

BANK OF FINLAND
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**PATTERNS OF POPULATIONS OF SELECTED AGGREGATES
IN THE CURRENT ACCOUNT**

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1. PURPOSE OF THE STUDY

The purpose of this paper is to examine populations of active enterprises in the selected aggregates of the Current Account during the first half of 1995. Current Account is divided into six sub-items:

1. Merchandise
2. Transport
3. Other services
 - construction
 - planning and project implementation
 - repairs
 - advertising, marketing, films and TV programmes
 - processing and contract manufacture
 - commissions, agent's fees etc.
 - other
4. Factor incomes
 - patents, licences, royalties and franchises
 - wages and salaries
 - insurance premiums and indemnities
 - leasing
 - investment income
5. Private and official unrequited transfers
6. Travel

The above Balance of Payment items are further divided into payments to and from EU-countries and other countries. The aim of the paper is to study how the distributions in EU- and non-EU populations differ in various current account items (Table 1). The cumulative distributions of the values of transactions by enterprise are employed to reveal the degree of concentration in the enterprise populations (Charts 1 -5). Also the skewness and the kurtosis estimates of the logarithmic enterprise distributions are calculated (Table 2, Charts 6 - 10). The skewness statistics are positive when most of the empirical probability density of the distribution is on the left side of the average and the tail of the distribution on the right side. The more positive the skewness is this means in practise that there are more small

firms involved. The interpretation of negative skewness is just the opposite.

Short term stability (changes from month to month) of the cumulative distributions of the populations in early 1995 are also examined (Charts 11 - 28).

Calculations concerning travel cannot be compared with other items because in travel the resident usually refers to the reporting bank which reports the payments of actual residents in lump sums.

The reader is invited to become familiarized with the numerous charts in the appendix describing the distributions of various populations. To simplify the tables and charts, the following notation is employed.

EU-EXP = payments from EU
 OTH-EXP = payments from other countries
 EU-IMP = payments to EU
 OTH-IMP = payments to other countries

2. THE DATA

The data for this study is collected from the Bank of Finland's Foreign Payments Database, which includes all foreign payments effected by residents. The payments less than 50 000 FIM are reported in lump sums. The data are thus a census.

All compilers of the Balance of Payment statistics using settlement systems are familiar to the problems of the data. Most likely those do not have notable effects on the results reported in this paper. Accordingly, the data can be considered to be of the same quality as in other settlements using countries. Below listed are the most common problems.

Reporting by even some large firms may be delayed considerably. The reliability of the data classified by payment codes is not fully satisfactory. Moreover, the country codes, by which the breakdown to EU and other countries is made, are determined according to the country of payment, not by the residency of the foreign counterpart. In travel, the country of counterpart is defined by the currency.

This study covers the period from January 1995 to May 1995; on factor incomes and unrequited transfers data were collected also beginning from July 1994. For more general conclusions, this or corresponding study must be repeated with a few years intervals.

Since the data are so complete and large, practical problems in dataprocessing are obvious. If

more dimensions (more geographical details) are added, the processing becomes even more complicated. To overcome this in the forthcoming studies, sampling must be employed.

3. ANALYSIS BY SELECTED ITEMS

3.1. MERCHANDISE

The EU-exports and -imports are some two thirds of total exports and imports. EU-exports are more concentrated than EU-imports, 20 biggest exporting firms making up some 50 % of the total value of exports to EU, whereas the proportion of the 20 biggest importing firms of the total value of imports from EU is only 25 %. Even though the total value on non-EU exports is clearly smaller than the respective EU figures, the number of active export firms to both region is almost the same. In imports, the number of active EU importing firms is high displaying the lowest degree of concentration (Table 1).

The cumulative distributions confirm the above observation, the of imports from EU being clearly different from others in merchandise. Accordingly, calculated from the log-values of the enterprise data, the skewness statistics of non-EU exports and imports have larger positive values than the respective EU-figures. In practise this means that the amount of small firms is larger in the non-EU classes.

The populations within exports and imports are also fairly stable; 319 of the 500 biggest exporting firms had transactions each month during January 1995 - May 1995. Of the 500 biggest importers 292 had transactions each month during the same time.

3.2. TRANSPORT

The number of active enterprises in transport in various areas is only a few hundred. EU exports and imports account for some 60 per cent of the global values. The same applies also for the number of enterprises (Table 1). The cumulative distributions are fairly similar in all cases, the 100 largest enterprises accounting over 95 per cent of total values. However, all four populations are positively skewed, and the non-EU population slightly more than the EU-populations. In practise this means more smaller firms. The populations do not vary considerably from month to month during the early 1995.

3.3. OTHER SERVICES

EU-trade in other services accounts for 60 per cent of the total trade. Number of active enterprises in other services is more than thousand in each of four classes studied. The number enterprises active in service trade to and from the EU area is some 30 per cent larger than to and from other countries. The 100 largest enterprises account for more than 70 per cent of exports to both EU and other countries, imports being slightly more concentrated but without large difference between EU and non-EU area.

The group of enterprises having other services income vary considerably from month to month; the groups in expenditures are more stable.

3.4. FACTOR INCOMES

EU-area accounts for almost 70 per cent of Finnish factor incomes and expenditures. The number of firms in factor income is slightly under 1000 in incomes from both the EU and from other countries but clearly more than 1000 in both expenditure classes. Also the total values in expenditures are clearly larger, Finland being an indebted country. The populations are highly concentrated, 100 biggest firms make up over 95 % of the total value of transactions in all areas. The incomes and expenditures from and to EU-area are more concentrated than from and to other countries. This concentrated part consists most likely of investment income/expenditure. Foreign credits are known to be very concentrated in Finland.

The enterprise groups in the payments to and from other countries are more variable than to and from the EU in mid 1994 - mid 1995.

3.5. UNREQUITED TRANSFERS

This item includes more than 2000 enterprises in EU classes and clearly less in non-EU classes. In values EU accounts for some 70 per cent of global values. The degree of concentration varies considerably between classes. The transfer incomes from other countries is least concentrated. Relevant enterprises change from month to month in transfers. Only some 5 % of the total population had transactions each month from January 1995 to May 1995 in each area.

4. CONCLUSIONS

The study does not reveal that the EU- and non-EU populations have same difference in all current account items in Finland in 1995. However, in many items the enterprises active in trade with non-EU countries are smaller and populations vary in time

considerably more than in trade with EU countries. This gives more challenge to designers of data collection systems for Balance of Payments when only extra EU is concerned.

TABLE 1

GENERAL INFORMATION OF THE STUDIED POPULATIONS

	NO. OF FIRMS	TOTAL VALUE	NO. ACTIVE IN ALL AREAS	% OF TOTAL NO. OF FIRMS	% OF TOTAL VALUE	PAYMENTS TO FINLAND ONLY			PAYMENTS FROM FINLAND ONLY		
						NO. ACTIVE IN ALL AREAS	% OF TOTAL NO. OF FIRMS	% OF TOTAL VALUE	NO. ACTIVE IN ALL AREAS	% OF TOTAL NO. OF FIRMS	% OF TOTAL VALUE
MERCHANDISE						out of 500 biggest			out of 500 biggest		
EU-EXP	3886	4,72E+10	107	21,40 %	54,19 %	303	60,60 %	85,22 %			
OTH-EXP	3564	2,76E+10	107	21,40 %	47,19 %	303	60,60 %	79,36 %			
EU-IMP	6523	2,85E+10	107	21,40 %	33,93 %				232	46,40 %	53,18 %
OTH-IMP	3910	1,56E+10	107	21,40 %	42,53 %				232	46,40 %	69,21 %
TRANSPORT						out of 400 biggest			out of 400 biggest		
EU-EXP	580	1,72E+09	99	17,07 %	61,82 %	211	36,38 %	75,69 %			
OTH-EXP	383	1,29E+09	99	25,85 %	71,22 %	211	55,09 %	92,06 %			
EU-IMP	573	3,67E+09	99	17,28 %	43,45 %				197	49,25 %	85,15 %
OTH-IMP	433	1,73E+09	99	22,86 %	60,11 %				197	49,25 %	87,88 %
TRAVEL						out of 500 biggest			out of 500 biggest		
EU-EXP	310	1,15E+09	25	8,06 %	75,33 %	77	24,84 %	94,55 %			
OTH-EXP	482	5,74E+08	25	5,19 %	69,00 %	77	15,98 %	89,50 %			
EU-IMP	518	1,95E+09	25	4,83 %	83,50 %				97	19,40 %	94,49 %
OTH-IMP	682	1,04E+09	25	3,67 %	65,94 %				97	19,40 %	89,93 %
OTHER SERVICES						out of 400 biggest			out of 400 biggest		
EU-EXP	2289	2,7E+09	24	6,00 %	25,19 %	115	28,75 %	44,92 %			
OTH-EXP	1781	1,9E+09	24	6,00 %	30,73 %	115	28,75 %	60,11 %			
EU-IMP	1306	3,21E+09	24	6,00 %	24,93 %				174	43,50 %	67,73 %
OTH-IMP	1009	2,06E+09	24	6,00 %	37,52 %				174	43,50 %	82,21 %
FACTOR INCOMES						out of 1000 biggest			out of 1000 biggest		
199407 - 199505											
EU-EXP	1068	9,04E+09	120	11,21 %	94,38 %	233	21,82 %	95,69 %			
OTH-EXP	909	4,16E+09	120	13,17 %	92,10 %	233	25,63 %	94,93 %			
EU-IMP	1542	2,28E+10	120	7,77 %	88,21 %				387	38,70 %	94,09 %
OTH-IMP	1236	1,05E+10	120	9,69 %	81,82 %				387	38,70 %	96,34 %
UNREQUITED TRANSFERS						out of 600 biggest			out of 195 biggest		
199407 - 199505											
EU-EXP	2148	1,71E+09	13	2,17 %	2,32 %	27	13,50 %	4,69 %			
OTH-EXP	1821	6,22E+08	13	2,17 %	13,70 %	27	13,50 %	19,10 %			
EU-IMP	2653	3,59E+09	13	2,17 %	7,43 %				33	22,00 %	23,00 %
OTH-IMP	1893	1,64E+09	13	2,17 %	33,90 %				33	22,00 %	61,28 %

TABLE 2

Descriptive Statistics

MERCHANDISE JANUARY - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	3795	13,385	13,322	13,4792	12,96557	6,59167	22,09922	11,80148	14,54065	3,91373	1,978316	0,032114	0,944441	0,039746	0,65899	0,079472
OTH_EXP	3480	13,2592	13,19596	13,32033	12,8515	10,1708	21,29307	11,77576	14,34856	3,50022	1,870888	0,031715	0,98397	0,041505	0,70624	0,082986
EU_IMP	6482	13,1275	13,08455	13,17045	12,79351	7,87864	21,00626	11,70645	14,21738	3,11138	1,769911	0,021909	0,85973	0,030417	0,36972	0,060825
OTH_IMP	3845	12,862	12,80999	12,91404	12,50643	9,29598	21,16215	11,55271	13,8142	2,70739	1,645415	0,026536	1,12719	0,039487	1,30477	0,078954

TRANSPORT JANUARY - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	481	13,1542	12,9912	13,31717	12,74111	10,87427	21,26833	11,62594	14,36162	3,30992	1,819154	0,082946	0,88078	0,111341	0,4892	0,222227
OTH_EXP	357	13,1198	12,9369	13,30063	12,82015	7,89852	20,97554	11,6848	14,16044	3,01943	1,737651	0,091966	0,89178	0,1291	1,32128	0,257495
EU_IMP	555	13,4331	13,26676	13,59949	13,0879	10,87003	22,02479	11,77329	14,78053	3,98111	1,995271	0,084695	0,82821	0,103696	0,27529	0,207023
OTH_IMP	417	13,1643	12,9832	13,34547	12,73457	8,15047	21,27236	11,59537	14,46675	3,5409	1,881727	0,092149	0,85298	0,119524	0,55933	0,238485

TRAVEL JANUARY - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	281	12,2475	12,03932	12,45563	11,66276	4,905275	19,29037	11,21094	12,67891	3,14217	1,772617	0,105745	1,40373	0,146352	4,36892	0,269701
OTH_EXP	442	11,8152	11,67404	11,95629	11,45409	3,637566	18,42118	11,09741	12,26655	2,27895	1,50962	0,071805	0,39905	0,116118	7,59124	0,23172
EU_IMP	491	12,1042	11,96463	12,24374	11,58989	4,905275	20,10827	11,11978	12,48708	2,47705	1,573666	0,071028	1,99888	0,110208	6,37388	0,219975
OTH_IMP	617	11,9338	11,82728	12,04036	11,4602	7,765145	18,70432	11,11693	12,30897	1,81584	1,347532	0,054625	2,3323	0,096374	7,18177	0,196434

OTHER SERVICES JANUARY - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	2155	12,4967	12,43894	12,55455	12,19108	10,8687	18,80341	11,4151	13,2377	1,87243	1,368367	0,029477	1,2599	0,052729	1,8059	0,105409
OTH_EXP	1627	12,4777	12,4045	12,53893	12,1439	8,91878	19,32191	11,38509	13,22337	1,91043	1,382184	0,034267	1,24152	0,060671	1,63004	0,121268
EU_IMP	1267	12,8444	12,75255	12,92619	12,47411	5,92301	18,80285	11,52349	13,72221	2,77523	1,665902	0,046802	0,86722	0,068734	1,04473	0,137361
OTH_IMP	983	12,7302	12,62971	12,83064	12,39459	7,45819	19,34638	11,44	13,61136	2,52375	1,588632	0,051193	1,00766	0,078811	0,84491	0,15746

FACTOR INCOMES JULY 1994 - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	12,4877	12,36773	12,60769	11,84544	3,713572	22,92457	11,2636	12,9355	3,52479	1,877442	0,061138	1,79518	0,07964	4,58755	0,159112	
OTH_EXP	832	12,386	12,26854	12,50336	11,79063	4,912655	22,14783	11,26105	12,91046	2,97682	1,725345	0,059816	1,82019	0,084768	4,74366	0,169335
EU_IMP	1470	13,0783	12,97739	13,17928	12,59037	6,297109	23,84936	11,52349	14,03896	3,89274	1,973004	0,05146	1,28998	0,063823	2,01468	0,127559
OTH_IMP	1153	13,0231	12,91099	13,13527	12,52806	4,369448	23,07329	11,46322	14,072	3,7664	1,940722	0,057154	1,09802	0,072044	1,84448	0,143964

UNREQUITED TRANSFERS JULY 1994 - MAY 1995																
Valid N	Mean	Confid.					Upper Quartile	Variance	Std.Dev.	Standard Error	Std.Etr.					
		-95,00 %	95,00 %	Median	Minimum	Maximum					Skewness	Skewness	Kurtosis	Kurtosis		
EU_EXP	2001	11,9124	11,86933	11,95542	11,6344	10,86912	21,26544	11,16195	12,35062	0,96389	0,961777	0,021948	2,02493	0,054718	8,85736	0,109381
OTH_EXP	1712	11,9254	11,87844	11,97228	11,67737	6,81454	20,24835	11,1993	12,4011	0,97974	0,989818	0,023922	1,71076	0,059148	7,00735	0,118228
EU_IMP	2603	11,9304	11,8911	11,96978	11,64132	10,86672	22,00174	11,2202	12,32845	1,04772	1,023582	0,020063	2,51202	0,047983	12,0099	0,095929
OTH_IMP	1892	11,9753	11,9238	12,02687	11,69525	4,26268	21,22001	11,26756	12,30345	1,26503	1,124736	0,026278	1,87929	0,057182	9,78432	0,114301

CHART 1

MERCHANDISE
JANUARY - MAY 1995

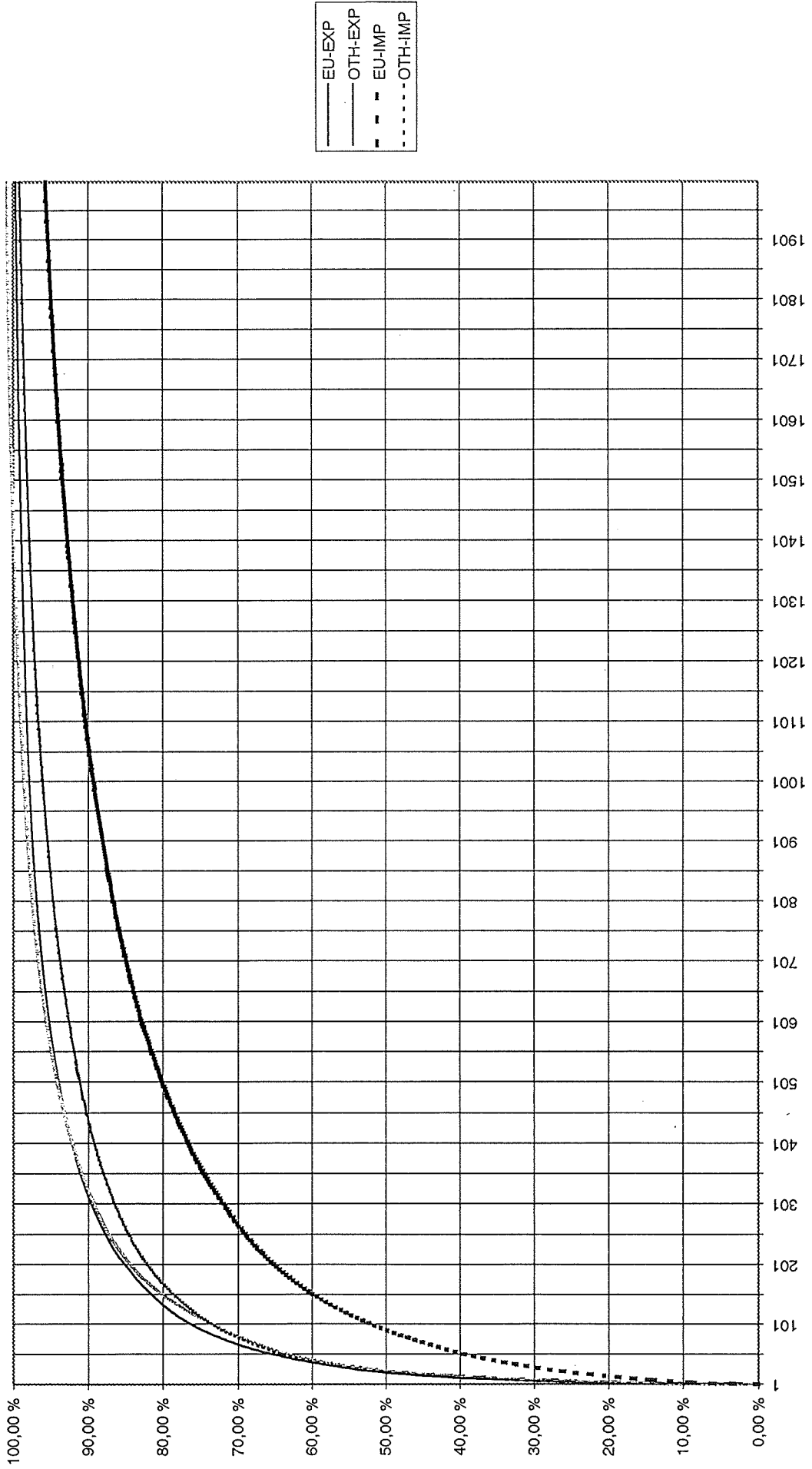


CHART 2

TRANSPORT
JANUARY - MAY 1995

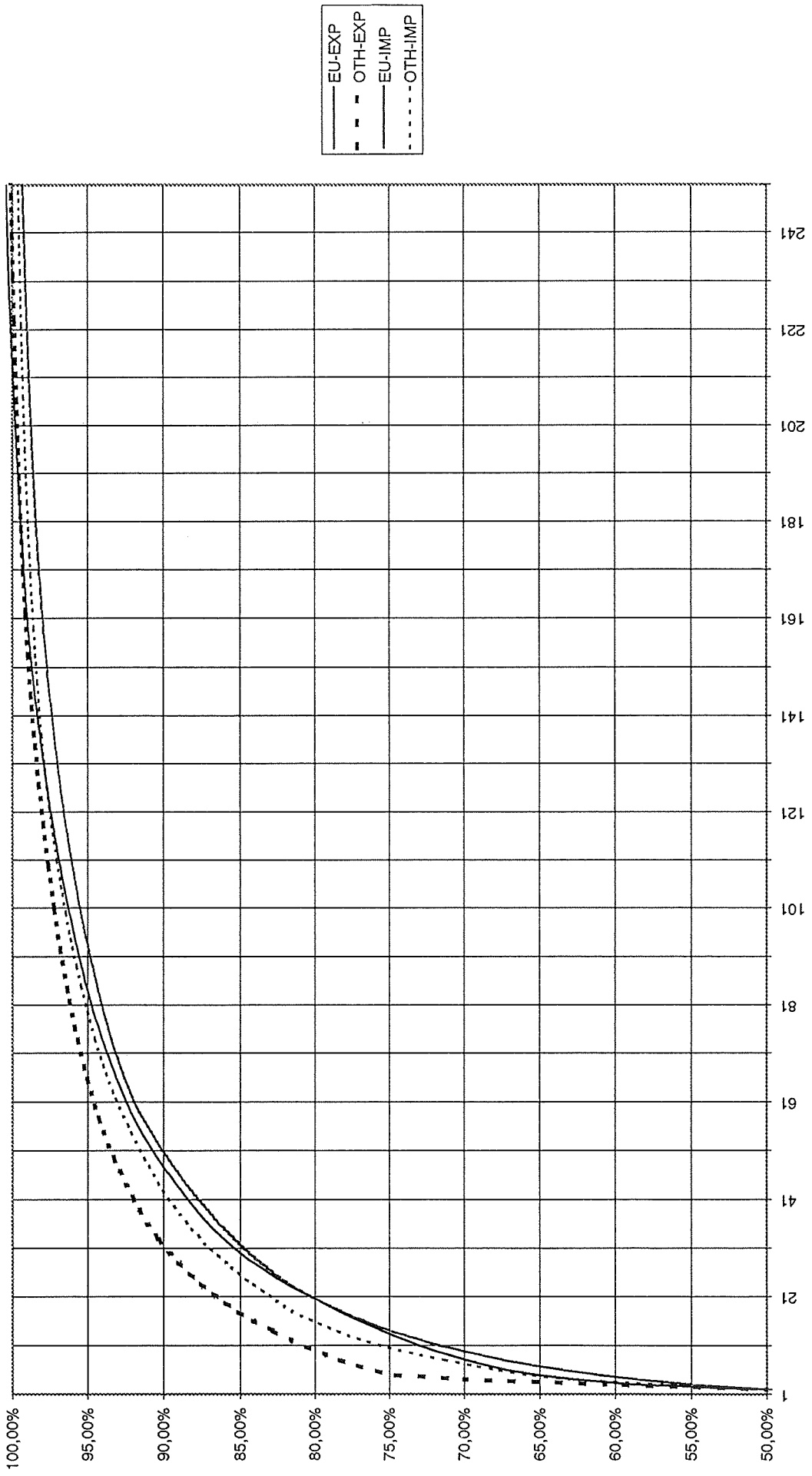


CHART 3

OTHER SERVICES
JANUARY - MAY 1995

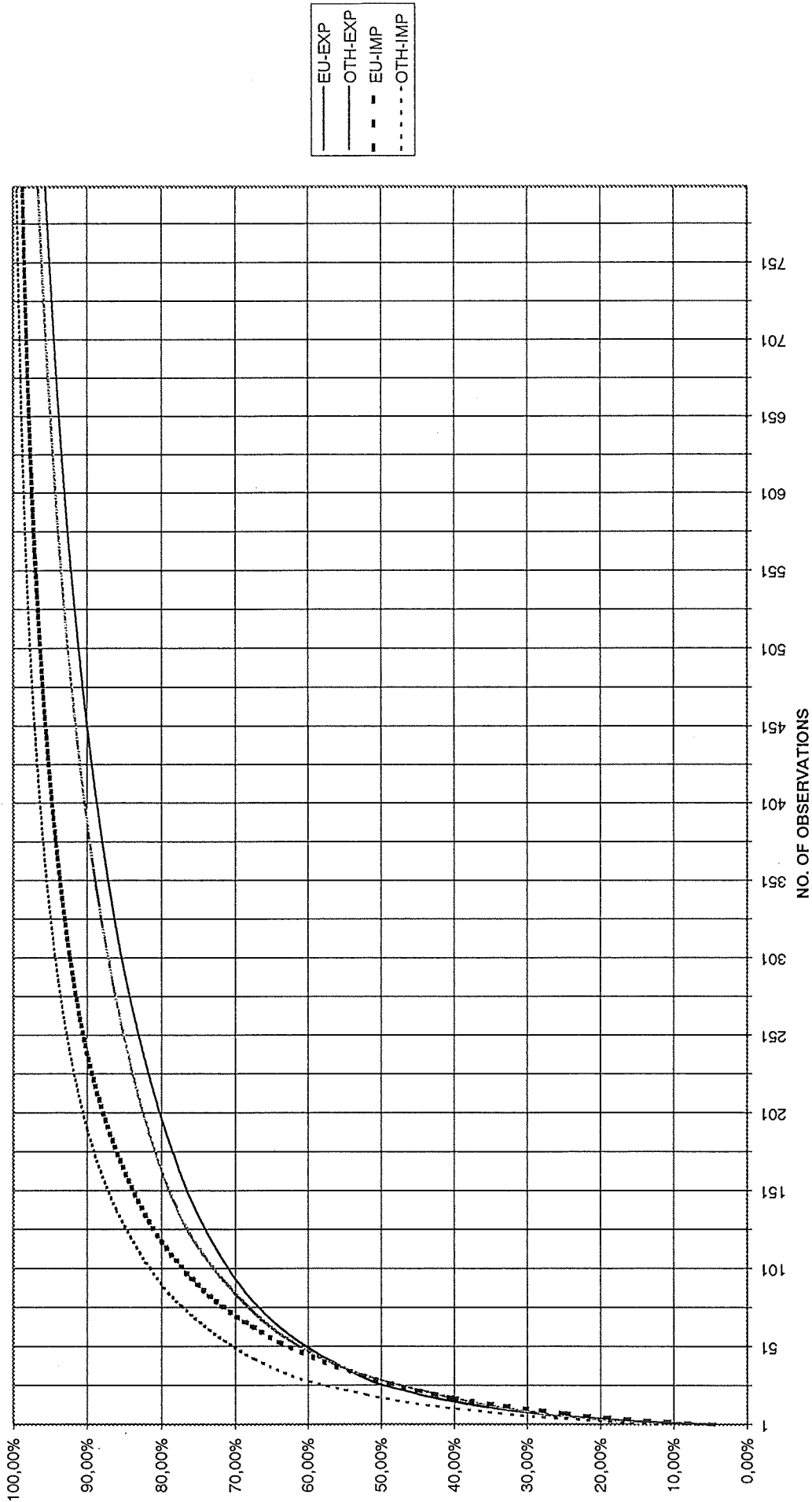


CHART 4

FACTOR INCOMES
JULY 1994 - MAY 1995

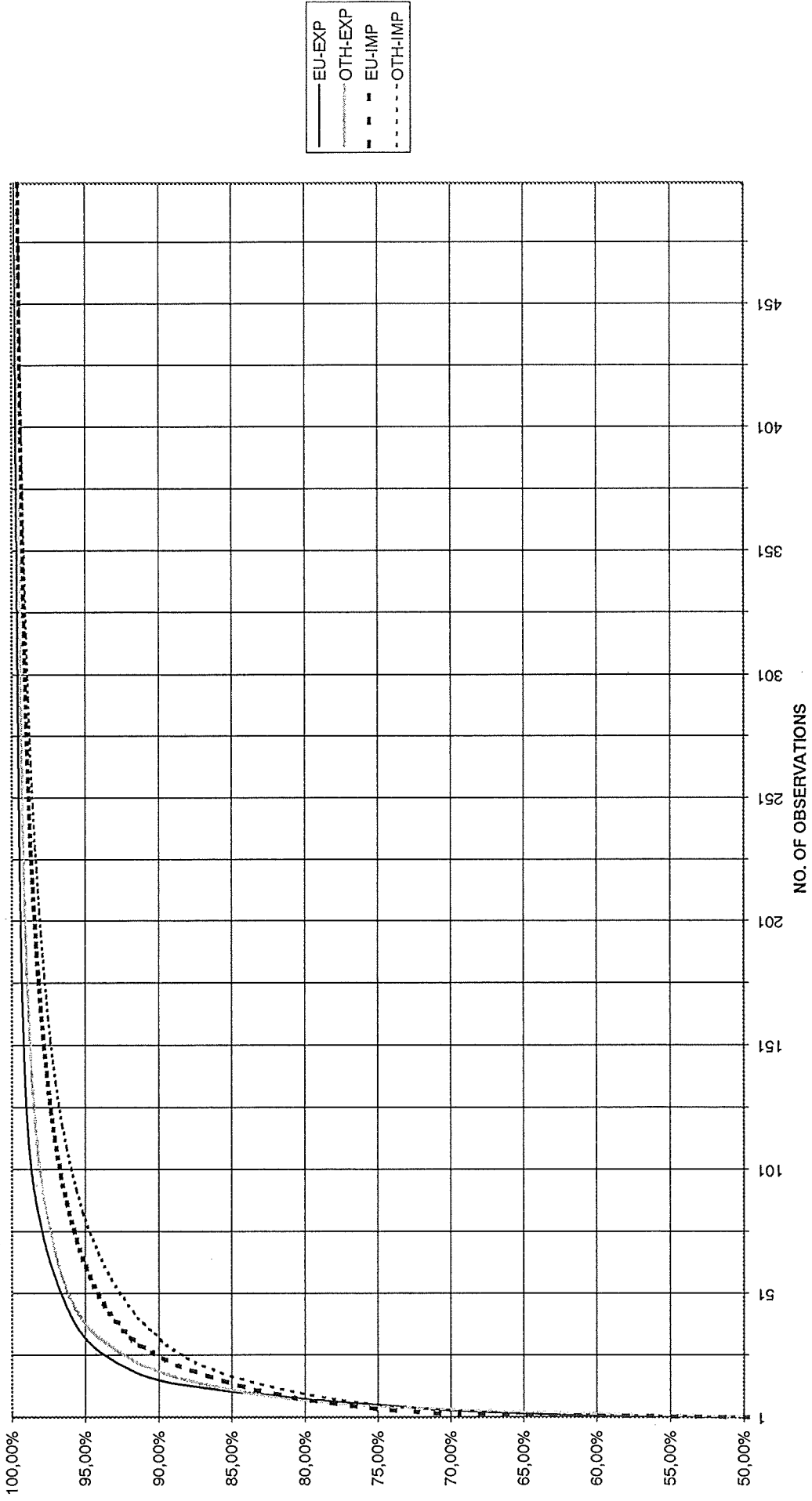
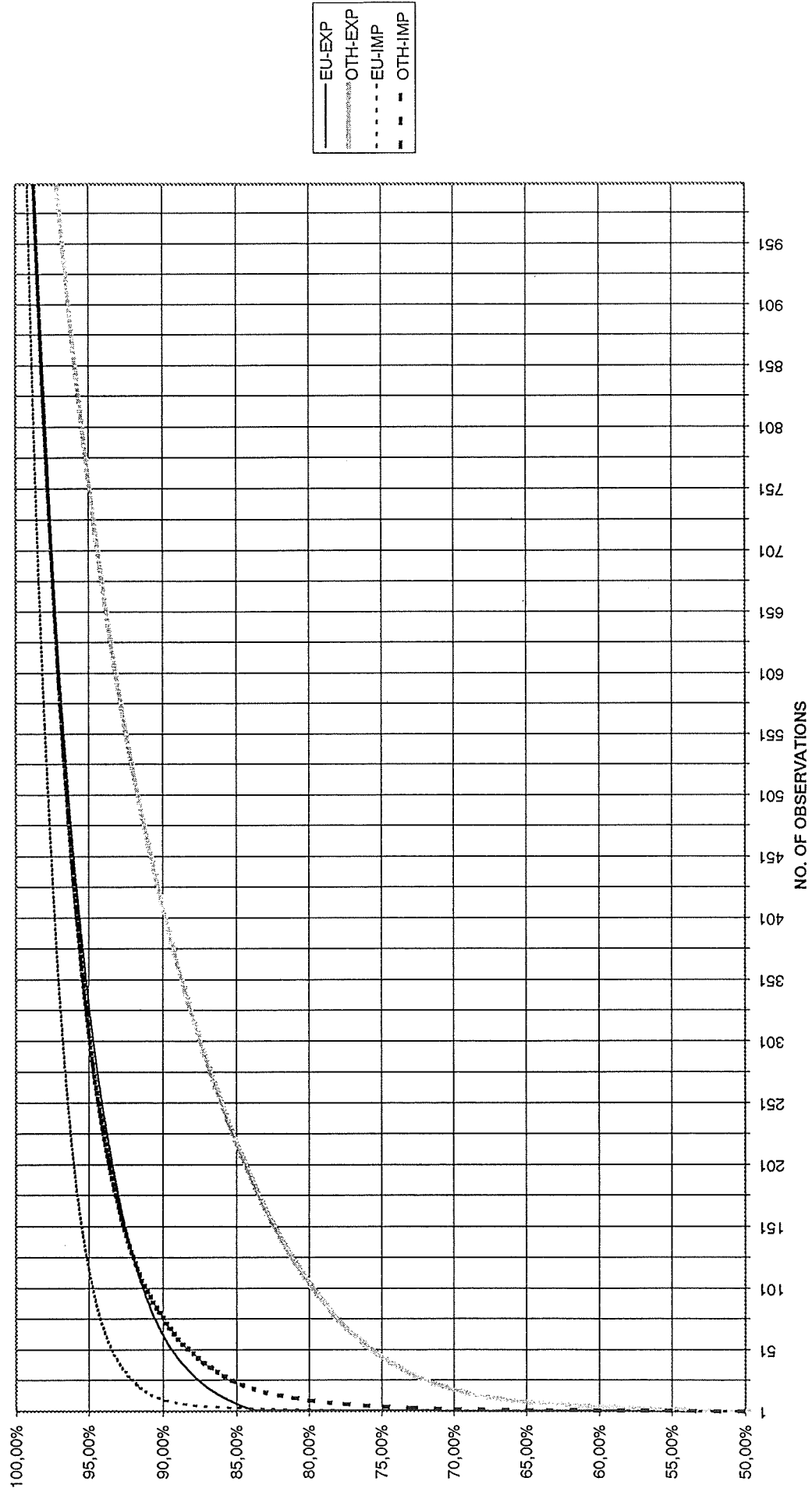
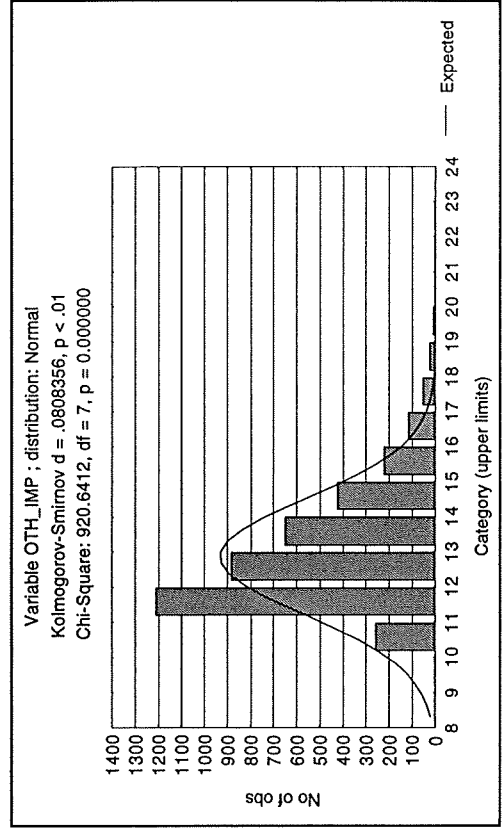
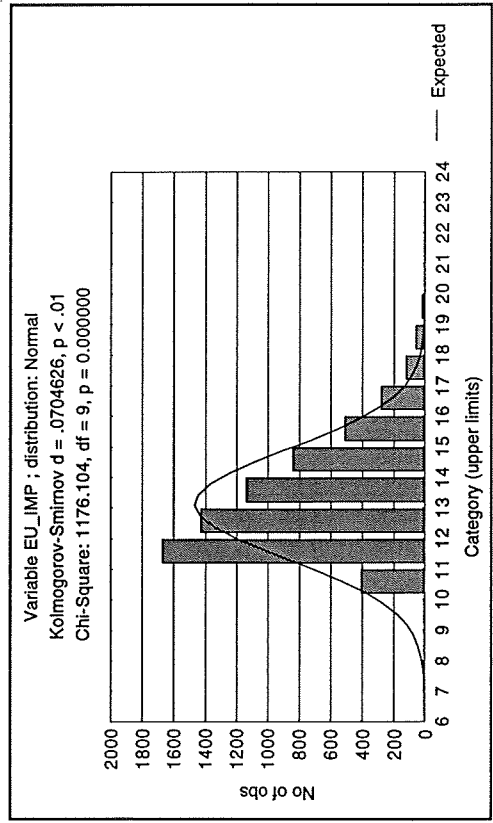
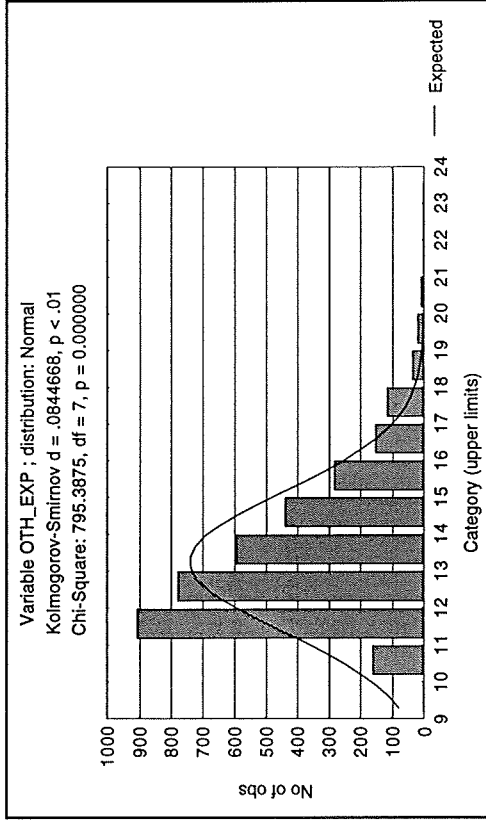
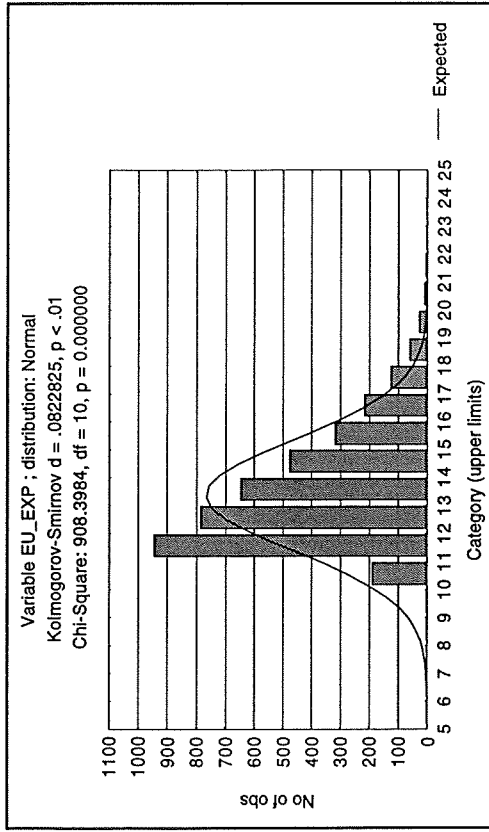


CHART 5

UNREQUITED TRANSFERS
JULY 1994 - MAY 1995

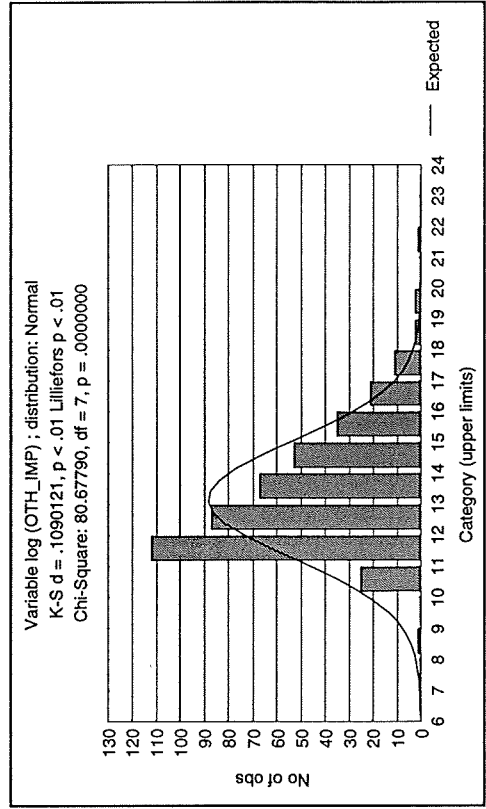
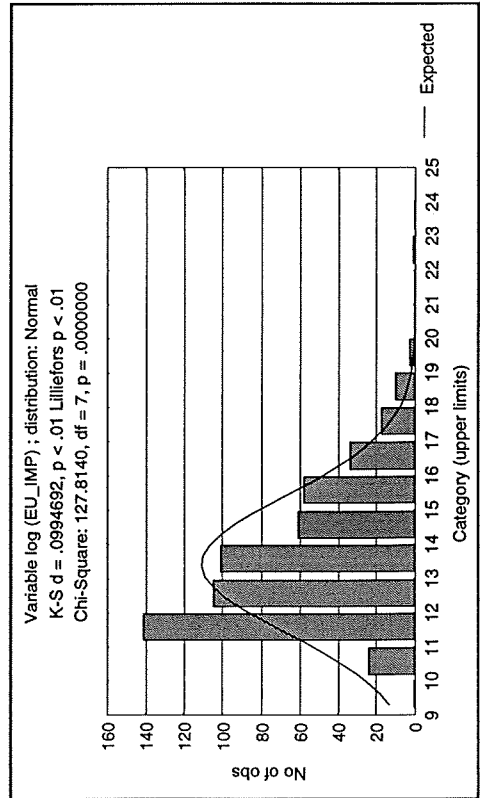
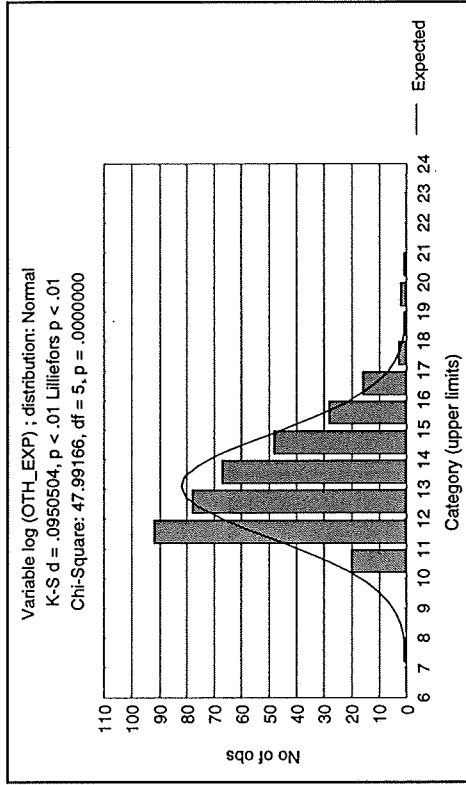
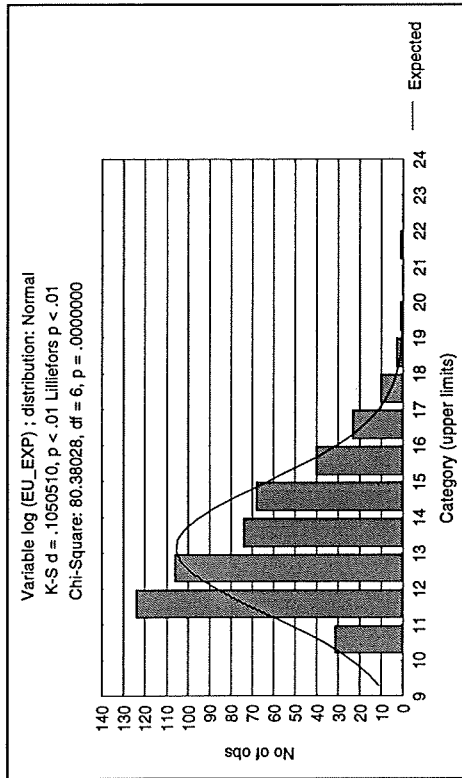


DISTRIBUTIONS OF LOGARITHMIC VALUES



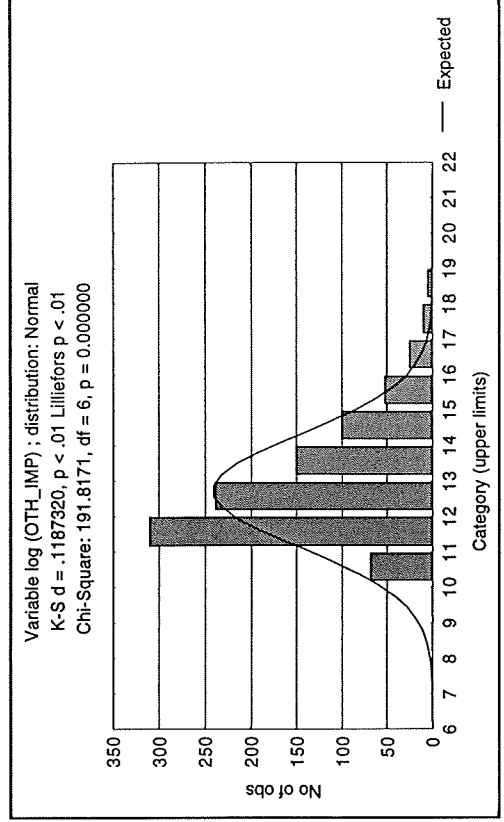
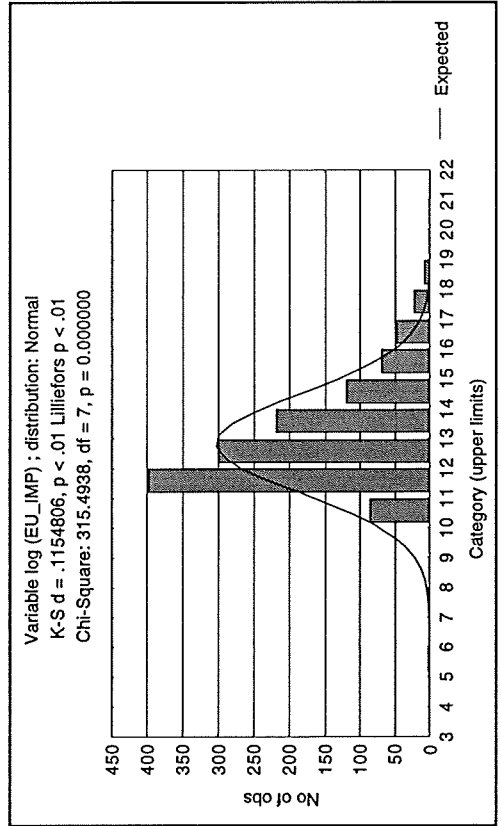
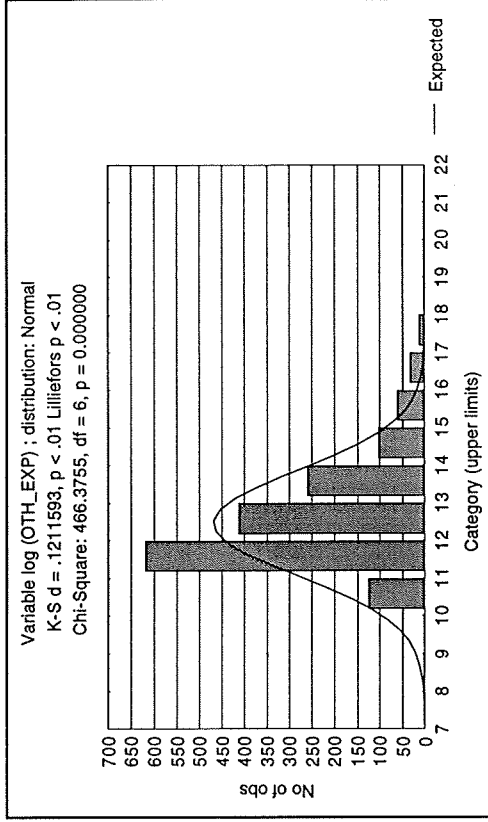
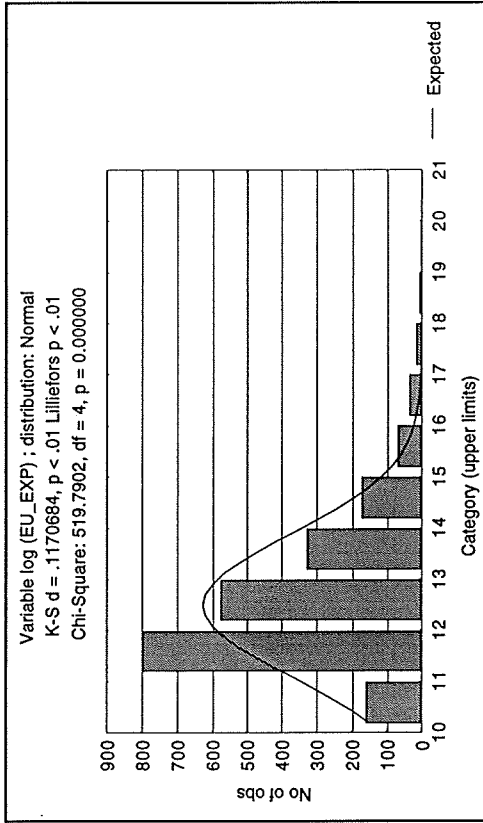
TRANSPORT JANUARY - MAY 1995

DISTRIBUTIONS OF LOGARITHMIC VALUES

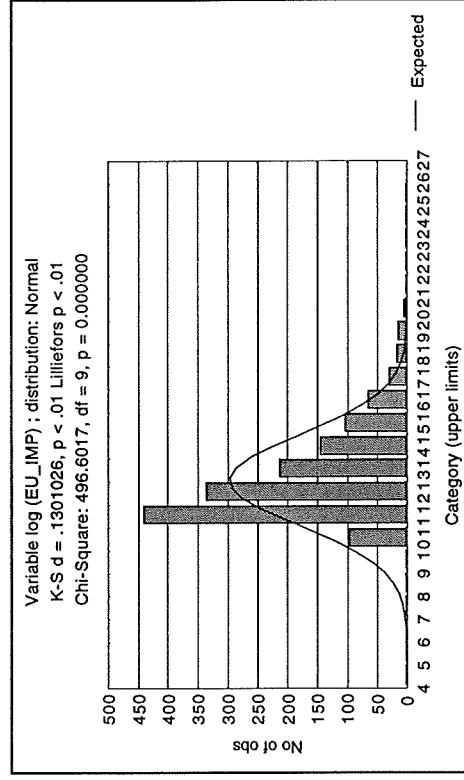
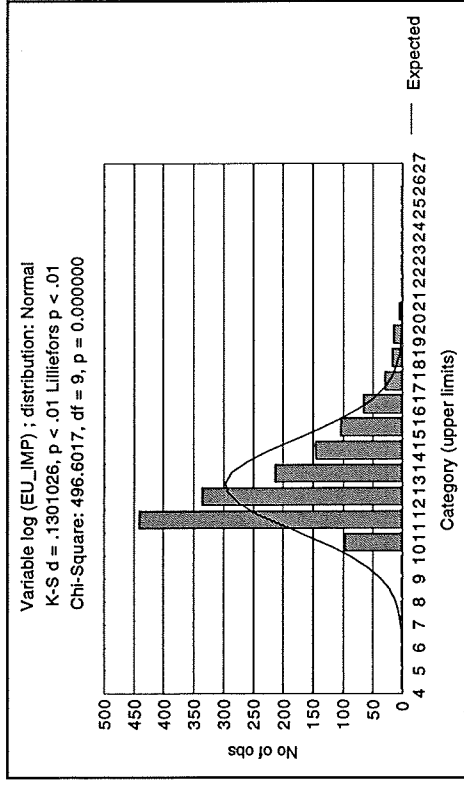
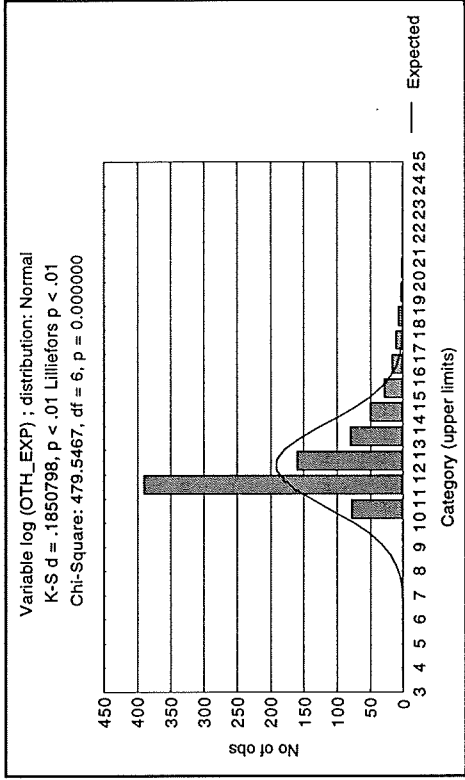
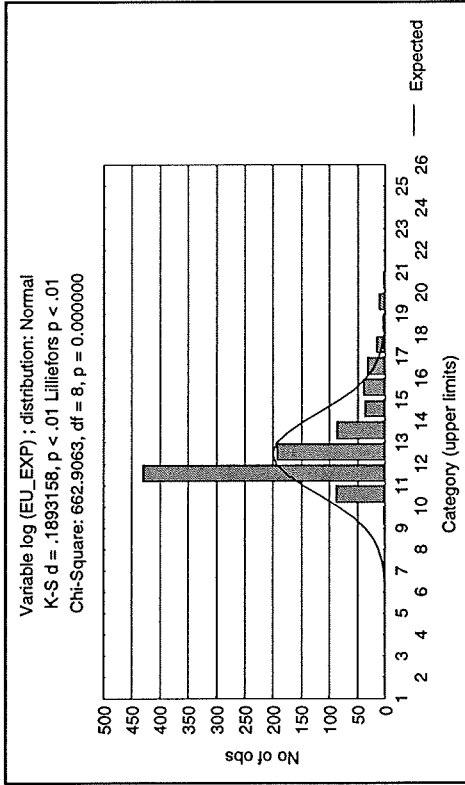


OTHER SERVICES JANUARY - MAY 1995

DISTRIBUTIONS OF LOGARITHMIC VALUES



DISTRIBUTIONS OF LOGARITHMIC VALUES



DISTRIBUTIONS OF LOGARITHMIC VALUES

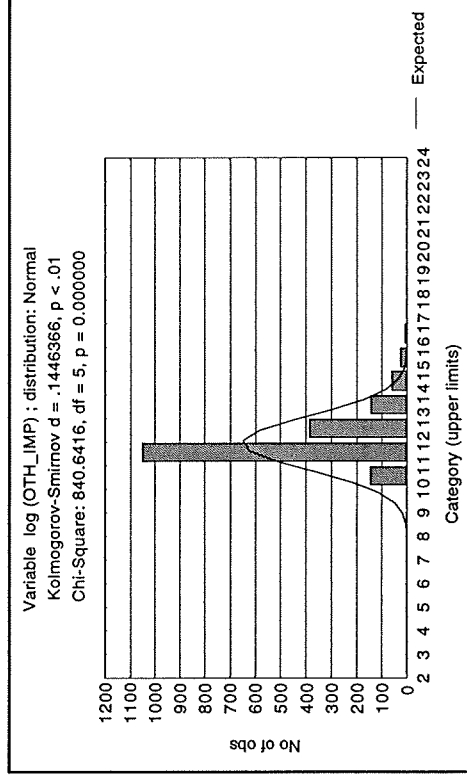
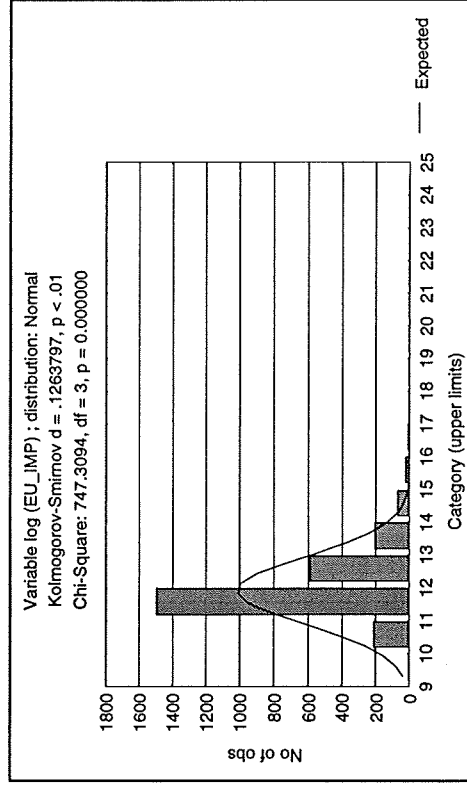
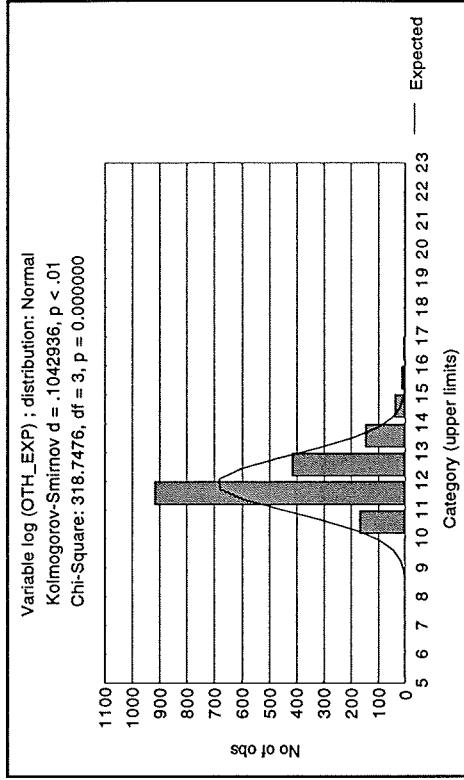
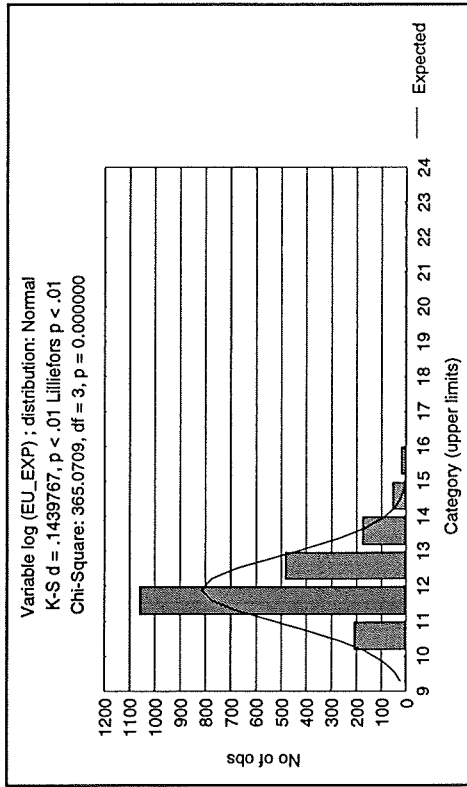
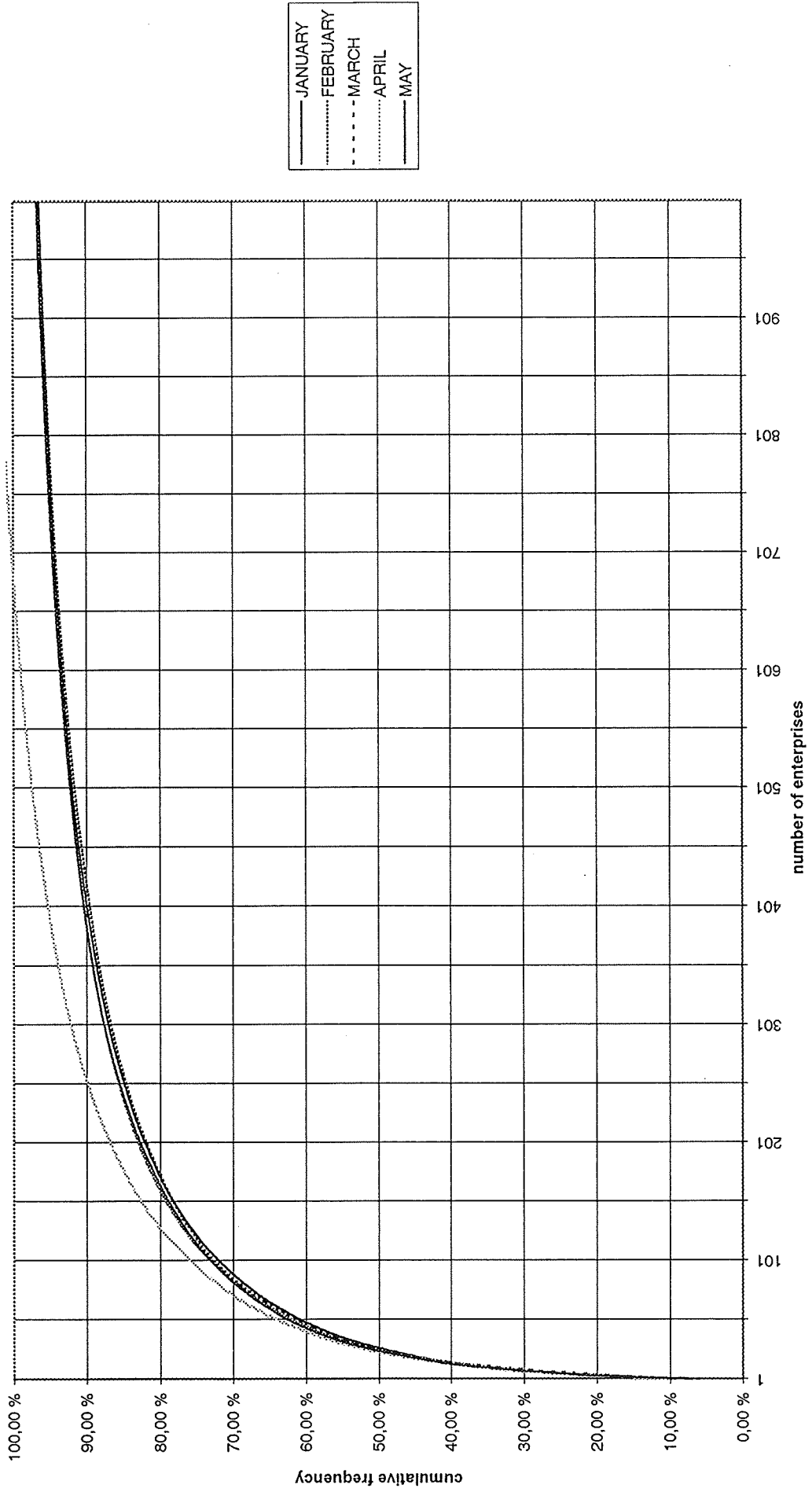
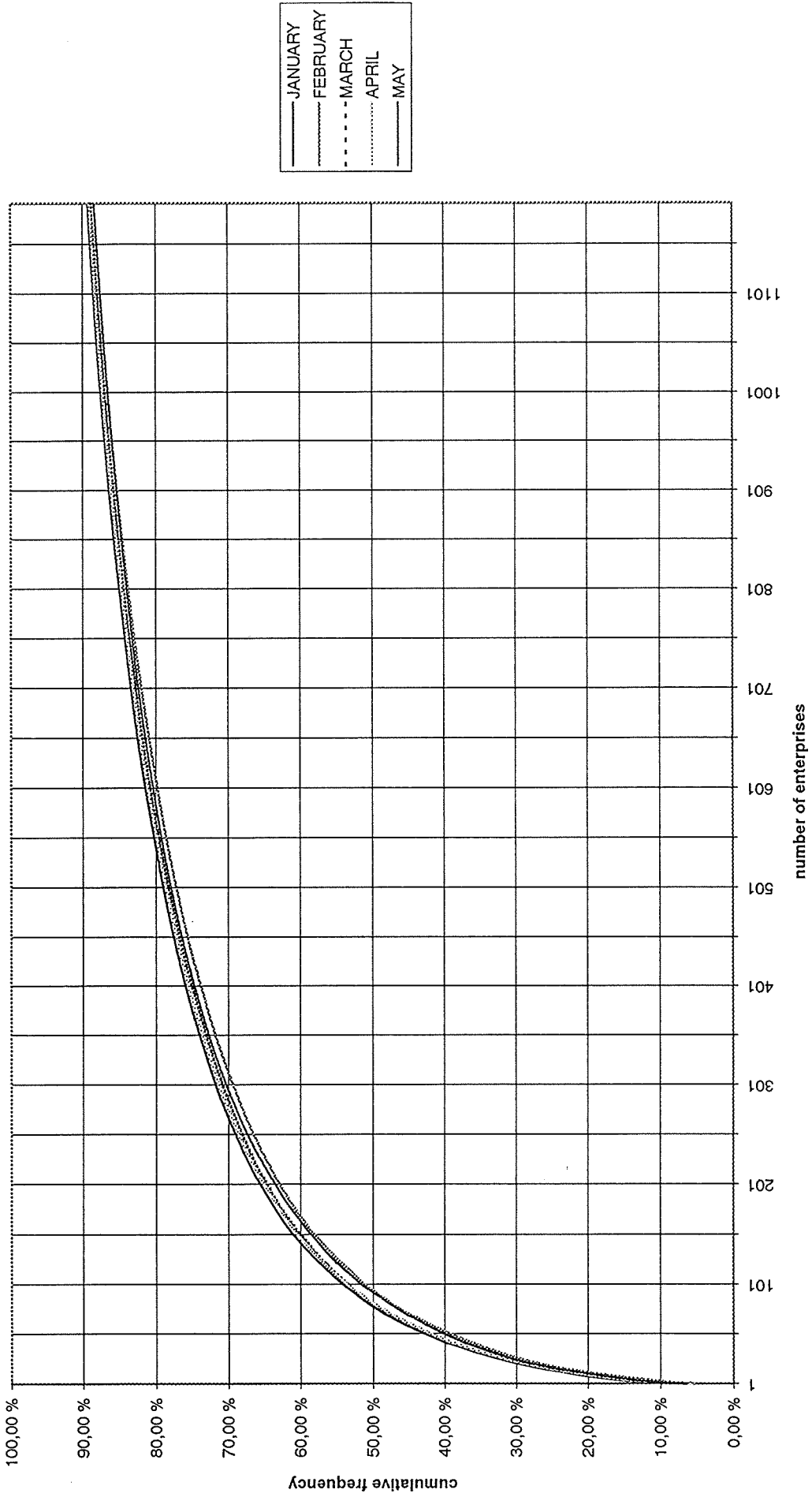


CHART 11

MERCHANDISE - EXPORTS 1995



MERCHANDISE - IMPORTS 1995



TRANSPORT 1995
Payments from EU

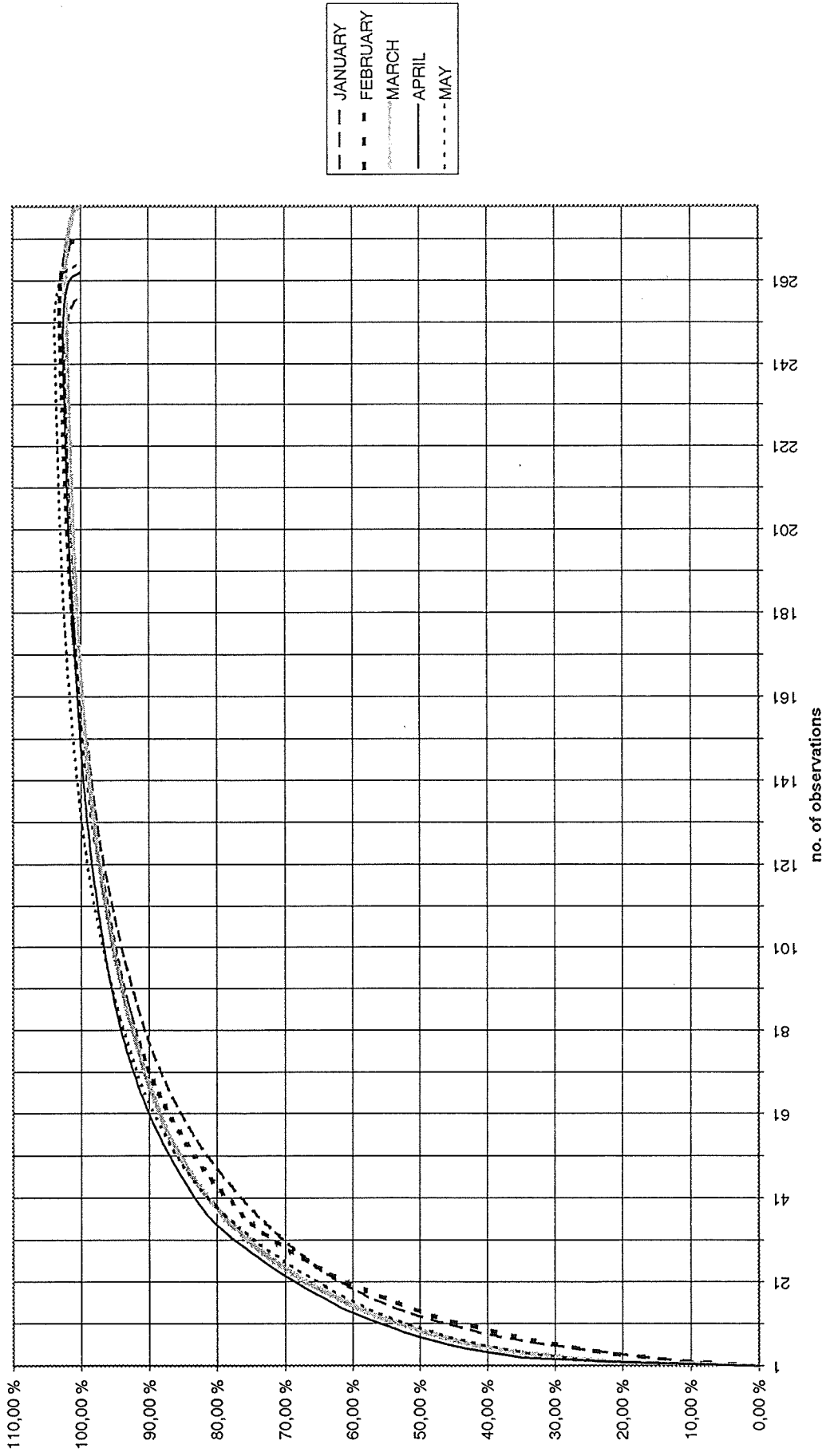


CHART 14

TRANSPORT 1995 Payments from other countries

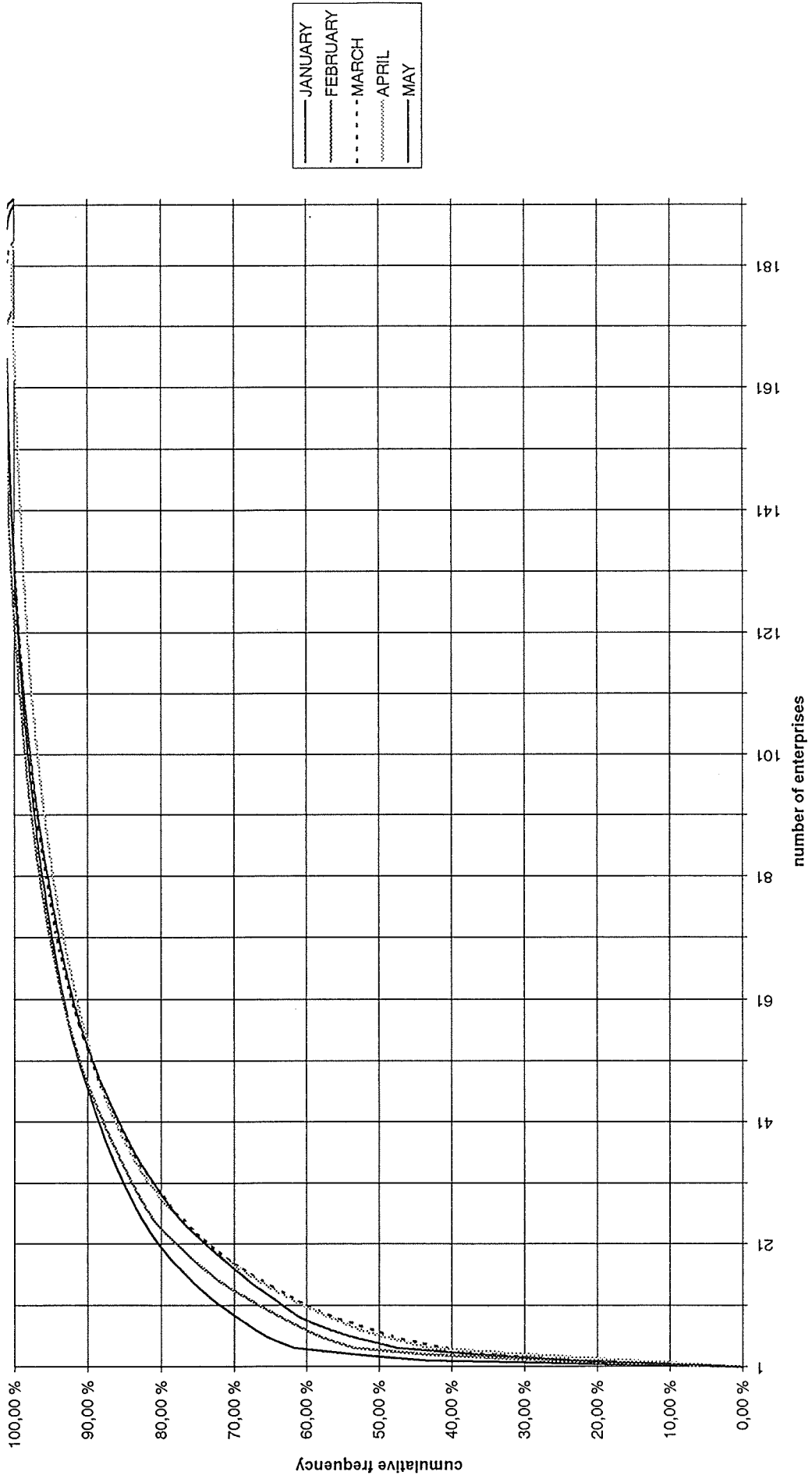


CHART 15

TRANSPORT 1995
Payments to EU

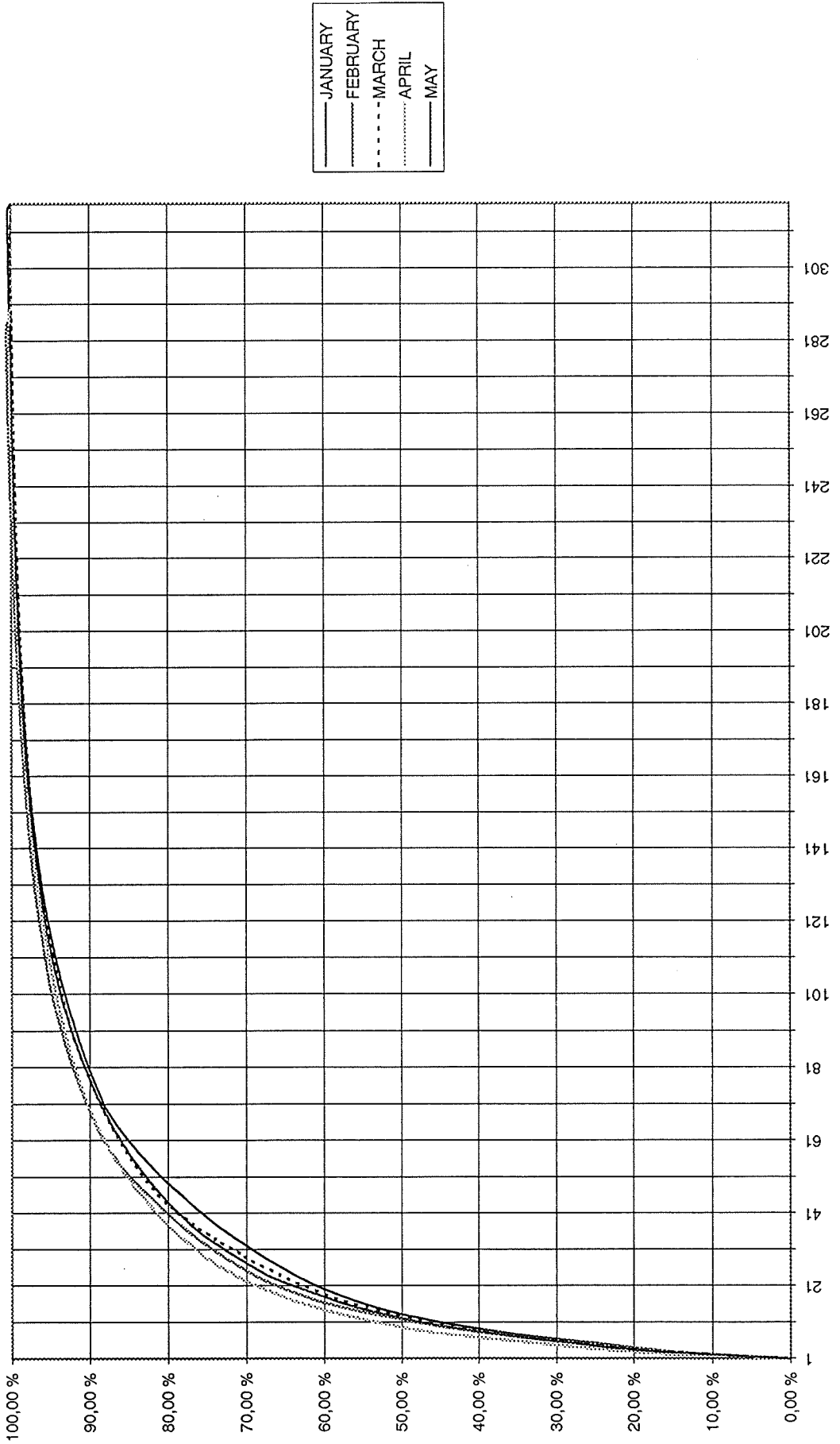


CHART 16

TRANSPORT 1995
Payments to other countries

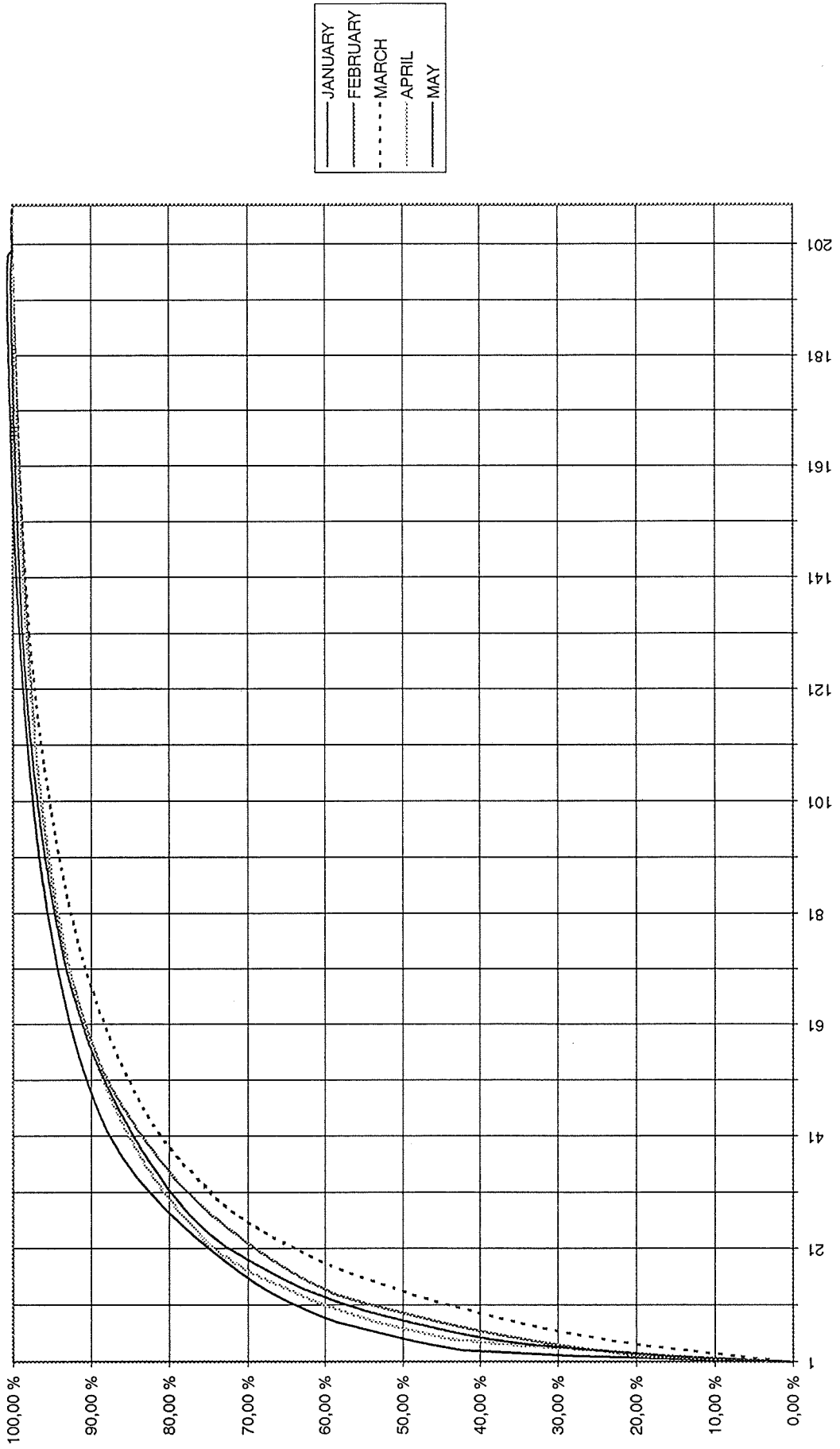


CHART 17

OTHER SERVICES 1995
Payments from EU

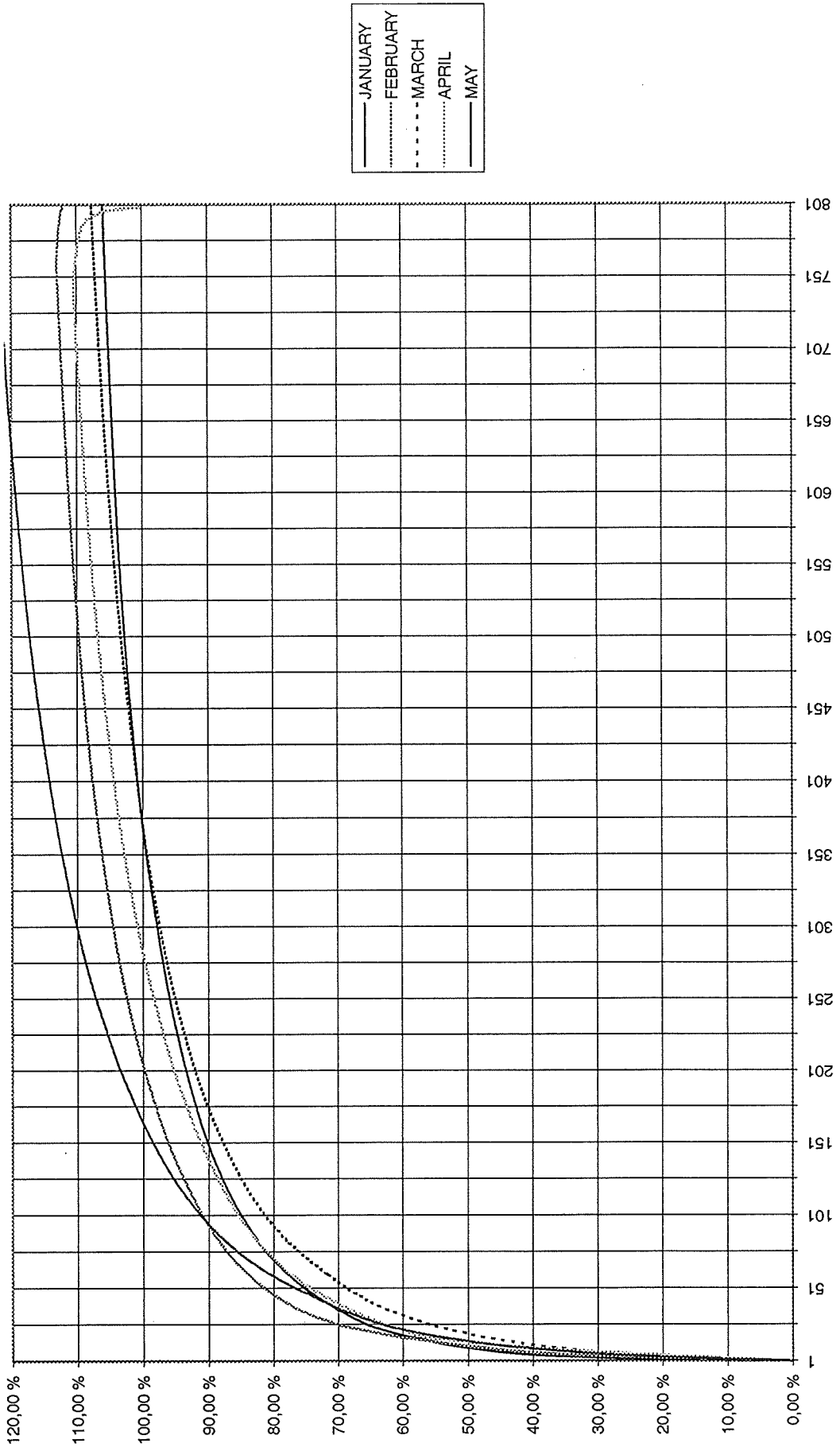
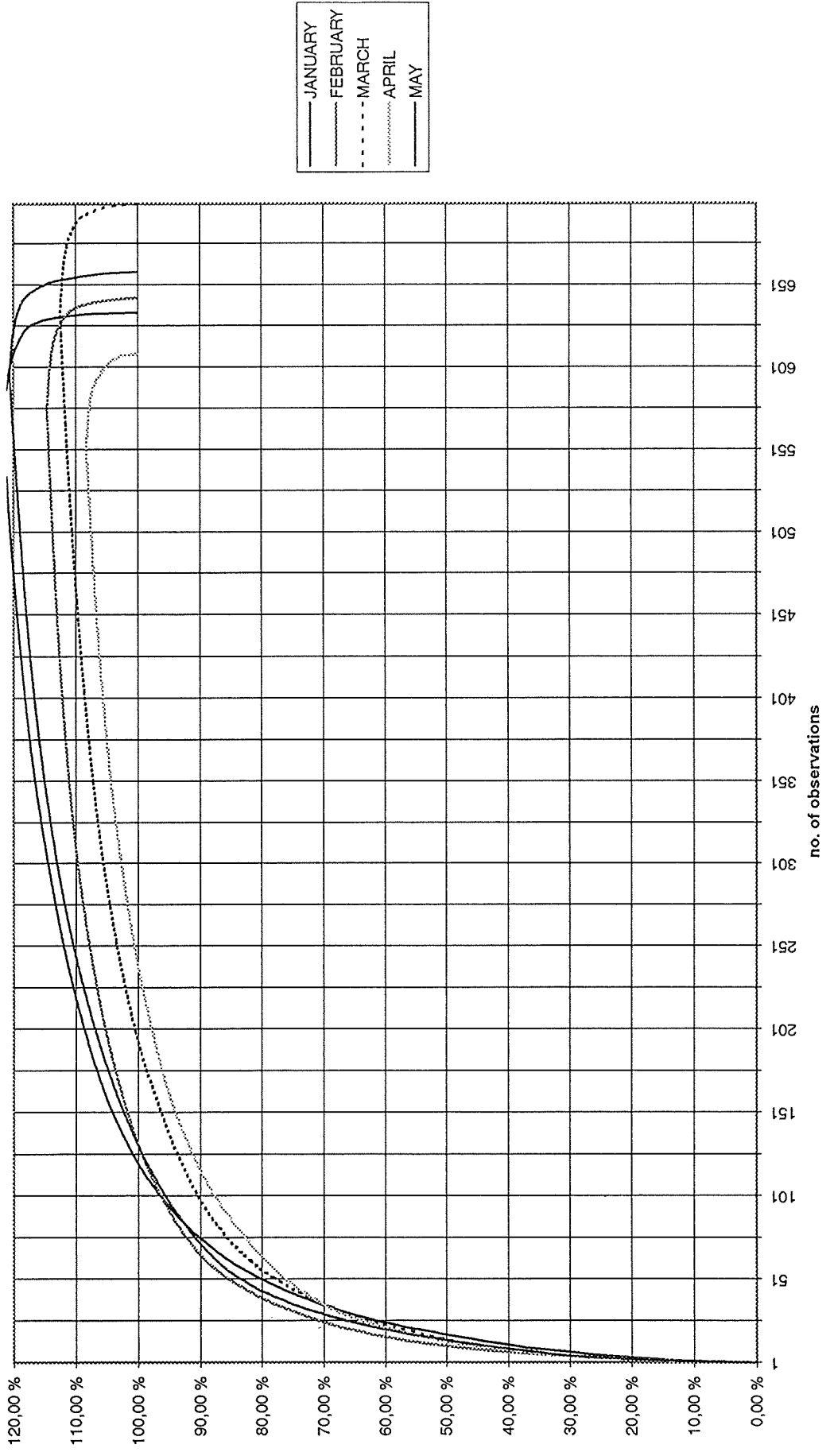


CHART 18

OTHER SERVICES
Payments from other countries



JANUARY
FEBRUARY
MARCH
APRIL
MAY

OTHER SERVICES 1995
Payments to EU

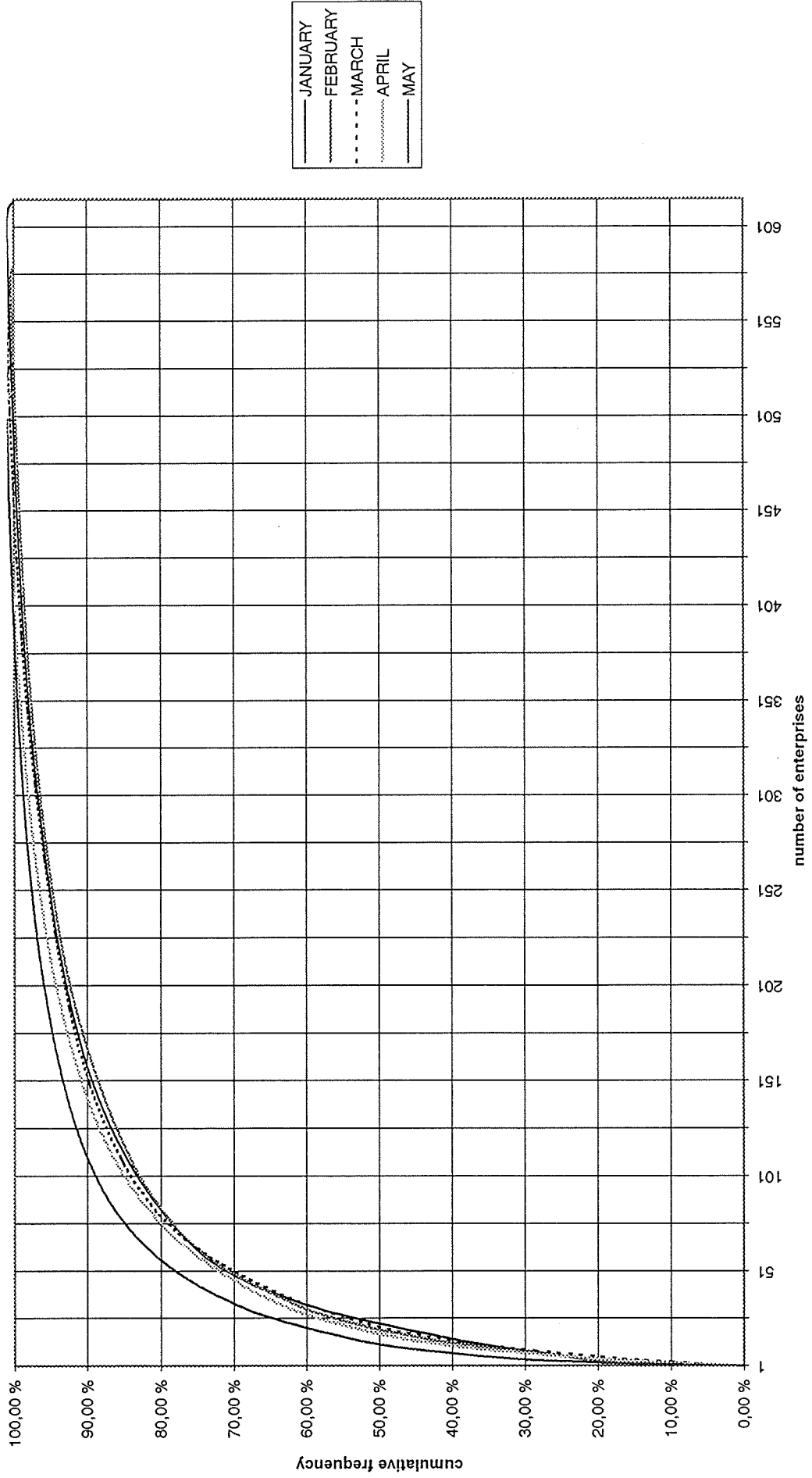


CHART 20

OTHER SERVICES 1995
Payments to other countries

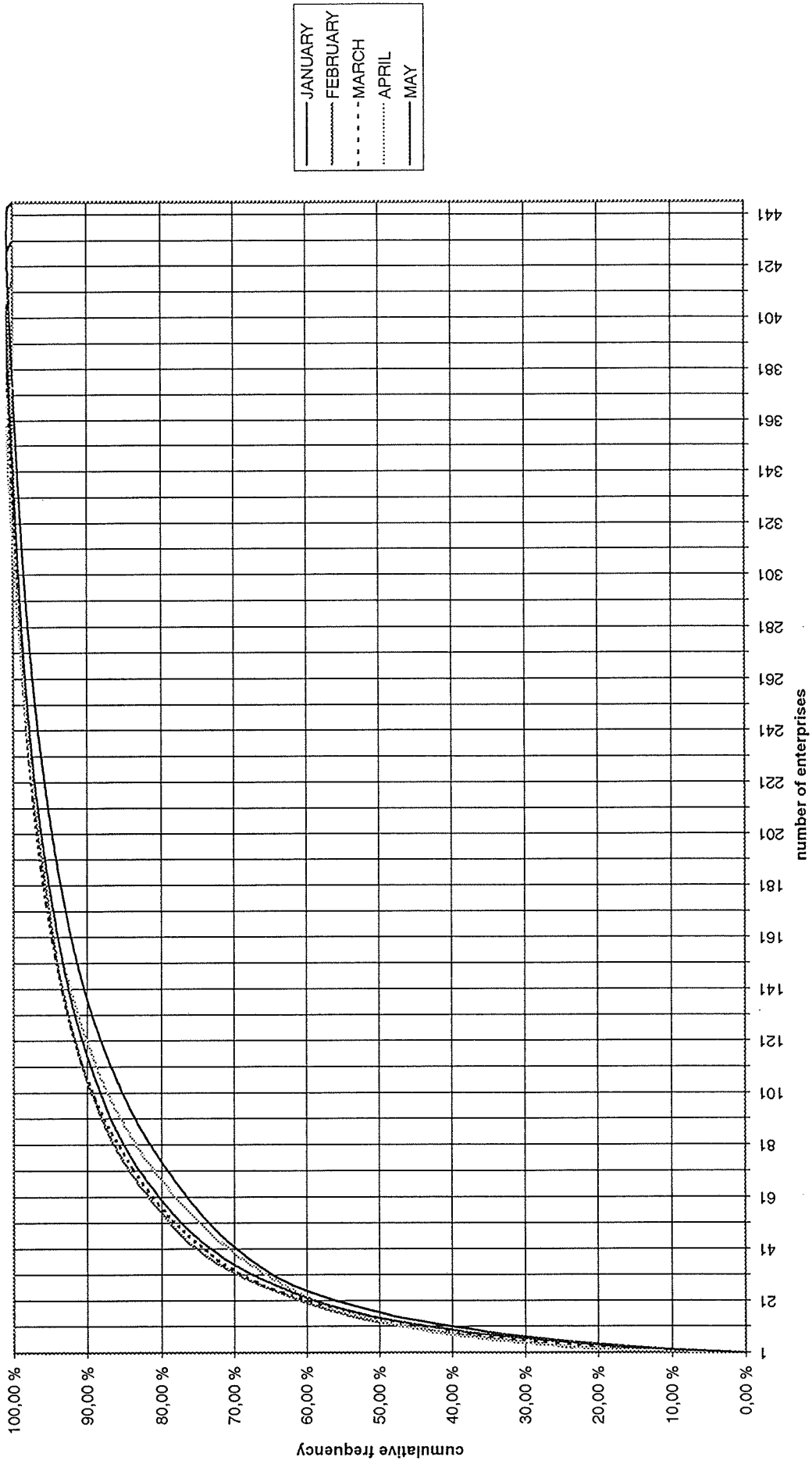


CHART 2.1

FACTOR INCOMES 1995
Payments from EU

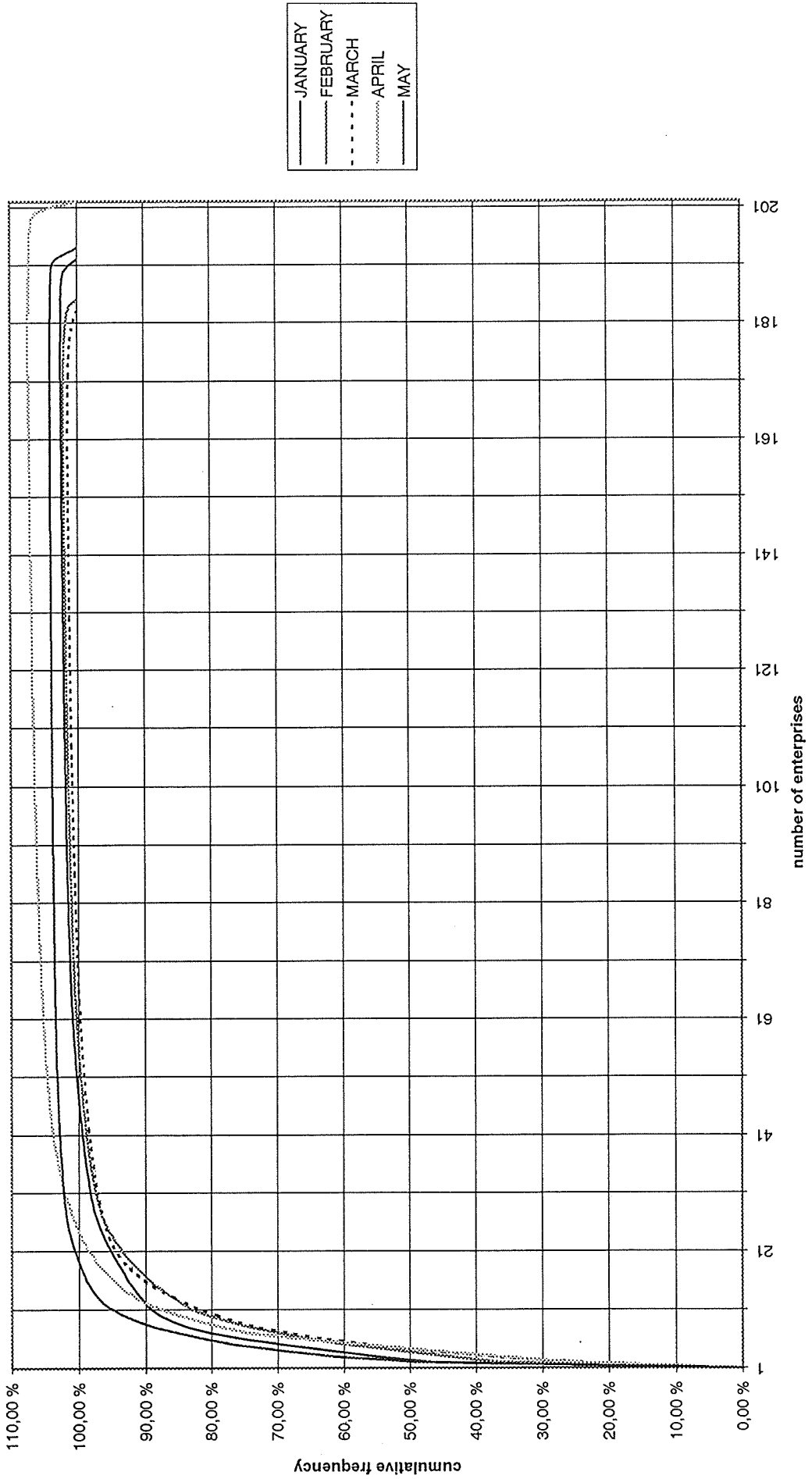


CHART 22

FACTOR INCOMES 1995
Payments from other countries

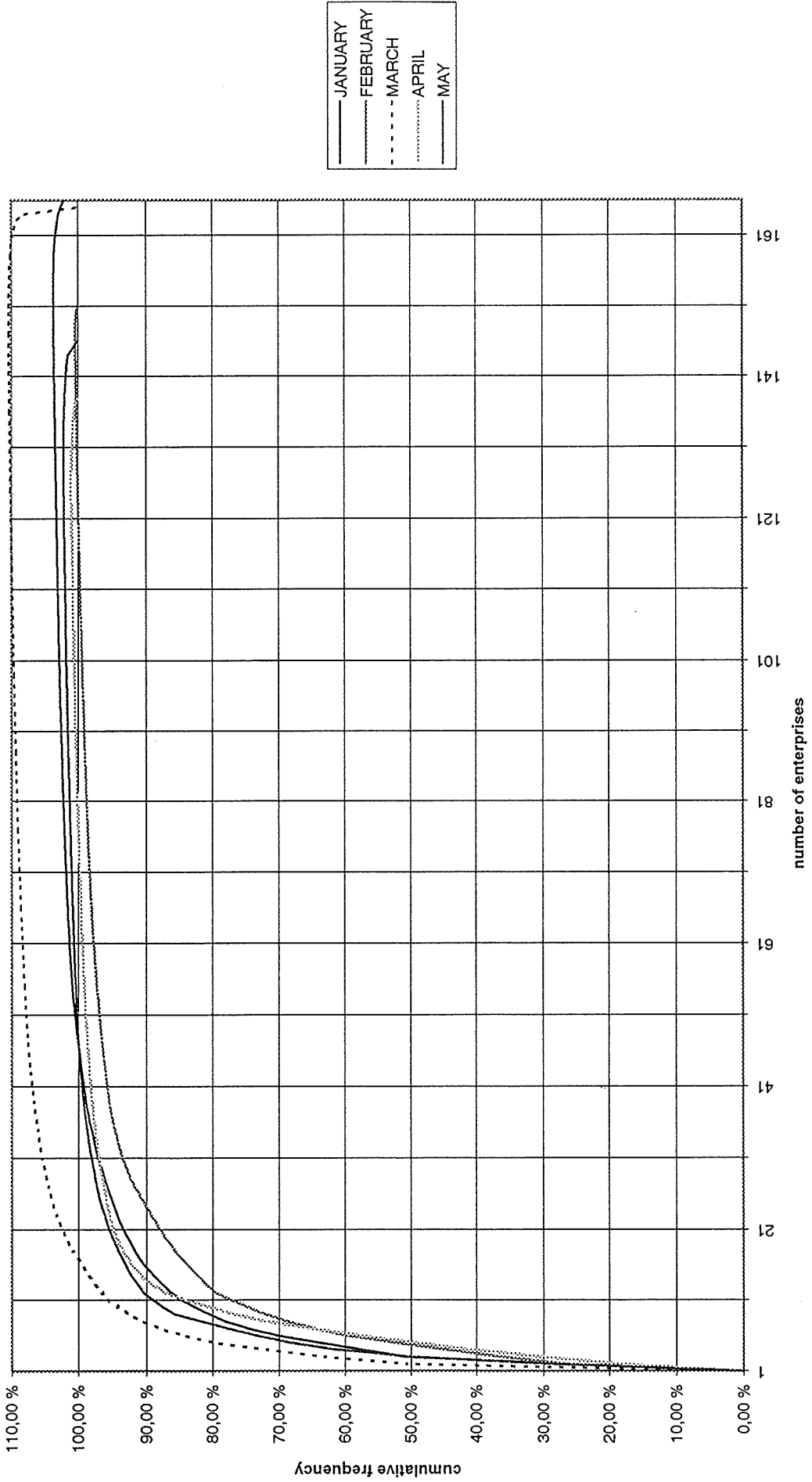


CHART 23

FACTOR INCOMES 1995
Payments to EU

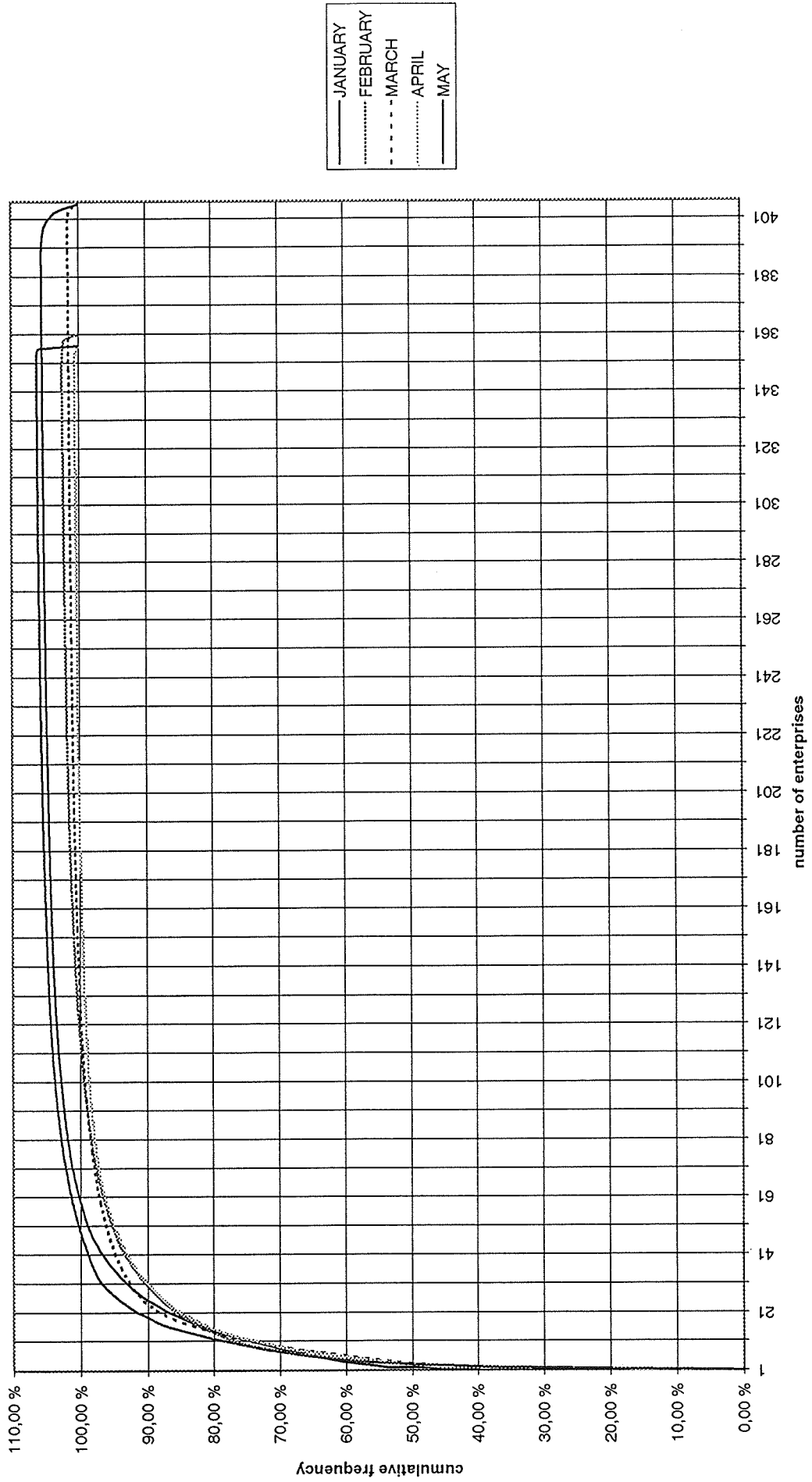


CHART 24

FACTOR INCOMES 1995
Payments to other countries

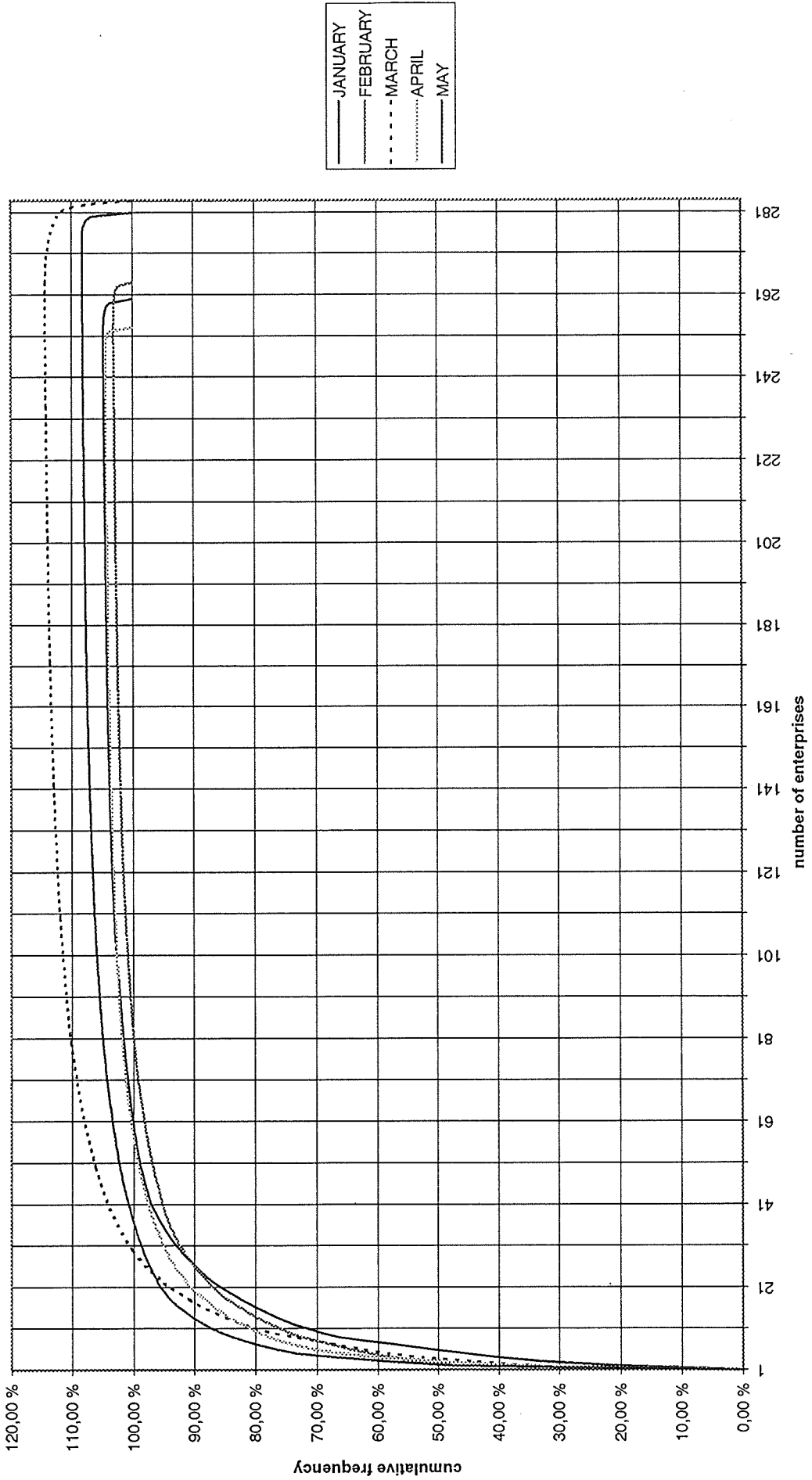


CHART 25

UNREQUITED TRANSFERS 1995
Payments from EU

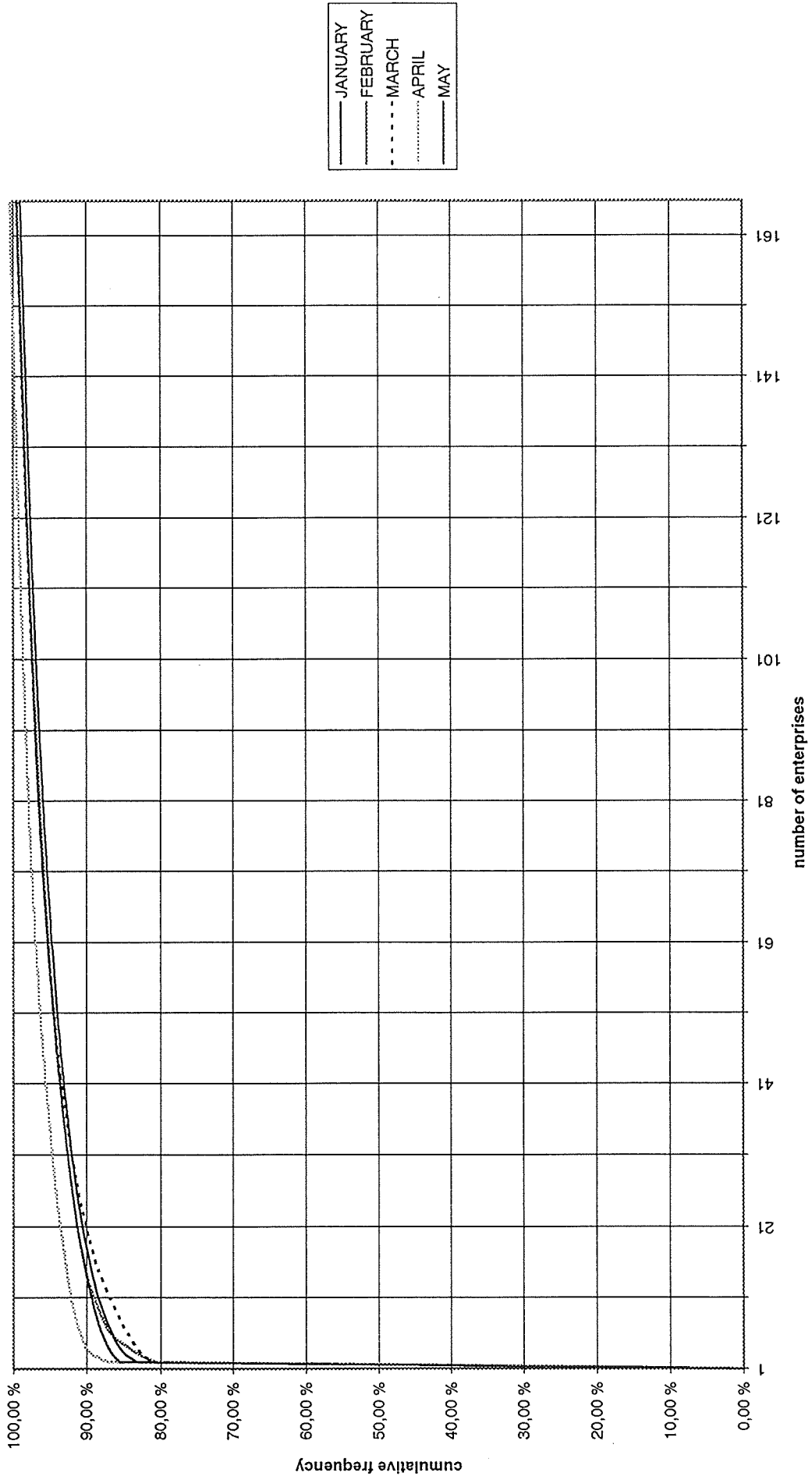


CHART 26

UNREQUITED TRANSFERS 1995
Payments from other countries

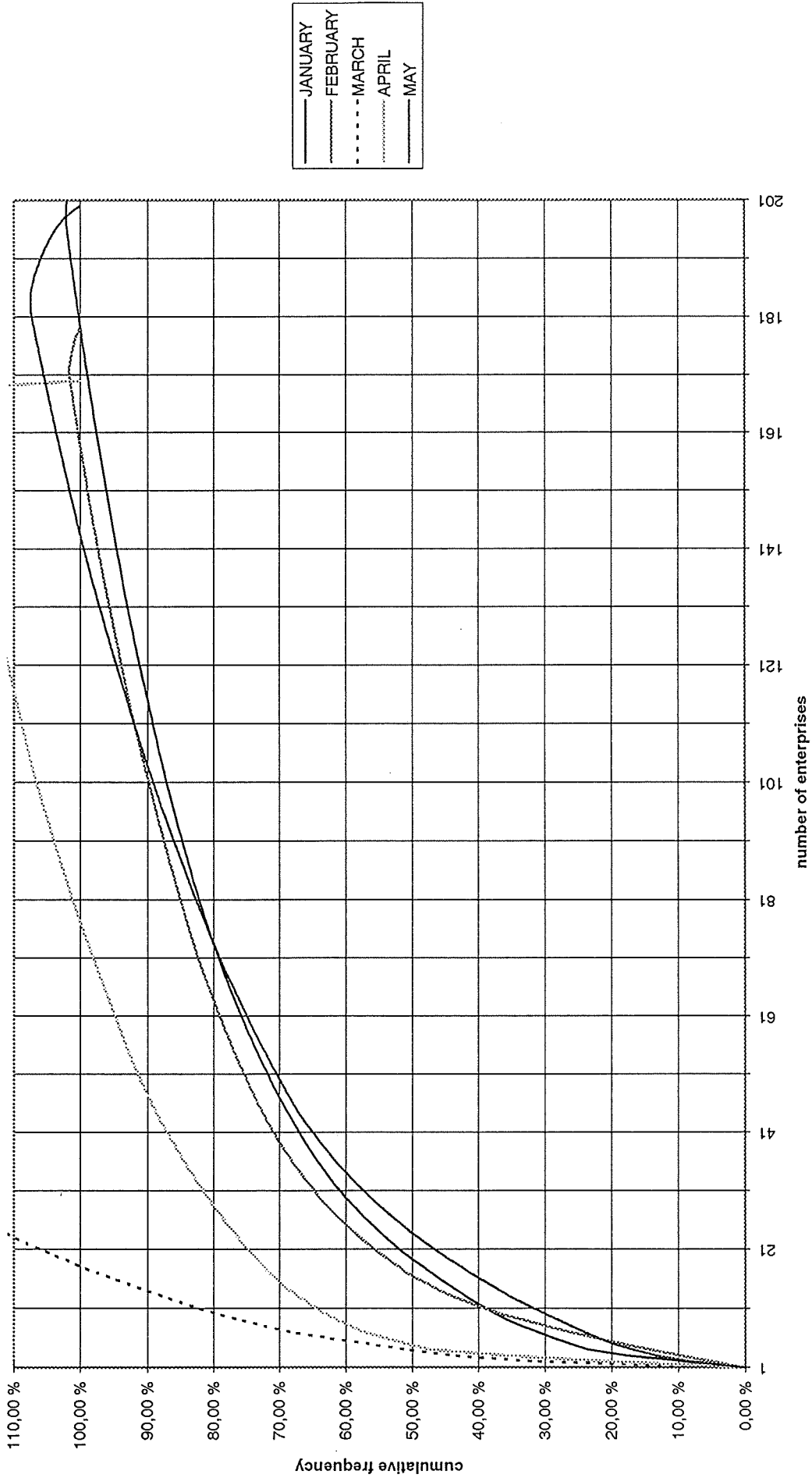


CHART 27

UNREQUITED TRANSFERS 1995 Payments to EU

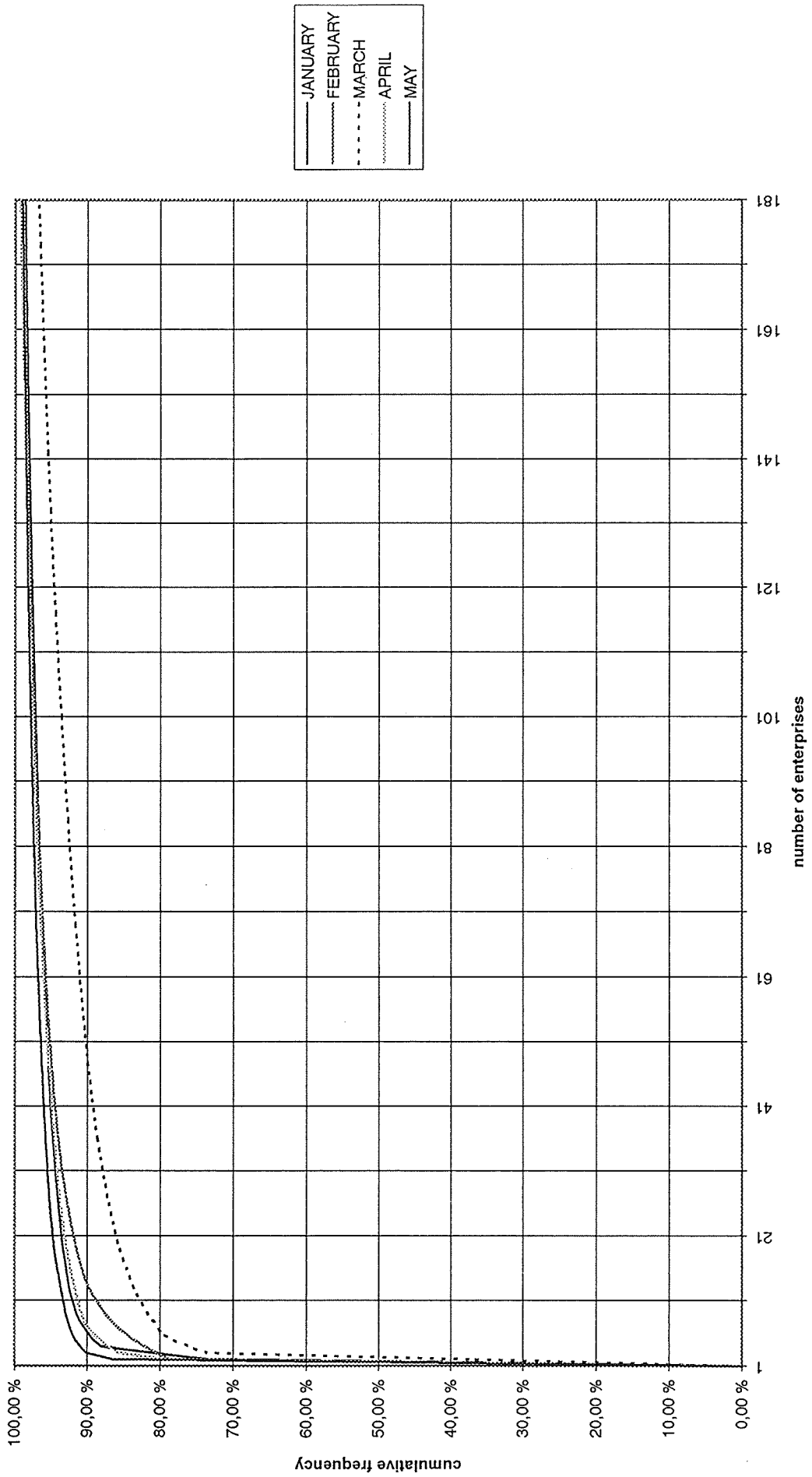


CHART 28

UNREQUITED TRANSFERS 1995 Payments to other countries

