

BUDGET, TREASURY AND PLANNING COMMITTEE
CHAMBER OF DEPUTIES

Restoring competitiveness and Italian economic growth

Testimony of the Governor of the Bank of Italy
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Rome, 27 June 2000

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The Italian economy grew at an average annual rate of 1.4 per cent in the nineties, as against 2.4 per cent in the eighties and 3.6 per cent in the seventies. In the fifties and sixties it had grown at an average annual rate of more than 6 per cent. The slowdown in the last decade affected other industrial countries, but it was more pronounced in Italy.

In the nineties Italy accumulated a GDP growth shortfall of about 7 percentage points with respect to the other euro-area countries, equivalent in the long run to about 1.4 million jobs. The gap is much wider with respect to the industrial countries as a whole.

The fiscal adjustment required to enable Italy to participate in the single currency affected households' disposable income; this expanded at an annual average rate of only 1.2 per cent in the nineties, thus curbing the growth in private consumption.

In the last few years Italy's competitiveness has been seriously eroded. From the time the lira rejoined the European exchange rate mechanism at the end of 1996, Italy's poor trade performance has knocked nearly 3 percentage points off the growth in its GDP.

The slower growth of the economy is attributable to the inadequate response of supply. In fact domestic demand increased in line with that of the other euro-area countries. Between the end of 1995 and the end of 1999 industrial production expanded by 4.4 per cent in Italy, as against 13 per cent in the other euro-area countries.

The depreciation of the lira in the early nineties presumably caused exporting industries to relax their efforts. The necessary step-up in the quantity and quality of investment was not made; it is only in the last few years that the pace of capital spending has quickened, spurred by tax incentives.

Last year produced increasing evidence of a robust recovery in economic activity in all the major European economies, fueled by the growth in exports in response to the expansion in world trade and the depreciation of the euro. In the second half of 1999 and the first quarter of this year annualized GDP growth rates have been over 3 per cent. Nonetheless, the outlook appears less favourable for Italy than for its main European partners.

Foreign trade

Italy's loss of competitiveness is reflected in the wide gap between the growth in its exports and the expansion of world trade, on the one hand, and in the increased elasticity of imports with respect to demand, on the other.

In the four years from 1996 to 1999, Italian exports grew by 10 per cent, world trade in goods and services by 28 per cent. While aggregate domestic and foreign demand increased by 9 per cent in Italy, imports grew by 24 per cent, with an elasticity of nearly 3. In the other euro-area countries exports grew by 31 per cent, aggregate demand by 14 per cent and imports by 31 per cent, with an elasticity of just over 2.

The disparities remain large even if the period considered is extended to the last five years by including 1995: world trade grew by 39 per cent, Italian exports by 24 per cent and those of the other euro-area countries by 41 per cent.

Looking at the trends of goods exports over the last fifteen years, one observes a slow decline in the role of the industrial countries, especially the largest, faced with the competition of the newly-industrialized Asian countries. Italy's merchandise exports held up well until the mid-nineties, but have languished in the last few years: the country's share of world exports fell sharply from an average of 4.7 per cent between 1986 and 1995 to 4.1 per cent last year, the largest decline recorded by any industrial country.

Price and cost competitiveness

The index of competitiveness based on producer prices clearly reveals the ups and downs of Italy's competitiveness in the last thirty years.

The movements in the index with respect to the other euro-area countries are particularly significant. In the seventies, until the inception of the European Monetary System in 1979, the index shows a series of improvements, which were entirely due to the periodic devaluations of the lira. From 1979 until the dramatic correction in 1992, there was a steady loss of competitiveness, on the order of 20 per cent; this was undoubtedly a stimulus to the modernization of Italian industry that took place in the eighties. After the devaluation of the lira in September 1992, the index of competitiveness returned to its 1979 level. Subsequently, the index fluctuated with the exchange rate. Since the lira rejoined the European exchange rate mechanism at the end of 1996, there has been a loss of competitiveness of about 5 percentage points; since 1993 there has been an erosion of 7.3 points.

In 1999 the index of competitiveness with respect to all of Italy's main trading partners was down by 2.3 per cent compared with 1993. Over the same period the competitiveness of French and German industry improved by respectively 8 and 7 per cent.

The index of competitiveness based on labour costs shows wider fluctuations than that based on prices.

Unit labour costs account for about half of total unit variable costs; they are an indicator of national competitiveness, since the costs of other inputs — raw materials, energy, basic intermediate goods and to some extent investment goods as well — tend to differ less across countries.

After worsening by 20 percentage points between 1979 and 1992, in 1993 the index of cost competitiveness returned to its value at the beginning of the period; in 1996 it was still close to that level. From then until the end of 1999 Italy's cost competitiveness with respect to the rest of the euro area deteriorated by around 14 percentage points.

The loss of competitiveness in the last four years, during which the exchange rate has been fixed, amounted to 17 percentage points with respect to both France and Germany and was primarily due to slower growth in productivity.

Industrial specialization

Rather than diminishing between 1988 and 1997, the differences between the industrial specializations of the European countries increased. In the euro area two patterns can be observed: French and German exports are concentrated in medium and high-tech products requiring a larger proportion of skilled labour; those of Italy and Spain mainly consist of traditional products with a lower level of technology.

Looking further afield, Italy's specialization is similar to those of some newly-industrialized Asian economies and countries in Central and Eastern Europe; it diverges very considerably from those of the United States and Japan.

Europe as a whole is lagging behind the other main industrial economies.

In 1997 the share of high-tech goods in exports of manufactures was 16 per cent in Europe, as against 29 per cent in Japan and 28 per cent in the United States. Patent office data suggest that the gap appears especially wide in emerging high-tech sectors.

The international comparison is particularly unfavourable to Italy: in 1997 the share of high-tech goods in Italian exports of manufactures was only 8.5 per cent.

At least until the mid-nineties there were signs of an improvement in the specialization of Italy's exports, but competition from the newly-industrialized countries is now intensifying.

Between 1990 and 1997 world demand for traditional Italian products — such as textiles and clothing, leather and footwear, furniture, metal products, and agricultural and industrial machinery — rose by 37 per cent, as against an increase of 64 per cent in that for goods with a higher technological content. Over the same period demand for office machinery and precision instruments grew by 85 per cent.

The high price elasticity of Italy's exports is also a consequence of the shortcomings of its marketing structures abroad.

The Italian economy in the nineties

Between 1990 and 1999 labour productivity in Italy improved at an average annual rate of 1.4 per cent in the economy as a whole, compared with 2.2 per cent between 1983 and 1989.

The slowdown in productivity growth is primarily attributable to the performance of industry. Between 1996 and 1999 productivity in manufacturing increased at an annual rate of 0.7 per cent, compared with 4 per cent in Germany and 3.2 per cent in France.

The rate of productivity growth in the service sector rose from 1.5 per cent between 1983 and 1989 to 2.0 per cent in the nineties, partly as a result of liberalization.

The conversion of the advanced economies to the production of services continued in the nineties, reflecting factors on the demand side, such as the emergence of new patterns of consumption associated with demographic change, and the supply side, such as technological innovation and organizational change. The United Kingdom and the United States had seen the service sector begin to gain in importance in the sixties; the other industrial economies made up much of the ground during the seventies and eighties.

In the nineties, owing to restructuring in the distribution sector and public-sector enterprises and the slowdown in the growth of government employment, the proportion of employment in services increased more slowly in Italy than in the other countries. However, business and household services continued to expand rapidly. In 1998 the service sector accounted for 61.4 per cent of employment in Italy, similar to the proportion in Germany and Japan but with a widening gap vis-à-vis France and the United Kingdom, where its share was around 70 per cent, and the United States, where the figure was 74 per cent.

According to Eurostat data, the modernization of services in Italy continued to lag in the mid-nineties: value added per employee was among the lowest in Europe.

The most recent intermediate census of industry indicates that between 1991 and 1996 the number of firms in Italy increased by 12.8 per cent. This figure lends itself to different interpretations. Net enterprise creation increased both in expanding sectors, such as financial services, equipment leasing, information technology, research and business activities, and in construction, where the rise was due to the progressive fragmentation of the industry. The number of firms declined in manufacturing and, among services, in hotels and restaurants, wholesale and retail trade and repairs.

After peaking in the sixties, average firm size began to decline in all the industrial countries. In Italy, the proportion of employment in manufacturing firms with more than 500 employees fell by half between the early seventies and the mid-nineties, from 31 to 15 per cent; in France it decreased from 55 per cent in 1977 to 43 per cent in 1994. The decline was smaller in the United States and the United Kingdom and negligible in Germany.

Worldwide, the decline in the average size of large firms reflects technological factors related to the growing use of information technology, which has made it easier to coordinate separate units, reducing the importance of achieving economies of scale within the firm.

In Italy, the share of workers in small firms is higher than the European average in nearly every sector. A study of the size distribution of firms in the main sectors of the European economies in the mid-nineties shows that this characteristic of Italy cannot be explained by differences in sectoral specialization.

Germany and the United Kingdom have larger-than-average firms; the opposite is the case in Spain and Italy. There are also pronounced differences within sectors: the average size of Italian textile firms is half the European average and about one fourth that in Germany.

The tendency of Italy's productive structure to remain highly fragmented has been accompanied by the development of industrial districts, which generate large external economies that partly offset the disadvantages of small firm size.

The predominance of small firms in all productive sectors reflects the impact of the specific institutional characteristics of the Italian economy.

The difficulty Italian enterprises have in growing is a result of a number of factors. Staying small enables firms to reduce the burden of tax and social security charges and to avoid the administrative and legal rigidities that govern the factor market.

The Bank of Italy's 1999 survey of investment (whose findings may in part reflect cyclical factors) shows that nearly half of manufacturing firms with at least 50 employees had recently considered expansion. The proportion was smaller in textiles, clothing, leather and footwear.

Only 32 per cent of the firms that had considered expansion fully implemented their plans. In addition to weaker demand, firms cited the risk of redundant staff, rigidities in the use of labour, difficulties in finding qualified workers and delays in the construction of planned public infrastructure as reasons for incomplete implementation.

In addition to the small size of industrial firms, Italy's economy is characterized by an excessively large proportion of self-employment compared with the other industrial countries.

The traditionally high share of self-employment in Italy rose further, from 22.7 per cent in 1978 to 25.8 per cent in 1990, before leveling off largely as a result of restructuring in wholesale and retail trade. Among European countries, only Greece has a higher incidence of self-employment, at 32.6 per cent. In Germany the share is 9.9 per cent, in France 8.2 per cent.

The underground economy, populated by firms that presumably evade tax and labour laws, is abnormally large in Italy. The increase in the burden of taxes and social security contributions has been accompanied by an expansion of the grey economy, whose share of employment rose from 13.4 per cent in 1992 to 15.1 per cent in 1998. This represents an increase in irregular labour from 3,150,000 to around 3,450,000 equivalent full-time workers.

Innovation in firms

The link between innovation and growth emerged clearly during the nineties, a decade characterized by sweeping technological change driven by advances in information and communication technology.

Italy has a lower propensity to invest in research and development than the majority of industrial countries. In 1998 R&D spending was equal to 1.03 per cent of GDP in Italy, compared with 2.32 per cent in Germany, 2.20 per cent in France, 2.77 per cent in the United States and 2.91 per cent in Japan. Italy's share of patent applications submitted to the European Patent Office has been increasing but is still far smaller than those of Germany, France and the United Kingdom.

Size is a key factor in innovation: the proportion of firms developing innovations rises from 46 per cent of those with between 20 and 49 employees to 82 per cent of those with more than 500 employees. In 1997, about 78 per cent of in-house R&D in Italy was conducted by firms with at least 500 employees, compared with 2.5 per cent for firms with fewer than 50.

The existence of a causal link between company size, innovation and productivity has been investigated in an econometric study by the Bank's Research Department. The findings show a positive correlation between sectoral productivity growth and average firm size.

The obstacles to growth and, more generally, the competitive difficulties of Italian firms are also connected with the regulatory environment and the slowness of liberalization in many sectors, especially in services.

The large number of administrative formalities is the result of overlapping regulations that often serve different purposes and are produced by different levels of government that are not always adequately coordinated.

The average time needed to complete the bureaucratic requirements to start up a business depends on the efficiency of the offices involved and the number of formalities. Recent ISAE figures show that the process is very long in Italy, Spain and Germany, fairly long in the Netherlands and France and shortest in the United States, the United Kingdom and Ireland.

Additional costs arise from the complexity of regulations and relations with government departments as well as the burden imposed by the lengthiness and uncertainty of procedures for settling disputes between private parties and between the latter and the State.

In location decisions and the creation and growth of firms, countries whose economic law is framed for efficiency and competitiveness and thus better answers the modern industrial economy's need for flexibility will have an advantage.

A reform of company law is necessary that will promote autonomy of company bylaws, introduce forms of incorporation that are suitable for small firms and simplify procedures. The Government's recent bill adopting the recommendations of the Mirone Committee is a step in this direction. Equally urgent is a reform of bankruptcy law aimed at preserving the value of firms in difficulty, possibly by means of their transfer to third parties.

The competitiveness of Italian firms depends to a material extent on the cost of services, especially those closely related to industrial activity, such as transportation, communications, energy, water supply and professional services.

The new economy in the United States

Until the mid-nineties the growth rate of the US economy held at around 3 per cent; for many years it showed no response to the rise in spending on technologically advanced goods that began in the eighties.

The picture changed notably in the second half of the nineties. The US economy achieved exceptional results, decidedly better than those recorded in Europe. Since 1996 it has grown at an annual rate of 4.1 per cent, compared with 2.2 per cent in the countries of the euro area. The unemployment rate in the United States has fallen sharply and today is fluctuating around 4 per cent; in Europe, notwithstanding recent gains, it is still above 9 per cent.

Compared with those of 1961-69 and 1982-89, the current expansion, which began in 1991, is distinguished in the first place by the acceleration in labour productivity in the advanced part of the cycle. In addition, the growth of productivity in manufacturing has been particularly rapid, above all in durable goods industries. The current expansion is also characterized by the large fall in the prices of information technology goods compared with those of consumer goods, which has been crucial to their spread.

The positive results that the US economy has achieved rest on the large gain in productivity.

In the non-farm private sector, which represents around 80 per cent of the economy, the annual rate of increase in hourly labour productivity rose by about 1 percentage point between the first and second halves of the nineties: from 1.6 per cent up to 1995 to 2.5 per cent thereafter.

Not all of the gain in hourly labour productivity has come from the advances in the sectors supplying information technology goods; some of it is also due to the diffusion of these goods in other productive sectors; the process is tending to involve the whole economy.

A critical mass of high-tech capital goods was reached as a result of major investment in the nineties. The context for such investment was propitious. Essential ingredients were: flexibility in the use of productive factors; substantial flows of immigration, on the order of 800,000 a year, which restrained the growth in wages for unskilled workers; a budgetary policy aimed at fostering the expansion of supply by directly or indirectly allocating substantial resources to basic research; public policies designed to foster competition and the widest possible distribution of the benefits of the new technologies.

Firms' capital spending increased by 10 per cent a year in the nineties; IT equipment accounts for 42 per cent of the total nowadays, compared with 12 per cent in the early eighties.

By connecting businesses on-line, these capital goods have enabled firms to change their procedures both for purchasing from suppliers and for selling their own products. The computerized management of sales and inventories has brought cost savings, especially in large-scale distribution. Competition has increased, with further beneficial effects on prices. Finally, the average size of large firms has diminished in conjunction with more clear-cut specialization in the various phases of the chain of production.

The restructuring of relationships between firms and between sectors has raised the productivity of the entire economy.

The growth and the globalization of world trade in goods and services have contributed to the positive results of the US economy, whose response to this stepped-up competition has consisted not only in the marked advance in productivity but also in greater specialization in the production of high-tech goods.

US growth has been facilitated by a macroeconomic framework free of cogent balance-of-payments constraints and by the abundance of liquidity.

The new techniques in microelectronics, information technology and telecommunications are general-purpose, with a vast range of potential applications in all sectors of the economy, and complementary, i.e. combinable with existing technologies.

It is not yet possible to determine whether the step-up in productivity growth is temporary or permanent. Some observers maintain that it reflects deep-going change in the structure of the US economy, while others contend that it is simply a protracted phase of rapid increase that will be followed before long by reversion to more modest productivity gains.

In any event, the increase in productivity in the United States is likely to be sufficiently long-lasting; international experts have revised the US economy's potential rate of growth upwards from 2.5 to somewhere between 3.5 and 4 per cent a year.

A new phase of development

The importance to economic development of innovations, of their application to the production process and to the entire economy, is evident.

The spread of innovation is usually slow. With the technological frontier now accessible to all countries and all industries, competition is intensifying; private returns to investment in research and development are decreasing, but the social return is increasing. Cooperative solutions and suitable policies are necessary to widespread adoption of the new technologies throughout the economy.

The new technological regime requires well-prepared human capital. The introduction, use and improvement of the new technologies is possible only if appropriately qualified workers, technicians and researchers are available.

Parallels with past experience are to be found, but also differences. When, in the fifties, Italy and other European countries imported US methods of work organization and new products and models of consumption, they introduced mass production based on the segmentation of tasks. This required above all an effort of industrial reorganization.

The deterioration in our export competitiveness in world markets must be halted.

The new computer-based technologies have radically changed the types of workers the economy requires. As in the past, strategic and organizational innovations are needed, but so are higher skill levels and the ability to work with the new information and communications instruments.

Human capital is the key factor in development, especially in this period of market globalization and technological change. Closer coordination between scientific and technological activities, between research centres, universities and industry, is needed. Large parts of the population, those lacking sufficient education, risk exclusion. Italian educational levels are still lower than those of the other industrial countries.

Only 30 per cent of the Italian population between the ages of 25 and 64 were secondary school graduates in 1996, compared with 60 per cent in Germany, 55 per cent in the United Kingdom, 52 per cent in the United States and 44 per cent in France. In that same age group, 62 per cent of Italians had not finished upper secondary school, while 86 per cent of Americans, 82 per cent of Germans, 77 per cent of British and 60 per cent of French had a secondary or higher degree.

Moreover, Italy turns out disproportionately few university students in the sciences and technology: just 16 per cent of all graduates in 1995, as against 31 per cent in France and 38 per cent in Germany.

A pool of skilled labour is an indispensable condition for improving product quality and triggering technological innovation.

A revision of school curricula increasing the level of instruction in mathematics, the sciences and computer science is desirable. Nor, in a time of epoch-making change, can we do without suitable, thorough training in economics and the humanities.

The guidelines for economic policy have already been set out. They consist in vigorous measures for technological investment and R&D activities and completion of the liberalization of the product and factor markets.

Public intervention must be rethought with a view to easing the fiscal burden, reducing current expenditure and relaunching infrastructural investment. A more efficient system of justice and higher quality in education must be ensured. The modernization of economic law and of labour legislation is urgent.

There must be no delay in improving the efficiency of administration, so as to enable the country to seize the new economic opportunities.

The advent of the new technological paradigm based on microelectronics and information technology necessitates more dedicated inquiry to identify all its possibilities.

For Italy, a strategy of catch-up and emulation is feasible. It will require considerable ability to reorganize the entire administrative system and the economy.

The scenario of advancing international integration and technological progress makes the traditional distinction between industrial and service products obsolete. There is increasing interaction between the two sectors. To gain market shares, firms

must expand the services connected with the sale of manufactured products. The distinction between internationally exposed and sheltered markets is fading.

The pressure of competition is mounting and now involves entire national systems, including the government apparatus. The quality of local administrations is a crucial competitive factor for the goods and services produced in any given area.

In this new context, competitiveness depends above all on cumulative innovation in industry, in the services, and in government. A major advantage derives from the ability to capitalize on the network externalities that the new technology makes available.

If, instead, investment is directed solely to reproducing the existing model of organization, it will ultimately narrow the productive base and keep productivity at levels inadequate to respond to the competition. In the end, this will mean a contraction of employment.

A technological leap is needed, a new start required.

Italy's shortcomings in the productive and competitive capabilities needed to keep pace with European and, even more, global economic development call for structural measures.

Such measures can only bear fruit in the medium term, but they must be put in place rapidly with appropriate legislative and regulatory instruments.

In Italy as in the rest of Europe, the cyclical upswing is export-led. GDP growth in Italy is significantly faster than in recent years but remains slower than the European average. At the same time, inflationary pressures are stronger.

The expansion makes it easier to tackle the structural problems without delay; it makes it possible to increase investment in the new technologies. In the other major industrial countries the determination to intervene is resolute.

Prompt action on the part of the public sector will result in improved expectations, curbing inflationary impulses and increasing the private sector's propensity to invest.

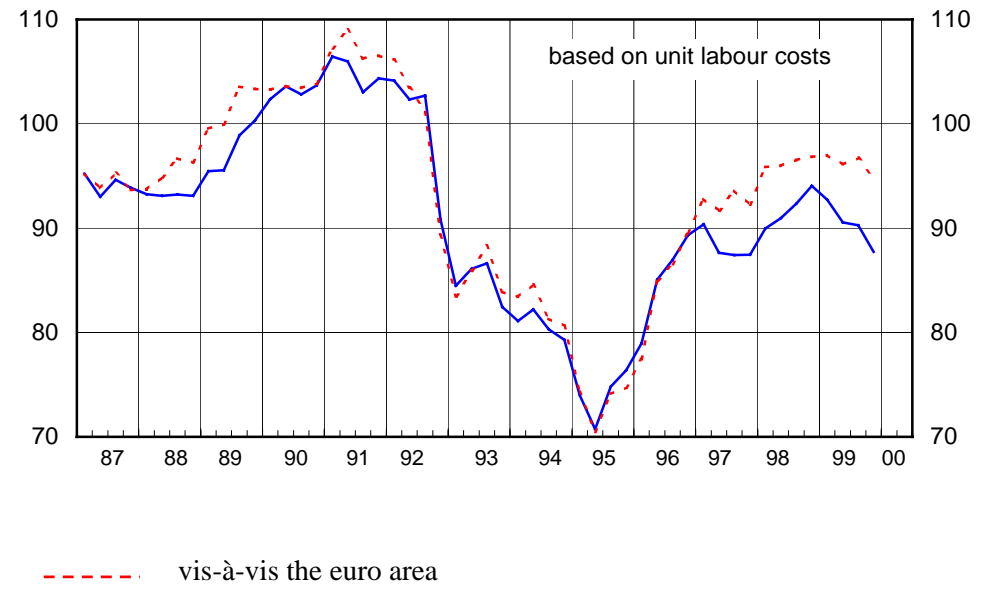
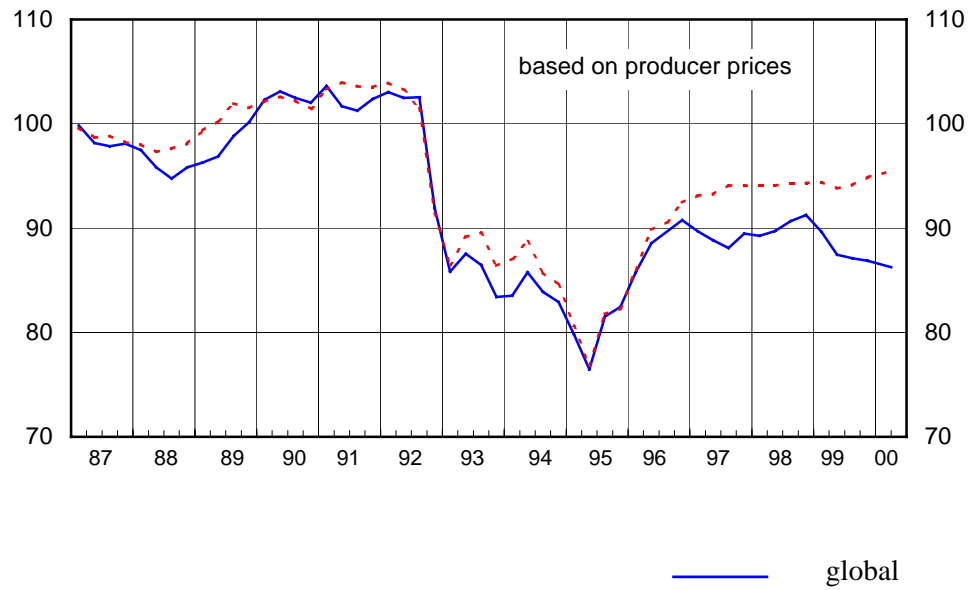
If we respond to the challenges of globalization, the cyclical upturn can be turned into a new phase of development for the Italian economy, with the creation of stable forms of employment in modern industries open to international competition.

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Figure 1

ITALIAN INDICATORS OF COMPETITIVENESS (1)
(indices, 1992 = 100)



Sources: Based on ISTAT, OECD and IMF data and national statistics.
(1) Quarterly data. An increase indicates a loss of competitiveness.

Table 1

INDICATORS OF COMPETITIVENESS OF SELECTED INDUSTRIAL COUNTRIES
(average data; indices, 1993 = 100)

	United States	Japan	Germany	France	Italy	United Kingdom	Canada	Netherlands	Belgium	Switzerland
Indicators of competitiveness: producer prices (1)										
1990	102.6	77.6	95.8	103.3	119.4	104.3	111.7	103.8	104.3	103.1
1991	100.1	83.6	95.0	99.0	119.1	108.8	111.0	101.3	101.0	100.6
1992	98.0	86.1	98.7	100.5	116.5	107.1	103.8	101.3	102.1	98.5
1993	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1994	98.2	103.7	99.2	99.3	97.9	101.2	98.1	99.4	102.0	104.4
1995	96.7	104.0	103.6	101.3	93.3	97.5	100.4	103.2	105.9	108.4
1996	100.1	87.5	100.3	99.4	103.3	101.2	101.0	101.9	103.7	103.9
1997	105.0	83.0	94.8	94.7	103.7	117.1	101.4	98.1	99.6	95.5
1998	108.6	79.6	96.2	95.3	105.1	123.7	97.6	97.0	99.4	97.4
1999	107.0	90.2	92.7	92.1	102.3	124.2	97.5	95.0	97.8	95.1

Sources: Based on IMF and OECD data and national statistics.

(1) An increase indicates a loss of competitiveness.

**UNIT LABOUR COSTS AND THEIR COMPONENTS
IN MANUFACTURING INDUSTRY IN MAIN EURO-AREA COUNTRIES**

(a) Percentage change in the period indicated

	ITALY			GERMANY			FRANCE		
	Labour costs per employee	Labour productivity	Unit labour costs	Labour costs per employee	Labour productivity	Unit labour costs	Labour costs per employee	Labour productivity	Unit labour costs
1991-99	54.0	20.7	27.6	45.0	30.2	11.4	28.4	38.2	-7.2
1992-99	40.3	18.7	17.9	36.3	26.5	7.8	20.9	33.3	-9.4
1993-99	31.5	13.8	15.5	29.6	28.9	0.6	16.3	29.2	-10.1
1995-99	21.1	6.7	13.1	16.1	19.4	-2.8	10.8	19.1	-7.1
1996-99	15.7	3.0	12.1	10.1	15.9	-5.0	8.1	12.9	-4.4

(b) Differentials between Italy and the countries indicated (percentage points)

	Unit labour costs		Labour productivity		Labour costs per employee	
	GERMANY	FRANCE	GERMANY	FRANCE	GERMANY	FRANCE
1991-99	16.2	34.8	-9.5	-17.5	9.0	25.6
1992-99	10.1	27.3	-7.8	-14.6	4.0	19.4
1993-99	14.9	25.6	-15.1	-15.4	1.9	15.2
1995-99	15.9	20.2	-12.7	-12.4	5.0	10.3
1996-99	17.1	16.5	-12.9	-9.9	5.6	7.6

Sources: For Italy, Istat; for Germany and France, OECD.

Table 3

WORLD TRADE AND EXPORTS OF GOODS AND SERVICES IN THE LEADING INDUSTRIAL COUNTRIES
(at constant prices; percentage changes)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
World trade	5.6	4.6	4.7	3.8	9.0	9.1	6.7	9.7	4.2	4.6
Exports										
United States	8.7	6.5	6.2	3.3	8.9	10.3	8.2	12.5	2.2	3.8
Japan	6.9	5.2	4.9	1.3	4.5	5.4	6.2	11.6	-2.5	1.9
Euro area			3.2	0.4	8.6	7.8	4.3	10.3	6.9	4.4
- Germany			-0.8	-5.5	7.6	5.7	5.1	10.9	7.0	4.2
- France	4.8	5.9	5.4	0.0	7.7	7.7	3.5	11.8	7.8	3.7
- Italy	7.5	-1.4	7.3	9.0	9.8	12.6	0.6	6.5	3.3	-0.4
- Spain (1)	3.2	7.9	7.4	8.5	16.7	10.0	10.3	15.1	7.1	8.5

Sources: IMF, OECD and national statistics.

(1) For years before 1996, OECD estimates.

**DEGREE OF SIMILARITY OF EXPORTS SPECIALIZATION
BETWEEN ITALY AND 23 COUNTRIES IN 1994**

	Coefficients (1)
Taiwan	0.44
Thailand	0.40
Romania	0.40
Czech Republic	0.36
Hungary	0.35
Poland	0.29
Brazil	0.27
Hong Kong	0.27
Bulgaria	0.26
Indonesia	0.26
Korea	0.20
Spain	0.20
China	0.17
Philippines	0.14
Argentina	0.13
Mexico	-0.09
Germany	-0.09
United Kingdom	-0.14
France	-0.16
Malaysia	-0.24
Singapore	-0.33
United States	-0.40
Japan	-0.40

Source: Centro Studi Confindustria, based on OECD data.

(1) Spearman's rank correlation coefficients of Balassa indices of comparative advantage calculated to 2-digit SITC Rev. 3; positive values indicates similarity.

SHARES OF WORLD EXPORTS
(percentage shares of total world exports of goods; values at current prices)

	United States	Japan	Germany	France	Italy	United Kingdom	Canada	Rest of OECD	Total OECD	Non-OECD Asia	Latin America	Other non-OECD	Total non-OECD
1976	12.7	7.3	11.9	6.1	4.0	4.9	4.4	18.4	69.7	7.5	-	22.8	30.3
1977	11.5	7.6	11.8	6.0	4.2	5.2	4.1	17.6	68.0	7.6	-	24.4	32.0
1978	11.6	7.9	12.2	6.3	4.4	5.4	3.9	17.9	69.6	7.9	-	22.5	30.4
1979	11.3	6.3	10.9	6.1	4.3	5.3	3.6	18.3	66.1	-	3.4	-	33.9
1980	11.3	6.6	10.1	5.8	3.9	5.5	3.5	17.8	64.5	-	3.3	-	35.5
1981	12.2	7.8	9.3	5.4	3.9	5.2	3.8	17.3	64.9	-	3.4	-	35.1
1982	11.5	7.9	10.3	5.5	4.2	5.4	4.0	18.9	67.7	8.9	4.5	18.8	32.3
1983	11.3	8.6	10.1	5.5	4.2	5.2	4.4	19.4	68.7	9.4	4.5	17.3	31.3
1984	11.6	9.4	9.6	5.3	4.0	5.0	4.8	19.5	69.2	10.1	4.7	16.0	30.8
1985	11.3	9.6	10.1	5.4	4.2	5.3	4.8	19.6	70.5	9.8	4.5	15.2	29.5
1986	10.5	10.5	12.3	6.1	4.8	5.2	4.5	20.6	74.4	9.7	3.6	12.3	25.6
1987	10.2	9.8	12.6	6.2	4.8	5.4	4.2	21.6	74.7	10.5	3.2	11.6	25.3
1988	11.2	9.8	12.1	6.1	4.7	5.3	4.3	21.7	75.2	11.2	3.4	10.2	24.8
1989	11.8	9.4	11.8	6.0	4.7	5.1	4.2	21.5	74.3	11.7	3.4	10.6	25.7
1990	11.2	8.6	12.2	6.4	5.0	5.4	3.9	22.2	75.0	11.7	3.2	10.2	25.0
1991	11.7	9.3	11.6	6.3	4.9	5.3	3.8	22.0	74.8	13.1	3.0	9.1	25.2
1992	11.5	9.4	11.8	6.4	4.8	5.1	3.7	22.0	74.7	14.1	2.9	8.3	25.3
1993	11.8	9.9	10.4	5.8	4.6	4.8	4.0	22.2	73.4	15.5	3.0	8.2	26.6
1994	11.4	9.5	10.2	5.6	4.5	4.9	4.0	22.4	72.7	16.2	3.0	8.1	27.3
1995	11.0	8.9	10.5	5.7	4.6	4.8	3.9	23.4	72.7	16.3	2.9	8.1	27.3
1996	11.1	7.9	10.2	5.5	4.8	4.9	3.9	23.5	71.8	16.4	3.0	8.7	28.2
1997	12.0	7.8	9.5	5.4	4.4	5.1	4.0	23.2	71.4	16.8	3.2	8.6	28.6
1998	12.1	7.3	10.2	5.8	4.5	5.1	4.1	24.1	73.2	16.2	3.1	7.5	26.8
1999	12.0	7.6	9.9	5.5	4.1	4.7	4.4	24.1	72.2	16.3	3.0	8.4	27.8

Source: OECD.

Table 6

**DEFLATORS OF VALUE ADDED IN THE WHOLESALE AND RETAIL TRADE,
TRANSPORTATION AND COMMUNICATION SECTOR**

	Italy	Germany	France
1991	100.0	100.0	100.0
1992	103.5	101.6	101.7
1993	107.9	105.6	103.9
1994	111.1	109.6	104.3
1995	114.9	112.4	105.5
1996	120.1	111.6	105.5
1997	120.3	112.3	105.1
1998	122.9	112.2	105.0
1999	124.6	110.2	104.4

Sources: Istat and Eurostat.

Table 7

IMPORTS OF A GROUP OF OECD COUNTRIES BY PRODUCT SECTOR
(percentage changes of values in dollars)

	1991	1992	1993	1994	1995	1996	1997	1990-97
Agricultural products	2.3	3.2	-7.1	13.6	11.8	2.3	-2.3	24.6
Energy products	-5.0	-2.9	-4.8	-2.8	7.8	20.0	-0.6	9.7
Ferrous and non-ferrous ores and metals	-7.1	-1.8	-10.7	19.3	28.9	-20.5	5.0	4.5
Non-metallic mineral products	-0.5	5.0	-9.6	11.8	15.3	-0.4	-0.6	20.5
Chemical products	1.2	8.1	-4.3	13.4	23.3	0.5	3.3	52.0
Metal products	4.6	10.1	-10.4	14.0	17.3	3.5	2.1	45.8
Agricultural and industrial machinery	-3.0	4.1	-12.2	13.8	21.0	6.0	3.1	33.6
Office machinery and precision instruments	5.3	10.0	2.2	14.3	22.7	5.9	5.4	85.1
Electrical goods	5.3	8.8	1.5	18.1	23.2	2.0	3.2	78.0
Motor vehicles and engines	0.8	8.6	-6.9	14.6	16.0	8.0	3.1	50.9
Other transport equipment	13.4	-5.5	-9.1	1.7	-1.4	7.2	16.5	22.0
Food products	3.6	10.6	-6.5	9.4	13.7	-1.3	-2.8	27.9
Beverages	3.6	9.4	-5.8	8.1	6.4	2.0	-1.2	24.0
Tobacco products	11.4	9.4	9.7	5.3	16.4	-2.3	4.5	67.2
Textiles and clothing	4.9	9.6	-6.0	8.7	10.5	2.6	2.0	35.8
Leather and footwear	2.9	5.7	-1.2	10.9	9.0	4.8	1.6	38.5
Wood products and furniture	-0.4	9.5	-0.3	14.6	10.6	3.1	2.8	46.1
Paper and printing products	-3.1	4.1	-11.0	13.1	30.4	-10.6	-2.6	15.4
Rubber and plastic products	3.0	12.8	-6.8	12.8	18.7	2.4	1.8	51.2
Other manufacturing products	-1.5	9.3	-0.5	7.0	9.8	9.7	1.2	39.6
Products from recovery and demolition	-33.4	-6.1	2.3	13.6	16.1	-16.0	13.6	-19.4
Total	0.6	5.8	-5.3	11.8	17.4	2.8	2.4	39.2

Source: Based on OECD-SITC Rev. 3 data.

(1) OECD countries excluding South Korea, the Czech Republic, Hungary and Poland. This group accounts for 70 per cent of world imports.

AVERAGE FIRM SIZE COMPARED WITH EU AVERAGE (1)

	EU (2)	Germany (3)	Spain (3)	France (3)	Italy (3)	Netherlands (3)	Sweden (3)	United Kingdom (3)
Real estate agencies	81.66	0.76	0.37	0.91		0.49	1.32	
Wood and wood products	103.96	1.90	0.34	0.68	0.21	0.55	1.63	0.93
Leather products	105.10	0.48		2.05	0.51	0.22	0.47	2.21
Construction	106.72	1.23	1.06	1.32	0.38	0.89	3.36	0.86
Textiles	175.35	1.86	0.65	0.95	0.48	0.72	0.49	1.96
Hotels and restaurants	182.68	0.83	0.33	0.84	0.43	0.51	0.78	3.56
Other services	204.85	1.40	1.22	0.72	0.68	0.80	1.08	1.38
Business services	254.28	1.14	0.63	1.40	0.30	1.20	0.70	1.23
Paper and printing products	300.65	1.57	0.51	0.72	0.60	0.93	1.28	0.97
Metal products	305.03	1.55	0.59	1.05	0.48	0.99	1.22	0.90
Non-metal products	319.66	1.84	0.50	1.35	0.44	0.99	0.81	1.38
Food products	338.66	0.91	0.58	0.84	0.75	2.04	1.69	2.46
Wholesale and retail trade	343.04	1.35	0.44	0.76	0.16	1.28	0.62	2.91
Transportation	347.03	1.57	0.60	1.32	0.70	0.62	0.89	1.35
Machinery	362.41	1.36	0.51	1.11	0.66	0.37	1.25	0.98
Rubber products	394.55	1.65	0.77	1.29	0.44	1.39	0.53	0.72
Other manufacturing products	532.43	2.00	0.11	0.31	0.09	0.26	0.22	0.30
Chemical products	728.99	1.72	0.43	0.87	0.70	1.12	0.84	1.07
Electrical machinery	788.87	1.48	0.50	0.93	0.71	3.28	1.37	0.62
Finance	1,163.84	0.94	1.15	1.03		2.18	1.53	1.55
Oil	1,196.54	1.40		1.15	0.87			
Transport equipment	1,742.63	1.93	0.67	1.14	0.88	0.32	0.84	0.72
Total	336.33	1.58	0.63	0.98	0.57	1.21	1.17	1.59

Source: Eurostat, *Enterprises in Europe*.

(1) Weighted average of size classes (1-9, 10-49, 50-249 and more than 250 employees), with the weights obtained from the percentage of employees in each size class.

(2) Average number of employees.

(3) EU = 1.

Table 9

R&D EXPENDITURE IN SELECTED INDUSTRIAL COUNTRIES
(as a percentage of GDP)

	1981	1986	1991	1993	1995	1996	1997	1998
France								
Total	1.97	2.23	2.41	2.45	2.34	2.32	2.24	2.20
Enterprises	1.16	1.31	1.48	1.51	1.43	1.43	1.37	1.37
Germany								
Total	2.43	2.73	2.61	2.42	2.31	2.30	2.31	2.32
Enterprises	1.71	2.00	1.81	1.62	1.53	1.52	1.56	1.57
Italy								
Total	0.88	1.13	1.24	1.14	1.01	1.02	1.00	1.03
Enterprises	0.50	0.66	0.69	0.61	0.54	0.55	0.53	0.56
United Kingdom								
Total	2.37	2.25	2.11	2.15	2.02	1.95	1.87	-
Enterprises	1.49	1.55	1.42	1.44	1.32	1.27	1.22	-
Spain								
Total	0.42	0.61	0.87	0.91	0.85	0.87	0.86	0.88
Enterprises	0.19	0.34	0.49	0.44	0.41	0.42	0.42	0.43
European Union								
Total	1.70	1.91	1.95	1.92	1.84	1.83	1.82	-
Enterprises	1.06	1.25	1.23	1.19	1.14	1.14	1.14	-
Japan								
Total	2.13	2.55	2.82	2.68	2.77	2.80	2.89	-
Enterprises	1.41	1.82	2.13	1.90	1.94	2.01	2.10	-
United States								
Total	2.42	2.85	2.81	2.62	2.61	2.66	2.70	2.77
Enterprises	1.70	2.06	2.05	1.85	1.88	1.95	2.01	2.08

Source: OECD, *Main Science and Technology Indicators*, 1999.

Table 10

PATENT APPLICATIONS FILED WITH THE EUROPEAN PATENT OFFICE
(percentage shares)

	1983 - 85	1989 - 91	1993 - 95
Germany	21.61	19.95	20.23
France	8.75	8.27	8.35
United Kingdom	7.52	6.30	5.19
Italy	2.82	3.50	3.69
Netherlands	3.85	3.67	3.53
Sweden	2.42	1.53	1.66
Austria	1.18	1.06	1.03
Belgium	0.90	0.78	0.98
Finland	0.36	0.63	0.89
Denmark	0.53	0.54	0.60
Spain	0.21	0.39	0.57
Ireland	0.09	0.10	0.15
Luxembourg	0.16	0.10	0.11
Greece	0.02	0.04	0.04
Portugal	0.00	0.01	0.03
EUROPEAN UNION	50.41	46.87	47.04
United States	28.84	27.93	29.60
Canada	0.90	0.86	0.86
Mexico	0.01	0.02	0.01
NAFTA	29.75	28.81	30.47
Argentina	0.00	0.01	0.02
Brazil	0.03	0.03	0.06
MERCOSUR	0.04	0.05	0.08
Korea	0.02	0.13	0.52
Singapore	0.02	0.01	0.03
Taiwan	0.07	0.18	0.18
NICs	0.11	0.31	0.72
Malaysia	0.01	0.01	0.01
Thailand	0.00	0.00	0.00
NECs	0.01	0.01	0.01
Japan	14.73	20.43	18.28
Switzerland	4.68	3.62	3.55

Source: ENEA, *L'Italia nella competizione tecnologica internazionale - Il rapporto* (1998).

Table 11

INDEX OF PATENTS/GDP RATIO

	1983 - 85	1989 - 91	1993 - 95
Italy	5.05	5.75	4.32
France	11.78	12.45	9.97
Germany	19.17	21.89	15.94
United Kingdom	14.07	11.62	7.10
EU	12.61	12.51	9.23
United States	8.22	9.05	7.15
Japan	7.66	12.38	8.94

Source: ENEA, *L'Italia nella competizione tecnologica internazionale - II Rapporto* (1998).

Table 12

TIME REQUIRED FOR LEGAL CONSTITUTION OF AN ENTERPRISE
(number of weeks between opening of dossier and start of activity, 1996)

	Public limited company (Spa)	Private limited company (Srl)	Partnership (Snc)	Sole trader
France	15	8	6	7
Germany	24	24	24	0
Ireland	-	4	0	0
Italy	22	16	12	16
Netherlands	12	12	7	7
United Kingdom	1	1	0	0
Spain	28	28	28	4
United States	2	2	2	2

Source: ISAE, based on Logotech data (1997).

Table 13

ADMINISTRATIVE EXPENSES ACCORDING TO LEGAL FORM OF ENTERPRISE
(1997; in ecus)

	Public limited company (Spa)	Private limited company (Srl)	Partnership (Snc)	Sole trader
France	2,200	2,100	2,000	2,000
Germany	1,000	1,000	500	25
Ireland	-	350	350	0
Italy	700	400	500	150
Netherlands	1,000	800	0	0
United Kingdom	300	70	0	0
Spain	150	150	150	0
United States	800	800	800	800

Source: Logotech (1997).

Table 14

INDIRECT COSTS ACCORDING TO LEGAL FORM OF ENTERPRISE
(1997; in ecus)

	Public limited company (Spa)	Private limited company (Srl)	Partnership (Snc)	Sole trader
France	5,000	2,500	2,000	700
Germany	1,000	1,000	1,000	0
Ireland	-	350	350	0
Italy	7,000	1,800	1,200	1,000
Netherlands	400	200	0	0
United Kingdom	600	350	350	350
Spain	180	180	180	0
United States	100	100	100	50

Source: Logotech (1997).

**DISTRIBUTION OF THE POPULATION 25 TO 64 YEARS OF AGE
BY THE HIGHEST COMPLETED LEVEL OF EDUCATION IN 1996**
(percentages)

	Primary	Secondary	Higher	Total
Canada	24	29	48	100
United States	14	52	34	100
Japan (1)	30	48	22	100
Austria	43	32	25	100
Belgium	47	30	24	100
Denmark	34	44	22	100
France	40	41	19	100
Germany	19	60	22	100
Ireland	50	28	23	100
Italy	62	30	8	100
Netherlands	37	40	23	100
Portugal	80	9	10	100
United Kingdom	24	55	22	100
Spain	70	13	18	100
Sweden	26	47	27	100

(1) 1988.

Primary: below upper secondary.

Secondary: upper secondary.

Higher: university and non-university post-diploma studies .

Source: OECD, *Education at a Glance*, *OECD Indicators*, 1998.

Table 16

**PERSONS WHO HAVE COMPLETED AT LEAST
UPPER SECONDARY EDUCATION BY AGE GROUP IN 1996**
(percentages)

	25-34	35-44	45-54	55-64	25-64
Canada	85	81	73	56	76
United States	87	88	86	77	86
Japan	-	-	-	-	-
Austria	82	75	67	53	71
Belgium	70	58	47	31	53
Denmark	74	70	65	50	66
France	74	64	56	38	60
Germany	86	85	81	71	81
Ireland	66	54	38	30	50
Italy	52	46	31	17	38
Netherlands	72	66	57	47	63
Portugal	32	24	15	9	20
United Kingdom	87	81	71	60	76
Spain	50	34	20	11	30
Sweden	87	80	70	53	74

Source: OECD, *Education at a Glance*, *OECD Indicators*, 1998.

**DISTRIBUTION OF THE LABOUR FORCE 25 TO 64 YEARS OF AGE
BY LEVEL OF EDUCATIONAL ATTAINMENT IN 1996**
(percentages)

	Primary	Upper secondary	Tertiary, non-university	Tertiary, university	Total
Canada	18	29	33	20	100
United States	11	52	9	28	100
Austria	23	68	2	7	100
Belgium	37	33	16	14	100
Denmark	29	47	8	17	100
France	34	44	11	11	100
Germany	14	61	10	15	100
Ireland	43	29	14	14	100
Italy	54	34	-	11	100
Netherlands	29	43	-	27	100
Portugal	76	11	4	9	100
United Kingdom	19	57	10	15	100
Spain	62	15	6	17	100
Sweden	23	48	15	14	100

Source: OECD, *Education at a Glance, OECD Indicators*, 1998.