# The role of Etibank in the development of the mining industry in Turkey

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The foundation of Etibank as a state-owned mining, metallurgical and banking company dates back to the year 1935. The main task assigned to Etibank was defined as the "mining of mineral resources and the production of energy to provide the nation with raw materials".

Etibank carried out these tasks until 1955. Now the Iron and Steel Industry has been separated from Etibank. Etibank ceased activities related to coal mining in 1957 and to energy production in 1970.

The company is presently involved in mining, and chemical and metallurgical activities related to non-ferrous and non-coal mineral resources. Some banking activities fall within the sphere of Etibank's engagement.

## Organisation of Etibank

At the present time Etibank owns 19 mining, chemical and metallurgical establishments. The organisation chart and the nature of these establishments can be seen in Figure 1 in the Appendix. In addition there are two other subsidiaries which are owned by Etibank to approximately 99%. Etibank has also participated to a varying degree in five joint ventures.

In the field of banking the company provides service through 128 branches all over Turkey.

## Current products, production rates and related capacities

Etibank's own establishments and subsidiaries produce up to 41 different products. These products are listed in the shaded box(right).

The production rates for the main products for the period 1975 to 1986 is summarised in Table 1 in the Appendix. Figures 2 and 3 in the Appendix depict the production rate graphically. The current production capacities are to be expanded.

Blister copper
Alumina
Aluminium hydroxide
Aluminium sulphate
Aluminium
Aluminium profile
Aluminium sheet
Chromite (concentrate and lumpy)
High carbon ferrochromium
Low carbon ferrochromium
Ferrosilicon
Calcium carbide
Silicon ferrochromium
Colemanite
Tincal
Ulexite
Borax decahydrate
Borax pentahydrate
Boric acid
Etibor 46
Sodium perborate
Sulphur
Sulphuric acid
Phosphate concentrate
Barite (lumpy and concentrate)
Pyrite
Boxite
Emery
Diasporite
Magnetite
Garnet
Mercury
Crushed and classified perlite
Expanded perlite
Plaster, panel and block products of perlite
Söderberg
Lead and Zinc
Marble
Pumice
Antimony concentrate
Silver

## Development of existing production capacities

The development of existing production capacities in the mining sector is primarily a function of existing mineral resources. In addition to this, the demand

for the product concerned has to be sufficient either in the domestic or in the foreign market. The expansion must be profitable.

Within the framework of these main criteria Etibank has tried to expand the production of tincal concentrate, boric acid, colemanite concentrate, sodium perborate, chromite concentrate and ferrochromium. The following volumes are estimated:

| | |
|---|---|
| Tincal concentrate | 550 kt/y |
| Colemanite concentrate | 400 |
| Boric acid | 100 |
| Sodium perborate | 20 |
| Ferrochromium | 100 |

These volumes will be reached in 1988 and 1989. There are also other possibilities for capacity expansion but the demand problem limits their realization.

## Growth of Etibank's income

Etibank is a state-owned company. Therefore, profit is not the only goal. A compromise must be reached between profit, the reduction of unemployment, the balance of social relations and the needs of the country for raw materials.

Figure 4 in the Appendix shows the growth rate of revenues reached during the period 1979-1986. The same figure shows also the development of the export income of Etibanki's products.

## Investment activities of Etibank

The investment activities of Etibank fall into three different categories. These are:

- Investment activities exclusive to Etibank.
- Investment activities as shareholders in domestic share investments.
- Investment activities as joint ventures with foreign companies.

The investment activities exclusive to Etibank are the above-mentioned investments for production increase and investments in new plants. The new plants are as follows: The hydrogen peroxide plant in Bandirma, the silver plant in Kutahya, the phosphate concentrate plant in Mazidagi.

The last three new plants started producing 1987.

As a shareholder, Etibank retains its shares in the new investments of the subsidiaries mentioned above. Apart from those Etibank invests in a sodium bichromate plant with 20% share. It is likely that this kind of participation will be increased over the next few years.

Etibank is increasingly engaged in investments carried out as joint ventures with foreign companies, both in domestic and foreign markets. For example the investment in a copper deposit on the Black Sea.

In Figure 4 investment figures are shown for the period 1979 to 1986.

## Potential of mineral resources owned by Etibank

Etibank owns more than 700 mineral resources rights in Turkey. The most important resources are shown below:

The total value of these reserves makes up approximately 40% of the value of the mineral reserves potential of Turkey. There are also many indications that these reserves may increase if prospecting can be stepped up.

## The role of Etibank regarding employment in Turkey

Etibank has for a long time followed the principle of employing more labour or personnel than necessary. When Turkey entered a period of industrial change this principle was relaxed.

Figure 5 in the Appendix shows a commensurate decrease in employment since 1980.

In the years to come employment will increase as new plants begin to operate. With the increase of the employment rate an increase in efficiency can also be noted.

**Potential of mineral resources by Etibank**

| | |
|---|---|
| Copperores with a proven reserve of | 66 Mt |
| Bauxite ores with a proven reserveof | 62 Mt |
| Antimony with a proven reserveof | 354 Kt |
| Mercury with a proven reserve of | 1.2 Mt |
| Scheelite with a proven reserve of | 13 Mt |
| Trona with a proven reserve of | 200 Mt |
| Phosphate witha proven reserve of | 70 Mt |
| Colemanite with a proven reserve of | 1 050 Mt |
| Borax with a proven reserve of | 519 Mt |
| Ulexite with a total proven reserve of | 61 Mt |
| Silver with a proven reserve of | 20 Mt |
| Chromit ewith a total proven reserve of | 8 Mt |
| Gold with a total proven reserve of | 8.5t metal |
| Perlite with a total reserve of more than | 2 Gt |
| Zeolite with a total potential reserve of more than | 20 Mt |

**Table 1**
**Production of main products, 1975–1986**

| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boron concentrate | 348 976 | 329 507 | 443 886 | 471 551 | 627 759 | 642 842 | 758 161 | 655 206 | 617 548 | 907458 | 924 059 | 1 009 790 |
| Boron products | 37 367 | 56 651 | 64 421 | 47 800 | 51 432 | 63 096 | 65 209 | 47 404 | 67 184 | 75 084 | 59 034 | 89 300 |
| Chromite (lumpy + concentrate) | 255 284 | 232 972 | 226 970 | 212 164 | 176 330 | 184 174 | 216 503 | 246 124 | 180 230 | 242 585 | 268 416 | 19 5264 |
| Sulphuric acid | 31 360 | 25 976 | 25 278 | 20 682 | 18 498 | 105 303 | 121 573 | 120 310 | 119 831 | 130 607 | 92 259 | 115 529 |
| Aluminium | 18 149 | 37 508 | 51 331 | 32 288 | 31 720 | 33 574 | 39 985 | 36 521 | 30 381 | 37 887 | 54 150 | 6 0003 |
| Ferrochromium | 15 902 | 17 441 | 24 731 | 40 982 | 39 439 | 32 710 | 40 775 | 40 066 | 30 175 | 49 180 | 53 300 | 5 3626 |
| Phosphate concentrate | — | 1 500 | 22 900 | 21 003 | 26 694 | 21 826 | 42 500 | 26 345 | 50 350 | 95 585 | 38 525 | 2 700 |
| Sulphur | 19 450 | 21 000 | 20 040 | 20 028 | 21 004 | 23 051 | 28 645 | 31 335 | 11 174 | 36 703 | 37 500 | 40 014 |
| Blister copper | 15 725 | 14 850 | 18 150 | 12 582 | 10 739 | 2139 | 5002 | 4665 | 2 500 | 6 202 | 4 340 | 5 625 |
| Scheelite concentrate | — | — | 23 | 22 | 258 | 295 | 249 | 283 | 303 | 484 | 550 | 619 |
| Mercury | 176 | 169 | 161 | 173 | 162 | 154 | 202 | 246 | 161 | 182 | 226 | 261 |

## Etibank's mining and metallurgical technology and development strategies

In general the the Etibank subsidiaries open pit mining technology is comparable with that of their competitors. Most of the machines for open pit mining operations are imported from the industrialized countries. The same situation exists in the metallurgical and chemical plants.

On the other hand underground mining technology is mostly primitive. Although underground mining is limited to the shallow type ore bodies, there are still many problems to be found in this sector. These problems will increase if reserves at a deeper level have to be taken into production.

In order to develop mining and metallurgical technology the following strategies are posited:

Transfer of know-how related to underground mining of deep lying reserves.

Transfer of know-how or support of research programs to increase efficiency in metallurgical and chemical plants.

Increase of productivity per manshift.

Improvement of product quality.

Introduction of new technologies for obtaining minor metals as by-products.

Cooperation with international mining and metallurgical companies in the field of investment.

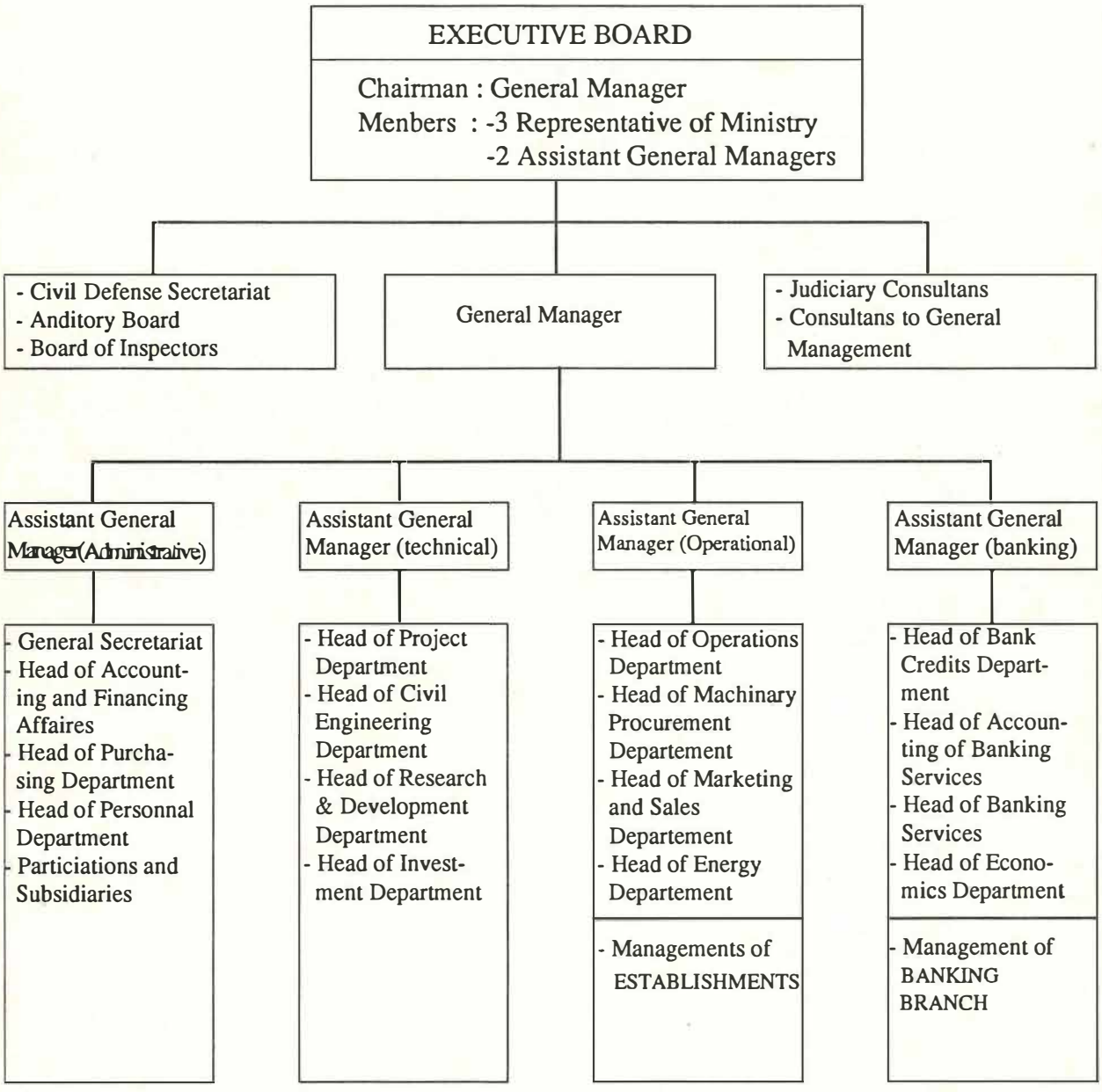
## Possible joint ventures with foreign investors

One of the goals of Etibank is to establish joint ventures with international companies both in domestic and foreign markets. The following projects (see shaded box right) have been opened to foreign investment:

Antalya borite project.
Balyalead project.
Beypazari trona project.
Bolkardagi gold project.
Cayeli copper project.
Izmir perlite project.
Izmir volcanic tuff project.
Kayseri pumice project.
Madenkoy copper project.
Marmara marble project.
Mazidagi phosphate fertilizer project.
Milas aluminium project.
Westonatolien chromite project.

In addition to these projects joint ventures are feasible in for example the exploitation of zeolite minerals.

**Figure 1**
**Organisation Chart of Etibank**



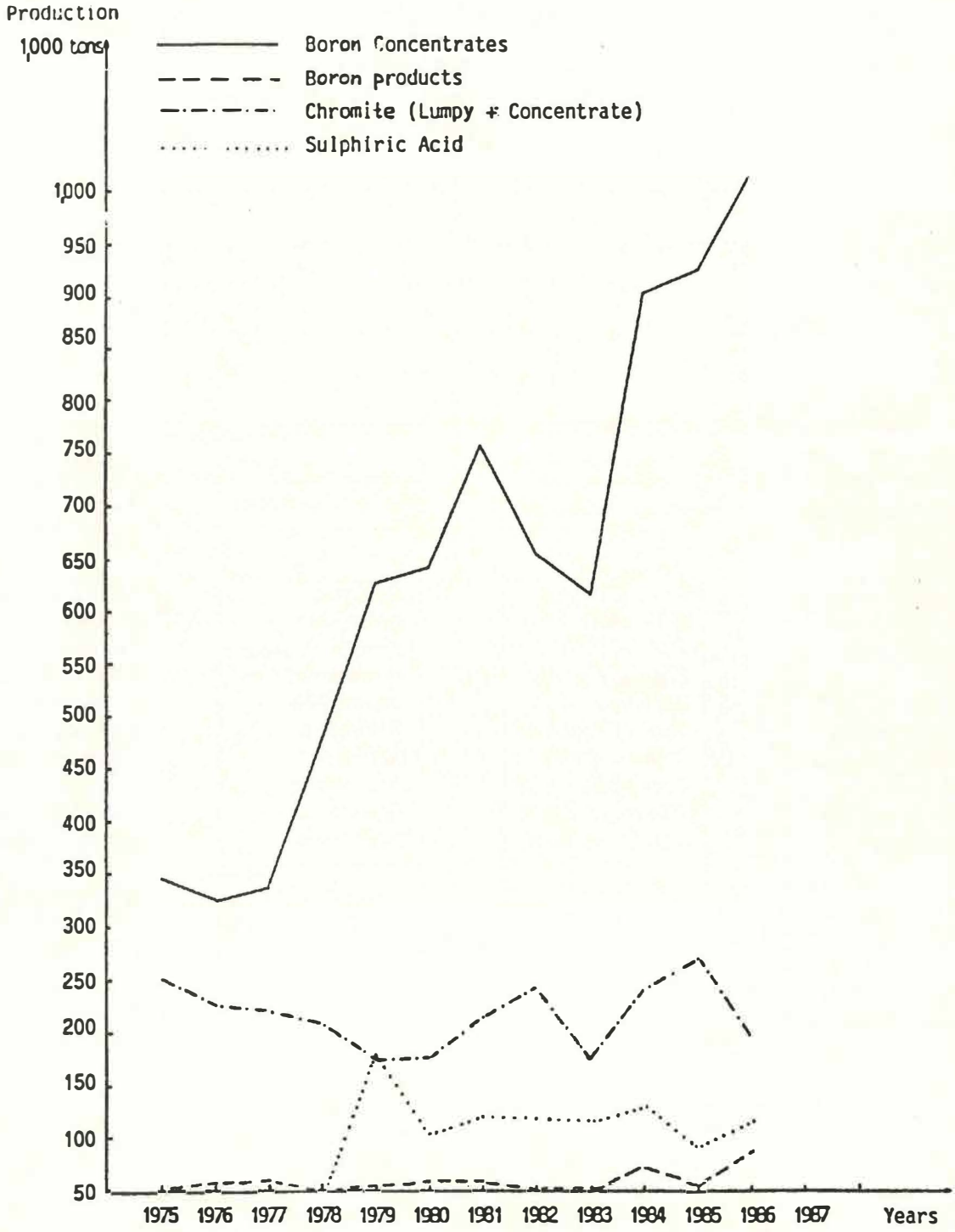



Figure 2 : Production Rates Of The Main Products During The Period From 1975 to 1986.

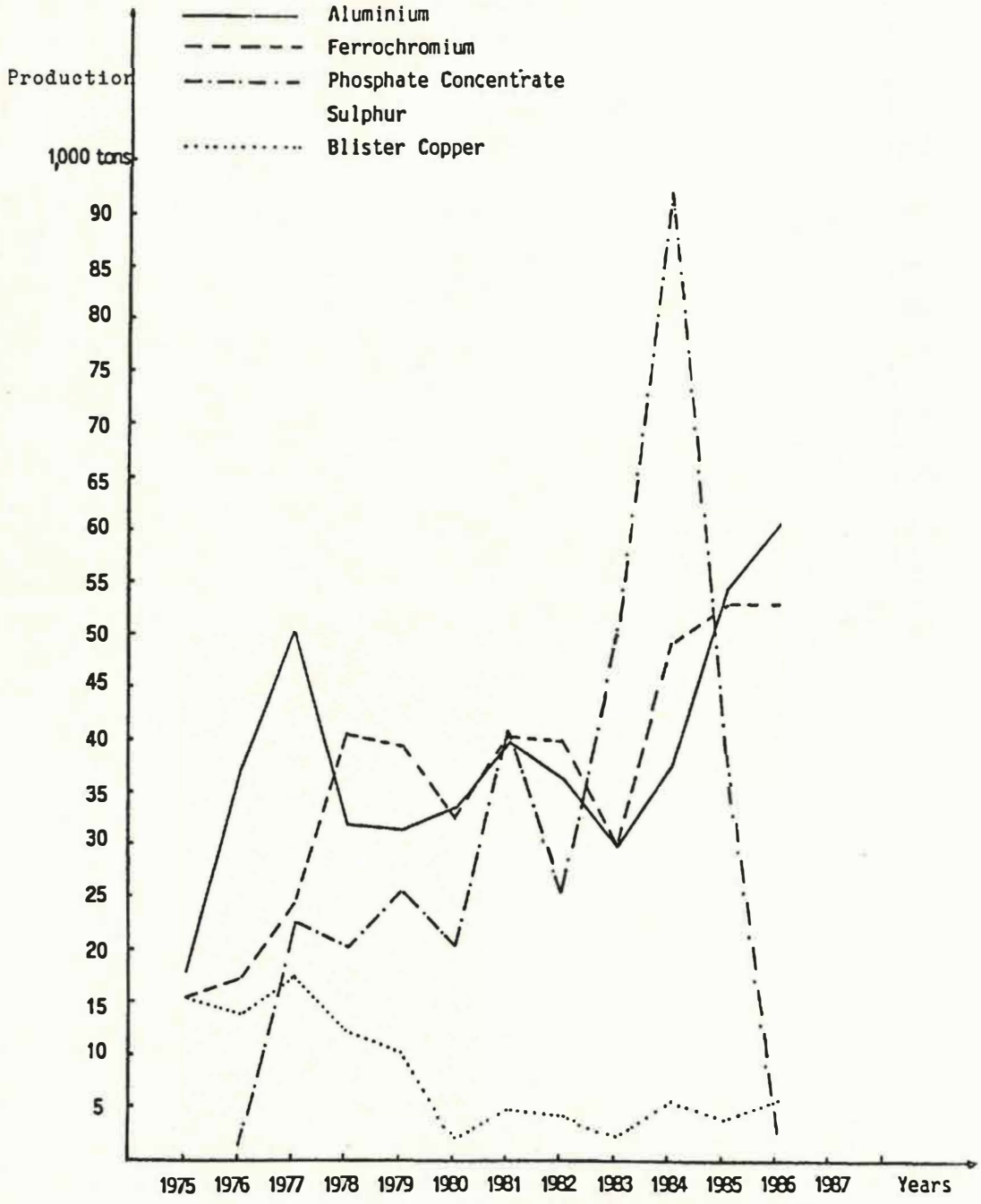



Figure 3: Production Rates Of The Main Products During The Period From 1975 to 1986.

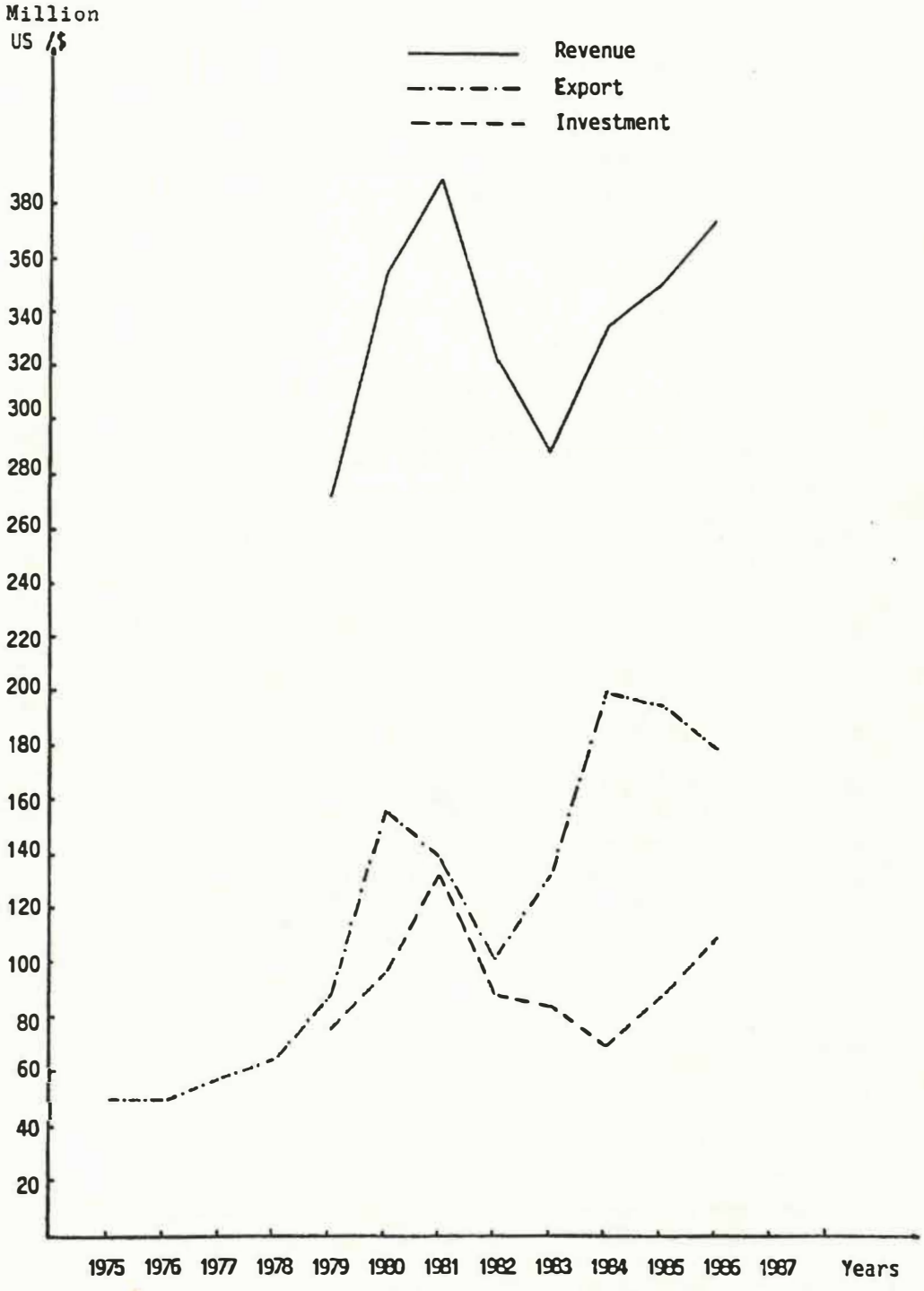



Figure 4: Revenue, Export And Investment Of Etibank
During The Period From 1975 to 1986.

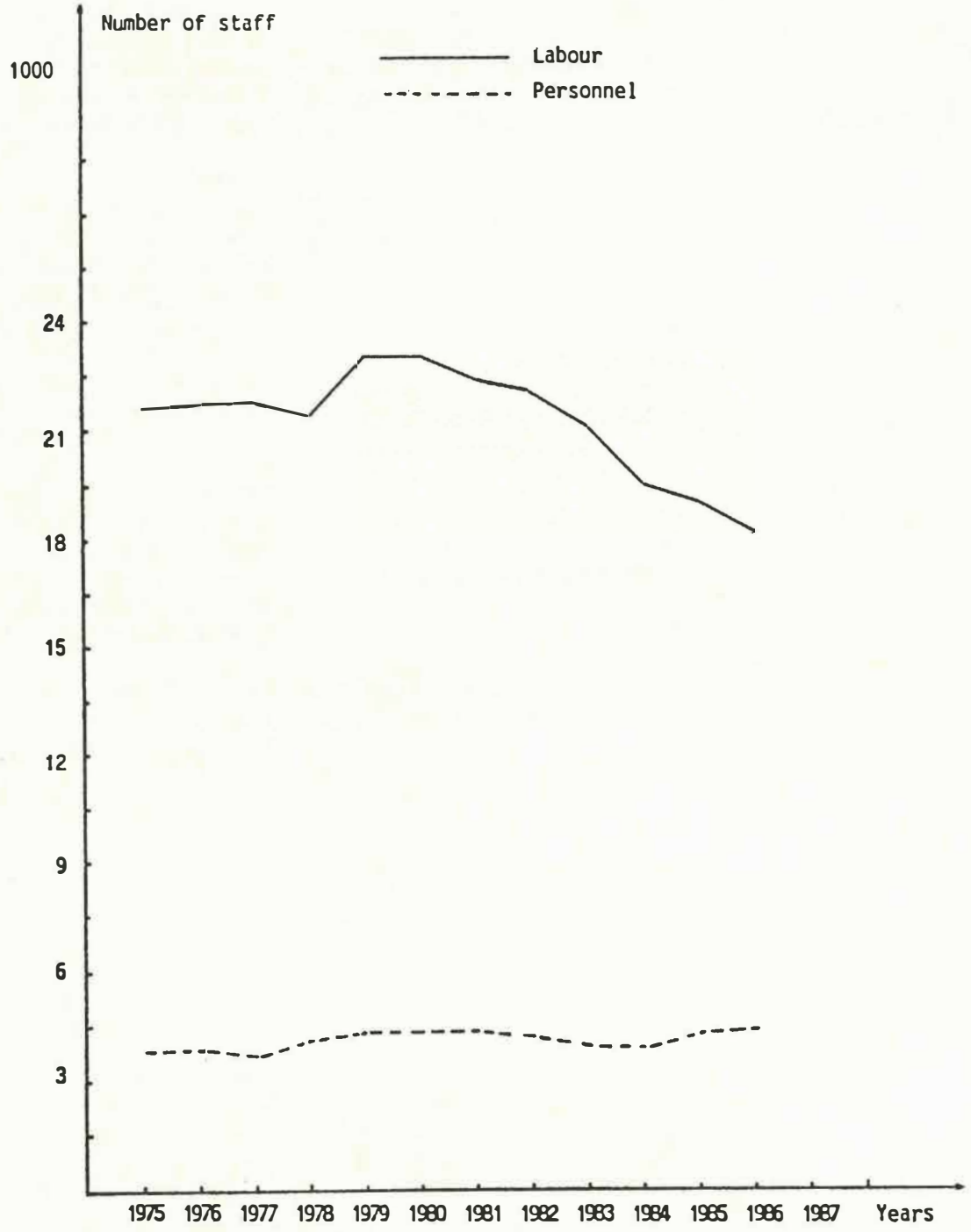



Figure 5: Total Number of Labour And Personnel Employed in Etibank During The Periods From 1975 to 1986.