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GRAIN PRICE FLUCTUATION IN FIFTEENTH CENTURY GHENT

TAKASHI OKUNISHI

Several studies have been made of grain price fluctuation in Ghent in the fifteenth century. However, the details of that fluctuation have not been identified clearly in previous studies. In this paper I make clear that there were several patterns of price movements in periods of high prices and in periods of normal prices that must be related to the structural change of grain circulation: three types in the times of high prices: 1) a gradual rise followed by a steady, high level and a sharp fall; 2) a rapid rise and a gradual fall; 3) a sudden rise in the short term. In the times of normal prices there were also three types: 1) a gradual change which had in some cases a serrulated pattern with a rise in the last period of the season between harvests; 2) a fixed price in each harvest year; 3) continuous change over several years.

The purpose of this paper is to investigate grain price fluctuation in fifteenth century Ghent by considering differences in price data. Ghent, at the confluence of the Scheldt and Leie Rivers, was the most important grain trade center in Flanders in the late Middle Ages. Ghent had established her grain staple right by the latter half of the fourteenth century and controlled grain circulation in the Scheldt and Leie basins for a long period of time. Based on this privilege, Ghent managed the grain trade in this area and was occasionally in conflict with other cities to keep her monopolistic position. It is generally agreed that the existence of the grain staple vigorously affected grain circulation as an important non-market factor. [Bigwood, G. (1902), Boone, M. (1990), (1991), Derville, A. (1987b), Nicholas, D. (1987), (1992), Prevenier, W. en Blockmans, W. (1983), Prevenier, W. en Boone, M. (1990), Tits-Dieuaide, M.-J. (1973), (1984), van Schaîk, R. (1978)] On the effect of the grain staple on the grain price in the late middle ages, it is thought that this privileged position favored Ghent so that the level of its grain prices was lower than that of Bruges. [Boone, M (1990), (1991)] Conversely it was also thought that the pattern of Ghent's annual grain price fluctuation had an intense similarity with those of other Flanders cities in spite of her grain staple. [Tits-Dieuaide, M.-J. (1973), (1984)] While these views are widely accepted, the question now arises; why there were simultaneous price fluctuations under the strong effect of the grain staple ? To answer this question it seems to be necessary to examine precise price movements and to examine the actual process of the effect of the staple on prices. However, the condition of late medieval price documents makes it difficult to conduct such a study. The number of the late medieval quantitative documents is

much smaller than those of the later centuries. In many documents the price records in the late middle ages are just a fragmental prologue of the following continuous data. Adding to this fragmentation, price data contained in these records are various in quality and in quantity. Some of this variety is caused by the individuality or peculiarity of each price recorded in these documents, indeed that is the very reason why the precise price analysis mentioned above is necessary. Even the prices recorded as sale or purchase prices in the market place were based on the particular seller-buyer relations, especially in the case of religious institutions. Adding to this, the market where these trades were made was subject to many social and political constrictions. So even in the case of prices in markets, individual recorded prices can not be said to be the market price as the term is used in modern economics.

The fragmentariness and variety of the price documents have been noted as a constraint of analysis. [Morineau M. (1968), Van der Wee, H. (1963a), (1968), Wijffels, A. (1957)] If these various price data are mingled, they produce only vague figures. On the contrary, if price data are classified based on their variety, the number in each category is so small and scattered in many cases that the normal statistical method can not be used. So there have been a number of attempts at making a proper data set for analysis, while there have been several studies on the appropriate statistical methods for interpreting the fragmental data that reduced the effectiveness of the standard methods of quantitative analysis. [Munro, J.H. (1975), Stier, W. (1989), Unger, R.W. (1983), Van der Wee, H. (1978), Van der Wee, H. Daems, H. and Van Cauwemberghe, E. (1971)] Consequently, the method of producing price documents has changed.

In the 1950s, when price history became again one of the main subjects of pre-industrial economic history, scholars tried to produce continuous yearly price time-series. For this purpose they sometimes combined price data from several kinds of documents. [Croisiau, G. (1959), Scholliers, E, (1960), Van der Wee, H., (1963)] Subsequently they often chose a single continuous document, the nature of which seemed to be less changeable, and published it with an examination of its characteristics. Most of the documents of this type were a kind of rent register, in which were recorded the rendering of rents in kind into money using a conversion price called "rentprijs," or the sale of grain levied as rents in kind which was derived from bargaining. [Van Uytven, R., (1961) Verhulst, A., (1965), Derville, A., (1977)] In the 1970s another type of price document was also published, which contained information of a detailed description concerned with prices. [Deblonde-Cottenier, E. Vandamme-De May, L. en Prevenier, W. (1973)] Thus there are few new publications of price data for the late middle ages and in most price analyses price data already published are used, although supplemental unpublished price data from original documents are used in some studies. [Bruneel, C. (1991), Thoen,

E. (1988).]

There seem to be several correlated reasons for this situation. First, macro-analysis is the main method of analyzing in Belgian price history, for which it is necessary to use continuous price data estimated as being the "market price" as used in modern economics. Based on work between 1950 to 1980, scholars have been able to produce continuous price data which are thought to have a 'similarity to the "market price". These studies have made clear that trend and pattern of price movements with which economic fluctuation can be estimated. [Munro, J. H. (1982), Van Cauenberge, E (1983), Vandenbroeke, C. (1982), Van der Wee, H. (1963b), (1965), (1975)] In this situation comprehensive document research beyond this previous work is not only time consuming but also increases the fragmentariness and variety of price data making it difficult to construct continuous time series.

Concerning the price data for Ghent, there are several published price data for late medieval and early modern Ghent [Croisiau, G. (1959), Wyffels, A. (1965), Deblonde-Cottenier, K. Vandamme-De May, L. en Prevenier, W. (1973); Toch, M. (1973)] in the most important published documents on pre-industrial Belgian prices and wages. [Verlinden, C. en Scholliers, E. (1959-1973)] [1] The grain price annual time-series of the fifteenth century published by G. Croisiau [Croisiau, G. (1959)] are used in several studies including the studies mentioned above. [Tits-Dieuaide, M.-J. (1973), (1987); Boone, M. (1989), (1991), Thoen, E. (1989)] These time-series of minimum and maximum prices and the arithmetic mean of the minimum and maximum prices of wheat, rye and oat were made from several types of religious institutional accounts. I have examined some fifteenth century religious institutional accounts in Ghent including those which Croisiau used, and found that the price data contained in these records is various in quality and in quantity adding to fragmentation. [Okunishi, T. (1991, 1992)]

In the case of the registers of Saint-Peter's Abbey, grain prices are found in rent records. The Abbey's income consisted mainly of money but some rent was still levied in kind. So grain such as rye, barley and oat was received as rent in kind and the conversion to money or sale of grain were made. On these occasions grain prices were recorded in various forms. Even in the same accounts there are various types of description and changes in the style of description occurred during the fifteenth century. In some records are mentioned the details of the methods of conversion but in other records only the volume of grain and the amount of money are mentioned. The style of description changed clearly in the 1460s in some

1) The record of rent levied on October 1st. in the register of "Pitancie" which I used in this paper contains the same data that A. Wyffels used in his work as rent price from the fragmental registers of Saint-Peter's Abbey.

accounts, such as the Account of "Aalmoezenie", "Infirmerie" or the rent accounts of the Land of Aalst. More precise descriptions of pricing decisions were begun to be made and also the precise use of measures by which local measures were converted to those of Ghent date from this time. In many accounts the difference between the conversion price and sale of rent in kinds are confused. There are changes in the use of the words for conversion, such as "verdingen", and sale, such as "verkopen", by time and by place. The relations between the type of description and price movements are also confused. Most of the conversion and sale prices fluctuated with some range but some of them were fixed at a low level for several years.

In the case of the registers of eight hospitals in Ghent, the price data are varied in quality and in quantity. In addition, the number of years for which these accounts survive is much less than those of Saint-Peter's Abbey. Hospitals in Ghent, whose income consisted mostly of the money rent and tenant fee, bought grain in the fifteenth century, although relatively large hospitals, such as Hebberechtshospitaal levied rent in kind too. They made bread from purchased wheat in general, although bread was bought by some hospitals in the second half of the century and many hospitals bought rye in the periods of shortage such as 1437-39 and 1491-92 and in the early fifteenth century.

There are differences among the purchases mentioned in the records. There are many records which contain limited information; in some cases only the sum of grain purchase was mentioned. There are also some records in which various items are mentioned; in addition to price, volume, the date of purchase of grain, the seller's name or the transport cost.

Based on the descriptions in these records, the grain purchases of the hospitals can be classified in several ways. We can categorize them into five types according to the place where the grain was bought: 1) purchase at the Grain Market or at the quay beside the Leie, 2) purchase at the hospital, in this case grain was brought by the seller, 3) purchase at a grain trader's storehouse, in this case grain was brought directly from there to the hospital, 4) purchase at some places outside Ghent such as Aalst and Axel, in this case some hospital's members went to that place to buy grain, 5) purchase without mention of location.

We can also categorize them into four types according to the person who sold the grain; 1) purchase from persons recorded as being the hospital's own tenant farmers pachter, 2) purchase from persons recorded as being the bakers who baked bread for the hospital, 3) purchase from persons recorded in name only, or recorded in name and by occupation such as farmer, 4) purchase without mention of the person's name. In addition, the information on transport cost is useful as it indicates the distance from the place of purchase to the hospital and other kinds of information can show details of grain purchases. As I wrote above, there are many records without these descriptions, the lack of these data is, however, a

source of information. No specification of the place and person seems to be evidence that a record of such information is of little importance. In other words, it seems that these purchases aren't special. Considered with other data such as transport cost, many of these unspecified purchases seem to have been made at the Grain Market or at the quay beside the Leie, as were normal purchases.

There is variety and change in these purchase types among the hospitals and through the fifteenth century. (Table I). There is a tendency for the number of the types of grain purchases to increase. According to the surviving records, in the early part of the century, the hospitals bought grain mainly at the market or the quay beside the Leie. In the middle of the century they began buying from their tenants or they also began purchases from bakers or directly from storehouses. Conversely, purchases at some places outside Ghent, and the purchase of rye diminished. There are also occasional peculiarities at times of high prices. In these periods, some hospitals bought small volumes of grain at several days interval according to the limitation of maximum volume, usually two halsters (1 halster = about 52.4 liter [Vandewelle, P. (1984)]), and in other cases they stopped buying in these periods.

This variety and scarcity makes it difficult price to aggregate, if we want to estimate the market price as the term is used in macro-economics. These primary data sources, however, are useful for examining the actual process of the staple effect on price. For this purpose I have produced some graphs of price movements from 1434 to 1504, with consideration of this variety, showing the character of fifteenth century price fluctuations in Ghent.

Sources

Fonds Sint-Pietersabdij Reeks I Rekeningen, II and Bisdom K
in Rijksarchief Gent(State Archives in Ghent)

Pitantie: Algemene rekeningen door de monnik pitantier.
Infirmerie: Algemene rekeningen door de monnik infirmerier.
Aalmoezenie: Algemene rekeningen door de monnik aalmoezenier.
Kwartier van Gent: Rekeningen van de heerlijke renten, cijzen en pachten door de ontvangers.
Kasselrij Oudenaarde: Algemene rekeningen door de ontvangers
Land van Aalst: Algemene rekeningen door de ontvangers.
Land van Waas: Rekeningen van het Land van Waas en Temse door de ontvangers.
Hebberechtshospitaal: Rekeningen van het Hebberechtshospitaal

* C. Marechal produced the inventory of the registers of Saint-Peter's Abbey in

1984 (C. Marechal, *Inventaris van de rekeningen van de Sint-Pietersabdij te Gent,* Brussel, 1984)

Fonds Bisdom - Sint-Baafs Reeks R 766, B 905-909
Sint-Anna Hospitaal: rekeningen van Sint-Anna Hospitaal

Reeks LIV, LV, LXIV, LXV, LXVI, LXIX in Stadsarchief Gent(City Archives in Ghent)

Sint-Janshospitaal: LXV 159-207(ex. 169,171)
Sint-Jakobshospitaal: LXIV 15-18
Wolweversgodshuis: LIV 454,455
Voldersgodshuis: LV 28
Godshuis van Sint-Jan en Sint-Pauwel: LXVI 27-30
Wenemaarhospitaal: LXIX 284

* I have listed the numbers of these registers in Table II and III.

Wheat and rye prices in Ghent from 1434 to 1504

At first, we can indicate the trends and pattern of grain price movements in this period in Graph I and Graph II. Graph I shows the fluctuation of the purchase price of wheat in the registers of six hospitals in Ghent. (except Sint-Janshospitaal and Voldersgodshuis). Graph II shows the fluctuation of the conversion or sale price of rye in the registers of Saint-Peter's Abbey and Graph III shows the change of silver contents in the contemporary coin of Flemish groat. (The vertical-axes in Graph I and II show price in Flemish Groats per Ghent's halster and the horizontal axes give the years.) In Graph I, each dot represents the weighted annual average price of each hospitals. (HH, SA, SJB, WW, SJP and WN denote Hebberechtshospitaal, Sint-Anna Hospitaal, Sint-Jacobshospitaal, Wolwevershospitaal, Godshuis van Sint-Jan en Pauwel and Wenemaarhospitaal respectively and the number in parentheses represents the month when each hospital's financial year began.) The thick and broken lines show the annual highest and lowest price respectively. In Graph II each diamond shows the rye price of each yearly rent and the thin line connects the prices of the same items. The grain price movements indicated in Graph I and II show a trend similar to that which the previous work had made clear but also demonstrate some figures which are unknown.

There were markedly high rises in the late 1430s in both prices. The peak prices of wheat and rye were about 50 and 40 groats. After this prices decreased gradually until the middle of the 1450s, during which time the wheat price had a rapid rise in 1452 when Ghent revolted against the Duke of Burgundy. Then

there was a sharp rise in 1455 and prices gradually declined until 1463. Then prices began increasing slightly and there were the periods of marked high prices, twice in the 1480s and once in the early 1490s. The peak prices of wheat and rye were about 90 and 60 groats. The high prices in the 1480s were particularly related to the serious debasement in that period which Graph III and Table IV show. Then there was a big drop in prices and a gradual increase followed. Finally there was also a small rise in the early 1500s. As a trend, grain prices decreased from the 1430s to the 1460s and increased steadily after 1463. It is clear that this price increase was connected with the debasement in this period but price began increasing before debasement began.

Graphs I and II show also some interesting figures of price movements. First, the price range during a year was narrower in the 1460s and 1470s than in other periods. Adding to this, only in these periods was there no rye price that was fixed steadily. Second, the annual average prices paid by hospitals sometimes show differences according to the month when the financial year began. Finally, the wheat price, which was the purchase price, and the rye price, which was the conversion or sale price, had very similar tendencies and patterns except the movement in 1452.

The movements of daily prices are indicated in the following graphs. The price movements in the periods of high prices are indicated in Graphs IV. V, VI, VII, VIII, IX, X. The price movements in the periods of normal prices are indicated in Graphs XI, XII, XIII, XIV. In these graphs the following black symbols denote the different types of wheat price for which the purchase date was recorded; black circle = purchase at the Grain Market or the quay beside the River Leie, black diamond = purchase from a person whose name was recorded, black triangle = purchase from the hospital's tenant farmers, black square = purchase outside Ghent, short line = non-specified purchase, plus sign = purchase from a baker, cross sign = purchase at the hospital. White circles denote the price of rye that hospitals bought with a record of its purchase date and white diamonds denote the conversion and sale prices of rye for which the levied date was recorded; Sept. 17, Oct. 1, Nov. 1, Nov. 11, Dec. 24 or 25 and Feb. 2. I later write these prices simply the rent price. Finally, vertical broken lines denote the range of the maximum and minimum purchase price of each hospitals in the case that they mentioned few data in the periods of high prices and horizontal and curved broken lines denote the purchase price for which the date was estimated roughly.

First, Graph IV shows that wheat and rye prices rose from February 1437 to August 1438 and that the price was steady at a high level until August 1439. In that period hospitals stopped buying grain so there are few wheat price data. Then there was a rapid drop in prices in the summer of 1439.

Graph V shows that only the wheat price rose and fell during, 1452, the

harvest year when the revolt of Ghent occurred, as mentioned above. The only item of data for which the purchase date was recorded was the price of wheat purchased at the Grain Market in August 1453 and the peak price was about 35 groats. But the wheat price had already decreased by the autumn of 1453. For the rent price of rye there was no rise, but some of the rent in rye which could not be levied in the harvest year, 1452, was levied in the next harvest year, 1453 so that two year's rents were levied at one time at the price of 1453. It is clear that the revolt of Ghent affected the selling and buying at the market and the payment of rent in grain. Although it is also clear that the revolt had an effect on the purchase price, it is not easy to say whether the effect on the rent price was weak or the price rose only in the period between the seasons of levying rent.

Graph VI shows another pattern of price rises. There was a steep price rise from the early spring to the winter of 1455-56 following the very slight rise in the harvest year 1454. In the next three years the price gradually declined with seasonal fluctuations such as the short rise in the autumn of 1456 and 57. In this period both the purchase price of wheat and rent price of rye display similar patterns.

Graphs VII and VIII show high prices in the early and late 1480s when Flemish cities revolted against Maximilian I of Hapsburg and when severe debasement also occurred. In this period there were many rents which could not be levied for several years because of warfare. There are no records of purchases of small volumes made at intervals of several days that were made in other periods of high prices and there were several purchases, of large volumes, direct from grain storehouses. Unfortunately most of the purchase records lack a date, so we can see the price movement only sketchily. In the first half of the 1480s, the purchase price of wheat seems to have risen in the summer of 1481 and it rose to a peak in the harvest year 1482, then it gradually declined. In the case of the rent price of rye, including prices without the levied date the price level of 1481 was higher than that of 1482. Subsequently the purchase and rent prices seem to have increased gradually from the autumn of 1485 to the winter of 1489-90 and then dropped sharply. Concerning the price level, we must think of the effect of debasement particularly in the second half of the 1480s.

Graph IX shows the highest price rise of the century which occurred from 1490 to 93. The purchase and rent prices rose rapidly from the autumn of 1490. The purchase price of wheat rose to about 90 groats in the autumn of 1991 and after that hospitals stopped buying wheat until the winter of 1492-93. Then they bought rye in the harvest year 1491 and the vertical thick line in July 1491 shows the range of the purchase price of rye bought by Sint-Jacobshospitaal. The purchase and rent prices of rye continued to rise until the spring of 1492 when they rose to about 80 groats. There was no price data in the following period

until the autumn of 1492. At that time the price level had fallen to about 40 groats, then prices gradually decreased. Although there were few data, the fall in price seems to have been rapid in the beginning for the peak price was very high and the span between the peak and the level of 40 groats was relatively short. Concerning the different types of prices, wheat prices were higher than rye prices except in the autumn of 1492 when both prices were at the same level. The purchase prices of rye were at the same or a little above the level of the rent prices of rye and most of the prices of wheat purchased at the hospital were little lower than those at the Grain Market.

Graph X shows that the price rise in the first half of the first decade of the sixteenth century was the very similar to that of the second half of the 1430s. Wheat and rye prices rose from February 1501 to November 1501 and the price rose steadily until August 1503. Then there was a rapid drop in the summer of 1503. The seasons of rise and fall and the span and pattern of the periods of high prices was nearly the same, although the price level was lower.

Next we examine the price movements in the periods of normal prices. Graph XI shows the declining trend of prices, with seasonal fluctuation, in the first half of the 1440s. The purchase price of wheat rose in the last period of the season between the harvests and fell gradually following the harvests time except in the harvest year 1452. Although there were no data of the rent price of rye between harvests, the rent price also gradually decreased with a serrulated pattern. Graph XII shows the price movements in the first half of the 1460s when the price level was at its lowest point in the fifteenth century. Price declined gradually until the autumn in 1463 and then price increased gradually. In this period there was a difference between the price of wheat purchased from the tenant farmers and that purchased at the Grain Market or purchased from other named persons. The former was more stable and a little higher than the latter. In the harvest year 1464, however, the purchase price at the Grain Market increased steadily and became a little higher than the purchase price from the tenant farmers in the winter 1464-65. Graph XIII shows the price movements in the first half of the 1470s. In this period both the purchase price from tenant farmers and the rent price were steady in each harvest year, except in 1475, and the yearly price level changed in a narrow range. Graph XIV shows the price movements in the second half of the 1490s. In this period prices rose gradually until the winter of 1497-98, then fell gradually.

Conclusion

The features that are distinguished in those graphs lead to the conclusion that there were several patterns of price movements in periods of high prices and in

periods of normal prices. The former can be classified into three types: 1) a gradual rise followed by a steady, high level and a sharp fall; 2) a rapid rise and a gradual fall; 3) a sudden rise in the short term. The rise in the first half of the 1490s seems to be of the second type although the fall in prices at its beginning seems to have been rapid. The movements in periods of normal prices can be classified into three types: 1) gradual change, which had in some cases a serrulated pattern, with a rise in the last period of the season between harvests; 2) a fixed price in each harvest year; 3) continuous change over several years.

There are several studies of the price movement pattern and it has already been said that the grain stock in Ghent, and strong control, caused the rapid fall after the periods of high prices but these variations in price movements are not identified clearly in previous studies. However it is clear that a change in the price movement pattern was related to the structural changes in grain circulation. For example, Ghent lost several privileges after its defeat in 1452, when a short term price rise occurred. The price movement in the second half of the 1430s before the revolt was of type I of the periods of high prices and the price movement in the second half of the 1450s just after it was of type II. It seems that the grain stock in Ghent and strong control caused the rapid fall after the period of high prices before Ghent's defeat, while conversely the gradual decline was caused by a grain stock-shortage and weak control of circulation after that.

Needless to say, it is necessary to study various elements of grain circulation, of which price movements are only one element. However it is also clear that examining the details of price movements is one of the most important ways to study grain circulation structure.

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* including related literature

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TABLE I Purchase Type

Hospital name	Hebberechts.	St. Anna	St. Jans.	St. Jacobs.	Wolwevers.	St. Jan-Pauls.	Volders.	Wenemaars.
	F.S.P.R.r.l	F. B.	LXV	LXIV	LIV	LXVI	LV	LXIX
year	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb
1434-35				t				
1435-36	t		U	t				
1436-37	U		U	t				
1437-38	LUS	M U O	U	t				
1438-39		US O	U	t				
1439-40		ML O	U	U O				
1440-41		M U O	U	U O				
1441-42		M O	U	U				
1442-43		M O		b				
1443-44		M U		U O				
1444-45		M		U				
1445-46	S	M		U O				
1446-47		M		U O				
1447-48		M U O		US O				
1448-49		M		U				
1449-50	M S	M		U				
1450-51	M S	M O		U				
1451-52	M S	M U		M U				
1452-53		M		U P				
1453-54		MLUS		U P				
1454-55	U	M		U				
1455-56		M	LU	US PO				
1456-57	U	U	LU		U			
1457-58		t		U P	t			
1458-59		U O			t			
1459-60		M			t			
1460-61	M US	t			t			
1461-62	S	t		U P	t			
1462-63		t		P	t			
1463-64		t		M P	t			
1464-65	US	t		M P	t			
1465-66	S	t		P				
1466-67		t		M P				
1467-68		t		P	U			
1468-69		M		S P	t			
1469-70		M		P				
1470-71	S	M		S P	b			
1471-72		M		HP				
1472-73	S	M		P				
1473-74	S	M		P		b		
1474-75		M			U B b			
1475-76		M		P	B b			
1476-77		M			b			
1477-78				U	U b		b	
1478-79					b		b	
1479-80						B	b	
1480-81						M U	b	
1481-82					U		b	
1482-83	U					U OB	b	

Hospital name	Hebberechts.	St. Anna	St. Jans.	St. Jacobs.	Wolwevers.	St. Jan-Pauls.	Volders.	Wenemaars.
	F.S.P.R.r.l	F. B.	LXV	LXIV	LIV	LXVI	LV	LXIX
year	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb	MLUSHPOBtb
1483-84	U				U	B	b	
1484-85				S P			b	
1485-86							b	
1486-87				S P	S	U	b	
1487-88				S	b	U B b	b	
1488-89				U P	t	U B b	b	
1489-90		B		U	L S	H	b	
1490-91		B		U	S	U	b	
1491-92		B			S B	US	b	
1492-93		B					b	M H
1493-94	M S	B				b	b	M USH O
1494-95	S P					b	b	M SHP
1495-96						b	b	M SH
1496-97	P B			U	U	b	b	M US P
1497-98		b		US O		b	b	M HP
1498-99		P b		S P	U	b	b	M US P
1499-1500		b					b	
1500-01	P B	b		M P	U	b	b	U
1501-02		P b		US P	U	b	b	
1502-03	M P B	S P b		M US P		b	b	U
1503-04	S P B	S P b		M US P		b	b	U
1504-05	M P B	S b				b	b	U

M=Grain Market U=unspecified L=Lye S=specified
H=at hospital P=from tenant farmer O=outside Ghent B=from baker
b=as bread t=total

TABLE II Hosp. register number

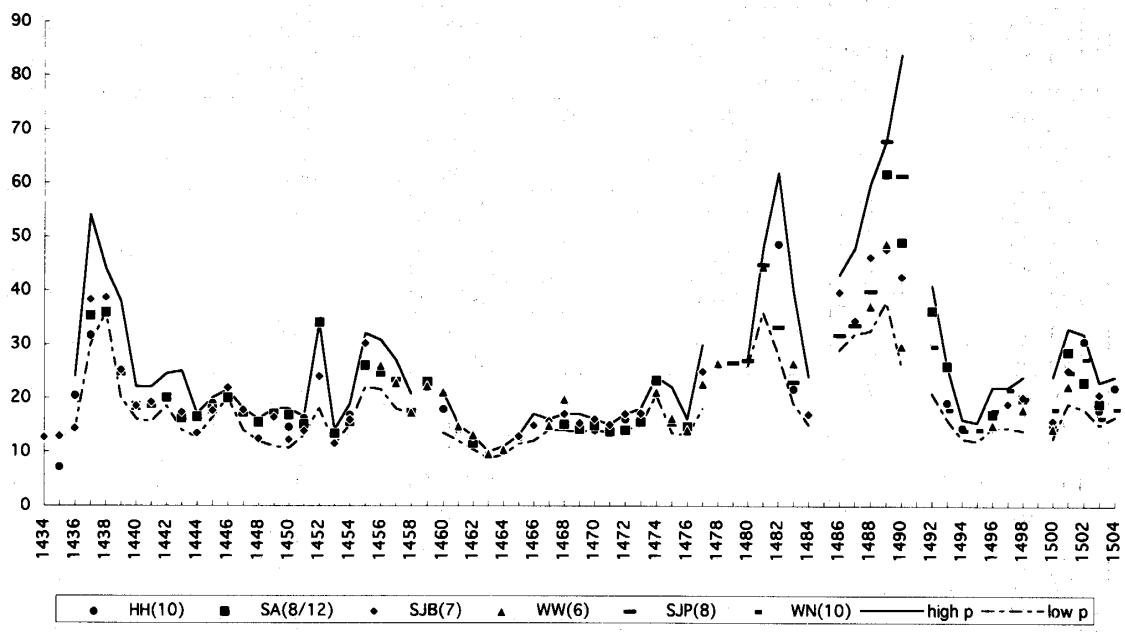
Hospital name	Hebberechts.	St. Anna	St. Jans.	St. Jacobs.	Wolwevers.	St. Jan-Pauls.	Volders.	Wenemaars.
year/RN	F.S.P.R.r.1	F. B.	LXV	LXIV	LIV	LXVI	LV	LXIX
1434-35			199	15				
1435-36	1040		198	15				
1436-37			191	15				
1437-38	1041	R766	190	15				
1438-39	1080	R766	189	15				
1439-40	1081	R766	188	15				
1440-41		R766	187	15				
1441-42		R766	186	15				
1442-43		R766	185	15				
1443-44		R766	184	15				
1444-45		R766	183	15				
1445-46	1042	R766	182	15				
1446-47		R766	181	15				
1447-48		R766	180	15				
1448-49		R766	179	15				
1449-50	1043	R766	178	15				
1450-51	1044	R766	177	16				
1451-52	1045	R766	176	16				
1452-53		R766	174	16				
1453-54		R766	175	16				
1454-55	1046	R766	173	16				
1455-56		R766	172	16				
1456-57	1047	R766	170	16	454			
1457-58		R766	168	16	454			
1458-59		R766	167		454			
1459-60		R766/B905			454			
1460-61	1048	B905	166					
1461-62	1049	B905		16	454			
1462-63		B905		16				
1463-64		B906		16	454			
1464-65	1050/1	B906		16				
1465-66	1050/2	B906		16				
1466-67		B906						
1467-68		B907	165	16	454			
1468-69		B907	164	16				
1469-70		B907		16				
1470-71	1051	B907	163	16	454			
1471-72		B907		16				
1472-73	1052	B907		16				
1473-74	1111	B907		16		27		
1474-75		B907	162		454			
1475-76		B907		16	454			
1476-77		B907			454			
1477-78		B907	161	17	454		28	
1478-79					454		28	
1479-80						27	28	
1480-81					454		28	
1481-82					454		28	
1482-83	1053					27	28	

Hospital name	Hebberechts.	St. Anna	St. Jans.	St. Jacobs.	Wolwevers.	St. Jan-Pauls.	Volders.	Wenemaars.
year/RN	F.S.P.R.r.l	F. B.	LXV	LXIV	LIV	LXVI	LV	LXIX
1483-84	1054				454	27	28	
1484-85				17		27	28	
1485-86			160				28	
1486-87				17	455	27	28	
1487-88				17	455	27	28	
1488-89		B908		17	455	27	28	
1489-90		B908		17	455	27	28	
1490-91		B908		17	455	28	28	
1491-92		B908		17	455	28	28	
1492-93		B908					28	284
1493-94	1055	B908				28		284
1494-95	1056					28	28	284
1495-96			159			28	28	284
1496-97	1057			17	455	28	28	284
1497-98		B909		17		28	28	284
1498-99		B909		17	455	28	28	284
1499-1500		B909				29	28	
1500-01	1058	B909		18	455	30	28	284
1501-02		B909		19	455	31	28	
1502-03	1059/1	B909				32	28	284
1503-04	1059/2	B909		20		33	28	284
1504-05	1060					34	28	284

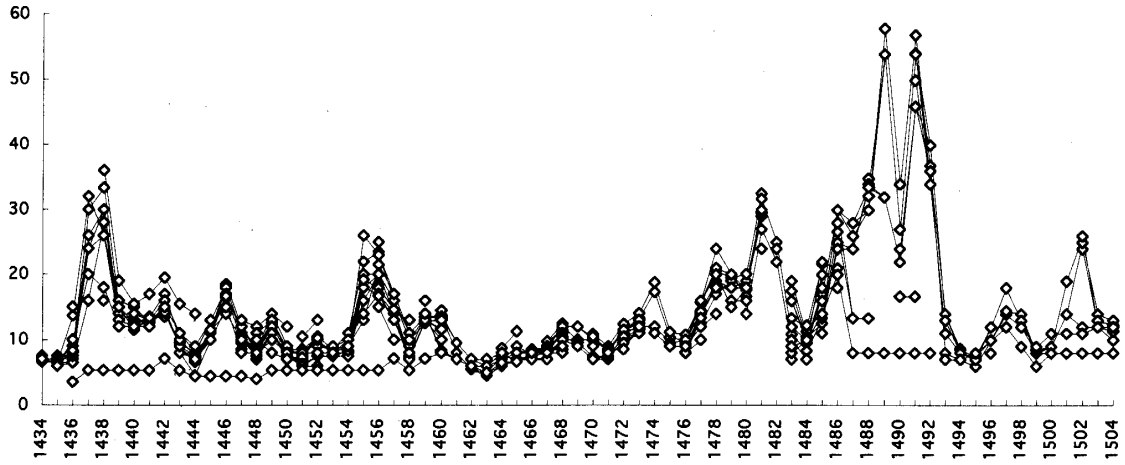
TABLE Ⅲ Register number of St-Peters Abbey

St. Pietersabdij rekenigen							
year/name	Pitancie	Infirmrie	Aalmoezenie	K. v. Gent	K. Oudenaerde	L. v. Aalst	L. v. Waas
1434-35	1642	1252		1873/1	570		
1435-36	1694	1253		1873/2	571		2140
1436-37	1695	1254		1873/3	572	28	2141
1437-38	Ⅱ202/1	1255		1873/4	573	29	2142
1438-39	1696	1256			574	30	Ⅱ286/4
1439-40	1697	1257/1		1640	575	K8054	2143
1440-41	1698/1	1258		1641	576	31	
1441-42	1698/2		673	1874	577	32	2147
1442-43	1699	1259		1642	578	33	
1443-44		1260	674	1200		34	
1444-45		1261	675	1675	580	35	
1445-46	1700	1262	676	1875/1	K9540	36	38
1446-47	1702	1263		1875/2	581	37	2144
1447-48	1703	1264	678		582	38	2146/1
1448-49	1704	1265	679	1876	583	39	
1449-50	1705	1266	680	1876/1	584	40	
1450-51	1706	1267	681		585	41	
1451-52	1707	1268			586	42	
1452-53	1709	1269/1	682		*586	43	2148
1453-54	*1709	1270	*682		587	44	*2148
1454-55	1711	1271	683		589	45	2150
1455-56	1712/1	1272	684		590	46	2151
1456-57	1713	1274	685	1876/2	592	47	2152
1457-58	1714	1275	Ⅱ169/2		593	49	2153
1458-59	1715	1276/2		1876/3	594	52	2154
1459-60	1716	1278/2	686		595	53/1	2155
1460-61	1717	1279/1		1876/4	516	53/2	2156
1461-62	1718	1280/1				54	2157
1462-63	1719	1281/1		1876/5	Ⅱ909/2	55	2158
1463-64	1721	1282/2		1876/6	597	56	2159
1464-65	1722	1283/1	688	1876/7	636	58	57
1465-66	1723	1284/1	689	1876/8	637	2161	2160
1466-67	1724	1285/3		1877	638		2163/1
1467-68	1725	1285/1	690,691	1172/1	639	59	2164
1468-69	1720	1286/1	692	1172/2	640	60	2165
1469-70	1726	1286/3			599		
1470-71	1720	1287	693	1173	642		
1471-72			1994	1196	600	61	2167
1472-73		1288	694	1174/1	601	62	
1473-74		1289/1	696	1174/2	519	63	
1474-75		1289/2	697			64	2168
1475-76		Ⅱ231/1	698			65	2169
1476-77		1291	699	1175	520	67	2174
1477-78	Ⅱ202/3	1292	1995	1190	521	68	2170
1478-79		1293	700	1176/1		69	2171
1479-80	1727	1294	702	1176/2	517	70	
1480-81	1728	1295	703	1882	518		2172
1481-82	1727	1296	*704	1883	522		2173
1482-83		1297			523		2175
1483-84	1727	1298	705	1883/1	525	71,72	2176

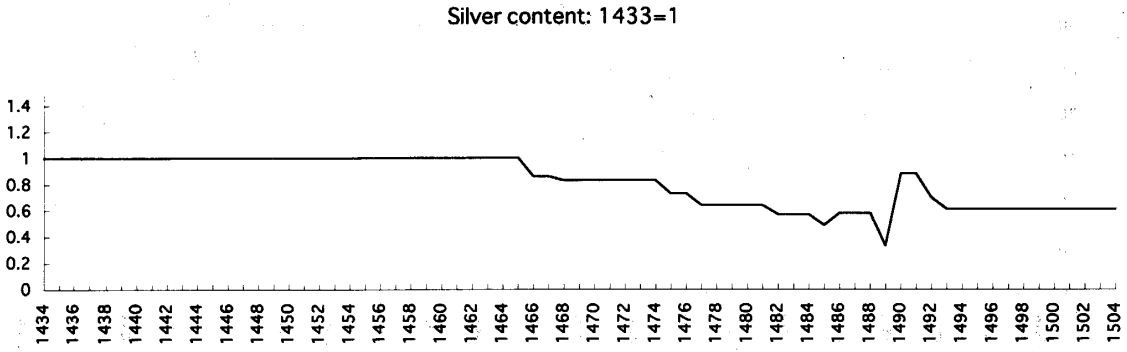
St. Pietersabdij rekenigen							
year/name	Pitancie	Infirmrie	Aalmoezenie	K. v. Gent	K. Oudenaerde	L. v. Aalst	L. v. Waas
1484-85	1732/1	1290	706	1883/2	524	73	2177
1485-86	1727	1290		1883/3	977	74	2178
1486-87	1727	1299/1-2		1883/4	603	2162	2179
1487-88	1727	1300	707	1883/5	602		
1488-89	1727	1301		1883/6	604		2180
1489-90	1727	1302		1884	605		2180
1490-91	1734	1303	707	1884/1	612		2180
1491-92	1734		707	1884/2	606		2180
1492-93	1734	1305		1884/3			2180
1493-94	1732/2	1306	707	1884/4		75	2180
1494-95	1735			1884/5	607	*75	
1495-96	1736	1290		1884/6	611	76	
1496-97	1737			1164	608	77	2182
1497-98	1738	1309		1884/7	609	II 286/6	
1498-99	1740/1			1884/8	554	78	
1499-1500	1733,1740/2	1310		1884/9	II 910	79	2181
1500-01	1741			1885	613	80	2183
1501-02	II 202/4			1161	614	81	2184
1502-03	1742			1885/1	708	82	2185
1503-04	1743	1311	709/1		615	83	2186
1504-05	1744	1312	709/2	1885/2	616	84	*2186



GRAPH I Purchase Price (Wheat) : 1434-1504



GRAPH II Rent Price (rye) : 1434-1504

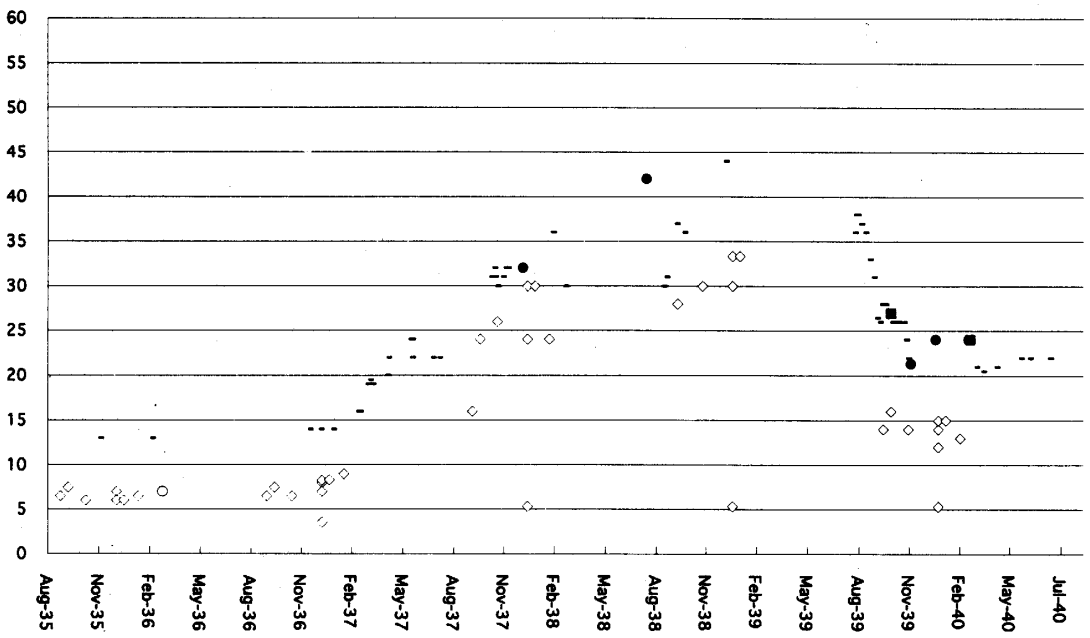


GRAPH Ⅲ Silver Coin : 1434-1504

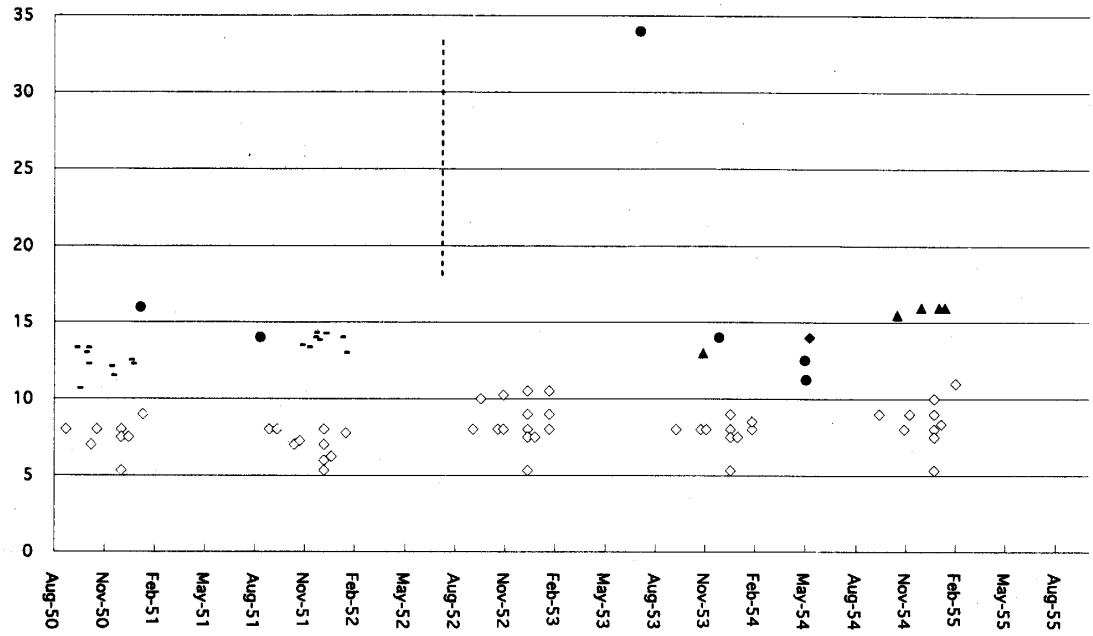
TABLE Ⅳ Silver content in Flemish coin

mint date	total (g)	pure silver (g)	unit	ratio to 1433
1433/10/15	1.6997	0.8143	1 Groot	1
1466/5/23	1.7608	0.7031	1 Groot	0.86
1468/1/23	1.8827	0.6766	1 Groot	0.83
1475/3/8	1.8683	0.5967	1 Groot	0.73
1477/12/20	1.8683	0.5222	1 Groot	0.64
1482/7/18	1.8683	0.4663	1 Groot	0.57
1485/8/6	1.8683	0.5967	1.5 Groot	0.49
1486/2/21	1.8683	0.4725	1 Groot	0.58
1489/6/23	1.6209	0.2777	1 Groot	0.34
1489/7/9	1.4148	0.2636	1 Groot	0.32
1489/11/26	2.9488	0.7372	3 Goten	0.3
1490/12/19	1.79965	0.7186	1 Groot	0.88
1492/3/24	1.7865	0.5706	1 Groot	0.72
1493/11/20	1.7865	0.4993	1 Groot	0.61

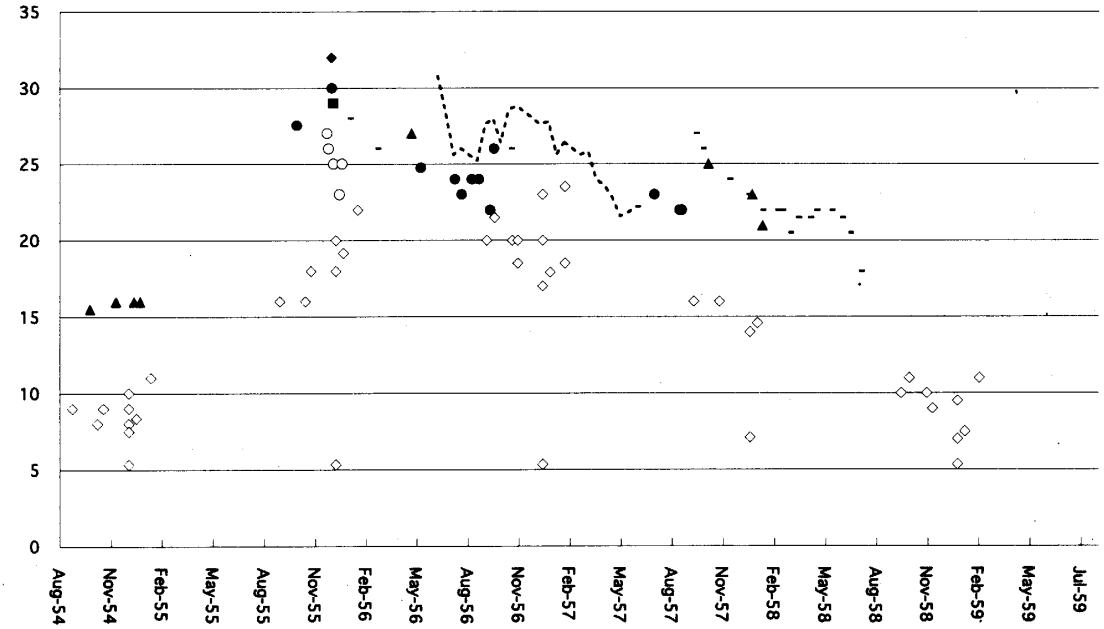
source; E. Aert en H. Van der Wee, Vlaams-Brabantse Muntstatistieken, Leuven, 1985, deell, pp.75-77.



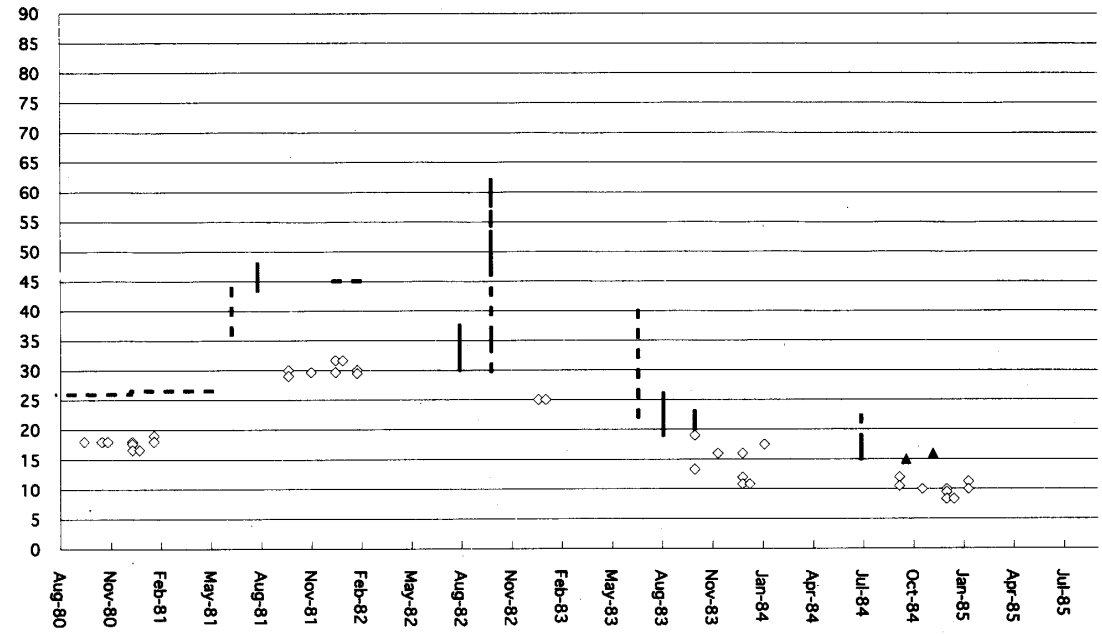
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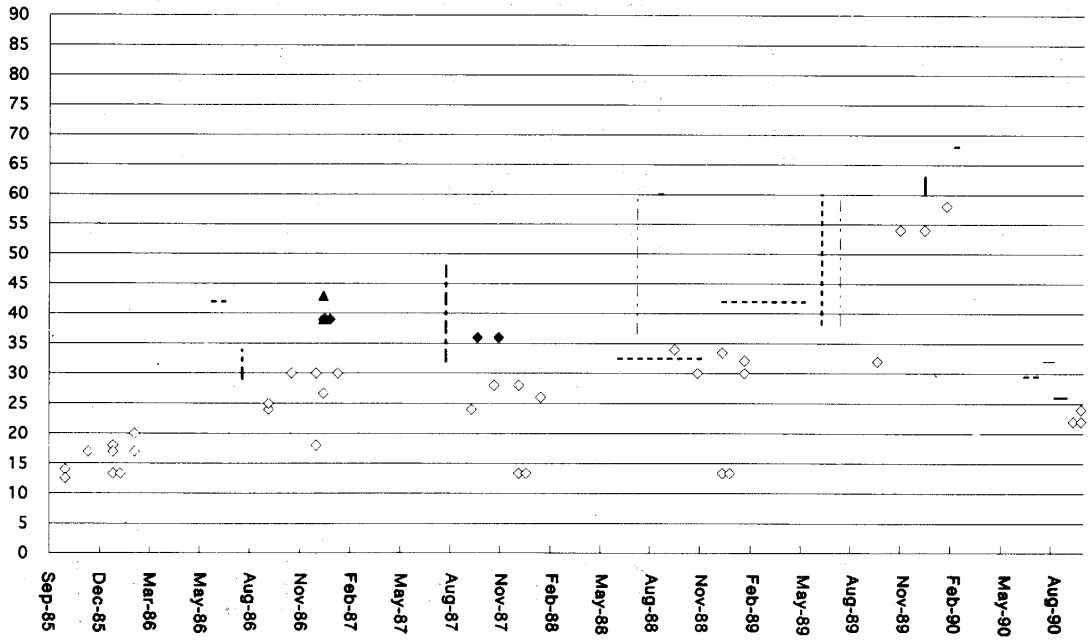
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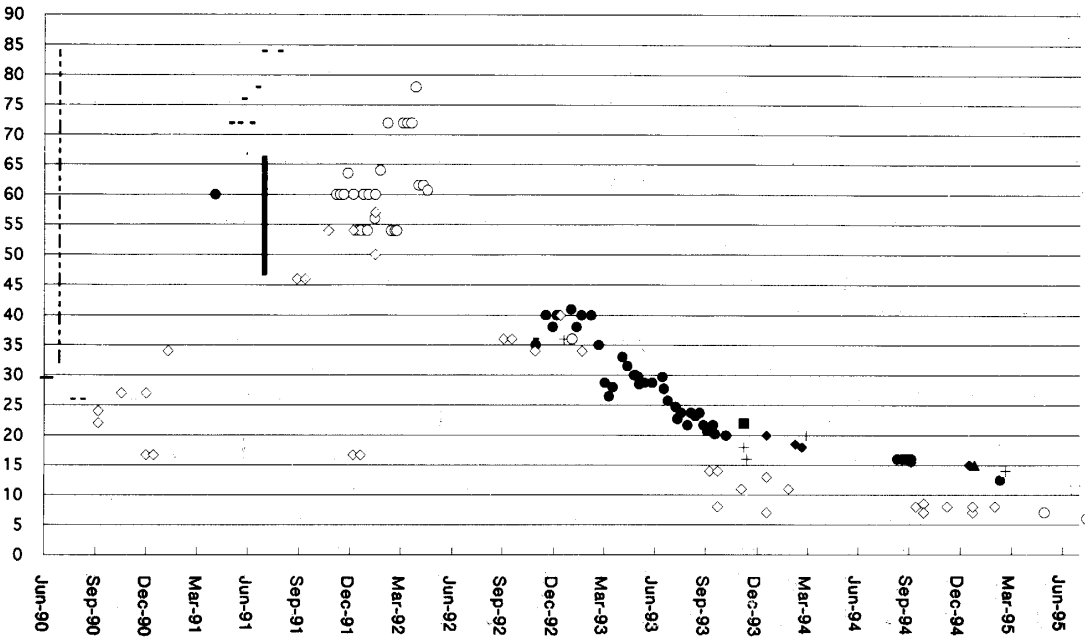
GRAPH VI 1454-59



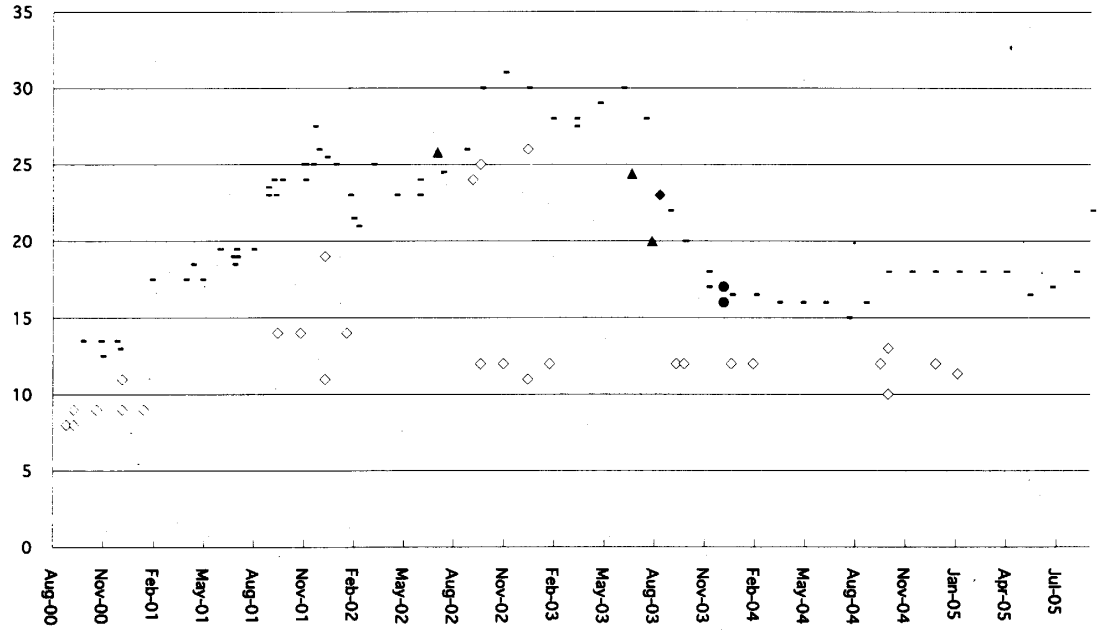
GRAPH VII 1480-85



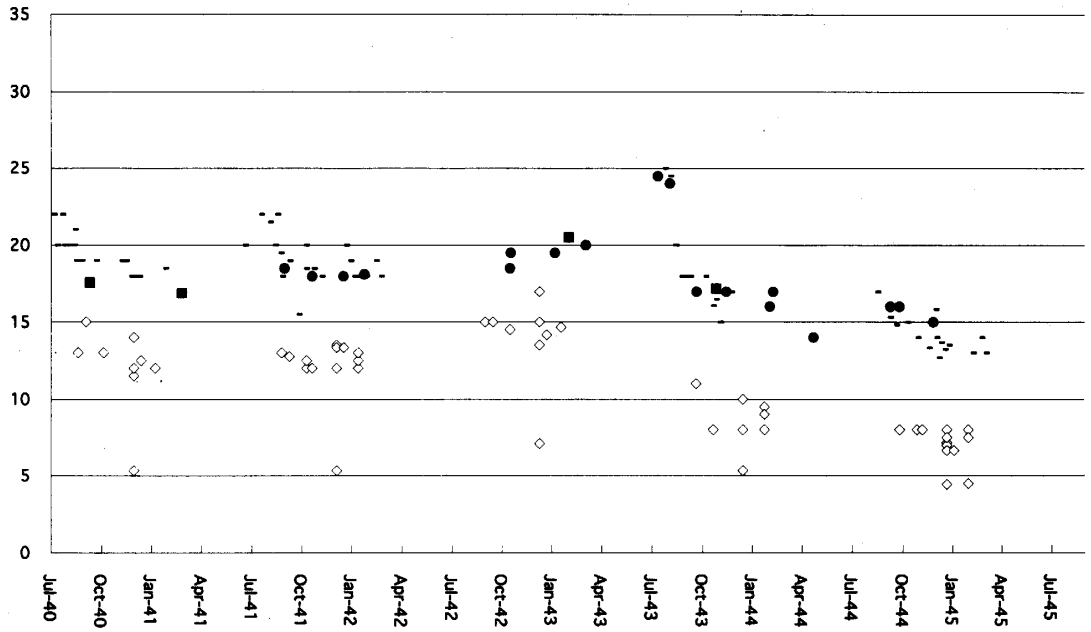
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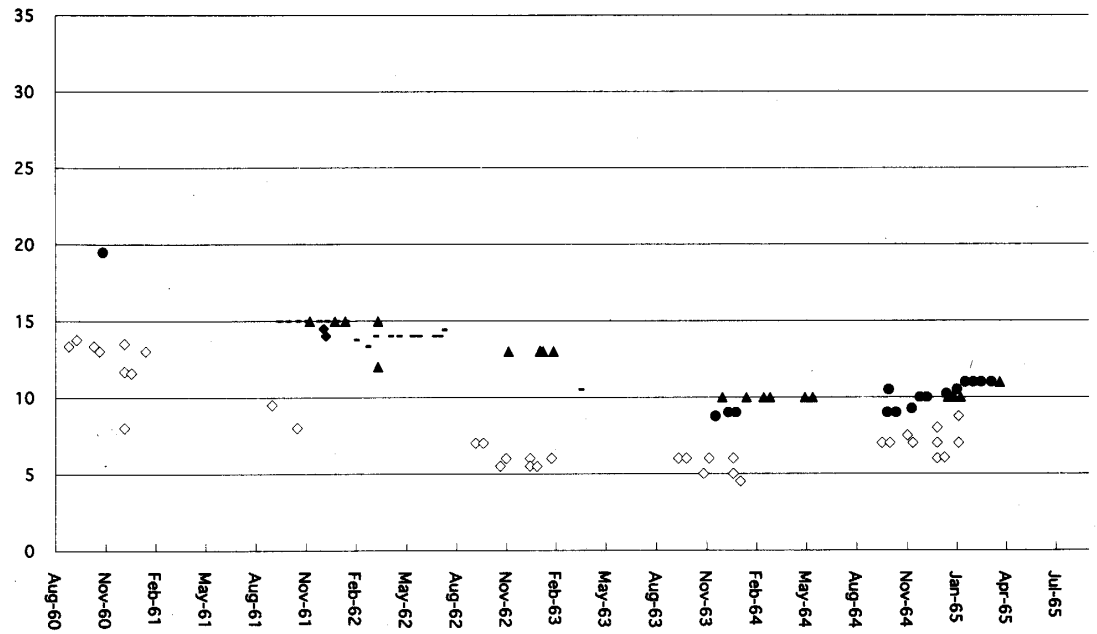
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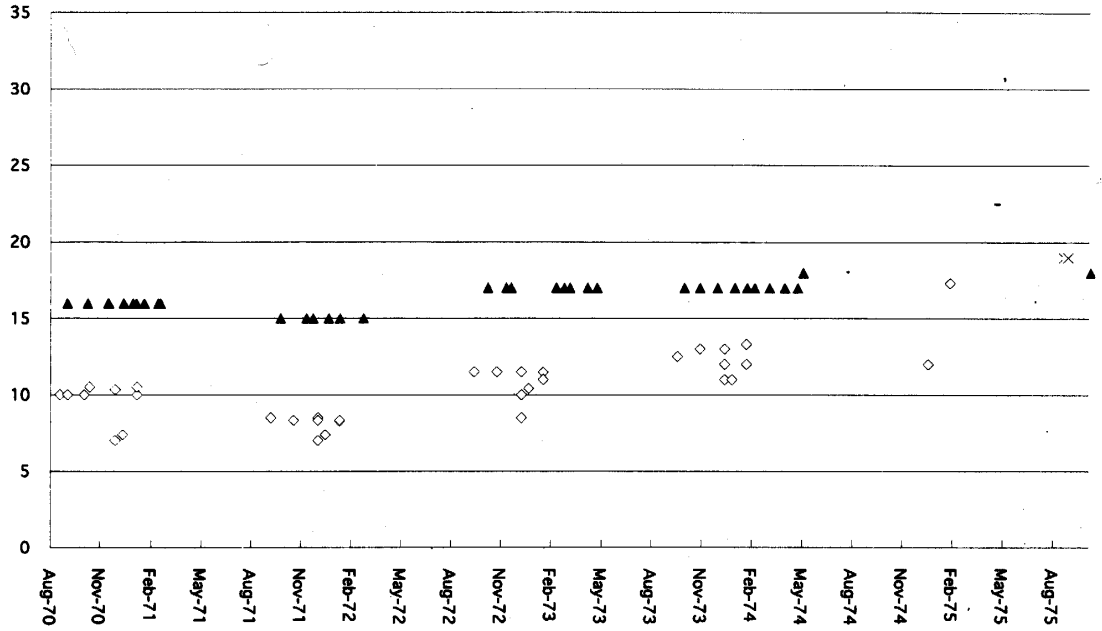
GRAPH X 1500-05



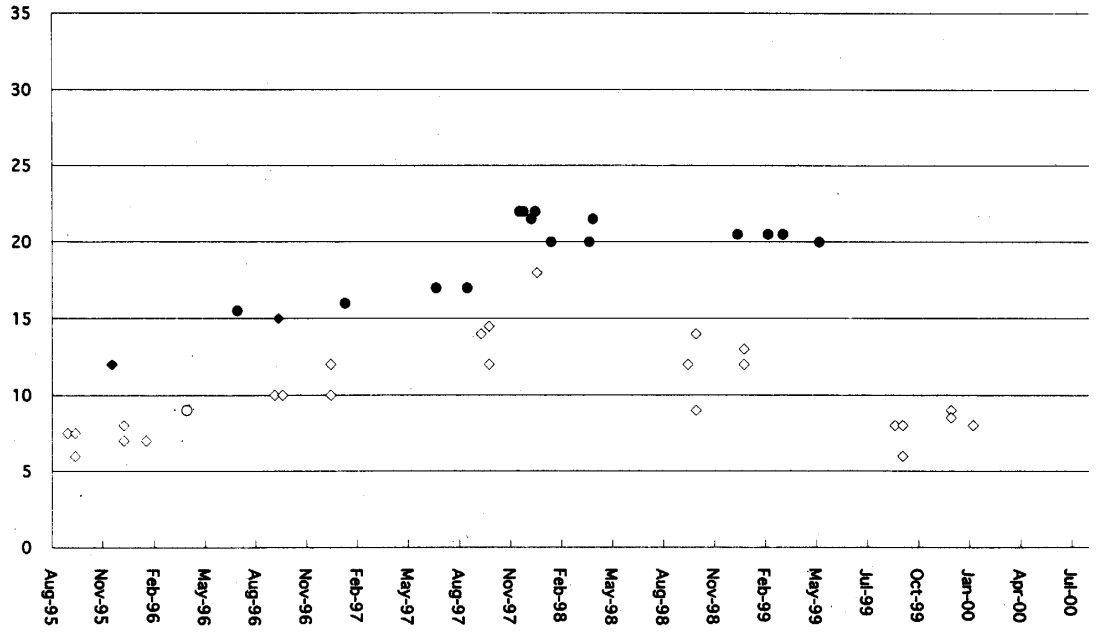
GRAPH XI 1440-45



GRAPH XII 1460-65



GRAPH XIII 1470-75



GRAPH XIV 1495-1500