

**UNECE**United Nations Economic Commission for Europe

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## **At end 2003, over 26,000 industrial robots were at work in the French industry, up 8% over 2002**

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. In 2003, however, the market recovered, showing an increase of 4% over 2002.

At the end of 2003, the stock of robots in actual operation in France was estimated at about 26,100 units, an increase of 8% over the 2002 stock.

For the period 2004-2007, the market in France is projected to grow by a yearly average of 6%, which would result in a robot stock of close to 36,000 units at the end of 2007.

### ***Large enterprises dominate the use of robots***

Large firms dominate the use of industrial robots. In 2003, firms with more than 1,000 employees accounted for 66% of total robot use and for as many as 68% 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 2003. In the same year they received 14% 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 2003, there were 71 industrial robots, which makes the French robot density almost double that of the United Kingdom but far behind Germany, which had 148 units per 10,000 persons employed (see figure 2). In the French motor vehicle industry there are as many as 910 robots per 10,000 production workers, almost at the same level as the German motor vehicle industry (see figure 3).

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

Between 1990 and 2003, prices of industrial robots fell from index 100 to 48, without taking into account that robots installed in 2003 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 23. In other words, an average robot sold in 2003 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 131. This implies that the relative prices of robots fell from 100 in 1990 to 38 in 2003 without quality adjustment, and to 16 when taking quality improvements into account.

### ***How much do the robots cost?***

All but 4% of the robots sold in France in 2003 were priced at more than FF 200,000. Robots in the price range of FF 200,000 to 350,000 made up 64% of the 2003 supply. Robots in the price range of FF 350,000 to 500,000 had a share of 30% in 2003, 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 1998-2003, 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 44% in 2003. In that year, about 11,400 welding robots were estimated to be in operation in France.

Material handling, machining and plastic moulding, each with 12%-13% were other major 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 under 6% in 2003.

### ***Motor vehicles in the forefront***

The motor vehicle industry is by far the largest robot user in France. In 2003, it surged to a record 64% of the total operational stock of robots in France. At the end of 2003, the motor vehicle industry had an estimated 16,700 robots in operation.

The chemical industry was the second largest user branch, accounting for 13% of the 2003 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 3-4%, respectively, of the total stock.

For the global development of industrial robots and service robots, see a parallel press release (ECE/STAT/04/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

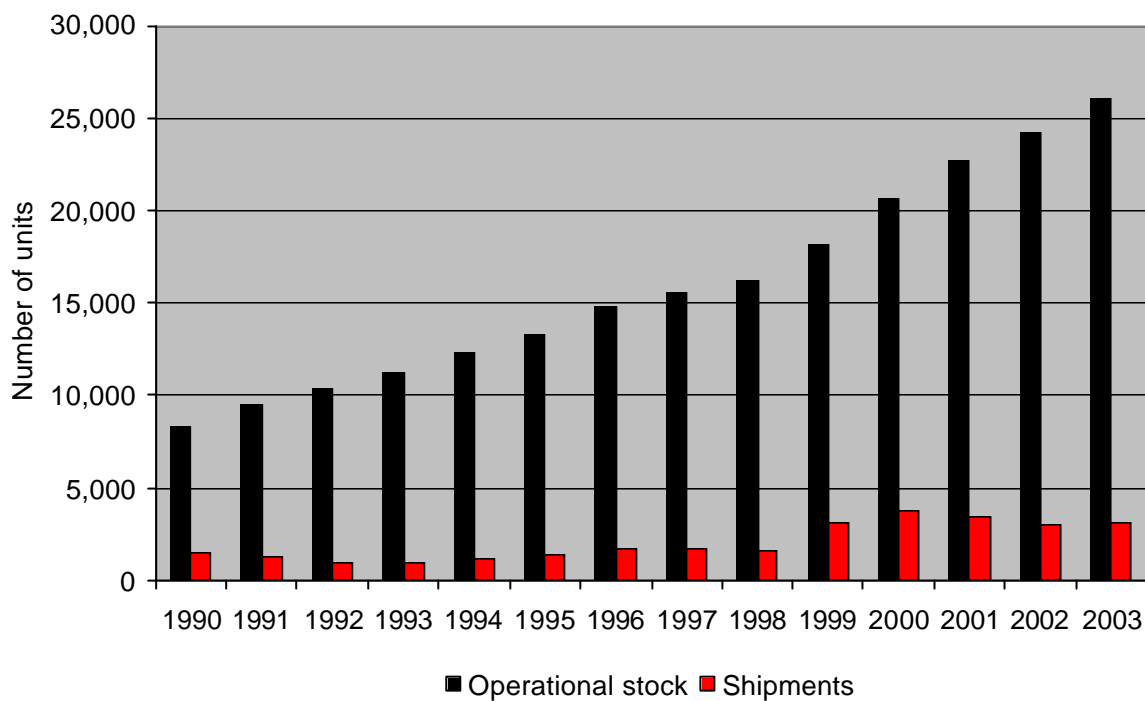
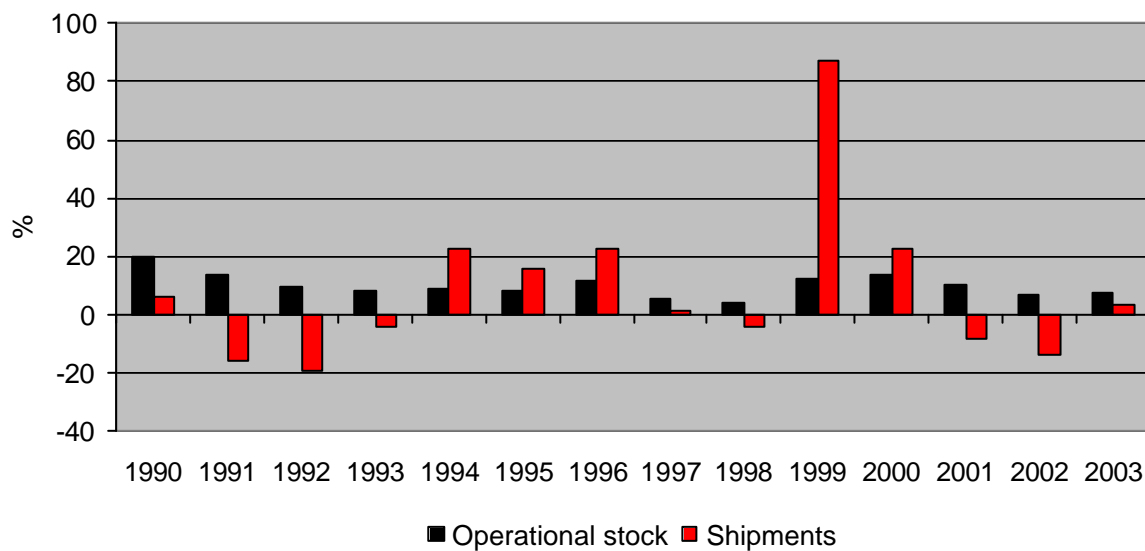


Figure 1b. Yearly percentage change in estimated operational stock and in shipments



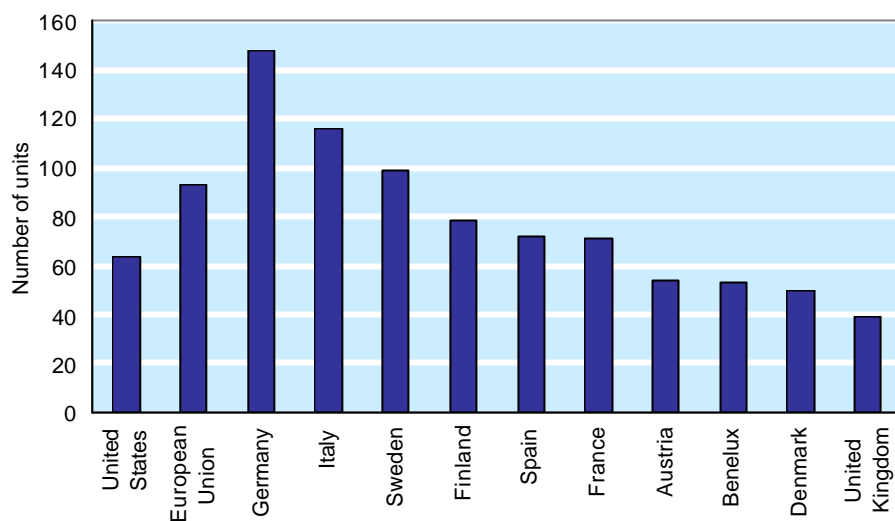
	2003
Japan a/	322
Rep. of Korea b/	138
<b>United States</b>	<b>63</b>
<b>European Union</b>	<b>93</b>
Germany	148
Italy	116
Sweden	99
Finland	78
Spain	72
France	71
Austria	54
Benelux	53
Denmark	50
United Kingdom	39
Australia	36
Norway	24
Portugal	15
Czech Rep. a/	12

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 2003



	2001	2003
France	720	910
Germany	760	1,000
Italy	1,040	1,400
Japan	1,300	1,400
Spain	650	800
Sweden	560	560
United Kingdom	580	660
United States	640	740

Sources: UNECE and IFR.

Figure 3 Number of robots per 10,000 production workers in the motor vehicle industry, 2001 and 2003

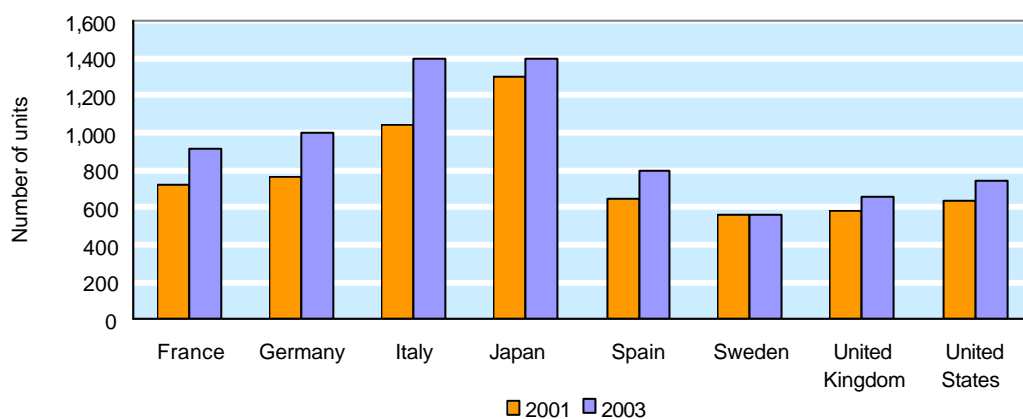
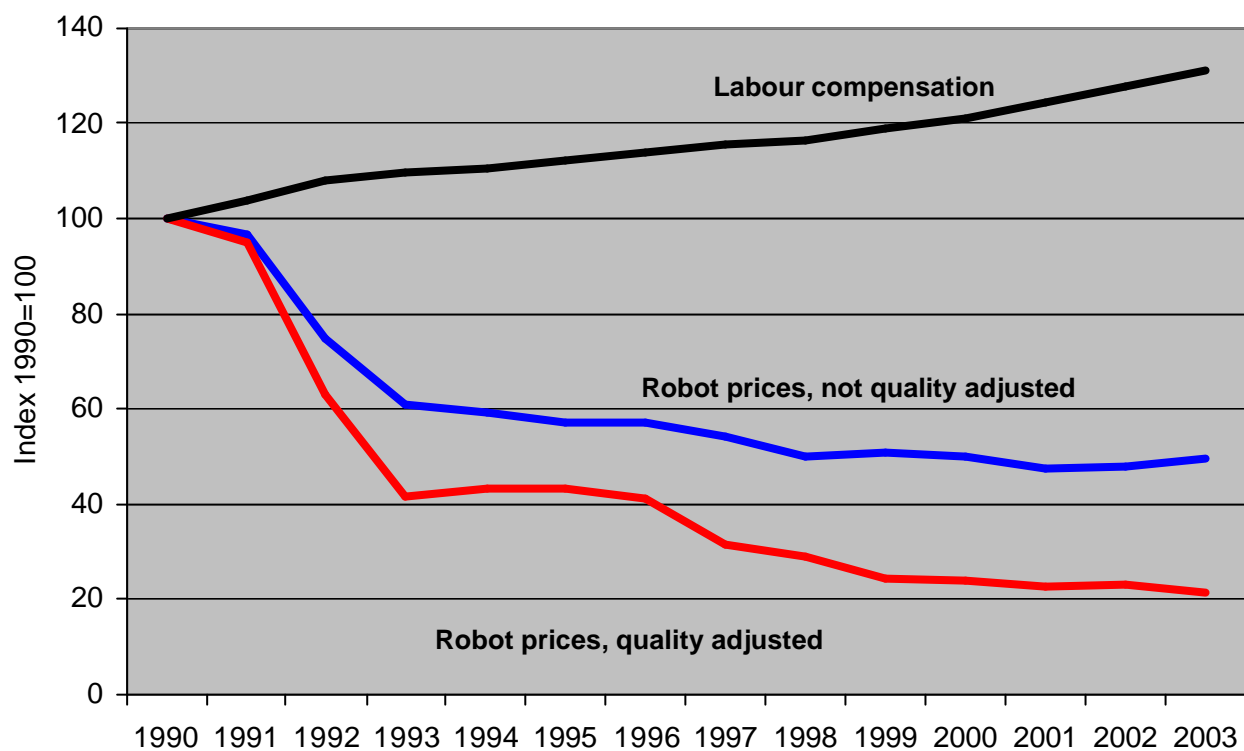
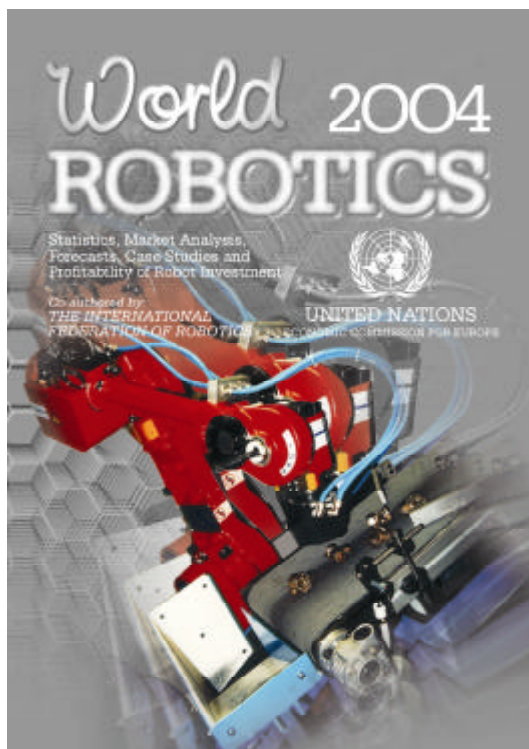


Figure 4.  
Price index of industrial robots in France, with and without quality adjustment.  
Index of labour compensation in the French business sector



The publication **World Robotics 2004 – Statistics, Market Analysis, Forecasts, Case Studies and Profitability of Robot Investment** is available, quoting Sales No. GV.E.04.0.20 or ISBN No. 92-1-101084-5, through the usual United Nations sales agents in various countries or from the United Nations Office at Geneva (see address below), priced at US\$ 150:



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