

# Estimates of the number of Dutch master-painters, their earnings and their output in 1650\*

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## Method

In a series of recent papers A.M. van der Woude has attempted to calculate the total number of paintings painted by Dutch painters in the period 1580-1800.<sup>1</sup> His grand total for the period - 8 to 9 million paintings - strikes me as plausible, at least as an order of magnitude. However, because his calculations rest in the last analysis on samples of collections in eighteenth century Delft, which he had to assume were representative for the entire seven provinces of the Republic, and because he had no reliable method for deriving the net yearly increments in these collections themselves, they are the subject to a wide, and probably unascertainable, margin of error. This said, it is reassuring that the approximate magnitude of Van der Woude's totals is confirmed by estimates he derived in a totally different manner (from the number of artists active in the Republic in various periods and their estimated output, an approach similar to the one taken in the present paper).

My study has a narrower focus. Like Van der Woude, I also calculate the number of master-painters; then I estimate their yearly earnings; finally, from this estimate, I try to infer their yearly production. But in carrying out these calculations, I confine myself to a single year, midway through the seventeenth century. To give the reader a sense of the relative accuracy of my results, I plan to discuss more systematically than Van der Woude did in his pioneering attempt the uncertainty attending each step of my exploration.

My approach also differs, implicitly, from Van der Woude's in that I restrict my attention to master-painters. Thus, in theory at least, I exclude from my estimates of output 'work by the dozen' turned out by apprentices and decorator-painters ('kladschilders').<sup>2</sup> My estimates of output thus correspond to a narrower definition of what consists of 'painting' than those built up by counting items in extant inventories, which, especially in lower-middle-class estates, contain many inexpensive works that were presumably not made by masterpainters.

In the seventeenth century, artist-painters who completed their apprenticeship to one or more masters normally registered in the guild of the city in which they resided. Evidence from Delft and Haarlem shows that very few artist-painters, if any, avoided guild registration for more than a year after they settled in a town (usually because they were reluctant to pay the guild's entrance fee).<sup>3</sup> Unfortunately, the guild lists and account books for Amsterdam are totally lacking after their destruction in the first decades of the nineteenth century; about all we know is that, from time to time, the municipal authorities induced a cohort of artist-painters to become citizens ('poorters'), from which it has been inferred that the authorities checked in the guild lists the names of those men born in other cities who had not yet acquired Amsterdam citizenship, as they were supposed to according to guild regulations.<sup>4</sup> In any event, there are no surviving guild lists for Amsterdam; what I shall be estimating, in effect, is the number of artist-painters in that city who would have been expected to register in the guild if the same norms had been enforced as they were in smaller cities.

In Alkmaar, Delft, Haarlem, The Hague, Leyden and Utrecht, the number of guild-registered artist-painters may be estimated from the occasionally issued master lists - there is even one for Delft for 1650 - and from the inscription of new masters, and from the evidence available about the departure or death of newly inscribed masters from the time of their inscription until 1650. Even there I have had to resort to assumptions about the more obscure artists whose death or date of departure from the city, after an initial inscription, was unknown. The results are shown in Table 1, along with the estimated populations of the six towns of the United Provinces for which these data have been constructed.

*Sources:*

For the number of artists in all towns except Haarlem and Utrecht, F.D.O. Obreen, *Archief voor Nederlandsche kunstgeschiedenis*, 7 vols., (Rotterdam 1877-1890), in particular Alkmaar, vol. 2, pages 26-61; Delft, vol. 1, pages 44-48; The Hague, vol. 4, pages 59-60, vol. 5, pages 195-217; Leyden, vol. 5, pages 172-215. For Haarlem, A. van der Willigen, *Les artistes de Haarlem, Notices historiques avec précis sur la gilde de St. Luc* (Haarlem and The Hague 1870), pages 27-30 and pages 66-351 and Hessel Miedema, *De archiefbescheiden van het St. Lucas gilde te Haarlem*, 2 vols. (Alphen aan den Rijn, 1980). For Utrecht, the estimated number of artist-painters was kindly communicated to me by Marten Jan Bok, who is writing a doctorate dissertation on Utrechts's artistic community. Population statistics are

taken from Jan de Vries, *European urbanization* (Cambridge, Mass.1984) page 271.

Table 1

Guild-registered Artist-painters in Alkmaar  
Delft, Haarlem, The Hague, Leyden and Utrecht in 1650

|           | Number of<br>artist-<br>painters | Estimated<br>population<br>(thousands) | Artist-<br>painters<br>per thousand<br>inhabitants |
|-----------|----------------------------------|--|--|
| Alkmaar   | 24                               | 15                                     | 1.6  |
| Delft     | 36                               | 24                                     | 1.5  |
| Haarlem   | 68                               | 38                                     | 1.8  |
| The Hague | 37                               | 18                                     | 2.1  |
| Leyden    | 55                               | 67                                     | 0.8  |
| Utrecht   | 60                               | 30                                     | 2.0  |
| Total     | 280                              | 192                                    |  |

*Methods*

*Alkmaar:* There were 15 artist-painters in the guild of St. Lucas in 1631; 32 artist-painters registered in the guild between 1632 and 1650. It was assumed that the ratio of guild members active in 1631 to the number still active in 1650 was the same as in Delft (15 out of 31 or 48.4 percent, thus 7 members). It was further assumed that the ratio of members having registered in the guild between 1631 and 1650 to the number of these new masters still active in 1650 was also the same as in Delft (18 out of 34 or 52,9 percent, thus 17 members). The estimated total (7 plus 17 or 24) is the number shown in the table.

*Delft:* The count was based on the master list for 1650 (Obreen, vol. 1, pages 44-45), supplemented by information on the careers of guild members who had died, left town, or ceased working. It was assumed that Abraham de Coge, by 1650, was active as art dealer but no longer as an artist-painter.

*Haarlem:* The estimate is based on the list of members in Van der Willigen (op. cit. above) on page 38 and pages 66-351, on the guild accounts in vol. 2 of Miedema (op. cit. above) and, in a few doubtful cases, on information in Thieme-Becker, *Allgemeines Lexicon der Bildende Künstler von der Antike bis zur Gegenwart*, 37 vols., (Leipzig 1907-1950).

*The Hague:* based on the list of artists who joined the new Confrérie of St. Lucas in 1656 (Obreen, vol. 4, pages 59-60), a total of 48 members, from which was subtracted nine artists who were not primarily painters. This left 38 artist-painters. This number was adjusted backward to 1650 as follows. There were an estimated 27 artist-painters in 1621. The net increase from 1621 to 1656 was three new members for ten years, hence two in six years. Subtracting two from 39 yields the number in the table.

*Leyden:* Based on the partial list of artist-painters in 1644 who signed an act that preceded the establishment of the new guild (Obreen, vol. 5, pages 177-178), supplemented by the detailed accounts of the guild in subsequent years, which provide considerable detail on yearly payments by members and new registrations (ibid., pages 195-215). Because of uncertainty regarding the activity of certain new members who are totally unknown (not listed in Thieme-Becker), my estimate of members in 1650 ranges from 44 to 52. I have adopted the higher of the two numbers to account for possible omissions in the original list of 1644.

The estimated number of artist-painters per thousand inhabitants ranged from a low of 0.8 in Leyden to a high range of 1.8 to 2.1. in Haarlem, Utrecht and The Hague. The low ratio for Leyden may be explained, first, by the fact that a guild for painters was only founded in 1648. I suspect that the absence of a guild to protect the interests of artists had an adverse effect on the number of artists active in this city. Secondly, Leyden was populated in large part by textile and other workers; it had a relatively small middle and upper class that might have been expected to provide an outlet for the works of local artists. The relatively high ratio for Haarlem confirms a hypothesis I put forward in an earlier publication<sup>5</sup> to the effect that Haarlem was a major center of exportation of paintings - especially of landscapes, still lifes, and genre subjects - to the other cities of Holland. As to the exceptionally high ratio for The Hague, I can only suggest that the town, even though it was small, offered good opportunities for artists due to the presence of the Stadhouder's Court and various States General activities that required at least a moderate number of government officials with an income sufficient to

buy paintings. The creation of a separate confrèrie for painters in 1656, on whose memberships I base my estimates for 1650, may have attracted a number of new artist. If so, I may have slightly overestimated the number of artist-painters in 1650. The estimate subject to the greatest uncertainty is that for Alkmaar, which is based on the untested assumption that the trends in guild membership for master-painters from 1631 to 1650 were the same in Alkmaar as those that took place in Delft. The number of artists in Utrecht is also subject to a fairly high margin of error. The city in the first thirty or forty years of the century had been a prospering art center which attracted many painters. By 1650 it was probably in decline. However, it is not possible to determine, in the case of certain artists, whether or not they were still active in the city.

While I am perfectly aware that all the data in Table 1, with the possible exception of those for Delft and Haarlem, are surrounded by a significant margin of uncertainty, I feel they have at least a reasonable basis. These data correspond to a total estimated population of 192,000 people. If we subtract this number from the estimated population of the 21 largest towns of the United Provinces in 1650, we are left with a population of 330,000 for which we have virtually no reliable data on the number of resident artist-painters. Thus we are left with some sort of estimates of the numbers of master-painters in towns accounting for 37 percent of the population of the 21 largest towns and with the necessity of making guesses for towns accounting for the remaining 63 per cent of this urban population. (I assume that no artists were active in the *platteland*). The city of Amsterdam, with an estimated 175,000 inhabitants and no guild records extant for 1650, accounts by itself for half of the population of the 21 largest cities for which we have no reliable data on the number of artist-painters. My analysis of Amsterdam inventories<sup>6</sup> showed that paintings by artists residing in Amsterdam in inventories of the 1640s were only about 2.6 times as numerous as those by Haarlem-based artists who did not spend any significant part of their career in Amsterdam (45.0 and 17.6 percent respectively). Since the Amsterdam population was 4.9 times as great as Haarlem in 1650, it would appear that the incidence of paintings by Amsterdam artists was less than expected, even if there had been no obstacles whatever to the import of paintings by Haarlem artists into Amsterdam. The ratio 2.6/4.9 can be taken as a very rough measure of this underestimation. Applying this ratio to the number of artist-painters per thousand inhabitants in Haarlem in 1650 from Table 1, yields approximately 1.0. If this assumption is correct, there were 175 painters in Amsterdam in 1650. For the remaining part of the urban population for which we have no estimates - 522,000 minus 367,000, including Amsterdam, or 155,000

inhabitants - I will assume that the ratio was the same as the average from the six towns for which estimates were made in Table 1, or 1.5. This adds another 233 artist-painters to our count.

To summarize, we have 280 artist-painters in the six cities in Table 1, an estimated 175 painters in Amsterdam, and an estimated 233 artist-painters in the remaining 14 towns, a total of 648. This accounts for all urban inhabitants in 1650 except for 81,000 living in cities of less than 10,000 inhabitants, for which I assume a ratio of 0.8 (as in Leyden where there was no painters' guild until 1648). This yields 64 artists. Our grand total for the Republic comes to 712 artist-painters in 1650. I cannot calculate confidence intervals from these data, but I think that it is quite likely that the true number was somewhere between 650 and 750.

### The yearly earnings of artist-painters

In a petition to the magistrates of Leyden dated April 2, 1648, a number of the town's painter-decorators ('kladschilders') complained that they had to pay the same yearly contribution to the newly established guild of St. Lucas - one and a half guilders - as the artist-painters ('fijnschilders').<sup>7</sup> They argued that their earnings 'could not be compared to those of the artist-painters, because not only can an artist-painter in a day or two earn as much as each of the supplicants [the decorators] in a whole month, but he can continue to work the whole year through and enjoy earnings, while the supplicants cannot earn their living more than three or four months a year, when the weather is dryest'. The rest of the time, 'to feed their children, they [the master-decorators, of whom there were 22 in Leyden] must take other jobs' ('yets anders bij de handt moeten nemen'). There therefore requested that their yearly contributions be reduced 'to such a price as the common craftsmen, be they coopers, tailors, smiths and other whose yearly earnings are on a level with those of the supplicants, pay their guilds'.<sup>8</sup> In another petition, dated September 3, 1648, the painter-decorators complained that some of the artist-painters, for whose benefit the new guild had been created, used their apprentices as decorators to the prejudice of the master 'kladschilders'.<sup>9</sup> Their renewed request for a separate status and reduced yearly fees was approved.

The petition of the Leyden decorators reinforces the conclusion I had already drawn from my work in Delft. Artist-painters earned considerably more in the seventeenth century than did ordinary craftsmen. But it only gives us an outer limit of the difference in the level of earnings between the two groups, for it can hardly be expected

that the *average* difference could have been as high as that implied by the equality of an ordinary craftsman's monthly earnings to 'one or two days' of work by an artist painter. (Assuming 24 days of work a month, this would be equivalent to an earning ratio between 12 and 24 to one).

We can narrow this range if we are willing to compare the odd conditions of artists' earnings in the literature with the fairly solid evidence we have on ordinary craftsmen's wages. The latter may be estimated at 1.2 to 1.5 guilders a day. The lower limit is based on an average of the wages of four faience painters and turners in a Delft workshop in 1644 and one master servant ('meesterknecht') engaged from Delft to work in a stone-carving shop in Haarlem in 1640; the higher limit is the approximate wage of a master carpenter in the middle of the seventeenth century.<sup>10</sup>

In 1625, the painter Jacques de Ville promised to deliver to Hans Melchiorz., shipper, paintings worth 2,400 guilders over a year and a half. The shipper, after selling the paintings, would hand over the proceeds to the artist, who had stood surety for some of Melchiorz.'s unpaid debts. Melchiorz. was responsible for paying all production costs including panels and frames.<sup>11</sup> At this rate, de Ville would have made 1,600 guilders a year or approximately 6 guilders a day, which was four times a master carpenter's wage. In 1645, Pieter van den Bosch contracted with Marten Kretzer to paint 'from sunrise to twilight in the winter and from 7 a.m. to 7 p.m. in the summer' for 1,200 guilders a year.<sup>12</sup> This salary may be the equivalent of approximately 4 guilders or 2.7 times a master carpenter's wage.

Abraham van de Heck, an artist working in The Hague, received a commission for two portraits ('by May (1653)'). He was to receive 380 guilders for the portraits plus the cost of the frames.<sup>13</sup> Assuming the cost of paints and canvas was no more than five per cent of this amount, this implies he would receive 361 guilders for two months' work or a yearly rate of 2,166 guilders. We have no information as to whether Van der Heck received enough commissions to maintain his yearly earnings at this level. It may also be that his income was augmented by the fees of one or two apprentices learning the art of painting under his guidance. This might have brought him another fifty to one hundred guilders a year,<sup>14</sup> for a total income of some 2,250 guilders a year. Abraham van der Heck seems to have painted genre pictures à la Molenaer as well as portraits. It is then probable that his output per year was more than the twelve pictures corresponding to his two-month portrait commission.

In the early 1600s, Emanuel de Witte, who was heavily indebted at the time, contracted with the art dealer Joris de Wijs to paint in the latter's house for an indefinite period in exchange for 800 guilders a

year plus room and board.<sup>15</sup> (The document implies but does not state at all that the paintings De Witte could produce under this arrangement would belong to De Wijs). The monetary equivalent of room and board varied from about 50 guilders for a young apprentice to 310 guilders for a young man of good family in a house of correction.<sup>16</sup> For an artist of De Witte's age and condition, I should judge that it would be worth some 200 guilders. The contract then cost De Wijs approximately 1000 guilders a year.

In March 1679, one of the members of the Grebber family of artist-painters (probably Anthony Claesz.) contracted to paint six pictures of the Passion at 60 guilders apiece, subject to the judgment of Jacob Esselens, master-painter, that they be sufficiently artful ('curieus'). The six pictures were to be delivered within 'four to five months'.<sup>17</sup> This implies after deduction of 5 percent for costs, earnings of 800 to 1,000 guilders per year, depending on whether he actually completed the commission in four or five months. Any other works he could have painted in addition to his commission and pupils' fees would have brought his income into the 1,000 guilder range. This is not a very high income (a little over twice a master carpenter's wage), but it should be recalled that 1) de Grebber might have been working on other paintings at the same time as the portraits and 2) that the 1670s were a depressed period for art, owing to the long-lingering war with France which brought down artists' earnings.

Conditions for the arts became even more depressed in the first half of the eighteenth century as Jan van Gool, the most important chronicler of Dutch art after Arnold Houbraken, frequently complained in his *Nieuwe Schouburg*, published in 1750.<sup>18</sup> According to this authority, it was difficult, even for better painters, to earn twice as much as a carpenter.<sup>19</sup>

These disparate data suggest that, in the more opulent years of the seventeenth century, a typical workaday artist might have been able to earn anywhere between 1,000 and 2,250 guilders a year from the sale of his paintings, above or between 2.2 to five times as much as a master carpenter's wage. The average, for this minuscule sample of five individuals, comes to nearly 1400 guilders a year. This was about 3.6 times a master carpenter's wage or 4 to 4.5 times the wage for a decorator or faience.

Another approach consists in comparing the expenditures of ordinary craftsmen and artist-painters on a large item of consumption, such as house rent, and in inferring the earnings of typical artist painters on the assumption that the ratio of rents to total income was approximately the same for both categories of income earners. The presumption here is that if the income of artists had shrunk to that of ordinary craftsmen, their expenditure on rent would have di-

minished proportionately. This, in turn, implies that artists' income elasticity of expenditures on house rents was close to unity. The evidence from modern times on the share of rents in total expenditures suggests that this may not be too bad an assumption. Data based on household expenditures in the Netherlands in 1935-1936 show that the share of rents in total expenditures decreased only from 16 to 13 percent as yearly income rose from a base of 100 to 254.<sup>20</sup> In most countries, developed and underdeveloped, the share, prior to World War II, averaged between 10 and 15 percent.<sup>21</sup>

A sample of 15 house rents per year of artist-painters (8 from Delft, 7 from other Dutch towns) from 1654 to 1665 yielded an average of 133.3 guilders.<sup>22</sup> During the same period, the average for a sample of yearly rentals of craftsmen (three guild-registered painter-decorators, one unregistered sculptor, and three painters on faience, long employed as 'knechts' in faience works, all from Delft) was 39.3 guilders. The ratio of the two averages was 3.4. If we multiply this ratio by the average wage of similarly situated individuals cited above (1.2 guilders), we get 4.1 guilders a day, or roughly 1,250 guilders a year. If we assume, instead, that the ratio of rent to total expenditures for the higher income category was only 81 percent of what it was in the lower category (as in the Netherlands in 1935-1936), we obtain an estimate of the daily income of artist-painters of 5.1 guilders a day or approximately 1,500 guilders a year. This method of estimating artist's incomes gives results that are very close to the average obtained from our sample of artist's incomes (1,400 guilders). A range of 1,250 to 1,500 guilders probably encloses the true figure. From these limits I subtract 100 guilders for outside income (mainly pupils' fees, net of costs) to estimate a range of artists' net earnings from the sale of paintings of 1,150 to 1,400 guilders a year.

## Productivity

Productivity, by which I mean the average number of paintings produced by an artist in a year, differed enormously among Dutch painters in the seventeenth century. Subject (portraits were more time-consuming than landscapes) and style ('rough' or 'fine', tight or loose) were among the principal factors accounting for this variation. An artist working in the 'fine manner' like Vermeer probably did not paint more than two major paintings a year and one minor one.<sup>23</sup> Toward the other end of the spectrum, we learn that Jan Porcellis (in 1615) committed himself to deliver two paintings a week for 20 weeks. The buyer was to pay three guilders per painting for panel and frame, and one guilder per painting for ashes and colors.<sup>24</sup>

Porcellis's minimum pay, incidentally, was to be 15 guilders a week or twice a master carpenter's wage - but this was to be supplemented by his share in the profit from the sales. Jan van Gool also informs us that an earnest apprentice in the mid-seventeenth century could copy two peasant 'tronies' per week, which comes to some 100 paintings a year, after making a rough subtraction of days lost to sickness and vacation.<sup>25</sup> An output of two paintings per week is by no means improbably high, even for guild-registered masters in the middle of the seventeenth century, as the following calculations suggest.

My method of estimating productivity is to divide the average income of artists from selling paintings (which I have placed in the range of 1,150 to 1,400 guilders a year) by the average price they obtained for a painting. To estimate this average price I propose to consider, first, the evidence from Amsterdam inventories in the 1640's and, secondly, the great auction sale of contemporary paintings which took place in The Hague in 1647.

Because the average price of a painting rises significantly with the overall value of the inventory in which it is found, it is crucial to construct a sample of inventories that is as free of bias as possible. This cannot be said of the Getty-Montias sample used by Van der Woude, which, because about two-thirds of the inventories on which it is based contain attributed paintings, suffers from a very significant upward bias in the average prices of the paintings it includes. (In the 1640's, only about four or five percent of all inventories contained attributed paintings, and these were, on average, far larger and more valuable than most inventories). My sample of 120 inventories from the Amsterdam notarial archives dated in the 1640's, which may be characterized as quasi-random, was constructed as follows. Using a table of random numbers, I picked microfilm spools containing notarial records until I had met my quota of 120 inventories in each decade from the 1620s to the 1640s. In each spool, I chose inventories in the sequence 1,3,6,8,11 etc. (thus skipping alternatively one or two inventories after each inventory selected), with the sequence continuing from one spool in the random sample to the next.<sup>26</sup> The result is 'nearly random', in the sense that the choice of spools is random, but the inventories in any spool in the sample have a higher chance of being selected than that if they had been picked at random, irrespective of spools. (A fully random method would have required finding every inventory in the notarial archives in the period 1620-1650, assigning a number to each inventory, and then selecting from this set at random. Such a procedure would be beyond the capability of a single researcher). Of the 120 inventories I selected that were dated in the 1640's, 32 were evaluated, almost all by sworn assessors ('gesworentaxeersters'). Two of the assessed invento-

ries contained attributed work of art and a third one a couple of copies. I recorded separately three categories of paintings:<sup>27</sup> small paintings ('kleijne schilderijen', 'schilderijtjes', but not 'een watertje' or a 'lantschapje'); large paintings (e.g. 'een groot schilderij'); and all others, which were presumably neither very small nor very large. Small paintings averaged 3.12 guilders (sample size = 103); large paintings, 43.8 guilders (6); and the remaining paintings, 8.7 guilders (203). The overall average was 6.8 guilders (312 paintings). It may be noted in passing that small attributed paintings averaged 6 guilders (sample size = 4) and other attributed paintings (neither small nor large), 16.7 guilders (10).<sup>28</sup> How representative are these averages of the prices obtained by registered artist-painters? Unfortunately, we have no way to know how many of the paintings may have been copies and other work by the dozen made by the pupils, apprentices, and other craftsmen or would-be artists who were not registered in the guild.

We may get somewhat closer to the prices that artists received for their paintings by analyzing the proceeds of a very large auction sale of paintings held by artists, which took place in The Hague, beginning on April 9, 1647.<sup>29</sup> In this sale, the bulk of the paintings were either attributed and designated as originals ('principaelen') or as copies after a named master. The originals were distributed among 109 artists, almost all still alive, many of them active in other towns of the Netherlands (mainly from the Northern, a very few from the Southern provinces). There were no paintings by non-Netherlands masters. The artists included may, in my opinion, be considered as broadly representative of the community of Dutch painters in the 1640s, exclusive of portrait painters and of some of the most famous and most highly paid history painters of the 1630s and 1640s, such as Rembrandt and Dou.<sup>30</sup> There was no differentiation of the paintings according to their size. Altogether, there were 850 original paintings which brought an average of 9.3 guilders each. The 68 copies after designated masters averaged 4.13 guilders each. The fact that the average price of the originals at the sale was about one third higher than the average price of Amsterdam painting in my sample for the 1640 (6.8 guilders) suggests that the Amsterdam sample may have contained copies and other works by the dozen mixed in with a majority of paintings by masters.

If anything, I would expect that the sale in The Hague brought prices that were lower than those artists generally obtained, and this for two reasons. First, many artists received commissions or sold their paintings to private collectors at prices that must have been higher than those they could hope to get at auction. Second, The Hague sale was so enormous - it included in total about one thousand

paintings - that, even though many of the buyers represented were dealers on the lookout for bargains who tended to shore up the market, it must have depressed the level of prices attained. I will assume - and this is only a guess - that artists could obtain prices that were 50 percent higher than the average prices brought at The Hague sale for one half their output (i.e. for the paintings they sold directly to the customers). This would add 25 percent (one half of 50 percent) to the average auction price, which raises the average to 11.6 guilders per painting. From this must be subtracted the costs of frames, panels, ashes, and other colors. Perhaps the most commonly encountered size of panels was the 'tientje' or ten-stuiver-panel.<sup>31</sup> (we do not know its exact measurements). To this would typically correspond a two-guilder frame. Together the cost of panel plus frame would then be 2.5 guilders per painting. Another 0.62 guilders must be added for ashes and colors, for a total of 3.12 guilders.<sup>32</sup> The net average earnings per painting thus works out to almost exactly 8.5 guilders (11.6 minus 3.12 guilders).

If we take this average net earning per painting and compare it with an average artist's total earnings of 1,250 to 1,400 guilders a year from the the sale of paintings, as I have stimated it above, we obtain a productivity of anywhere from 135 to 164 paintings a year, or 2.6 to 3.1 a week, or an average of 2.85 paintings a week. This seems remarkably high. But of course, the date of the auction on which these estimates are based (1647) was also the high point of the tonal school of painting, which was heavily represented in The Hague sale. Tonal painters, I have argued elsewhere, painted more quickly and had a higher productivity than both the Mannerists who preceded them, and the 'fijn schilders' who followed them.<sup>33</sup>

We still need to make an adjustment for portrait and history painters whose works were virtually absent from the 1647 sale. A reasonable guess in my view would be that portrait painters produced on average one painting a week.<sup>34</sup> Supposing that about one fifth of the artist-painters were primarily portrait painters, another fifth were history painters producing chiefly larger works at the rate of one every four week, and the remaining three fifths produced 2.85 paintings a week,<sup>35</sup> we arrive at an estimate of roughly 1.8 paintings per week or 94 paintings per year. Multiplying this number by the estimated number of registered artist-painters in the Northern provinces (650 to 750) yields a range of 63,000 to 70,000 paintings a year.

If this rate had been maintained for the twenty years that elapsed between 1640 and 1659, it would have cumulated to between 1.3 and 1.4 million 'newly created paintings' during this period, compared to 1.1 million estimated by Van der Woude.<sup>36</sup> This difference is fairly

small, considering the uncertainties affecting most of the building blocks that were used to reach our respective estimates.

Has the present, rather elaborate, exercise been worthwhile nonetheless? I think it has been so in two basic ways: first, in setting forth the alternative methods that can be used in arriving at the various estimates and in the discussion of the uncertainties attending each of them; second, in providing more precise estimates for some of the building blocks that were used in reaching the final results (the numbers of artists active in various Dutch centers in 1650, the average prices of paintings in Amsterdam inventories of the 1640s, the average prices of paintings sold at auction in 1647). This study has also revealed, or made more evident, that gaps remain in our knowledge. We still know next to nothing about the number of artists active in Amsterdam and the average prices received by painters for their works. We know very little about their average earnings. I have tried to bridge these gaps by making educated guesses. I hope they can, and will, be improved upon in due time.

## Notes

\* Dit is een voorlopige versie van een artikel dat elders in bewerkte en uitgebreide vorm gepubliceerd zal worden.

1. A.M. van der Woude's most recent paper on the subject, 'De schilderijen produktie in Holland tijdens de Republiek: een poging tot kwantificatie' was delivered at the meeting of the 'zeventiende eeuw geselschap' in August 1989. It will be published in H. Dagevos ed., *Kunstzaken. Particulier en overheidsinitiatief van de wereld van de beeldende kunst* (Rotterdam 1990).
2. I suggested in my book *Artists and artisans in Delft: A study of the seventeenth century* (1982), 324, that inexpensive copies of works by master-painters and other 'work by the dozen' were by apprentices and 'kladschilders'.
3. On Delft, see Montias, op. cit., 78-82. On Haarlem, see Hessel Miedema, *De archiefbescheiden van het St. Lucas gilde te Haarlem*, 2 vols. (Alphen aan den Rijn 1980). The successful efforts of the guild officers of Haarlem following three months of repeated convocations, to force Willem Willemsen Swinderswijck to register, despite his initial energetic refusal (*ibid.*, vol. 2, 525-6, 539, 546, 550), suggest that the guild did not easily let recalcitrant payers go.

4. I.H. van Eeghen, 'Het Amsterdamse Sint Lucas gilde in de 17de eeuw', *Jaarboek Amstelodanum*, 61 (1974), 67.
5. J.M. Montias, 'An analysis of subjects and attributions in seventeenth century Amsterdam inventories', to be published in the *Proceedings of the Getty Center Conference on History and Art, Art and History* (April 1987).
6. Ibidem.
7. Obreen, *Archief voor Nederlandse kunstgeschiedenis*, 191.
8. Idem, 192
9. Idem, 194.
10. Van der Woude, 'De schilderijen produktie in Holland tijdens de Republiek', 21. Van der Woude cites a wage of 28 to 34 stuivers a day.
11. H. Floerke, *Die Formen des Kunsthandels, das Atelier und die Sammler in den Niederlanden vom 15-18 Jahrhundert* (Leipzig 1905) 35.
12. A. Bredius, 'De kunsthandel te Amsterdam in de XVII eeuw', *Amsterdamsch Jaarboekje* (1891) 56-7.
13. A. Bredius, *Künstler-Inventare; Urkunden zur Geschichte der Holländischen Kunst des XVIIten, und XVIIIten Jahrhunderts*, vol. 7 (1921) 102.
14. A pupil living at home could expect to pay a run-of-the-mill master 20-50 guilders a year (see Montias, *Artists and artisans*, 169). Most artists, unlike Rembrandt or Gerrit Honthorst, had very few pupils as far as we can judge from extant guild records of payments of fees for taking in apprentices (see, for instance, the detailed list of masters and their apprentices in Alkmaar in Obreen, *Archief voor Nederlandse kunstgeschiedenis* vol. 2, 41-61. There were only 24 apprentices registered in the guild from 1631 to 1649 compared to 49 new masters).
15. Bredius, *Künstler-Inventare* 5, 1838.
16. Montias, *Vermeer and his milieu, A web of social history* (Princeton, N.J) 163.
17. Bredius, *Künstler-Inventare* 7, 58-59.
18. On this point I rely on Lyckle de Vries's extended citations from Van Gool's book in his unpublished study on the writer and on Van der Woude's citations from the original.
19. Johan van Gool, *Antwoord op den zoo genaemden brief aen een vrient*, ca. 1750, cited in Van der Woude, 'De schilderijen produktie in Holland tijdens de Republiek', 21.
20. J.H. Spiegelberg, *De invloed van belasting-heffing op de consumptie* (Leiden 1946) 53.
21. C.Z. Zimmerman, *Consumption and standards of living* (London, 1936) 191.

22. The rental dates for towns other than Delft were taken from Bredius, *Künstler-Inventare*, passim.
23. J.M. Montias, *Vermeer and his milieu*, 401-2.
24. Floerke, *Die Formen des Kunsthandels*, 19-20.
25. Cited in Van der Woude, 'De schilderijen produktie in Holland tijdens de Republiek', 20. Van Gool had heard about this from his friend Mattheus Terwesten (1670-1757), who had been the pupil of Willem Doudijns (1630-1697). Doudijns, in turn, had been apprenticed to [Adriaen] van Ostade, presumably before 1650. According to this tradition, the apprentices who made copies after Van Ostade could sell them for six guilders apiece. This might be higher than the typical price such copies brought on the market. In the auction that took place in The Hague in 1647, to which I refer in the text below, the average price of a copy was 4.13 guilders. Most copies brought three to four guilders. Copies after Pieter Quast, Benjamin Cuyp, Pieter Bloot, and Hendrick Pot, whose subject and manner of working can be compared to Adriaen van Ostade's, were sold for 3.35, 1.85, 1.1. and 1.4 guilders respectively. (Bredius, *Künstler-Inventare*, 474-475).
26. I included in my sample every inventory containing what appeared to be all the movable goods ('meubele goederen') of the individual whose possessions were being inventoried. This could be a deceased individual, one about the enter marriage in view of making a marriage contract, or a debtor giving his creditor collateral in the form of his movable goods. If an inventory that came up in the series did not meet a minimum completeness requirement (for example, if it did not contain at least one bed), I skipped to the next inventory that came up and resumed the series from there.
27. Unlike Ad van der Woude ('De schilderijen produktie in Holland tijdens de Republiek', 25), I do not believe that a significant proportion of the more inexpensive paintings were actually illuminated prints. He argues that so-called paintings evaluated at less than 2-5 guilders were in reality prints or drawings. In my sample, there were 39 prints, designed as such, averaging almost 0.4 guilders (8 stuivers). The 103 small paintings in my sample had an average value of 3.12 guilders. Four of these paintings were evaluated at 0.4 guilders each and four at 0.6 guilders each (the lowest prices in the set). Chalk and lead drawings were far more expensive (typically two to four guilders apiece), but I doubt they were frequently confused with paintings (since they were not colored). All this suggests that if there was any overlap (and confusion), it was small. To avoid any possible error of this

- sort, I did not classify as paintings 'small boards' or panels that were not otherwise described (e.g. '16 borritges' for one guilder).
28. While this is not directly relevant to this enquiry, I may mention here that the average value of movable goods in my sample of 32 inventories was 1122,7 guilders and the value of all works of art, including paintings, prints, drawings, maps, sculptures, and miscellaneous other works of art (but excluding silverware) was 52.7 guilders. In a regression of the logarithm of the value of the works of art on the value of the movable goods that I carried out, the coefficient of the independent variable turned out to be equal to 1.31 with a standard deviation of 0.29. This indicates that a one percent increase in the value of the movable goods was, on average, associated with a 1.3 percent increase in the value of works of art possessed. However, the standard deviation was so large that a true coefficient on unity cannot be excluded. Thus the wealth elasticity of the demand for works of art, on the basis of this sample, may be as low as unity. It may be noted that I evaluated this elasticity, for my Delft sample in the 1640's, at 1.26. In this case, the elasticity was significantly above unity (Montias, *Artists and artisans*, 265-266).
  29. Bredius, *Künstler-Inventare* vol. 2, 457-520.
  30. Rembrandt, Rubens and Anthony van Dyck were only represented through copies. Dou's work did not show up at all. There were only four paintings costing 50 guilders or more in the sale.
  31. See the large stock and assortment of Joost Abrahamsz., a Rotterdam dealer in panels and other painter's utensils, in 1673 (Bredius, *Künstler-Inventare*, vol. 6., 1891-2).
  32. I take the cost of ashes and colors from the relative ratio of these costs to the costs of panels and frames in the Porcellis contract cited above (note 22).
  33. J.M. Montias, 'Cost and Value in 17th century Dutch art', *Art History*, 10 (1987) 455-466.
  34. A typical price for a Delft portrait was about 30 guilders (Montias, *Artist and artisans*, 193-194). Assuming that the portraitist earned 1,400 guilders a year by painting nothing but portraits, he would be painting roughly one a week.
  35. These proportions are based on estimates for Delft. (Montias, *Artists and artisans*, 142).
  36. Van der Woude, 'De schilderijen produktie in Holland tijdens de Republiek', table 9.