Canada

Combined Impact of Old and New Establishments From 1971 to 1980

March, 1984

Government of Canada
Regional Industrial Expansion

Gouvernement du Canada
Expansion industrielle régionale

Combined Impact of Old and New Establishments - From 1971 to 1980

Prepared for the Small Business Secretariat,
Department of Regional Industrial Expansion

March, 1984

Table of Contents

I. INTRODUCTION

This study essentially represents the construction and presentation of a data base designed to portray the composition of Canada's manufacturing industries by size of producing unit and the dynamics of growth, decline, entry and exit of manufacturing establishments in various size groups, over the medium-term. Subject to certain limitations as a result of small numbers of observations in some industry sectors, it has been possible to construct the data base in a way which facilitates some initial analysis of the data, and thereby confirm or dispell certain perceptions of the track record of survival and growth, employment and productivity, and so on, for smaller vs. larger manufacturing establishments. However, this report is essentially descriptive of what has happened, and does not contain an analysis of causal factors. The latter must await a subsequent phase of work on this or other data bases, and in fact such work goes on in various quarters, using such time series data as can be generated on a representative body of establishments or enterprises.

This analysis is based upon data collected by the Annual Census of Manufactures by Statistics Canada. The study focuses on manufacturing establishments in each of the twenty major industry groups.

This study was made possible largely through the efforts of Statistics Canada. In particular, the Manufacturing and Primary Industries Division provided several special printouts that proved invaluable over the course of this project.

For many purposes, such as the monthly Statistics Canada Employment Surveys in the past years, a threshold of 20 employees has traditionally been chosen to define small establishments. However, that appears to be too small for a manufacturing study, since only 6% of value added and 8% of employment in

manufacturing was generated by the 1-19 employee establishments which were active in 1971.* By taking 1-49 employees, one captures 15% of value added and 19% of employment, which is a more significant share within which to see size group differences and fluctuations over time.

We have therefore selected as a general guideline the following size ranges to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 199 employees
Large: 200 + employees

However, because of the nature of the economic unit in each major manufacturing group and the resultant number of observations in each size range, confidentiality considerations sometimes render infeasible our preferred standard size grouping (small = 1-49, medium = 50-199, large = 200 + employees).

That is, at the major industry group level, it is not always possible to find a sufficient number of establishments in each size range to permit Statistics Canada to release data for the above size groupings. Therefore, we have had to depart from these thresholds in several cases. Unfortunately, this means that the definition of small, medium and large varies between sectors. In the introduction of each of the various industry sections of Chapter III, the grouping used to define small medium and large for that sector is clearly indicated. Since this is a structural study showing relative performance

---

* 1-19 employees was the definition of "small" in Tracking Study of Small Manufacturing Establishments in Canada: 1971-79, Don Allen & Associates, October, 1981, but that report also provided findings for 1-49, 1-99, etc, so that the reader could examine the performance of any desired size grouping.

within each major industry group of plants which could reasonably be described as small, medium and large, this is not a serious limitation; nevertheless, valid cross-sector comparisons can not always be made because of this data problem.

The basic statistical data underlying this study were produced by Statistics Canada's Manufacturing and Primary Industries Division (MAPID). Special programs were written to access and analyse their files, going back as far as 1971. This was suggested as the preferred starting year for the study, for technical reasons relating to the construction of the MAPID file and assignment of record serial numbers starting in 1971. At the time that this project was initiated, 1980 was the most recent year for which a complete file was available. Thus the 1971-80 time frame was chosen, and it serves the purpose of a medium-term study, spanning a couple of cycles in manufacturing activity.

Of course, no matter how closely one attempts to reconstruct the statistical universe of a dozen years ago, inevitably there will be some establishment records which were included in tabulations for the MAPID publications of that era but are not picked up in the special tabulations of today. One reason could be a shift in classification of a reporting unit from a producing establishment to a Head Office or Sales Office. Also, individual records or tables may have been revised after publications were released for any given year. For these and other reasons, there are minor differences here and there in this study between published data and special tabulations contained herein on total establishments, employment and other measures of activity. Because of the complexity and voluminous nature of the files to be accessed, there may even be minor discrepancies within this report.

None of these discrepancies is of a sufficiently large magnitude to distort the general conclusions regarding the performance of manufacturing establishments as grouped into the broad size categories of small, medium and large in this current study. However, they would have to be investigated further if a reader were interested in drawing firm conclusions on a very narrowly defined size group in a given sector.

As a final comment, it should be noted that Statistics Canada's Manufacturing and Primary Industries Division provided special tabulations of their data which were a pre-requisite for the tracking analysis reported upon herein. Within Statistics Canada, the infrastructure and data files are being built up to link ownership and establishment data which will permit tracking of large vs. small companies rather than simply large vs. small establishments, for those types of analysis where size of firm rather than producing unit is of greater interest.

In fact, it appears that at the all-manufacturing level, "small establishments" can generally be interpreted as signifying "small business"; as shown in the table below, over 91% of establishments (in 1980) in the 1-49 employees size group also belonged to enterprises (either single or multi-establishment) which fell into the same small size group:

Relationship of Establishment Size to Enterprise Size for All Manufacturing

Size of Establishment (# of Employees)		Size of Enterprise			
		Small	Medium	Large	Total
Small	#	26,217	825	1,649	28,691
(1-49)	%	91.38	2.88	5.75	100.00
Medium	#	0	2,995	2,063	5,058
(50-199)	%	.00	59.21	40.79	100.00
Large	#	0	0	1,746	1,746
(200+)	%	.00	.00	100.00	100.00
TOTAL	#	26,217	3,820	5,458	35,495
	%	73.86	10.76	15.38	100.00

This tends to enable one to identify small establishments in this report with small business, as noted above. Nevertheless, the reader must bear in mind that the establishment, not the enterprise, is the basic building block for the statistics in this study.

II. SURVIVAL, EXIT AND ENTRY OF ESTABLISHMENTS, BY MAJOR GROUP

Out of nearly 32,000 establishments conducting manufacturing activity in 1971, almost 19,000 were still active in 1980. In the interim period, 1972 to 1980, over 16,000 establishments were born and remained active through to 1980. Total establishments reporting manufacturing activity thus rose from approximately 32,000 to 35,000 over the period under study. The following table shows the survival and entry rates for all manufacturing, during the 1971-80 period:

	All Manufacturing
1971 base (number of active establishments)	31,908
Percentage of 1971 plants which survived	58.5%
1972-80 Births (as percentage of 1971 base)	52.9%
Total 1980 active establishments (as percentage of 1971 base)	111.4%

The table above shows that for all the major industry groups, on the average 58.5% of those establishments active in 1971 continued to report activity as of 1980. Also, new entrant establishments amounted to 52.9% of the total number of plants that were active in 1971. This figure represents an average 1972-80 "birth rate" for manufacturing as a whole. The 1972-80 birth rate for all manufacturing was sufficiently large to more than make up for those establishments that became inactive during the 1972-80 period. In fact, the 1980 active population was 11.4% higher than that of 1971.

The MAPID data base confirms the applicability to manufacturing of the widely-held perception that it is the smaller size ranges which experience both (a) the highest rate of departure from the ranks of the existing establishment universe, and (b) the highest rate of birth of new plants.

Survival rates within manufacturing industries generally increased with the employment size group. Only in two industries did a major size group (small, medium or large) not follow this pattern.

Consequently, the survival rates for manufacturing industries as a whole observed the following pattern, increasing with size group:

Small	(1- 49 employees):	53.2%
Medium	(50-199 employees):	78.4%
Large	(200 + employees):	89.1%
Total		58.5%

For plants which survived, there was a strong tendency for those at the small end of the size range, as measured by employment, to move upward in size. This will be discussed at considerable length in Chapter III.

The size distribution of new births was, as expected, heavily skewed toward smaller plants as reflected in the statistics below which show the breakdown of the 1972-80 births for all manufacturing, by size group, at the time of start-up:

1972-80 Births, by Size Group

All Manufacturing

	1972-80 Births		% of 1971
	#	%	Base
Small	16,109	95.4	62.4
Medium	673	4.0	14.8
Large	101	0.6	6.6
Total	16,883	100.0	52.9

The table on the preceding page shows the number of 1972-80 births, in the small, medium and large size categories, as a percentage of the 1971 base. The percentages show the distribution of the 1972-80 "birth rate" arising from births within each of the size groupings. For every 100 small establishments active in 1971, 62 small plants started up during the rest of the decade; the corresponding statistic for the medium size group was 15 new plants and for large, almost 7 new entrants.

The pattern of entry and exit varied considerably by major group. In some sectors, there was a net decline in the number of active establishments; in others, the number of new entrants greatly outweighed the number becoming inactive. These data are summarized in the following table:

	Survival, Exit and Entry of Establishments					
Major Manufacturing Group	Active in 1971	Still Active in 1980	Inactive by 1980	1972-1980 Births	1980 Active Estab.	% increase) (decrease)
Food & Beverages	5,599	3,213	2,386	1,485	4,698	-16.1
Tobacco	29	18	11	7	25	-13.8
Rubber & Plastics	664	454	210	539	993	49.5
Leather	470	261	209	177	438	-6.8
Textiles	915	552	363	379	931	1.7
Knitting Mills	318	199	119	88	287	-9.7
Clothing	2,164	1,220	944	917	2,137	-1.2
Wood Industries	3,164	1,521	1,643	1,837	3,358	6.1
Furniture & Fixtures	2,165	994	1,171	1,379	2,373	9.6
Paper & Allied Inds.	642	516	126	238	754	17.4
Printing & Publishing	3,649	2,118	1,531	2,155	4,273	17.1
Primary Metals	405	313	92	145	458	13.1
Metal Fabricating	4,143	2,699	1,444	2,587	5,286	27.6
Machinery	913	637	276	831	1,468	60.8
Transportation Equip.	963	520	443	720	1,240	28.8
Electrical Products	764	510	254	594	1,104	44.5
Non-Metallic Minerals	1,307	826	481	753	1,579	20.8
Petroleum & Coal	101	74	27	36	110	8.9
Chemicals	1,139	769	370	452	1,221	7.2
Miscellaneous Mfg.	2,394	1,252	1,142	1,564	2,816	17.6
Total Manufacturing	31,908	18,666	13,242	16,883	35,549	11.4

In manufacturing overall, there were roughly five establishments entering the active population in 1972-80 for every four which departed. Sectors exhibiting striking growth in the population of establishments were machinery (where entrants outnumbered exits by 3:1), rubber and plastics (2.5:1) and electrical products (2.3:1). In food and beverages, in contrast, the ratio of births to departures from the active file was just over 1:2.

From the preceding tables it is obvious that the vast majority of 1972-80 births started up in the small size category. As a result, the average number of employees for older (1971 cohort) plants still active by 1980 was 78.4, whereas newer plants averaged 17.5 workers.

The following table shows the relative sizes of the major industry groups (in terms of average employment and average shipments per establishment) for both old and new establishments:

Relative Sizes of Old and New Entrant Manufacturing Establishments in 1980

	Old Establishments (from 1971 cohort, still active in 1980)		New Establishments (1972-80 births, still active in 1980)	
	Average number of Employees	Average Shipments per Establishment($000's)	Average number of Employees	Average Shipments per Establishment ($000's)
Food & Beverages	60.0	8,701	16.7	2,280
Tobacco	353.6	67,557	23.1	4,681
Rubber & Plastics	93.2	7,444	27.7	1,996
Leather	80.4	4,009	24.1	997
Textiles	99.7	7,234	22.2	1,324
Knitting Mills	93.0	4,146	33.0	1,702
Clothing	59.2	4,588	24.2	920
Wood Industries	58.1	4,480	15.4	1,021
Furniture and Fixtures	37.4	1,825	10.0	412
Paper & Allied Inds.	223.0	27,098	34.3	4,433
Printing & Publishing	39.2	2,168	10.1	576
Primary Metals	365.6	44,730	68.9	8,590
Metal Fabricating	50.0	3,891	13.3	1,192
Machinery	112.6	10,565	25.6	2,124
Transportation Equip.	286.4	43,386	29.3	2,448
Electrical Products	174.4	13,772	37.3	2,774
Non-Metallic Minerals	53.1	4,759	11.9	963
Petroleum & Coal	140.7	173,321	49.1	54,447
Chemicals	89.9	14,281	23.3	4,674
Miscellaneous Mfg.	39.4	2,970	10.0	575
Total Manufacturing	78.4	8,634	17.5	1,546

From the table on the preceding page we can see that the new establishments from the major industry groups primary metals, petroleum and coal, and paper and allied industries were relatively large compared to other new entrant manufacturing industries in 1980. For example, new plants in the primary metals industry averaged almost 69 employees per plant and over $8.5 m. in shipments. New petroleum and coal industry plants averaged over 49 employees per establishment and over $54 m. in shipments in 1980. At the other end of the scale, the new entrant establishments from miscellaneous manufacturing, furniture and fixtures, printing and publishing, and non-metallic minerals industries were small relative to the other manufacturing industries. For example, the new furniture and fixtures establishments were very small, averaging only 10 employees per plant and $412,000 in shipments per establishment in 1980.

III. NET IMPACT ON EMPLOYMENT AND PRODUCTIVITY OF OLD AND NEW PLANTS, BY SIZE GROUP

A. All Manufacturing

1. Employment

Employment levels for old and new plants, broken down by size group, are presented in the following table:

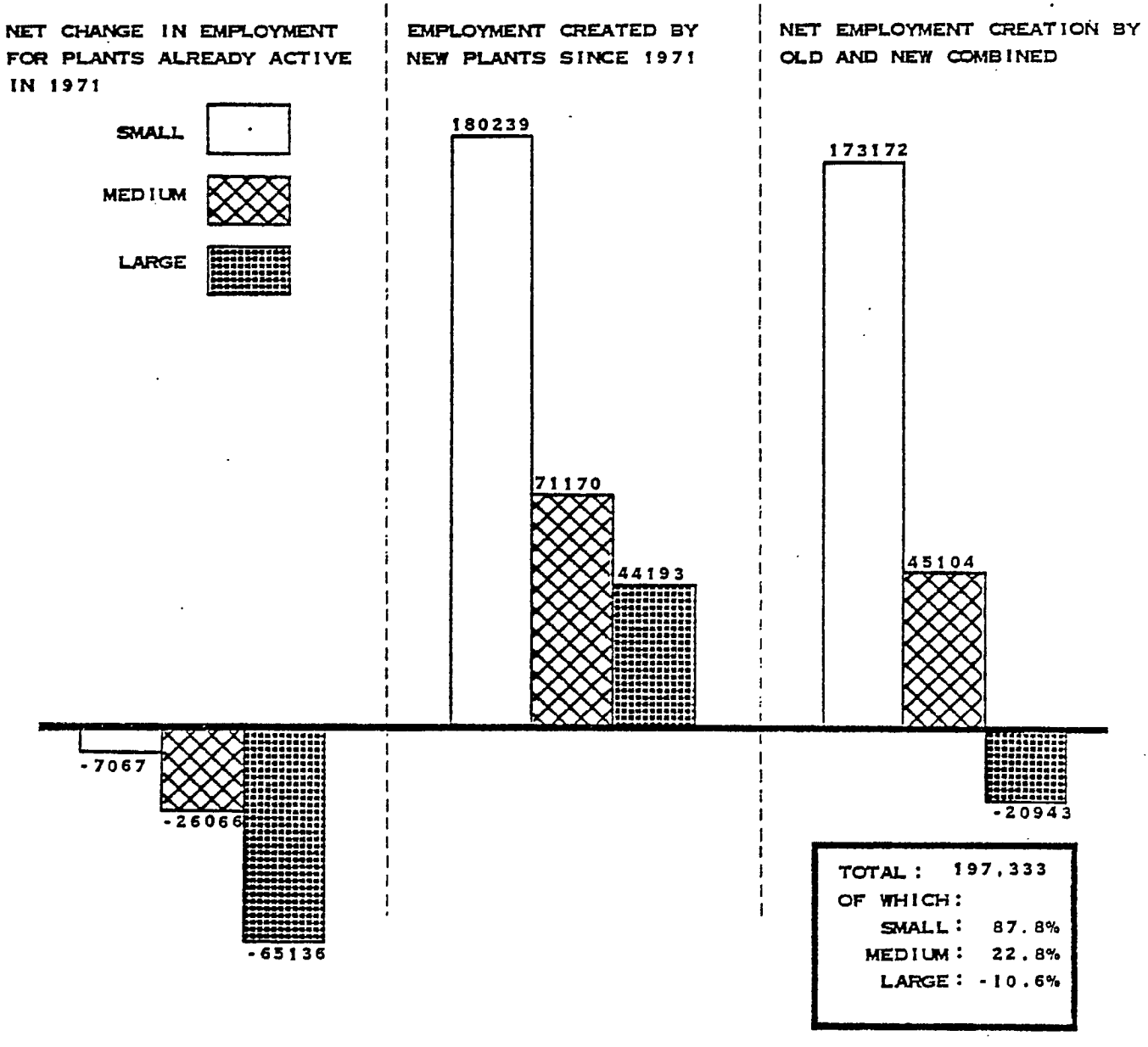
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	291,732	284,665	-7,067	Small	180,239
Medium	444,354	418,288	-26,066	Medium	71,170
Large	825,805	760,669	-65,136	Large	44,193
Total	1,561,891	1,463,622	-98,269	Total	295,602

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort		Net Employment Change from 1971 to 1980			
	Job Loss For Plants Ceasing Activity	Net Job Growth For Surviving Plants	Old Plants	New Plants	Total #	Total %
Small	-101,094	94,027	- 7,067	180,239	173,172	87.8
Medium	-92,839	66,773	-26,066	71,170	45,104	22.8
Large	-75,958	10,822	-65,136	44,193	-20,943	-10.6
Total	-269,891	171,622	-98,269	295,602	197,333	100.0

TOTAL MANUFACTURING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

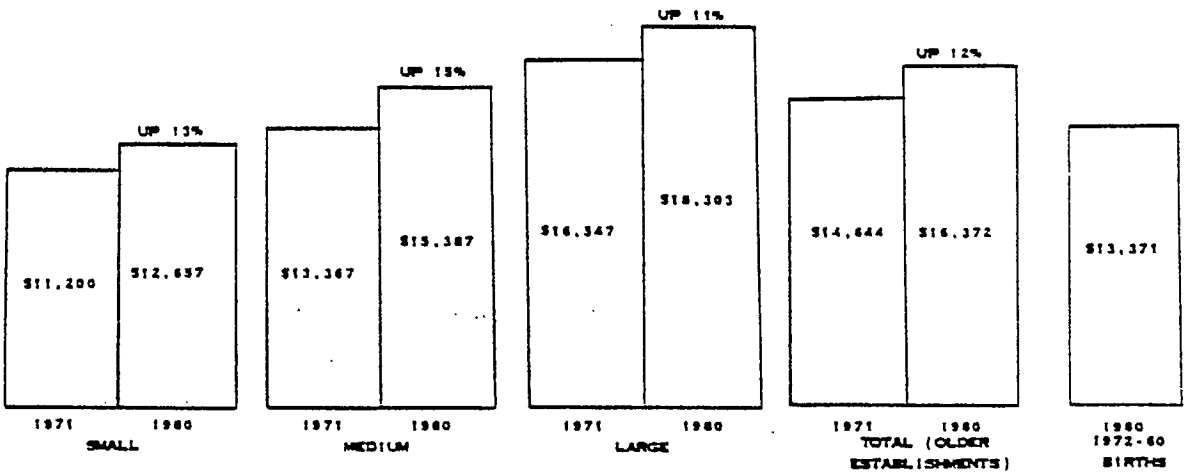


2. Productivity*

Value added per worker for small establishments in 1971 was $11,200, 24% below the average ($14,644) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated average growth in this productivity measure (13% vs. 12% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $13,371 (in $ 1971). This was 18% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 6% above the 1980 average for plants which had been small in 1971 ($13,371 vs. $12,657).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was at least as high as it was for larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, but higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

B. Food and Beverages

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	25,063	18,564	-6,499	Small	9,418
Medium	54,873	54,011	-862	Medium	10,048
Large	129,145	120,112	-9,033	Large	5,367
Total	209,081	192,687	-16,394	Total	24,833

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

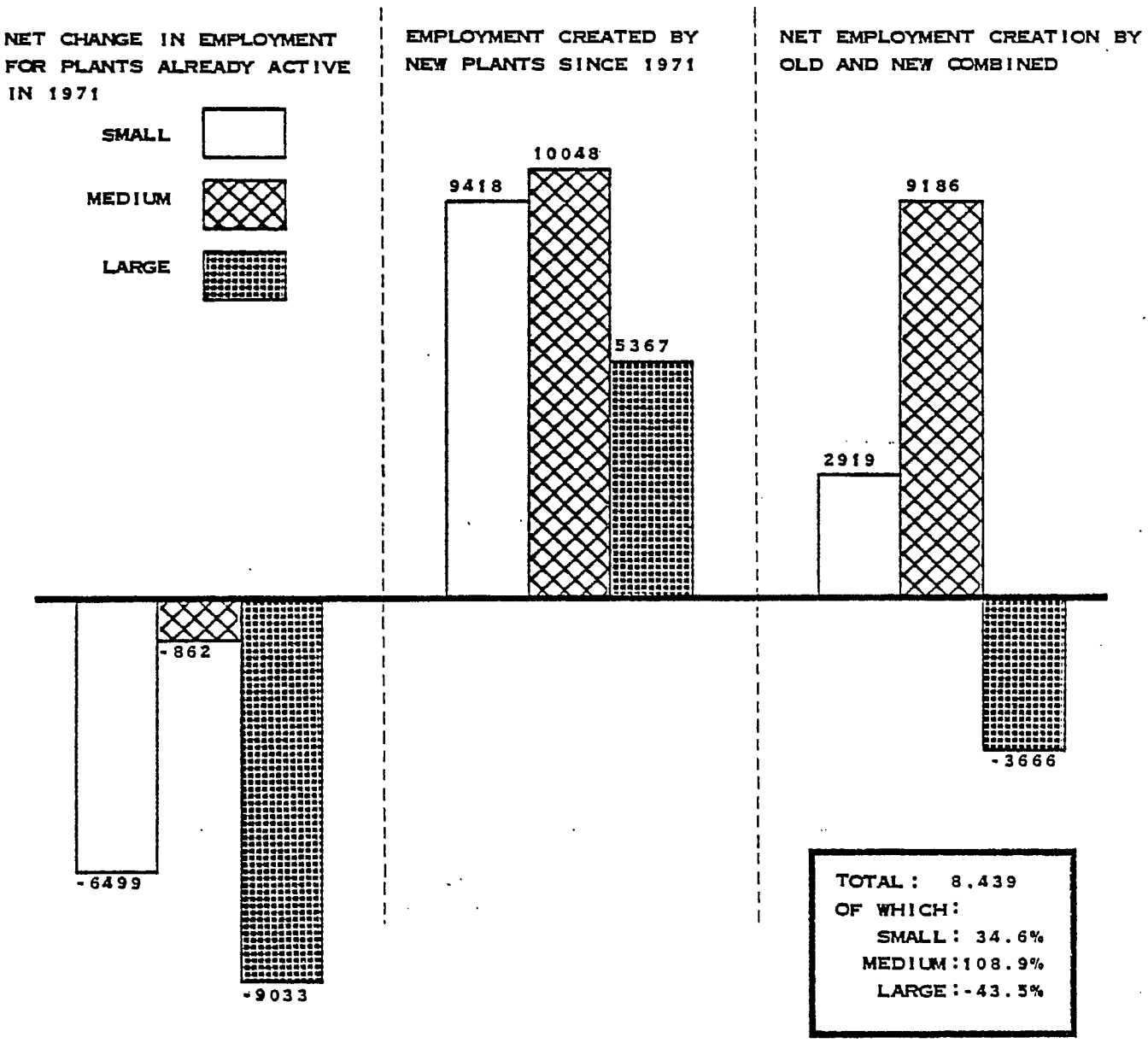
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total	
Small	-11,027	4,528	- 6,499	9,418	2,919	34.6
Medium	-14,765	13,903	- 862	10,048	9,186	108.9
Large	-16,205	7,172	- 9,033	5,367	-3,666	-43.5
Total	-41,997	25,603	-16,394	24,833	8,439	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 19 employees
Medium: 20 - 99 employees
Large: 100 + employees

FOOD AND BEVERAGES

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

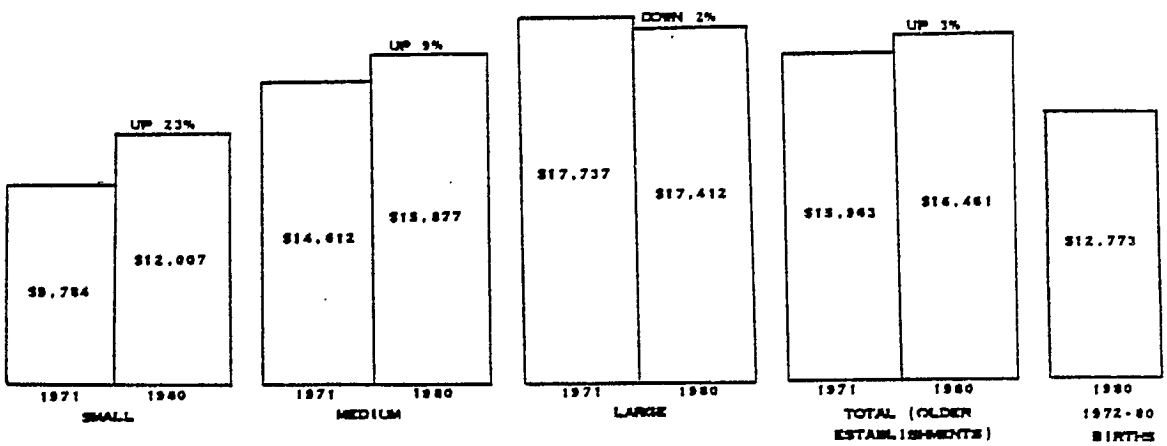


2. Productivity*

Value added per worker for small establishments in 1971 was $9,784, 39% below the average ($15,963) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated growth well above average in this productivity measure (23% vs. 3% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $12,773 (in $ 1971). This was 22% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 6% above the 1980 average for plants which had been small in 1971 ($12,773 vs. $12,007).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was far superior to that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, but slightly higher productivity than those surviving from the 1971 small establishment cohort.



---

* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

C. Tobacco Products

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	161	78	-83
Medium	2,944	1,800	-1,144
Large	5,273	4,486	-787
Total	8,378	6,364	-2,014

New Plants (1972-80 births)

Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	88
Medium	74
Large	0
Total	162

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

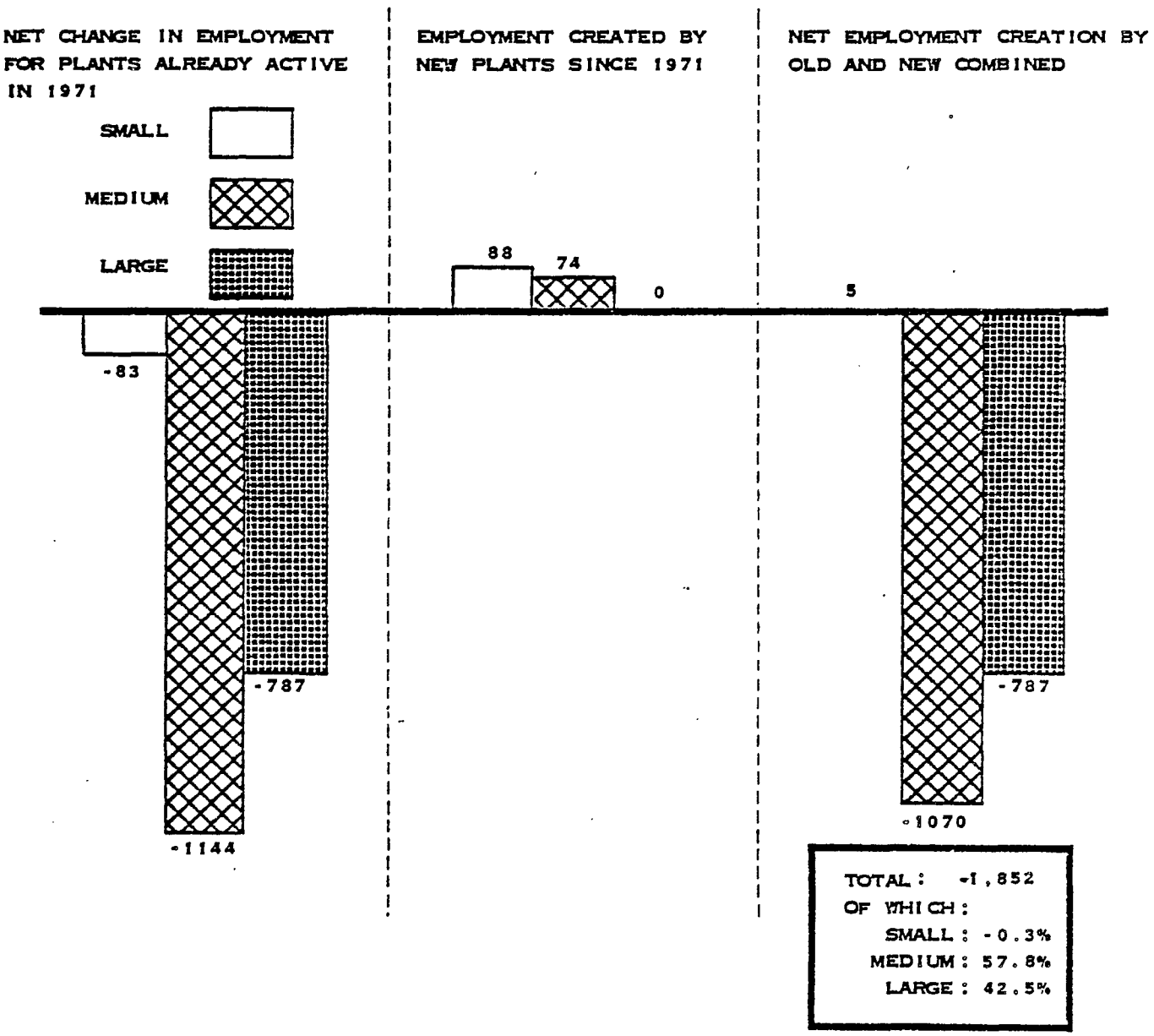
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total	
Small	-60	-23	-83	88	5	-0.3
Medium	-1,374	230	-1,144	74	-1,070	57.8
Large	-879	92	-787	0	-787	42.5
Total	-2,313	299	-2,014	162	-1,852	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 499 employees
Large: 500 + employees

TOBACCO

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

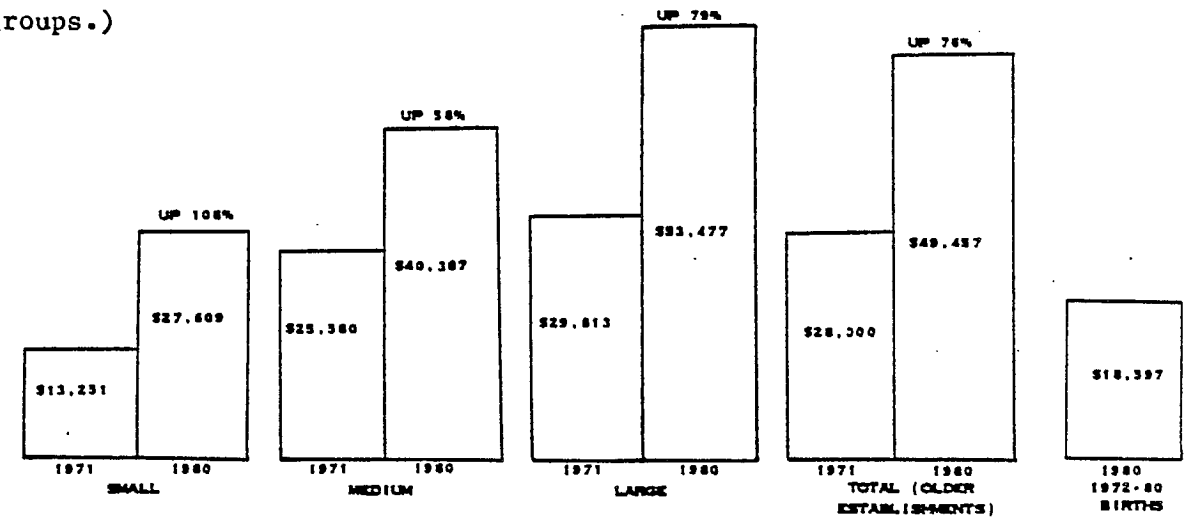


2. Productivity*

Value added per worker for small establishments in 1971 was $13,251, 53% below the average ($28,000) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (108% vs. 76% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $18,597 (in $ 1971). This was 62% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 33% below the 1980 average for plants which had been small in 1971 ($18,597 vs. $27,609).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was higher than that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, and also generated lower productivity than those surviving from the 1971 small establishment cohort. (The number of observations is so small in this sector that these comparisons have less significance than for other major groups.)



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

D. Rubber and Plastics

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	2,799	3,959	1,160
Medium	26,269	26,194	-75
Large	12,677	12,142	-535
Total	41,745	42,295	550

New Plants (1972-80 births)

Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	5,402
Medium	6,846
Large	2,682
Total	14,930

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

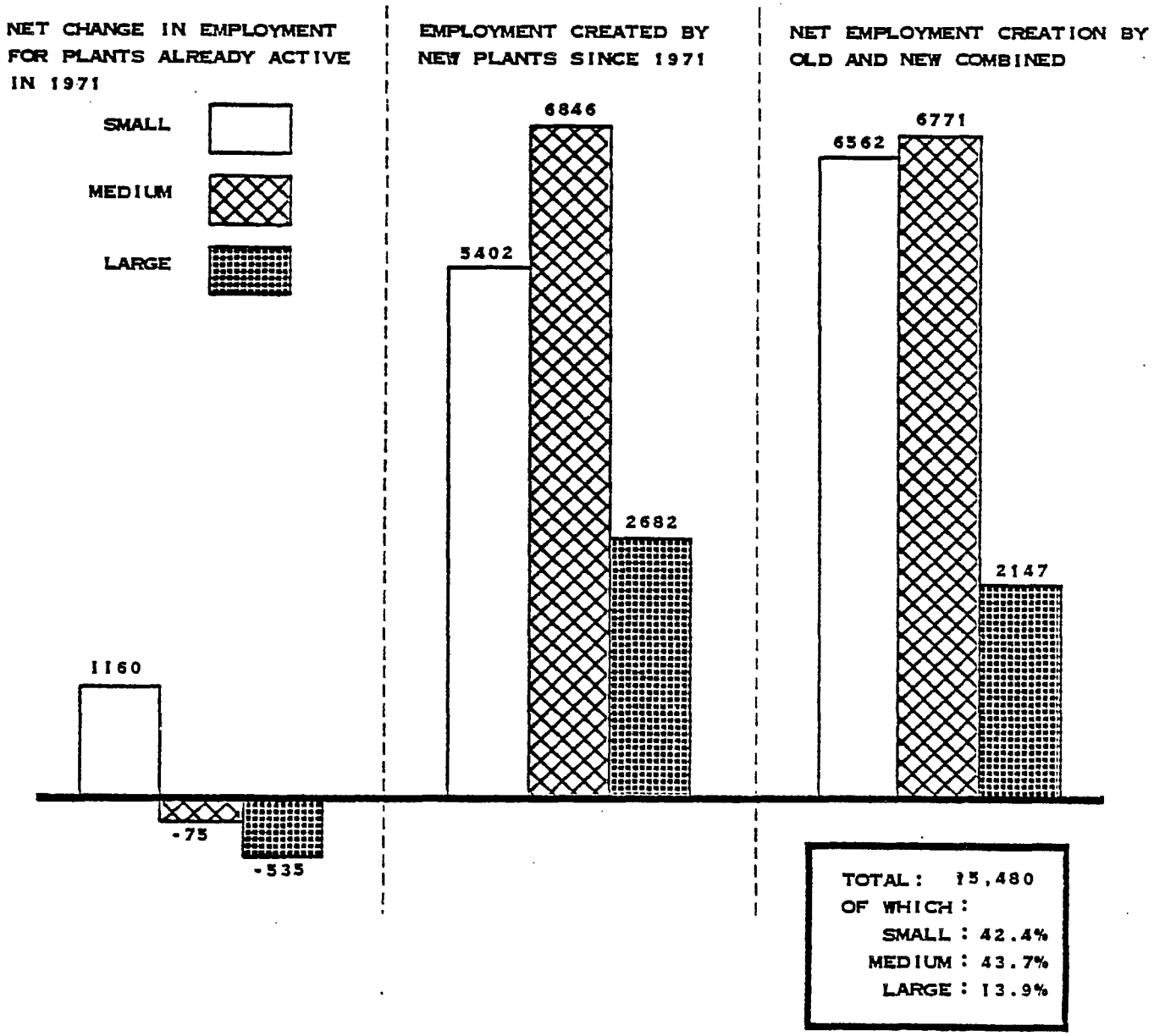
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total	
Small	-1,032	2,192	1,160	5,402	6,562	42.4
Medium	-4,133	4,058	-75	6,846	6,771	43.7
Large	0	-535	-535	2,682	2,147	13.9
Total	-5,165	5,715	550	14,930	15,480	100.0

Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 19 employees
Medium: 20 - 499 employees
Large: 500 + employees

RUBBER AND PLASTICS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

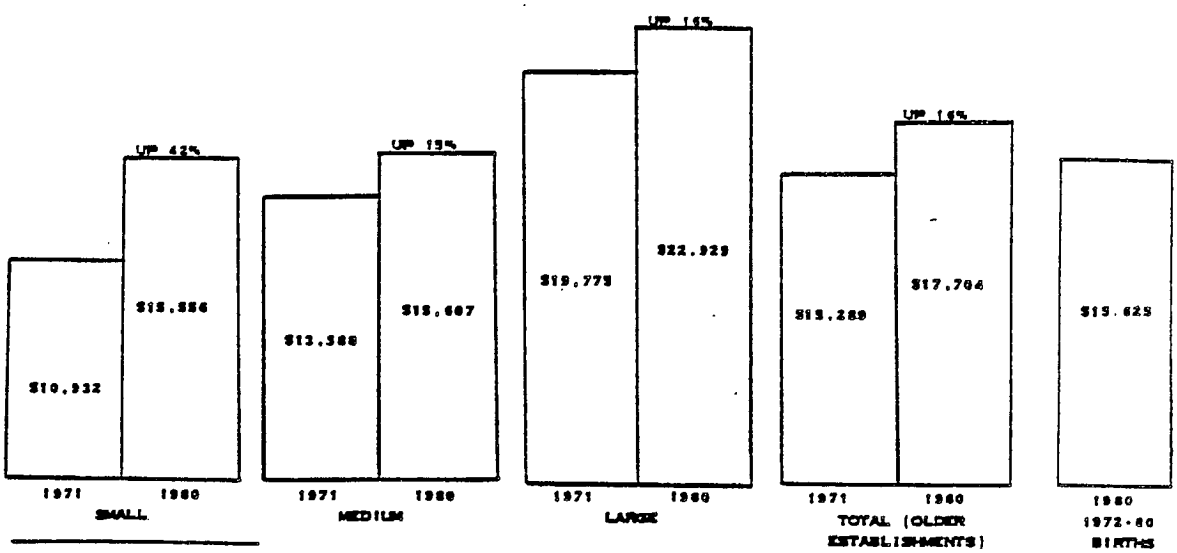


2. Productivity*

Value added per worker for small establishments in 1971 was $10,932, 28% below the average ($15,289) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (42% vs. 16% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $15,625 (in $ 1971). This was 12% below the 1980 average for the older plants as a group. The new establishments' output per worker was almost identical to the 1980 average for plants which had been small in 1971 ($15,625 vs. $15,556).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was higher than that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than older plants active in 1980, and the same productivity as those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

E. Leather

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	536	374	-162	Small	766
Medium	991	1,018	27	Medium	626
Large	26,077	19,589	-6,488	Large	2,882
Total	27,604	20,981	-6,623	Total	4,274

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

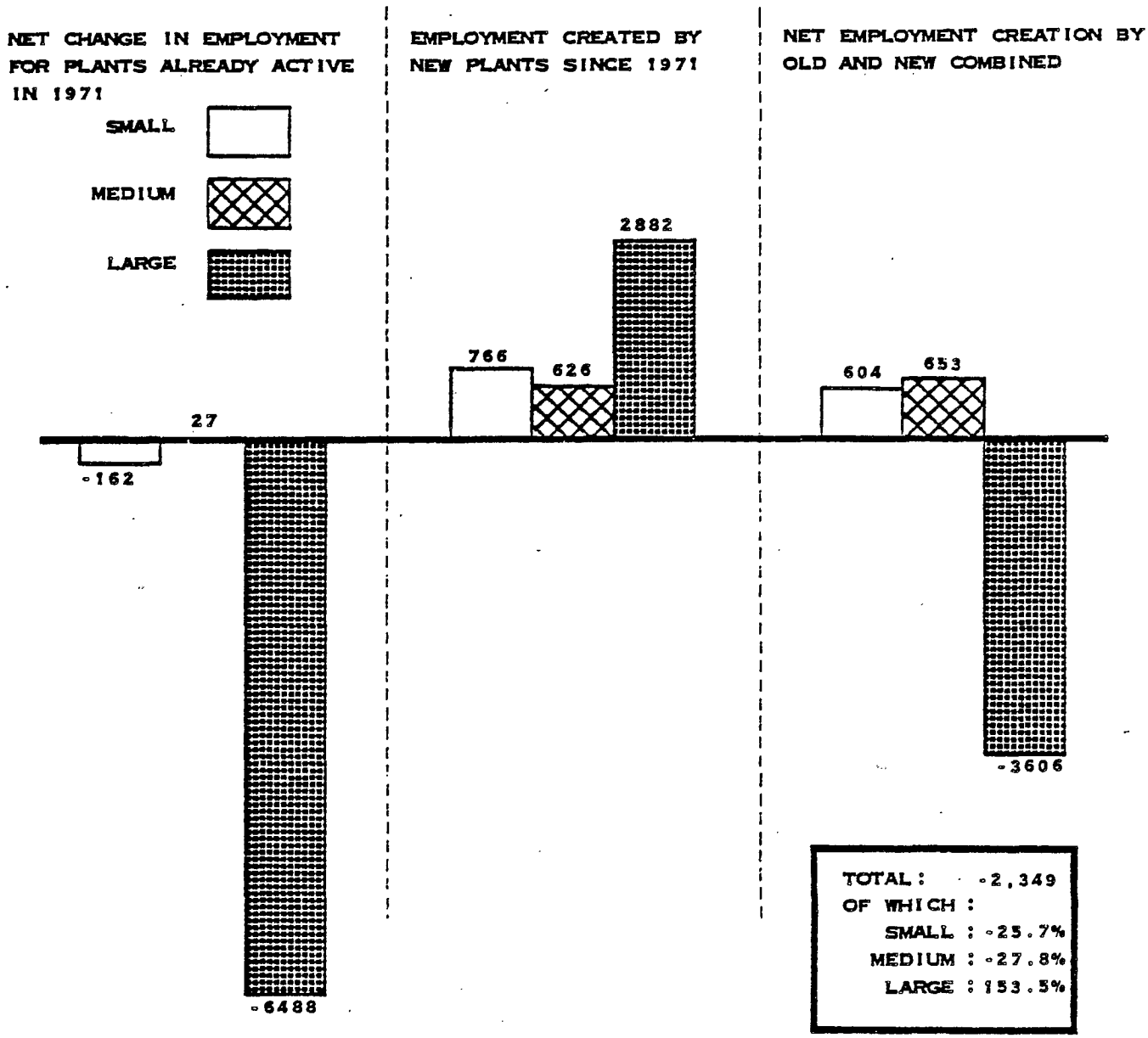
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total	
Small	-350	188	-162	766	604	-25.7
Medium	-396	423	27	626	653	-27.8
Large	-8,961	2,473	-6,488	2,882	-3,606	153.5
Total	-9,707	3,084	-6,623	4,274	-2,349	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 9 employees
Medium: 10 - 19 employees
Large: 20 + employees

LEATHER

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80



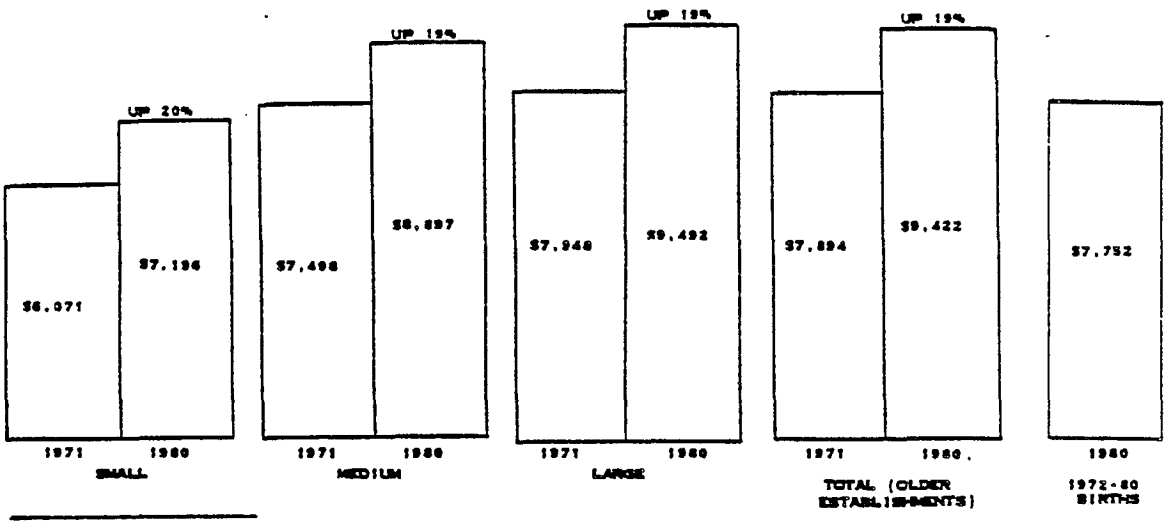
TOTAL :	-2,349
OF WHICH :	
SMALL :	-25.7%
MEDIUM :	-27.8%
LARGE :	153.5%

2. Productivity*

Value added per worker for small establishments in 1971 was $6,071, 23% below the average ($7,894) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated average growth in this productivity measure (20% vs. 19% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $7,752 (in $ 1971). This was 18% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 8% above the 1980 average for plants which had been small in 1971 ($7,752 vs. $7,196).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was at least as high as it was for larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than older plants active in 1980, but slightly higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

F. Textiles

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

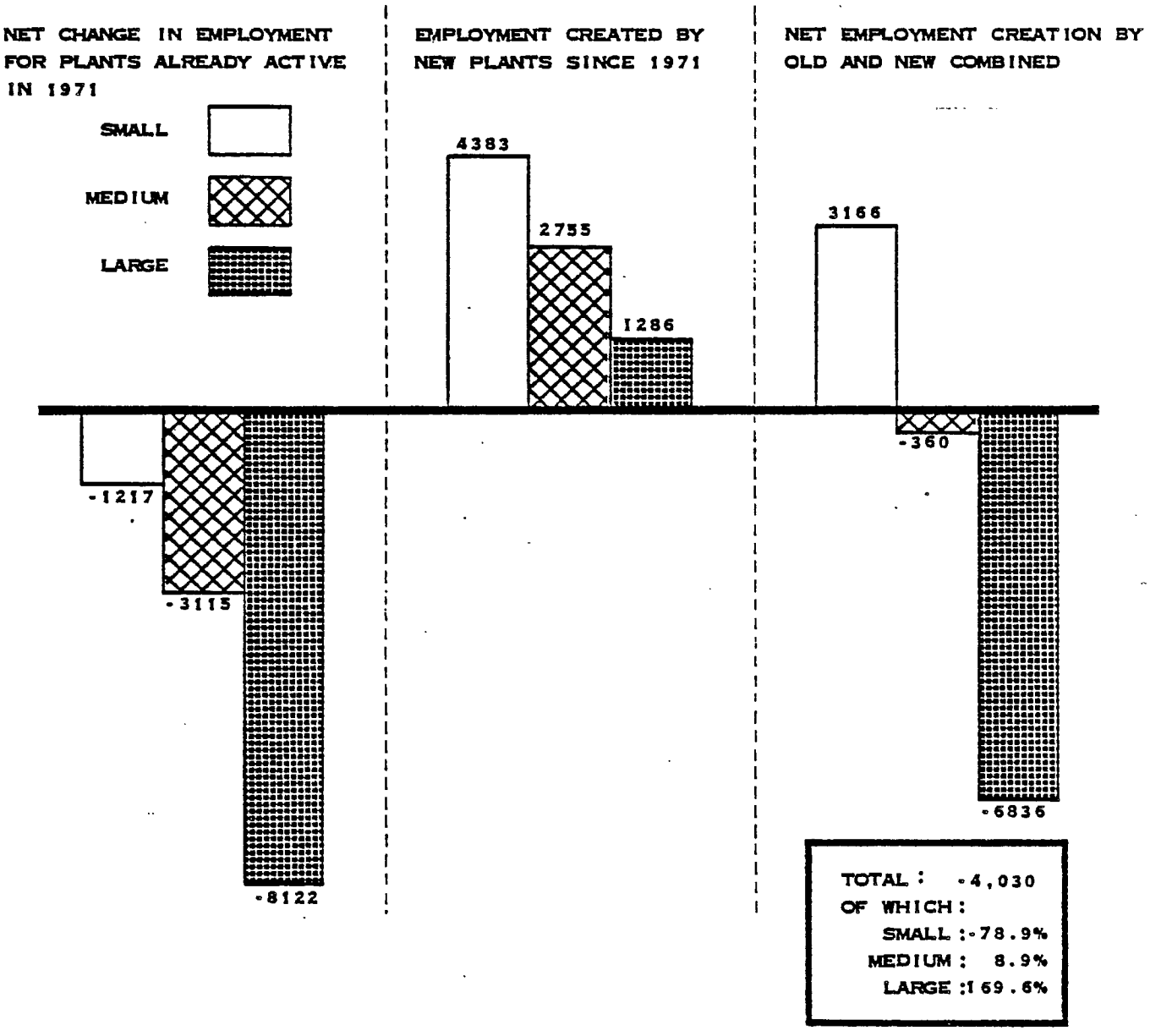
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	8,631	7,414	-1,217	Small	4,383
Medium	16,568	13,453	-3,115	Medium	2,755
Large	42,311	34,189	-8,122	Large	1,286
Total	67,510	55,056	-12,454	Total	8,424

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total: #	Total: %
Small	-3,166	1,949	-1,217	4,383	3,166	-78.5
Medium	-5,026	1,911	-3,115	2,755	-360	8.9
Large	-4,713	-3,409	-8,122	1,286	-6,836	169.6
Total	-12,905	451	-12,454	8,424	-4,030	100.0

TEXTILES

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

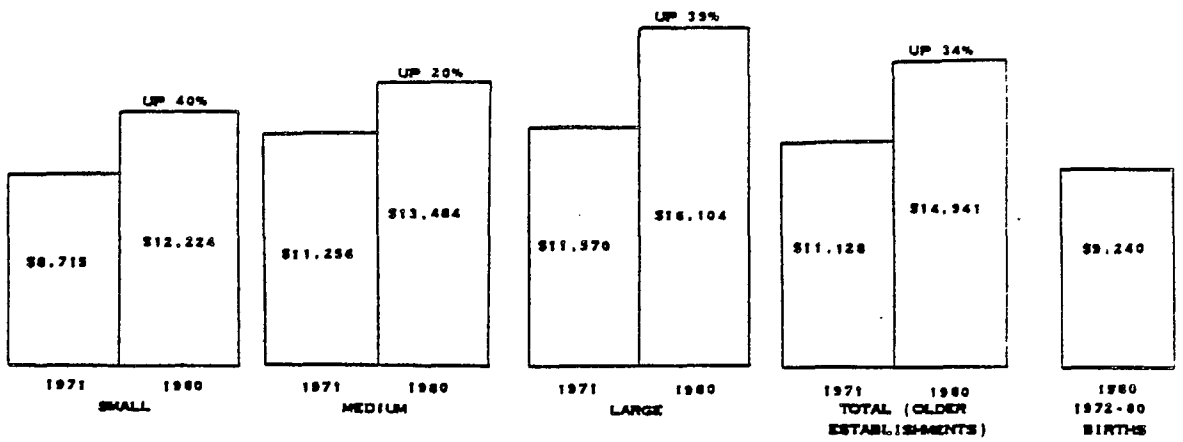


2. Productivity*

Value added per worker for small establishments in 1971 was $8,715, 22% below the average ($11,128) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (40% vs. 34% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $9,240 (in $ 1971). This was 38% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 24% below the 1980 average for plants which had been small in 1971 ($9,240 vs. $12,224).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was at least as high as it was for larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than both older plants active in 1980, and those surviving from the 1971 small establishment cohort.



---

* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

G. Knitting Mills

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	3,477	3,066	-411
Medium	10,623	7,859	-2,764
Large	9,509	7,591	-1,918
Total	23,609	18,516	-5,093

New Plants (1972-80 births)

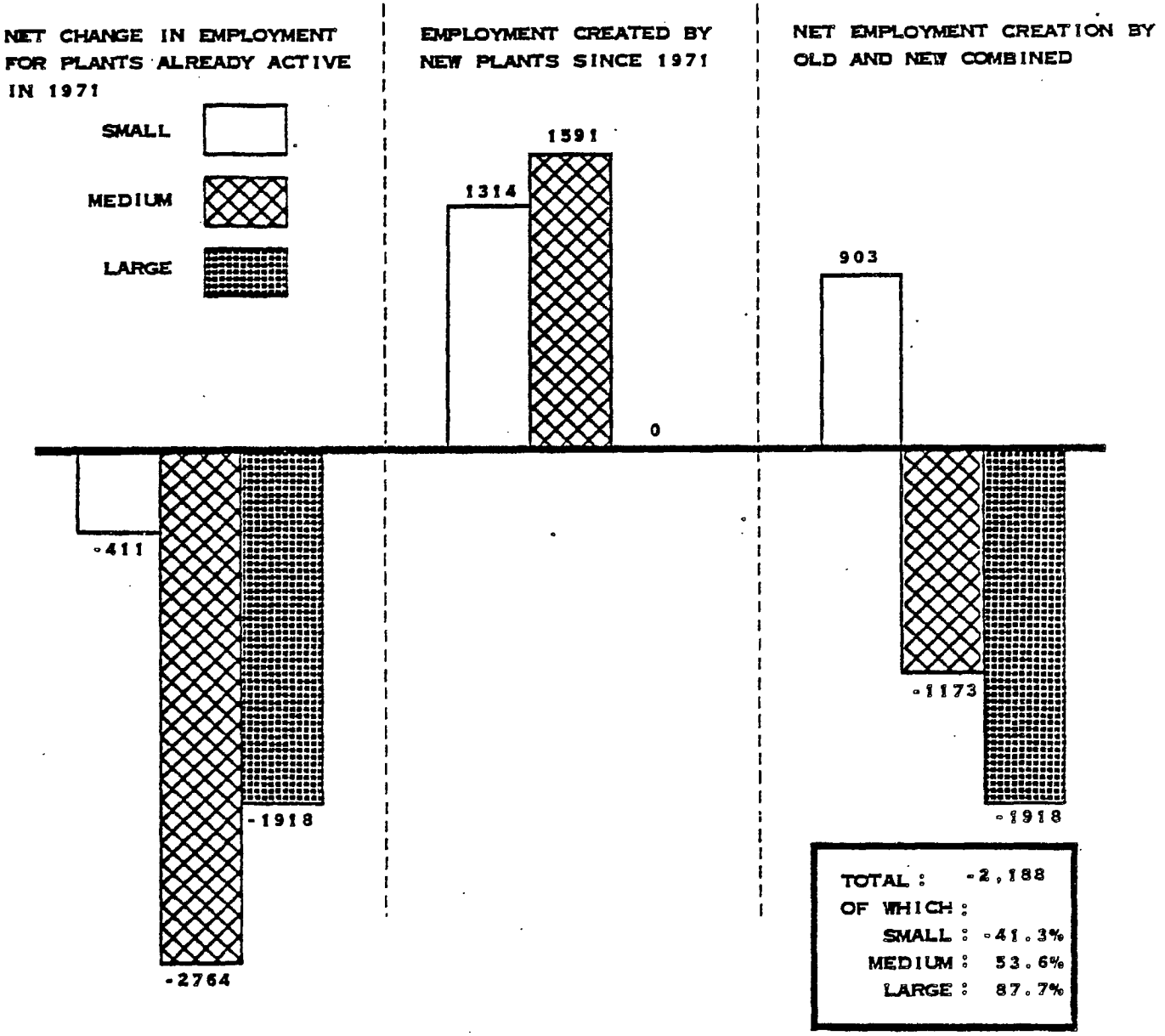
Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	1,314
Medium	1,591
Large	0
Total	2,905

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total #	Total %
Small	-1,377	966	-411	1,314	903	-41.3
Medium	-3,308	544	-2,764	1,591	-1,173	53.6
Large	-984	-934	-1,918	0	-1,918	87.7
Total	-5,669	576	-5,093	2,905	-2,188	100.0

KNITTING MILLS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

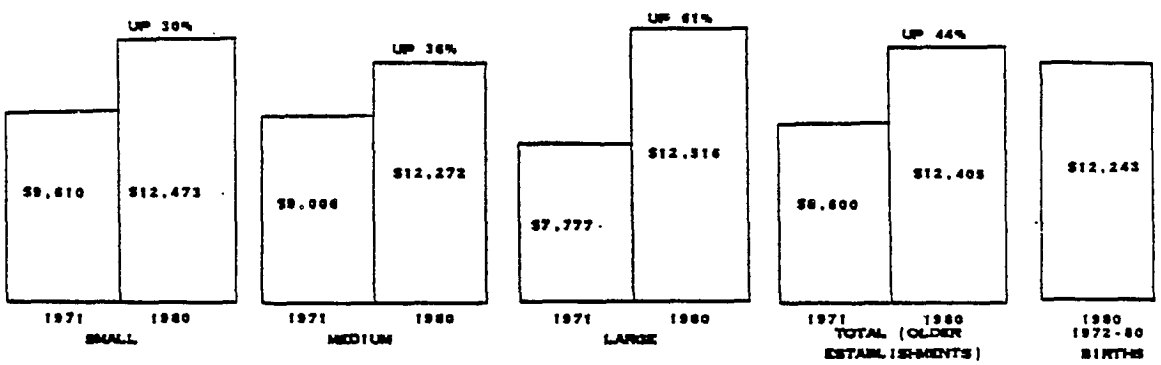


2. Productivity*

Value added per worker for small establishments in 1971 was $9,610, 12% above the average ($8,600) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated below average growth in this productivity measure (30% vs. 44% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $12,243 (in $ 1971). This was 1% below the 1980 average for the older plants as a group. Similarly, the new establishments' output per worker was 2% below the 1980 average for plants which had been small in 1971 ($12,243 vs. $12,473).

In summary, smaller establishments demonstrated generally higher output per worker in absolute terms than medium or large plants, but their growth in productivity was lower than that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated the same productivity as older plants active in 1980, which was also almost identical to the productivity of plants surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

H. Clothing

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

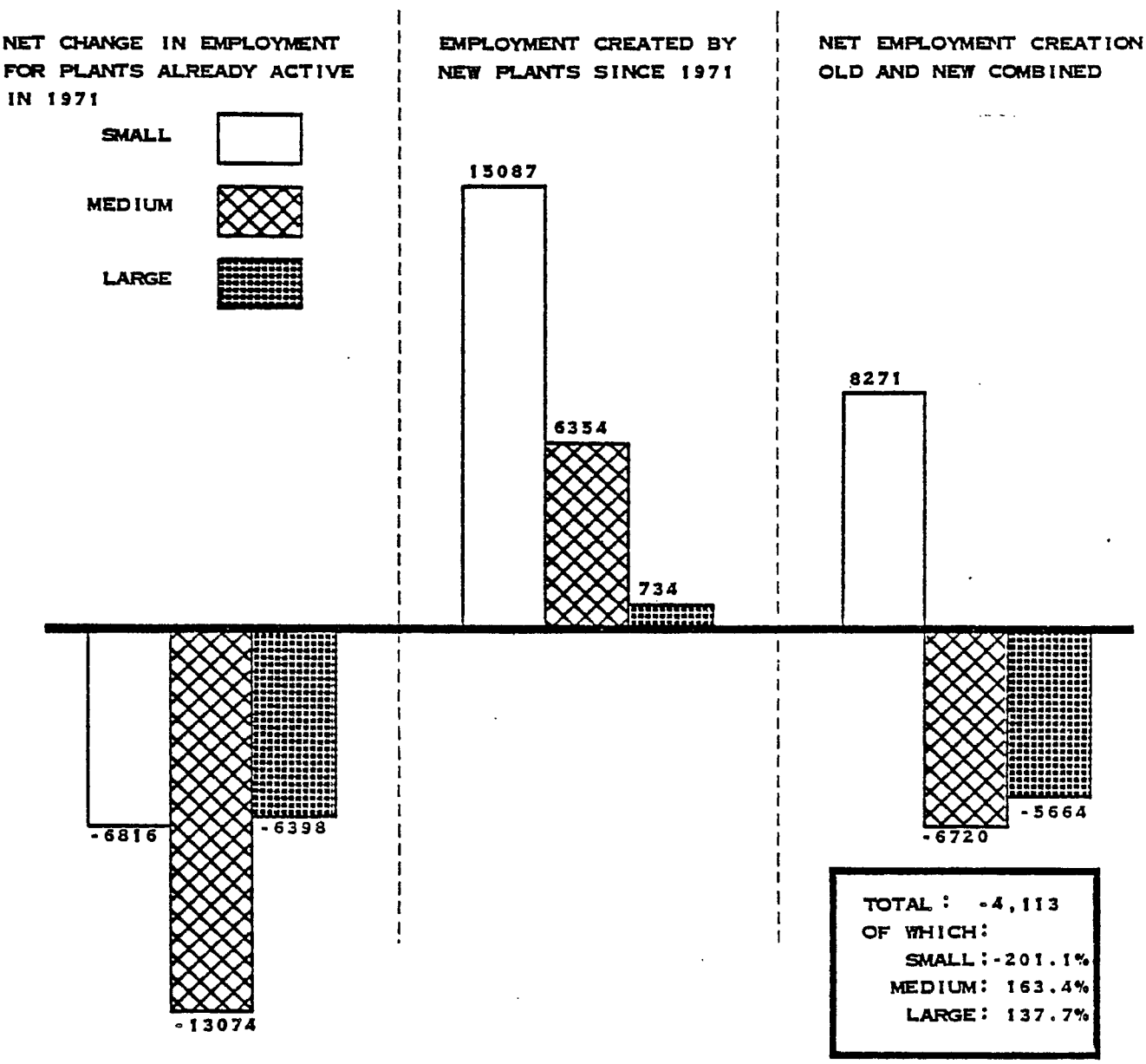
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	26,342	19,526	-6,816	Small	15,087
Medium	47,740	34,666	-13,074	Medium	6,354
Large	24,453	18,055	-6,398	Large	734
Total	98,535	72,247	-26,288	Total	22,175

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort		Net Employment Change from 1971 to 1980			
	Job Loss For Plants Ceasing Activity	Job Growth For Surviving Plants	Old Plants	New Plants	Total #	Total %
Small	11,553	4,737	-6,816	15,087	8,271	-201.1
Medium	12,884	-190	-13,074	6,354	-6,720	163.4
Large	3,843	-2,555	-6,398	734	-5,664	137.7
Total	28,280	1,992	-26,288	22,175	-4,113	100.0

CLOTHING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

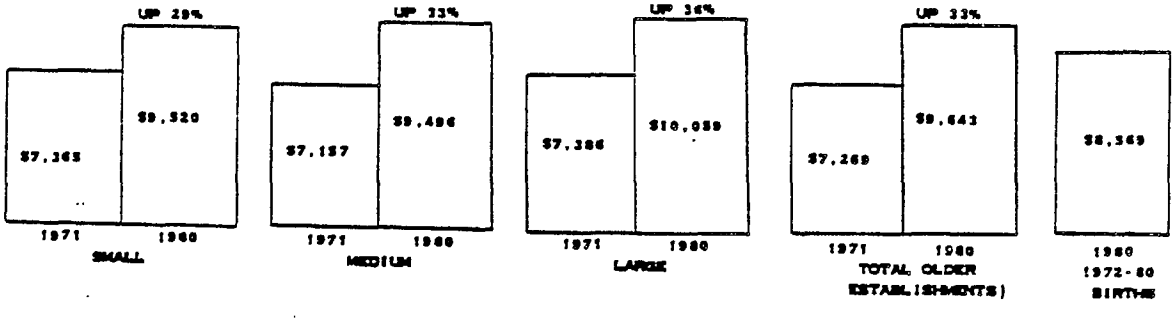


2. Productivity*

Value added per worker for small establishments in 1971 was $7,365, virtually the same as the average ($7,269) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated slightly below average growth in this productivity measure (29% vs. 33% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $8,569 (in $ 1971). This was 11% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 10% below the 1980 average for plants which had been small in 1971 ($8,569 vs. $9,520).

In summary, smaller establishments generally demonstrated similar output per worker in absolute terms as medium or large plants, and their growth in productivity was also close to that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than both older plants active in 1980, and those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

I. Wood Industries

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

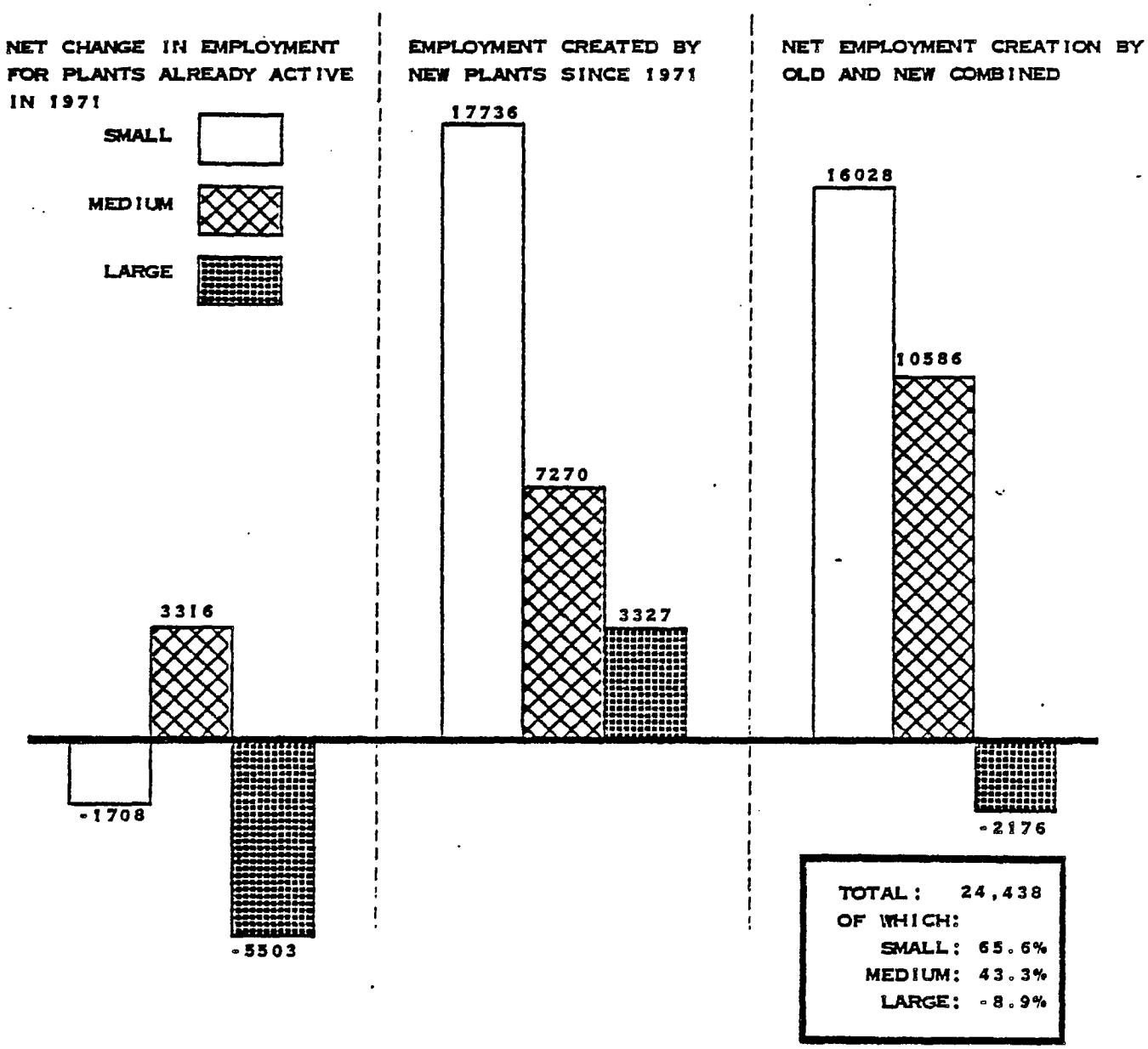
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	26,727	25,019	-1,708	Small	17,736
Medium	35,026	38,342	3,316	Medium	7,270
Large	30,525	25,022	-5,503	Large	3,327
Total	92,278	88,383	-3,895	Total	28,333

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total: #	Total: %
Small	-11,560	9,852	-1,708	17,736	16,028	65.6
Medium	-7,695	11,011	3,316	7,270	10,586	43.3
Large	-3,820	-1,683	-5,503	3,327	-2,176	-8.9
Total	-23,075	19,180	-3,895	28,333	24,438	100.0

WOOD INDUSTRIES

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

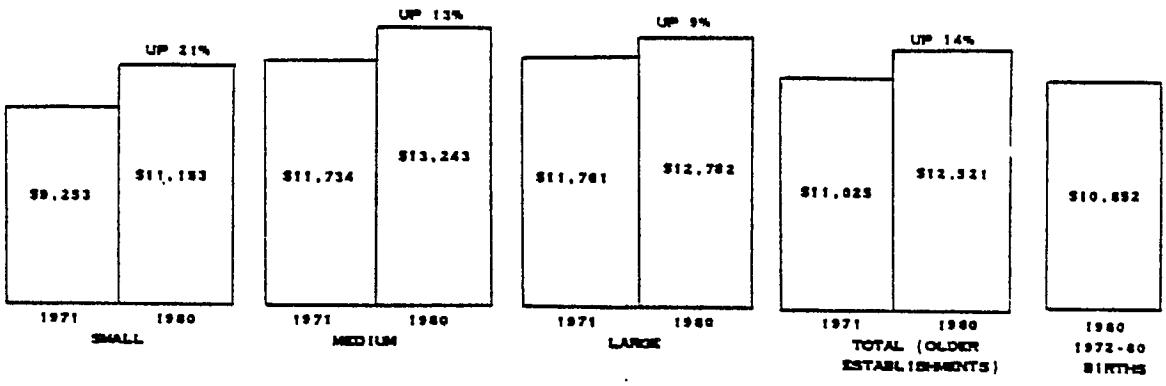


2. Productivity*

Value added per worker for small establishments in 1971 was $9,253, 16% below the average ($11,025) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (21% vs. 14% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $10,852 (in $ 1971). This was 13% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 3% below the 1980 average for plants which had been small in 1971 ($10,852 vs. $11,153).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was higher than that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than older plants active in 1980, as well as slightly lower productivity than those surviving from the 1971 small establishment cohort.



---

* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

J. Furniture and Fixtures

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	15,390	13,798	-1,592
Medium	18,979	16,705	-2,274
Large	9,846	6,653	-3,193
Total	44,215	37,156	-7,059

New Plants (1972-80 births)

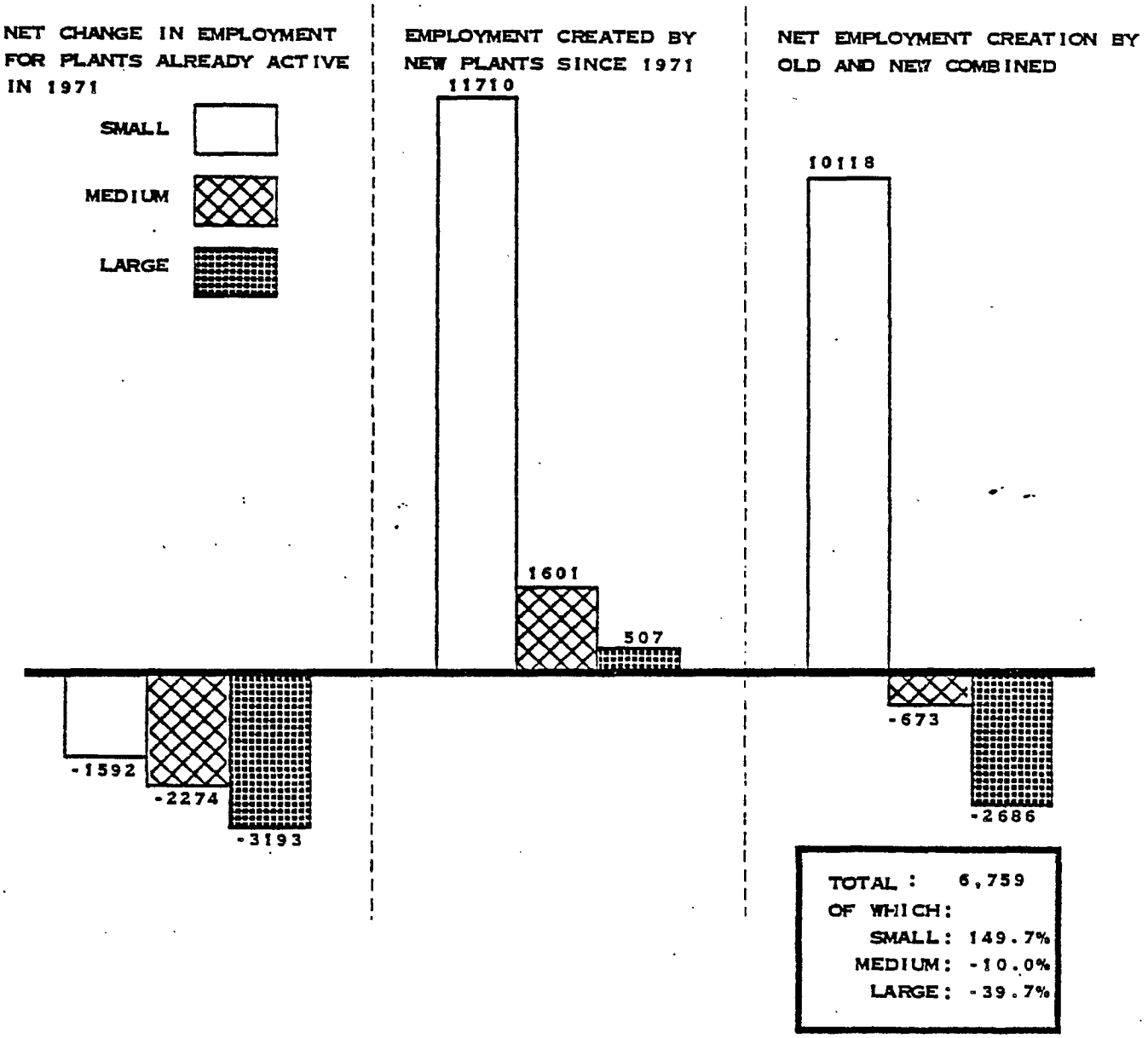
Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	11,710
Medium	1,601
Large	507
Total	13,818

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total: #	Total: %
Small	-6,300	4,708	-1,592	11,710	10,118	149.7
Medium	-4,250	1,976	-2,274	1,601	-673	-10.0
Large	-1,355	-1,838	-3,193	507	-2,686	-39.7
Total	-11,905	4,846	-7,059	13,818	6,759	100.0

FURNITURE AND FIXTURES

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

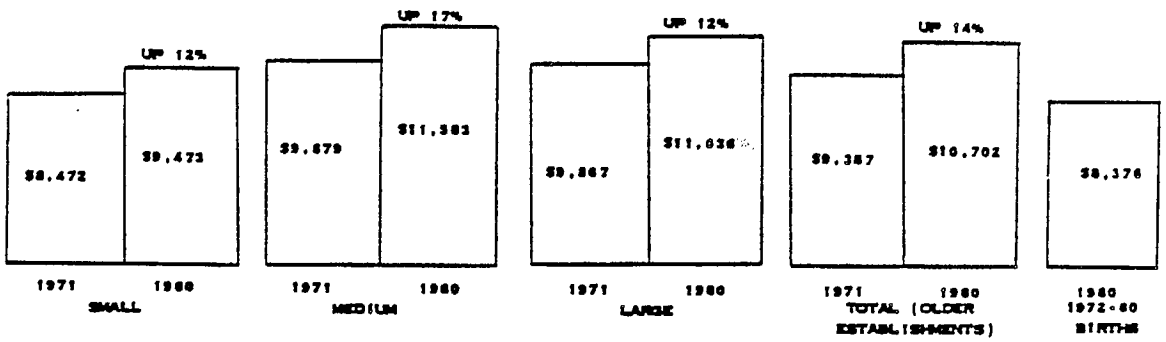


2. Productivity*

Value added per worker for small establishments in 1971 was $8,472, 10% below the average ($9,387) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated average growth in this productivity measure (12% vs. 14% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $8,376 (in $ 1971). This was 22% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 12% below the 1980 average for plants which had been small in 1971 ($8,376 vs. $9,473).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was nearly as high as that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, and also generated lower productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

K. Paper and Allied Industries

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	5,713	6,326	613
Medium	79,789	79,480	-309
Large	27,875	29,267	1,392
Total	113,377	115,073	1,696

New Plants (1972-80 births)

Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	4,205
Medium	3,950
Large	0
Total	8,155

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

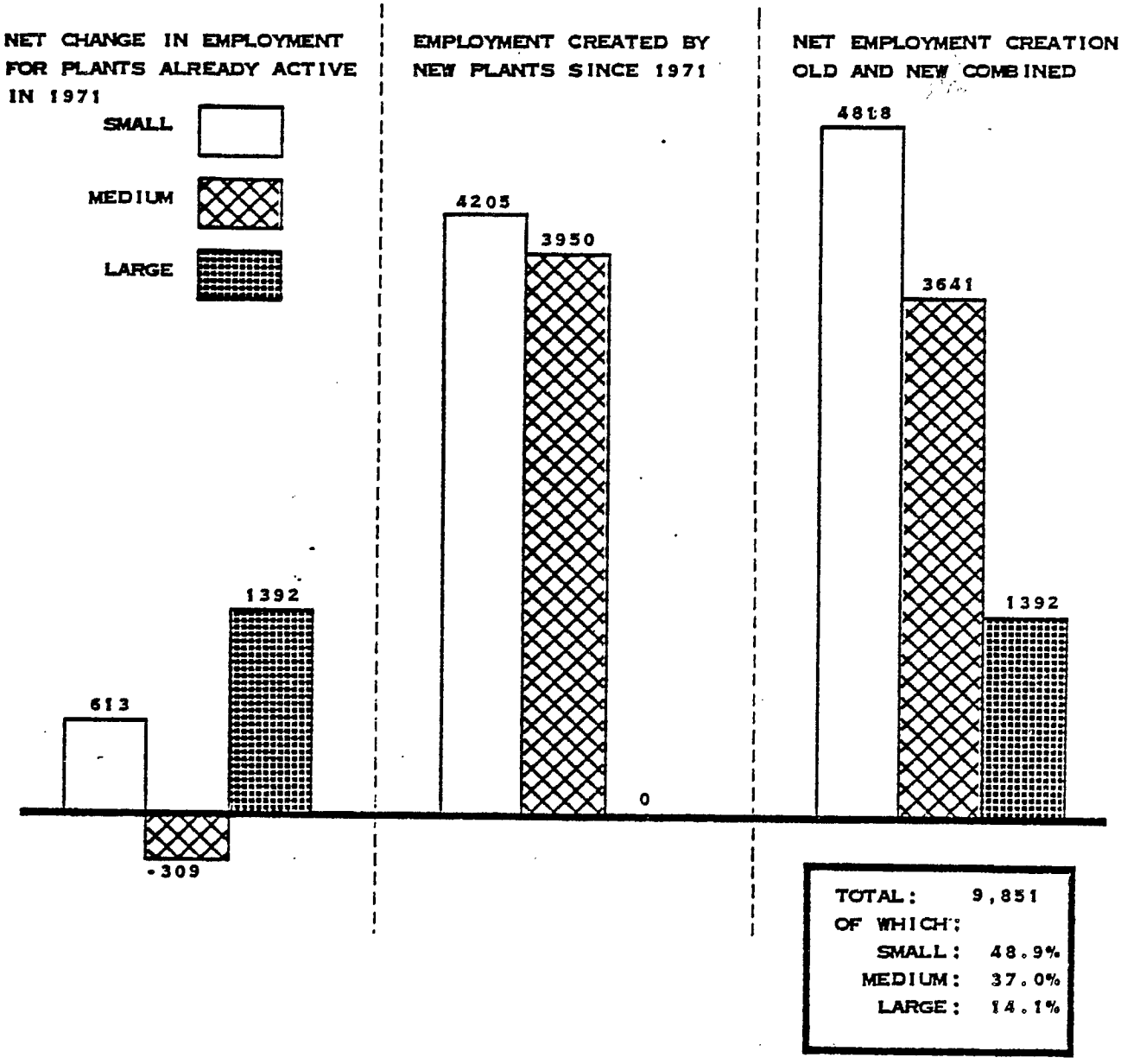
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	Net Employment Change from 1971 to 1980: New Plants	Total: #	Total: %
Small	-1,557	2,170	613	4,205	4,818	48.9
Medium	-7,142	6,833	-309	3,950	3,641	37.0
Large	0	1,392	1,392	0	1,392	14.1
Total	-8,699	10,395	1,696	8,155	9,851	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 999 employees
Large: 1000 + employees

PAPER AND ALLIED INDUSTRIES

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

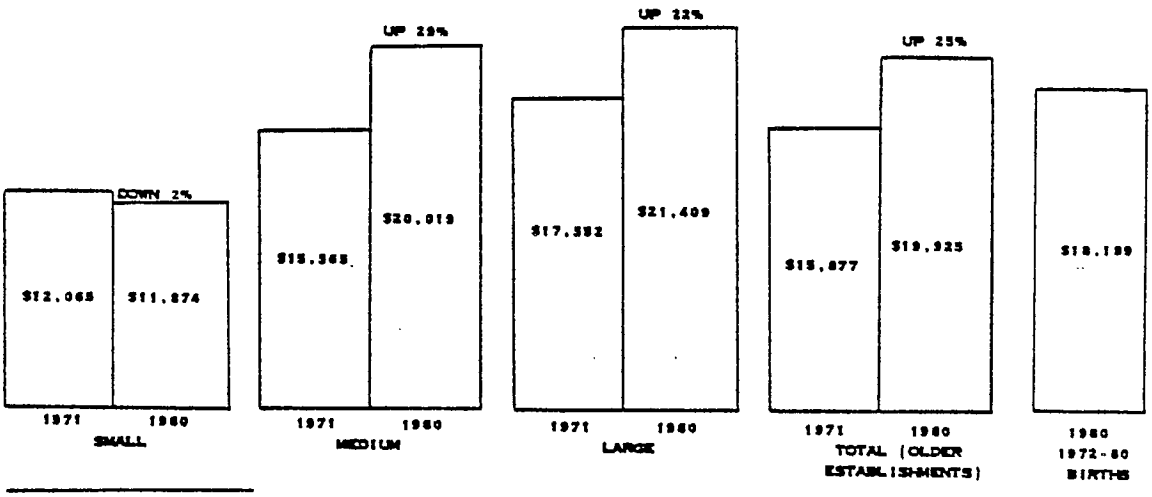


2. Productivity*

Value added per worker for small establishments in 1971 was $12,065, 24% below the average ($15,877) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated a net decline in this productivity measure (as opposed to an average growth rate of 25% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $18,189 (in $ 1971). This was 9% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 53% above the 1980 average for plants which had been small in 1971 ($18,189 vs. $11,874).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, and a negative growth in productivity compared to a substantial growth in productivity for larger establishments over the 1971-80 period. New plants, although they were primarily small, generated almost as high productivity as older plants active in 1980, and much higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

L. Printing and Publishing

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	29,091	29,636	545	Small	16,500
Medium	12,746	12,115	-631	Medium	1,463
Large	43,221	41,192	-2,029	Large	3,791
Total	85,058	82,943	-2,115	Total	21,754

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

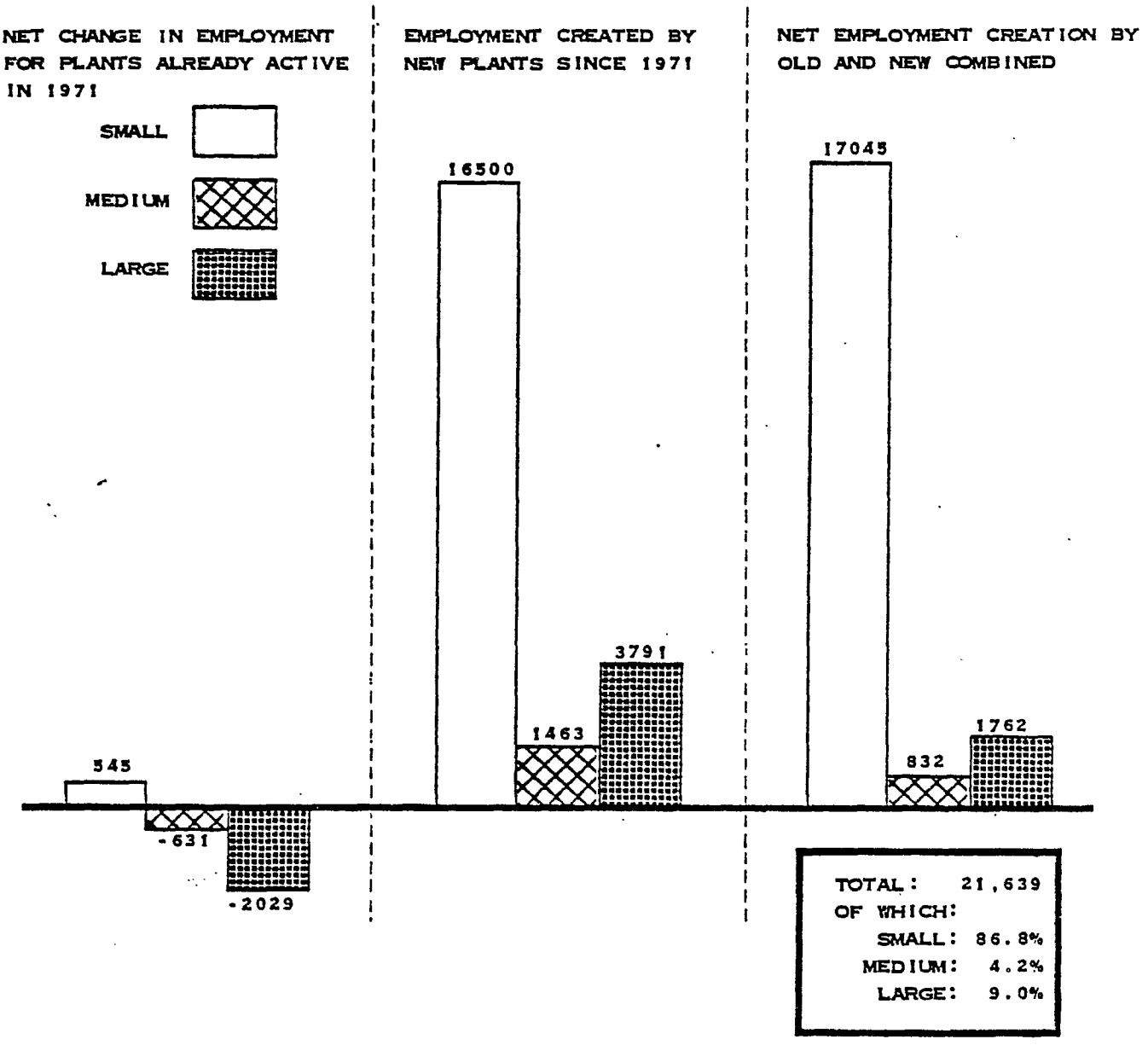
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	Net Employment Change from 1971 to 1980: New Plants	Total: #	Total: %
Small	-9,301	9,846	545	16,500	17,045	86.8
Medium	-2,509	1,878	-631	1,463	832	4.2
Large	-6,003	3,974	-2,029	3,791	1,762	9.0
Total	-17,813	15,698	-2,115	21,754	21,639	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 99 employees
Large: 100 + employees

PRINTING AND PUBLISHING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

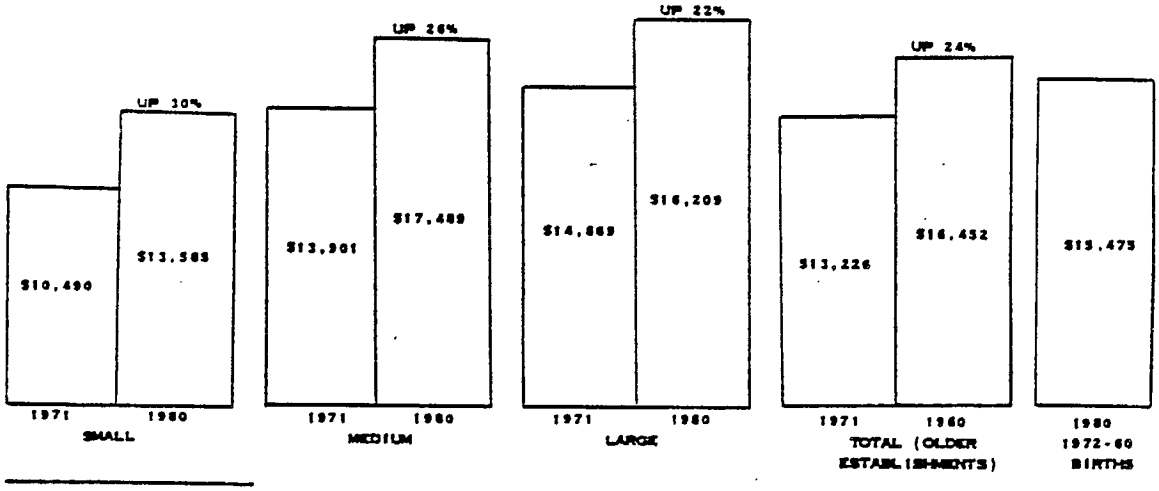


2. Productivity*

Value added per worker for small establishments in 1971 was $10,490, 21% below the average ($13,226) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (30% vs. 24% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $15,475 (in $ 1971). This was 6% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 14% above the 1980 average for plants which had been small in 1971 ($15,475 vs. $13,585).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was substantially higher than that of larger establishments over the 1971-80 period. New plants, although they were primarily small, generated almost as high productivity as older plants active in 1980, and considerably higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

M. Primary Metals

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	1,170	1,641	471	Small	1,162
Medium	14,913	18,194	3,281	Medium	3,009
Large	94,850	94,608	-242	Large	5,819
Total	110,933	114,443	3,510	Total	9,990

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

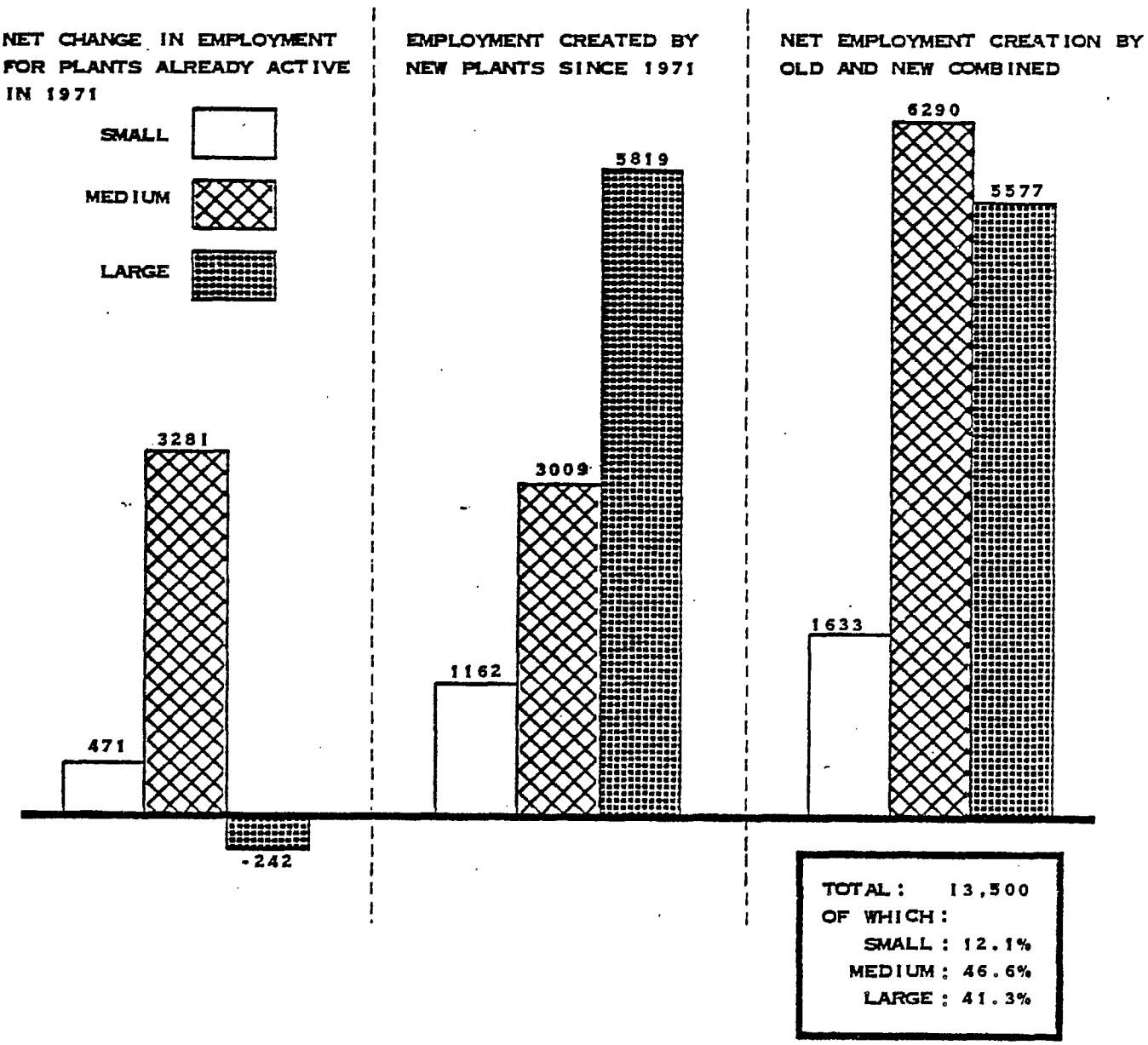
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total #	Total %
Small	-375	846	471	1,162	1,633	12.1
Medium	-2,184	5,465	3,281	3,009	6,290	46.6
Large	-1,951	1,709	-242	5,819	5,577	41.3
Total	-4,510	8,020	3,510	9,990	13,500	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 19 employees
Medium: 20 - 199 employees
Large: 200 + employees

PRIMARY METALS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

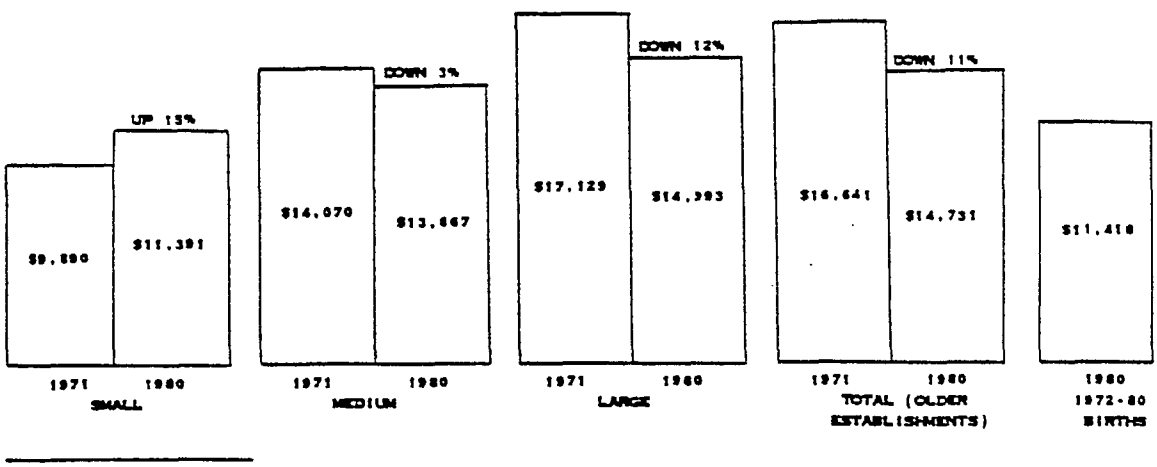


2. Productivity*

Value added per worker for small establishments in 1971 was $9,890, 41% below the average ($16,641) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset was the only size group to demonstrate growth in this productivity measure (15% vs. a decline of 11% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $11,418 (in $ 1971). This was 23% below the 1980 average for the older plants as a group. The new establishments' output per worker was virtually the same as the 1980 average for plants which had been small in 1971 ($11,418 vs. $11,391).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was far superior to that of larger establishments over the 1971-80 period (in fact, the larger establishments experienced a net decline in productivity over this time frame). New plants, which were primarily small, generated lower productivity than older plants active in 1980, and the same productivity as those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

N. Metal Fabricating

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	19,207	23,380	4,173	Small	19,990
Medium	22,110	24,033	1,923	Medium	7,472
Large	95,477	87,676	-7,801	Large	7,001
Total	136,794	135,089	-1,705	Total	34,463

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

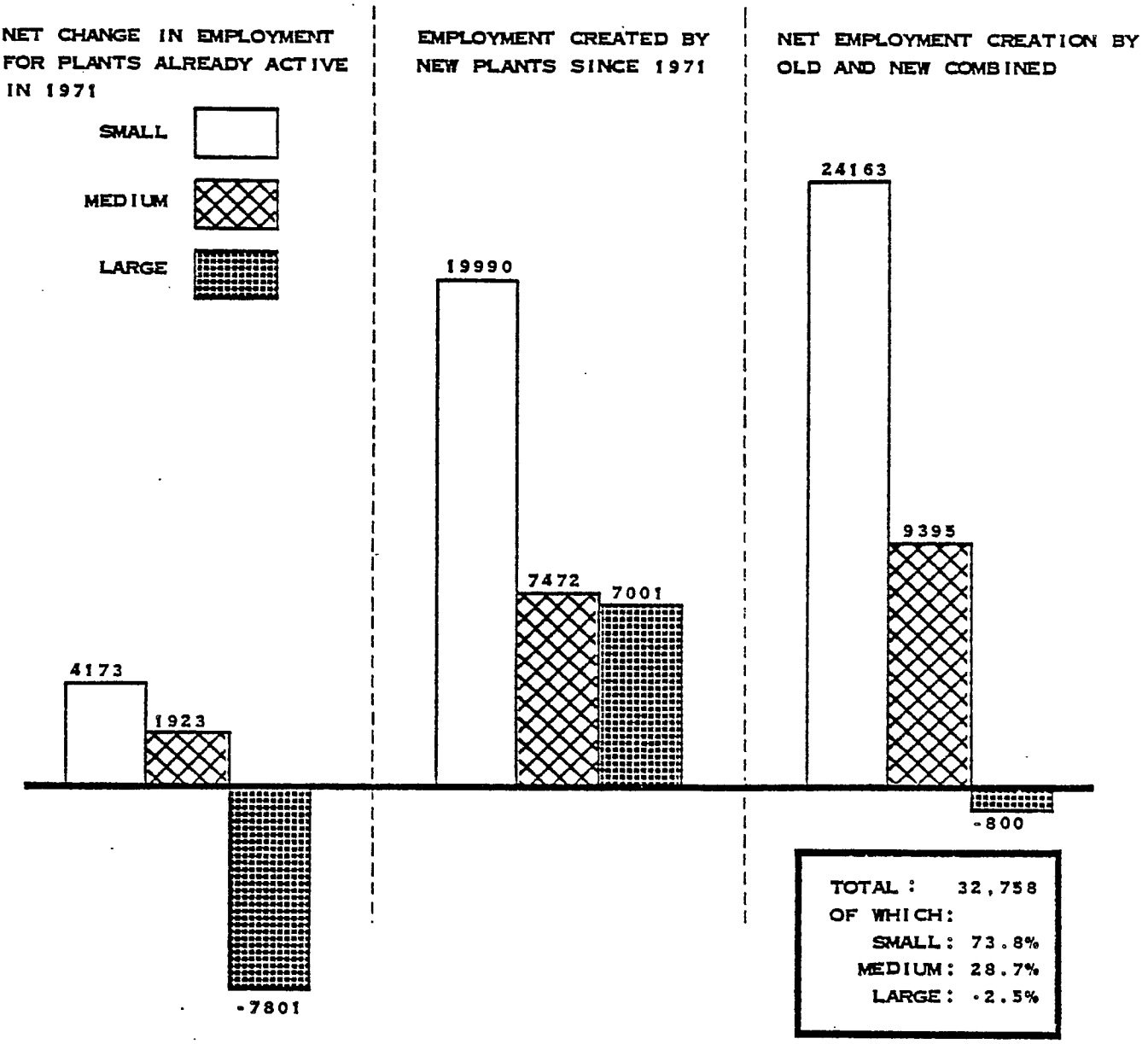
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort Job Loss For Plants Ceasing Activity	1971 Cohort Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980 Old Plants	New Plants	Total #	Total %
Small	-6,411	10,584	4,173	19,990	24,163	73.8
Medium	-4,810	6,733	1,923	7,472	9,395	28.7
Large	-10,879	3,078	-7,801	7,001	-800	-2.5
Total	-22,100	20,395	-1,705	34,463	32,758	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 19 employees
Medium: 20 - 49 employees
Large: 50 + employees

METAL FABRICATING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

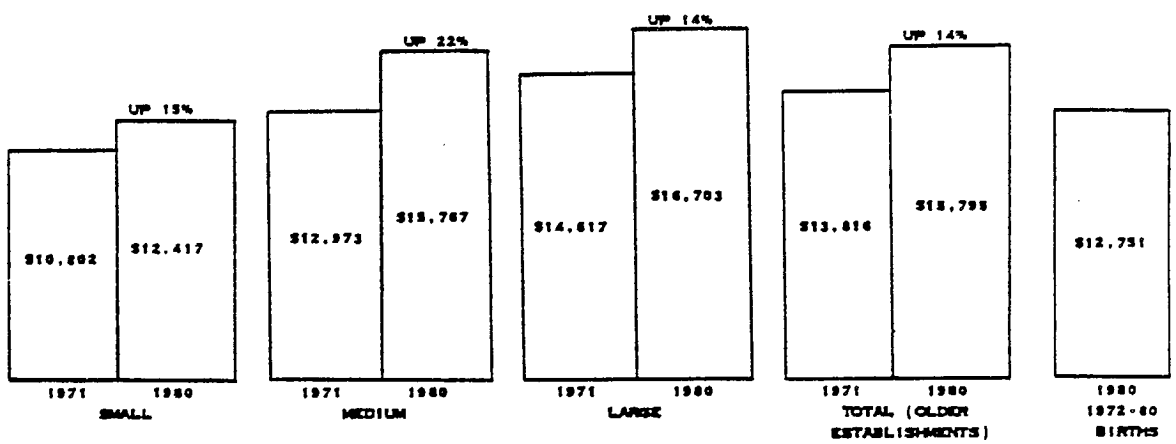


2. Productivity*

Value added per worker for small establishments in 1971 was $10,802, 22% below the average ($13,816) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated average growth in this productivity measure (15% vs. 14% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $12,751 (in $ 1971). This was 19% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 3% above the 1980 average for plants which had been small in 1971 ($12,751 vs. $12,417).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was close to that of larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, but slightly higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

O. Machinery

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

Old Plants (1971 cohort)

Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	9,605	12,548	2,943
Medium	18,212	21,595	3,383
Large	39,264	37,557	-1,707
Total	67,081	71,700	4,619

New Plants (1972-80 births)

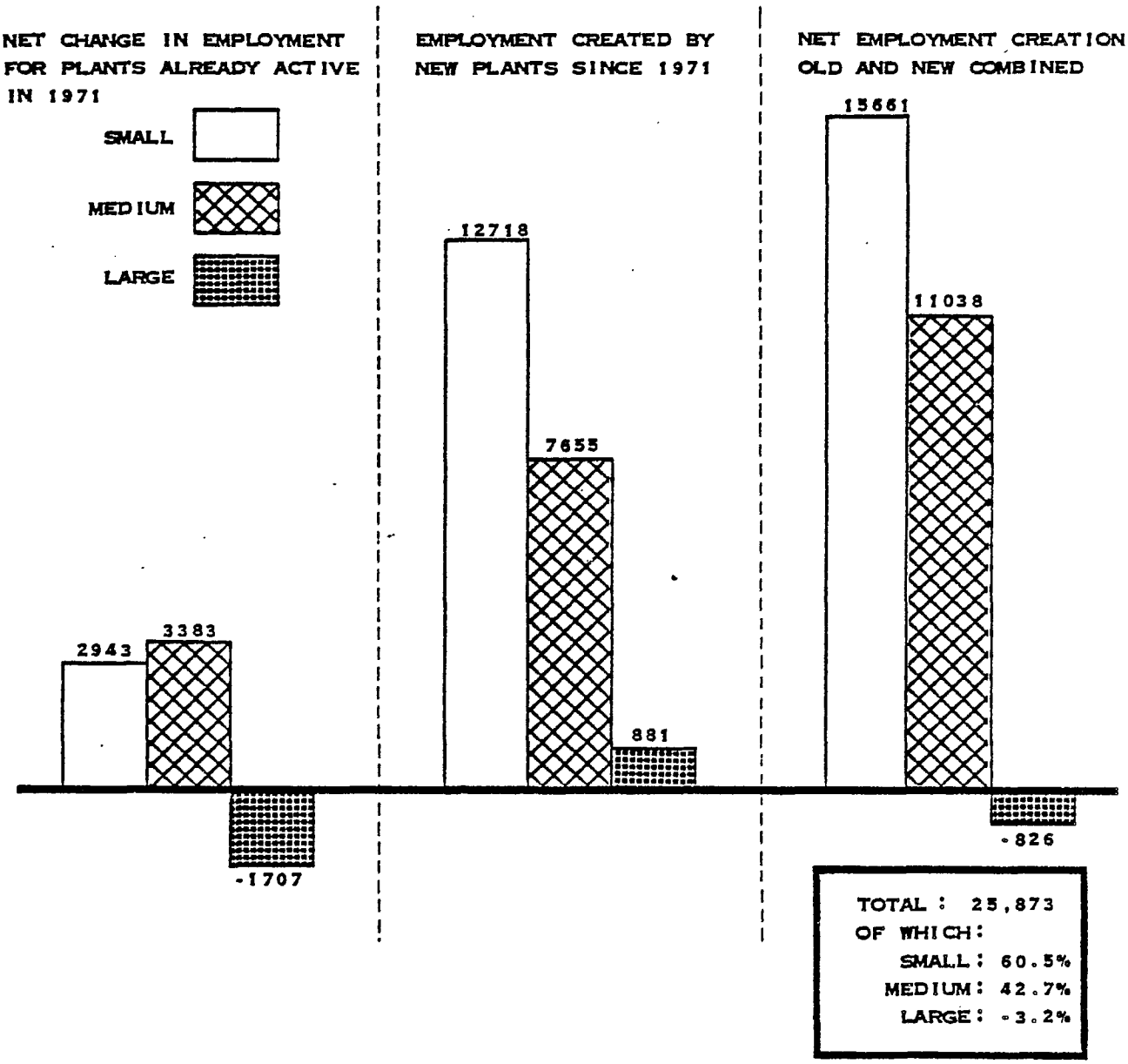
Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	12,718
Medium	7,655
Large	881
Total	21,255

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total: #	Total: %
Small	-2,542	5,485	2,943	12,718	15,661	60.5
Medium	-3,741	7,124	3,383	7,655	11,038	42.7
Large	-5,002	3,295	-1,707	881	-826	-3.2
Total	-11,285	15,904	4,619	21,255	25,873	100.0

MACHINERY

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

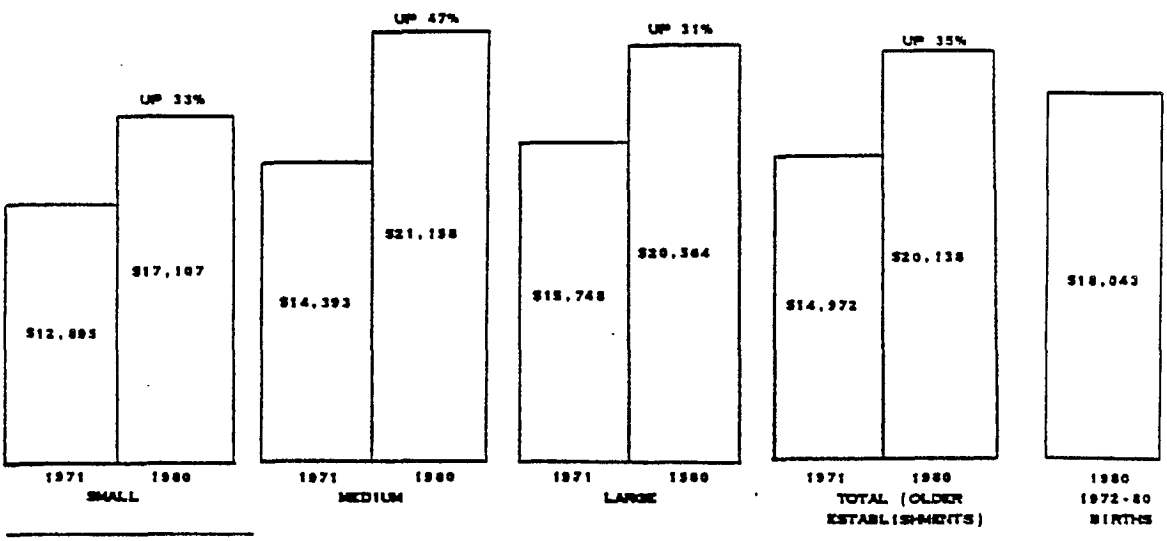


2. Productivity*

Value added per worker for small establishments in 1971 was $12,895, 14% below the average ($14,972) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated average growth in this productivity measure (33% vs. 35% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $18,043 (in $ 1971). This was 10% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 5% above the 1980 average for plants which had been small in 1971 ($18,043 vs. $17,107).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was almost as high as it was for larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than older plants active in 1980, but slightly higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

P. Transportation Equipment

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)			
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change
Small	8,453	9,118	665
Medium	38,592	38,807	215
Large	98,418	101,001	2,583
Total	145,463	148,926	3,463

New Plants (1972-80 births)	
Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	7,998
Medium	7,700
Large	5,411
Total	21,109

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

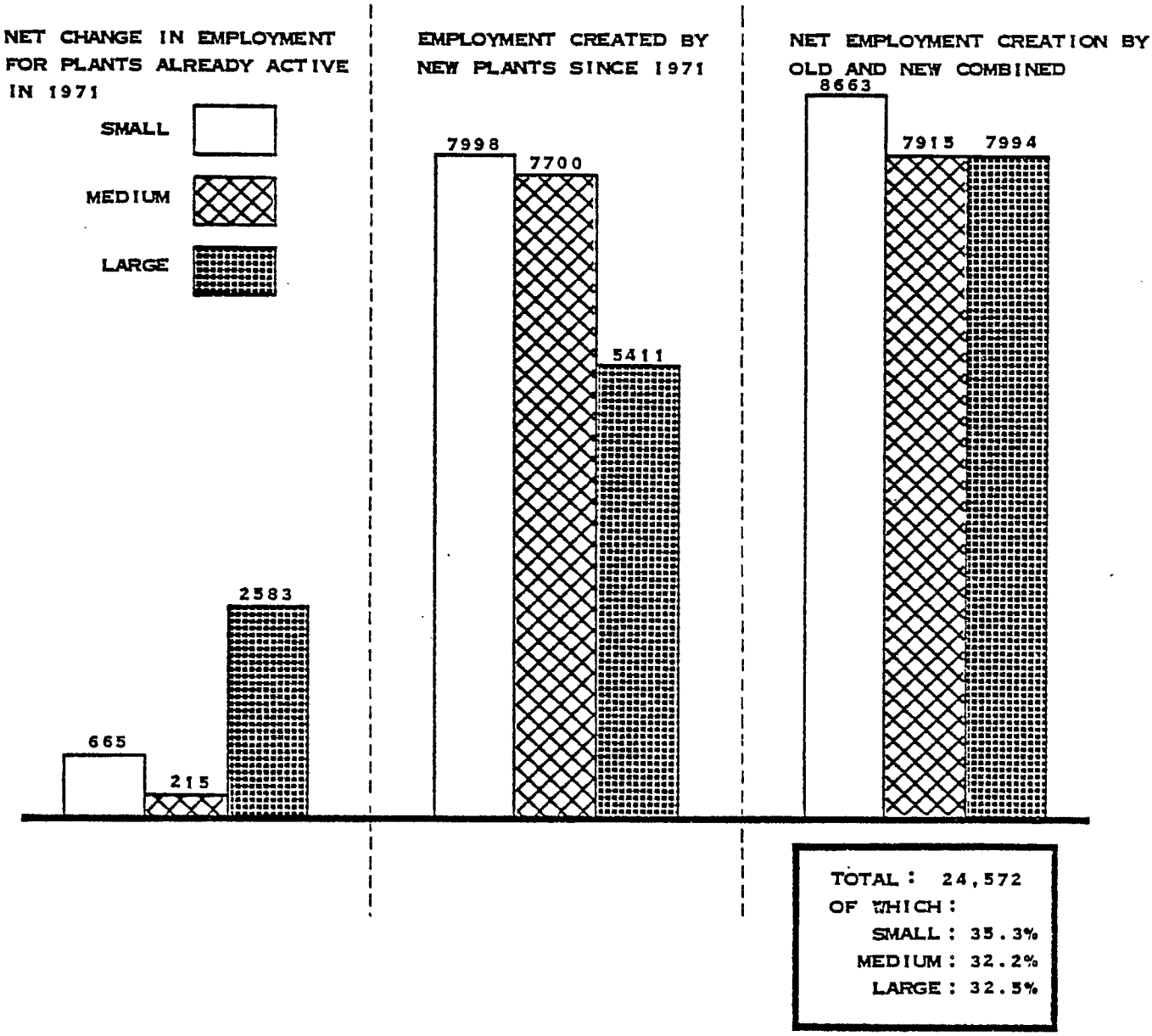
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total #	Total %
Small	-3,998	4,663	665	7,998	8,663	35.3
Medium	-9,729	9,944	215	7,700	7,915	32.2
Large	-5,905	8,488	2,583	5,411	7,994	32.5
Total	-19,632	23,095	3,463	21,109	24,572	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 499 employees
Large: 500 + employees

TRANSPORTATION EQUIPMENT

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

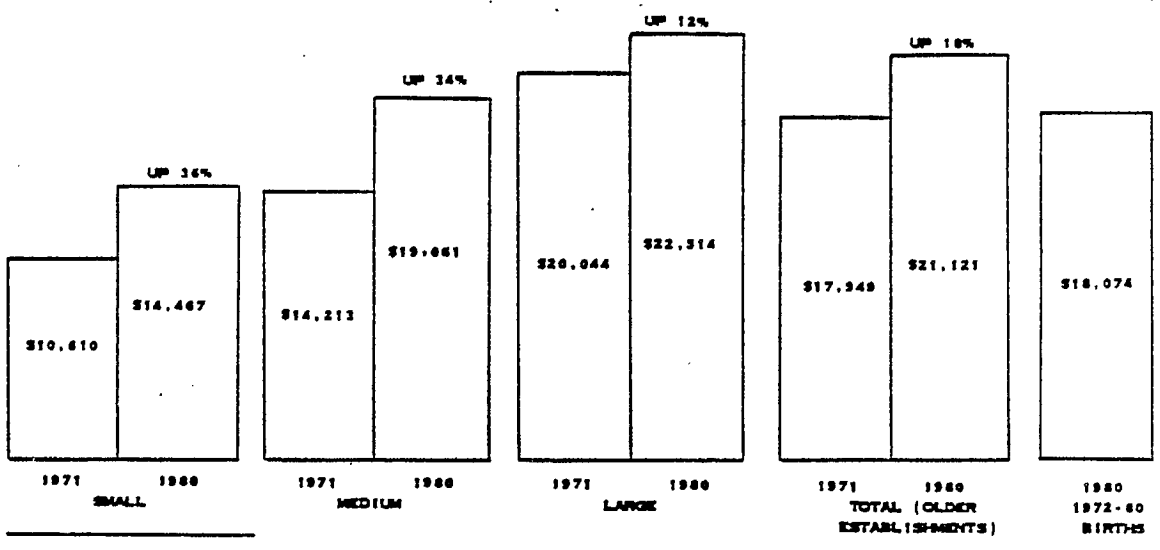


2. Productivity*

Value added per worker for small establishments in 1971 was $10,610, 41% below the average ($17,949) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (36% vs. 18% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $18,074 (in $ 1971). This was 14% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 25% above the 1980 average for plants which had been small in 1971 ($18,074 vs. $14,467).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their growth in productivity was well above that of the larger establishments over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, but considerably higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

Q. Electrical Products

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

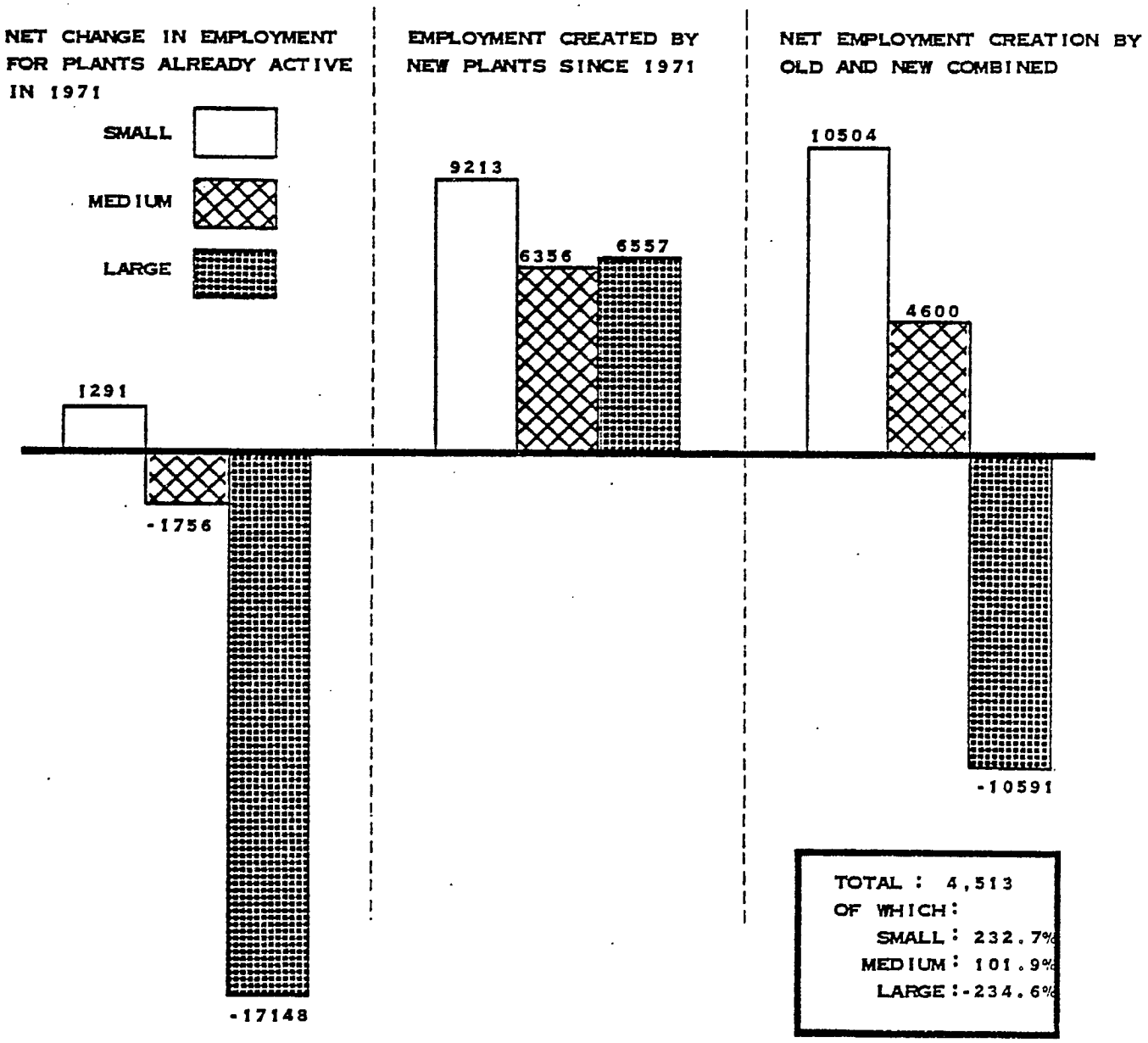
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	6,520	7,811	1,291	Small	9,213
Medium	21,122	19,366	-1,756	Medium	6,356
Large	78,936	61,788	-17,148	Large	6,557
Total	106,578	88,965	-17,613	Total	22,126

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total: #	Total: %
Small	-2,378	3,669	1,291	9,213	10,504	232.7
Medium	-5,431	3,675	-1,756	6,356	4,600	101.9
Large	-14,794	-2,354	-17,148	6,557	-10,591	-234.6
Total	-22,603	4,990	-17,613	22,126	4,513	100.0

ELECTRICAL PRODUCTS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

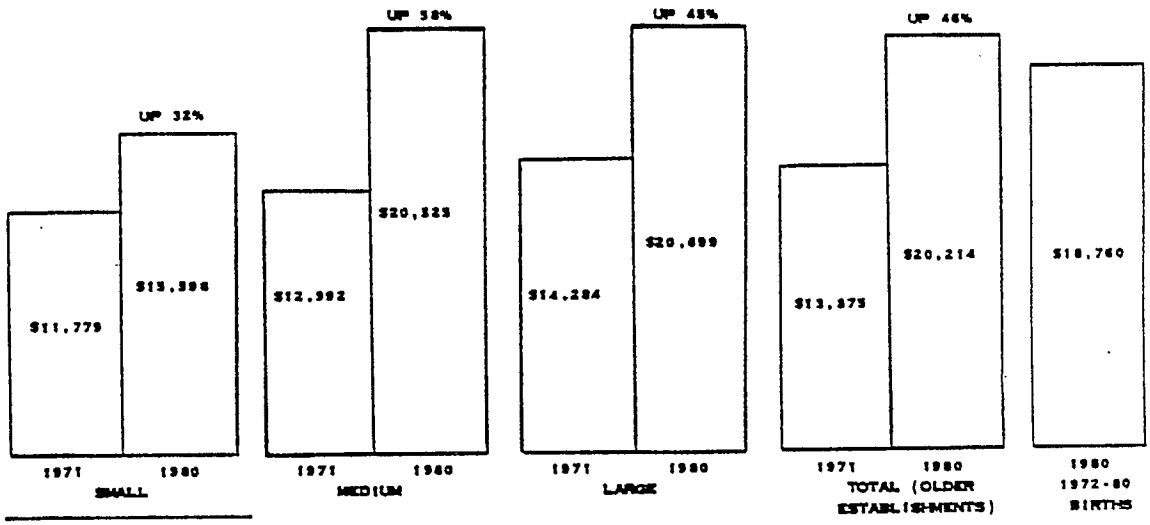


2. Productivity*

Value added per worker for small establishments in 1971 was $11,779, 15% below the average ($13,875) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated below average growth in this productivity measure (32% vs. 46% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $18,760 (in $ 1971). This was 7% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 20% above the 1980 average for plants which had been small in 1971 ($18,760 vs. $15,598).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, and their growth in productivity was also lower than that for larger establishments over the 1971-80 period. New plants, although they were primarily small, generated almost as high productivity as older plants active in 1980, and considerably higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

R. Non-Metallic Minerals

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	20,332	18,298	-2,034	Small	7,418
Medium	9,710	9,042	-668	Medium	916
Large	18,192	16,548	-1,644	Large	609
Total	48,234	43,888	-4,346	Total	8,943

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

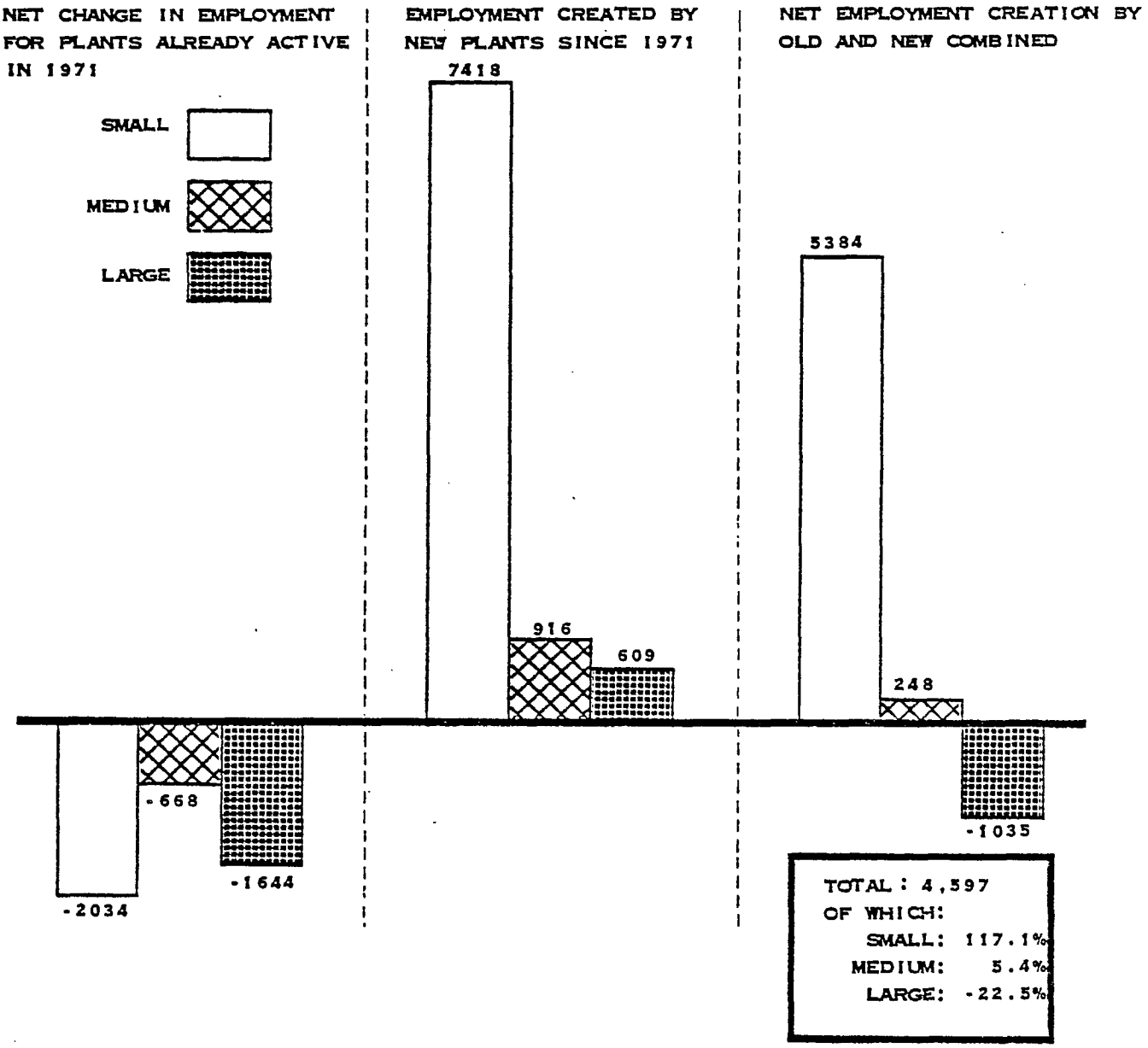
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	New Plants	Total #	Total %
Small	-6,043	4,009	-2,034	7,418	5,384	117.1
Medium	-1,714	1,046	-668	916	248	5.4
Large	-774	-870	-1,644	609	-1,035	-22.5
Total	-8,531	4,185	-4,346	8,943	4,597	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 99 employees
Medium: 100 - 199 employees
Large: 200 + employees

NON-METALLIC MINERALS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

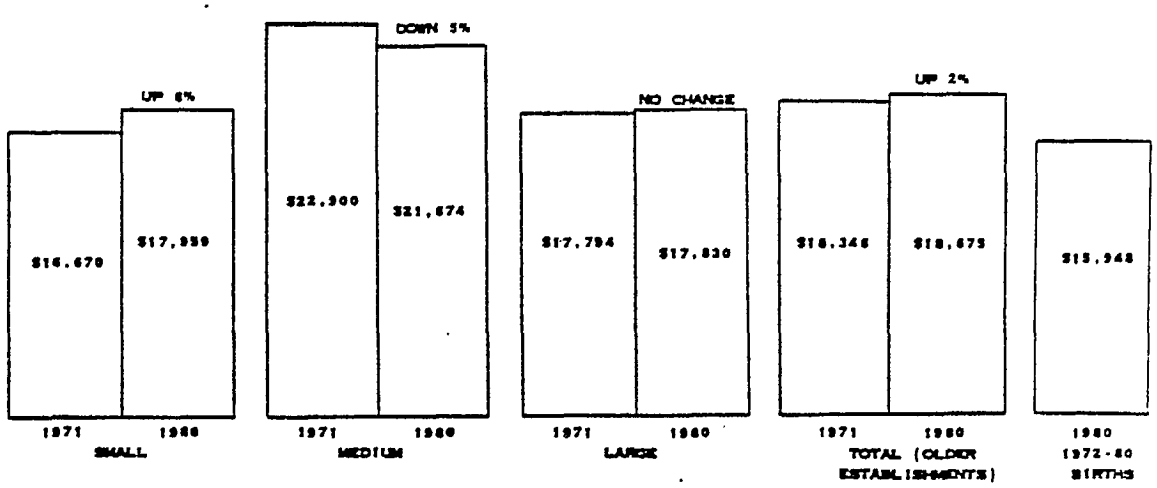


2. Productivity*

Value added per worker for small establishments in 1971 was $16,670, 9% below the average ($18,348) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated above average growth in this productivity measure (8% vs. 2% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $15,948 (in $ 1971). This was 15% below the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 11% below the 1980 average for plants which had been small in 1971 ($15,948 vs. $17,959).

In summary, smaller establishments demonstrated generally lower output per worker in absolute terms than medium or large plants, but this group showed the only positive growth in productivity over the 1971-80 period. New plants, which were primarily small, generated considerably lower productivity than older plants active in 1980, and also lower productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

S. Petroleum and Coal

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	264	166	-98	Small	282
Medium	3,946	4,408	462	Medium	434
Large	5,208	5,838	630	Large	1,053
Total	9,418	10,412	994	Total	1,769

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

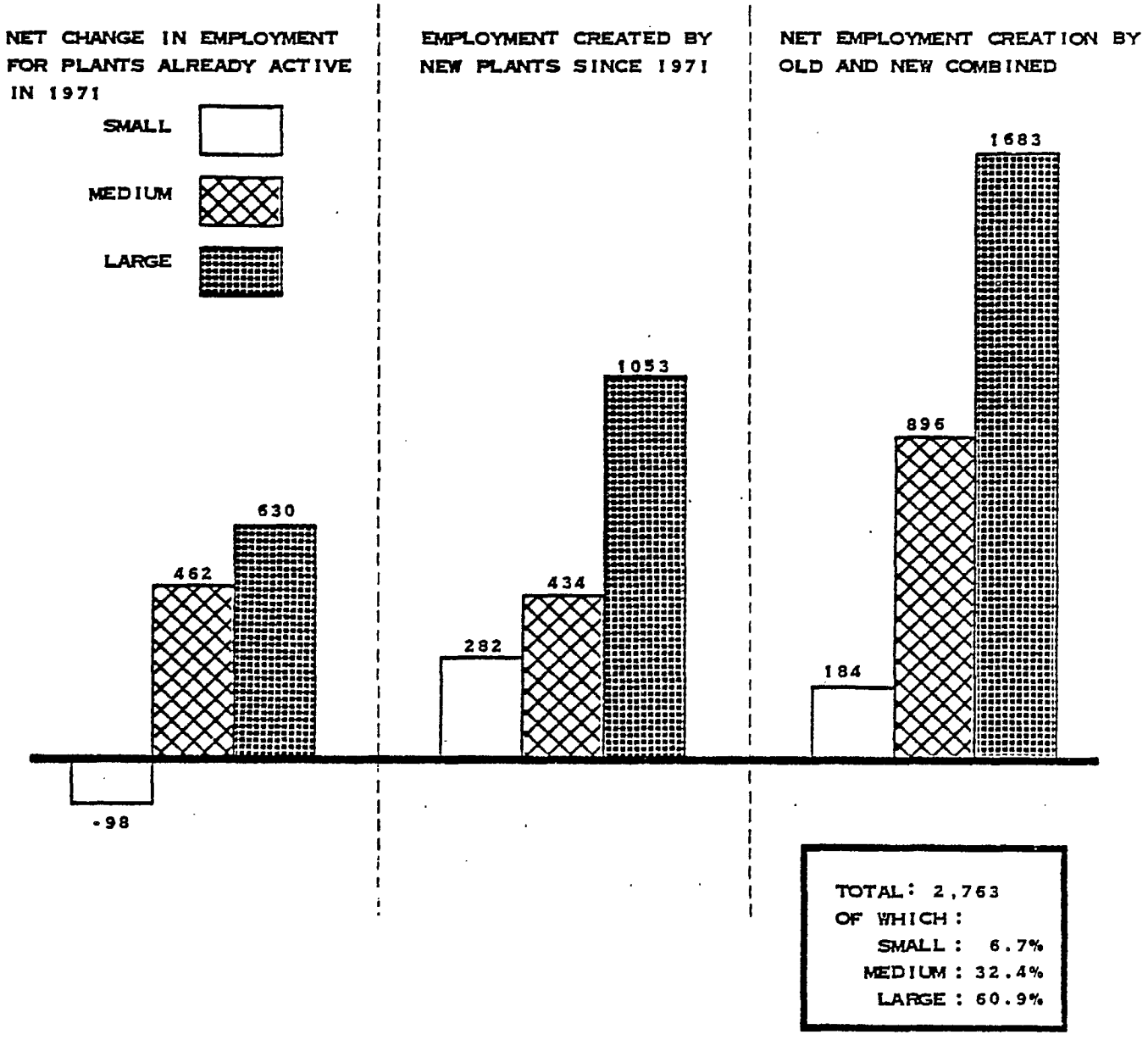
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort		Net Employment Change from 1971 to 1980			
	Job Loss For Plants Ceasing Activity	Net Job Growth For Surviving Plants	Old Plants	New Plants	Total #	Total %
Small	-120	22	-98	282	184	6.7
Medium	-756	1,218	462	434	896	32.4
Large	0	630	630	1,053	1,683	60.9
Total	-876	1,870	994	1,769	2,763	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 19 employees
Medium: 20 - 199 employees
Large: 200 + employees

PETROLEUM AND COAL

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

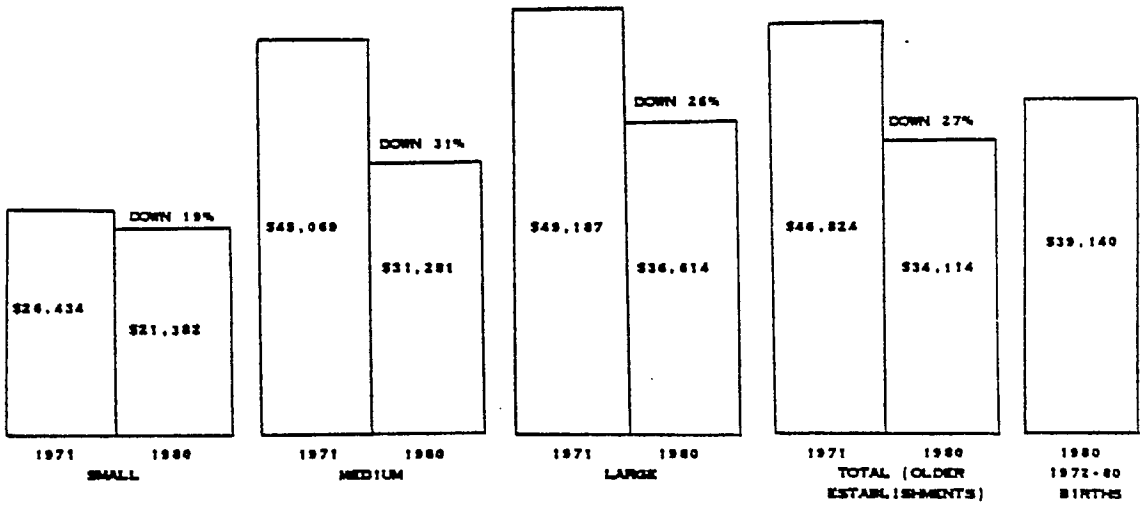


2. Productivity*

Value added per worker for small establishments in 1971 was $26,434, 44% below the average ($46,824) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated a below average decline in this productivity measure (19% vs. 27% for all establishments). (The extremely high growth in the Industry Selling Price Index for this major group had a particularly depressing effect on constant dollar value added, leading to an anomalous overall decline in estimated value of output per worker, after adjusting for inflation.)

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $39,140 (in $ 1971). This was 15% higher than the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 83% above the 1980 average for plants which had been small in 1971 ($39,140 vs. $21,382).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, but their decline in productivity was also lower than that of larger establishments over the 1971-80 period. New plants generated significantly higher productivity than older plants active in 1980, and much higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

T. Chemicals

1. Employment

For this major group, the employment levels of old and new plants, by size group*, are presented in the following table:

Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	10,940	11,340	400	Small	4,484
Medium	38,214	39,879	1,665	Medium	6,063
Large	20,008	17,922	-2,086	Large	0
Total	69,162	69,141	-21	Total	10,547

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

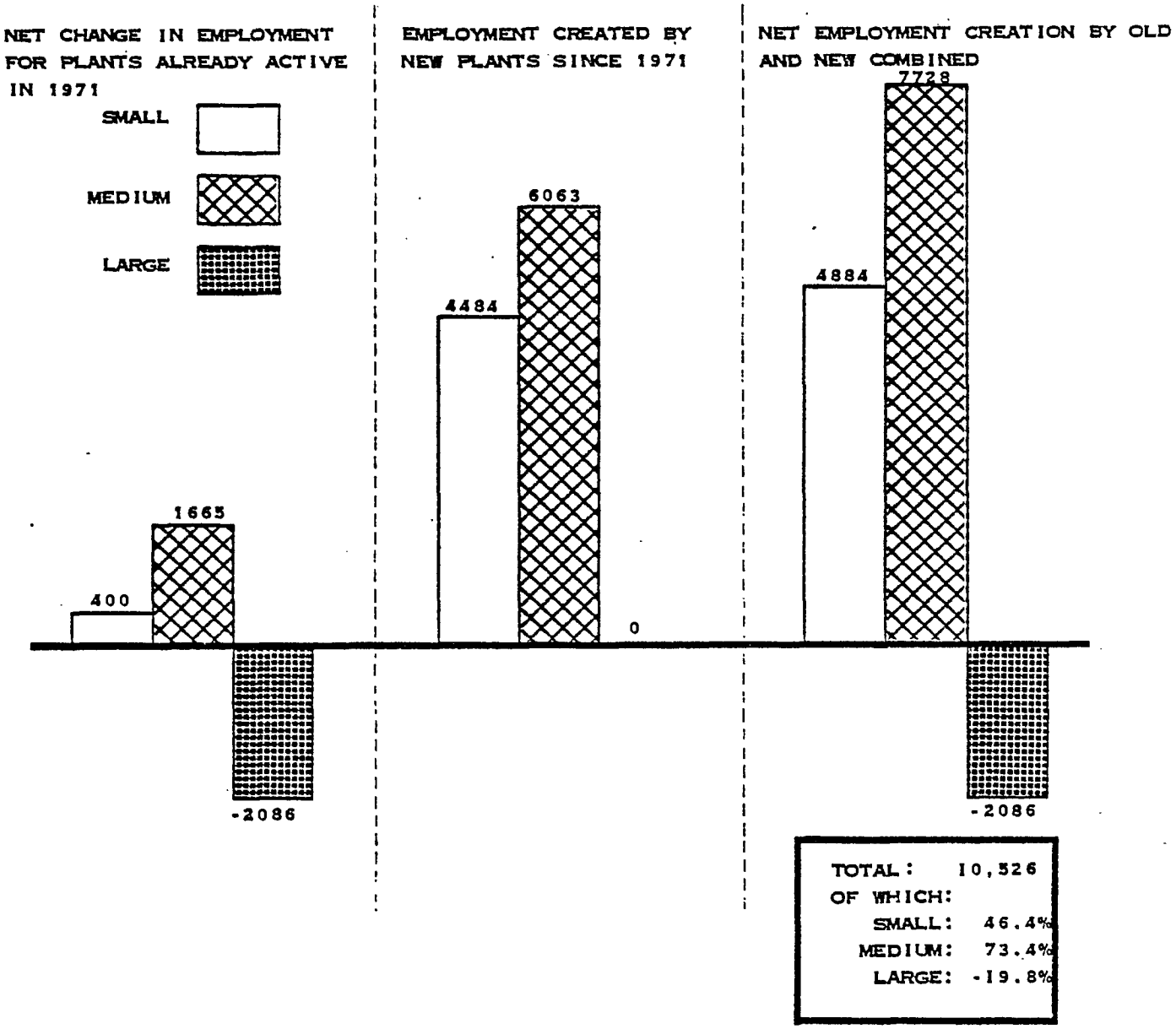
Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort: Job Loss For Plants Ceasing Activity	1971 Cohort: Net Job Growth For Surviving Plants	Net Employment Change from 1971 to 1980: Old Plants	Net Employment Change from 1971 to 1980: New Plants	Total: #	Total: %
Small	-3,136	3,536	400	4,484	4,884	46.4
Medium	-4,553	6,218	1,665	6,063	7,728	73.4
Large	-1,601	-485	-2,086	0	-2,086	-19.8
Total	-9,290	9,269	-21	10,547	10,526	100.0

* Note Re Size Grouping: For this sector, because of the data limitations, the following thresholds were used to define small, medium and large establishments:

Small: 1 - 49 employees
Medium: 50 - 499 employees

CHEMICALS

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

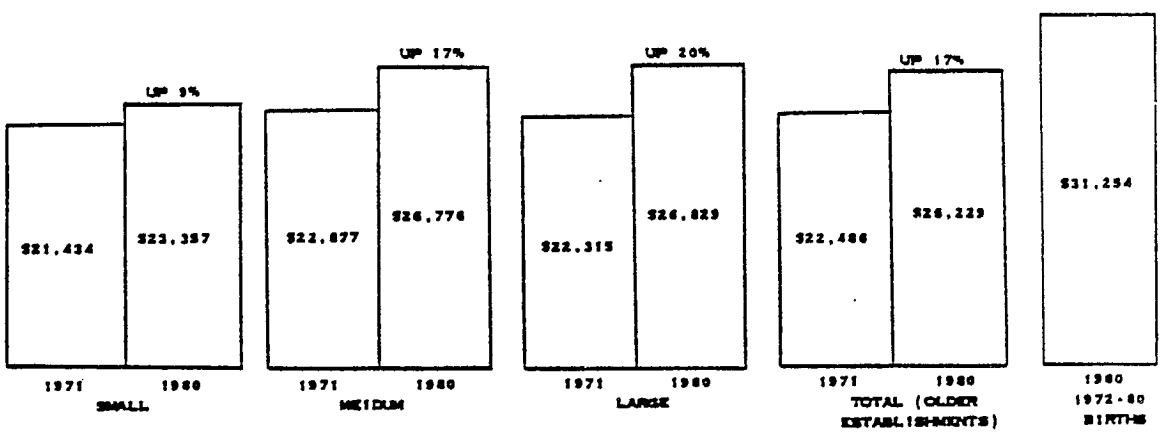


2. Productivity*

Value added per worker for small establishments in 1971 was $21,434, 5% below the average ($22,486) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated below average growth in this productivity measure (9% vs. 17% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $31,254 (in $ 1971). This was 19% higher than the 1980 average for the older plants as a group. Furthermore, the new establishments' output per worker was 34% above the 1980 average for plants which had been small in 1971 ($31,254 vs. $23,357).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, and their growth in productivity was also lower than that for larger establishments over the 1971-80 period. New plants, although they were primarily small, generated considerably higher productivity than older plants active in 1980, and much higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

U. Miscellaneous Manufacturing

1. Employment

For this major group, the employment levels of old and new plants, by size group, are presented in the following table:

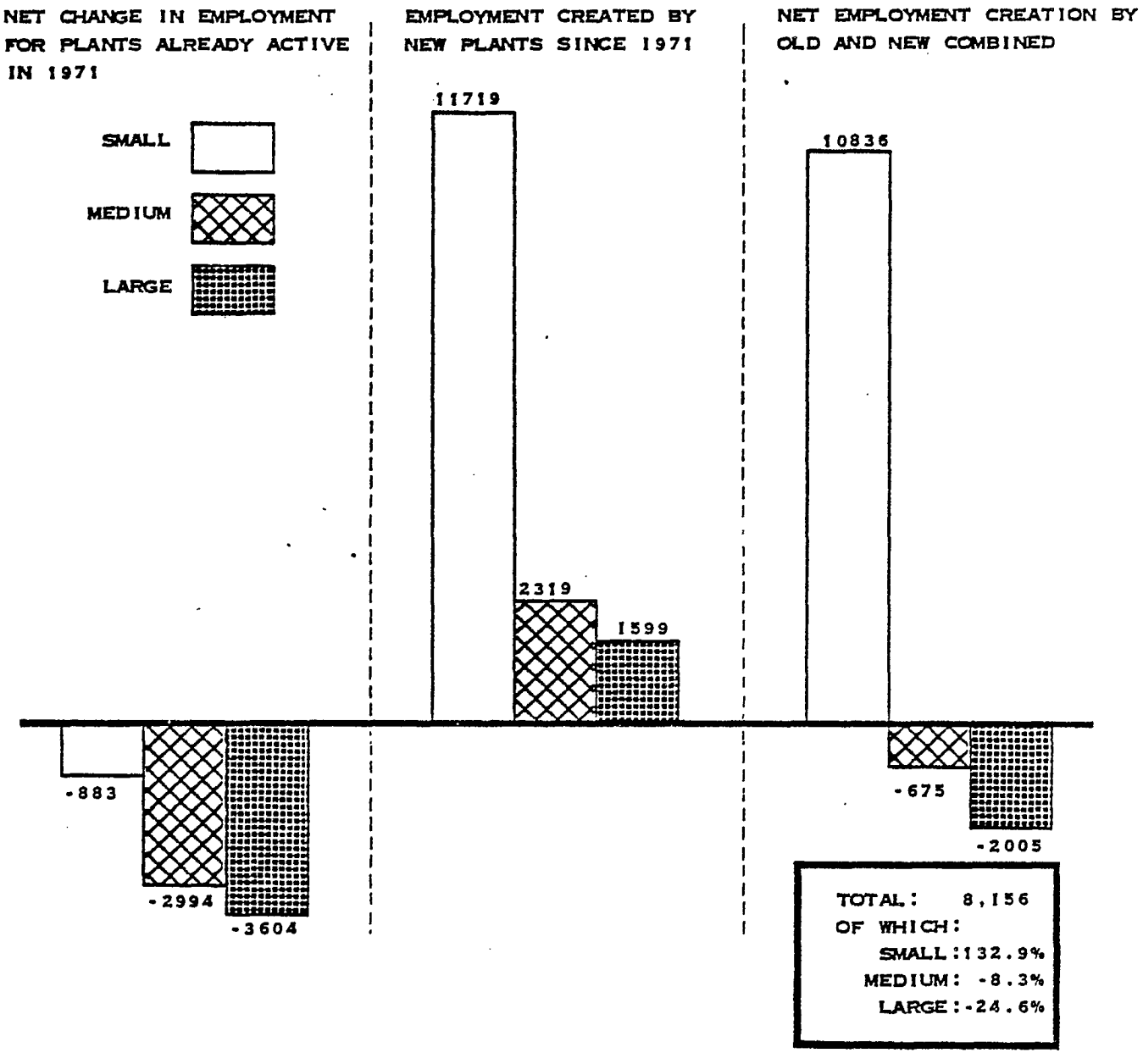
Old Plants (1971 cohort)				New Plants (1972-80 births)	
Size of Plant in 1971	Total Employment in 1971	Total Employment in 1980	Net Employment Change	Size of Plant at time of Birth on MAPID file	Employment in 1980
Small	18,538	17,655	-883	Small	11,719
Medium	17,866	14,872	-2,994	Medium	2,319
Large	20,434	16,830	-3,604	Large	1,599
Total	56,838	49,357	-7,481	Total	15,637

By merging the net 1971-80 changes in employment for plants active at the beginning of the period with the job contribution of new entrant establishments, we obtain a composite picture with the data presented in the table below and summarized on the bar chart on the page following:

Size of Plant in 1971 (for old plants) or upon start-up (for new plants)	1971 Cohort		Net Employment Change from 1971 to 1980			
	Job Loss For Plants Ceasing Activity	Net Job Growth For Surviving Plants	Old Plants	New Plants	Total #	Total %
Small	-6,388	5,505	-883	11,719	10,836	132.9
Medium	-3,905	911	-2,994	2,319	-675	-8.3
Large	-3,176	-428	-3,604	1,599	-2,005	-24.6
Total	-13,469	5,988	-7,481	15,637	8,156	100.0

MISCELLANEOUS MANUFACTURING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80

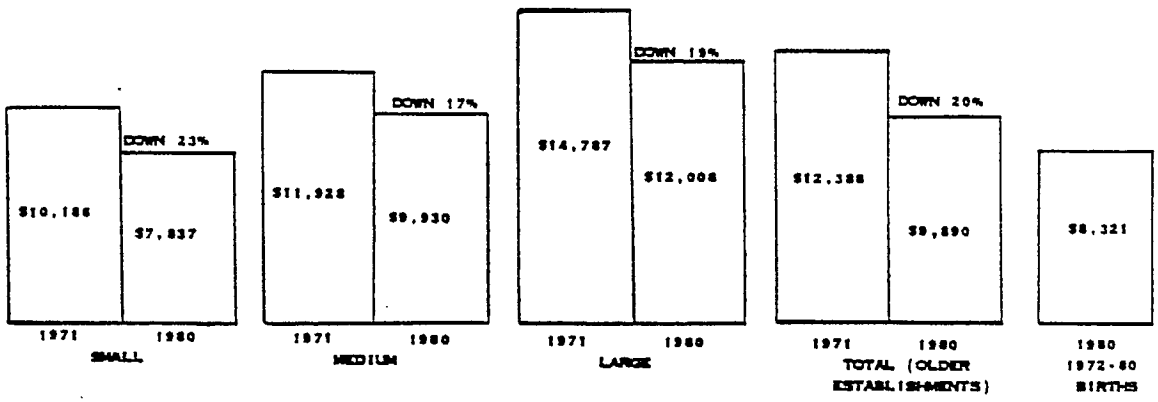


2. Productivity*

Value added per worker for small establishments in 1971 was $10,186, 18% below the average ($12,388) for all plants. Amongst those plants which were still active by 1980, the group which was small at the outset demonstrated a slightly above average decline in this productivity measure (23% vs. 20% for all establishments).

Establishments which were born in the 1972-80 interval had a productivity level by 1980 of $8,321 (in $ 1971). This was 16% below the 1980 average for the older plants as a group. However, the new establishments' output per worker was 6% above the 1980 average for plants which had been small in 1971 ($8,321 vs. $7,837).

In summary, smaller establishments demonstrated lower output per worker in absolute terms than medium or large plants, and their decline in productivity was higher than that for larger establishments over the 1971-80 period. New plants, which were primarily small, generated lower productivity than older plants active in 1980, but slightly higher productivity than those surviving from the 1971 small establishment cohort.



* Productivity is defined as value added per employee. Current dollar value added data have been deflated by the Industry Selling Price Index to generate estimated productivity in constant 1971 dollars.

IV. SMALL ESTABLISHMENT SHARE OF 1980 EMPLOYMENT AND VALUE ADDED FOR MAJOR GROUPS AND KEY INDUSTRIES

Using benchmark figures for all manufacturing data to use as comparison points for the major industry groups and individual SIC manufacturing industries we can group the major industry groups into average, above average and below average categories according to 1980 small plant shares of major group employment and value added as follows:

	1980 Small Establishment Shares	
Above Average	Employment (%)	Value Added (%)
Furniture and Fixtures	38.6	32.0
Printing and Publishing	35.9	28.8
Miscellaneous Manufacturing	35.3	27.3
Metal Fabricating	33.3	27.8
Clothing	27.1	26.0
Non-Metallic Minerals	26.1	22.3
Wood Industries	25.0	19.9
Average		
Rubber and Plastics	18.9	17.8
Leather	18.3	16.5
Food and Beverages	17.2	15.2
Knitting Mills	14.5	15.9
Machinery	16.2	13.6
Chemicals	14.1	12.8
Textiles	13.7	10.5
Below Average		
Electrical Products	8.7	6.7
Transportation Equipment	6.6	4.4
Paper and Allied Industries	5.5	3.1
Petroleum and Coal	4.2	2.5
Primary Metals	3.5	2.8
Tobacco	2.4	2.1
All Manufacturing	18.4	13.8

The following table lists the major industry groups classified as "above average" and highlights the individual industries within each for which small plants accounted for relatively large shares of 1980 employment and value added. The all manufacturing benchmark figures for small plant share of employment and value added are 18.4% and 13.8% respectively.

1980 Small Establishment Industry Shares

Industry	Employment (%)	Value Added (%)
Total Furniture and Fixtures	38.6	32.0
268 Electric Lamp and Shade	53.8	51.5
261 Household Furniture	41.9	35.6
266 Miscellaneous Furniture	39.5	33.5
Total Printing and Publishing	35.9	28.8
287 Plate making, Typeset	56.3	50.0
288 Publishing Only	45.8	35.5
286 Commercial Printing	42.9	36.5
Total Metal Fabricating	33.3	27.8
308 Machine Shops	72.6	66.8
3041 Metal Coating	56.0	50.3
3039 Ornamental & Architectural	53.8	44.0
3031 Metal Doors & Windows	39.9	36.4
306 Hardware, Tools, etc.	39.0	34.5
Total Miscellaneous Manufacturing	35.3	27.3
3915 Dental Laboratories	72.9	74.1
3999 Other Misc. Manufacturing	64.0	62.5
397 Signs and Displays	64.2	56.3
3941 Opthalmic Goods	60.4	59.1
3998 Fur Dressing and Dyeing	50.0	50.0
392 Jewellery and Silverware	36.9	26.5

1980 Small Establishment Industry Shares

Industry	Employment (%)	Value Added (%)
Total Clothing	27.1	26.0
246 Fur Goods	71.0	61.5
2442 Women's Cloth. Contractors	58.7	59.7
2492 Hat and Cap	39.3	36.5
2499 Miscellaneous Clothing	37.6	39.8
2432 Men's Clothing Contractors	28.9	27.3
Total Non-Metallic Minerals	26.1	22.3
353 Stone Products	77.4	78.1
355 Ready-Mix Concrete	58.0	59.8
354 Concrete Products	51.1	49.2
Total Wood Industries	25.0	19.9
258 Coffin and Casket	63.2	56.9
2511 Shingle Mills	61.6	51.5
2544 Kitchen Cabinets	62.0	50.3
256 Wooden Box	56.7	50.6
2541 Sash, Door and Other	54.0	49.1
259 Miscellaneous Wood	36.0	34.6
2543 Pre-Fabricated Buildings	29.9	24.2

Industries in which small plants had a notable increase in share of industry employment and/or value added, or a particularly strong growth in productivity relative to industry averages are summarized in the table on the following page. Industries for which small plants accounted for very small shares of employment and value added (less than 10% of both) were not considered for this table.*

---

* Note: Industries at the 3 and 4-digit level were considered to show high growth in one or more of the following areas if they satisfied the following criteria:

Employment	Value Added	Productivity
35+	60+	20+

where the numbers refer to the excess of small plant percentage growth over that of all plants.

High Growth Industries for Small Establishments

Area of Strong Growth over 1977-80*

Industry		Employment	Value Added	Productivity
102	Fish Products			x
1892	Narrow Fabric Mills			x
1899	Miscellaneous Textiles			x
2432	Men's Clothing Contractors	x	x	
2499	Miscellaneous Clothing nes			x
2511	Shingle Mills		x	
2513	Sawmills and Planing			x
2544	Kitchen Cabinets	x		
256	Wooden Box		x	x
272	Asphalt Roofing	x	x	
274	Misc. Paper Converters			x
294	Iron Foundries			x
297	Copper and Copper Alloy		x	x
298	Metal Rolling, Casting nes		x	x
301	Boiler and Plate Works	x	x	
302	Fabricated Structural Metal	x	x	
311	Agricultural Implement	x		
316	Commercial Refrigerator, Air Conditioner		x	x
3242	Non-Commercial Trailers	x	x	
331	Small Electrical Appliances	x	x	x
333	Lighting Fixtures	x	x	
334	Household Radio and T.V.	x	x	
3512	Imported Clay Products	x	x	x
3932	Toys and Games	x	x	
3994	Sound Recording-Musical Instruments	x	x	x
3996	Pens and Pencils			x

* Note: Value Added and Productivity (value added per worker) measured in current dollars.

V. CONCLUSION

Market opportunities, technological developments, competitive pressures, and the like, combined to produce considerable change in Canada's manufacturing sector in the 1970's. The net effects of these forces as they affected plants tracked from the start of the decade, as well as those born during 1972-80, are represented in the charts on the following pages.

For small plants, there was a high mortality rate, as represented by an almost 50% incidence of becoming inactive by 1980. However, good growth potential was there for small plants which survived, as reflected in their growth in employment and value added.

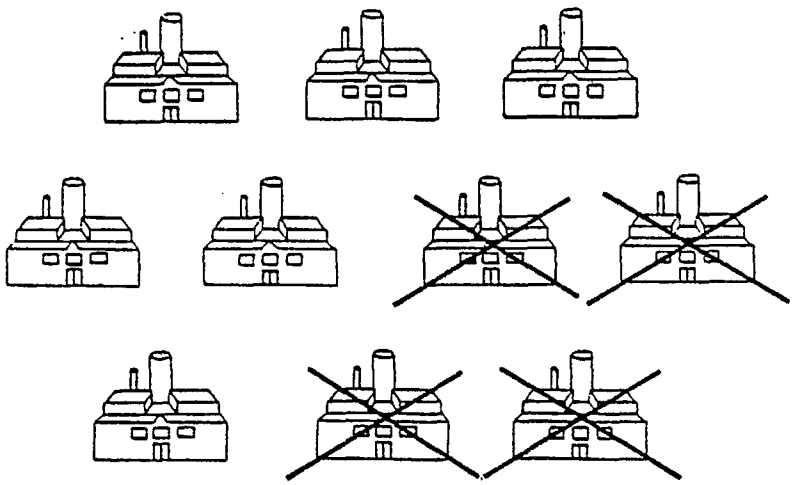
For medium and large firms, the effects of the dynamics of the marketplace were seen to a much more limited extent, either on the downside in the form of ceasing activity or on the upside in terms of dramatic growth. On balance, their workforce declined by 7%.

As a result, for the 1971 cohort, small plants as a group registered:
(a) the greatest stability in employment
(b) slightly above average productivity growth
(c) the greatest increase in real value added.

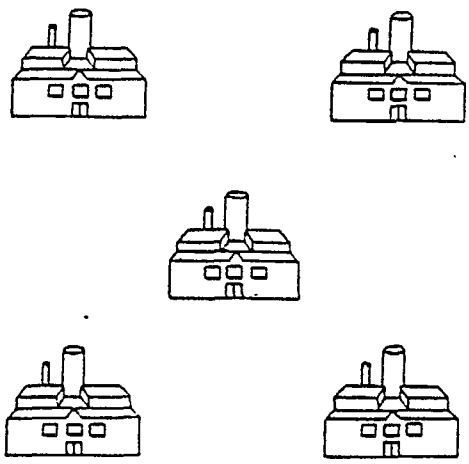
As expected, the occurrence of new establishments born into the manufacturing universe was overwhelmingly concentrated in the smaller end of the size spectrum. Although these new plants represented 47.5% of active establishments in 1980, they accounted for less than 17% of employment and just over 14% of value added, with the surviving plants from the 1971 cohort making up the balance. The employment created by these new, primarily small, establishments more than offset the above-noted net reduction in employment for the 1971 cohort, for manufacturing as a whole.

Thus looking at old and new plants in combination, smaller establishments dominated the growth of both numbers of establishments and total employment. In net terms, over 85% of 1971-80 manufacturing employment growth resulted from plants which had fewer than 50 employees in 1971 or started up in that size range during 1972-80.

FOR EVERY TEN MANUFACTURING PLANTS OPERATING IN CANADA IN 1971 ...

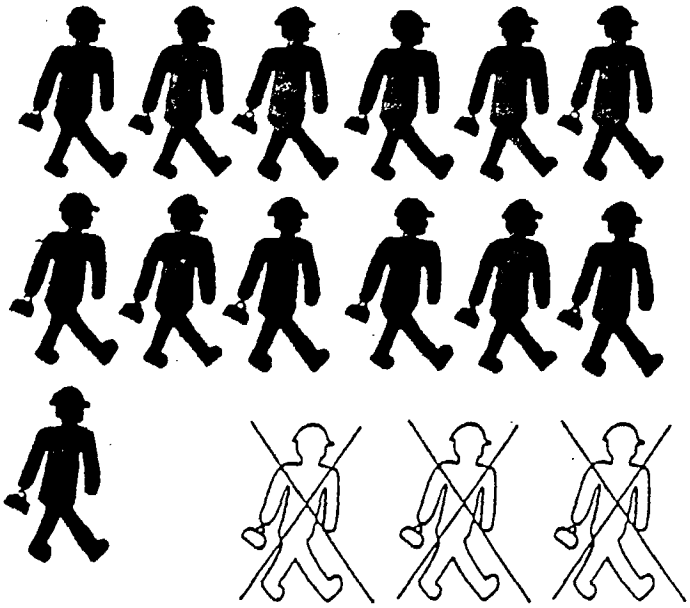


... FOUR WERE INACTIVE BY 1980 ...



... AND FIVE STARTED UP BETWEEN 1972 AND 1980 ...

FOR EVERY SIXTEEN CANADIAN MANUFACTURING JOBS WHICH EXISTED IN 1971...



...THREE WERE LOST THROUGH THE DISAPPEARANCE OF OLD PLANTS...

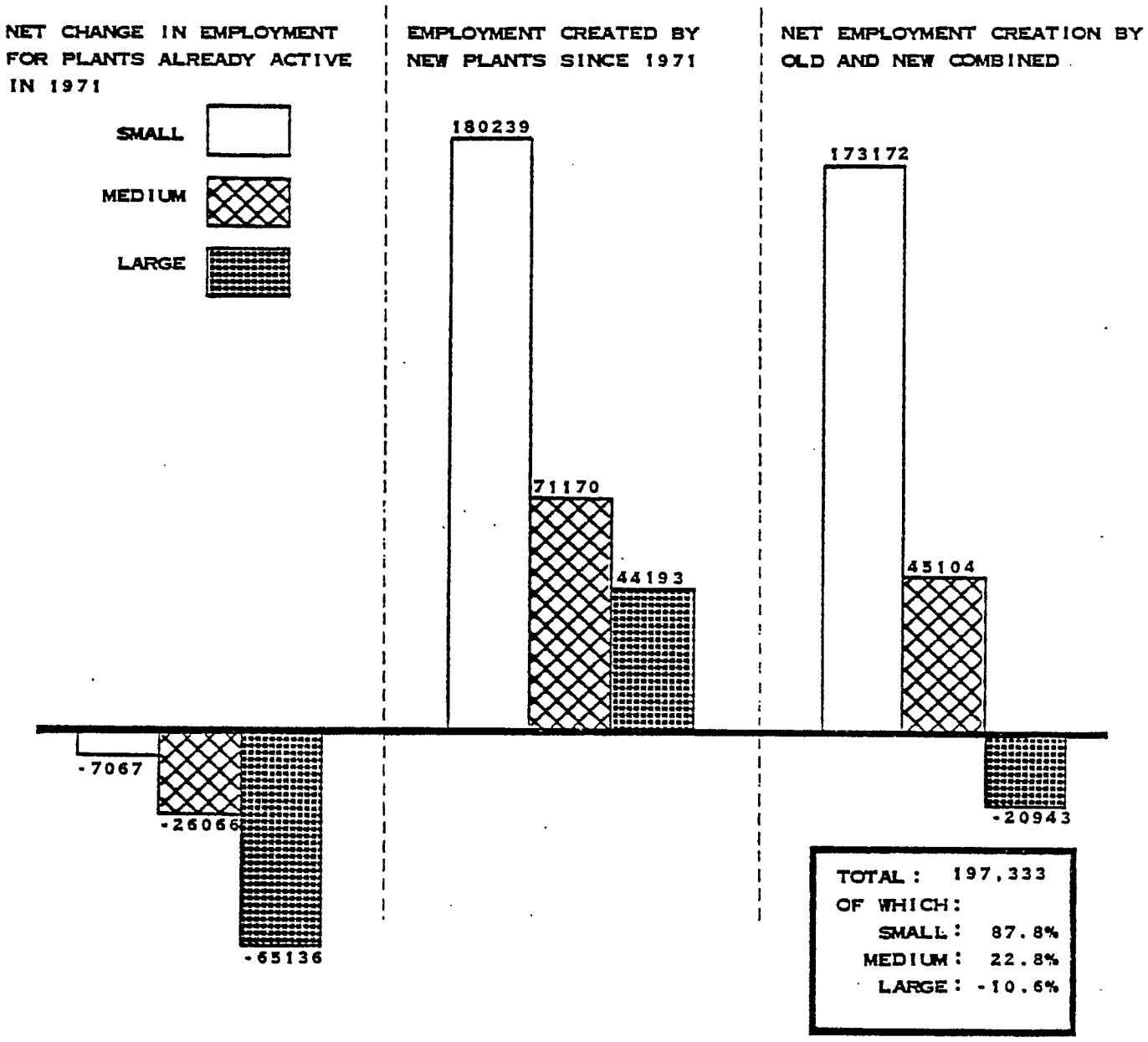
...TWO WERE ADDED BY THE GROWTH OF OLD PLANTS WHICH SURVIVED...

...AND THREE MORE JOBS WERE CREATED BY NEW-ENTRANT PLANTS.

THE OVERWHELMING MAJORITY OF NET JOB CREATION CAME FROM NEW SMALL ESTABLISHMENTS...

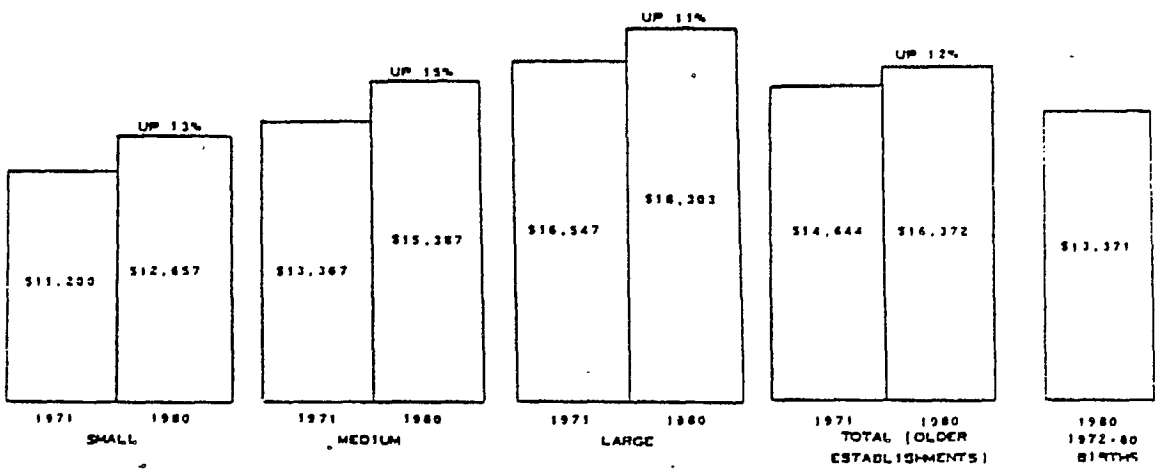
TOTAL MANUFACTURING

NET CONTRIBUTION OF SMALL, MEDIUM AND LARGE MANUFACTURING PLANTS TO JOB CREATION, 1971-80



Productivity growth, as measured by constant dollar value added per worker, was around 1% per year (12% for 1971-80 period).

Medium and small plants had lower absolute output per worker levels than large establishments, but outperformed them in terms of productivity growth. New plants had higher productivity than surviving 1971 small plants, but below the average for older establishments as a whole:



Looking ahead to future research, one of the more significant opportunities afforded by the acquisition and integration of various administrative survey data files at Statistics Canada is probably the potential for tracking large vs. small firms in non-manufacturing sectors.* Since the service and retail sectors are so important in any analysis of small business, tracking studies in these areas probably merit a relatively high priority in terms of research into the small business role in the Canadian economy, and the dynamics of enterprise development.

---

* In fact, consultants and federal agencies are currently engaged in negotiations on tracking studies which will span both manufacturing and non-manufacturing sectors. On another front, the Canadian Federation of Independent Business has recently conducted a tracking study on a data base of its active members over the period 1975-82. The findings appear in A study of Job Creation 1975 to 1982 and Forecasts to 1990, CFIB, Toronto, December 1983.