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Robot investment in France fell by 14% in 2002 but the robot stock grew by 7%

In 1999 and 2000, sales of industrial robots in France skyrocketed by 87% and 23%, reaching an annual rate of 3,800 units, by far the highest figure ever recorded for robot sales. In 2001, however, sales fell by 8% over the 2000 level to just under 3,500 units and in 2002 the market dropped by another 14% (see figures 1a and b). As a comparison, the value of the French market for machine tools fell by as much as 27% in 2002. Robot investments seem to be less sensitive to recession than other types of investment goods.

At the end of 2002, the stock of robots in actual operation in France was estimated at about 24,330 units, an increase of 7% over the 2001 stock.

For the period 2003-2006, the market in France is projected to grow by a yearly average of 2%, which would result in a robot stock of 31,700 units at the end of 2006. As order intake of industrial robots placed by European customers increased by as much as 25% in the first half 2003, compared with the same period in 2002, reaching the highest level ever recorded, this forecast might very well be far too conservative.

Large enterprises dominate the use of robots

Large firms dominate the use of industrial robots. In 2002, firms with more than 1,000 employees accounted for 66% of total robot use and for as many as 70% of the new installations in the same year.

Firms with fewer than 300 employees only accounted for just 17% of the total robot stock in 2002. In the same year they received 15% of total robot sales.

The robot density in France is well ahead of that of the United Kingdom but far behind Germany...

For every 10,000 persons employed in the French manufacturing industry at the end of 2002, there were 67 industrial robots, which makes the French robot density almost double that of the United Kingdom but far behind Germany, which had 135 units per 10,000 persons employed (see figure 2). In the French motor vehicle industry there are as many as 630 robots per 10,000 production workers (see figure 3).

.../

Robot prices are down, labour costs are up...

Between 1990 and 2002, prices of industrial robots fell from index 100 to 47, without taking into account that robots installed in 2002 had a much higher performance than those installed in 1990 (see figure 4). If quality changes had been taken into account, it was estimated that the index would have fallen to 24. In other words, an average robot sold in 2002 would have cost only a fourth of what a robot with the same performance would have cost in 1990 if it had been possible to produce such a robot in that year.

At the same time, the index of labour compensation in the French business sector increased from 100 to 129. This implies that the relative prices of robots fell from 100 in 1990 to 37 in 2002 without quality adjustment, and to 18 when taking quality improvements into account.

How much do the robots cost?

All but 5% of the robots sold in France in 2002 were priced at more than FF 200,000. Robots in the price range of FF 200,000 to 350,000 made up 63% of the 2002 supply. Robots in the price range of FF 350,000 to 500,000 had a share of 30%, down from 40% in 2001. The share of robots priced at more than FF 500,000 was fairly stable at about 2% in the period 1998-2002, except in 2000 when it dropped to just under 1%.

Welding dominates...

Welding was the largest application area, increasing its share from 35% in 1990 to a record 43% in 2002. In that year, over 10,500 welding robots were estimated to be in operation in France. In 2002, the stock of welding robots increased by 10%, compared with 4% for all other robot applications.

Material handling and plastic moulding each with 13% and machining with 12% were the second to fourth largest application areas.

It is worth noting that assembly, which is regarded as a growth area for robotics, not only had a share significantly lower than in Germany, the United States and Japan, but also that its share fell continuously from just under 14% in the late 1980s to 6% in 2002.

Motor vehicles in the forefront

The motor vehicle industry is by far the largest robot user in France. In 2002, it surged to a record 63% of the total operational stock of robots in France. At the end of 2002, the motor vehicle industry had an estimated 15,200 robots in operation.

The chemical industry was the second largest user branch, accounting for 13% of the 2002 robot stock, followed by the machinery and equipment industry with 6%. It is somewhat surprising that the electrical machinery industry and the food industry have relatively few robot installations, each accounting for only about 3%, respectively, of the total stock.

For the global development of industrial robots and service robots, see a parallel press release (ECE/STAT/03/P01) issued on the same day as the present one.

Figure 1a. Estimated operational stock of robots at year-end and shipments during the year

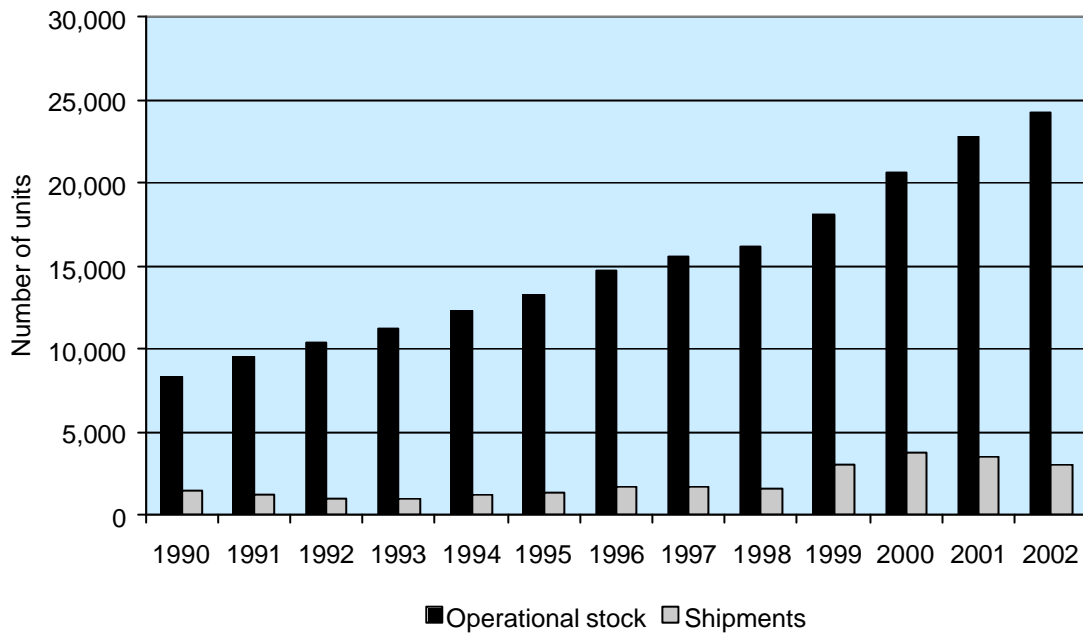
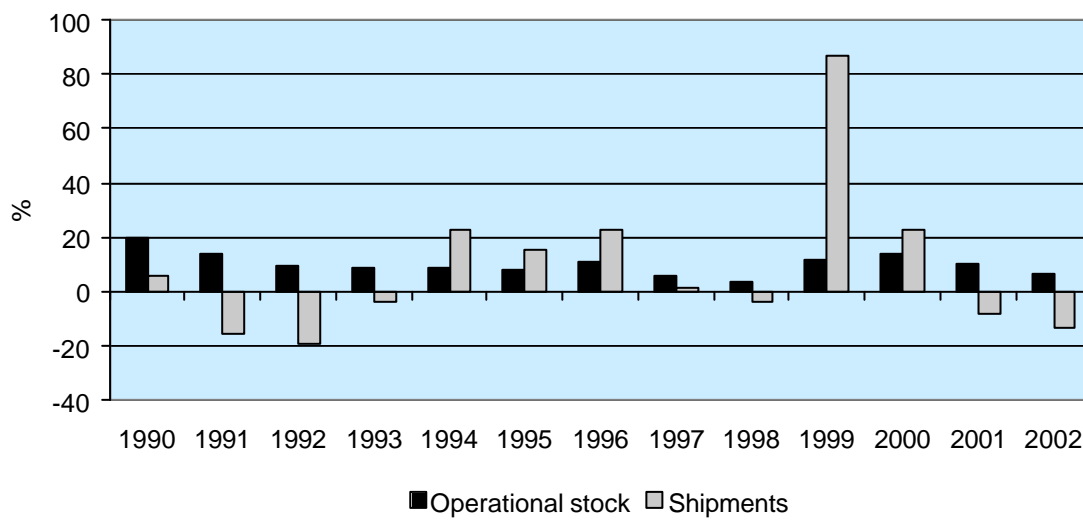


Figure 1b. Yearly percentage change in estimated operational stock and in shipments



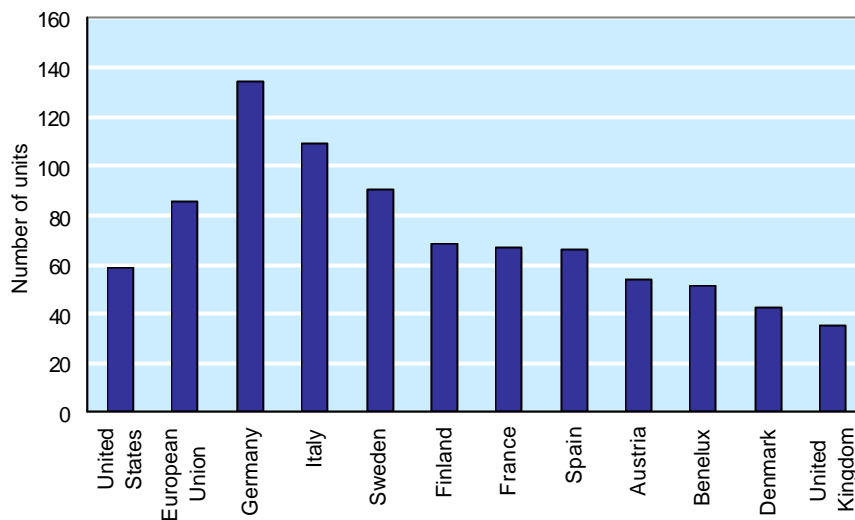
	2002
Japan a/	308
Rep. of Korea b/	128
United States	58
European Union	86
Germany	135
Italy	109
Sweden	91
Finland	68
France	67
Spain	66
Austria	54
Benelux	51
Denmark	43
United Kingdom	36
Australia	33
Norway	21
Portugal	9
Czech Rep.	8

Sources: UNECE and IFR.

a/ Up to and including 2000, data for Japan include all types of robots. As from 2001, data exclude dedicated robots, except for dedicated machining robots. As from 2001, Japanese statistics are therefore much more comparable with those of other countries.

b/ All types of industrial robots.

Figure 2. Number of robots per 10,000 persons employed in the manufacturing industry in 2002



	2001	2002
France	540	630
Germany	890	1,000
Italy	1,010	1,130
Japan	1,600	1,700
Spain	670	760
Sweden	540	570
United Kingdom	520	550
United States	690	770

Sources: UNECE and IFR.

Figure 3. Number of robots per 10,000 production workers in the motor vehicle industry, 2001 and 2002

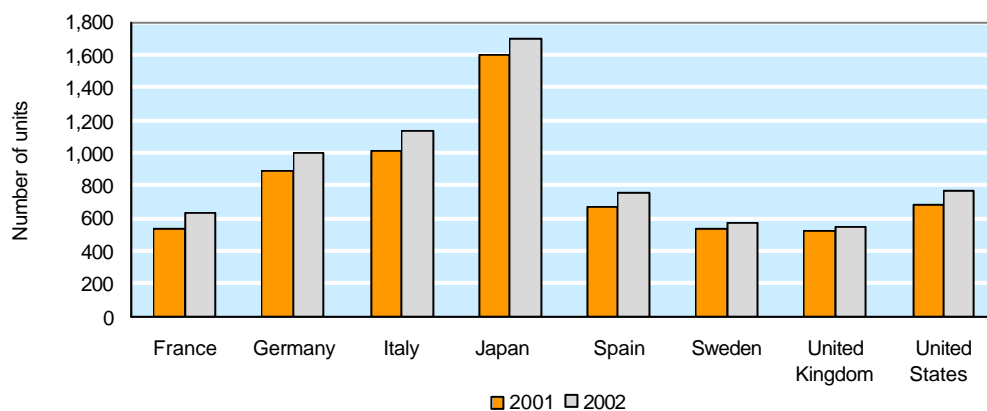
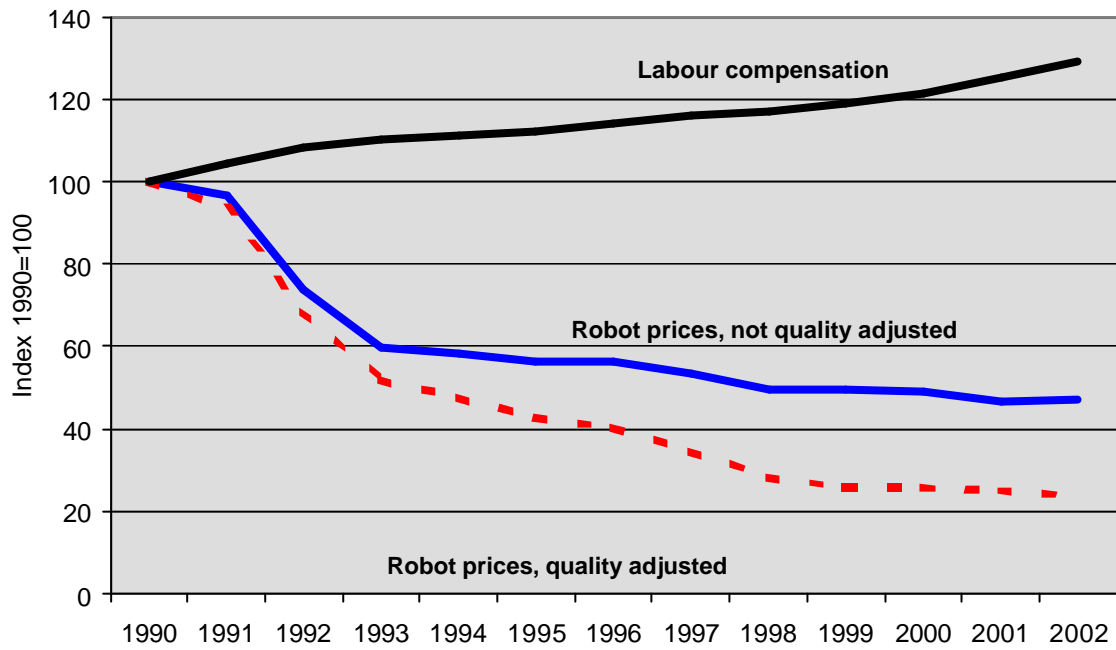
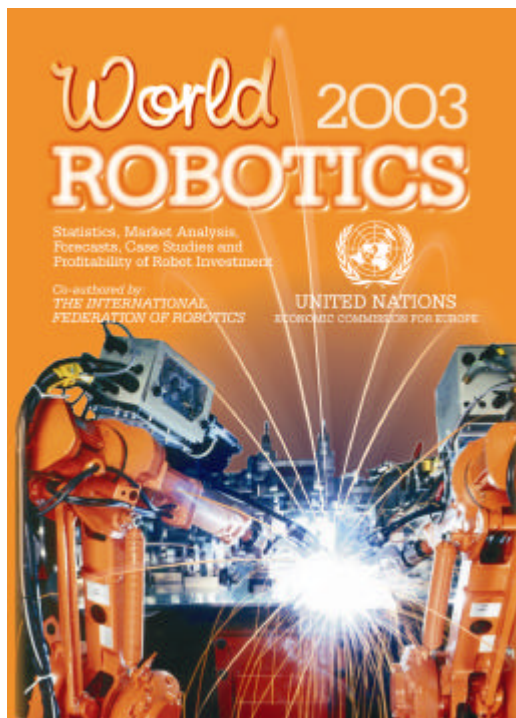


Figure 4
Price index of industrial robots in France, with and without quality adjustment.
Index of labour compensation in the French business sector



The publication **World Robotics 2003 – Statistics, Market Analysis, Forecasts, Case Studies and Profitability of Robot Investment** is available, quoting Sales No. GV.E.03.0.16 or ISBN No. 92-1-101059-4, through the usual United Nations sales agents in various countries or from the United Nations Office at Geneva (see address below), priced at US\$ 130:



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