

**UNECE**United Nations Economic Commission for Europe

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Robot investment in France in 2001 was the second highest ever recorded

Investment projected to grow at an annual rate of 10% in 2002-2005

In 2000, sales of industrial robots in France skyrocketed to almost 3,800 units, up 23% compared with 1999. It was 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, the second highest investment level ever recorded (see figure 1).

The growth in both 1999 and 2000 was, however, to a very large extent explained by booming robot investment in the automotive industry. This branch, together with other transport equipment industries, increased investment by a hefty 184% between 1998 and 1999 while all the other robot-using industries taken together increased their combined investment by only 5%. This trend continued in 2000, albeit less pronounced. The transport equipment industry was up 29% compared with 9% for all other branches taken together.

For the period 2002-2005, robot investment in France is projected to grow at an annual average rate of 10%, resulting in some 5,100 robots to be installed in 2005.

Total accumulated annual sales of robots reached about 29,800 units at the end of 2001. The stock of robots in actual operation was estimated at about 22,750 units, an increase of 10% over the 2000 stock. By the end of 2005, the stock is projected to have increased to almost 36,000 units.

Large enterprises dominate the use of robots

Large firms dominate the use of industrial robots. In 2001, firms with more than 1,000 employees accounted for 66% of total robot use and for as many as 73% of the new installations in the same year.

Firms with fewer than 300 employees only accounted for just under 18% of the total robot stock in 2001. In the same year they received 14% of total robot sales.

The robot density in France ahead of United Kingdom but behind Germany...

For every 10,000 persons employed in the French manufacturing industry at the end of 2001, there were 63 industrial robots, which makes the French robot density 80% higher than that of the United Kingdom but well behind Germany, which had 127 units per 10,000 persons employed (see figure 2). In the French motor vehicle industry there are as many as 540 robots per 10,000 production workers.

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

Between 1990 and 2001, prices of industrial robots fell from index 100 to 47, without taking into account that robots installed in 2001 had a much higher performance than those installed in 1990 (see figure 3). If quality changes had been taken into account, it was estimated that the index would have fallen to 21. In other words, an average robot sold in 2001 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.

In the same time, the index of labour compensation in the French business sector increased from 100 to 128. This implies that the relative prices of robots fell from 100 in 1990 to 36 in 2001 without quality adjustment, and to 16 when taking quality improvements into account.

How much do the robots cost?

All but 3% of the robots sold in France in 2001 were priced at more than FF 200,000. Robots in the price range of FF 200,000 to 350,000 made up 55% of the 2001 supply. Robots in the price range of FF 350,000 to 500,000 had a share of 40%, up from 32% in 2000. The share of robots priced at more than FF 500,000 was fairly stable at about 2% in the period 1997-2001, 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 42% in 2001. In that year, over 9,500 welding robots were estimated to be in operation in France. In 2001, the stock of welding robots increased by 17%, compared with 6% for all other robot applications.

Material handling with 14%, plastic moulding 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 2001.

Motor vehicles in the forefront

The motor vehicle industry is by far the largest robot user in France. In 2001, it surged to a record 61% of the total operational stock of robots in France. At the end of 2001, the motor vehicle industry had an estimated 13,900 robots in operation.

The chemical industry was the second largest user branch, accounting for 14% of the 2001 robot stock, followed by the machinery and equipment industry with 7%. It is somewhat surprising that the electrical machinery industry and the food industry have relatively few robot installations, each accounting for only about 4% and 3%, respectively, of the total stock.

<p>For the global development of industrial robots and service robots, see a parallel press release (ECE/STAT/02/01) issued on the same day as the present one.</p>

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

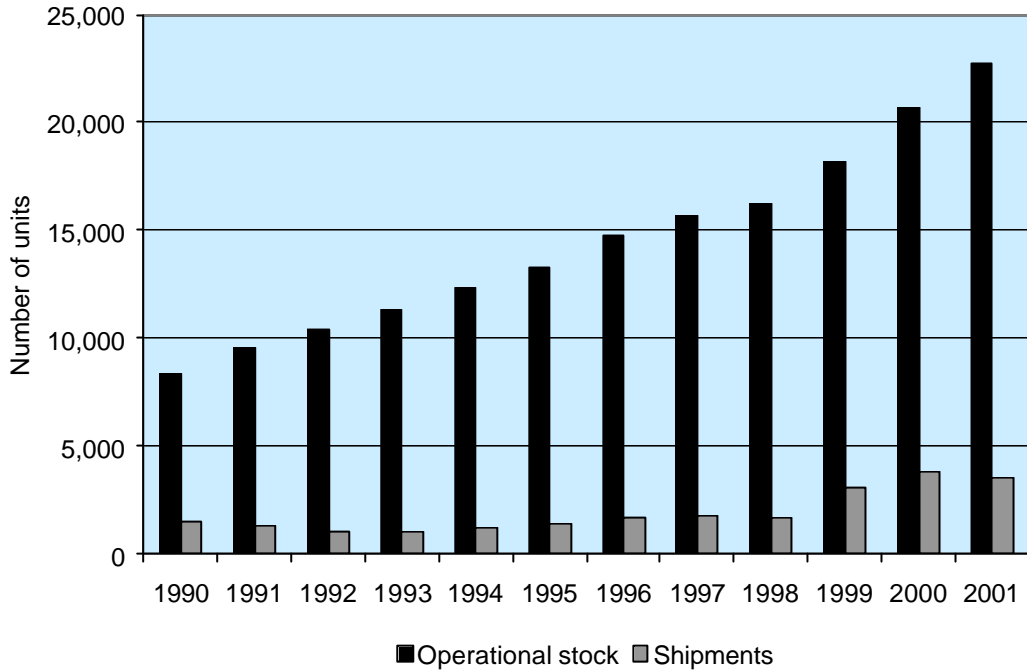
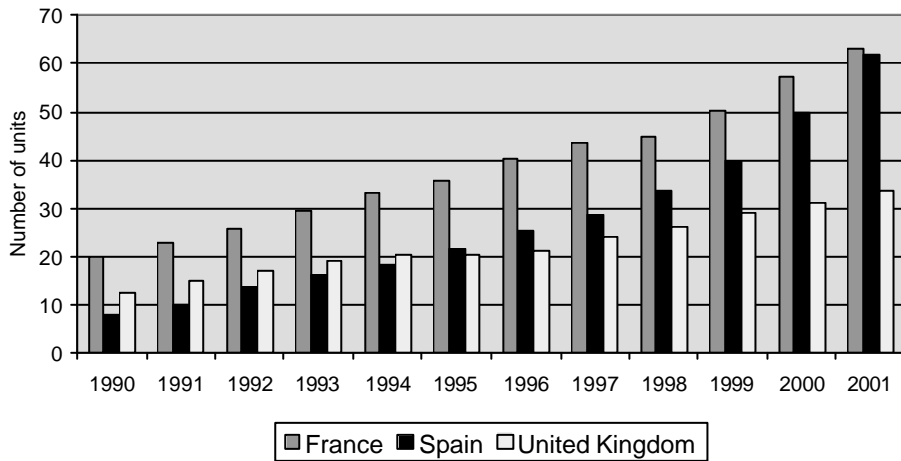
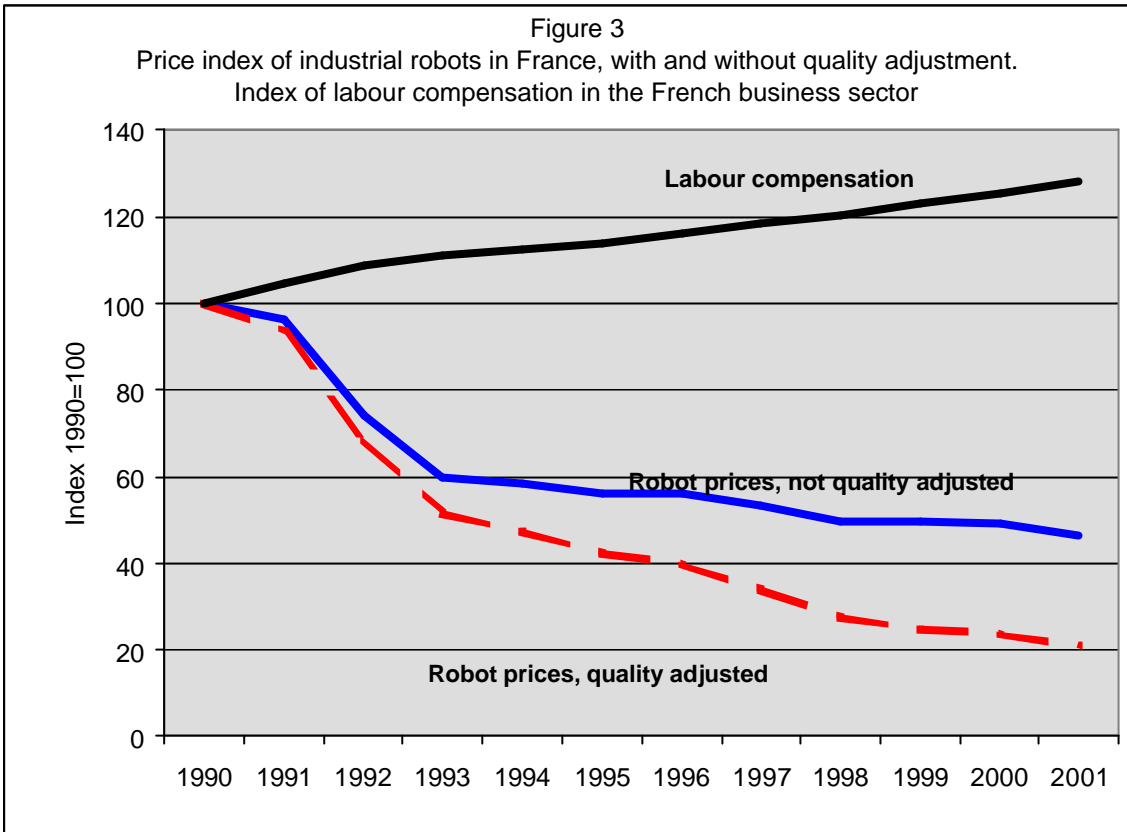
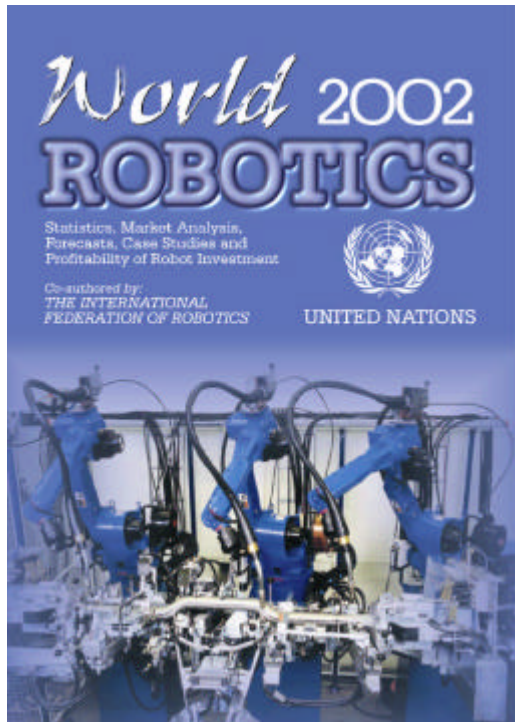


Figure 2. Number of multipurpose industrial robots per 10,000 employees in the manufacturing industry (ISIC rev.3: D)





The publication **World Robotics 2002 - Statistics, Market Analysis, Forecasts, Case Studies and Profitability of Robot Investment** is available, quoting Sales No. GV.E.02.0.8 or ISBN No. 92-1-101047-0, through the usual United Nations sales agents in various countries or from the United Nations Office at Geneva (see address below), priced at US\$ 120:



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Sales and Marketing Section
Palais des Nations
CH - 1211 Geneva 10, Switzerland

Phone: +41(0)22 917 26 06 / 26 13
Fax: +41(0)22 917 00 27
E-mail: unpubli@unog.ch

For more information about the publication, please contact:

Mr. Jan Karlsson
Statistical Division
United Nations Economic Commission
for Europe (UNECE)
Palais des Nations
CH - 1211 Geneva 10, Switzerland

or: International Federation of Robotics (IFR)
Box 5506
S - 114 85 Stockholm
Sweden

Phone: +41(0)22 917 32 85
Fax: +41(0)22 917 00 40
E-mail: jan.karlsson@unece.org

Phone: (+ 46 8) 782 08 43
Fax: (+ 46 8) 660 33 78
E-mail: ifr@vi.se