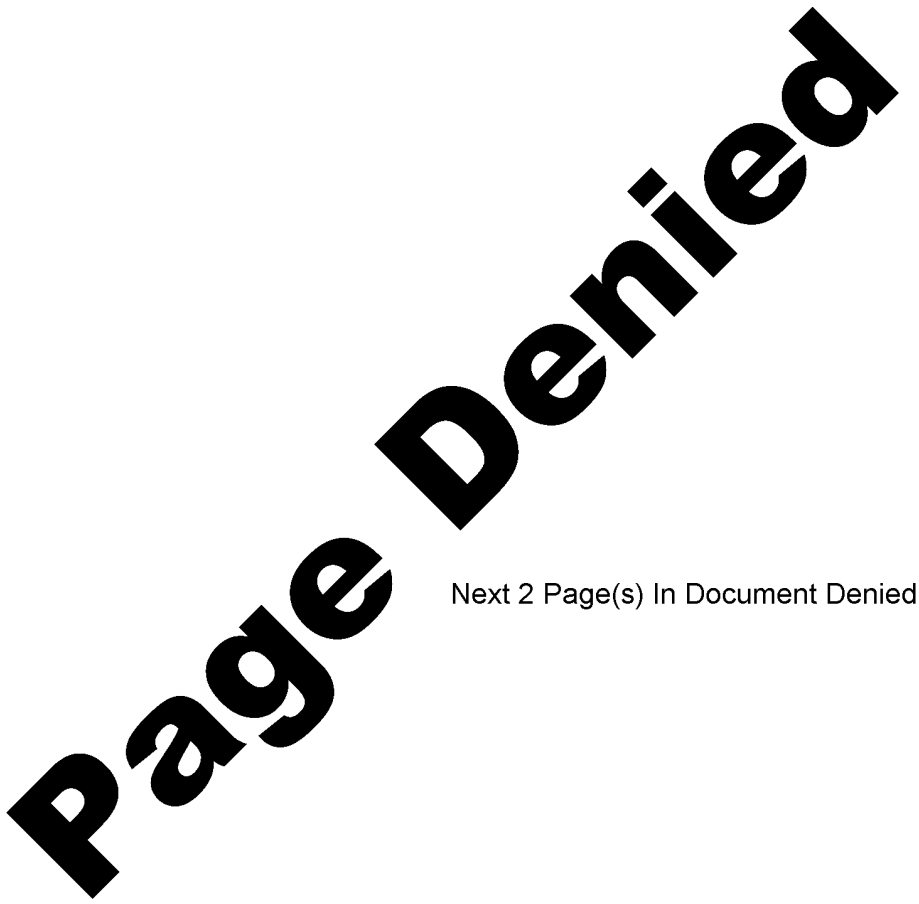

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Western Europe: Structural Economic Change in the Big Four

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A Technical Intelligence Report

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Western Europe: Structural Economic Change in the Big Four

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A Technical Intelligence Report

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Western Europe: Structural Economic Change in the Big Four

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Preface

This paper describes from a macroeconomic perspective the scope and direction of industrial restructuring under way in Western Europe. It presents detailed information for the period 1970-84 on output, employment, investment, and trade at the industry level, but in a comprehensive form so that the relation of individual industries or groups of industries—such as the high-technology industries—can be gauged against economic performance as a whole. The data are presented in a form that makes it easy to compare restructuring patterns among the West European countries, and between Western Europe, the United States, and Japan.

This paper is not intended to assess why restructuring happened or did not happen, although some of the data on profits suggest that until lately there were strong incentives to shift resources out of manufacturing. It is meant, rather, to pull together information from a wide variety of sources such as the European Community's computer data base on industry performance, the United Nations' data base on international trade, and the OECD data base on standardized unemployment rates (see appendix B) to describe what happened and to provide essential background analytical data for those seeking to assess developments and policies in a single country or industry.

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Western Europe: Structural Economic Change in the Big Four

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Summary

Information available as of 30 July 1986 was used in this report.

The West European economies have been undergoing a marked shift in the structure of their economies. Their manufacturing sectors now account for only little more than one-fourth of GDP, down from over 30 percent in 1970:

- In contrast, the manufacturing sector in the United States has maintained a fairly constant share of output over the last 15 years, while in Japan manufacturing has rapidly expanded.
- Employment in the manufacturing sector has fallen dramatically in Western Europe in contrast with the experience in the United States and Japan. From 1970 to 1984, Western Europe lost 6 million manufacturing jobs, while the United States added 300,000 and Japan gained 600,000.
- Western Europe has lost competitiveness in trade in manufactured goods. Its world market share has dropped over 7 percentage points since 1970, while the US share has held roughly steady and Japan and the newly industrializing countries have experienced large gains.

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There has been some shifting within Western Europe toward the high-technology industries, but the growth of their output has not been very strong:

- The high-technology industries have been growing only slightly faster than GDP.
- Despite growing faster than their economies as a whole, West European high-technology industries have added no new jobs.
- West European high-technology industries overall have been losing competitiveness. The Big Four have lost even more world market share in high-tech goods than they did in low-tech goods. From 1975 to 1984 the Big Four's share fell 5.4 percentage points to 31.4 percent of the world market for high-tech goods, while its share of the low-tech market fell 4.6 percentage points to 35.9 percent.

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Among the Big Four, West Germany and the United Kingdom have seen a marked decline in the relative size of their manufacturing sectors since 1970. Manufacturing in France and Italy continued to expand in the 1970s, but peaked around 1980:

- France and Italy have experienced the most rapid growth in real output of their high-tech industries, but, at 3.7 percent or so per year since 1975, this growth has not been dramatically faster than the overall GDP growth rate in these two countries.

- Italy stands out in that its low-technology industries have continued to grow almost as fast as its high-tech sectors and have done well in world trade performance.

- From 1975 to 1984, manufacturing output in the United Kingdom fell an average of 0.8 percent a year. The United Kingdom is the only major West European country to experience a fall in the absolute level of manufacturing output over this period. High-tech output grew, but only by 0.8 percent a year.

- West German high-tech output has grown more slowly than French and Italian output. Germany has been more successful in shifting resources from low to high tech, but it has also suffered the greatest loss in its world market share of high-tech exports.

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The weakness in the West European manufacturing sector is at least partially the result of large decreases in the overall rate of investment and, in particular, the decline in the share of investment going to the manufacturing sector. After a decade of steep decline, an upturn in overall and manufacturing-sector profit rates has occurred in the last two to three years.

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Government policy has also been shifting in recent years. Although some policies were developed in the 1970s to foster research, development, and commercialization in high-technology areas, by far the most effort went into attempts to cushion the decline of faltering low-technology industries such as shipbuilding, steel, and textiles. These efforts were aimed at saving

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jobs but they cost governments and consumers huge sums of money and did not arrest the deterioration of the manufacturing sector. Now, after a decade of effort to subsidize and protect floundering industries, West European governments seem more inclined to encourage competition and market discipline. The policy of privatization in the United Kingdom launched in the early 1980s has now caught on to varying degrees in other major West European countries. Moreover, the members of the European Community have launched an ambitious program to chop down by 1993 internal barriers to trade and competition within the EC.

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The upturn in profit rates plus these new industrial policies could lead to improved investment and manufacturing-sector performance, but still there are tremendous obstacles that lead us to expect only limited gains. First, the commitment to privatization is far from complete. London, for example, has had to back off from several of its planned sales this summer, and it appears that any effort by the Chirac government to sell off recently nationalized companies will be sharply contested by the Socialists. Second, while profit rates have improved, European industry still faces high marginal tax rates and costly labor protection schemes that inhibit industrial innovation. Third, we feel that for the most part the West European business community remains more risk averse and less prone to gamble on new ventures, products, and processes than its US and East Asian competitors.

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Western Europe: Structural Economic Change in the Big Four

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Big Four

Shifts in Production

West European manufacturing sectors have shrunk significantly in relative size over the last 14 years:

- Value added by the manufacturing sector in the Big Four fell from 30.3 percent of GDP in 1970 to 27.4 percent in 1984.
- Manufacturing output continued to grow in absolute terms over this period, but at only 1.5 percent a year, two-thirds the rate of overall real GDP growth.
- The West European results differ strikingly from the pattern in the United States where the relative size of the manufacturing sector remained roughly unchanged from 1970 to 1984, and from the Japanese case where the relative size of the manufacturing sector grew rapidly.

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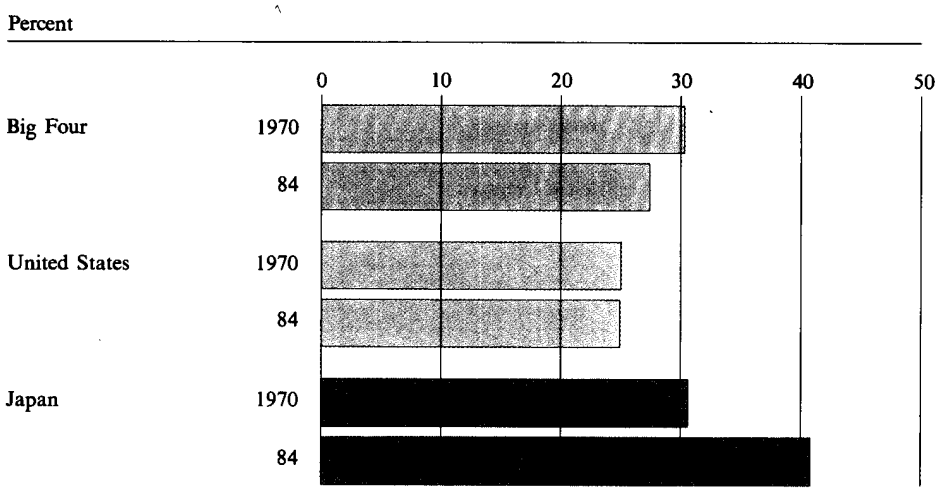
Figure 1
Share of GDP Produced by the Manufacturing Sector, 1970 and 1984



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Patterns of Restructuring

The pattern of industrial restructuring varies widely among the major West European countries:

- West Germany has suffered a fall in the relative size of its manufacturing sector since 1970, but the absolute level of manufacturing output has continued to grow.
- The United Kingdom's manufacturing sector has declined precipitously, falling from 31.3 percent of total output in 1970 to 24.1 percent in 1984. The United Kingdom is the only major West European country where manufacturing output actually fell over this period, measured in 1980 prices.
- Italy has experienced a rise in the relative share of its manufacturing sector, and France's has remained about constant, although both countries peaked around 1980 and have fallen since.
- The smaller West European countries, taken as a group, show little trend in the relative size of the manufacturing sector. Some countries (such as the Netherlands and Norway) have seen a sharp fall in the share of manufacturing, while others (such as Finland and Spain) have experienced a sharp rise.

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Table 1
Share of Manufacturing in GDP, 1970-84

Percent

	1970	1975	1980	1982	1984
West Germany	33.8	31.8	31.9	29.8	30.2
France	26.1	26.5	27.6	25.8	26.2
United Kingdom	31.3	29.8	26.8	24.4	24.1
Italy	27.9	27.3	31.5	29.1	28.8
Big Four	30.3	29.2	29.5	27.2	27.4
Other Western Europe	23.7	24.6	22.8	23.0	NA
Western Europe	28.1	27.6	27.3	25.8	NA
United States	25.0	24.3	24.7	23.4	24.9
Japan	30.6	30.1	36.0	38.4	40.8

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High and Low Technology

High-technology industries [1] are accounting for an increasing share of manufacturing output in all the Big Four countries and are growing at a faster rate than GDP in all but the United Kingdom:

- All of the decline in manufacturing's share of total output in the Big Four can be traced to declines in the low-technology sectors.
- High-technology industries in the United Kingdom account for a growing share of total manufacturing output. Output from the high-tech sectors lags real GDP growth, however, so high-tech industries account for a declining share of GDP.
- In Italy, low-technology industries have been growing nearly as fast as high-tech industries.
- West German high-tech industries account for both a larger share of manufacturing and a larger share of GDP than in the other three countries. French and Italian high-tech output, however, has been growing faster than German production since 1975.

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[1] See appendix A for a discussion of the methodology for dividing industries into low- and high-technology groups.

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Table 2 *Percent*
Big Four: High-Technology Industries Share of Total Manufacturing Value Added and Share of GDP, 1975-84

	Share of Manufacturing			Share of GDP		
	1975	1982	1984	1975	1982	1984
West Germany	23.2	25.8	NA	7.4	7.7	NA
France	19.9	21.7	22.8	5.3 [a]	5.6	6.0 [a]
United Kingdom	19.3	22.7	NA	5.7	5.5	NA
Italy	19.7	20.1	21.7 [a]	5.4	5.8	6.2 [a]

[a] Estimate.

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Employment Shifts

Employment in the manufacturing sector has fallen dramatically in Western Europe:

- The Big Four have lost 6 million manufacturing jobs since the 1970 peak.
- The service sector has expanded by several million jobs, but not by enough to offset manufacturing-sector losses. Total employment in the Big Four declined by 500,000 from 1970 to 1984.
- The European results contrast sharply with the United States and Japan where manufacturing sector employment has increased since 1970.

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Table 3
Employment in the Manufacturing Sector, 1970-84

Millions

	1970	1975	1980	1982	1984
West Germany	9.6	8.6	8.3	7.8	7.4
France	5.5	5.7	5.3	5.0	4.9
United Kingdom	8.5	7.7	7.3	6.1	5.7
Italy	5.5	5.6	5.7	5.5	5.1 [a]
Big Four	29.1	27.6	26.6	24.4	23.1
Other Western Europe	11.1	11.3	11.0	10.0	9.7 [a]
Western Europe	40.2	38.9	37.6	34.4	32.8
United States	20.7	19.5	21.9	20.3	21.0
Japan	13.8	13.5	13.7	13.8	14.4

[a] Estimate.

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High and Low Technology

Despite their relatively rapid growth, high-technology industries have not been a source of new jobs:

- Employment in high-tech industries has fallen less sharply than in low-technology sectors— except in Italy—but it has still fallen over 500,000 from 1975 to 1983.

- Very few manufacturing sectors, whether high or low tech, gained employment over this time period. Road motor vehicle production in West Germany and France and the aerospace industry in West Germany, France, and Italy are among the few exceptions.

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Table 4
Big Four: Employment in High-Technology Industries, 1975-84

	Thousands			Share of Manufacturing Employment *(percent)*		
	1975	1983	1984	1975	1983	1984
West Germany	1,933	1,768	NA	22.6	23.6	NA
France	1,078	1,000	1,048	19.0	20.3	21.4
United Kingdom	1,486	1,253	1,260	19.4	21.7	22.0
Italy	974	915	NA	17.3	17.3	NA
Big Four	5,471	4,936	NA	19.9	21.0	NA

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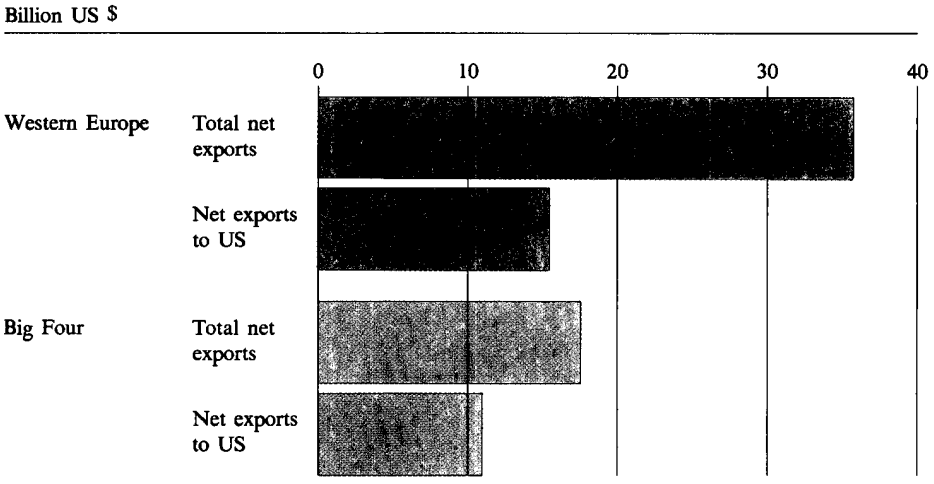
Trade in Manufactures

Western Europe increased its net exports of manufactured goods substantially from 1975 to 1984, but at least in the case of the Big Four this gain was due more to increased imports by the United States than to dynamism in the European manufacturing sector. [redacted] 25X1

Figure 2
Gain in Net Exports of Manufactured Goods, 1976-84



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Share of World Market

Western Europe's share of the total non-Communist world market for trade in manufactured goods—including intra-European trade—fell sharply, from 61.8 percent in 1975 to 54.7 percent in 1984:

- The Big Four's share of the world export market fell even faster than the overall West European share. It dropped from 39.7 percent in 1975 to 34.7 percent in 1984.
- Japan and a group of newly industrializing countries picked up the market share lost by Western Europe.
- The United States' market share fell only slightly.

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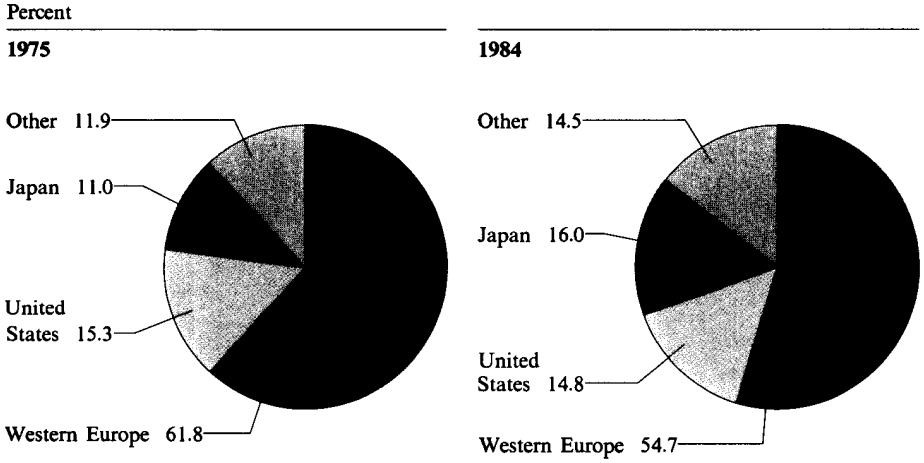
Figure 3
Share of Non-Communist Exports of Manufactured Goods, 1975 and 1984



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High and Low Technology

The losses by the Big Four in their world market share were not limited to low-technology products: high-tech goods have shown proportionately greater declines in world market share:

- All the Big Four countries have shown substantial losses in their high-tech world market share.
- The smaller West European countries have also lost a large amount of trade share. The overall West European market share in high-tech goods fell from 56.4 percent in 1975 to 46.5 percent in 1984.
- The United States has shown only a slight loss in its world market share since 1975 and even gained share during the period 1980-84 when the dollar was relatively strong.

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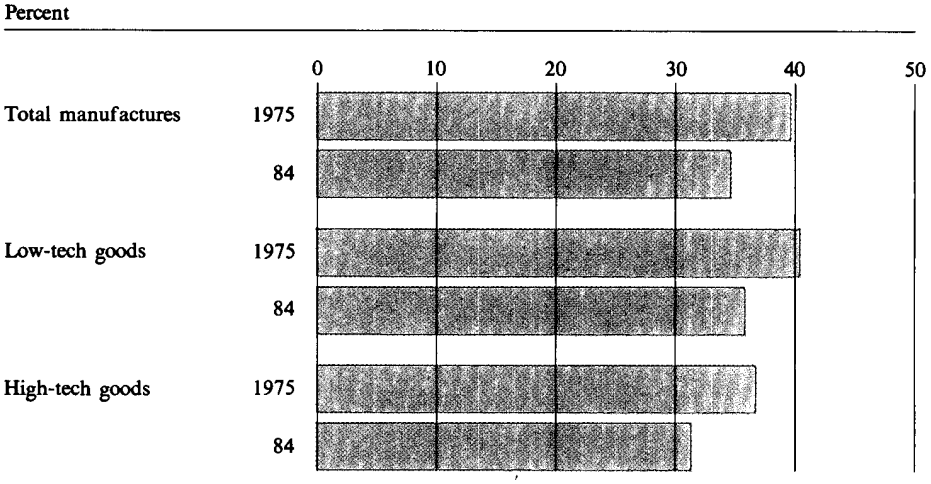
Figure 4
Big Four: Share of Free World Exports, 1975 and 1984



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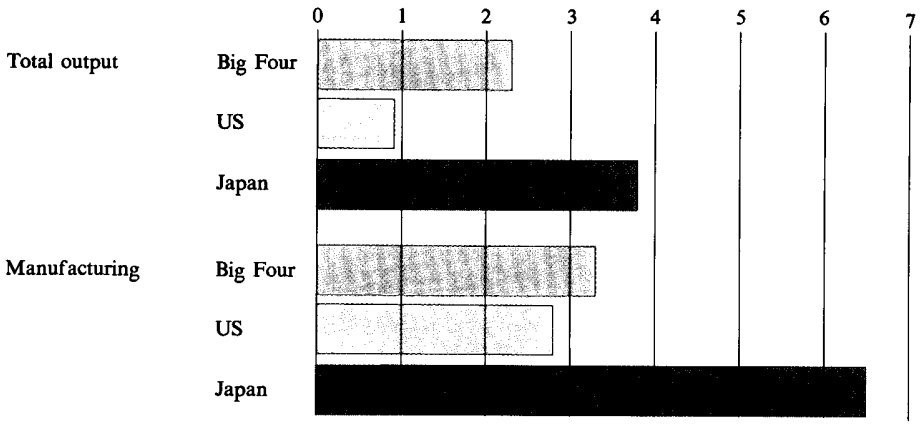
Productivity Trends

Labor productivity [2] has been growing much more rapidly in the Big Four West European countries than it has in the United States:

- In the manufacturing sector, however, US productivity growth has been almost as fast as in the Big Four. 25X1

[2] Labor productivity is defined in this paper as output divided by employment. 25X1

Figure 5
Average Annual Productivity Growth, 1971-84



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Productivity Trends (continued)

Germany and France had considerably higher rates of productivity growth than the United Kingdom and Italy. The other West European countries, taken as a group, performed about the same as the Big Four average.

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Table 5
Average Annual Productivity Growth, 1971-84

Percent

	All Sectors	Manufacturing Sector
West Germany	2.6	3.2
France	2.8	3.9
United Kingdom	1.9	2.7
Italy [a]	1.8	2.6
Big Four	2.3	3.3
Other Western Europe	2.3	3.5 [b]
Western Europe	2.3	3.1 [b]

[a] 1970-83 data.
[b] 1970-82 data.

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Average productivity levels in France and West Germany far surpass those in the United Kingdom and Italy and now closely approach the US level.

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Table 6
Productivity Levels:
GDP Per Person Employed, 1960-85

Percent [a]

	1960	1970	1980	1985
West Germany	58.2	74.2	92.1	95.3
France	57.3	76.4	92.6	94.1
United Kingdom	53.5	61.1	60.6	64.7
Italy	43.2	58.2	68.5	67.5
Big Four	53.5	66.2	78.5	80.6
Japan	27.5	52.5	72.2	79.4

[a] Figures are indexed so that the US productivity level equals 100 in each specified year.

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Investment and Profit Trends

The share of GDP going to investment has been falling in Western Europe since the early 1970s. The Big Four investment ratio was remarkably steady at about 22 percent in the 1960s, years of very fast GDP growth. But after peaking at 22.7 percent in the early 1970s (slightly lower than that for the rest of Western Europe), the investment ratio has trended sharply downward:

- The drop in investment shares has been the most dramatic in West Germany, but all of the Big Four countries and the other West European countries taken as a group have experienced large declines.
- The Japanese investment ratio has also dropped sharply in the last 15 years.
- Only the United States among the major industrial countries has shown a tendency for the investment ratio to rise.

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Table 7
Percent
Ratio of Aggregate Investment to GDP

	1970	1975	1980	1982	1984	1985 [a]
West Germany	25.5	20.4	22.8	20.5	20.4	19.8
France	23.4	23.3	21.6	20.5	19.2	19.0
United Kingdom	18.6	19.5	17.5	16.4	17.4	17.4
Italy	21.4	20.6	19.8	19.0	18.6	19.1
Big Four	22.7	21.1	20.8	19.3	19.1	18.9
Other Western Europe	24.2	23.5	21.9	20.5	20.0	20.0
Western Europe	23.1	21.9	21.2	19.7	19.5	19.3
United States	14.3	14.0	16.3	14.9	16.1	16.6
Japan	35.6	32.5	31.9	30.0	29.1	29.1

[a] Estimate.

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Investment in Manufacturing Sector

The proportion of total investment going to the manufacturing sector in the Big Four has been shrinking. Manufacturing investment as a share of GDP has fallen even faster than the already rapid fall in the overall investment ratio:

- Big Four investment in the manufacturing sector accounted for 21.3 percent of total investment in 1970 but only 15.1 percent in 1982.
- The United Kingdom suffered the biggest drop in manufacturing investment share, from 21.4 percent in 1970 to only 11.4 percent in 1982. Preliminary data indicate that this rate has changed little since 1982.
- Data for Japan and the United States are not strictly comparable because of different sectoral breakdowns in the national accounts. Nonetheless, the United States stands apart from Europe. The US manufacturing sector has accounted for a constant if not growing share of total fixed investment. [redacted] 25X1

Table 8
Investment by the Manufacturing Sector as a Share of Total Investment, 1972-82

Percent

	1970	1975	1980	1982
West Germany	22.5	16.3	16.9	16.3
France	20.2	15.8	16.0	15.0
United Kingdom	21.4	16.2	15.5	11.4
Italy	20.2	21.1	19.1	17.2 [a]
Big Four	21.3	16.9	16.7	15.1 [a]
United States	25.3	23.8	25.2	25.6
Japan	53.4	44.6	42.2	41.8

[a] Estimate.

[redacted] 25X1

High and Low Technology

There has been some shifting of investment resources within the manufacturing sector toward the high-tech industries, but in most countries investment in high-tech sectors now accounts for a smaller share of GDP than it did in the mid-1970s:

- French investment in low-tech industries has declined sharply as a share of GDP, while investment in the high-tech industries has been relatively stable.
- Germany has recorded a slight increase in the ratio of high-tech investment to GDP.
- Britain's high-tech industries have been getting an increased share of an ever smaller manufacturing investment pie. Like low-tech investment, high-tech investment has been falling as a share of GDP.
- The decline in manufacturing investment in Italy has affected the high-tech sectors about the same as the low-tech sectors.

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Table 9
Big Four: Investment by the Manufacturing Industries as a Share of GDP, 1975-82

Percent

	High-Tech Sectors			Low-Tech Sectors		
	1975	1981	1982	1975	1981	1982
West Germany	0.9 [a]	1.0	0.8 [b]	2.5 [a]	2.7	2.6 [b]
France	0.8	0.9	0.8	2.8	2.4	2.3
United Kingdom	0.8	0.5	0.5	2.4	1.5	1.4
Italy	1.0	0.6	0.7 [b]	3.3	2.9	2.4 [b]

[a] 1976 figure.
[b] Estimate.

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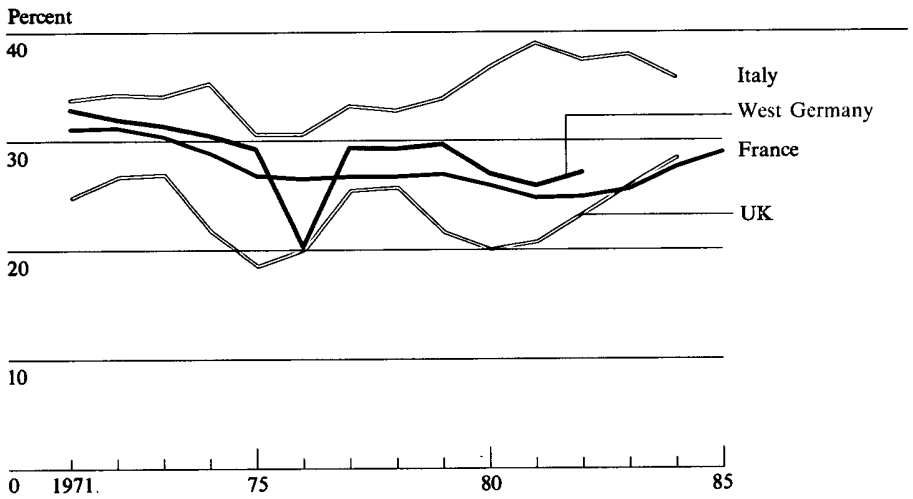
Profit Trends

The relative decline in manufacturing output in Western Europe and its lagging trade performance in manufactures are probably related to lagging investment in the 1970s and early 1980s, and lagging investment was probably related to falling profit rates:

- Overall profit shares fell sharply in the late 1970s and early 1980s. Profit shares in the manufacturing sector fell much faster than in the service sector.
- The rate of return on manufacturing in West Germany and the United Kingdom fell sharply from 1971 to 1982—much more sharply than for the service sector in each country.
- Corporate profits also plummeted in France in the late 1970s and early 1980s.
- Unlike the experience in the other Big Four, aggregate profit rates in Italian industry rose in the 1970s and early 1980s.
- Profit rates overall and in the manufacturing sector in most of the Big Four have apparently turned upward in the last two or three years, although no significant shifts in investment have yet been detected. [redacted] 25X1

Figure 6
Big Four: Profit Trends[a], 1971-85



[a] Profits are defined here as gross operating surplus divided by gross value added in the manufacturing sector. These figures should not be used for cross-country comparisons because of differences in inclusiveness of the data.

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West Germany

West Germany

Summary

West German policies toward industrial restructuring have been less activist than those of France or the United Kingdom. The West German Government has sometimes acted to cushion the fall of low-tech sectors such as shipbuilding and coal, but Bonn's low-key policies focus more on anticipating market trends and trying to foster new technology by research and development grants, government procurement policies, and other strategies. Bonn has made only a few small sales of government-owned industrial assets. 25X1

With a government following a less activist and more market-oriented approach than its neighbors, the West German economy nonetheless has seen a rapid shrinking of its manufacturing sector relative to the rest of the economy:

- The share of GDP originating in the manufacturing sector has fallen about 4 percentage points from 1970 to 1984.
- West German manufacturing has contracted more than the West European average, although not by nearly as much as in the United Kingdom. 25X1

West German manufacturing has been shifting gradually toward high-technology industries:

- Output from high-tech industries has been growing only slightly faster than GDP.
- The shift to high technology has been significantly slower than that in France.
- The shift has not been enough to arrest an enormous loss in world market share of high-tech exports.
- The high-tech industries have not added any new jobs. 25X1

West Germany's relatively poor performance in manufacturing is probably related to its relatively poor performance in investment in the manufacturing sector, and that poor performance is probably related to a rapid decline in profit rates in the manufacturing sector:

- Total investment as a share of GDP has fallen from over 25 percent in 1970 to under 20 percent in 1985, while investment in the manufacturing sector has fallen even faster.
- West German profit rates in manufacturing have fallen sharply since the early 1970s, while profit rates in the expanding service sector have risen. 25X1

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Shifts in Production

The West German manufacturing sector has been shrinking relative to the economy as a whole:

- The share of GDP originating in the manufacturing sector has fallen about 4 percentage points since 1970, from 33.8 percent in 1970 to 30.2 percent in 1984.
- Total output from the manufacturing sector has continued to grow, but at only 1.4 percent a year, much less than the GDP growth rate.
- The share of GDP originating in the production of services has risen over 6 percentage points from 1970 to 1984. Most of this gain came from growth in market services, not government services.
- West Germany had the largest proportionate rise in its service sector among the Big Four countries.
- The shift away from manufacturing has been more pronounced than the West European average, and contrasts sharply with the United States, where manufacturing's share has remained nearly unchanged since 1970. [redacted] 25X1

Table 10
West Germany: Value Added by Sector as a Share of GDP, 1980 Prices, 1970-84

Percent

	1970	1975	1980	1982	1984
Agriculture	2.6	2.4	2.2	2.4	2.1
Fuels	5.4	5.2	5.7	5.2	5.1
Manufactured products	33.8	31.8	31.9	29.8	30.2
Construction	8.6	7.6	7.6	6.7	6.5
Market services	38.0	40.1	40.0	43.4	43.6
Government services	11.6	12.9	12.6	12.5	12.5
GDP growth (index: 1980 = 100)	75.5	84.1	100.0	99.0	102.9

[redacted] 25X1

Low-Technology Industries

All of the decline in manufacturing's share of total output can be traced to declines in the low-technology industries:

- Iron and steel, food and beverages, and textiles and clothing have all suffered large declines in relative and absolute output in the period 1976-82.
- Industrial and agricultural machinery boosted its share of manufacturing output, but it, too, fell as a share of GDP.
- Only road motor vehicles, machinery, and rubber and plastic products rose as a share of GDP. Road motor vehicle production jumped 17 percent from 1975 to 1984, increasing its share of total manufacturing output almost 3 percentage points. The industry peaked in 1982, however.

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Table 11
West Germany: Low-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-84

Percent

	1975	1980	1982	1984
Iron and steel	5.3	4.4	4.0	4.4
Nonferrous metals	1.0	1.2	1.1	1.1
Nonmetallic mineral products	4.3	4.4	4.1	4.0
Low-tech chemicals	5.4	2.6	2.6	NA
Industrial and agricultural machinery	12.6	13.5	13.8	12.7
Road motor vehicles and parts	8.3	10.4	11.6	11.2
Other transportation equipment	1.2	0.8	0.9	NA
Other metal products	8.6	9.2	8.9	8.4
Food and beverages	11.5	10.6	10.8	10.4
Textiles and clothing	5.6	4.9	4.4	4.3
Leather and footwear	0.9	0.8	0.7	0.6
Wood and paper	8.2	8.3	7.5	NA
Rubber and plastic products	3.2	3.9	3.8	NA
Other manufacturing [a]	0.7	0.1	0	NA
Ratio of low-tech value added to total manufacturing	76.8	75.1	74.2	NA
Ratio of low-tech value added to GDP	24.4	24.0	22.1	NA

[a] Includes statistical discrepancy.

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High-Technology Industries

High-technology industries have increased their share of manufacturing output and have grown at a slightly faster rate than the West German economy as a whole:

- The share of high-tech output rose from 23.2 percent of total manufacturing output in 1975 to 25.8 percent in 1982.
- Almost all of the rise in the relative size of the high-tech group can be traced to the electronics/electrical equipment sector, which rose from 11.5 percent of total manufacturing production in 1975 to 13.9 percent in 1982 (14.1 percent in 1984).
- The aerospace industry, while still small, almost doubled its share of total manufacturing in the period 1976-82.
- Most of the other high-tech industries barely maintained their share of total manufacturing output, which means that they contributed a smaller share of total GDP in 1982 than in 1975. 25X1

Table 12
West Germany: High-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-84

Percent

	1975	1980	1982	1984
Basic industrial chemicals	6.1	5.6	5.6	NA
Pharmaceuticals	1.7	1.7	1.8	NA
Office machinery and data-processing equipment	1.7	1.6	1.8	NA
Telecommunications equipment		5.1	6.9	
Consumer electronics	11.5	1.1		14.1
Other electrical equipment		7.0	7.0	
Scientific instruments	1.7	2.0	1.8	NA
Aerospace equipment	0.5	0.8	0.9	NA
Ratio of high-tech value added to total manufacturing	23.2	24.9	25.8	NA
Ratio of high-tech value added to GDP	7.4	7.9	7.7	NA

25X1

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Employment Shifts

The composition of employment has shifted even more rapidly than the composition of output:

- Employment in manufacturing made up only 30.1 percent of total employment in 1984, compared with 36.6 percent in 1970.
- Unlike manufacturing output, the shift away from employment appears to be accelerating.
- The manufacturing sector lost over 2 million jobs—23 percent—from 1970 to 1984.
- The agricultural sector lost almost 1 million jobs.
- Many of the lost private-sector jobs were offset by gains in the public sector, which created nearly 1 million jobs from 1970 to 1980, a 31-percent increase. The level of public-sector employment has held roughly constant since 1980.
- Despite the additional jobs in the service sectors, the overall economy lost 1.5 million jobs. The unemployment rate displayed the greatest percentage change of the Big Four, starting at 0.8 percent in 1970 and rising to 8.5 percent in 1984.

25X1

Table 13
West Germany: Employment by Sector as a Share of Total Employment, 1970-84

Percent

	1970	1975	1980	1982	1984
Total employment *(millions)*	**26.2**	**25.3**	**25.8**	**25.1**	**24.7**
Agriculture	8.5	6.8	5.4	5.4	5.4
Fuels	2.0	2.0	1.9	2.0	2.0
Manufactured products	36.6	33.9	32.2	31.0	30.1
Construction	8.9	8.1	8.3	7.9	7.7
Market services	32.8	35.3	37.3	38.0	38.8
Government services	11.2	13.9	14.9	15.7	16.0

25X1

Low-Technology Industries

Employment in the low-tech manufacturing sectors fell 14 percent—almost 1 million jobs—from 1975 to 1983:

- The loss of jobs was particularly severe in the iron and steel industry and in the traditional consumer goods industries such as food and beverages, textiles and clothing, and leather and footwear.

- Employment in the production of road motor vehicles rose sharply until 1982 but declined somewhat thereafter. [redacted] 25X1

Table 14
West Germany: Employment in Low-Technology Sectors, 1975-83

Thousands

	1975	1980	1981	1982	1983
Total	**6,638** [a]	**6,366**	**6,180**	**5,946**	**5,725**
Share of total manufacturing employment *(percent)*	77.4	76.7	76.5	76.4	76.4
Iron and steel	440	378	359	340	210
Nonferrous metals	95	85	83	78	79
Nonmetallic mineral products	384	391	378	356	350
Low-tech chemicals	347	204	181	178	174
Industrial and agricultural machinery	1,188	1,179	1,178	1,148	1,115
Road motor vehicles and parts	697 [a]	818	820	829	826
Shipbuilding	82 [a]	63	64	58	53
Railway rolling stock	NA	12	13	13	12
Other transportation equipment	NA	21	17	16	15
Other metal products	803	800	778	747	850
Food and beverages	622	571	565	546	525
Textiles and clothing	719	617	570	522	485
Leather and footwear	106	93	87	80	75
Wood and paper	781	715	685	644	614
Rubber and plastic products	306	347	337	329	322
Other manufacturing [b]	68	72	65	62	20

[a] Estimate.
[b] Includes statistical discrepancy.

[redacted] 25X1

High-Technology Industries

Even though the high-tech sectors were expanding output at a much faster rate than the low-tech industries, they were not providing new jobs:

- Employment in the high-tech sectors fell much less than in the low-tech sectors, but as a group the high-tech sectors still lost 165,000 jobs between 1975 and 1983.
- Every high-tech industry except aerospace suffered reductions in employment.

25X1

Table 15
West Germany: Employment in High-Technology Sectors, 1975-83

Thousands

	1975	1980	1981	1982	1983
Total	**1,933**	**1,932**	**1,898**	**1,835**	**1,768**
Share of total manufacturing employment *(percent)*	22.6	23.3	23.5	23.6	23.6
Basic industrial chemicals	355	346	345	340	334
Pharmaceuticals	98	97	98	98	96
Office machinery and data-processing equipment	96	82	82	79	81
Telecommunications equipment	1,163	409	405	384	369
Consumer electronics		127	117	111	107
Other electrical equipment		619	601	581	558
Scientific instruments	177	191	185	177	160
Aerospace equipment	44	61	65	65	63

25X1

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Trade in Manufactures

West Germany's trade performance also suggests that its manufacturing sector has not been performing particularly well, despite a huge gain in net exports of manufactured goods. [redacted] 25X1

Table 16
West Germany: Trade Balance in Manufactured Goods, 1975-84

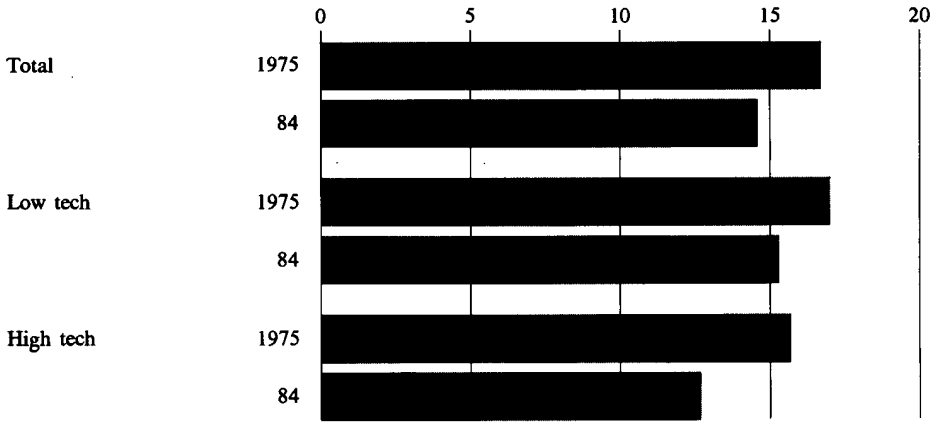
Billion dollars

	1975	1980	1982	1984
Total manufactures	**35.0**	**55.8**	**61.3**	**53.9**
Low-technology goods	28.4	44.5	51.0	44.3
High-technology goods	6.6	11.3	10.3	9.6

[redacted] 25X1

Although West Germany's exports were growing fast enough relative to imports to increase its trade surplus, they were growing much slower than the world average. As a result, West Germany has lost a significant share of the world export market for manufactured goods, and its share of the world market for high-tech goods has fallen proportionately more than that for low-technology goods. [redacted] 25X1

Figure 7
West Germany: Share of World Exports of Manufactured Goods, 1975 and 1984



[redacted] 25X1

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Low-Technology Goods

West Germany's low-technology industries—like its high-tech sectors—have experienced large gains in net exports in recent years, but they have been losing world market share:

- Although the dollar value of exports of road motor vehicles rose dramatically, West Germany's share of the burgeoning world market fell from 20.2 percent in 1975 to 19.3 percent in 1984.
- Industrial and agricultural machinery, another big gainer in absolute dollar terms, also lost significant market share, from 22.6 percent in 1975 to 17.8 percent in 1984.
- More than one-third of West Germany's rise in net exports of low-technology goods can be explained by trade with just one partner, the United States.
- Despite losing market share, exports of low-technology goods are very important to the West German economy and constituted about 16 percent of total value added by the manufacturing industries in 1982. [redacted] 25X1

Table 17
West Germany: Trade Balance in Low-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**28.4**	**44.5**	**51.0**	**44.3**
Share of world exports (*percent*)	17.0	16.3	16.1	15.3
Iron and steel	4.8	4.8	4.6	3.4
Nonferrous metals	−0.6	−1.2	−0.7	−0.7
Nonmetallic mineral products	0.3	0.3	0.7	0.6
Low-tech chemicals	3.4	7.2	6.1	6.5
Industrial and agricultural machinery	15.0	23.3	20.9	18.5
Road motor vehicles and parts	7.8	18.5	21.2	18.6
Other transportation equipment	1.9	1.4	1.7	1.3
Other metal products	1.8	3.1	3.1	2.6
Food and beverages	−3.4	−5.6	−4.0	−3.9
Textiles and clothing	−2.4	−6.1	−3.5	−3.7
Leather and footwear	−0.8	−1.9	−1.3	−1.4
Wood and paper	0	0	1.1	1.2
Rubber and plastic products	0.4	0.7	0.8	0.9
Other manufacturing [a]	0.2	0	0.3	0.4

[a] Includes statistical discrepancy.

[redacted] 25X1

High-Technology Goods

West Germany has lost world market share in seven of eight of the high-technology sectors, even though net exports continued to rise in most of them:

- West Germany has the highest level of high-tech exports among the Big Four and the biggest share of the world market. It also has been experiencing the sharpest erosion of its market share.
- Only one industry, aerospace (largely because of the success of Airbus), gained world market share over this period, moving from 3.9 percent in 1975 to 14.5 percent in 1984.
- Electrical equipment categories did not enjoy gains in net exports and suffered large losses in market share.
- Office machinery and data-processing equipment became a net deficit item. German exporters of these products lost almost half their world market share.
- Net exports of high-technology goods constitute a smaller share of total output of high-tech goods than is true for low-tech goods.

25X1

Table 18
West Germany: Trade Balance in High-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**6.6**	**11.3**	**10.3**	**9.6**
Share of world exports (*percent*)	15.7	15.1	14.3	12.7
Basic industrial chemicals	1.3	2.9	2.2	2.9
Pharmaceuticals	0.5	1.0	0.9	0.9
Office machinery and data-processing equipment	0.2	−0.2	−0.1	−0.6
Telecommunications equipment	0.7	1.0	1.0	0.9
Consumer electronics	0.1	−0.1	−0.3	−0.5
Other electrical equipment	3.3	5.7	5.5	4.5
Scientific instruments	0.8	1.5	1.4	1.3
Aerospace equipment	−0.3	−0.5	−0.3	0.2

25X1

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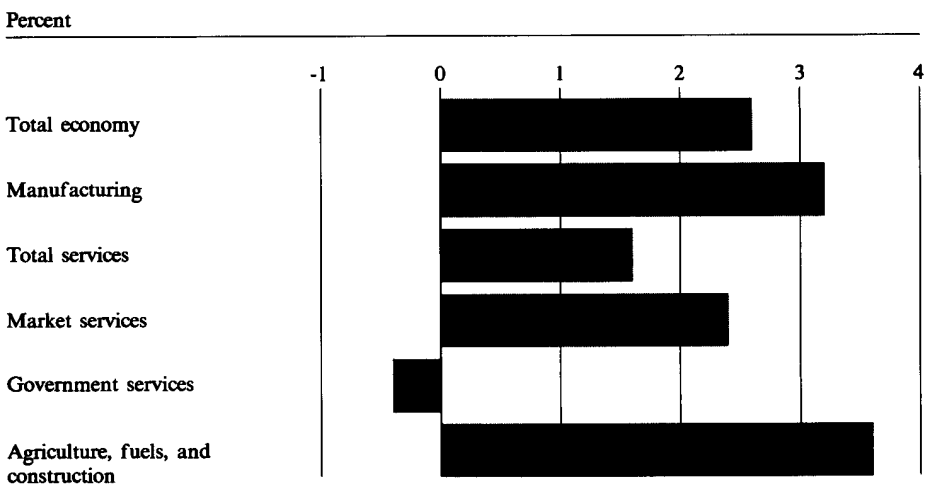
Productivity Trends

Labor productivity growth in the last 15 years has been only about half that of the 1950s and 1960s:

- West German productivity grew at an average annual rate of 4.9 percent a year from 1953 to 1970, compared with 2.6 percent from 1971 to 1984.
- Productivity growth was much faster in the declining manufacturing sector—where employment was falling—than in the rapidly growing service sector. Productivity actually declined in the public sector during the period 1971-84.
- Productivity grew about 3.2 percent a year in the manufacturing sector during the period 1971-84. This rate is not significantly higher than that in the United States which—unlike West Germany—has gained manufacturing jobs.

Figure 8
West Germany: Average Annual Productivity Growth, 1971-84

25X1



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Investment and Profit Trends

The slow growth in the manufacturing sector and the loss in world market share are probably related to the decline in the share of GDP devoted to investment overall and to the decline in the share of investment going to the manufacturing sector in particular:

- Total West German investment as a share of GDP has fallen from 25.5 percent in 1970 to 19.8 percent in 1985.
- Fixed capital formation in the manufacturing sector has fallen from 5.7 percent of total GDP in 1970 (22.5 percent of total investment) to 3.3 percent of GDP (16.3 percent of total investment) in 1982.
- This sharp decline in West German manufacturing-sector investment resembles behavior in the other West European countries, but it is far different from the sharp increase in investment in the US manufacturing sector.
- Fixed capital formation in the private-sector services industry has maintained its share of total output and significantly increased its share of total investment.

25X1

Table 19
Percent
West Germany: Investment by Sector as a Share of Total Investment, 1970-85

	1970	1975	1980	1982	1985
Agriculture	3.3	3.2	2.8	2.7	NA
Fuels	5.2	8.6	6.1	7.5	NA
Manufactured products	22.5	16.3	16.9	16.3	NA
Construction	2.6	1.6	1.9	1.3	NA
Market services	49.9	53.4	57.5	59.1	NA
Government services	16.5	16.9	14.8	13.1	NA
Total investment as a share of GDP	25.5	20.4	22.8	20.5	19.8

25X1

Low-Technology Industries

Investment in low-technology industries as a group has not changed much as a share of total manufacturing-sector investment:

- Investment in the iron and steel industry has seen a steep drop while investment in the production of road motor vehicles has increased dramatically.

25X1

Table 20
Percent

West Germany: Low-Technology Sectors' Investment as a Share of Total Investment in Manufacturing Sector, 1976-83

	1976	1980	1981	1983
Iron and steel	11.5	6.3	5.2	5.4
Nonferrous metals	1.3	1.5	1.9	
Nonmetallic mineral products	5.9	6.3	6.2	5.8
Low-tech chemicals	2.7	3.0	3.0	2.7 [a]
Industrial and agricultural machinery	8.8	9.4	9.7	9.6
Road motor vehicles and parts	8.4	14.4	15.6	
Shipbuilding	0.5	0.3	0.4	17.6 [a]
Railway rolling stock	0.1	0.1	0.1	
Other transportation equipment	0.1	0.1	0.1	
Other metal products	6.8	6.8	6.3	6.2
Food and beverages	10.9	9.7	10.3	10.8
Textiles and clothing	4.2	3.2	2.6	3.7
Leather and footwear	0.4	0.3	0.3	
Wood and paper	7.6	8.8	7.7	8.0
Rubber and plastic products	3.5	4.1	3.9	4.1
Other manufacturing [b]	0.6	0.2	0.3	0.4
Ratio of low-tech investment to total manufacturing investment	73.3	74.5	73.6	74.3
Ratio of low-tech investment to total investment	12.5	12.6	12.3	12.3
Ratio of low-tech investment to GDP	2.5	2.9	2.7	2.5

[a] Estimate.
[b] Includes statistical discrepancy.

25X1

High-Technology Industries

There has been no shift in the allocation of investment toward the high-technology sectors:

- Investment in the high-tech sectors has remained at about 26 percent of total manufacturing investment from 1976 to 1981. Partial data for 1982-83 do not reveal any significant changes from the 1981 observations.
- France and the United Kingdom have been much more successful at shifting investment toward the high-tech sectors than West Germany.
- Within the high-tech group, the electrical/electronic sector and the aerospace industry have increased their share of total manufacturing investment; the basic industrial chemicals industry has seen a large shrinkage of its share. 25X1

Table 21
Percent
West Germany: High-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1976-83

	1976	1980	1981	1983
Basic industrial chemicals	11.4	8.7	9.1	9.4 [a]
Pharmaceuticals	1.4	1.1	1.1	
Office machinery and data-processing equipment	3.1	3.4	3.6	3.4 [a]
Telecommunications equipment	3.2	4.0	4.0	
Consumer electronics	1.3	1.1	1.1	10.8
Other electrical equipment	4.9	5.3	5.4	
Scientific instruments	0.9	1.3	1.3	1.2 [a]
Aerospace equipment	0.5	0.6	0.8	0.9 [a]
Ratio of high-tech investment to total manufacturing investment	26.7	25.5	26.4	25.7 [a]
Ratio of high-tech investment to total investment	4.6	4.3	4.4	4.2 [a]
Ratio of high-tech investment to GDP	0.9	1.0	1.0	0.9 [a]

[a] Estimate.

25X1

Rates of Return

The decline in investment in West Germany is almost surely related to very large declines in profit shares and rates of return on capital:

- The rate of return on output and capital stock in the manufacturing sector fell sharply from 1971 to 1982.
- Rates of return overall for the West German economy have fallen much less, while profit shares have increased in the market-services sector.
- Another indicator of trends in the profitability of investment, the ratio of the market value of existing assets to the replacement cost of those assets, has been estimated to have turned sharply upward since 1982 but still to be below 1.0, the level at which new investment becomes attractive.

25X1

Table 22
West Germany: Profit Shares and Rates of Return, 1971-82

Percent

	1971	1975	1980	1982
Total economy				
Gross operating surplus/ gross value added	38.6	36.1	36.3	37.1
Market services sector				
Gross operating surplus/ gross value added	41.5	39.5	40.0	43.3
Manufacturing sector				
Gross operating surplus/ gross value added	32.7	29.1	26.8	26.9
Gross operating surplus/ gross capital stock	17.5	13.7	12.9	12.1

25X1

France

France

Summary

The French Government has intervened more actively than Bonn in industrial restructuring and development. Both countries have used research and development grants, government procurement policies, and other means to encourage high-technology sectors. France, however, generally uses a more formal planning structure and has been more likely than West Germany to counter undesirable market signals by providing subsidies, encouraging consolidation, offering import protection, and nationalization. 25X1

This policy approach probably helps to explain why French low-tech industries have been declining less quickly than those in West Germany. The French have seen a smaller decline in the relative size of their manufacturing sector and a faster growing high-technology industry than most of their neighbors:

- Manufacturing now contributes about the same proportion of GDP as it did 15 years ago.
- French high-tech industries have been increasing output at a much faster rate than those in West Germany and the United Kingdom.
- Although the manufacturing sector is growing at about the same rate as the economy, it has experienced declining employment. Job losses were especially severe in the low-tech industries. All of the new job creation in the last decade has come from the low-productivity service sector.
- The French have lost world market share in exports of high-tech goods, but they have lost proportionately less than the other three countries. The French have increased their market share in three out of eight high-tech categories.
- As in West Germany and the United Kingdom, the manufacturing sector has been receiving a smaller and smaller share of total investment resources. This declining amount of resources has been shifting toward the high-tech industries.
- Profit rates have turned up in the last few years, but this fact has as yet had no appreciable impact on investment. 25X1

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Shifts in Production

France has experienced only modest shifts among the major sectors of the economy:

- The share of GDP originating in the manufacturing sector has varied up and down over the last 15 years, first rising to 27.6 percent in 1980, then slipping down to its 1970 level of about 26 percent.

- The share of GDP originating in the production of services has risen from 54 to 59 percent from 1970 to 1984. This gain came entirely from the robust growth in the market service sector, not government services. 25X1

Table 23
France: Value Added by Sector as a Share of GDP, 1980 Prices, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Agriculture	5.5	4.5	4.5	4.6	4.4	4.6
Fuels	4.2	4.1	4.6	4.2	4.4	4.3
Manufactured products	26.1	26.5	27.6	25.8	25.9	26.2
Construction	9.8	9.1	7.3	6.8	6.6	6.2
Market services	41.2	43.5	43.5	46.6	46.7	58.7
Government services	13.2	12.3	12.5	12.0	12.0	
GDP growth (index: 1980 = 100)	70.0	85.2	100.0	102.2	103.2	104.9

25X1

Low-Technology Industries

The French manufacturing sector has been shifting gradually away from low-technology industries:

- The low-tech sectors accounted for 77.2 percent of manufacturing output in 1984, compared with 80.1 percent in 1975.
- Most of the decline came in the production of basic metals and metal products, although industrial and agricultural machinery also showed a significant decline.
- Road motor vehicle production increased dramatically from 1975 to 1980, rising from 8.7 percent of total manufacturing production in 1975 to 11.1 percent in 1981, and then leveled off.

25X1

Table 24
France: Low-Technology Sectors' Production Value as a Share of Total Production Value in Manufacturing, 1975-84 [a]

Percent

	1975	1980	1981	1984
Iron and steel	6.3	5.2	5.1	5.7
Nonferrous metals	1.9	2.2	2.0	1.7
Nonmetallic mineral products	4.3	4.5	4.4	3.7
Low-tech chemicals	4.6	4.9	5.0	4.0
Industrial and agricultural machinery	7.1	6.3	6.1	5.7
Road motor vehicles and parts	8.7	10.9	11.1	11.0 [b]
Shipbuilding	1.3	0.5	0.6	0.6 [b]
Railway rolling stock	0.5	0.3	0.3	0.2 [b]
Other transportation equipment	0.4	0.4	0.3	0.2 [b]
Other metal products	7.7	8.0	7.8	7.4
Food and beverages	17.2	16.1	16.6	18.0
Textiles and clothing	6.7	5.9	5.4	5.3
Leather and footwear	1.3	1.3	1.2	1.1
Wood and paper	8.1	8.7	8.5	8.4 [b]
Rubber and plastic products	3.1	3.5	3.3	3.2
Other manufacturing [c]	0.9	0.8	1.0	1.0 [b]
Ratio of low-tech value added to total manufacturing [b]	80.1	79.5	78.7	77.2 [b]
Ratio of low-tech value added to GDP [b]	21.2	21.9	20.4	20.2 [b]

[a] Value-added data are not available by sector.
[b] Estimate.
[c] Includes statistical discrepancy.

25X1

High-Technology Industries

High-technology industries have increased their share of manufacturing output and have grown much faster than the economy as a whole:

- Value added in the high-tech industries grew at about 3.8 percent a year between 1975 and 1984, compared with a real GDP growth rate of 2.3 percent a year.
- The aerospace industry appeared to grow the most rapidly, but large gains were also noted in chemicals, pharmaceuticals, and electronics.
- High-tech industries in France have been growing at a much faster rate than in West Germany or the United Kingdom. [redacted] 25X1

Table 25
France: High-Technology Sectors' Production Value as a Share of Total Production Value in Manufacturing, 1975-84

Percent

	1975	1980	1981	1984
Basic industrial chemicals	4.1	3.9	4.3	4.9
Pharmaceuticals	2.0	2.0	2.2	2.5
Office machinery and data-processing equipment	1.5	1.5	1.6	
Telecommunications equipment		1.8	1.8	12.0
Consumer electronics	9.0	2.6	2.6	
Other electrical equipment		5.0	4.9	
Scientific instruments	0.7	0.7	0.6	
Aerospace equipment	2.6	3.0	3.3	3.4 [a]
Ratio of high-tech value added to total manufacturing	19.9	20.5	21.3	22.8 [a]
Ratio of high-tech value added to GDP	5.3 [a]	5.7 [a]	5.6 [a]	6.0 [a]

[a] Estimate.

[redacted] 25X1

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Employment Shifts

The composition of employment, unlike that of output, has experienced a pronounced shift away from the manufacturing sector toward services:

- Employment in the manufacturing sector has slipped between 1970 and 1984, losing over one-half million jobs. While the overall economy gained 300,000 jobs in that period, it has lost 400,000 since 1980.
- The agricultural sector lost over 1 million jobs.
- Many of the lost jobs in manufacturing and agriculture were made up by gains in service-sector employment. Both market and government services showed large increases in employment over this period.
- Because of the minuscule growth in overall employment, France's unemployment worsened severely from 2.4 percent in 1970 to 9.7 percent in 1984 (and rose to 10.1 percent in 1985). [redacted] 25X1

Table 26
France: Employment by Sector as a Share of Total Employment, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Total employment *(millions)*	**20.9**	**21.2**	**21.6**	**21.5**	**21.4**	**21.2**
Agriculture	13.2	10.0	8.7	8.2	8.0	8.1
Fuels	1.6	1.4	1.4	1.5	1.5	1.5
Manufactured products	26.4	26.7	24.5	23.4	23.0	23.0
Construction	9.6	8.9	8.4	8.1	7.8	7.7
Market services	32.8	35.5	38.9	40.2	40.7	40.6
Government services	16.4	17.5	18.1	18.6	19.0	19.1

[redacted] 25X1

Low-Technology Industries

Employment in the low-tech manufacturing sectors fell by more than 700,000 from 1975 to 1984, accounting for almost all the manufacturing sector's decline in employment:

- Most of the low-tech industries lost jobs. Iron and steel, metal products, and machinery lost the most.

- Although the food and beverage sector's production increased by over 20 percent between 1975 and 1984, employment grew only 6 percent. Road motor vehicles' employment grew only 3 percent while production increased almost 50 percent.

25X1

Table 27
France: Employment in Low-Technology Sectors, 1975-84

Thousands

	1975	1980	1981	1984
Total	**4,587**	**4,270**	**4,112**	**3,838** [a]
Share of total manufacturing employment *(percent)*	81.0	80.6	80.4	78.6 [a]
Iron and steel	302	220	208	194
Nonferrous metals	72	61	60	58
Nonmetallic mineral products	289	264	254	233
Low-tech chemicals	193	183	181	166
Industrial and agricultural machinery	416	372	367	348
Road motor vehicles and parts	544	566	540	560 [a]
Shipbuilding	72	38	38	40 [a]
Railway rolling stock	26	19	20	19 [a]
Other transportation equipment	27	26	24	23 [a]
Other metal products	580	569	552	396
Food and beverages	463	467	464	489
Textiles and clothing	638	539	501	470
Leather and footwear	133	117	111	105
Wood and paper	536	518	498	492 [a]
Rubber and plastic products	230	241	229	221
Other manufacturing [b]	67	70	65	64 [a]

[a] Estimate.
[b] Includes statistical discrepancy.

25X1

High-Technology Industries

Although output was up sharply in the high-tech industries, employment declined slightly from 1975 to 1984:

- Employment in high-technology industries rose steadily as a share of total manufacturing employment.
- Employment rose in absolute terms in the pharmaceutical and aerospace industries. [redacted] 25X1

Table 28
France: Employment in High-Technology Sectors, 1975-84

Thousands

	1975	1980	1981	1984
Total	**1,078**	**1,031**	**1,004**	**1,048** [a]
Share of total manufacturing employment *(percent)*	19.0	19.4	19.6	21.4 [a]
Basic industrial chemicals	123	116	106	99
Pharmaceuticals	78	73	75	100
Office machinery and data-processing equipment	54	56	56	
Telecommunications equipment		127	125	712
Consumer electronics	635	153	157	
Other electrical equipment		322	300	
Scientific instruments	66	57	53	
Aerospace equipment	122	127	132	137 [a]

[a] Estimate.

[redacted] 25X1

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Trade in Manufactures

France maintained a stable level of net exports of manufactured goods in the period 1975-84, except in 1982, but its share of the world export market for manufactures declined sharply:

- Net exports of high-tech goods almost tripled from 1975 to 1984, more than compensating for the fall in low-tech net exports. 25X1

Table 29
France: Trade Balance in Manufactured Goods, 1975-84

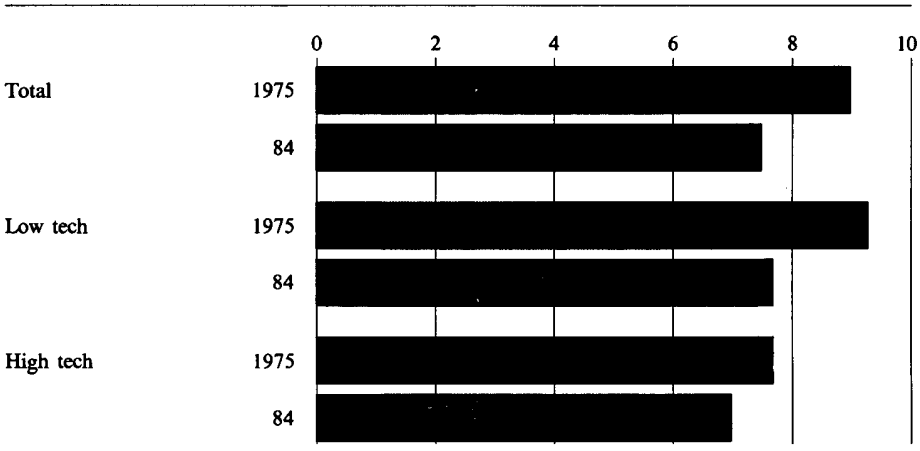
Billion dollars

	1975	1980	1982	1984
Total manufactures	**10.4**	**10.8**	**5.9**	**11.8**
Low-technology goods	8.8	8.9	3.8	7.2
High-technology goods	1.6	1.9	2.1	4.6

25X1

But France, like West Germany and the United Kingdom, has lost a significant share of the world export market for manufactured goods. 25X1

Figure 9
France: Share of World Exports of Manufactured Goods, 1975 and 1984



25X1

310048 9-86

Low-Technology Goods

Although net exports of low-technology manufactured goods have generally remained high, the French share of the world export market dropped:

- Road motor vehicles, which enjoyed a dramatic increase in production, experienced a slight decline in the value of net exports and a significant loss in market share, dropping from 10.6 percent in 1975 to 7 percent in 1984.
- French exports of industrial and agricultural machinery slipped from 8.5 percent of the world market in 1975 to only 6.4 percent in 1984.
- France fell from being the fourth-largest exporter of textiles and clothing in 1975 to the sixth-largest in 1984.

25X1

Table 30
France: Trade Balance in Low-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**8.8**	**8.9**	**3.8**	**7.2**
Share of world exports (*percent*)	9.3	9.0	8.0	7.7
Iron and steel	1.2	1.9	1.5	1.8
Nonferrous metals	−0.8	−1.5	−1.0	−0.7
Nonmetallic mineral products	0.1	−0.4	0.1	0.3
Low-tech chemicals	0.4	0.7	0.5	1.0
Industrial and agricultural machinery	1.7	1.4	0.7	1.1
Road motor vehicles and parts	3.5	5.4	2.3	3.0
Other transportation equipment	0.8	1.1	1.1	1.4
Other metal products	0.6	0.8	0.7	0.6
Food and beverages	0.8	1.8	1.4	1.3
Textiles and clothing	0.4	−1.0	−1.5	−1.2
Leather and footwear	0.1	−0.3	−0.4	−0.4
Wood and paper	−0.6	−1.6	−1.6	−1.3
Rubber and plastic products	0.5	0.7	0.4	0.6
Other manufacturing [a]	0.1	−0.1	−0.4	−0.3

[a] Includes statistical discrepancy.

25X1

High-Technology Goods

France experienced a large gain in net exports of high-tech goods, but its world trade share slipped—from 7.7 percent in 1975 to 7.0 percent in 1984:

- France lost market share in five out of eight of the high-tech categories, but its loss was less than any of the other Big Four. France also showed the largest increase among the Big Four in the dollar value of net exports of high-tech goods.
- The aerospace industry did especially well, with net exports increasing dramatically and France's world market share rising from 7.3 to 11.2 percent.
- The basic chemicals industry also experienced a dramatic increase in both net exports and market share to become the third-largest exporter in 1984 with 10 percent of the world market.

25X1

Table 31
France: Trade Balance in High-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**1.6**	**1.9**	**2.1**	**4.6**
Share of world exports (*percent*)	7.7	7.8	7.3	7.0
Basic industrial chemicals	0.7	1.1	1.7	2.6
Pharmaceuticals	0.3	0.8	0.7	0.7
Office machinery and data-processing equipment	−0.3	−0.6	−1.2	−1.0
Telecommunications equipment	0.3	0.4	0.4	0.6
Consumer electronics	−0.3	−0.8	−0.9	−0.6
Other electrical equipment	0.9	1.1	0.7	0.8
Scientific instruments	−0.2	−0.5	−0.5	−0.3
Aerospace equipment	0.2	0.4	1.2	1.8

25X1

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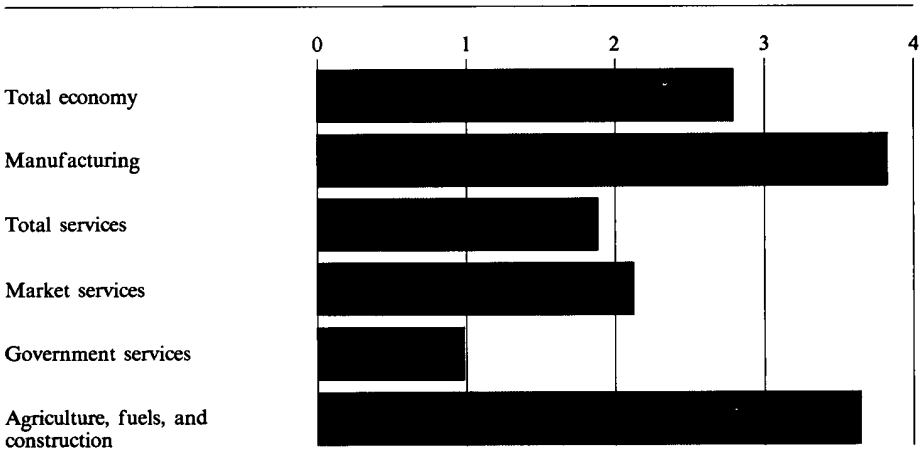
Productivity Trends

Labor productivity growth over the period 1971-84 was only about half that of the 1950s and 1960s:

- French productivity grew at an average annual rate of 4.7 percent a year from 1953 to 1970 compared with 2.8 percent from 1971 to 1984.
- Productivity grew about 3.9 percent a year in the manufacturing sector during the period 1971-84.
- Productivity in the service sector—private and public—grew at only half that rate. However, France is the only Big Four country to have boosted productivity in the public services sector. [redacted] 25X1

Figure 10
France: Average Annual Productivity Growth, 1971-84[a]



[a] Growth rates for services are for 1971-83.

[redacted] 25X1

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Investment and Profit Trends

Total fixed capital formation as a share of GDP fell from 23.4 percent in 1970 to 19.0 percent in 1985:

- Fixed capital formation in the manufacturing sector fell even more sharply, from about 4.7 percent of total GDP in 1970 to 3.3 percent in 1984.
- The sharp decrease in French investment in the manufacturing sector resembles behavior in the other West European countries, but it is far different from the increase in investment in US manufacturing.
- The downturn in investment is probably related to sharp falls in profit rates during the 1970s.
- The ratio of gross operating surplus to value added for corporations fell from a peak of 31.5 percent in 1971, to about 25 percent in the late 1970s, to a trough of 23.8 percent in 1982.

25X1

- This profit trend has turned around in the last several years, exceeding 27 percent in 1985, but investment shares have continued to fall since 1982.

Table 32
France: Investment by Sector as a Share of Total Investment, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Agriculture	4.4	4.6	4.0	4.3	4.5	4.1
Fuels	6.3	6.4	9.0	9.3	9.1	8.6
Manufactured products	20.2	15.8	16.0	15.0	15.1	17.1
Construction	3.0	2.5	2.2	2.1	2.0	1.9
Market services	52.2	57.1	57.2	56.5	56.0	54.9
Government services	13.9	13.6	11.6	12.8	13.3	13.4
Total investment as a share of GDP	23.4	23.3	21.6	20.5	19.9	19.2

25X1

Low-Technology Industries

Investment in low-technology industries as a group has declined substantially as a share of total manufacturing-sector investment and as a share of GDP:

- Investment in the iron and steel industry has plummeted from 11.1 percent of total manufacturing investment in 1975 to only 4.6 percent in 1984.
- The share of investment going to the motor vehicle industry rose in the late 1970s but has been falling for the past several years.
- The food and beverage industry has substantially increased its share of investment resources.

25X1

Table 33
France: Low-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1975-84

Percent

	1975	1980	1981	1982	1984
Iron and steel	11.1	4.1	3.4	3.8	4.6
Nonferrous metals	3.2	1.8	1.8	1.3	1.8
Nonmetallic mineral products	6.9	7.6	7.8	6.6	6.4
Low-tech chemicals	5.2	4.5	4.7	4.6	4.3
Industrial and agricultural machinery	3.9	4.5	4.4	4.4	4.2
Road motor vehicles and parts	11.2	15.6	14.9	14.3	12.4 [a]
Shipbuilding	0.8	0.1	0.2	0.2	0.1 [a]
Railway rolling stock	0.2	0.2	0.1	0.2	0.1 [a]
Other transportation equipment	0.3	0.3	0.2	0.2	0.2 [a]
Other metal products	6.6	7.2	7.1	7.2	6.5 [a]
Food and beverages	11.8	12.2	13.3	13.8	15.9
Textiles and clothing	4.4	4.1	3.8	4.7	5.1
Leather and footwear	0.7	0.7	0.6	0.8	0.7
Wood and paper	7.1	8.0	6.4	7.1	7.0 [a]
Rubber and plastic products	2.9	4.0	3.8	3.6	3.7
Other manufacturing [b]	0.7	0.5	0.9	0.7	0.7 [a]
Ratio of low-tech investment to total manufacturing investment	77.0	75.4	73.4	73.5	73.7 [a]
Ratio of low-tech investment to total investment	12.2	12.1	11.3	11.0	12.6 [a]
Ratio of low-tech investment to GDP	2.8	2.6	2.4	2.3	2.4 [a]

[a] Estimate.
[b] Includes statistical discrepancy.

25X1

High-Technology Industries

High-technology sectors have been capturing a greater share of total investment, but, measured as a share of GDP, high-tech investment has been flat over the last 10 years:

- The aerospace industry has seen a very large increase in investment, while the basic chemicals industry has experienced a large decrease. [redacted] 25X1

Table 34
France: High-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1975-84

Percent

	1975	1980	1981	1982	1984
Basic industrial chemicals	5.8	4.5	4.8	3.0	3.5
Pharmaceuticals	1.5	1.1	1.4	1.8	2.2
Office machinery and data-processing equipment	5.3	6.6	6.8	6.8	
Telecommunications equipment	1.6	1.5	1.7	1.8	17.9
Consumer electronics	2.0	2.7	2.8	3.3	
Other electrical equipment	4.3	5.0	5.2	5.5	
Scientific instruments	0.7	0.5	0.5	0.6	
Aerospace equipment	1.8	2.7	3.4	3.7	2.7 [a]
Ratio of high-tech investment to total manufacturing investment	23.0	24.6	26.6	26.5	26.3 [a]
Ratio of high-tech investment to total investment	3.6	3.9	4.1	4.0	4.5 [a]
Ratio of high-tech investment to GDP	0.8	0.8	0.9	0.8	0.9 [a]

[a] Estimate.

[redacted] 25X1

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United Kingdom

United Kingdom

Summary

The wave of nationalizations by the UK Government in the early 1970s to help floundering companies in a variety of industries—such as shipbuilding, aerospace, automobiles, and machine tools—did not result in enhanced investment or commercial success in most cases. The British manufacturing sector continued to decline, registering by far the largest shrinkage among the Big Four:

- Only the United Kingdom since 1970 has seen a fall in the absolute as well as the relative level of manufacturing output.
- Output from British high-technology industries is at least growing in absolute terms, but, unlike the experience in the other Big Four countries, high-technology industries are growing at a slower rate than the economy as a whole.
- The United Kingdom has suffered a big loss in its world market share in both low- and high-tech categories. Among the Big Four the United Kingdom has the worst net trade balance in manufactured goods.
- As in West Germany and France, the United Kingdom's poor manufacturing performance is probably related to sharply falling investment rates, which in turn are probably related to sharply falling profit rates. [redacted] 25X1

Prime Minister Thatcher's shift to privatization of industry appears to have contributed to increased sales and profits in most of the firms involved, but it is difficult to tell if these results are due to new ownership or generally improved economic conditions. [redacted] 25X1

Recent UK data reveal two positive developments. First, profit shares, both overall and in manufacturing, have turned sharply upward. This should encourage additional investment although no major shifts have yet been discerned. Second, the recent drastic cuts in UK manufacturing employment have led to manufacturing productivity growth outdistancing France and West Germany (and the United States) in the last few years. If continued, both these trends could spell improved manufacturing-sector performance and increased competitiveness. [redacted] 25X1

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Shifts in Production

The British economy is undergoing a drastic shift away from manufacturing:

- The share of GDP originating in the manufacturing sector has fallen 7 percentage points since 1970 and now constitutes only 24.1 percent of GDP, lowest among the Big Four West European countries.
- Total output from the manufacturing sector has been falling. From 1975 to 1984, manufacturing output fell an average 0.8 percent a year. The United Kingdom is the only major West European country to experience a fall in the absolute level of manufacturing output over this period.
- The share of GDP originating in the production of services has risen over 6 percentage points from 1970 to 1984. Most of this gain came from growth in market services.
- The contribution of government services to total output peaked in the 1970s and has been falling since.

25X1

Table 35
United Kingdom: Value Added by Sector as a Share of GDP, 1980 Prices, 1970-84

Percen

	1970	1975	1980	1982	1983	1984
Agriculture	2.0	1.5	1.7	1.9	1.7	1.8
Fuels	7.4	5.9	10.1	10.7	10.8	10.0
Manufactured products	31.3	29.8	26.8	24.4	23.8	24.1
Construction	6.9	6.7	6.3	5.6	5.5	5.5
Market services	37.3	39.4	38.6	41.6	43.0	58.6
Government services	15.1	16.7	16.5	15.8	15.2	
GDP growth (index: 1980=100)	82.8	92.0	100.0	100.2	103.3	105.8

25X1

Low-Technology Industries

Almost all of the decline in manufacturing's share of total output can be traced to declines in the low-technology industries:

- Iron and steel, textiles and clothing, and some categories of chemical production have all suffered sharp declines in relative and absolute output between 1975 and 1982.
- Value added in the iron and steel sector (in 1980 prices) fell over 60 percent from 1975 to 1982.
- Only food and beverages increased its output in absolute terms (1980 prices).
- Road motor vehicle production, a dynamic sector in West Germany and France in the 1970s, has remained a fairly constant share of total UK manufacturing, but that indicates a drop in output of over 14 percent.

25X1

Table 36
United Kingdom: Low-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-83

Percent

	1975	1980	1981	1982	1983
Iron and steel	5.3	2.4	2.9	2.5	3.5
Nonferrous metals	1.4	1.4	1.1	1.0	
Nonmetallic mineral products	4.9	4.9	4.6	4.7	4.6
Low-tech chemicals	4.6	3.7	3.7	3.6	NA
Industrial and agricultural machinery	10.7	12.0	10.1	9.9	9.3
Road motor vehicles and parts	5.6	6.0	5.7	5.5	5.3
Shipbuilding	1.3	1.1	1.5	1.5	1.7
Railway rolling stock	0.4	0.6	0.7	0.6	0.5
Other transportation equipment	0.3	0.2	0.1	0.1	0.2
Other metal products	7.1	6.5	6.2	6.4	6.4
Food and beverages	18.1	19.4	21.7	22.0	21.8
Textiles and clothing	6.7	5.4	5.0	4.8	5.6
Leather and footwear	1.1	0.9	0.9	0.8	
Wood and paper	9.5	10.0	10.1	10.1	9.9
Rubber and plastic products	3.2	3.5	3.3	3.3	3.4
Other manufacturing [a]	0.5	0.8	0.9	0.5	NA
Ratio of low-tech value added to total manufacturing	80.7	78.8	78.5	77.3	NA
Ratio of low-tech value added to GDP	24.0	21.1	19.3	18.9	NA

[a] Includes statistical discrepancy.

25X1

High-Technology Industries

High-technology industries have increased their share of manufacturing output but have grown slower than the UK economy as a whole:

- The share of high-tech output rose from 19.3 percent of total manufacturing output in 1975 to 22.7 percent in 1982, but as a share of GDP high-tech output fell from 5.7 percent in 1975 to 5.5 percent in 1982.
- Unlike the low-tech industries, the high-tech group registered an overall gain in output from 1975 to 1982, although the gain was very small—only 0.7 percent a year.
- Pharmaceuticals was the biggest gainer with value added increasing 53 percent between 1975 and 1982 (measured in 1980 prices).
- Output of basic industrial chemicals and scientific instruments suffered both relative and absolute declines. [redacted] 25X1

Table 37
United Kingdom: High-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-83

Percent

	1975	1980	1981	1982	1983
Basic industrial chemicals	4.4	3.8	3.9	3.9	NA
Pharmaceuticals	1.4	2.0	2.2	2.4	NA
Telecommunications equipment		3.9	4.2	5.7	
Consumer electronics	8.4	1.1	1.1		10.6
Other electrical equipment		4.5	4.3	4.5	
Scientific instruments	1.5	1.3	1.2	1.3	3.4
Office machinery and data processing equipment	1.0	1.3	1.2	1.5	
Aerospace equipment	2.6	3.3	3.4	3.4	3.2
Ratio of high-tech value added to total manufacturing	19.3	21.2	21.5	22.7	NA
Ratio of high-tech value added to GDP	5.7	5.7	5.3	5.5	NA

[redacted] 25X1

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Employment Shifts

The composition of employment has shifted even more rapidly away from the manufacturing sector than has output:

- Overall employment grew slightly in the 1970s but almost 2 million jobs have been lost since 1980.
- The unemployment rate soared from 3.0 percent in 1970 to 13.0 percent in 1984 (13.2 percent in 1985), the highest rate among the Big Seven.
- Employment in the manufacturing sector fell one-third from 1970 to 1984, a loss of almost 3 million jobs.
- The fuels sector now accounts for a much larger share of output but has not added any new employment.
- Employment in government services provides the greatest share of total employment in the Big Seven. Public service jobs are no longer growing in either an absolute or a relative sense.

25X1

Table 38
United Kingdom: Employment by Sector as a Share of Total Employment, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Total employment *(millions)*	**24.4**	**24.7**	**25.0**	**23.7**	**23.5**	**23.9**
Agriculture	3.2	2.7	2.6	2.7	2.7	2.6
Fuels	3.3	2.9	2.8	2.9	2.8	2.6
Manufactured products	34.7	31.1	28.4	25.6	24.7	24.0
Construction	6.8	6.6	6.5	6.2	6.1	6.3
Market services	37.2	38.0	40.6	42.4	43.2	44.6
Government services	14.8	18.7	19.1	20.2	20.5	19.9

25X1

Low-Technology Industries

Employment in low-tech manufacturing sectors fell almost 30 percent, 1.7 million jobs, from 1975 to 1984:

- Employment fell in every low-tech industry.
- The loss of jobs was particularly severe in the iron and steel industry (down 62 percent), shipbuilding (down 51 percent), and textiles and clothing (down 43 percent).

25X1

Table 39
United Kingdom: Employment in Low-Technology Sectors, 1975-84

Thousands

	1975	1980	1981	1983	1984
Total	**6,185**	**5,664**	**5,045**	**4,532**	**4,458**
Share of total manufacturing employment (*percent*)	80.6	80.0	79.3	78.3	78.0
Iron and steel	428	252	208	170	165
Nonferrous metal	99	88	78	64	63
Nonmetallic mineral products	319	289	293	269	268
Low-tech chemicals	199	195	180	148	151
Industrial and agricultural machinery	890	903	765	676	673
Road motor vehicles and parts	513	522	441	384	372
Shipbuilding	161	141	98	91	79
Railway rolling stock	50	48	47	38	34
Other transportation equipment	26	25	25	20	22
Other metal products	573	547	478	442	449
Food and beverages	811	761	734	694	686
Textiles and clothing	852	682	588	498	486
Leather and footwear	125	103	91	82	81
Wood and paper	785	758	700	667	676
Rubber and plastic products	268	272	243	216	218
Other manufacturing [a]	86	77	76	73	35

[a] Includes statistical discrepancy.

25X1

High-Technology Industries

Employment in high-tech industries fell sharply from 1975 to 1984, although not by nearly as much as in the low-tech industries:

- Only the pharmaceutical industry has registered an increase in employment during the period 1975-84. All other high-tech sectors have lost jobs.
- The high-tech industries increased their share of manufacturing employment but fell as a share of total employment because of manufacturing's sharply shrinking share of total employment. [redacted] 25X1

Table 40
United Kingdom: Employment in High-Technology Sectors, 1975-84

Thousands

	1975	1980	1981	1983	1984
Total	**1,486**	**1,417**	**1,319**	**1,253**	**1,260**
Share of total manufacturing employment (*percent*)	19.4	20.0	20.7	21.7	22.0
Basic industrial chemicals	187	169	153	134	132
Pharmaceuticals	78	86	84	84	84
Office machinery and data-processing equipment	51	53	45	44	46
Telecommunications equipment		299	281	278	283
Consumer electronics	773	90	74	406	409
Other electrical equipment		377	340		
Scientific instruments	155	107	99	95	99
Aerospace equipment	242	236	243	212	207

[redacted] 25X1

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Trade in Manufactures

Britain's trade performance also highlights weakness in its manufacturing sector:

- British net exports of manufactured goods have fallen sharply, from a positive $4.3 billion in 1980 to a negative $9.1 billion in 1984.
- Among the Big Four West European countries, only the United Kingdom experienced a worsening trade balance in manufactured goods.

25X1

Table 41
United Kingdom: Trade Balance in Manufactured Goods, 1975-84

Billion dollars

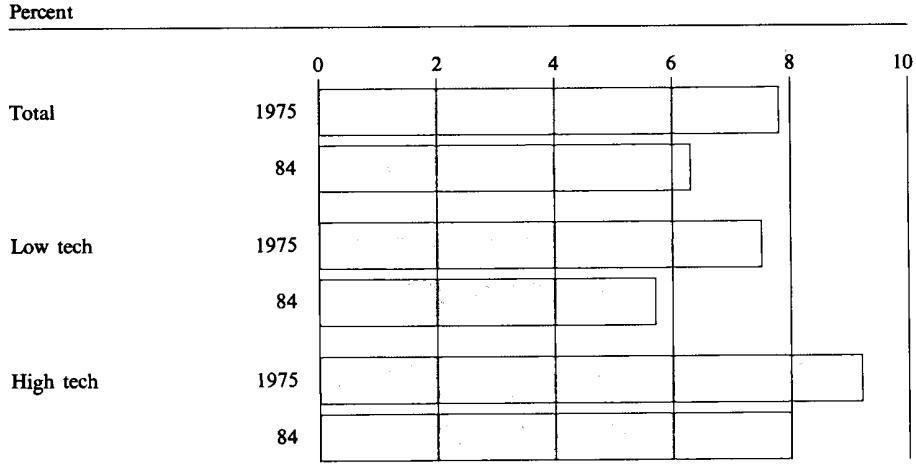
	1975	1980	1982	1984
Total manufactures	**3.0**	**4.3**	**−0.3**	**−9.1**
Low-technology goods	1.2	0.5	−2.6	−8.3
High-technology goods	1.8	3.8	2.3	−0.8

25X1

The United Kingdom recorded the biggest proportionate decline among the Big Four in its world market share for manufactured goods, with its share declining in both low- and high-technology categories.

25X1

Figure 11
United Kingdom: Share of World Exports of Manufactured Goods, 1975 and 1984



25X1

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Low-Technology Goods

The United Kingdom's trade balance in low-technology manufactured goods has fallen from a surplus of $1.2 billion in 1975 to a deficit of $8.3 billion in 1984:

- Most of the low-tech sectors have suffered large declines in net exports since 1980. Only iron and steel and other metal products have registered significant improvement.

- Industrial and agricultural machinery, road motor vehicles, and textiles and clothing have suffered the largest declines in net trade balances. The United Kingdom slipped from being the third-largest exporter of machinery (9.3 percent of the world market) in 1975 to fourth place (7.1 percent of the market) in 1984.

25X1

Table 42
United Kingdom: Trade Balance in Low-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**1.2**	**0.5**	**−2.6**	**−8.3**
Share of world exports *(percent)*	7.5	7.8	6.2	5.7
Iron and steel	−0.3	−1.1	−0.1	0.1
Nonferrous metals	−0.6	−1.7	−0.5	−0.5
Nonmetallic mineral products	0.2	0.3	0.2	0
Low-tech chemicals	1.1	3.2	2.2	1.6
Industrial and agricultural machinery	4.5	7.4	4.8	2.1
Road motor vehicles and parts	0.9	−0.6	−2.5	−3.5
Other transportation equipment	0.6	0.7	0.4	0.6
Other metal products	0.6	1.1	3.1	2.8
Food and beverages	−4.0	−4.1	−3.8	−4.1
Textiles and clothing	−0.5	−1.3	−2.4	−3.1
Leather and footwear	−0.1	−0.3	−0.5	−0.6
Wood and paper	−1.1	−2.3	−2.8	−3.0
Rubber and plastic products	−0.2	−0.4	0	−0.2
Other manufacturing [a]	0.1	−0.4	−0.7	−0.5

[a] Includes statistical discrepancy.

25X1

High-Technology Goods

The United Kingdom is a net exporter in only four out of the eight high-technology sectors and, in the last 10 years, has lost world market share in six out of eight sectors:

- Aerospace equipment is the only high-tech sector which has increased net exports since 1980, but even this sector has fallen from its 1982 peak.
- Net exports of the three categories of electronics and electrical equipment used to be highly positive but has now fallen into deficit.
- The United Kingdom has long been a net importer of office machinery and data-processing equipment, but the magnitude of net imports has risen sharply since 1980.
- Only basic chemicals and aerospace equipment have increased their market share since 1975. The aerospace market share, however, has been declining sharply since 1980.

25X1

Table 43
United Kingdom: Trade Balance in High-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**1.8**	**3.8**	**2.3**	**−0.8**
Share of world exports *(percent)*	9.2	10.2	8.9	8.0
Basic industrial chemicals	−0.1	1.2	0.8	0.7
Pharmaceuticals	0.1	0.3	0.2	0.2
Office machinery and data-processing equipment	−0.1	−0.4	−1.1	−1.4
Telecommunications equipment	0.3	0.4	0.3	0.1
Consumer electronics	−0.1	−0.4	−0.6	−0.5
Other electrical equipment	0.9	1.2	0.5	−0.9
Scientific instruments	0.1	0.4	0.2	−0.2
Aerospace equipment	0.7	1.1	2.0	1.2

25X1

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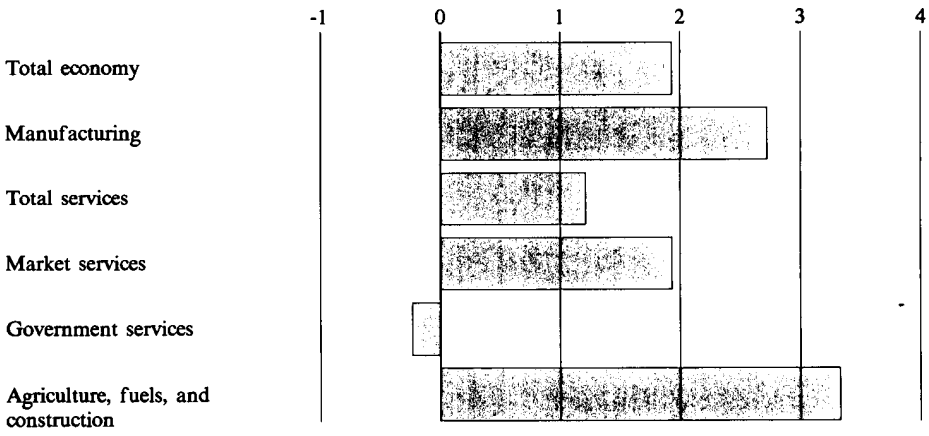
Productivity Trends

Huge cuts in manufacturing employment have helped the United Kingdom register large gains in manufacturing productivity since 1980:

- From 1980 to 1984, UK manufacturing productivity has grown 5 percent a year, about double the rate in West Germany and France. In the 1970s, French and West German productivity growth was faster.
- British labor productivity growth has been much faster in the declining manufacturing sector than in the rapidly growing service sector. [redacted] 25X1

Figure 12
United Kingdom: Average Annual Productivity Growth, 1971-84



[redacted] 25X1

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Investment and Profit Trends

Investment in the British manufacturing sector is so low that the aggregate capital stock is barely replenishing itself:

- Total fixed capital formation as a share of GDP has fallen only slightly, from 18.6 percent in 1970 to 17.5 percent in 1984.
- In the manufacturing sector, however, fixed capital formation has dropped about 50 percent. It constituted 21.4 percent of total investment in 1970 but only 11.7 percent of total investment in 1984.
- Gross capital stock in the manufacturing sector (measured at replacement cost) has grown only 0.3 percent a year (1979-84), compared with a growth rate of 2.3 percent a year for nonmanufacturing capital stock over the same period.

25X1

Table 44
United Kingdom: Investment by Sector as a Share of Total Investment, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Agriculture	3.0	2.8	2.5	2.6	2.6	NA
Fuels	10.0	13.7	13.6	14.0	13.1	11.8
Manufactured products	21.4	16.2	15.5	11.4	10.9	11.7
Construction	1.6	1.6	1.1	1.1	1.0	NA
Market services	50.2	52.1	57.2	60.0	60.6	NA
Government services	13.8	13.6	10.1	10.9	11.8	12.3
Total investment as share of GDP	18.6	19.5	17.5	16.4	16.6	17.5

25X1

Low-Technology Industries

The United Kingdom has been shifting investment resources from low-technology industries toward high-tech sectors:

- As a share of GDP, investment in low-tech industries has fallen 40 percent in seven years.
- All of this decline can be accounted for by the collapse in investment in the iron and steel industry. In 1975, investment in the iron and steel industry exceeded 16 percent of total manufacturing investment. In 1982 the figure was only 3.1 percent. Preliminary data for 1983-85 indicate no upturn.

25X1

Table 45
United Kingdom: Low-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1975-82

Percent

	1975	1980	1981	1982
Iron and steel	16.1	4.1	4.2	3.1
Nonferrous metals	1.9	1.7	1.5	1.2
Nonmetallic mineral products	5.2	6.8	5.1	5.1
Low-tech chemicals	3.6	4.0	5.4	5.6
Industrial and agricultural machinery	6.9	7.2	7.2	7.3
Road motor vehicles and parts	5.5	10.7	9.7	9.5
Shipbuilding	1.3	0.6	1.1	1.0
Railway rolling stock	0.2	0.3	0.3	0.2
Other transportation equipment	0.1	0.1	0.1	0.1
Other metal products	4.8	6.2	7.5	7.0
Food and beverages	14.6	13.7	15.2	16.1
Textiles and clothing	5.4	3.8	3.1	3.3
Leather and footwear	0.4	0.3	0.3	0.4
Wood and paper	7.4	9.9	9.4	8.8
Rubber and plastic products	2.8	3.8	3.6	3.7
Other manufacturing [a]	0.6	0.8	0.5	0.7
Ratio of low-tech investment to total manufacturing investment	76.8	74.0	74.2	73.1
Ratio of low-tech investment to total investment	12.4	11.5	9.4	8.3
Ratio of low-tech investment to GDP	2.4	2.0	1.5	1.4

[a] Includes statistical discrepancy.

25X1

High-Technology Industries

Investment in high-technology industries has been growing as a share of manufacturing investment, but has fallen sharply as a share of total investment and as a share of GDP:

- Basic industrial chemicals has seen a shrinkage of its share of investment, but pharmaceuticals has seen a large increase.
- The electronics/electrical equipment sector has sharply increased its share of total manufacturing investment. Preliminary data for 1983-85 indicate that this trend is continuing. [redacted] 25X1

Table 46
United Kingdom: High-Technology Sectors' Investment by Industry as a Share of Total Investment in Manufacturing, 1975-82

Percent

	1975	1980	1981	1982
Basic industrial chemicals	12.2	12.2	10.6	10.4
Pharmaceuticals	1.7	2.3	3.1	3.1
Office machinery and data-processing equipment	0.6	0.8	0.8	0.9
Telecommunications equipment	1.9	3.0	3.5	3.8
Consumer electronics	0.9	1.3	1.3	1.4
Other electrical equipment	3.0	3.2	3.3	3.6
Scientific instruments	1.1	0.9	0.8	1.1
Aerospace equipment	1.8	2.3	2.4	2.6
Ratio of high-tech investment to total manufacturing investment	23.2	26.0	25.8	26.9
Ratio of high-tech investment to total investment	3.8	4.0	3.3	3.1
Ratio of high-tech investment to GDP	0.8	0.7	0.5	0.5

[redacted] 25X1

Rates of Return

Profit shares and rates of return on capital in the manufacturing sector plummeted in the 1970s, presumably dragging down investment shares with them:

- Profit shares in the manufacturing sector (measured as gross operating surplus divided by gross value added) fell from nearly 25 percent in the early 1970s to about 20 percent in the early 1980s. Gross operating surplus as a share of gross capital stock fell nearly one-half, from 9.1 percent in 1971 to 5.4 percent in 1981.

- Profit shares in the service sector did not fall nearly as much as in manufacturing between 1971 and 1972.

- Profit shares have staged a dramatic turnaround in the last several years. There has been as yet no great increase in aggregate investment shares, but the decline in manufacturing's share of total investment seems to have been arrested. 25X1

Table 47
United Kingdom: Profit Shares and Rates of Return, 1971-83

Percent

	1971	1975	1980	1982	1983
Total economy					
Gross operating surplus/ gross value added	32.5	27.7	21.1	33.5	34.5
Market services sector					
Gross operating surplus/ gross value added	48.9	45.8	44.6	45.6	58.2
Manufacturing sector					
Gross operating surplus/ gross value added	24.8	18.5	20.0	23.3	25.9
Gross operating surplus/ gross capital stock	9.1	5.9	5.6	6.2	7.2

25X1

Italy

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Italy

Summary

As in the United Kingdom, the 1970s Italian policy of rescuing badly performing companies by absorbing them into the public sector has shifted toward a more market-oriented approach, but one which does not as strongly emphasize privatization. The Italian manufacturing sector has undergone much less restructuring than has taken place in the United Kingdom or elsewhere in Western Europe:

- Manufacturing accounts for a larger portion of GDP than it did 15 years ago.
- Italian low-tech industries have been growing almost as fast as the high-technology industries, and both are growing faster than GDP.
- There does not appear to be any shift of investment resources toward the high-tech industries.
- Low-tech industries have been Italy's star performers in international trade. Italy, alone among the Big Four, has a greater portion of world trade in manufactured goods now than it did 10 years ago. This achievement is due to huge increases in exports of low-technology products such as textiles, clothing, footwear, and furniture. The high-tech industries have lost market share in six out of eight categories.
- As in the other major West European countries, rates of manufacturing-sector growth, productivity growth, investment rates, and employment growth have all been much lower in the last decade or so than previously.
- Although growing faster than the rest of the economy, the manufacturing sector is still not providing any new jobs. All of the new job creation in the last decade has come from the low-productivity service sector. [redacted] 25X1

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Shifts in Production

The Italian manufacturing sector, alone among the Big Four, accounts for a greater share of GDP now than in 1970:

- The share of GDP originating in the manufacturing sector reached a peak of 31.5 percent in 1980 but has slipped somewhat since then.
- The share of GDP originating in the production of services has risen 4 percentage points from 1970 to 1984. Most of this gain came from growth in market services, not government services.

25X1

Table 48
Italy: Value Added by Sector as a Share of GDP, 1980 Prices, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Agriculture	7.4	6.9	6.6	6.1	6.5	6.2
Fuels	5.0	4.8	4.8	4.4	4.3	4.3
Manufactured products	27.9	27.3	31.5	29.1	28.1	28.8
Construction	10.1	8.4	7.9	7.4	7.4	7.1
Market services	36.9	39.2	36.5	40.6	41.1	53.6
Government services	12.7	13.4	12.7	12.4	12.6	
GDP growth (index: 1980 = 100)	73.5	82.8	100.0	99.7	98.6	101.2

25X1

Low-Technology Industries

Italy has seen less shifting between the low- and high-technology industries than the other Big Four countries, but this is because Italy's low-tech firms have continued to expand and not because its high-tech firms have been stagnant:

- Low-tech manufacturing output (in value-added terms) grew about 2.6 percent a year between 1975 and 1984, slightly faster than real GDP (2.3 percent a year).

- Italy also has seen less shifting within the low-tech group than has occurred elsewhere in the Big Four. There has been no massive decline or increase in the relative size of any of the low-tech sectors, such as the huge fall in UK steel production or the huge increase in West German motor vehicle production that occurred through the early 1980s.

25X1

Table 49
Italy: Low-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-84

Percent

	1975	1980	1981	1984
Iron and steel	5.8	5.7	5.2	5.4
Nonferrous metals	1.2	1.4	1.3	1.3
Nonmetallic mineral products	6.5	7.4	7.4	6.7
Low-tech chemicals	3.5	3.5	3.5	3.6
Industrial and agricultural machinery	10.1	10.4	11.2	9.4
Road motor vehicles and parts	8.4	7.3	7.3	
Shipbuilding	1.1	0.7	0.7	9.4 [a]
Railway rolling stock	0.4	0.4	0.5	
Other transportation equipment	0.5	0.7	0.8	
Other metal products	6.8	7.1	7.2	5.8
Food and beverages	12.1	10.9	11.4	11.6
Textiles and clothing	9.4	9.9	9.6	9.6
Leather and footwear	2.0	2.3	2.2	2.2
Wood and paper	7.6	8.4	8.0	8.5
Rubber and plastic products	4.2	4.4	4.1	4.1
Other manufacturing [b]	0.7	0.8	0.8	0.7
Ratio of low-tech value added to total manufacturing	80.3	81.3	81.2	78.3 [a]
Ratio of low-tech value added to GDP	21.9	25.6	24.0	22.6 [a]

[a] Estimate.
[b] Includes statistical discrepancy.

25X1

High-Technology Industries

High-technology industries have been growing at only a slightly faster pace than the low-technology industries:

- Output in high-tech industries grew about 3.8 percent a year between 1975 and 1984, compared with 2.6 percent a year for low-tech sectors.
- There has been considerable shifting within the high-tech group. Production of basic chemicals has fallen sharply, while pharmaceuticals and the electronics/electrical equipment sector have grown much faster than the average.
- The aerospace industry increased its share of total manufacturing in the period 1976-81, but remains very small.
- High-tech manufacturing output has been growing about as fast as in France, much faster than in West Germany or the United Kingdom. [redacted] 25X1

Table 50
Italy: High-Technology Sectors' Value Added as a Share of Total Value Added in Manufacturing, 1975-84

Perc

	1975	1980	1981	1984
Basic industrial chemicals	5.2	4.2	3.4	3.9
Pharmaceuticals	2.6	2.6	2.7	3.5
Office machinery and data-processing equipment	1.2	1.1	1.2	1.8
Telecommunications equipment	9.1	1.7	1.7	10.3
Consumer electronics		1.9	2.0	
Other electrical equipment		5.4	5.6	
Scientific instruments	0.9	0.9	1.0	1.2
Aerospace equipment	0.7	0.9	1.2	1.0 [a]
Ratio of high-tech value added to total manufacturing	19.7	18.7	18.8	21.7 [a]
Ratio of high-tech value added to GDP	5.4	5.9	5.5	6.2 [a]

[a] Estimate.

[redacted] 25X1

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Employment Shifts

Total Italian employment has grown between 1970 and 1984, unlike the experience in West Germany and the United Kingdom:

- Employment in the manufacturing sector, despite above-average growth in output, declined by about 200,000 jobs from 1970 to 1983.
- The agricultural sector lost far more jobs—over 1 million.
- The lost manufacturing and agricultural jobs were more than matched by gains in service-sector employment. Market-service-sector jobs have risen by almost 2 million since 1970, and government-service jobs by about 1 million.
- Italy's increased employment from 1970 to 1984 was not sufficient to absorb increases in the labor force; the unemployment rate almost doubled from 5.3 to 10.2 percent.

25X1

Table 51
Italy: Employment by Sector as a Share of Total Employment, 1970-84

Percent

	1970	1975	1980	1982	1983	1984
Total employment (*millions*)	**19.8**	**20.0**	**20.9**	**20.9**	**21.0**	**21.0**
Agriculture	18.2	15.2	13.2	12.0	12.0	11.4
Fuels	0.9	0.9	0.9	0.9	0.9	
Manufactured products	27.7	28.1	27.1	26.1	25.3	32.8
Construction	10.2	8.7	8.4	8.4	8.2	
Market services	31.2	33.1	35.3	37.1	37.9	55.8
Government services	11.8	14.0	15.1	15.5	15.7	

25X1

Low-Technology Industries

Despite the growth in low-tech output, the number of jobs in these traditional industries has been declining:

- Few of the low-tech industries had employment gains over this period. Hardest hit by job losses were transportation equipment and clothing, textiles, leather, and footwear.

- Contrary to the experience in the rest of the Big Four, Italian employment rose in the production of iron, steel, and nonferrous metals. [redacted]

25X1

Table 52
Italy: Employment in Low-Technology Sectors, 1975-83

Thousands

	1975	1980	1981	1983
Total	**4,651**	**4,650**	**4,581**	**4,387** [a]
Share of total manufacturing employment (*percent*)	82.7	82.3	82.3	82.7 [a]
Iron and steel	266	322	328	382
Nonferrous metals	77	79	77	
Nonmetallic minerals	388	377	378	372
Low-tech chemicals	181	168	158	140 [a]
Industrial and agricultural machinery	528	566	579	558
Road motor vehicles and parts	470	489	466	
Shipbuilding	69	65	65	514 [a]
Railway rolling stock	19	23	26	
Other transportation equipment	35	45	46	
Other metal products	416	416	411	398
Food and beverages	398	395	395	397
Textiles and clothing	866	764	738	902
Leather and footwear	180	185	177	
Wood and paper	460	456	452	446
Rubber and plastic products	236	239	229	223
Other manufacturing [b]	62	61	56	55

[a] Estimate.
[b] Includes statistical discrepancy.

[redacted]

25X1

High-Technology Industries

High-tech manufacturing sectors have not been a source of new employment:

- Employment in high-tech industries fell by 60,000 jobs from 1975 to 1983. The aerospace equipment and scientific instruments industries apparently were the only net contributors of new jobs.

25X1

Table 53
Italy: Employment in High-Technology Sectors, 1975-83

Thousands

	1975	1980	1981	1983
Total	**974**	**1,002**	**984**	**915** [a]
Share of total manufacturing employment (*percent*)	17.3	17.7	17.7	17.3 [a]
Basic industrial chemicals	185	184	164	242 [a]
Pharmaceuticals	102	107	110	
Office machinery and data-processing equipment	59	46	46	47 [a]
Telecommunications equipment		109	101	
Consumer electronics	536	125	122	518
Other electrical equipment		322	326	
Scientific instruments	57	58	58	59 [a]
Aerospace equipment	35	51	57	49

[a] Estimate.

25X1

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Trade in Manufactures

Italy's trade performance in manufactured goods improved overall, but, unlike those of the other Big Four, Italy's low-tech industries gained while its high-tech industries faltered:

- Italy enjoyed a huge improvement, almost 100 percent, in its trade balance in manufactured goods from 1975 to 1984. 25X1

Table 54
Italy: Trade Balance in Manufactured Goods, 1975-84

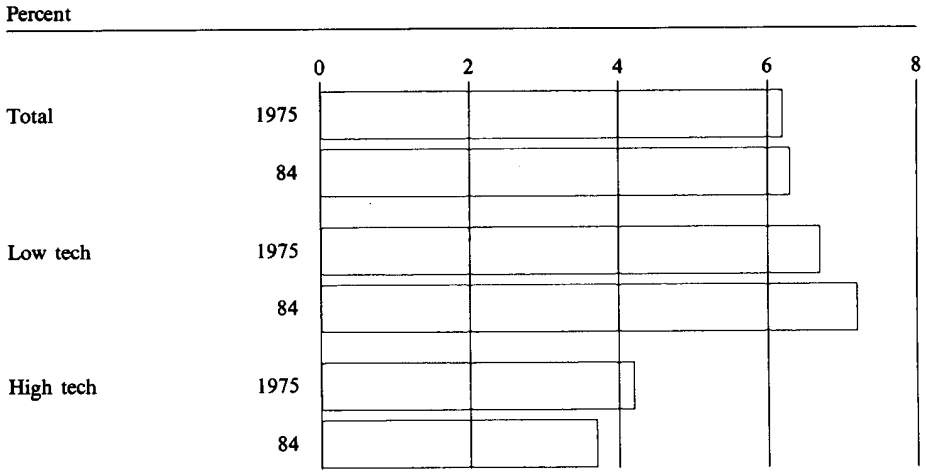
Billion dollars

	1975	1980	1982	1984
Total manufactures	**10.5**	**13.1**	**19.7**	**19.9**
Low-technology goods	9.9	15.4	19.8	20.8
High-technology goods	0.6	−2.3	−0.1	−0.9

25X1

Italy, unlike the other Big Four countries, was able to increase its share of the world export market for manufactured goods, and now exports almost as many manufactured goods as the United Kingdom. 25X1

Figure 13
Italy: Share of World Exports of Manufactured Goods, 1975 and 1984



25X1

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Low-Technology Goods

Net exports of Italian low-tech products more than doubled between 1975 and 1984, while their share of world market exports rose from 6.7 to 7.2 percent:

- Textiles and clothing, leather and footwear, and wood products all displayed large increases in both net exports and world market share.
- Italian leather and footwear accounted for 35.4 percent of the world market in 1984, making it the primary exporter by far in that category.
- Textiles and clothing held almost 12 percent of the world market in 1984, up from 10.4 percent in 1975.
- Wood products also showed a large gain in net exports and increased its market share from 5 to nearly 6 percent.

25X1

Table 55
Italy: Trade Balance in Low-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**9.9**	**15.4**	**19.8**	**20.8**
Share of world exports *(percent)*	6.7	7.2	7.2	7.2
Iron and steel	1.1	−0.3	1.5	0.9
Nonferrous metals	−0.7	−2.4	−1.1	−1.3
Nonmetallic mineral products	0.7	2.2	1.8	2.0
Low-tech chemicals	0	−1.1	−1.1	−1.1
Industrial and agricultural machinery	2.8	6.3	6.6	6.6
Road motor vehicles and parts	1.7	−1.2	−1.4	−0.6
Other transportation equipment	0	0.5	0.6	0.6
Other metal products	0.8	2.3	2.3	2.0
Food and beverages	−2.5	−4.7	−4.1	−3.6
Textiles and clothing	2.7	5.3	5.6	6.3
Leather and footwear	1.6	3.5	3.6	3.7
Wood and paper	0.7	2.6	2.3	2.2
Rubber and plastic products	0.4	0.7	0.8	0.7
Other manufacturing[a]	0.6	1.7	2.4	2.4

[a] Includes statistical discrepancy.

25X1

High-Technology Goods

Italy's trade position in high-tech goods worsened in terms of both net exports and world market share:

- Italy's overall share of the world high-tech market slipped from 4.2 to 3.7 percent, despite the market share gains of basic chemicals and aerospace equipment.
- Italy has a much smaller share of the world high-tech market than any of the other Big Four countries.
- Consumer electronics, pharmaceuticals, and office machinery and data-processing equipment all became net import items during this period. Only telecommunications equipment and aerospace equipment increased net exports, and even there the gains were slight. 25X1

Table 56
Italy: Trade Balance in High-Technology Goods, 1975-84

Billion dollars

	1975	1980	1982	1984
Total	**0.6**	**−2.3**	**−0.1**	**−0.9**
Share of world exports *(percent)*	4.2	3.7	3.9	3.7
Basic industrial chemicals	−0.1	−1.5	−0.6	−0.5
Pharmaceuticals	0	0	0	−0.1
Office machinery and data-processing equipment	0	0.2	−0.1	−0.5
Telecommunications equipment	0.1	0	0.1	0.2
Consumer electronics	0.1	−0.6	−0.6	−0.5
Other electrical equipment	0.6	0.2	1.1	0.6
Scientific instruments	−0.1	−0.3	−0.3	−0.2
Aerospace equipment	0	−0.3	0.3	0.1

25X1

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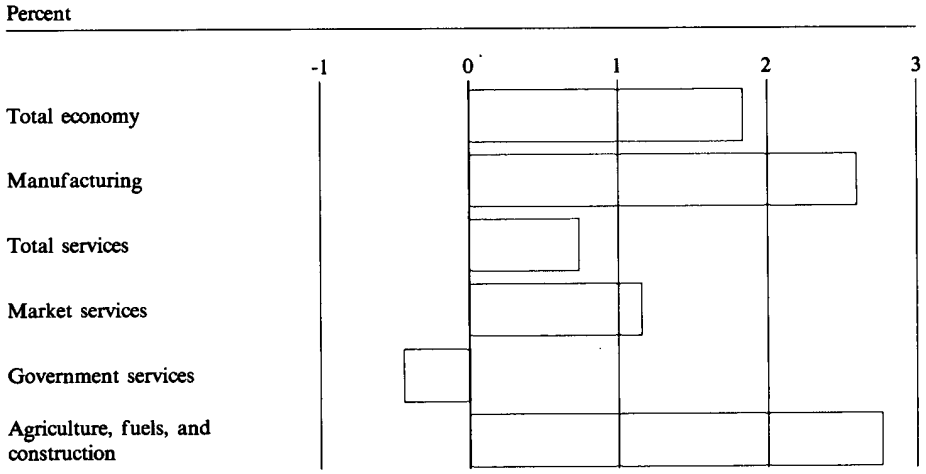
Productivity Trends

Labor productivity growth over the period 1971-83 was only about one-third that of the 1950s and 1960s:

- Italian productivity grew at an average annual rate of 5.2 percent a year between 1953 and 1970, compared with 1.8 percent in the period 1971-83.
- Productivity grew about 2.6 percent a year in the manufacturing sector between 1970 and 1983.
- Productivity in the service sector—private and public—grew at only one-fourth that rate. Productivity actually declined in the public sector in this period.
- Productivity growth in the three smaller sectors—agriculture, fuels, and construction—was much faster than the national average. [redacted] 25X1

Figure 14
Italy: Average Annual Productivity Growth, 1971-83



[redacted] 25X1

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Investment and Profit Trends

As in the other Big Four countries, total fixed capital formation has fallen sharply in relative terms:

- Investment as a share of GDP has fallen from 21.4 percent of GDP in 1970 to 19.1 percent in 1985.
- Fixed capital formation in the industrial sectors—fuels, manufactured products, and construction—has fallen from 6.3 percent of total GDP in 1970 (29.3 percent of total investment) to 4.4 percent of GDP (23.9 percent of total investment) in 1983.
- Investment in the service sector, especially nongovernmental services, has been taking an increasing share of total investment resources.
- Unlike in the other Big Four countries, aggregate profit rates did not appear to fall much, if any, in the 1970s.
- The ratio of gross operating surplus to gross value added in industry rose from 34 percent in the early 1970s to 37 percent in the early 1980s. [redacted] 25X1

Table 57
Italy: Investment by Sector as a Share of Total Investment, 1970-85

Percent

	1970	1975	1980	1982	1983	1985
Agriculture	6.2	7.2	7.1	6.7	6.8	NA
Fuels	7.9	7.6	8.6			NA
Manufactured products	20.2	21.1	19.1	26.0	23.9	NA
Construction	1.2	1.1	1.2			NA
Market services	53.8	53.2	55.0	56.7	58.3	NA
Government services	10.7	9.8	9.0	10.6	11.0	NA
Total investment as share of GDP	21.4	20.6	19.8	19.0	18.4	19.1

[redacted] 25X1

Low-Technology Industries

Unlike the other Big Four countries, Italy is not shifting its investment away from low-technology industries:

- The ratio of investment in low-tech sectors to total manufacturing investment has held steady overall.
- Road motor vehicles, industrial and agricultural machinery, and food and beverages all showed substantial gains in investment shares.
- Iron and steel and low-tech chemicals both experienced large decreases in investment shares.

25X1

Table 58
Italy: Low-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1975-82

Percent

	1975	1980	1981	1982
Iron and steel	14.5	8.9	9.1	8.3
Nonferrous metals	2.0	1.9	2.5	2.0
Nonmetallic mineral products	7.6	11.5	11.9	9.7
Low-tech chemicals	6.0	3.1	3.2	3.6
Industrial and agricultural machinery	5.6	7.1	7.9	6.3
Road motor vehicles and parts	7.9	8.0	7.0	11.1
Shipbuilding	0.6	0.3	0.4	0.4
Railway rolling stock	0.3	0.5	0.6	0.8
Other transportation equipment	0.5	1.0	1.1	0.9
Other metal products	6.4	7.2	6.8	6.2
Food and beverages	7.3	9.1	9.7	8.9
Textiles and clothing	7.3	8.4	8.4	6.9
Leather and footwear	0.8	1.2	1.3	1.1
Wood and paper	5.9	8.1	7.9	6.1
Rubber and plastic products	2.9	4.7	4.2	3.9
Other manufacturing [a]	0.4	0.7	0.4	0.5
Ratio of low-tech investment to total manufacturing investment	76.0	81.7	82.4	76.7
Ratio of low-tech investment to total investment	16.0	15.6	14.1	12.9 [b]
Ratio of low-tech investment to GDP	3.3	3.1	2.9	2.4 [b]

[a] Includes statistical discrepancy.
[b] Estimate.

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High-Technology Industries

Investment in the high-tech sectors as a group has decreased as a share of total manufacturing investment:

- The drastic fall in basic chemicals' share pulled down the high-tech sectors' share of manufacturing investment; all the other high-tech sectors experienced improved investment shares between 1975 and 1982. Despite the share decline, the amount invested in basic chemicals increased 12 percent.

- Office machinery and data-processing equipment has increased sharply both in its share and in the amount invested. Pharmaceuticals and aerospace equipment have also experienced increases.

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Table 59
Italy: High-Technology Sectors' Investment as a Share of Total Investment in Manufacturing, 1975-82

Percent

	1975	1980	1981	1982
Basic industrial chemicals	15.4	6.2	5.9	5.1
Pharmaceuticals	1.7	1.8	1.8	2.1
Office machinery and data-processing equipment	0.8	1.3	1.3	8.2
Telecommunications equipment	0.5	0.8	0.7	0.8
Consumer electronics	1.4	1.7	1.7	1.5
Other electrical equipment	3.3	4.6	4.0	3.5
Scientific instruments	0.4	0.7	0.6	0.5
Aerospace equipment	0.5	1.2	1.6	1.6
Ratio of high-tech investment to total manufacturing investment	24.0	18.3	17.6	23.3
Ratio of high-tech investment to total investment	5.1	3.5	3.0	3.9 [a]
Ratio of high-tech investment to GDP	1.0	0.7	0.6	0.7 [a]

[a] Estimate.

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Appendix A

Definition of High-Technology Industries

The definition of high technology used here is based on one of three definitions developed by the Bureau of Labor Statistics (BLS).[3] For this study, high-tech industries are defined as those that have ratios of research and development expenditures to sales greater than twice the average for all manufacturing industries (the average ratio for the United States is 3.1 percent). Any definition of high technology is somewhat arbitrary; we start with this one because it seems plausible, because it is widely used in the United States, and because it includes those industries most commonly mentioned by European analysts. Of the three high-tech groups defined by the BLS, this definition includes the fewest industries. Those included are:

Standard Industrial Classification Code	Industry
283	Drugs
357	Office, computing, and accounting machines
366	Communications equipment
367	Electronic components and accessories
372	Aircraft and parts
376	Guided missiles and space vehicles

On a subjective basis, we added to this list basic industrial chemicals and scientific instruments. These two sectors are included in the other BLS definitions of high-tech industries. Because of data problems, the electrical equipment category could not always be disaggregated into its high-tech and low-tech components. Since the low-tech component was estimated to be small, all electrical equipment was classified as high technology. [redacted] 25X1

[3] U.S., Congress of the United States, Office of Technology Assessment, Chapter 2, "Definition and Analysis of High-Technology Industry", *Technology, Innovation, and Regional Economic Development* (Washington, D.C.), July 1984, OTA-STI-238. [redacted] 25X1

The high-tech sectors used for our data analysis, as identified by their NACE (General Industrial Classification of Economic Activities within the European Communities) codes are:

NACE Code	Industry
2510	Basic chemicals
2570	Pharmaceuticals
3300	Office machinery and data-processing equipment
3440	Telecommunications equipment
3450	Consumer electronics
3410, 3420, 3430, 3460, 3470	Other electrical equipment
3700	Scientific instruments
3640	Aerospace equipment

Excluding the added sectors, this definition matches the BLS grouping since electronic components and accessories are included in the category for other electrical equipment, and guided missiles and space vehicles are included in the aerospace equipment category. All other manufacturing sectors are classified as "low-technology" sectors.

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Appendix B

Data Sources

The primary data source was the Eurostat Annual Industrial Survey data bank, which contains industrial-sector data on members of the European Community. The EC's NACE (General Industrial Classification of Economic Activities within the European Communities) coding system was adopted. The EC National Accounts data, published in Eurostat National Accounts ESA: Detailed Tables by Branch for 1984 and for 1985, were also used extensively. [redacted] 25X1

The Eurostat National Accounts gave the aggregate sectoral composition value added in 1980 prices for each European country. The industrial survey gave industry-level value added in current prices. The industry-share computations shown in this paper are thus in terms of nominal prices. To compute industry value-added shares of GDP we assumed that price movements in each industry equaled the aggregate movements in manufacturing prices. [redacted] 25X1

The OECD publications *National Accounts: Detailed Tables,* Vol. II for 1983 and for 1985, *Quarterly National Accounts Statistics* for 1984 and for 1985, *Industrial Structure Statistics* for 1984 and for 1985, and the *Economic Outlook* for December 1985 and for May 1986, provided data for the United States, Japan, and the smaller West European countries, as well as supplementary data on the Big Four countries. In particular, OECD data were used for standardized employment rates across the Big Four. [redacted] 25X1

Also supplementing the EC data were country source data. Various statistical publications and data banks from West Germany, France, England, Italy, the United States, and Japan were used, primarily to obtain data for later years than those published by the EC. The country source data were adjusted to conform to the NACE coding system. [redacted] 25X1

All trade data are from the United Nations trade tapes, obtained by using UNTAPE in CIA's TRADAR system. UN trade data are originally from country sources. [redacted] 25X1

The data for trade in manufactured goods cover SITC codes 5-9, as is usual, but also some categories of SITC codes 0-1 (food and beverages). We included those food and beverage categories that involved significant amounts of processing in order to reach a definition of manufactured goods consistent with the NACE code definition of manufacturing. [redacted] 25X1

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