentiation during the fourteenth century, in which labour intensive


agrarian occupations absorbed the labour surplus, especially where the institutional framework was relatively open and the political situation peaceful³.

In the following pages, I will concentrate on the economic expansion of Holland and Zeeland before the Revolt. Van der Wee has already stressed the importance of the commercial relations between Antwerp and the Northern Netherlands, a theme which I hope to work out below⁴. Together with the commercial blockades the Revolt created for the southern provinces in particular, it brought about a mass immigration pushing the two northern ones into the core position of the world system. It would have been impossible to take up this role immediately without having developed a structural basis during the preceding centuries. Elaborating a hypothesis formulated by H.P.H. Jansen, I shall argue that this was achieved from the great depression of the fourteenth century onwards as a process of regional differentiation and relocation. In his view, the fifteenth and sixteenth centuries intensified these changes, but did not modify their essence⁵. This implies that competition as well as linkages to external markets will form key arguments⁶. Firstly, however, I shall draw attention to the specific ecological and demographical situation with its effects on demand and on the labour market. My central question then will be: what made it possible for Holland and Zeeland, entering relatively late in the urban network, to expand during the general depression phase?

---

The Population Structure

Before the Black Death, the total population of Holland may have counted about some 260,000 persons, of which 60,000 or 23 p.c. lived in cities with a maximum of 8,000 each. Our next relatively reliable estimation is based on the "Informacie" of 1514 and results in a total of about 254,000, of which 44 p.c. now lived in cities. The density must have been 66 per sq. km, somewhat less than in Flanders (77) but much higher than in Brabant (40) and other regions. The above total figure corrects earlier publications in which the number of hearths was multiplied by 4.5, 5, 5.6 and even 5.9 for the cities, while in the meantime it has been proved that the average family size in Leiden during the siege in 1574 was 3.9. I have therefore recalculated the population figures for the main cities by multiplying the number of inhabited non-clerical hearths by 4 and adding numbers in relation to the clerics, religious and charitable institutions mentioned in the "Informacie" of 1514. I have compared these with figures available for ca. 1570.

Table I: Population of the main cities in Holland (1514 and ca. 1570)

<table>
<thead>
<tr>
<th>City</th>
<th>1514</th>
<th>ca. 1570</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leiden</td>
<td>12,800</td>
<td>12,456</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>12,200</td>
<td>30,000</td>
</tr>
<tr>
<td>Delft</td>
<td>10,300</td>
<td>14,000</td>
</tr>
<tr>
<td>Haarlem</td>
<td>9,600</td>
<td>14,000</td>
</tr>
<tr>
<td>Gouda</td>
<td>7,200</td>
<td>11,000</td>
</tr>
<tr>
<td>Dordrecht</td>
<td>6,200</td>
<td>11,000</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>4,700</td>
<td>?</td>
</tr>
<tr>
<td>The Hague</td>
<td>4,500</td>
<td>?</td>
</tr>
</tbody>
</table>


In 1514 the Dutch urban system was still characterized by the relatively small size of the cities and their flat rank-size distribution. It was only during the sixteenth century that Amsterdam surpassed by far all the other centres. But even then, five Brabantine and Flemish cities were of comparable dimensions, which represented only one-third of the population of Antwerp. The high density and high level of urbanization combined with a modest size of the total and urban population are to be interpreted in the light of the increasing difficulty of agrarian production on the Dutch peat soils. Progressive drainage had provoked the steady sinking of the land and its unsuitability for the culture of bread grains. The count's demesne accounts around 1400 display a nett decrease of the income from arable, while that from pasture remained relatively stable10. The culture of summer grains and stock-breeding became the

main rural activities which meant, however, the creation of an important labour surplus. Migration to the cities explains their growth in Holland during the fifteenth century while they stagnated in other regions\textsuperscript{11}. Other people emigrated to the southern Netherlands to find jobs in, for example, the building crafts in Bruges\textsuperscript{12}.

Still, the majority stayed in their villages trying to combine their small farms with other types of, mostly artisanal activities. Fishing and navigation as complementary activities in the coastal villages had a long history. Stock-breeding also implied some processing to produce butter and cheese. The fiscal inquiries held in 1494 and 1514 provide qualitative information about the occupation of the inhabitants. Although the two documents are not exactly conform, I have checked the consistency of the information – taking into account some possible change in the time span between them – and found it to be deceptive quite often. I have combined the occurrences of the main occupations in each village or group of villages as counted in the documents (Table II).

\textit{Table II: Occupations in hundred villages in Central Holland (ca.1500)}

<table>
<thead>
<tr>
<th>Occupation</th>
<th>In villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>stock-breeding</td>
<td>61</td>
</tr>
<tr>
<td>arable farming</td>
<td>28</td>
</tr>
<tr>
<td>peat digging</td>
<td>22</td>
</tr>
<tr>
<td>fishing and fowling</td>
<td>14</td>
</tr>
<tr>
<td>sea fishing</td>
<td>13</td>
</tr>
<tr>
<td>transport</td>
<td>12</td>
</tr>
</tbody>
</table>


Arable farming is recorded as a purely marginal activity in 23 villages. There, it was possible only on narrow strips of sand and clay banks, especially in Kennemerland and Waterland, north of Amsterdam. This


means that agriculture represented a substantive occupation in only 38 villages. The crops named were oats (15 cases), rye (6), hemp (6) and barley (5). Non-agrarian occupations were mentioned in 83 villages. These were regionally differentiated: peat digging occurred mainly in the central regions Rijnland, Delfland and Schieland, while the other activities were typical for the northern regions. De Vries and Van Zanden have shown that the average productivity and size of farms were insufficient to sustain a family, which made additional wage earning necessary. This explains the easy supply of labour force for shipping, for urban industries and for a wide range of artisanal activities in the villages, of which shipbuilding may well have been the most important one. Van Zanden introduced in this respect the concept of proto-industrial production, which made high demographic reproduction possible, notwithstanding the degradation of the agriculture\textsuperscript{13}.

As a logical consequence of this labour surplus, real wages in Holland were low as compared to those in the Southern Netherlands.

Table III: Real wages of master masons in Bruges, Haarlem and Leiden, 1460's and 1480's (in litres rye and wheat)

<table>
<thead>
<tr>
<th></th>
<th>Haarlem</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>rye</td>
<td>rye</td>
<td>wheat</td>
<td>wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1465</td>
<td>32</td>
<td>85</td>
<td>53</td>
<td>1459</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1466</td>
<td>28</td>
<td>57</td>
<td>42</td>
<td>1461</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>1467</td>
<td>28</td>
<td>67</td>
<td>39</td>
<td>1467</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>1468</td>
<td>25</td>
<td>65</td>
<td>37</td>
<td>1470</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1480</td>
<td>14</td>
<td>34</td>
<td>22</td>
<td>1481</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>1481</td>
<td>10.7</td>
<td>20</td>
<td>13</td>
<td>1482</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>1482</td>
<td>5</td>
<td>16</td>
<td>15</td>
<td>1483</td>
<td>8</td>
<td>10.5</td>
</tr>
</tbody>
</table>


A master mason or carpenter in Bruges could buy 2.4 as much rye as his colleague in Haarlem in prosperous years, and even 3.3 as much in years of shortage. In Bruges, the best year allowed 5.3 times the purchasing power, expressed in rye, of that in the worst year; in Haarlem, this tension was 6.4. The crisis thus struck harder in the low wage region than in the core. The wheat prices, the only available for Leiden, show a weaker contrast, as could be expected. But even then, the Bruges mason could buy 1.68 as much wheat as his colleague in Leiden during good years, and 1.76 as much during the crisis of the early 1480's.\(^{14}\) Even this milder contrast leaves no doubt about the substantial lower level of artisans' real

\(^{14}\) The Leiden data have been calculated on the basis of the 4.5 "stuiver" wages, while they fluctuated from 3 to 5 in the same years: reality may thus have been much less favourable to many artisans. I calculated weighed averages of the prices, which produced other results than the simple averages published
income in Holland than in Flanders. Admittedly, Bruges was in that period the most prosperous city in the Low Countries, but the differences with other cities in the Southern Netherlands were nothing compared to the discrepancy between Flanders and Holland\textsuperscript{15}.

We can conclude from this paragraph on population structure that Holland's specific characteristics reflected a particularly high pressure on arable. Its shortage pushed the labour surplus into complementary artisanal activities on the countryside, into shipping and into the cities. As a result the real income was low, expressing the abundance of labour as well as the permanent shortage of bread grains. This combination of factors made innovations possible and even necessary.

The Primacy of Demand

Holland's ecological and demographical situation during the second half of the fourteenth century was radically opposite to the general European pattern. The poor peat soils allowed the culture of oats and barley only; together with the widely available clean water and peat used as fuel, these grains were the main raw materials for the beer production which had grown in Leiden, Delft, Haarlem and Alkmaar since 1326\textsuperscript{16}. Furthermore,

\textsuperscript{15} In 1500, a mason's aid's summer daily wage was, in "stuivers": Bruges 3, Ghent 3, Aalst 2.5, Geraardsbergen 2.5, Antwerp 2.33; in 1547, only the Antwerp wages had risen to 4, the other remained nominally stable. On the other hand, during the 1500-1524 period, the average wheat price was not particularly high in Bruges: Bruges 21 grams silver, Douai 19, Lille 20, Diksmuide 23, Veurne 21, Bergues Saint Winnoc 22 : J.-P. SOSSON, \textit{Corporation}, pp. 568-569; E. SCHOLLIERS, Le pouvoir d'achat dans les Pays-Bas au XVIe siècle, in \textit{Album Charles Verlinden}, Ghent, 1975, p. 317; M. BOONE, W. PREVENIER, J.-P. SOSSON, Réseaux et hiérarchies urbains en Flandre, in \textit{Réseaux urbains en Belgique (Ancien Régime)}, Colloque Spa 1991, annexes 7 and 8, in print.

arable land was massively converted into pasture, which allowed the commercialization of dairy produce. Bread grains became increasingly scarce: corn tithes fell dramatically in the largest demesnes and the prices thus remained high. From 1360 to 1399, the average wheat price decreased only by 11 p.c., the rye price remained stable. The contrast with Flanders, where during the same period, prices fell by 26 p.c. for wheat and 27 p.c. for rye, is striking. Although recurrent epidemics without doubt caused severe damages, the population pressure on the land rose as a result of the extensification of the agrarian production; wages thus remained low in the long run, those of craftsmen in particular.

This resulted in the increased dependency on unstable wage earnings and the decrease of real income, especially since employment was uncertain. The need to import bread grains was stimulated by the sharply contrasting price evolution in Holland and in Europe generally. On the other hand, the Dutch rural economy offered the possibility for export of beer, cheese, butter and other finished goods. In the neighbouring regions, the rise of per capita income (in real terms) after the Black Death had created a new demand for such products. The anticyclical tendency in Holland thus favoured its commercial expansion.

In 1358, during a blockade of Flanders by the German Hanse, count Louis of Male, since recently lord of Antwerp, granted to this city the staple for "all kinds of fat products" the burghers and merchants of Amsterdam and Holland as a whole would bring. The enumeration indicates not only dairy produce and skins, but also specialized crops like coleseed, mustardseed, rapeseed, hemp and honey. This clearly shows the diversification, specialization and commercialization of Dutch

agrarian production as early as the middle of the fourteenth century. Indeed, in the Antwerp toll registers of 1366-1370, Dutch and Zeeland skippers appear frequently, declaring various products like butter, herring, barley and peas. They bought bread grain, timber, iron, wool and fruit.

During the fifteenth century, a regular grain trade, partly by Dutch merchants, developed from Saint-Omer to Zeeland and Holland. In the inquiry of 1494, the respondents of Gouda mentioned that in the time of Duke Charles the Bold thirty "boeyers", seaworthy ships used to sail down "to France, on the Somme and Seine rivers, for grain". The same demand for bread grains must have been the driving force behind the Dutch pushing forward into the Baltic. In this respect, they followed a path already explored and developed by the cities on the IJssel and along the coast of the Zuiderzee most of which were closely connected with the German Hanse. Prussian and Westphalian merchants held toll privileges in Dordrecht since 1340, while the latter saw their protection by the count in Holland and Zeeland generally extended in 1363. Their participation, siding with the Hanse in the war against the King of Denmark in 1367-1370, can be interpreted in this way. At any rate, it resulted in the Dutch occupation of some strongholds on the Scania coast, close to the place where the important fairs were held. It is obvious that they took advantage of this position, given the record of regular importations from Holland and Zeeland in Hanseatic cities in 1377 and 1385. In 1384, the

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20 R. DOEHAERD (ed.), Comptes du tonlieu d'Anvers, 1365-1404, Brussels, 1947, pp. 101, 102, 104, 115, 117, 120, 125-127, 159-160, 193, 207: registrations of Jan de Zeelandere, Clays de Hollandere and, most frequently, Woutre den Hollandere; the most explicit occurrences are: "Item Jan Backbroed van corne dat hi te Hollant wart vorde" (145); "Item Thomaes van Florencien 14 last haringhe bi Pieter Baniorde van Zevenberghen" (174); "Item Wouter van Hombreken, Clays den Hollandere, 8 last haringhe" (179), etc.


22 R. VAN UYTVEN, Oudheid en Middeleeuwen, pp. 24-25; M. MALOWIST, L'expansion économique, pp. 92 and 97.

Hanse already felt the necessity to order protectionist measures against Dutch herring-fishing near the Scania coast. Nonetheless, fishermen from Zeeland still sold herring from Scania in Great Yarmouth in 1393\textsuperscript{24}. Cloth from Leiden had been sold at the Scania fairs and in Bergen in the late fourteenth century. In 1392 the Hanse tried to bar the penetration of Hollanders into Livonia and Russia. Riga and the Prussian cities, on the other hand, saw these contacts as a means to escape from the domination by the Wendic cities. Cloth from Leiden and England was transported on Dutch ships to Russia and Danzig in 1401 and 1402\textsuperscript{25}. The accounts of the "Schäffer" of the Teutonic Order at Koenigsberg and at Marienburg, preserved for the years 1400 to 1404, reveal several transactions of Dutch cloth, produced at Leiden, Amsterdam and Dordrecht, the former being the most expensive. Its quality was relatively good for a much lower price than the Flemish cloth imported by the Wendic cities\textsuperscript{26}. The earliest explicit record of Dutch grain trade in the Baltic I have found so far dates from 1413, when export against the interdiction took place in Reval (Tallinn). However, as early as 1386 the city of Kampen protested against the prohibition issued by the Grand Master of the Teutonic Order to export grain, tar and timber, since it was said to be intended only against the English. At that time, ships from several ports in Holland and Zeeland moored regularly in Danzig. In 1416, complaints about the Dutch buying grain outside the "regular harbours" were brought forward in the "Hansetag". The direct trade between Dutch merchants and grain producers in Livonia irritated the Wendic cities which tried to impose their intermediary role\textsuperscript{27}. The growing competition of Holland probably explains why the Dutch, in contrast to the IJssel towns, remained outside the Hanse. In the long run, this allowed them to fight bitter economic wars against the Wendic cities, which they ultimately, in 1474, beat.

\textsuperscript{24} H.J. SMIT, Bronnen tot de Geschiedenis van den handel met Engeland, Schotland en Ierland, The Hague, 1928, n. 618, 718.


\textsuperscript{26} M. MALOWIST, L'expansion économique, pp. 93-96.

Obviously, transportation costs weighted heavily on such long distance trade; they could amount to 40 p.c. of the price in Danzig for a journey to Bruges in 1405, and the distance to Livonia was still considerably longer\(^{28}\). The Dutch tried to buy bread grain wherever they could, but preferably as nearby as possible. Near Leuven, for example, they bought 234 hectolitres in 1413-1414 and 997 hectolitres in 1415-1416. They exported regularly from Artois, Picardie and Normandy, as has already been mentioned above, and occasionally from England, especially during years of crisis in the relations with the Hanse, as in 1440, 1441, 1456 and 1457\(^{29}\). On the other hand they tried to reduce their costs by selling their own products such as cloth and herring.

The trade in Scania herring was soon outdated by the exploration of new fishing-grounds in the North Sea. As early as 1388-1392, Dutchmen sold North Sea herring in the Baltic up to Nowgorod, and in the Rhineland up to Cologne. In 1394, the city of Kleve, for example, wanted the casks to be marked so that one would be able to distinguish Scania herring from North Sea herring. The Hanse tried to push back the Dutch trade by emphasizing the superior quality of their own product but apparently failed to convince even its own members and thus lost its monopoly\(^{30}\).

During the years of heavy competition between Holland and the Hanse in 1414-1418, the Dutch made some concessions. For instance, they would not buy Scottish wool during the Hanseatic embargo of that country. The Hanse bought massively the first quality cloths from Leiden and Amsterdam, but was very keen on these being correctly marked\(^{31}\). Still, nearly one-third of the Dutch ships passing the Sound early in the sixteenth century entered the Baltic with ballast only.

Another device to reduce transport costs was the construction of ever larger ships. Also in this respect the Wendic cities tried in vain to stop Dutch competition through interdictions. In 1428 Dutch ships and crew


were forbidden to bring their goods to Prussia, nor were they allowed to
carry Prussian goods. In 1434 and 1435, the Hanse forbade their members
to build ships for Dutchmen, Flemings or Lombards, nor were they
supposed to sell ships to these peoples. Conflicts further concerned the
Dutch lack of respect for the winter rest and, again, the direct contact
between them and the producers in Latvia. In practice, the interests of the
trading partners in the eastern Baltic were contrary to the measures
dictated by the Wendic cities. The Master of the Teutonic Order, the city
of Danzig, the dukes of Pommerania and of Prussia all tended to let their
own interest prevail and they helped the Dutch to break through all
restrictions if only they paid a duty of one shilling on imports and two
pennies on exports\(^{32}\).

Gradual improvements in shipbuilding since the early fifteenth century
had made the herring buss larger and fit to trail a larger net. After the
herring season, the buss could be used as a carrier for merchandise. The
caravel was developed for the longer journeys down to Iberia\(^{33}\).
Shipbuilding became one of the major proto-industrial activities in cities
(like Edam) and in innumerable villages along the coast\(^{34}\). Agrarian
specialization had made it possible that some of the raw materials, such as
canvas and ropes, could be produced in Holland. Most, however, had to
be imported: wood from the Rhineland, Scandinavia and the eastern
Baltic; pitch and tar from the latter. Iron and steel came down the Rhine.
Obviously, these imports were only possible thanks to regularly providing
large cargo-space for bulky products. Again, it was the urging demand for
bread grains which triggered a whole series of side-effects creating new
demand for other goods such as the raw materials for shipbuilding. The
compelling needs stimulated the production of the means for their
acquisition: ships and the exchange values. This brings us to sum up the
Dutch offer.

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\(^{32}\) K. KOPPMANN, *Hanserecesse*, Leipzig, 1896, VIII, n. 507, pp. 325-327 (1428);
Weimar, 1939, VII, n. 205, p. 102.

\(^{33}\) R.W. UNGER, *Dutch Shipbuilding Before 1800. Ships and Guilds*, Assen,
Amsterdam, 1978, pp. 26-34.

\(^{34}\) R.W. UNGER, Regulations of Dutch Shipcarpenters in the Fifteenth and
The Competitiveness of the Offer

The fact that the Dutch economy entered relatively late in the European system provided specific opportunities for imitation of the existing trades and products. This was what the Dutch first did by imitating beer production with hop since the 1320's. The Gouda privilege dating from 1393 speaks about hopbeer plainly as being "beer brewed in the Hamburg way"35. The North-German innovation was commercialized by the Dutch who realized a large supremacy in the vast Flemish and Brabantine markets by the late fourteenth century. The beer production in Delft doubled from 50,000 barrels in 1343-1349 to 100,000 in 1400-1409. The 1370 account of the toll at Geervliet shows that foreign skippers transported not less than 14,000 barrels of Gouda beer, mostly to Brabant. The Antwerp toll accounts for the years 1366-1370 reveal beer transports by skippers from Mechlin, Vilvoorde and Lier, with loads of 3,300 to 4,700 barrels36. Already in 1392, the competitiveness between Hamburg and Dutch beer at Bruges was obvious to the authorities. A delegation of the city of Ghent complained with the Hanse merchants in Bruges that so much beer from Holland was imported in their city "in alsulken tunnen also men dat osters beer mede pleghe int land tho bringhende unde worde vor osters beer vorkoff". The Antwerp magistrate was even more explicit, even lyrical when in 1399 it requested the duke of Burgundy to levy the arrest by his sheriff – executed as a reprisal – of the goods of a burgher of Haarlem. Not only, they said, was it to be feared that people and goods from Antwerp would be arrested in Holland; even worse were "...daer [in Holland] verboden ons geen bier noch gheenrehande goed toe te laten comene, dat ons van hertten leed ware (...) want al haer [Antwerp] welware, beyde van byere, van wekemarcten, van coerne ende van allen goede haer leeght aan Hollant ende aan Zeelant"37. The brewers from Gouda even managed to create a new type of strong beer, the "koyte", which started a new product life cycle after the decay of the Haarlemmer

hop beer since the middle of the fifteenth century. Dutch dairy products not only acquired a strong position on the Antwerp market from the middle of the fourteenth century onwards, but they were also exported to the Rhineland and the Baltic. They made a real break-through on the Fairs of Brabant in the last decades of the fifteenth century, after the Flemish revolt had broken the supremacy of the butter and cheese from Flanders. The pattern of imitating and innovating can be observed once more for the other export products like cloth, following Flemish and Brabantine examples, and herring. As we have already seen, the Dutch presence in Scania since 1370 brought them into contact with the renowned herringfishing. When the competition became too fierce in Scania the Dutch, Flemings and Zeelanders adapted the technique of curing, salting and packing in wooden casks to the fishery on the North Sea. The longer travel required the boatsmen to perform the curing on the ship, so this had to be big enough to carry more men, the casks, gradually also a larger net and more goods. The new product became a second asset in the competition with the Hanse: while the Scania herring became scarce, the "kaakharing" was cheaper thanks to the economies of scale, the double use of the ships and the double subsistence basis – fishing and farming – of the boatsmen.

The increasing production of cask herring brought about a new demand: it required huge quantities of salt – 200 last per journey of a buss – which the worked-out centres of peat-salt in Flanders, Zeeland and Northern Brabant could no longer produce. Since the second quarter of the fifteenth century, salt from the Bay of Bourgneuf could be shipped at only two-thirds or half the price of the domestic product. Dutchmen and Zeelanders made a triple profit from the new situation: a. they became the main carriers of Bay-salt that they shipped up to the Baltic, which provided them with the badly needed exchange value for their grain; b. since Bay-salt was raw and unsuitable for the preservation of

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41 R. VAN UYTVEN, *Oudheid en Middeleeuwen*, p. 36.
herring, they applied to it the own traditional refining techniques, which considerably raised the value of the product they re-exported; c. they used the refined Bay-salt for the preservation of the herring they exported. In 1570, 150 salt pans in Zeeland and 50 along the Meuse near Dordrecht were counted. In the same year, an Antwerp merchant calculated the net return of the Dutch salt trade as 377 p.c.\(^4^3\) Around 1550, one last rye costed in Reval as much as two last salt in normal years, and four last when rye was expensive. This explains the endeavour of the Dutch to ship large quantities of salt to the Baltic. But already in the beginning of the fifteenth century, transport costs amounted to 85 p.c. of the purchasing price of salt on the journey from Lisbon (Setubal) to Bruges, 66 p.c. from Bruges to Danzig and 246 p.c. from Lisbon to Danzig\(^4^4\). Zeeland, and Walcheren in the first place, thus became the transboarding and wintering place for the long distance trade; the salt could easily be refined there as well\(^4^5\).

Having build a huge fleet for their grain transports from the Baltic – estimated at 180,000 tons around 1500 and 400,000 around 1580 –, the Dutch were beyond competition as bulk carriers on the route to the east, even when it had to start in Lisbon. On their way from the south, they halted in the Loire, Poitou and Bordelais regions to load precious wines which could equally be sold either in the Low Countries or in the Baltic. Their original demand for salt was turned in an offer of herring, cargo-space, refined salt and French wines. The growing importance of the Atlantic route favoured Zeeland as much as Holland. The east coast of Walcheren near Arnemuiden offered a well-protected harbour which developed as a busy haven. The recently published acts of notaries in La Rochelle and Bordeaux concerning trade with the Low Countries give in the first place a testimony of the orientation of French merchants. Holland is nearly absent in these acts: one shipmaster from Monnikendam was mentioned in Bordeaux with his ship in 1504, another one from Amsterdam with his ship "Bontecao" in 1513, and a Leiden merchant as witness in 1510. Arnemuiden is by far the most common destination, followed by Sluis, which occurs in 33 acts as the prescribed destination, and in 46 acts as a possible destination. Other Flemish harbours such as

Duinkerke, and also Calais are often recorded in the same way, too. Antwerp occurs 38 times as the explicit destination, Arnemuiden obviously in most cases acting as its outport. From these acts, covering the period from 1470 to 1520, Zeeland appears to have been closely connected to both Flanders and Antwerp. Holland did not need this intermediary on its way south, nor did the Aquitains do business further north than Arnemuiden. In 392 out of the 855 Bordeaux acts (45.8 p.c.) the shipment consisted of only wine, while 104 acts mention wine together with other products. The second item was pastel, mentioned in 365 acts (42.7 p.c.). Other items occur much less frequently, such as timber (19 mentions), resin (16), the medicinal plant tormentine (11) and vinegar (8). Herring is mentioned in 20 acts on the way south. Among the 80 acts from La Rochelle concerning the same period, 51 dealt with wine and 12 with salt.  

However important the port traffic may have been in Zeeland, its cities remained small: estimations in the 1560's and 1570's show figures under 6,000 for Middelburg, 4,000 to 4,400 for Flushing, 2,000 to 3,500 for Veere and 1,500 to 2,300 for Arnemuiden. Zeeland had a subsidiary role in the process of regional differentiation that I have described: it was the first export region of bread grains to the hungry neighbours, establishing a link between the three successively dominant regions. For each of these, Zeeland was an outport and provider of specific services such as salt refining and shipping.

Concluding on the extraordinary expansion of Holland, we can observe the positive impulses of its anticyclical momentum: it profited from the neighbouring regions as markets and imitated their main trades. The hanseatic blockades against Flanders created opportunities for Holland. Albert of Bavaria, count of Holland, was eager to grant privileges to the Hanse in 1358, 1363 and 1389 in order to establish the staple at Dordrecht. The count's total receipts from the farming out of his tolls reached the double in 1389-1394 from what they produced in 1400, after the return of the Hanse to Bruges. The competitive advantage for the

47 S. GROENVELD and J. VERMAERE, Zeeland en Holland, p. 136.
49 J.A.M.Y. BOS-ROPS, Graven op zoek naar geld. De inkomsten van de graven van
Dutch resided essentially in lower production costs, mainly as a result of lower wages and economies of scale. Real wages remained low as a consequence of the increasingly unfavourable ecological conditions. This favoured urbanization and made labour intensive rural activities both necessary and profitable. The institutional framework was open, favouring innovation and competition. Until well into the sixteenth century, guilds of shipcarpenters existed only in Dordrecht, Amsterdam and Veere, and their lenient regulations favoured a flexible response to the irregular demand\textsuperscript{50}. The incorporation under Burgundian rule prevented the German Hanse to play Holland off against Flanders as had happened before\textsuperscript{51}. The institutional context may thus be called favourable.

Schematically, we can distinguish three reactions to Holland's ecological scarcity:

- **intensification of production**: dairy products, specialized crops, fishing and shipping, shipbuilding, peat digging and burning of peat salt;
- **demand**: bread grain, wool, colouring plants, timber, iron, pitch, tar and salt;
- **offer**: beer, cloth, herring, cargo, refined salt and wine.

The take off of the Dutch economic expansion, indeed, has to be situated in the second half of the fourteenth century, as a creative response to the urgent demand for bread grain. Holland took a considerable advantage from the precocity of neighbouring regions. Although most aspects of the expansion were already signaled in the existing literature, its precise chronology, the primacy of demand, the successful combination of a whole range of factors and the interwovenness of the successive regional expansions have been clarified now. In the long run, the Dutch managed to commercialize their demand through a successful combination of linkages\textsuperscript{52}.

\textit{Holland en Zeeland 1389-1433}, Hilversum, 1993, pp. 82-86.
\textsuperscript{52} I wish to thank my assistant Marie-Charlotte le Bailly who helped me in the collection of data.