CAMERA DI COMMERCIO
INDUSTRIA ARTIGIANATO E AGRICOLTURA
DI TORINO

Torino Economy

Report on Torino province

Year 2005

Editing: Study Department of the Torino Chamber of Commerce

We thank in particular: Paolo Balistreri, head of Transport and Accommodations, TOROC; Marzio Bianchi, technical coordinator of From Concept to Car project, Centro Estero Camere Commercio Piemontesi; Ferruccio Blanc, head of Automotive sector of Centro Estero Camere Commercio Piemontesi; Giovanni Carossa, Alenia Aeronautica; Guido Cerrato, director of Associazione Torino Finanza; Mauro Durando, regional observatory of labour market, Region of Piemonte; Josep Ejarque, expert in metropolitan tourism; Giorgio Fossati, director of Film Commission Torino Piemonte; Giuliano Lengo, director of Centro Estero Camere Commercio Piemontesi; Michele Patrissi, director of COREP and Ceo of I3P; Roberto Ricci, director of Bioindustry Park del Canavese.

Graphic design of cover: Gruppo Vento srl
Paged and printed by: Mariogros Industrie Grafiche
Printing: January 2006.

Contents

Foreword

"Improving the understanding of our territory" is one of the priority objectives of the Torino Chamber of Commerce for the period 2005-2009. A complex, diverse and strongly dynamic social and economic fabric, such as that of the Torino area, needs to be thoroughly analysed, as a deep understanding of the local situation, not merely of its individual components but of their mutual relations, is one of the prerequisites to undertake the most suitable local policies.

Torino Economy was established to fulfil the need of understanding and support to local policies. It is an informative instrument aiming at drawing a picture of the structural features of the local business environment and of its development trends. The mass of information available on the local economy and in particular on the businesses based in the Torino area make the Chamber of Commerce the ideal and neutral institution that can undertake economic analyses, thank also to the cooperation of public and private agencies and of the trade associations that operate in the province.

Torino Economy draws the picture of a province which courageously took up the challenge of change and of diversification and is now ready to take up a position among those European areas that have the strongest potential for attraction.

Here I wish to thank all those who made this effort possible with their work and passion, together with the experts and representatives of the different sectors of the economy whose interviews are the highlights of the various chapters of this Report.

Alessandro Barberis
President

Introduction

An attempt to outline the current profile of the Torino province, to highlight its contours and get an image of it can only be a deliberately imperfect exercise. Indeed, the whole area is changing its shape and going through a significant transition. It is an area that has confidently grasped the challenge of change and competitiveness and is now accomplishing a complex conversion towards a much greater economic and occupational diversification as against the past.

Despite the hurdles and difficulties raised by the economic crisis in the past few years, the province of Torino has become a "test lab", a hub of creativity where ancient traditional businesses have been integrated in parallel to the development and experimentation of new business trends.

This ability to diversify and develop new business lines has confirmed that the sub-alpine province, with its rich endowment of resources, skills and networks of centres of excellence, still holds a big potential for growth. In the past few years, the economic structure of the area, moving away from an almost exclusive focus on its manufacturing core, the automotive business (which remains very important of course), has been characterised by the emergence of a multi-faceted business system: new companies in information and communication technologies, companies specialized in biotechnologies, aerospace, audiovisuals, to mention just some of the businesses that will be explored in this Report.

In addition, the coexistence of conventional manufacturing activities with new trends led to the development of a range of new business services, closely connected to the dynamic needs of modern companies.

In such a diversified and active social and economic environment new niches and economic sectors are making their appearance and becoming more aggressive in the market. In this respect the agro-food business and tourism are two important challenges to be met to take advantage of the visibility granted by the Winter Olympic Games.

At a time of profound changes, Torino, its province and the entire Region of Piemonte have the opportunity of playing a key role in Europe, realizing their potential for competitiveness and attraction, but this opportunity can become more real in the framework of a wider multi-centric area and of an integrated economic development strategy encompassing the provinces of Torino, Milano, Genova and their respective regions.

The Chamber of Commerce of Torino is one of the promoters of the alliance project including Torino, Milano and Genova, a project aimed at the creation of a single macro-region generating a multiplier effect which goes well beyond the sum of the individual performance of each of the three regions.

A key feature of this Report on the Torino economy is represented by its interviews to privileged witnesses and authoritative experts in the various sectors analysed. The aim is to gather the diverse perceptions and points of views of those who work directly in the field.

Background

Source: Province of Torino - Territory, Environment and Cartography Information Service (I.T.A.C.)

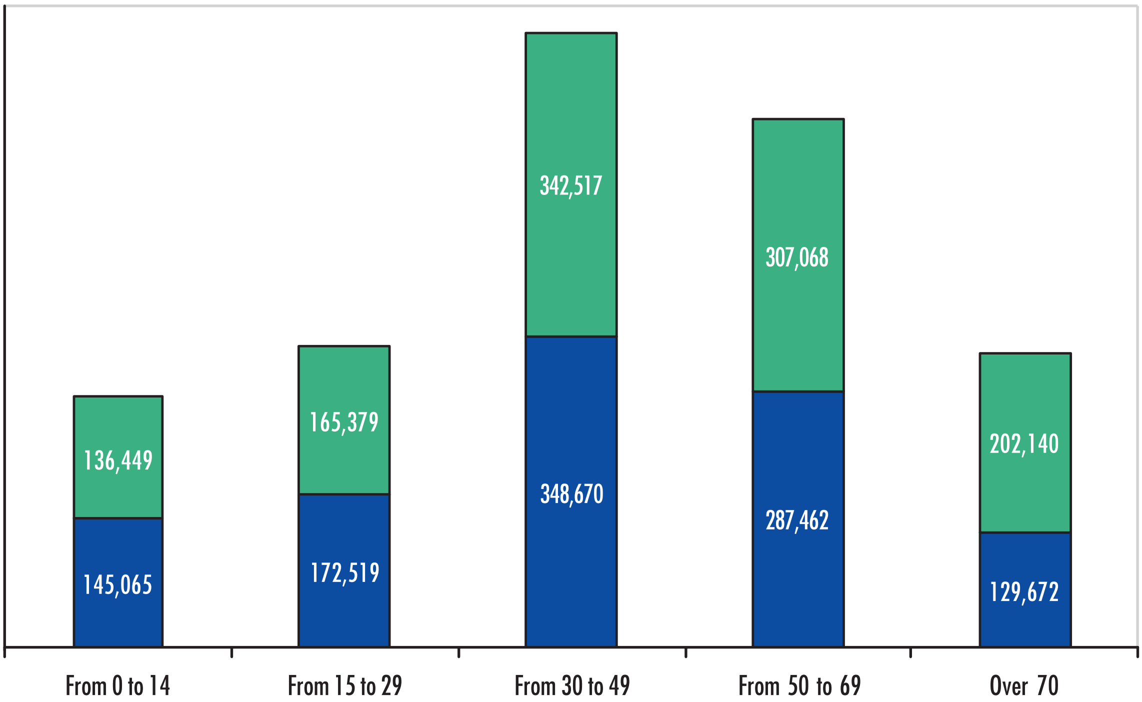
Some social and demographic data, though not being the main focus of this report, may be helpful to better understand the topics dealt with in the following chapters. In fact, the on-going changes in the Torino area affect these aspects too. The province covers an area of 6,829 square kilometres, mostly mountains with the remaining part equally shared by plains and hills.

The overall population in the province of Torino is equal to 2,236,941 inhabitants, i.e. almost 4% of the Italian population and half that of Piemonte. At the end of 2004 the number of residents had slightly increased with the arrival of migrants and the foreseen rise in birth rate. In the past few decades the number of citizens living in the city, almost 40% of the province population, shrank to the benefit of the municipalities of the surrounding metropolitan area.

There is one matter for concern that cannot be underestimated: similarly to the remaining part of Piemonte, Torino is a province with an aging population. The average age of inhabitants remains noticeably higher than the average national rate, with such a high percentage of the old-age population that there are almost two senior citizens for each young one.

Chart 1

Population of the province of Torino by age and gender



Legend

Male *Female*

Source: BDDE Region of Piemonte, data 31/12/2004

Production Patterns in the Torino province between Old and New Forms of Business

Torino has always been well-known as the "car city" – the main Italian corporation, the only one making cars, has had its headquarters here for over a hundred years. Its presence strongly affected the industrial production of the surrounding area mainly based on metal and mechanical industries. The only exception was Ivrea, which thanks to another large Italian corporation (Olivetti) developed its manufacturing business in electronics and information technology.

In the Nineties these two large corporations were caught into an economic downturn and as a consequence their influence on the economic development of our province diminished. The crisis is not over yet and a new business configuration still has to be found taking account of both the past and the future.

The automotive sector, electronics and information technology belong to our manufacturing core and they must not be neglected. On the one hand the expertise developed during all these years can be used elsewhere with new growth opportunities in emerging countries while on the other, being a local strength, it is an element of attraction.

But it is no longer enough and new business fields must be explored: ICT, biotechnologies, aerospace, and audiovisuals are some of the future challenges to relaunch the economy of Torino that can no longer rely on cars only.

Another challenge is tourism: Torino is expected to be integrated in the main international tourist circuits and a big help in that direction may come from the global visibility granted by the forthcoming Winter Olympic Games 2006.

1.1 Business birth and death rates

The number of businesses started and closed in 2004 gives a positive signal about the dynamic character of the business environment in Torino. The figures confirm that there is still a strong wish to set up new companies in the area: with over 50 companies established every day in 2004 (there were 43 in 2003) and a 17.6% increase in the number of registrations as against the previous year, the entrepreneurial community has shown a good degree of vitality.

The Register of Companies[1] of the Chamber of Commerce of Torino, with data processing by InfoCamere, depicts the evolution of the industrial structure of the province in a business overview.

At the end of 2004, 225,778 companies were registered as against 222,045 at the end of 2003, with an absolute increase of 3,733 units. With 18,376 overall registrations, the **birth rate** of companies was equal to 8.3%, while **death rate** was 6.6%.

There were 14,696 terminations (by birth rate we mean the ratio between the number of companies registered in that period of time and their number at the beginning of the period, while by death rate we mean the ratio between the number of companies closed down and their number at the beginning of the period). **Growth rate**[2] (or development) was equal to 1.7%.

Notes

[1] The Register of Companies envisaged by the Civil Code of 1942 was established - with Act N. 580 of December 1993 which laid down a reorganization of the Chambers of Commerce – through an IT register, managed by the Chambers of Commerce, by a Conservator (a manager of the Chamber of Commerce) and put under the scrutiny of a Judge entrusted by the President of the competent Court.

All subjects carrying out an economic activity must appear in the Register or be included in special sections of it.

The Register of Companies consists of an ordinary section, a special section and REA (Section devoted to Economic and Administrative data).

The Register of Corporations being computerised (following the development of new technologies and the experience gathered in the management of the Register of Firms), the registration generates all the envisaged legal consequences (for ex. the legal existence of the registered company; opposability of the data registered to third parties) starting from the time the required information is filed in the memory of the information system of the Register.

From that moment on, due to the structure of the systems, information becomes telematically available to whoever may have any interest in it.

Registration is mandatory by law (just like giving notice of any subsequent variation or depositing of deeds and documents) and so is telematic accessibility to the Register of Companies, it is in the general interest to promote transparency in the market and trust in economic reports.

Here is the list of subjects who must get registered in the Register of Companies (Ordinary Section and Special Section), within thirty days from the beginning of their activities:

- *One-man companies (art. 2195 C.C.)*
- *Unlimited partnerships and limited partnerships (art. 2291, 2313 C.C.)*
- *Joint-stock companies, partnerships limited by shares and limited companies (art. 2325, 2462,2472 C.C.)*
- *Cooperative companies (art. 2511)*
- *Consortia and consortium companies (art. 2612, 2615 ter C.C.)*
- *European Groups of Economic Interest (G.E.I.E. (Leg. Decree 240/1991)*
- *Public bodies with a mainly commercial purpose (art. 2201 C.C.)*
- *Foreign companies with a secondary administrative head office in Italy (art. 2506 C. C.)*
- *Special companies linked to the local authorities and consortia between local authorities (T.U. 267/2000)*
- *Farmers (natural persons and legal entities) (art. 2135 C.C.)*
- *Small entrepreneurs/farmers (art. 2083 C.C.)*
- *Ordinary companies (art. 2251 C.C.)*
- *Craft companies (L. 443/1985)*

[2] Growth rate is defined as the ratio between the number of companies registered and the number of companies closed and the number of companies at the beginning of the period. It shows variations related to a given geographical area.

Chart 2a

Distribution of companies by business: comparison between 1999 and 2004

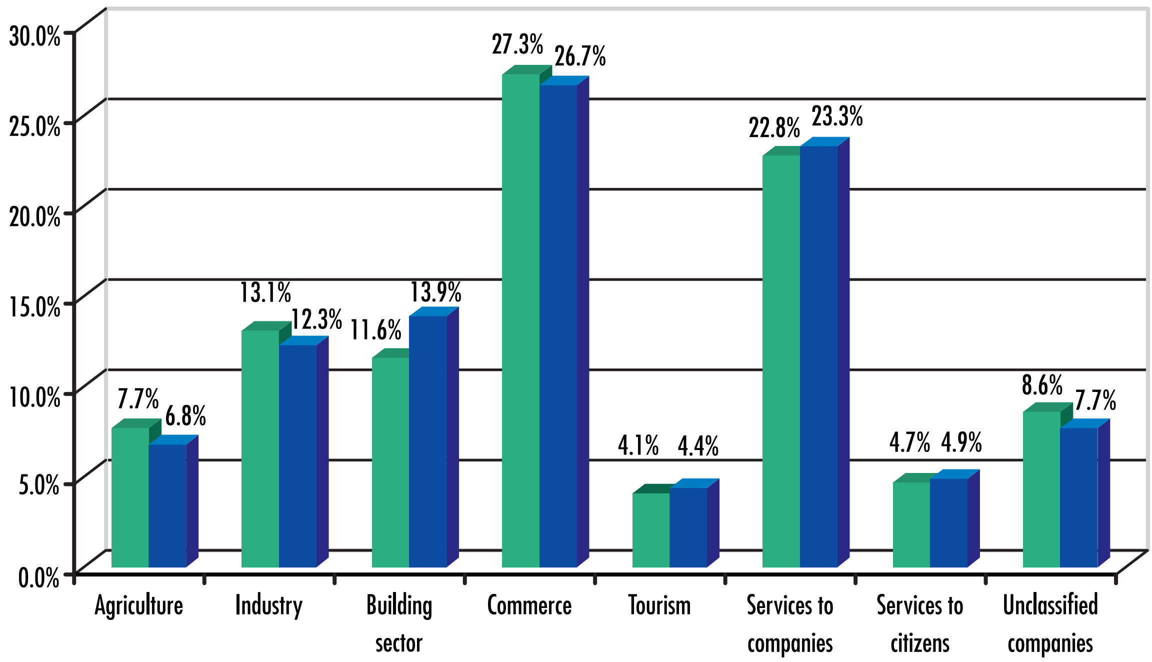
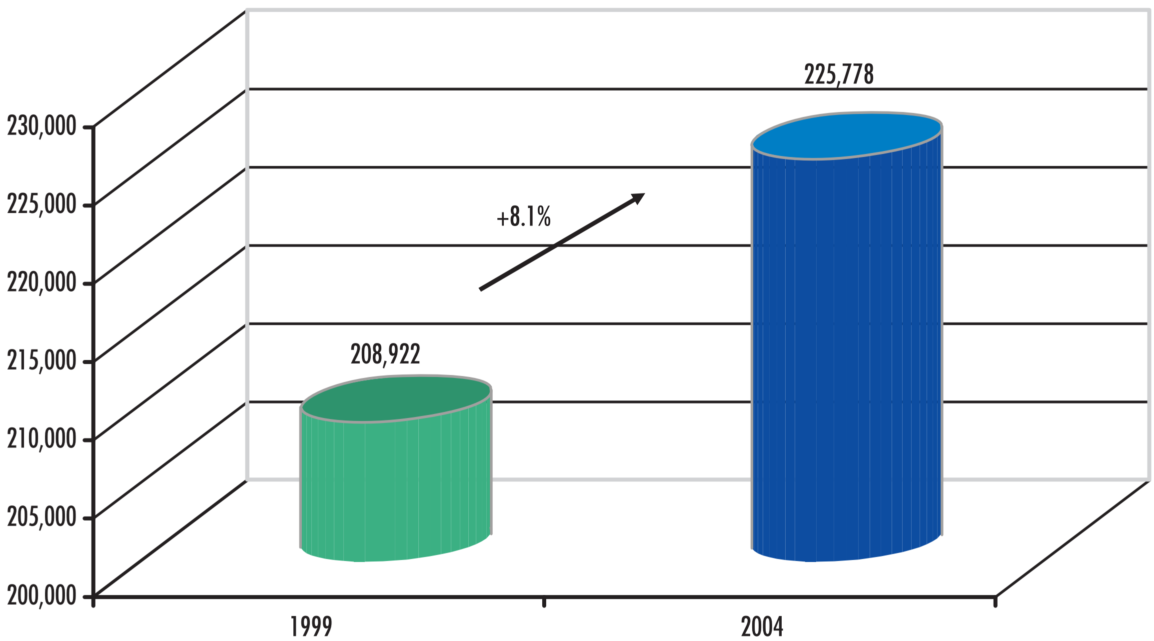


Chart 2b

Increase in the number of companies in the province of Torino between 1999 and 2004



Legend

1999 2004

Source: InfoCamere data processed by the Torino Chamber of Commerce

It is a positive trend, especially if compared to previous years: growth rate in 2004 was higher than the national average and pointed to a clear recovery of both the city of Torino and its province, after two years of milder growth.

If we look at variations in the number of companies by major **business sectors**[3], in absolute terms, the biggest contribution to growth comes from the building sector, with 1,900 new companies, followed by commerce and services to businesses, with an increase of 1,000 units.

In relative terms, the main highlights are a 6.4% increase in the building sector and a 4.5% increase in tourism, including hotels and restaurants. Slight drops were instead registered in agriculture (-0.7%) and industry (-0.5%).

Table 1

Companies registered at the end of 2004 and variations as against the end of 2003 in the province of Torino

	N. of companies at 31.12.2004	Absolute variation 2003-2004	% variation[4] 2003-2004
Agriculture	15,232	-112	-0.73
Industry	27,793	-130	-0.47
Building sector	31,481	1,898	6.42
Commerce	60,348	991	1.67
Tourism	10,012	430	4.49
Services to Businesses	52,544	1,013	1.97
Services to Consumers	11,100	308	2.85

Source: InfoCamere data processed by the Torino Chamber of Commerce

Notes

(3) This classification of sectors is based on the following list related to Ateco classification by Istat (Italian National Statistical Institute):

Agriculture = A Agriculture, Hunting and Silviculture + B Fishing, Pisciculture and related services

Industry= C Mining + D Manufacturing activities + E Production and Distribution of Electricity, Gas and Water

Building sector = F Building Sector

Commerce = G Wholesale and Retail Trade, personal goods and goods for the home

Tourism = H Hotels and Restaurants

Services to Businesses = I Transport, storage and communication + J Currency and financial brokerage + K Real Estate, Rental, Information Technology, Research

Services to Citizens = M Education + N Health + O Other social and personal services + P Home Services to families.

(4) This variation is defined as the ratio between the number of companies registered at the end of the period and the number registered at the beginning of the period. It is used to define variations in each sector.

The above table on registered companies offers interesting information on the production structure of the province.

The break-down by production sectors shows that commerce still takes the lion's share with 60,348 units, with over one fourth of the total number. The following sector is services to businesses with 52,544 units and the industrial sector with 27,793 units. A comparison between 2004 and 1999 highlights variations in the composition of the business structure in the province in the past 5 years.

There is also a clear decline in the relative weight of agriculture, industry and commerce and an increase in the building sector and services to businesses and also, though to a relatively lower extent, a decrease in the sector of tourism and services to consumers.

If we consider absolute values instead, the number of companies diminished in agriculture while remaining practically constant in the manufacturing sector and increasing significantly in the building sector, in tourism and services. As regards the latter, there was a 11% rise in transport, storage and communication and a 10.7% expansion in real estate companies, rental, information technology, and research businesses and finally a 4% increase in financial brokerage. In five years the overall number of firms registered at the Torino Chamber of Commerce grew by 8% moving from 208,922 to 225,778 units.

Table 2

Number of companies by sector in 1999 and 2004 and 1999-2004 variation

	N. of companies on 31.12.2004	N. of companies by sector (% on 2004 total)	N. of companies on 31.12.1999	N. of companies by sector (% on 1999 total)	%variation of companies 1999-2004
Agriculture	15,232	6.75%	16,133	7.72%	-5.58%
Industry	27,793	12.31%	27,451	13.14%	1.25%
Building sector	31,481	13.94%	24,258	11.61%	29.78%
Commerce	60,348	26.73%	57,002	27.28%	5.87%
Tourism	10,012	4.43%	8,591	4.11%	16.54%
Services to businesses	52,544	23.27%	47,701	22.83%	10.15%
Services to consumers	11,100	4.92%	9,888	4.73%	12.26%
Unclassified companies	17,268	7.65%	17,898	8.57%	-3.52%
Total	225,778	100.00%	208,922	100.00%	8.07%

Source: InfoCamere data processed by the Torino Chamber of Commerce

Going back to 2004 trends, in terms of the **legal form**, one-man companies account for 53% of the total in the province, with an increase of 1.9% as against the previous year. Joint-stock companies (14.2% of Torino firms) are the most dynamic ones with + 3.9% as against 2003. The number of joint-stock companies kept on rising in the past five years because a more complex and organized business structure allows businessmen to tackle an increasingly fierce competition with a higher probability of success.

Table 3

Companies registered at 31.12.2004 and variations by legal form in 2004

Legal form	Companies registered at 31.12.2004	% on total	Registered in 2004	Closed down in 2004	Balance
Joint-stock companies	31,957	14.15%	2,267	1,129	1,138
Partnerships	69,184	30.64%	3,451	3,209	242
One-man companies	120,073	53.18%	12,391	10,130	2,261
Other forms	4,564	2.02%	267	228	39
Total	225,778	100.00%	18,376	14,696	3,680

Source: InfoCamere data processed by the Torino Chamber of Commerce
Note: the total of 3,680 is obtained from the difference between the number of companies registered and closed down during 2004 and, because of data management reasons, it does not overlap with the difference between the number of companies at 31.12.2004 and at 31.12.2003, equal to 3,733.

1.2 Business groups

The analysis of business groups can help us have a much better insight into the changes occurred in production patterns in the past few years. A new picture of real economy emerges: the business system is re-organising itself and changing the way it operates. In addition to renewing their legal form (there are more and more corporations and fewer one-man companies), now in Italy companies are increasingly changing and improving their own organizational aspects, enhancing their ability to set up relations with the outside world and to advance the economy of the whole sector. These strategies not only meet the need to take advantage of geographical proximity – as a matter of fact, the strengthening of a group follows a pattern where both process and product proximity play an important role. This primarily applies to agricultural firms and manufacturing corporations: simpler groups in these businesses acquire control over other companies operating in the same field, while more complex groups aim at covering the entire sector. Almost every group controls some commercial firms which are the final link in the production chain. The performance of the business groups model casts a new light on the issue of business dwarfism and the companies which are too small to be successful in competition. The strong presence of small and very small enterprises, often very fragmented, is matched by the excellence of a number of groups, which can produce the right strategic response to overcome Italian structural criticalities.

Hence the growth of "stable" forms of aggregation in Italy through the creation of groups: this organizational model was chosen by 74,500 distinct groups at the end of 2002 in Italy, with a net increase of almost 8,000 units as against 2000 (+12%). Within these groups there are 168,000 subsidiaries leading to a total of over 193,000 Italian companies which operate in a group. Even if in relative terms it is a limited share of the entire business landscape in Italy, the number of groups becomes quite considerable if we consider its impact on employment and the added value they supply to the economy: 32.4% of the working population is employed in a group, with an added value of 33.1% out of the one generated in the whole country.

Table 4

Territorial distribution of groups (parent company and subsidiaries) and impact on the economy, number of employees and added value in 2002

Territory	Group headquarters	Subsidiary headquarters	Parent co. subsidiary headquarters	Group employees	Added value of groups (*)	% of all employees of the area	% on area added value
TORINO	2,459	5,048	6,242	320,712	20,706	39.2	40.3
PIEMONTE	4,579	9,570	11,684	510,445	32,805	34.0	34.4
ITALY	74,459	167,944	193,233	5,364,525	372,865	32.4	33.1

**In current 2002 terms,added value is expressed in million euros.*
Source: National Unioncamere Study Centre – Observatory of business groups, 2005

In the Torino area groups are even more numerous: there are 2,500 groups controlling over 5,000 companies and accounting for about 40% of both the added value and the people working in the province (this is definitely higher than the national figure). This figure refers to companies with a majority holding of over 50% and is obviously underestimated, in fact we know that a company can be controlled with a much lower holding). It also applies to joint-stock companies, the only ones which are compelled to deposit the list of partners when they submit their financial statement.

1.3 Foreign companies

The number of foreign companies continues to expand in Italy. The Italian employment market constantly offers new opportunities but it is increasingly evident that working as an employees has a number of unfavourable aspects in terms of continuity of the working relation, in terms of recognition of one's educational qualifications and in terms of the consequent compensation. These are the reasons why many prefer to become self-employed. Some decide to resume the activities dropped in their country of origin while others make a new choice and develop new entrepreneurial skills in contact with the Italian business environment.

According to statistical data worked out by the Chambers of Commerce, the growth in self-employment is increasingly related to the presence of migrants starting new businesses. The enterprise is therefore a really powerful factor of social integration, of dialogue between cultures, and of creation of well-being at all levels.

An analysis limited to variations in one-man companies shows that in 2004 start-ups with a migrant owner are 1,766 out of 2,261 and account for 78% of the total growth. In the case of one-man companies, each legal entity also implies a company owner, it is therefore easy to draw reliable data on the number of businesses from InfoCamere data on company owners.

Table 5

Company owners by nationality

Company owners nationality	N. of company owners 31.12.2004	N. of company owners 31.12.2003	% Variation 2004/2003
EC	932	842	10.69%
Outside the EC	7,664	5,963	28.53%
Italian	111,391	110,890	0.45%
Not classified	65	68	-4.41%
Total	120,052	117,763	1.94%

Source: InfoCamere data processed by the Torino Chamber of Commerce

In 2004 the number of company owners increased especially among migrants from countries **outside the European Community**, where there was a rise of about 1,700 units, while company owners of **Italian nationality** increased of 501 units.

If we break down the group of company owners coming from countries outside the European Community by **country of origin** we notice that 82% come from approximately 10 countries, including big percentages from Morocco and Rumania.

If we include in our analysis also the other positions in the company in addition to that of the owner as reported in the table above (owners, partners, directors, other positions), then the province of Torino reaches 13,575.

18% of them come from Morocco, 15% from Rumania and 7% from China. There is a strong correlation between country of origin and type of activity chosen: Moroccan businessmen have chosen commercial activities (57% of the total), Rumanians prefer the building sector (70%), Chinese businessmen set up restaurants or shops (75%).

Table 6

Company owners by country of origin in the province of Torino

Country of Origin	31.12.2003	31.12.2004	% on 2004 total	Balance	% on Balance
Albania	298	385	5.02%	87	5.11%
Argentina	177	194	2.53%	17	1.00%
Brazil	132	155	2.02%	23	1.35%
China	463	567	7.40%	104	6.11%
Egypt	177	210	2.74%	33	1.94%
Morocco	1,398	1,800	23.49%	402	23.63%
Nigeria	324	409	5.34%	85	5.00%
Rumania	856	1,573	20.52%	717	42.15%
Senegal	464	519	6.77%	55	3.23%
Switzerland	165	184	2.40%	19	1.12%
Tunisia	324	344	4.49%	20	1.18%
Others	1,185	1,324	17.28%	139	8.17%
Total	5,963	7,664	100.00%	1,701	100.00%

Source: InfoCamere data processed by the Torino Chamber of Commerce

1.4 Businesses owned by women

Companies established by women are a key component of the economy in the Torino area. Companies are constantly increasing and becoming more and more popular. The financial aid envisaged by Act 215/97 for women entrepreneurs is contributing to this development. Moreover, it seems that demographic data related to women entrepreneurship seem to follow the direction expressed in the Lisbon Agreements. The latter aim to foster equal opportunities including a better compatibility of working and family life and an increase, by 2010, in the number of working women of about 10 percentage points in Europe (from an average of 51% to over 60%). The increasing number of women who choose to start up a business seems to suggest a lower impact of work on their family and personal life.

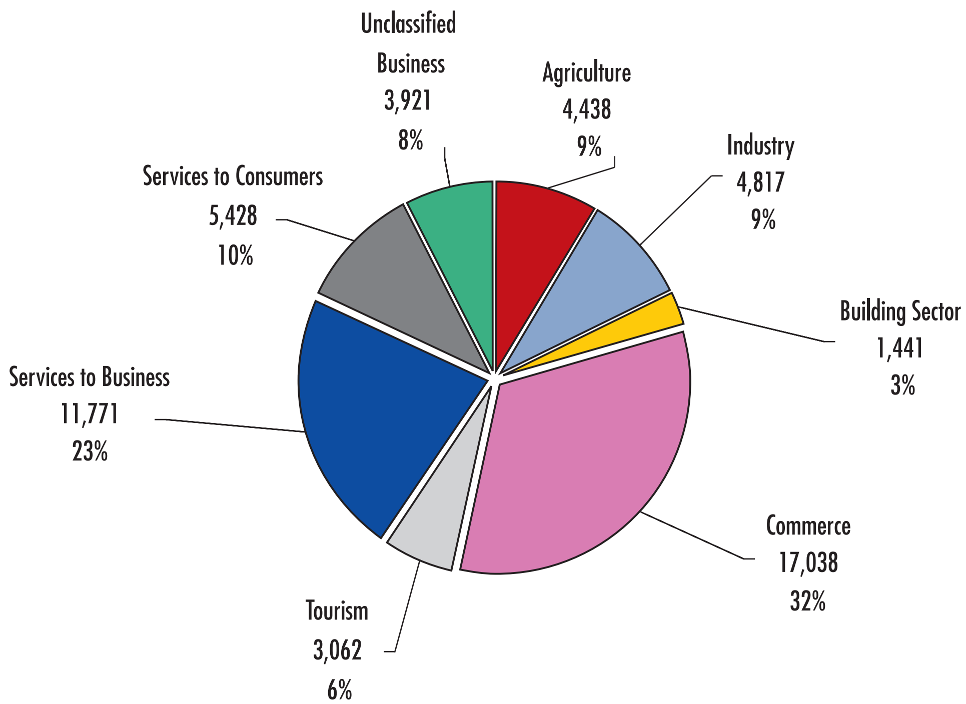
If, on the one hand, it is a more and more dynamic reality, (consider that in the province of Torino alone there were 51,916 enterprises set up by women in 2004) on the other hand, it still suffers from a certain structural fragility. Women-owned companies with a high turn-over close down because of incompatibility with family life, lower financial resources, lower propensity to capital investment, lower number of orders and smaller amounts as against the universe of men-owned businesses.

Positive actions are needed to promote business culture among women, to encourage them to submit more practical projects, overcoming the tendency to propose initiatives in "mature" conventional sectors and choose instead, with the necessary support, to explore innovative sectors with higher growth opportunities. Indeed data confirm a high concentration of these businesses in commerce and in services to businesses, two typical activities favoured by women.

Information, technical-financial assistance, the utilization of adequate guarantees and the promotion of a close cooperation with the banking institutions play an important role in the growth of women-owned businesses.

Chart 3

Women-owned businesses by sector in 2004



Source: InfoCamere data processed by the Torino Chamber of Commerce

1.5 A business overview update at the end of September 2005

At the end of September 2005 there were 228,753 businesses registered in the Register of Companies of the Chamber of Commerce of Torino, with a 1.3% **variation** as against the end of 2004.

In the period of time between January and September there were 14,150 new registrations and 11,231 companies closing down with a balance of +2,919.

If we break these figures down by **sector**, the most satisfactory increase is registered in the building sector, with a 4.2% rise as against the end of 2004, and in tourism (+3.6%). Services to businesses (+2.1), commercial activities (+1,1%) and services to consumers (+1.4%) performed well too.

Industry and agriculture remained constant.

As regards the **legal form** of businesses, joint-stock companies continued to increase in number, with a +2.3% as against 31.12.2004; there was also a significant growth in one-man companies (+1.5%), while partnerships registered a more modest increase (+0.7%).

The drop in companies with a "different legal form" (-0.8%) is probably the consequence of the legislative reform of cooperatives of 2003.

Table 7

Business birth and death rates in January-September 2005 in the province of Torino

	Registrations at 30.9.2005	Registrations at 31.12.2004	% Variation	Registered	Closed
Agriculture and fishing	15,240	15,232	0.1%	401	430
Industry	27,779	27,793	-0.1%	1,083	1,370
Building sector	32,794	31,481	4.2%	2,761	1,794
Commerce	61,022	60,348	1.1%	3,512	3,554
Tourism	10,373	10,012	3.6%	473	548
Services to Businesses	53,623	52,544	2.1%	2,320	2,349
Services to consumers	11,251	11,100	1.4%	479	525
Unclassified	16,671	17,268	-3.5%	3,121	661
Total	228,753	225,778	1.3%	14,150	11,231

Source: InfoCamere data processed by the Torino Chamber of Commerce

1.6. Centres of excellence and manufacturing specializations in Torino

1.6.1 Automotive components

The province of Torino has always been associated to car production, at least till about a decade ago when the largest Italian corporation, the only one producing cars in our country, had the first symptoms of a recession. However, the core competence of the area in manufacturing automobiles is a very precious resource that must not be wasted and the suppliers of automotive components are well aware of this opportunity: indeed after a tough period of time, our component manufacturers are regaining a good position especially in foreign markets and the forecasts are that the export of automotive parts will exceed that of cars by the end of 2005, as shown by Istat (Italian National Statistical Institute) statistical data of the first nine months of the year (8.5 billion euro versus 8.1 billion in Italy and 2.5 billion euro versus 1.8 billion in the Torino area). This information was released in the 2005 edition of the Observatory for Automotive Components of the Chamber of Commerce of Torino. In 2004 the revenues of Italian component makers reached 23,8 billion euro (+7% as against the previous year), split between 15,118 million for the original equipment market (+4.1%) and 8,715 million for the aftermarket (+12%).

The substantial robustness of the sector can be imputed to its broad coverage. A good image to describe it is an orange consisting of 5 different segments. They belong to a single fruit since the final destination of their output is the automotive sector but they may have different business strategies and outcomes. The most important thing is that they are not affected by the "local crisis" in the same way: the impact of the Asian threat is not the same for each of the segments and they may take advantage of global change differently.

The novelty about the report of Observatory 2005 is its attempt to describe the orange.

Here is a short illustration of the five segments:

a) **Engineering and Design** – they account for 5.8% of revenues and 8.8% of employees. It is about all what it takes to make a car from scratch. A "business of the business" where Italy is leading, especially in Piemonte, a sector increasingly attracted by globalization and increasingly able to take advantage of it at a local level.

b) **System Suppliers** – large system suppliers billed about 2.2 billion euro in 2004 in Italy. Italian system makers are not heavily affected by local downturns because they are global players. Their revenues are therefore bound to further expand.

c) **Specialists** – with 28,000 employees and a turn-over of 7.3 billion they are quite special: their parts bring a high added value and a low logistic cost. These are companies that turned specialization into a competitive advantage. Innovation and specialization are at the root of their competitiveness. They will not delocate as long as they can find the key competitive factors here in Italy and at the same time expand their sales around the world.

d) **Subsuppliers** – with 45,000 employees and 9.7 million euro sales, these companies have maintained their final assembly operations in Italy and still account for 40% of the chain. Many of them are working to become more international or to become specialists, or are seeking integration with other companies to make a quality breakthrough. They are not all threatened by Asian manufacturers in the same way. It is often the case that they make simple but high-volume components that wouldn't be convenient either for export or for import. At times, global sourcing or a drop in national production may negatively affect the business of subsuppliers.

e) The segment of **Module Makers** (they are often called sub-assemblers) has a turn-over of 3.2 billion euro and 13,000 employees. It is mostly affected by the reduction in car assembly since it is precisely during the final assembly stage that modules are ordered from outside. They are suffering from a global crisis since decisions are made based on the investments of manufacturers.

Table 8

The figures of the automotive components sector in 2004

	Italy			Piemonte		
	Companies	Revenues	Employees	Companies	Revenues	Employees
Module Makers	40	3,179	13,222	19	1,751	7,265
Subsuppliers	1,198	9,668	45,724	308	3,687	18,401
Specialists	370	7,340	28,677	97	2,696	11,137
System Makers	8	2,240	8,569	5	1,050	4,000
Engineering and Design	99	1,373	9,262	47	828	5,573
Total	1,715	23,800	105,454	476	10,012	46,376

Source: Observatory on Italian Automotive Component Makers, Torino Chamber of Commerce

On the subject we interviewed Ferruccio Blanc, the Manager of the Automotive Department of Centro Estero Camere Commercio Piemontesi, and Maurizio Bianchi, Technical Coordinator of From Concept to Car.

The exports of automotive components in our province have exceeded car exports: what were the main market trends in the past few years?

"The volume of cars which used to be manufactured in Piemonte up to some years ago has dropped noticeably. However, since several Fiat models are still manufactured in Fiat plants abroad, the export of components and tooling has augmented, with a positive net outcome for automotive components sector.

The OEM manufacturers which set up links with other foreign companies were not significantly impacted by the recession, their revenues are growing and they are no longer so dependent on Fiat as they used to be a decade ago. Starting from the Nineties a new practice was established in the procurement system – manufacturers started to entrust suppliers with complex systems such as the body, electric and electronic systems, external components etc. The natural consequence of this new trend is that traditional Piemonte suppliers no longer interact with the car manufacturers themselves but with the system makers instead. Unfortunately, system makers may soon have to tackle a new crisis, a reversal of the trend in the market that will split these groups into many different companies.

In the near future we are likely to see a revival of first-tier, second and third-tier suppliers. The few automotive manufacturers which maintained a direct relation with subsuppliers were successful in reducing costs".

China has become the fourth world automotive component maker. It is a rapidly expanding market like India: do you think companies of the Torino area will delocate to these countries, attracted by the huge market potential and low costs?

"There is an important preliminary statement to be made to this question: automotive services like styling, design, industrialization are gaining a very important role in international markets. If on the one hand we lost competitiveness in automobile production, the companies working in the design of new cars have started to work in India first and then in China where they are growing more and more prominent.

If on the one side it is true that China has become the fourth world manufacturer of components, it must also be added that there are still few Chinese firms with the capability to design and develop a complete vehicle. So far the Chinese did not need product development: they used to copy the part and/or complete vehicle and put it in the market at a ridiculous price taking advantage of both much lower labour costs and of no investment in research and development.

Now they are trying to master the technology and acquire the necessary know-how to become independent. The Americans first, then the Germans and now also the Italians are moving to China to contribute to deliver the design capability that the Chinese were totally lacking. Piedmontese companies can certainly use their know-how in design, style, industrialization, and play an important role in this remarkable market.

Another interesting market is undoubtedly Russia, where there is still room for our components as well as for our cars".

"From Concept to Car": a winning project at a tough time for the main Italian automobile maker. Some learnings after these first three years.

"From Concept to Car sets very high targets. The first most important one is to make our companies known abroad, especially small companies. They used to be Fiat suppliers and had no need to become international. Despite their good quality and technology they never grew in size. The goal of the project is to present them as integrated in one single sector to make them more attractive and competitive in the international market. The aim of From Concept to Car is not simply to put companies in touch with buyers but also to make them aware that they can be competitive in international markets because they have the best capability that can be found in the area. Price is no longer the only factor in the market. Success is more and more related to the ability to add "content" to the product through technological innovation. The project From Concept to Car is now three years old and has enabled many companies of the area to interface with major car manufacturers, something that they could not have done on their own. Three of these companies have already received orders and 15 are beginning to work with large foreign manufacturers – it is undoubtedly a rewarding result. The Chambers of Commerce of Piemonte had already worked successful in previous years, suffice to mention a program dating back to 1995, following which the Volkswagen Group decided to set up a purchasing team for automotive components in Italy".

What can the future be like for our component makers? The clustering of supply is a winning weapon to sell to automotive manufacturers?

"Two different speeds can be found in the automotive sector: the speed of industrial vehicles and that of cars. The former registered a 35% production growth last year, many companies must give up orders because they cannot meet the requirements. This shows a lack of cross-fertilization between the two sectors; we are trying to persuade those who work with cars only to specialize a little more so as to be able to work for the other sector too. The companies working for Fiat only are very few now and with narrow future prospects: every month we hear the names of companies closing down because they were not able to diversify their customer base. The lack of diversification of

the customer base kills product innovation at a time when the capability of a company is measured on its innovation potential. It is hard to predict the future of the automotive sector, the current global production is 55 million cars, a figure which could reach 70 million in 2010. Germany manufactures 5 million cars a year, France 3 million, Spain 3.5 million, Japan 9 million, Italy 1 million: the remaining share will be covered primarily by China (which intends to double its current production of 4 million cars), by India and Russia. Growth will therefore be reserved to the East, though it is unthinkable that China and India can manufacture competitive cars for our markets without the help of the West".

Quality, innovation, reliability are key to win international competition: can hydrogen become the winning weapon for our automotive industry?

"In our area, we have a centre of excellence on hydrogen, both stationary and mobile technologies. Hydrogen is dangerous (inflammable and explosive), it will therefore take special tanks to overcome this obstacle. It is the fuel of the future but there is still a long way to its widespread use. The process of fuel cells was already demonstrated around the end of the Nineteenth century but it was only with the development of the Apollo programme in the aerospace industry (in the Sixties and Seventies) that there was the first industrial application. In the past thirty years hydrogen was not developed because of technological and cost reasons but also because of a political one. It is a fact that Oil Corporations have always hampered the development of this "new technology", saying that low cost oil reserves would be sufficient for 30-50 more years. Hydrogen will therefore not be the panacea of all the automotive issues of our area, at least at short-term.

Another new element is the so-called "Bic car", the disposable car. As the technology moves forward the cost of a car could be the equivalent of 2-3 monthly wages, with good safety and environmental standards, and it is obvious that a car of this kind could be replaced much more frequently. Rather then disposable it should perhaps be called a "recyclable" car designed to better safeguard environmental protection: all construction materials must be notified so as to ensure correct disposal and prevent dangerous materials from being discarded in the environment".

1.6.2 ICT: Torino Wireless and the Canavese Technological District (from: http://www.distretti-tecnologici.it)

Torino, a symbol of car production, has started to move away from this stereotype to assert itself as a leader in an innovative field. The decision to create a high-tech cluster in the city of Torino originated from the will of the Local Authorities to offer a valid alternative to the car sector, leveraging on a resource which has always been a plus of the area – technological innovation. Several high-tech companies are based in Torino and its surroundings: some of them operate within the framework of the traditional specializations of the city (automotive, mechanical engineering and automation, aeronautics and aerospace), while some others work in the new ICT fields. This is not surprising if we think of the several ICT companies based in Torino in the past decades: RAI, the italian national broadcasting company, SIP, the national telephone company, and more recently CSELT, a research and development centre for telecommunications in IRI Group.

Coming to the present time, the current strong ICT research and development capabilities in the area create the prerequisites for innovation in the filed of information and communication technologies.

Torino Wireless

It is in this context that the "Torino Wireless project" was launched, to create and foster the prerequisites for the take-off of a truly "Wireless Valley" based in Torino. The Torino Wireless project is the first Italian technological district of this kind and is designed to be a pilot initiative at a national level, with Torino becoming one of the new international benchmarks in the "wireless" sector.

The first aim of the project is the creation and strengthening of connections between the academic and the business world in the field of research and development.

The District looks with interest at the ICT sectors which may positively interface with the technologies and business areas existing in the Piemonte Region. An example of this are the wireless technologies, i.e. solutions and systems for the transmission of multimedia services to moving users; electronic and optical devices, all the basic parts for the development of telecommunication systems and the processing of information; wireline technologies, telecommunication systems based on wires; multimedia technologies, systems and applications for data, image and sound processing; software technologies, such as operating systems, languages and applications enabling information processing and transportation.

Here are the main goals of the District:

- to encourage research
- to set up new companies to turn new ideas into business opportunities
- to support Small and Medium-Sized Companies investing in innovation as a tool for growth
- to develop innovative financial tools
- to increase the share of technology on regional GDP from 5 to 10%.

The signatories of the Torino Wireless agreement are: the Ministry for Education, University and Research, the Region of Piemonte, the province of Torino, the Municipality of Torino, the Chamber of Commerce of Torino, the Association of Industrialists, Fiat, Telecom Italy, the Compagnia di San Paolo Foundation, the CRT Foundation, San Paolo IMI, Unicredito and Mario Boella Higher Institute.

The Canavese Technological District

The Canavese Technological District is located north-west from Torino, is based in Ivrea and it includes Chivasso and Rivarolo Canavese. After the closing down of Olivetti and Lancia, several new small and medium-sized enterprises emerged in the high tech information and telecommunication field. These new companies were often established by former employees who decided to apply the skills and expertise acquired in the their old companies. In the case of Olivetti, which operated in the IT sector, with many different specializations in the field, production was fragmented in many small and medium-sized businesses set up by former employees, which specialized in the different sub-sectors of computer technology. Rather then being a discontinuity, the transformation of local production further emphasized the technological specialization of the area and promoted a gradual re-conversion of a part of the production operations into high tech fields like ICT. These companies have a significant potential for product and process innovation and for new ways of organizing production and tackling the market. Many of them could benefit from the funds granted by national or regional legislation to support technological innovation or became partners to EC projects (Eureka, Esprit, Race Brite Euram, Sprint).

The first outcomes achieved by the District can be summarised as follows:

- setting up of new ICT companies
- a range of new operations such as call centres, innovative businesses in the different ICT fields (in the Bioindustry Park), in mechanics (around Pininfarina), in entertainment (with

the planned Millennium Park), in the show business world (Telecittà at San Giusto Canavese), and in the development of other ICT productions (Fulchir and Lexicon)

- new highly specialized training and education programmes: three diplomas at the Torino Polytechnic, in addition to one on telecommunication at Aosta; two university degree courses in Communication Sciences, a workshop on digital communication services with a broad international approach and the collaboration of the London Royal Institute of Arts; innovative finance (Banca Sella and venture capital); new specialized infrastructures (Infoville and E-Canavese, the portal with individual organizations like Olivetti and Banca Sella.

In 1993 the Consortium for the Canavese Technological District was founded with the aim of catalysing the widespread resources of the Canavese area looking for synergies and interactions on the one side and supporting the re-conversion of traditional industrial operations.

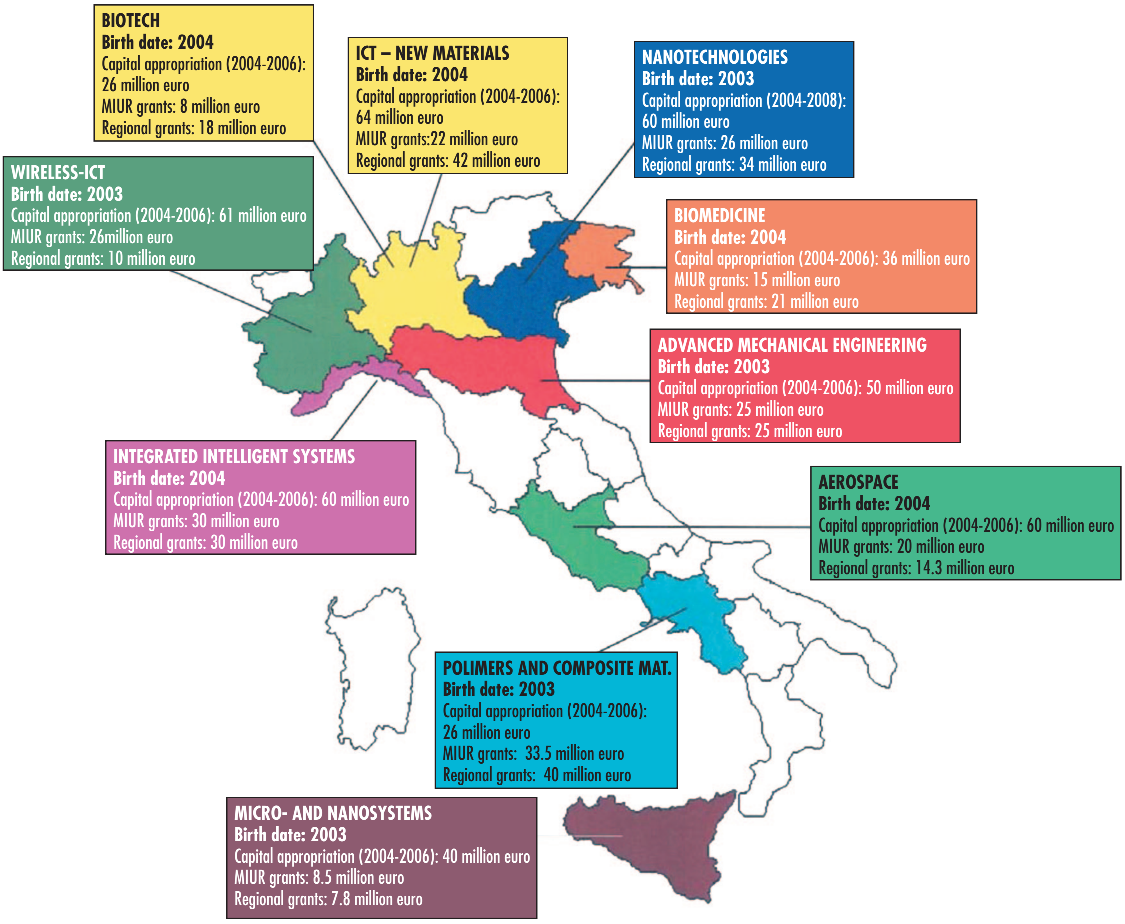
The Consortium includes the Province of Torino, the City of Ivrea, Olivetti S.p.A. and the Canavese Association of Industrialists. Its goal is promoting the economic and social development of Canavese and its activities embrace several lines of action:

- to promote process innovation and Local Authorities organizations also through the use of new technologies
- to support initiatives aimed at boosting technological transfer and innovation both through the enhancement of the existing heritage of technical and scientific knowledge and through the promotion of new ones
- to encourage economic and social development in the area through the promotion or coordination of specific projects which may also draw from EC, national or regional funds.

On December 6, 1999, the Canavese Territorial Pact was established with technical assistance tasks entrusted to the Technological District Consortium.

The Consortium and the Territorial Pact are expected to strengthen the action of enterprises and other intermediate organizations which already operate, directly or indirectly, for the development and growth of innovation in the area. In particular, they are designed to foster innovative programmes with the support of local and national policy makers. In short, the goal is to go beyond individual and isolated initiatives to create a system of strong interconnections between the world of production, in the narrower sense of the word, and the leading actors in research.

Technological Districts in Italy



1.6.3 Biotechnologies

Life Sciences, identified and widely recognized as a strategic and priority field for the future, are a significant reality in the Piemonte area and also an opportunity for development: there is in fact a critical mass of spaces, people and competencies comparable to other European regions or to the neighbouring region of Lombardia, with undeniable relevance at a national level. The size of the biotechnological sector is still limited, but it is growing rapidly both in the framework of public and industrial research.

Life Sciences and, more specifically, biotechnologies consist of a set of multidisciplinary technological platforms and scientific discoveries which can be combined in different and innovative ways in each context: relevant sectors range from the pharmaceutical to the biomedical sector, from diagnosis to information technology, from the agro-food business to veterinary, from cosmetic companies to the environment. Which are the main actors on the stage of biotechnologies in Piemonte?

Most activities related to Life Sciences in Piemonte are concentrated in the province of Torino: the University and the Polytechnic, the IRCC Candiolo Cancer Research Centre and the Bioindustry Park in Canavese. There are very qualified research groups which guarantee the necessary scientific basis to support the industrial development activities of a small but significant group of start-ups, often structured as academic spin-offs.

Next to the "public share" there is a lively group of small and medium-sized companies operating in the pharmaceutical and biotechnological field, along with more structured medium-sized and larger companies.

Technology transfer programmes and support of start-ups rely on the territorial concentration of these firms and on a network of multiregional and international links.

Starting a company in the biotechnological field requires several conditions to be met: a widespread scientific culture, high level scientific projects, favourable environmental conditions, a local system which can integrate and promote technological transfer and innovative financial support. Piemonte can meet all these conditions for growth and its banking system has recently opened up to more innovative forms of borrowing, consistent with the development needs of the new economy. Biotech requires financing at different levels: from the initial "family" format, promoted by a limited group of investors who believe in the project and support it at its early stages, to the more advanced and substantial programme for more important projects which requires at least 2-3 years of operation with the involvement of business angels and seed capital. A project of this kind may absorb resources varying from 3-400 thousand euro to 1-1,5 million euro.

If the research process continues and reaches the clinical testing stage, the need for funds may increases ten-fold or more and require the participation of large corporations of the sector interested in further development. Or, venture capital may be required, with massive investments to ensure the growth of the business.

In biotech, the percentage of risk on invested capital is very high because of the high degree of uncertainty on expected outcomes: this factor has often deterred Italian investors from putting their money in it and has encouraged them to turn towards investments with a more immediate return on capital. Very often investments were diverted abroad.

The Canavese Bioindustry Park certainly plays a key role in the development of biotechnologies in Piemonte. It started as an idea in the early Nineties and it was subsequently implemented between 1996 and 1998 when the first companies and a group of university researchers settled in the Park headquarters.

In the area, which hosts the Serono Group with RBM, there are now 500 people working in pharmaceutical and diagnostic research and development.

The figures of the Canavese Bioindustry Park	
16,000	square metres of laboratories and offices in 6 buildings
70,000	square metres of production areas
1,100	square metres hosting the Laboratory for Advanced Methodologies of the University
~ 240	people working in the Park
~ 20	patents developed in the Park in the past 4 years
Growth prospects in the 2006-2008 three-year period	
50	organizations located in the Park
400	employees

We interviewed Roberto Ricci on the subject, he is the Director of the Canavese Bioindustry Park:

Why is it worth to invest in Biotechnologies in Piemonte?

"Basically because the technologies of Life Sciences are key for local and international socio-economic development. Their integration with electronics and information technology will lead to the detection of multiple solutions to the needs of man and society in the near future, in full compliance with the legal and ethical standards.

In our region, which in the past few years has been moving from a monocultural model of production, that of cars, to a greater degree of diversification, the development of medium and long term strategies dictates careful consideration of the businesses with more growth opportunities in the next 15-20 years: next to telecommunications and information technology, the field of biotechnologies is one of the most promising ones".

Research and Business: is there a successful interaction between the two in biotechnologies?

"In Piemonte there are various areas of excellence, but for a long time, the various stakeholders in the public and private sphere, in the research and in the business world, have hesitated to interact with each other.

Given the importance of integration between basic research, pre-competitive development and applied research in Biotech, the Canavese Technological Park proposed to become a system integrator. The aim of the Park is to create a favourable environment where public and private research, innovative services to businesses and financing can interact as a "cocktail of excellencies", generating technological transfer and promoting the development of new innovative companies.

The relation between the world of research and the world of business must be strengthened if we want to promote the transformation of scientific discoveries into innovation, so that everybody can benefit from it. This may happen through joint Research and Development projects, the utilization of results for new patents and innovations and through technological transfer processes. Furthermore, the implementation of infrastructures and services will support the creation of new companies and the dissemination of all the information and know-how necessary for a congruent analysis of their potential and technologies".

What is then the mission of the Canavese Bioindustry Park?

"The Park is a key actor in the process of identification, development and use of research outcomes in the Life Sciences field. In short, the mission of the Bioindustry Park consists of 5 pillars:

- *to set up a link between university research and businesses*
- *to boost start-ups, spin-offs and the growth of innovative enterprises*
- *to promote research and development activities and the transfer of technologies, supplying scientific services and know-how*

- *to implement research activities in Life-Sciences related fields, in collaboration with the University, with public and private Research Centres and with businesses*
- *to offer competitive and useful equipped spaces, as well as logistic, technical and scientific services.*

The aim of the Park is to be a positive factor for the development of the area".

One of the limiting factors to new activities in the field of biotechnologies is represented by the difficult access to funds in the early stages of development: how is support to innovation changing in this sector?

"It is clear that from a business view point the presence of excellent basic research is not enough. In the case of academic start-ups and spin-offs, the first obstacle is start-up capital, which is hardly available through conventional channels. The Bioindustry Park has therefore decided to promote the setting up of Eporgen Venture which together with the Discovery Project and the Park Incubator ensured the venture capital required for 5 start-ups. Eporgen Venture was set up by businessmen and other private organizations in the Canavese area who strongly believed in the initiative and in the people who promoted it, despite their lack of specific expertise in the pharmaceutical and biotechnological fields".

Where should investments be directed in the field?

"The local market is not and cannot be the main market for Life Sciences. Success can only come from the ability to offer products and services in the global market. That is why public investments need to be carefully directed too. The priority is to identify and support technological fields which can be competitive at an international level, setting up technological platforms of absolute excellence. These platforms could be aimed at some of the key areas of research and clinical application of results as well as promote the start-up of new businesses. The implementation of platforms should be matched by the strengthening and rationalization of further synergic and complementary activities, such as synthesis chemistry, structural biology etc. to further a system which can become a cradle of innovation and discoveries at an international level".

Discovery Project: a unique initiative in Italy. How was it developed?

"The project, supported by the Region of Piemonte, is aimed at identifying new and innovative business ideas in the field of biotechnologies which could be developed in the Bioindustry Park.

One of the prerequisites of this programme is the availability of funds to support research activities based on very strict assessments, on the validity of projects and on regular monitoring of results.

During the first year of activity, the Discovery Project entailed scouting activities, project analysis *and assessment with the involvement of a dozen Italian universities, and meetings with over 200 researchers; out of the 23 projects submitted, 8 were selected. They were all scientifically robust and 5 have already been translated into business activities.*

It is indeed a unique model in Italy and certainly an innovative one in Europe because the main trend is to grant substantial funds at a more advanced stage of research, rather than at the pre-competitive and discovery stage".

Which are the connections between Biotech and the other technological fields in our area?

"Terms like Bioengineering, Bio-information technology, Bio-nanotechnologies point to the need for different technologies to be integrated to perform technological breakthroughs. From this viewpoint, Piemonte happens to be in a window of interesting opportunities: it has centres of absolute excellence, such as the X-lab in the field of micro-sensors, and projects like Torino Wireless, with synergic and complementary activities.

The integration between technologies is undoubtedly a big opportunity for Piemonte. Applications are different: nanotechnologies, like ICT, can be considered enabling technologies in the sense that if they are integrated even to even traditional solutions, they may generate product and process innovations. Hence new materials, new ways to release drugs, new diagnostic instruments".

From the integration between sectors to the integration of different areas. Which are the prospects of "creating a joint system" with other areas in this respect?

"Piemonte is not the only area with this kind of decisions to be made in the biotech field. There is therefore the need to identify and take advantage of synergies with other contexts, not just Italy, to improve the visibility of Piemonte. This started with ITP, three years ago and since then participation to fairs and events was matched by a mapping of all the actors in the field: a work team was set up including in addition to the Bioindustry Park and ITP the Biotechnologies Foundation, the Polytechnic of Torino, the Torino University, and the Innovation Relay Centre (IRC ALPS,) and in this framework promotional instruments and surveys were implemented. As a result of these activities new links with neighbouring areas were created, Grenoble being an example of it, and Piemonte became a party to EuroBiocluster South".

1.6.4 Aerospace

The aerospace sector in Piemonte: facts and figures	
Number of companies	Over 100
Number of employees	Over 9,000
Annual turnover	About 1,400 million euro

The aerospace sector plays a very important role in Piemonte, and particularly in the area around Torino: over 100 companies employ more than 9,000 people, with a total annual turnover of 1,300-1,400 million euro. In particular **aeronautics**, with almost 1,100 million euro, accounts for about 80% of the total regional turnover of the sector. About 50 companies work in both the aeronautical and space sectors, about 40 specialise only in aeronautics, and less than 10 are involved uniquely in the space sector.

The aerospace businesses of the piedmontese pole offer a multifaceted range of technical and production skills and know-how, which fully meet the requirements of the diverse segments of the aeronautic and space markets: aircrafts, engines, propulsion units, satellites, infrastructures, land and on-board control systems, etc. On top of the over 70 **manufacturing** companies, about 20 businesses work in the field of technical services (research and development, design, information technology, etc.). Their activities support the know-how of companies and industrial plants, sometimes complementing their internal structures. Further consulting and marketing enterprises complete the picture.

As far as manufacturing is concerned, the production chain is vertically structured in all its components:

- final manufactures of **complex subsystems**
- suppliers of **spare parts, components or functional groups** integrated in such subsystems
- subsuppliers of **specialised products and equipment**.

At one end of the manufacturing chain operate a few large businesses and production units of national leading corporates, largely known at international level: Alcatel - Alenia Spazio, Alenia Aeronautica, Avio Spa (former Fiat Avio), Galileo Avionica. They are responsible for the development and production of avionic and electro-optical systems, radars and electronic targets, flight simulators, space propulsion units, systems for scientific satellites and space infrastructures, modules for aeronautical engines, aircrafts or aircraft components. Such products are used in the fields of civil transport, scientific applications, telecommunications and defence. A couple of small enterprises also manufacture small ultralight aircrafts.

In addition to the main companies located at the very end of the aerospace production chain and historically rooted in the region, a group of 15-20 medium and medium-large production units has developed. These specialise in the production of spare parts, components or entire functional groups for the aeronautical and space sectors. Some examples are Microtecnica, the plant "Getti Speciali" (special castings) of Teksid Aluminium, the division "Cuscinetti Avio" (bearings) of SKF Industrie, Mecaer Meccanica Aeronautica, Ilmas.

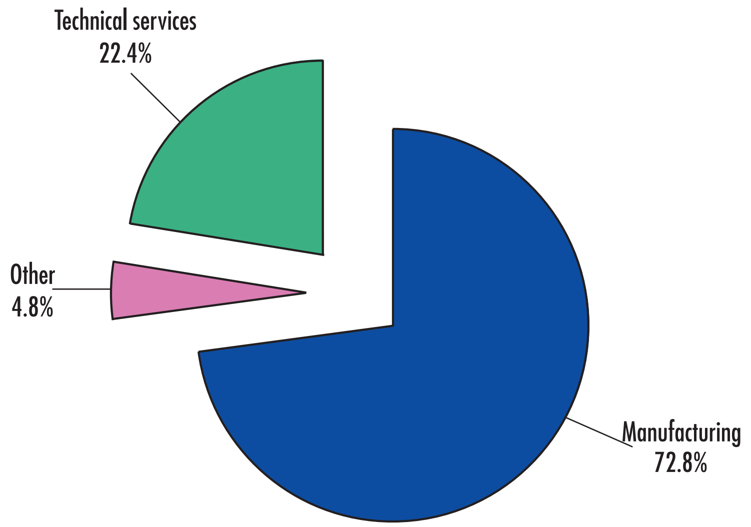
At the opposite end of the production chain operates a group of 50-60 small and medium subsuppliers, which rely on technologies and production processes meeting the technical standards required by the aerospace industry in terms of quality, precision, handling of special materials, etc. These companies mainly manufacture parts - usually on the basis of drawings and specifications provided by the customers - or carry out special working processes. Their activities range from the production of mechanical parts to the assembling of electronic circuits, from the casting of steels to the execution of surface heat treatments and the construction of dies, tools, equipment and electric cables. In this case, the contribution of such companies to the sector is not due to specific skills in the aeronautical sector, but rather to the existence of production capacities based on advanced industrial processes and technologies suited to meet the needs of the other companies in the production chain. The main markets for many of them lie in other industrial sectors (automotive or industrial tools), but they have the necessary experience, technologies and technical-manufacturing equipment for the aerospace sector. Further players in the piedmontese aerospace sector are the manufacturing companies that also provide technical and industrial services, such as initial design, modelling, industrial design, structural calculation, the production of specialised software, testing and lab testing.

The companies in this sector pay particular attention to technological innovation: at least 1 out of 3 has its own internal laboratory, for the others it is common practice to rely on external labs for tests and analysis.

In addition to cooperating with research centres in Italy – first and foremost the Polytechnic of Torino, which provides training in engineering and carries out research and experimentation – and abroad, aerospace companies are also involved in international programmes and projects (again, 1 out of 3) that give them the opportunity to acquire highly qualified skills and know-how. Thanks to internal research and the cooperation with external structures, almost half of the companies of the sector have developed specific know-how for the manufacturing of products for the aeronautical and space markets.

Chart 4

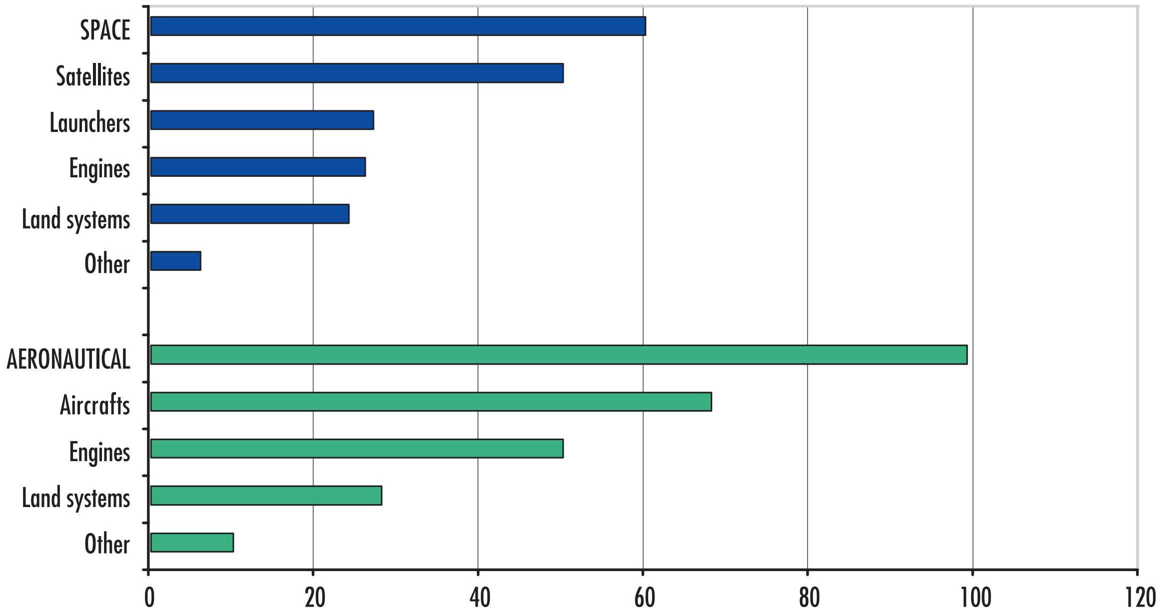
Company type



Source: Torino Chamber of Commerce, The aerospace sector in Piemonte, 2003

Chart 5

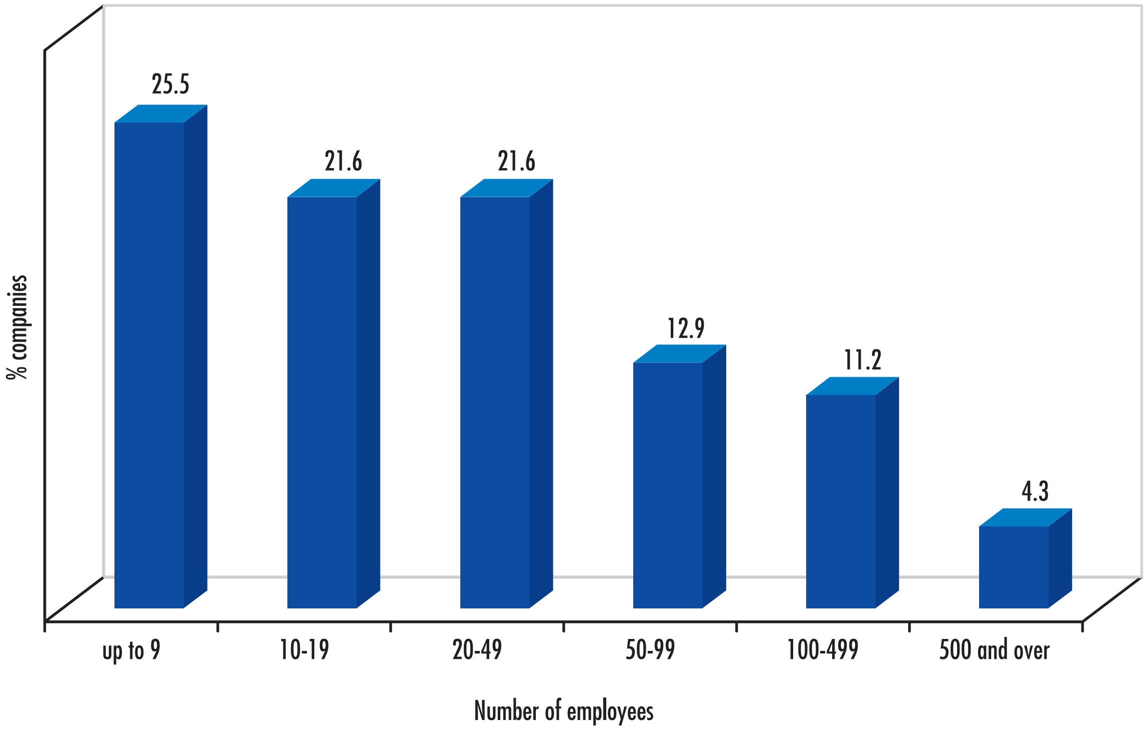
Target sectors



Source: Torino Chamber of Commerce, The aerospace sector in Piemonte, 2003

Chart 6

Company size



Source: Torino Chamber of Commerce, The aerospace sector in Piemonte, 2003

As for the **penetration of foreign markets** by aerospace companies, this is not limited to large, international leading enterprises, but it also involves SMEs: over half of them work with European and extra-European buyers. For 1 out of 10, export is the main turnover contributor. In several cases, companies have signed agreements with foreign partners, both for commercial and production purposes or for the exchange of know-how. Sometimes, this has even led to the creation of subsidiaries and plants in the most interesting countries. The ability to face up to international competition is mainly due to the high quality provided. Most of the companies has already been quality certified and two thirds can operate in accordance with the buyers' requirements, who must comply with the standards set by product and process certifications or by sector-specific quality labels.

The aerospace district: an opportunity for the area. Giovanni Crossa (Alenia Aeronautica), coordinator of the Committee for the creation of the new aerospace district in Torino, illustrates the opportunities that the new district can generate for Torino and Piemonte as a whole.

"Promoted mainly by the Engineers Association of Torino – aware of the wealth of skills and know-how that Torino and Piemonte can boast in the aerospace field, and of the opportunities offered to local development by the policy of districts – the project involves the most significant companies of the sector, along with local institutions. At the moment, contacts are under way with the Piemonte region and the Ministry of Education to sign a programme agreement on the creation process of the district, which the promoters hope will begin by 2006.

The promoting commitee, currently comprising Alenia Aeronautica, Alcatel-Alenia Spazio Italia, Avio, Galileo Avionica, Microtecnica and the Polytechnic of Torino, along with the Engineers Association, has already been working for over a year and a half. It has already produced a report on the existing technological excellence of the main companies working in the area. This will help to identify the potentially developable technologies in the district, keeping in mind the European priorities for the next years - safety, eco-efficiency and space exploration - which will costituite the basis for the granting of funds to the aerospace sector within the next framework programme. Starting from these strategic priorities and the technological skills and peculiarities of the Torino area, the suitable technologies will be identified. On this basis, a proposal on the infrastructures and organisation of the district will be formulated.

The district will aim at activating, through suitable investments in applied research, a potential financial lever that will generate great benefits in terms of innovation, new investments and high quality jobs.

A further important objective of the district lies in the creation of synergies between those who carry out research activities (the Polytechnic and big enterprises) and a network of excelling SMEs, able to provide the same high technological level of products and services as larger companies. As for minor companies, the plan is to map their technological skills in order to have a clear overview of their competences and know-how. In future, it will thus be possibile to provide services - within the district - aimed at identifying and supporting the potentially suitable SMEs.

This is particularly relevant, as if they want to compete with other areas where similar districts are located, both in Europe (such as Toulouse) and in Italy (the aerospace district in Campania), smaller businesses in Piemonte need to grow in terms of competence and technological skills, developing the excellence needed to cooperate in a targeted, coordinated and consistent way with larger companies.

Although no feasibility study on the impact of the district on local development has yet been carried out, it is reasonable to think that the creation of synergies in the production of knowledge and the birth of cooperation networks will increase the number of highly qualified jobs and raise the technological level of aerospace SMEs, thus promoting the growth of businesses and employment, similarly to what is already happening in the wireless district.

Obviously, the development of the sector also depends on national policies aimed at guaranteeing that the Italian aerospace industry has a significant role within international projects. The more we will be able to count on excellent companies at all levels of the production chain of the sector, the easier it will be to reach this objective".

1.6.5 Audiovisuals

The numbers of cinema 2001-2005

145	Productions
56	Films
41	TV series and soap operas
48	Short films and documentaries
800.5	Working weeks
180	Prep weeks
2.835	Local technicians employed
1.304	Local actors
12	Advertisements and music videos
138,383,294	Investments in Piemonte (euro)

Source: Film Commission Torino Piemonte. Updated on October 10th.

Torino is the city that saw the birth of Italian cinema in the first years of the last century. This vocation seemed to have disappeared, but since a few years Torino has become a significant location for cinema productions: a ribirth of an old tradition that is opening up new work opportunities and promoting growth in our province.

Torino hosts the Cinema Museum, one of the most important in the world. It is thanks to the great success of the Museum and of the Torino Film Festival that the idea came about of bringing filming back into town. The results have been amazing: 145 productions in four years, involving 2,835 local technicians and 1,304 local actors, with 800.5 working weeks.

Film Commission Torino Piemonte, but also Telecittà Studios in San Giusto Canavese represent the great opportunities for cinema in the Torino area. They are solid structures for all those who want to film in our region, and in particular in our province.

The investments made between 2001 and 2005 in Piemonte for the development of film productions amount to over 138 million euro. This figure can be increased in the future, thus making the film industry into one of the main sectors of the local economic fabric.

This new industry could become a dynamic source of revenue, with new job and growth opportunities. Torino and Piemonte will not become a "new Hollywood", but certainly represent an area of excellence in the film sector.

Torino also hosts Antenna MEDIA, the representative office in Italy – together with the Media desk located in Roma - of the EU MEDIA programme, the community programme for the support of the European audiovisual industry, managed by the DG Information Society and Media. Its database provides interesting information on the audiovisual production in the province of Torino. 193 businesses and associations are located in the municipality of Torino and their editorial activities can be classed as follows: 18% produce their own documentaries, 18% multimedia products, 8% fictional works and 3% animated films.

6% are active in two fields, mainly documentaries and fictional works.

The province hosts 38 audiovisual production companies, specialised in particular in multimedia works. More than 200 professionals are based in the Torino area: in the city, 73% are scriptwriters (93% in the rest of the province). Directors are also a significant professional profile in the area: 18% in Torino, and 5% in the rest of the province territory.

Interview with Giorgio Fossati, Director of Film Commission Torino Piemonte

On what grounds can we call Torino the "City of Cinema"?

"First of all, we have a long standing tradition in the field. Suffice it to say that Cabiria, the most expensive and famous Italian mute film, shot in 1913 in the film studios " Italia Film" in Torino, greatly influenced Hollywood. At the time, American directors came to Torino to study the technological and stylistic innovations, such as the systematic use of the travelling shot".

Infrastructures, professionals, initiatives: what does Torino offer today?

"Today Torino and Piemonte offer over 20 studios of extremely high standards, equipped with the most advanced technologies and highly qualified staff, such as the cinema and TV studios Lumiq, Unistudio, Euphon, Telecittà, just to mention a few. Some even have the right equipment for live and virtual shooting, such as the Virtual Reality & Multimedia Park. Torino also hosts one of the Rai Production centres, with four studios and the technologies for a virtual studio.

Several initiatives aim at enhancing the local film industry and promote the potentials of the film production sector in Piemonte. The latest project is the creation of the "Cineporto" in Torino, due to be completed in spring 2007. It will be a true "House of Producers", a reference point for the film and TV companies that will choose to work in Piemonte. At the Cineporto, guests will find a friendly environment and services such as production offices, a meeting room and a screening room where they can view their daily production, a costume room and areas for scenographies, casting rooms, a joiner's workshop and much more.

More film and TV productions mean more work for local artists and technicians, with beneficial consequences for the youngest and obvious advantages in terms of profit".

Professionalism in show business: what are the strong points of professionals and companies in Torino? Does our territory own an artistic or technical specilisation? What are the figures?

"Scenography has a very long tradition in Torino and in Piemonte. Torino has a strong technical vocation, originally linked to mechanics, electronics and industrial design. People here are creative, ingenious, manually skilled and have a lot of experience. And experience significantly reduces execution times, and therefore costs.

Film professionals learn their skills on the field, working in the industry. That is why working with a production crew is an enriching training experience, as well as a great opportunity for the local labour market.

Talking numbers – the structures that currently work in the field of cinema, TV, audiovisual and multimedia productions in Piemonte are about one hundred. On top of these, there are about 200 agen-

cies that operate in the area of show business, computer animation, multimedia programming, soundtracks, photography, special effects, post-production, scenography, costumes. At least 400 professionals of the audiovisual field, such as directors, grips, writers, or service providers connected to the sector work in the territory. One interesting note: Torino and Piemonte have gained an excellent reputation in the field of make-up and costumes. We rely on specialised artists and laboratories that offer the world film industry the Italian know-how in tailoring and artistic make-up. Also, in Torino and Piemonte are located animation studios that have produced true masterpieces, appreciated and awarded at international level. This is all based on a mix of creativity, innovative techniques and state of the art equipment. It is not by chance that since 2001 Torino hosts the Experimental Centre of Cinematography, Department of Animation".

The local film sector can count on a whole range of interesting realities: the National Cinema Museum, the Production Centre in San Giorgio, the Virtual Reality & Multi Media Park, the Torino Film Festival and much more. Can this offer of initiatives and opportunities grow further?

"2000 saw the opening in Torino of the Cinema Museum: the only one in Italy and one of the most important in the world. The Museum represents the roots, the history of cinema, while the film festivals are the future, the prospects. The Torino Film Festival, now at its 23rd edition, is the second most important in Italy, after Venezia. Its main focus is avant-guard cinema, just as Venezia fucusses on auteur cinema. Cinema Giovani aims at being a meeting and exchange opportunity for the new international cinema, in its diverse facets and artistic trends, and pays particular attention to emergening cinematographies and young filmmakers. Telecittà is a set of spaces, technologies and skills that can cover all the phases of the audiovisual production process. At the moment it is hosting the production of two soap operas. It is also a national centre for dubbing, with recognised and talented actors, some of whom come from the world of radio. The VR&MM Park is a technology park, a multimedia and audiovisual district that operates in the fields of new media, virtual reality, art and communication and high-level training".

How does cinema contribute to the economic fabric of a territory?

"Cinema stimulates curiosity, gives high visibility to an area and fosters interest in it. It also creates an image, an identity where there was none before. Thus, it impacts a territory in two ways: it attracts tourists and resources, and at the same time it promotes the development of further market sectors, enhancing the whole production context. Let me just mention one example. At last year's Berlin Festival, we managed to present piedmontese wines together with the film on the locations in Torino and Piemonte, produced with the help of the Torino Chamber of Commerce and seen by over 200 foreign producers and technicians".

As for Film Commission, how many films have been "brought" to Torino since Film Commission was created? How does it work?

"Film Commission Torino Piemonte is a no-profit organisation founded in 2000 with the aim of facilitating the work of those who choose to shoot in our area for cinema or TV productions. It helps searching for the right locations during pre-production and, if needed, also at script writing stage. Help and support are also given when production companies need to interface with public and private institutions, so as to speed up the granting of permissions and authorisations thanks to the special agreements signed with the Piemonte Region, the Municipality of Torino and the Superintendence of Fine Arts. In brief, Film Commission is the first contact that can solve problems and support the work of crews before and during production. In addition, it strongly promotes piedmontese cinema and TV professionals and service companies.

In 2004 alone, Torino and Piemonte hosted 31 productions: 6 films, 13 TV series, 2 soap operas, 9 short films and documentaries, 3 advertisements. The total productions since 2000 are 145, while the total investments in Piemonte amount to over 138 milion euro".

Are foreign productions interested in the locations in Torino and its province?

"Yes, over the past few months we have seen a certain interest from American, English and other foreign productions. We'll see whether in the near future, after the first meetings, they'll confirm their wish to shoot in our area.

The best proof of our success is obviously the appreciation shown by both the public and the critics for one of our films, now on show also abroad. It is also encuraging to see how cinema and TV productions tend to come back to Piemonte after a first experience here".

To conclude, do you believe that the film industry can truly become a strategic sector for Torino and its province?

"Yes, it's possibile. But if we want Piemonte and Torino to become a productive pole we must invest, be imaginative and put in place new financial tools in order to acquire the most significant productions. Cinema, just as industry, tends to delocalise to less developed areas. Other conditions being equal, productions tend to go where supernumeraries, spaces and constructions are less expensive, or where there are less operational hindrances. Setting up a system of facilities can attract to our area films and skills, and foster the creation of jobs. It is also necessary to strengthen the private system in Torino and Piemonte and help, even through financial support, those who try to become producers. Because cinema flourishes where producers are".

Income

What is the amount of wealth generated by the Torino and piedmontese production system in the last years? What is the level of economic well-being of the local community?

Torino and Piemonte have a significant impact on Italian income.

The latest available statistics on the regional income (provided by Istat, the Italian National Statistical Institute) show that in 2003 Piemonte generated a **gross domestic product** of over 109 billion euro -8.4% of the entire wealth produced at national level. With constant prices (basis year 1995), in the period 1996-2003 the regional GDP has increased from 80 to over 87 billion euro, with an average annual growth rate approaching 1.2%.

Although added value and GDP are only rough indicators of the economic well-being of the community they refer to – as they rather correspond to the idea of production potential of an area – it is deemed appropriate to describe their main structural and dynamic features. The estimated regional added value on base prices in 2003, calculated as the difference between the value of production of goods and services obtained by single production branches and the value of intermediate goods and services consumed by the same branches, was 102,203.90 million euro.

The estimated province **added value** on base prices in 2003, as calculated by Istituto Guglielmo Tagliacarne, was 53,986.90 million euro at current values, as it places the Torino province on the top ranks in Italy in terms of contribution to the generation of national wealth. Torino is preceded only by Milano and Roma and accounts for 4.4% of the national added value and 52.4% of the piedmontese added value. Nevertheless, these percentages have shown a decrease in the past few years. At province level, the average annual increase of this economic indicator between 1995 and 2003 was 3.5%. The analysis of the province added value by sector of activity clearly shows the fast growth of the third sector in terms of contribution to the wealth produced in the area. In the past decade, the importance of services in the province of Torino has progressively increased, reaching an added value of 37,998.7 million euro (70.4% of the province added value, against 63.8% in 1995). At the same time, the significance of the industrial sector has decreased (15,587.6 million euro, 28.9% of the province added value, against 35.3% in 1995), although its sub-sector “constructions” has become more and more important. The agricultural sector plays a marginal role (only 0.7% of the added value), although in 2003 it reached 400 million euro, with a rise of 6.6% on the previous year.

Table 9

Added value on base prices according to economic sector in 2003 *(million euro - current value)*

	Agriculture	Industry			Services	Total
		Strictly speaking	Constructions	Total		
Torino	400.6	13,197.5	2,390.1	15,587.6	37,998.7	53,986.9
Piemonte	1,959.9	27,316.0	5,269.0	32,585.0	68,424.0	102,968.0
North-West Italy	6,385.0	104,923.0	17,295.0	122,218.0	263,445.0	392,048.0
Italy	30,883.0	262,228.8	61,437.0	323,665.8	862,643.7	1,217,192.5

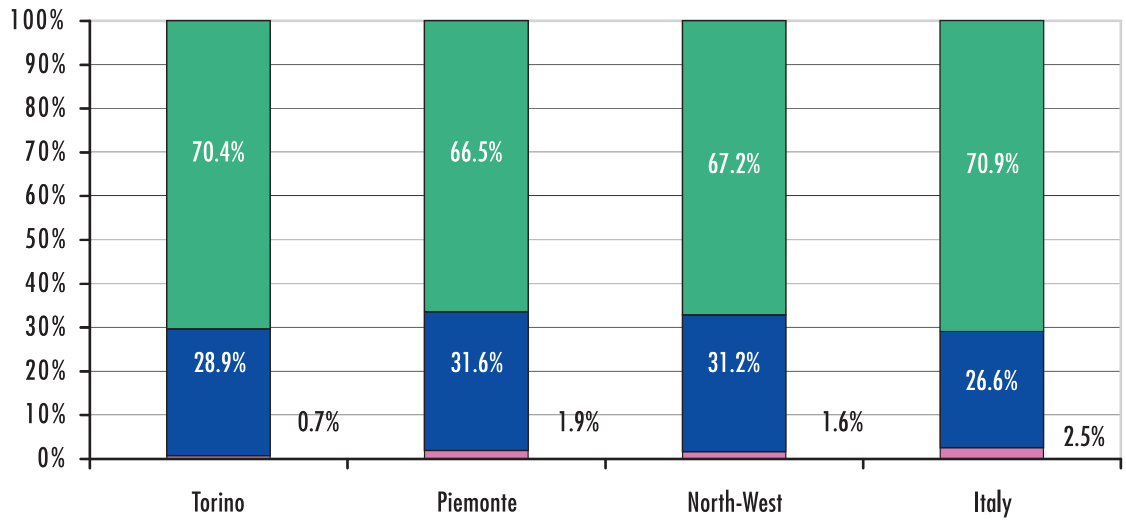
Source: Istituto Guglielmo Tagliacarne

The 2003 analysis of the **added value according to economic sector** at different territorial levels (provincial, regional, national) shows how the importance of industry in our province is much higher than the national average (26.6%) but lower than at regional level. As for services, the figure concerning the province of Torino is slightly lower than the national (70.9%) but higher than the regional average (66.5%).

The marginal contribution of agriculture to the province added value is lower than the regional average (1.9%) as well as the national figure (2.5%).

Chart 7

Breakdown of the added value by economic sector in 2003



Legend

Agriculture *Industry* *Services*

Source: Istat, Istituto Guglielmo Tagliacarne

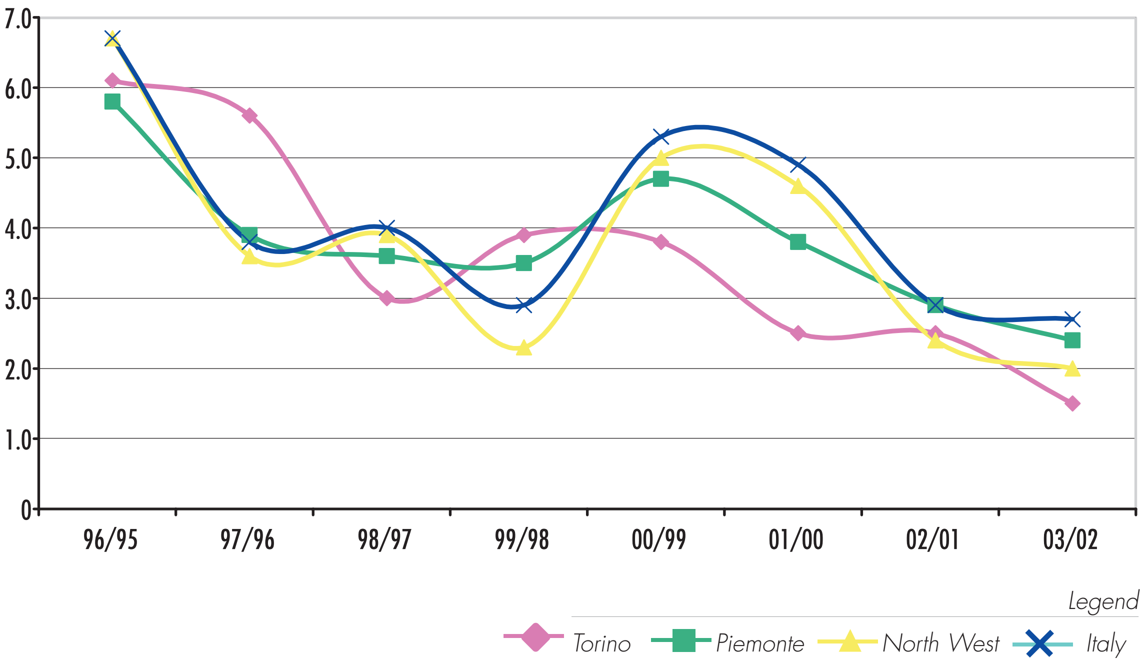
The trend followed by the province added value is mirrored in the per capita value of Torino, which, between 1995 and 2003, shows a 3.5% average annual growth, slightly lower than the regional and the national rates.

It is worth noting that the Torino trends often differ from the regional, North-Western Italy and national ones. Depending on the years taken into account, the figures can be much better or much worse.

According to the data recently disseminated by Unioncamere Italiana and Istituto Guglielmo Tagliacarne on 2004, the province of Torino ranks 25th in the list of Italian provinces with the highest per capita added value, with 23,557 euro. This figure shows a significant slowdown if compared to the 2003 estimate (23,660 euro) and has been considered as an indicator of an impoverishment of the area. If we only look at Piemonte, the province of Torino is the fourth in the list, after Cuneo (11th position), Alessandria and Novara, respectively 16th and 21st in the list.

Chart 8

Percentual annual change of the per capita added value (1995-2003)



Source: Istat, Istituto Guglielmo Tagliacarne

Further significant economic indicators must be taken into account, starting form the per capita disposable income, which in Torino amounts to 17,310 euro (2002). This value, higher than the national average (15,031 euro), places Torino at the 28th position in the national list. Similar figures can be seen in the analysis of **per capita cunsumption** (15,303 euro in

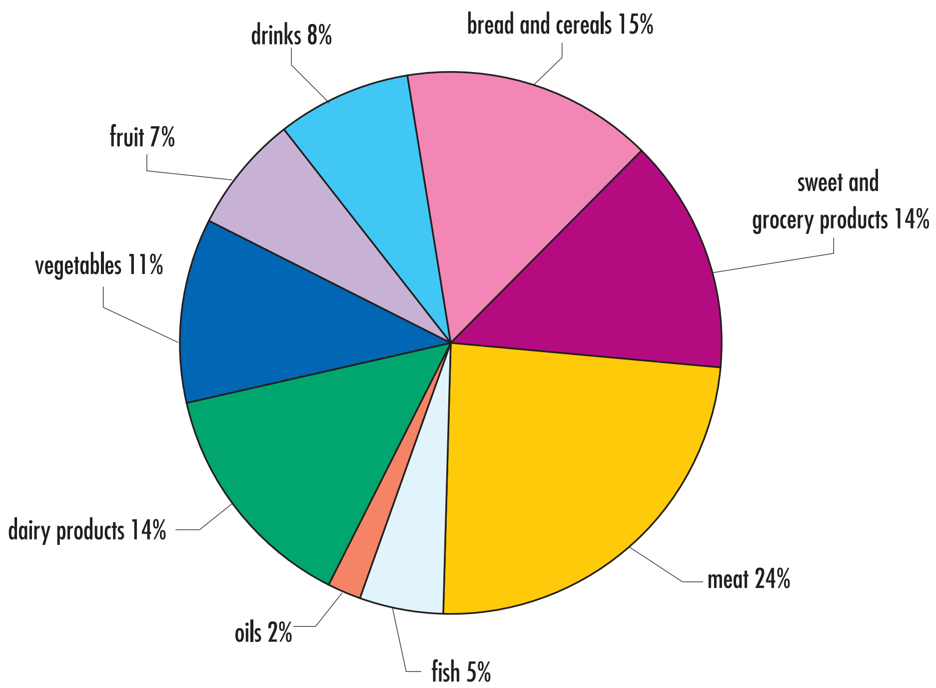
2003). Here the value is higher than the national average, but lower if compared to the other provinces in North-Western Italy (15,633 euro per capita). The province of Torino ranks 29th at national level.

The data on **family consumption** can be gathered from the results of the sample survey on the expenses of families who live in Torino, carried out by the Torino Chamber of Commerce together with trade associations (Ascom and Confesercenti Torino). In 2004, the average family in Torino (whose size is little more than 2 members) spent 2,380 euro per month. Food accounted for 14-15% of the total expenses (slightly less than 350 euro), with an increase of over 35 euro in comparison to the previous year. This rise brings Torino closer to the regional average (359 euro) and sheds an interesting light on the dynamics of price increases in the agribusiness sector.

The distribution into categories of food expenses shows that about one fourth of the total amount is devoted to "meat and cured meats" (24%). "Bread and cereals" follow (15%), then "milk and dairy products" and "sweet products" (both 14%). Less relevant are the expenses for "vegetables" (11%), "beverages" (8%), "fruit" (7%), "fish" (5%) and "oils and fats" (2%).

Chart 9

Distribution of food expenses of families in Torino in 2004



Source: Torino Chamber of Commerce, Ascom, Confesercenti, Survey on the expenses of families who live in Torino

In 2004, the monthly average expense for non-food products of a Torino family exceeded 2,030 euro -85% of total expenses excluding home maintenance costs - with an increase of 180-190 euro on the previous year. Such rise concerns several items, but is particularly due to home and health expenses.

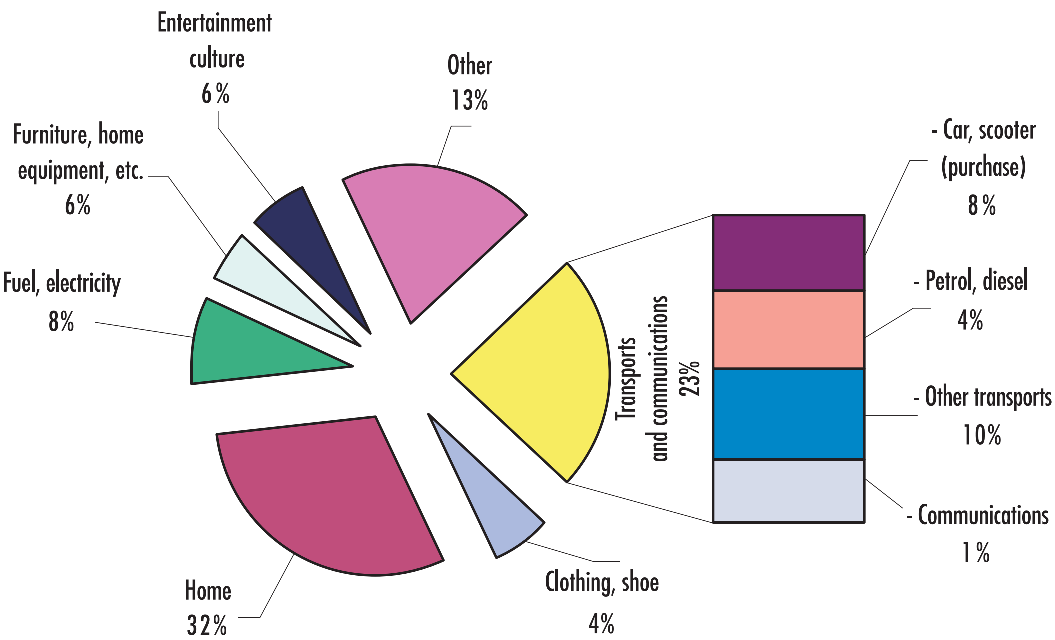
As for the types of products covered by non-food expenses, 32% of the total figure is spent on home expenses (almost 90% goes into rents, although condominium fees and the tax on waste also have a significant impact). These are followed by transport and communications - almost one third of non-food expenses (23%) – fuels and electricity (8%), furniture and home furnishings (6%), entertainment and culture (6%), clothing and shoes (4%) and other minor items.

The comparison with 2003 shows a reduction in the expense devoted to clothing – from 103 to 87 euro per month. The shoes sector does not suffer the same decrease. Home costs represent a more and more significant share of the total expenses (32% against 30.4% in 2003 and 28.2% in 2002), together with furniture, home furnishings and domestic appliances (6.4% against 5.3% the previous year).

The amount of money spent on entertainment and culture has remained on the same level (an average of 118 euro per month). This is still lower than the 2002 figure, although higher than the very negative value registered in 2003.

Chart 10

Distribution of non-food expenses of families in Torino in 2004



Source: Torino Chamber of Commerce, Ascom, Confesercenti, Survey on the expenses of families who live in Torino

The Challenge of Internationalisation

Strategically located in a border region, the province of Torino has shown its international vocation throughout its history. This is demonstrated by its tendency to create and develop exchanges of goods and services with other countries and its attractiveness for foreign capitals, which improve the competitiveness of the whole production system. Globalisation requires our area and our businesses to move with more and more determination towards a strategic internationalisation process, mainly through the delocalisation of production. We still lack complete and accurate statistical data on such phenomena, but it will be essential to monitor them closely if we want to fully understand the opportunities for the future development of our province.

3.1 The international dimension of the province of Torino: trade

The first months of 2005 have been a less than encouraging period in terms of the internationalisation challenge that our area has to face. According to the provisional data provided by Istat (the Italian National Statistical Institute), the export of the province has been disappointing, although the data on the third quarter of the year show some signs of recovery. On the contrary, the final statistics on the interchange of the province in 2004 show a moderate growth in that year.

The limited dynamism of the local economic system in penetrating foreign markets clearly mirrors the difficulties of the business cycle in the province of Torino. This is added to the chronic dynamic inefficiency in the pattern of international specialisation, which has worsened in recent years and is mainly determined by the production and export of goods whose world demand has grown slowly, and by the focus on markets characterised by relatively limited growth rates.

These difficulties have been made even harsher by the international context and the emergence of new competitor countries that are both large exporters of goods - directly competeing with local businesses - and significant importers of capitals. A further penalising factor in recent years has been the constant appreciation of the euro, which has contributed to the significant decrease of exports from our province to the United States. Nevertheless, this has not caused any collapse in other extra-Community areas, such as most of the emerging countries, where export levels have remained unchanged.

After Milano, Torino still ranks second in the national list of exporting provinces, and in 2004 accounted for 5.6% of all Italian sales of goods abroad. Exports from Torino, despite registering a positive trend, suffered a slowdown if compared to the previous year, when the annual growth had been 1.9%.

In 2004, with a total **export** of goods of 15,839.51 million euro (1.1% more than 2003), the province of Torino has shown lower growth rates than those registered at national (+7.5%) and regional level (+3.9%)

As a consequence, the contribution of Torino businesses to the piedmontese export has slightly decreased – 50.7% against 52% in 2003. Such data are confirmed also by the information on the first months of 2005.

A more dynamic trend has been registered for **imports**, which in Torino have increased by 2.7%, from 11,120.63 to 11,417.65 million euro. On the whole, the trade balance of the province is still largely positive and amounts to 4,434.6 milion euro.

3.1.1 Import and export of the province of Torino according to product type

What does the province of Torino export? What are the characteristics of its transactions with foreign countries?

It is extremely important to look at these issues, because the types of products exported, including their quality, the sector they belong to, the technology they integrate and their innovative nature, determine the direction of geographical flows of exports. This can be alternatively a difficulty to tackle or a strategic component in the increase or loss of market shares.

99.7% of the value of exports from Torino comes from the **manufacturing industry**: a figure that is higher than the world and the European Union average, as well as the Italian and regional values (95% and 97%).

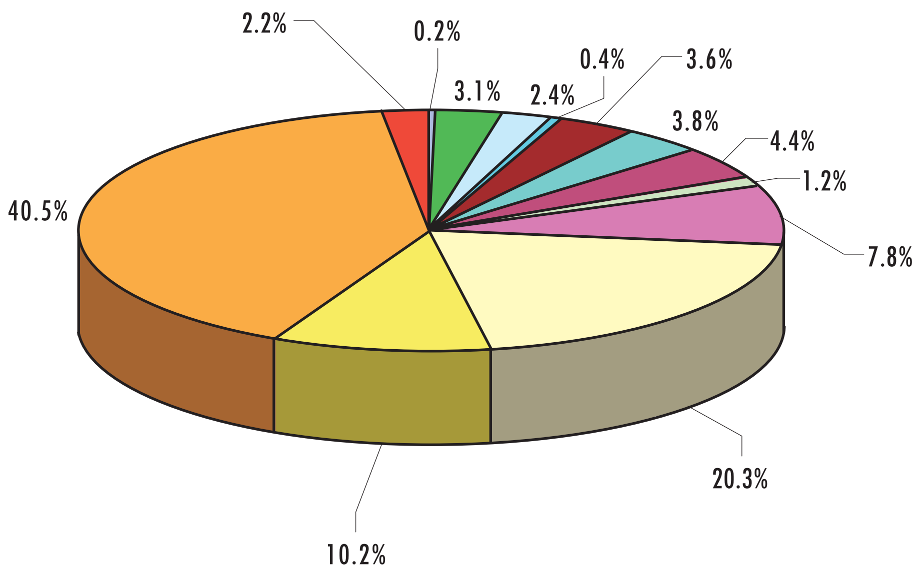
Following its production tradition, the main export sector of the Torino province is represented by **vehicles**, which account for about 41% of the total. 2003 was a year of good results, (+5,6%), followed in 2004 by a 1.4% decrease determined by the fall in the sales of cars (-9.4%).

For the first time, these transactions (almost 17% of the total), were exceeded by imports of spares and accessories for cars (20,5%), which increased by 12.3% if compared to 2003. Almost one third of Italian sales of car components come from the area of Torino. This is particularly interesting in the light of the role that Italy has regained today, after losing momentum since the end of the Nineties. Today this type of goods represents 5.5% of the world business. It is quite clear how the crisis of the Italian automobile sector pushed producers to look for more customers abroad.

The increase in exports has been accompanied by a decrease in the purchase of components (-10.6%), with a resulting improvement of the trade balance of the sector, which amounts to 2,135 million euro.

Chart 11

Breakdown of exports from the province of Torino by economic sector in 2004



Legend

- *Agriculture and fishing*
- *Food, drinks and tobacco*
- *Textile and clothing*
- *Leather*
- *Paper*
- *Chemicals*
- *Rubber and plastics*
- *Products from non-met. minerals*
- *Metals and metallic products*
- *Mechanical machines and equipment*
- *Electric machines and equipment*
- *Vehicles*
- *Other products*

Source: analysis of Istat data

As for this sector, which includes the entire vehicle industry, it is worth noticing the slowdown in the export of aircrafts and space vehicles for two consecutive years (-25.8%). These products represent today 2.5% of the sales of Torino, against 4.2% in 2002.

Table 10

Import-export of the province of Torino (million euro)

Type of product	2003		2004	
	import	export	import	export
Agriculture, hunting and forestry	308.60	24.57	304.3	28.24
Fishing and fish farming	6.64	0.02	6.0	0.03
Energy and non-energy minerals	16.30	12.44	17.3	12.76
Processed products	10,528.39	15,456.36	11,053.6	15,800.40
Food, drinks and tobacco	273.18	443.51	262.6	487.44
Textile and clothing	345.96	406.28	358.8	375.62
Leather and leather products	89.65	62.55	112.2	58.22
Wood and wood products	72.90	32.53	78.4	33.64
Paper pulp, paper and paper products, Editorial and press products	404.16	529.23	409.5	571.28
Coke, refined petrol products and nuclear fuels	36.74	28.95	32.0	30.10
Chemicals and synthetic and artificial fibers	675.80	545.25	734.6	604.99
Rubber and plastics	338.10	662.07	337.9	696.62
Products from non metallic minerals	85.86	190.54	90.5	196.41
Metals and metallic products	1,307.52	1,047.40	1,451.4	1,243.79
Mechanical machines and equipment	1,540.73	3,196.31	1,571.0	3,216.68
Electric, electronic and optical machines and equipment	1,839.66	1,521.33	1,827.2	1,611.67
Vehicles	3,353.08	6,509.62	3,630.8	6,415.57
Other products of manufacturing companies	165.05	280.81	156.8	258.36
Electric energy, gas and water	19.57	-	15.0	0.00
IT, professional and entrepreneurial activities	19.64	5.79	12.5	4.24
Provision of public, social and personal services	5.27	5.32	6.0	3.48
On-board supplies; rejected national goods; sundry goods	216.23	174.31	2.9	3.10
Totals	11,120.63	15,678.82	11,417.6	15,852.27

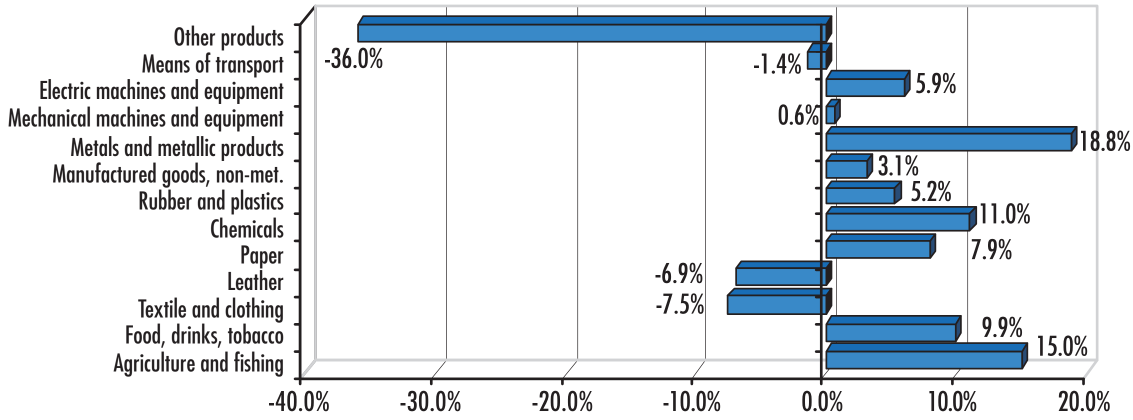
Source: Istat

The second important sector in terms of exports from the province, with a value of 20.3% (similar to the national figure), is represented by **mechanical machines and equipment**. The slight improvement registered in 2004 (+0.6%) stops the slowdown trend begun in 2002, despite the negative performance of some machine types for special applications.

This sector has always been characterised by a certain stability in the trade flows. Furhtermore, non-price competition factors, such as differentiation, innovation and after-sale services play a more important role than in other sectors. These are the reasons why, particularly in recent times, Italian entrepeneurs have been less subject to the competition from emerging countries (the only exception being household appliances, as these are labour intensive productions where learning processes are less relevant than for other types of mechanical equipment).

Chart 12

Trend of exports from the province of Torino by economic sector in 2004



Source: analysis of Istat data

Electric and electronic machinery and equipment represent another significant export sector, where a 5.9% growth has been registered after the negative trend of 2002-2003. In particular, electric appliaces and measuring tools – which, contrary to the trend, already obtained good results in 2003 - continue to be successful on foreign markets.

After a stagnant trend in the past few years, exports of **metals and metallic products** show a significant recovery (+18.8%). The sector accounts for 7.8% of the total exports from the province. A positive trend can also be registered in the trade of **rubber and plastics** (+5.2%) and **chemicals** (+11.0%). The latter sector is responsible for about 4% of exports from Torino, while at national level it ranks third in the list of the most exported products, thus accounting for about 10% of the total sales abroad.

The chemical sector in the province, just as at national level, has undergone significant changes over the past 15 years. Non only have its products gained more and more relevance in the context of total exports, but the strengths and weaknesses of the main components of the sector – basic products of the chemical industry, pharmaceuticals, soaps, detergents, fragrances and toiletries - have also been shifted. The increased importance of pharmaceuticals, which now account for over one third of the export of chemicals, has gone hand in hand with the reduced relevance of basic products of the chemical industry and the significance gained by personal care products, which in just over a decade have come to represent 25% of the total sector (previously 6%).

As for **food and drink**, foreign demand is increasing (+9.9%), due also to the growing international integration process of the sector. Nevertheless, bad news come from the fashion sectors, even if only marginally present in the Torino production system. The textile industry, clothing and leather products sales have fallen dramatically due to the aggressive competition from emerging countries. As for the textile manufacturing industry, historically concentrated in the area of Chieri and Poirino, the contraction of trade with foreign countries registered in 2004 (-7.5% in comparison to 2003) confirms the declining trend begun in 2002 (-10.1%) after the maximum values reached in 2000-2001.

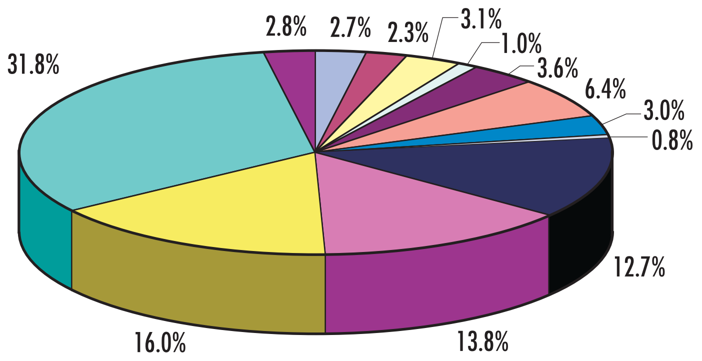
In terms of **import**, the vehicles **sector** is again the most significant. It accounts for almost one third of the value of foreign goods imported in the province of Torino, with an 8.3% increase on the previous year.

In the list of imports, this is followed by **electric machinery** (16.0% of the total), **mechanical machinery and equipment** (13.8%) and **metallic products** (12.7%). The first of these sectors shows a slight decline, while the other two have grown (+2% and +11% respectively).

Also worth noticing is the trend shown by the **agribusiness** sector. The decline in the import of products of the food and drink industry (-3.9%) and agriculture (-1.4%) has meant a larger trade balance surplus in the first sector and a slight reduction of the deficit in the primary sector.

Chart 13

Breakdown of imports in the province of Torino by economic sector in 2004



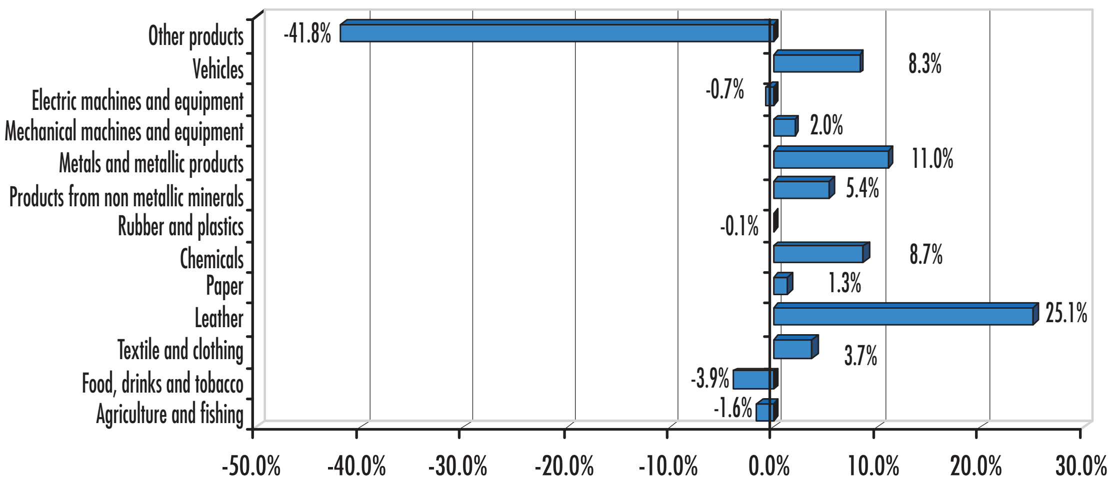
Legend

- *Agriculture and fishing*
- *Food, drinks and tobacco*
- *Textile and clothing*
- *Leather*
- *Paper*
- *Chemicals*
- *Rubber and plastics*
- *Products from non metallic minerals*
- *Metals and metallic products*
- *Mechanical machines and equipment*
- *Electric machines and equipment*
- *Vehicles*
- *Other products*

Source: analysis of Istat data

Chart 14

Import trends in the province of Torino by economic sector in 2004



Source: analysis of Istat data

3.1.2 International trade of the province of Torino between January and September 2005

What is the trend that emerges from the data of the first three quarters of 2005?

Provisional data from Istat show that export seems to be declining slightly: from January to September 2005 export transactions amounted to 11,572 million euros, -1.6% compared to +3.5% for Italy and +1.3% for Piemonte. The first half of the year saw a decline in sales, while the third quarter showed some signs of recovery (+2.5% over the first nine months of 2004).

Considering different classes of products, export of cars and of automotive parts continue to show opposite performances: -12.8% of orders for vehicles (amounting to 1,760 million euros) against +4.2% for the sale of automotive parts and accessories (2,543 million euros). The global amount of exports of the automotive industry decreased by 2%. Exports of the mechanical industry also decreased (-4.5%), while exports of metal, rubber and plastic products increased. Also decreasing are exports of electric machinery, chemicals, textiles and clothing.

The balance of trade of the province of Torino remained in the black in the first three quarters of 2005 in spite of a 3.7% increase of imports of three important categories of products: means of transport (+7.1%), electric and electronic equipment (+ 6.6%), and metals and metal products (+ 15%). Imports of mechanical machinery and equipment decreased.

Table 11

Import-export for the province of Torino by classes of products (in million of euros)

Classes of goods	January-September 2004		January-September 2005	
	import	export	import	export
Products of agriculture, hunting and forestry	230.71	17.28	277.65	23.45
Fishery and fish culture	4.40	0.02	4.57	0.05
Mineral ore and fuels	13.38	9.62	12.97	9.27
Manufactured products	8,128.55	11,721.21	8,387.13	11,521.44
Food, beverages and tobacco	191.41	340.59	157.38	363.54
Textiles and clothing	276.53	2.78.88	269.47	274.16
Leather and leather products	91.30	43.95	89.06	52.23
Wood and wood products	59.05	26.42	56.26	25.37
Paper, paper pulp and paper products; publishing and printing products	302.15	417.15	261.03	372.52
Coke, refined oil products and nuclear fuels	23.49	23.17	26.08	24.42
Chemical products and synthetic fibres	561.63	460.81	570.06	451.25
Rubber and plastic products	254.07	524.83	218.95	550.24
Non-metal mineral manufactured products	66.72	139.68	72.82	139.78
Metals and metal products	1,043.09	893.75	1,199.77	939.22
Mechanical machinery and equipment	1,176.30	2,386.18	1,125.46	2,277.82
Electric, electronic and optical machinery and equipment	1,334.40	1,183.63	1,422.71	1,156.87
Means of transport	2,633.37	4,804.71	2,819.75	4,710.07
Other manufactured products	115.05	197.45	98.35	183.94
Electric energy, gas and water	12.01	--	10.91	--
IT, professional and entrepreneurial activities	9.19	3.21	8.59	3.31
Provision of public, social and personal services	4.29	2.61	10.66	13.97
On-board supplies; rejected national goods; sundry goods	1.20	1.95	0.63	1.10
Totals	8,403.75	11,755.90	8,713.11	11,572.59

Source: analysis of Istat data

3.1.3 Import-export of the manufacturing industry by technological content

Interesting information can be acquired by analysing the manufacturing industry foreign trade in terms of the products technological contents.

Using Eurostat's classification of the manufacturing industry based on technological content, foreign trade can be classed in four groups of goods: high, medium-high, medium-low and low technology intensive.[5]

Table 12

Import-export of manufacturing in the province of Torino by product technology content

	Import	Export	Balance
High Technology	1,339,824,526	1,407,025,094	67,200,568
Medium-high technology	6,413,755,054	10,377,574,610	3,963,819,556
Medium-low technology	1,921,710,635	2,231,251,587	309,540,952
Low technology	1,378,314,885	1,784,553,300	406,238,415
Total	11,053,605,100	15,800,404,591	4,746,799,491

Source: Torino Chamber of Commerce based on Istat data

In the manufacturing industry foreign trade of goods is mostly within the category of medium-high-technology-intensive products, which accounted for 58% of imports and 66% of exports in 2004. High-technology products account for 12.1% of imports and 8.9% of exports.

Note

(5) Following OECD recommendations, Eurostat's classification for the manufacturing industry lists the following categories, based on NACE classification:

- High-technology: aerospace (NACE 35.3); pharmaceutical (NACE 24.4); office equipment, computers and IT (NACE 30); radio, TV and communication equipment (NACE 32); medical equipment, precision and optical instruments and watches (NACE 33);

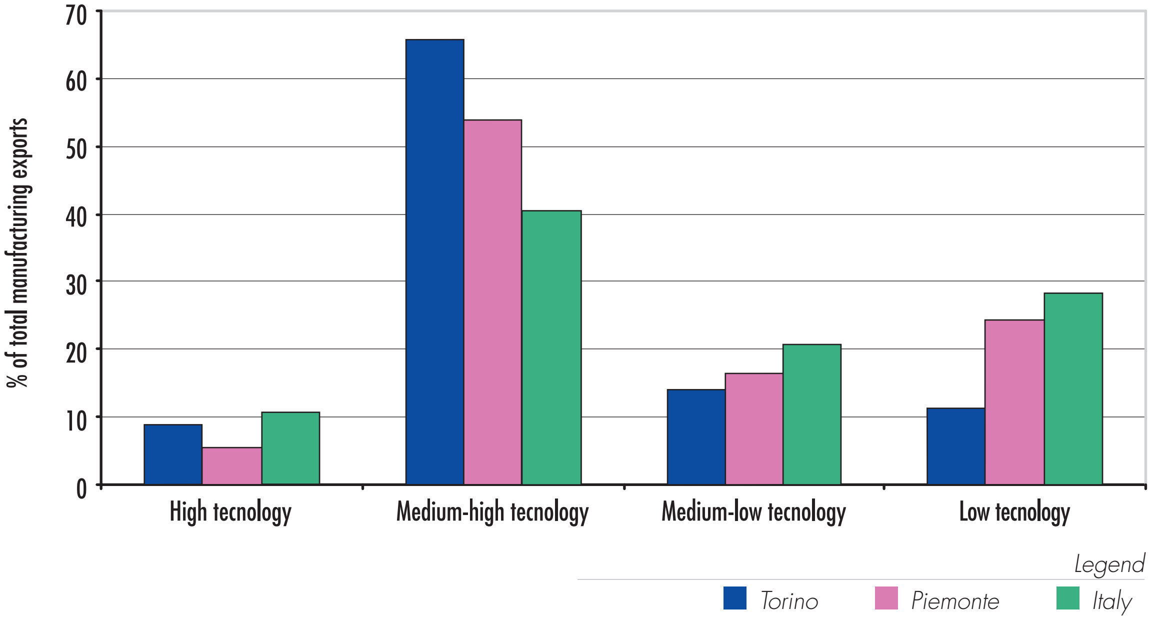
- Medium-high-technology: electrical machinery and equipment (NACE 31); vehicles, trailers and semitrailers (NACE 34); chemical products and synthetic fibres, excluding pharmaceutical, chemical and botanical drugs (NACE 24 excluding 24.4); other transport means and equipment (NACE 35.2, 35.4, 35.5); mechanical machinery and equipment (NACE 29);

- Medium-low-technology: coke, oil refineries, nuclear fuel treatment (NACE23); rubber and plastic products (NACE 25); non-metal mineral products (NACE 26); shipyards (NACE 35.1); metallurgy (NACE 27); metal products (NACE 28);

- Low-technology: other manufacturing industries and recycling (NACE 36, 37); wood, paper and publishing industry (NACE 20, 21, 22); food, beverages and tobacco (NACE 15, 16); textiles, clothing and tanning (NACE 17, 18, 19).

Chart 15

Manufacturing exports by technology content of products in 2004

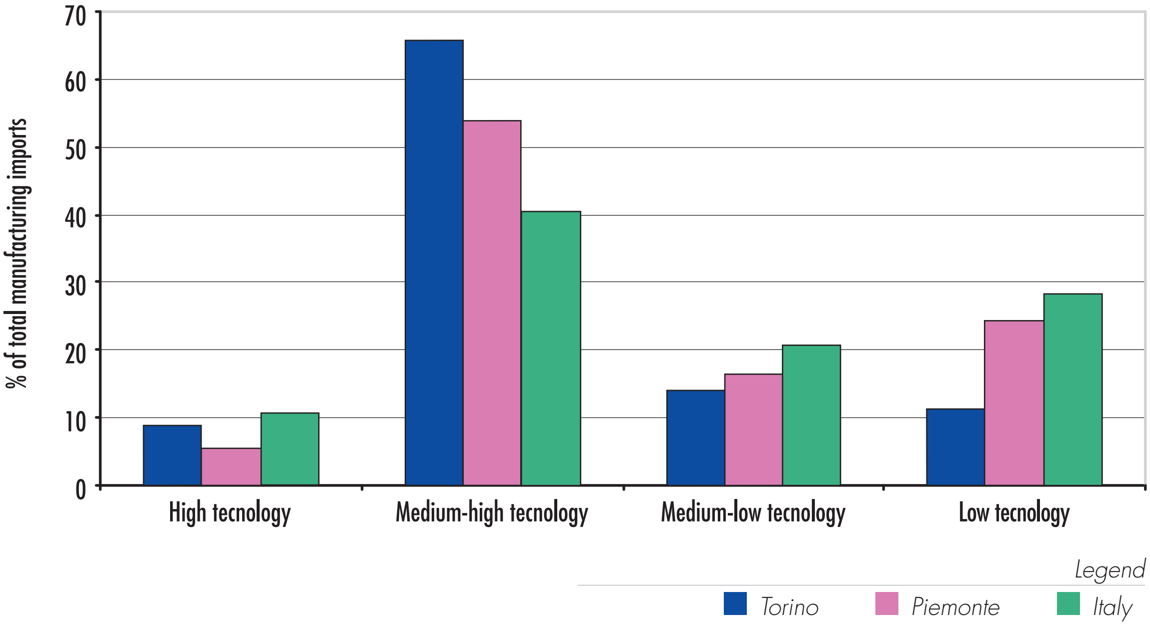


Source: analysis of Istat data

Comparing data for Torino and its province against data for Italy and Piemonte, it is apparent that Torino's foreign trade is based on high and medium-high technology to a greater extent than the country and region.

Chart 16

Manufacturing imports by technology content of products in 2004



Source: analysis of Istat data

3.1.4 Destination of exported goods

The geographical distribution of exports from Torino has changed in the last decade. Europe in general remains the prevailing destination, but the compass has turned toward the East. 68% of Torino exports[6] now go to the **25 countries of the UE** (more than global Italian exports, amounting to 59%), determining a greater dependence of our province from its "neighbours". Export to the Euro Zone has declined, in favour of the ten countries that recently joined the EU which now account for 8% of all exports.

Exports to **non-EU European countries** also increased (from 7% to almost 11%), while they declined to **American markets. Latin American** countries in particular now receive only 3.7% of our export sales against 10% a decade ago. The severe political, economic and financial crises that affected some Latin American countries in the late '90s and at the beginning of the new millennium caused a reduction in the trade flows between Italian companies and their foreign branches. Furthermore, the historical ties between Italy and the main Latin American countries are loosening, as these now turn increasingly towards the Pacific area for their trade relations. And yet, the whole Mercosur[7] area is now growing strongly and can provide good opportunities for our exports. As to Asia, in spite of the growing economic importance achieved by a number of Asian countries, this still seems to be a distant area where our goods have difficulty in finding their way and in ten years our exports have remain unchanged.

The decrease in 2004 exports to the EU area (-1,4%) mainly affected the transactions with our two biggest trading partners: France (-1.6%, third consecutive year of decline) and Germany (-2.9%). These countries receive 18% and 14.8% respectively of Torino's exports.

In 2004 Spain became the third export market for the goods of the province of Torino (8.3% of the total), overtaking the United Kingdom where, due to the strength of the euro, exports declined by 5.1%. The data for the first nine months of 2005 confirm this trend: +8.9% in the sales to Spain, +0.3 to France and +1.9% to Germany and still declining to the UK (-7.2%).

Among the countries that recently joined the EU, Poland proved a strategic market for the province of Torino with 5.4% of export sales in 2004, slowing down though in 2005 (-11.5%). Sales to Poland were very good in 2003 and grew another 3.5% the following year thanks to the 27.3% increase in vehicle sales (two third of all sales to Poland from the province of Torino) and in spite of the decline in sales of mechanical products, halved with respect to 2003.

As to the other countries that joined the EU on 1st May 2004, sales grew to the Czech Republic (+9.8%) and declined to Slovenia, Hungary and to the Baltic republics. In the first nine months of 2005, though, sales toward all these countries declined, with the exception of Hungary.

Notes

(6) *Istat data at 30th September, 2005.*

(7) *Argentina, Brazil, Paraguay and Uruguay.*

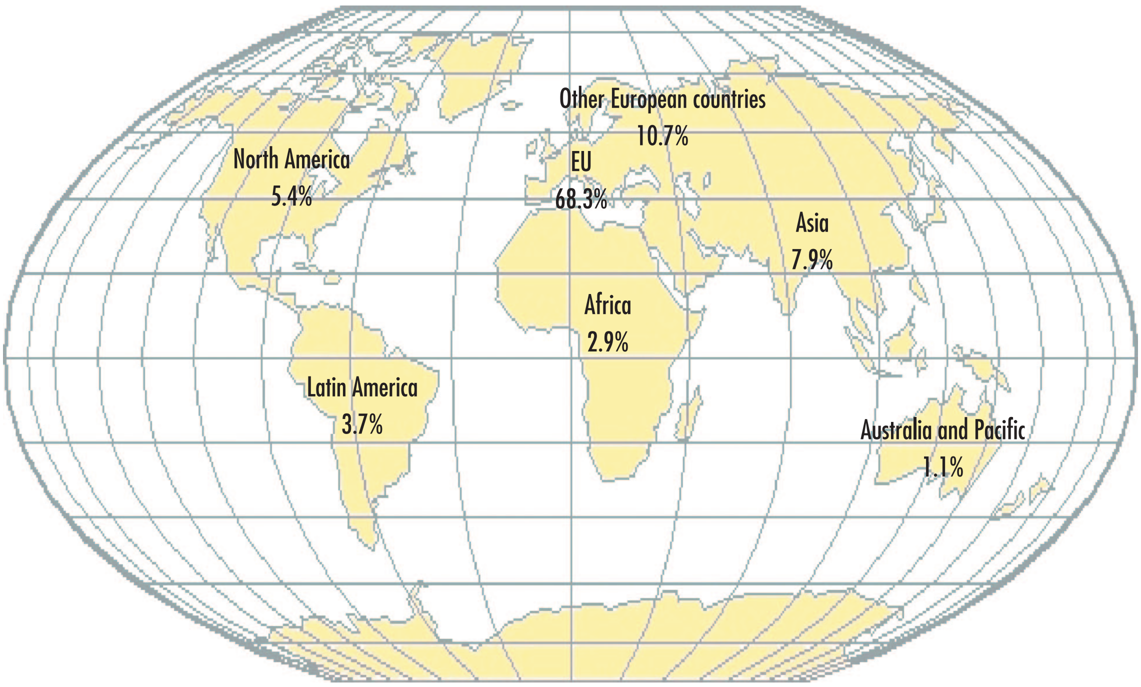
Outside the EU, Russia, Rumania and Turkey are growing markets for our goods: sales to Turkey in particular increased in the last two years becoming 4.5% greater than those to the USA, but declined again (-15%) in 2005.

Sales to the USA went down 18.9% in 2004, mostly in vehicles and electrical equipment, but recovered almost 8% in the first part of 2005.

Asian markets represent a good opportunity for Italian exports and sales of goods from the province of Torino are starting to grow. Orders increased 20% and 13% respectively from China and Japan, though still representing small portions of our exports (1.7% and 1.4% of the total). Trade relations are strengthening, but in 2005 sales reduced by 20% to China and 13% to Japan.

Chart 17

Geographic distribution of Torino exports, 30th September 2005



Source: analysis of Istat data

The economic recovery in Latin America had a positive effect on our exports to Brazil (+10%) and to Argentina (more than doubled) in 2004 and the trend continued in 2005. Also the Middle East saw an increase of sales of close to 40%, now accounting for 2.7% of all Torino exports.

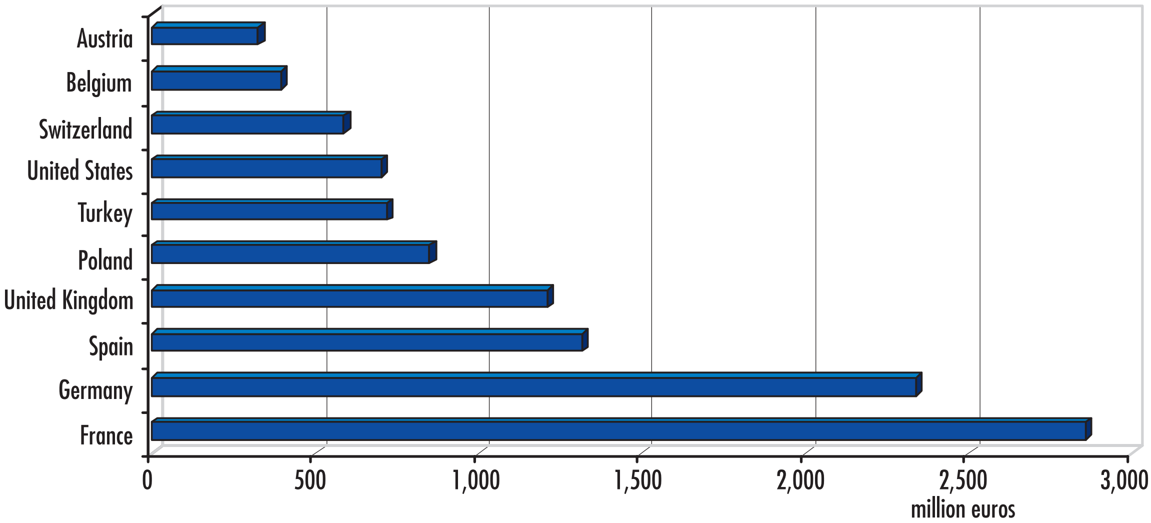
As to imports, the vast majority of goods (71.5%) come from the EU. The province of Torino imported mostly from France (20%) and Germany (15%), although the trend is decreasing.

Globally, imports from the EU increased by 3.6%. Purchases from Poland grew by 91%. This country now ranks third among the suppliers of the province of Torino and there is a deficit in our balance of trade with Poland.

Outside the EU, we import mostly from Turkey (4.3%), Japan (4%), China (3.6%) and USA (3.4%).

Chart 18

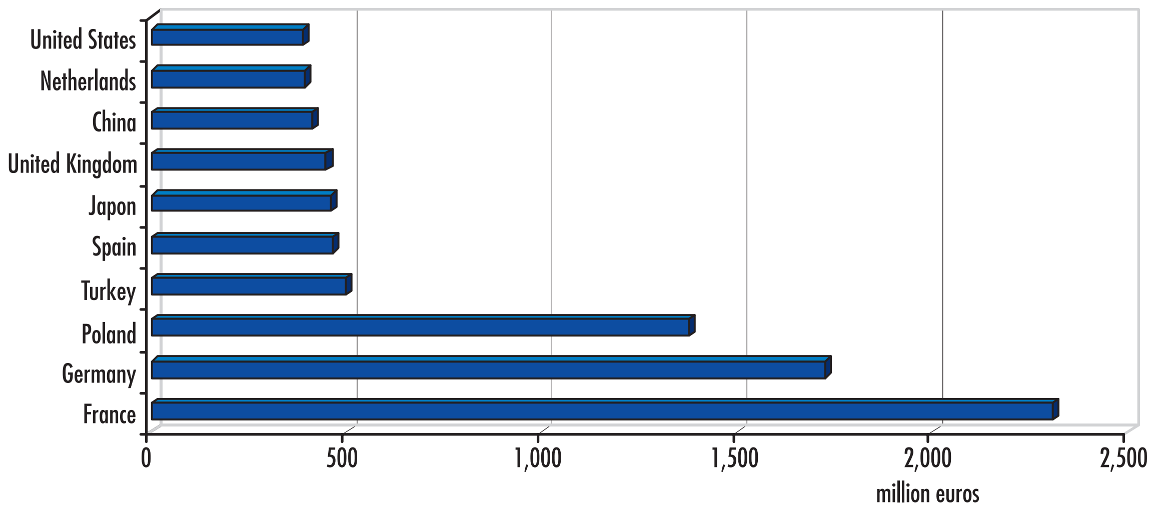
The first ten destination of Torino exports in 2004 (in million euros)



Source: analysis of Istat data

Chart 19

The first ten countries of origin of imports in the province of Torino in 2004 (in million euros)



Source: analysis of Istat data

3.2 Incoming and outgoing Foreign Direct Investments

Over the past twenty years, the growth of Foreign Direct Investments in the world has been considerable, exceeding that of international trade. FDI has become one of the most important means of internationalisation of companies operating in the more industrialised countries.

The expansion of companies beyond their national borders through direct control over other production units has proven to produce non negligible effects on trade flows thanks to the complementary character of exports and FDI in intra-company exchanges.

Following a three year decline, in 2004 there was at last a surge in FDI, up 2% over the previous year. The inversion in trend was determined by an increase in flows to developing countries, which compensated the reduction in flows to industrialised countries. The first have now taken up a new role on the world scene, not only attracting FDI and investments in research, but also actively promoting internationalisation.

Despite the establishment of stronger links between the Italian manufacturing system and that of other countries, Italy continues to attract little investments and does not seem to establish itself as a pole of attraction for foreign capital, hence ranking among the last in the euro zone, followed only by Greece and Portugal. Based on official statistics, average annual direct investments in our country were worth 13.9 billion euro over the period 2003 – 2004. These figures highlight that the level of international investments in our country is lower than that of other European countries which compete with us. This explains the need to pay special attention to the phenomenon.

What is the situation of the province of Torino in this general framework of being of little appeal to FDI? Available statistics refer to direct investments, that is the ones which create a long lasting relationship between a business residing within one national economy and one residing in another economy.

In the period 2003 – 2004, the province of Torino attracted 1,073 billion euros worth of foreign investments, net of divestments; a large share of this sum was concentrated in this past year. It is a limited amount if compared to the year 2000, when investments boomed in our province.

Our area has attracted a significant amount: over 8% of FDI in Italy over the period 2003 – 2004. As to the countries investing in our country, the official statistics of the Italian Foreign Exchange Office (UIC) only supply regional data: FDI in Piemonte mainly come from the EU, in particular from the Netherlands, (over two billion euro net), albeit in the year 2004 divestments from France, Germany and the UK have exceeded the investments made in the area.

The figure concerning the Netherlands can easily be explained since this is a country which collects international investments and then reinvests in third countries.

Table 13

Incoming net FDI (in thousands of euros)

	to Torino province	to Piemonte Region	to Italy
Year	foreign net	foreign net	foreign net
2 year average 2003-2004	1,073,921	1,060,888	13,963,335
2004	*1,399,600*	*1,290,502*	*13,215,510*
2003	*748,242*	*831,274*	*14,711,160*
2 year average 2001-2002	966,777	997,072	15,812,566
2002	*1,372,905*	*1,459,102*	*15,499,551*
2001	*560,648*	*535,042*	*16,125,580*
2 year average 1999-2000	1,666,210	1,824,354	17,582,770
2000	*2,685,345*	*2,921,656*	*28,198,496*
1999	*647,075*	*727,052*	*6,967,044*

Source: UIC

Foreign multinational corporations in Italy no longer invest in the manufacturing industry alone; investments are now made in all the many sectors of the economy, both the more traditional ones and those which have been developed most recently. In the year 2004, considerable investments have been made in Piemonte in the field of means of transport, thanks to the know-how in the area and the level of excellence achieved in auto component manufacturing. This makes our province particularly attractive to those wishing to invest in the automotive sector. As to services, investments have been made in sales and communications whilst financial services have reported a decline.

2004 has recorded a recovery in outgoing foreign investments which, however, has not made up for the decline of the preceding year. Hence, the average over the two year period, 2003 – 2004, is negative (-106 million euro). The 2004 figure is positive, being the balance of 7 billion euros worth of foreign investments abroad and 6 billion euros worth of divestments.

We must highlight that in Italy as a whole, contrary to the province of Torino, outgoing foreign direct investments in the year 2004 exceeded incoming foreign direct investments. The number of Italian investors abroad is growing thanks to the successes of the SMEs (small and medium sized enterprises); this has partly compensated the difficulties encountered by the larger Italian companies. This phenomenon goes along with a change in the geographic destination of investments, with a consistent growth in Central and Eastern European countries and in developing countries. Regional investments are still made in Europe, and in 2004 they were mainly in the UK (827 million euro), the Netherlands (735 million euro), Luxembourg (409 million euro) and France (213 million euro).

Table 14

Net outgoing foreign direct investments (in thousands of euros)

	from Torino province	from Piemonte Region	from Italy
Year	foreign net	foreign net	foreign net
2 year average 2003-2004	-106,373	28,718	11,252,013
2004	*1,040,579*	*1,135,129*	*15,589,654*
2003	*-1,253,324*	*-1,077,693*	*6,914,371*
2 year average 2001-2002	3,862,446	3,960,439	20,600,504
2002	*3,721,413*	*3,765,278*	*16,845,754*
2001	*4,003,479*	*4,155,599*	*24,355,253*
2 year average 1999-2000	2,453,847	2,793,541	13,113,760
2000	*10,160,335*	*10,652,666*	*21,591,532*
1999	*-5,252,642*	*-5,065,584*	*4,635,988*

Source: UIC

3.3 Foreign companies located in the province of Torino

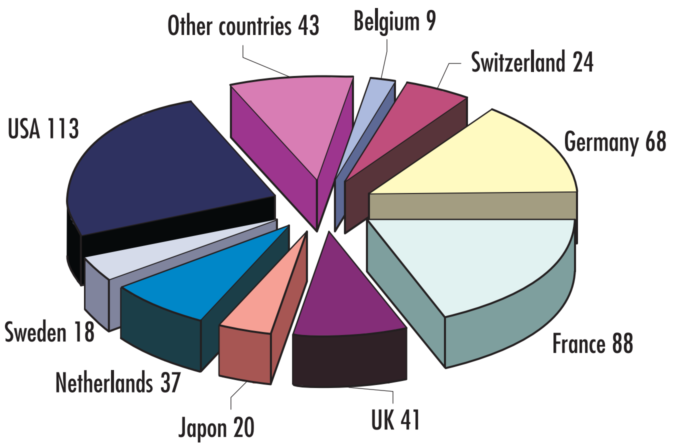
In the province of Torino there are 461 foreign companies, just under 70% of the total in Piemonte, according to information coming from the Reprint data bank developed by R&P Ricerca e Progetti and by the Milano Polytechnic. Two thirds of the companies are owned by European investors, this thanks to the weight of French and German multinationals; US companies, however, prevail with a share of 25%.

Without any doubt, multinational corporations represent a mighty productive system which employs 132,000 people in the province and 30,000 in the city of Torino, attaining total sales worth 43 and 51 billion euro respectively.

If we look to the spilt of activities in our province, we see a high concentration of investments in the energy sector (17% of the total) and in transport and logistic services (16%), and telecommunications and IT (12%). In the manufacturing industry, the largest investments are made in electrical and optical machinery and equipment (9%) and in the two activities our province specialises in: metal products and mechanics, both representing 8% of investments made by companies with a foreign participation.

Chart 20

Companies with a foreign participation in the province of Torino



Source: R&P and Milano Polytechnic

The floor to an expert in internationalization: we interviewed Giuliano Lengo, director of the Centro Estero of the Piedmontese Chambers of Commerce. The Centre will be celebrating its 30th anniversary in 2006.

How are Piemonte's SMEs facing the challenges of the market?

"Over time, small and medium enterprises have become more mature, within the framework of our economy. However the "small, lean, fast" concept has led to the creation of a highly fragmented system. Special attention has to be paid to these companies in the phase of internationalisation because they are totally involved in globalisation, despite the technical, organisational and financial problems they may encounter; they must therefore be equipped with the right tools to face competition, and innovation processes no doubt represent a driver in supporting competitiveness. Aggregation in clusters is a must in order to be successful in processes of economy internationalisation".

In a continuously changing environment, what actions can be taken to promote companies abroad?

"The institutions must adapt their actions to meet the new requirements of the companies and of the international environment. It is precisely in the attempt to react to the new requirements that the Chamber of Commerce of Torino has been promoting the project "From Concept to Car" which is co-ordinated by the Centro Estero Camere Commercio Piemontesi and is sponsored by the Piemonte Region, the EU and the Ministry of the Economy, in order to support the Piemonte automotive system in international markets. This project has demonstrated how institutional support changes and updates itself to meet the requests coming from the entrepreneurial world".

"From Concept to Car" has been a winning initiative; what are its strengths?

"When the project was launched, it surprised many people because it was very innovative. It emerged from the strong collaboration among institutions. The idea was to work on sectors of activity, with territorial marketing and with regular financing, enabling the project to work as a multi-year plan It was decided to allow a limited number of companies to take part in the project and to select the participants based on their level of excellence. A working method requiring a high level of accountability was then defined".

Excellency, quality. Do these features still allow our products to stand out vis-à-vis competition, now that there has been an improvement in the quality standards of products made by emerging countries?

"Nowadays, if one does not attain high quality standards in production and services it is difficult to compete, even in our domestic market. The world has changed: competitors are quickly coming closer to our standards. Creativity, imagination, managerial and production organisation, logistics are all strong points of ours, but we must evolve continuously and innovate so as not to lose the market challenges. We must create and capture innovation".

What enterprises does the Centro Estero offer its services to?

"We can pick out three separate groups among the companies working on internationalisation. First of all there are the large multinational companies which express the need for institutional assistance when they turn to particularly distant and "difficult" countries and feel the need to present themselves as a "system"; on the other side of the spectrum we find a group of small, not very well organised companies which are not prepared to tackle international markets since they have a limited vision of internationalisation and only see it from the point of view of exports. These companies rarely consider the possibility of getting together and pooling in a system. Given the limited preparation of these companies, a great amount of work is required (32-33 man hours on average) in preparing a plan to meet their requirements.

The third group is represented by medium size companies, mainly industries and advanced tertiary sector companies, and to a lesser extent companies operating in the field of craft and trade. These are companies which have already begun a process of internationalization, hence it takes less time (8-9 man hours) to respond to their needs. If we want to sum up the results of the work done by the Centro Estero we can say that we offer our services to each of the 7,800 Piedmontese companies at least once in a year".

How can you help the latter group to get to the market and conquer a sound and long lasting position?

These are companies which face problems of internal organisation when tackling internationalisation, because they need the right human resources for this kind of process. They need to be able to work out a plan on their positioning in the markets and make an assessment of competition in the area. To support these activities, in some foreign countries there are the Torino Chamber of Commerce Information Desks and the "Antenne" of the Piemonte Region, operated by the Centro Estero.

Nowadays companies must be able to anticipate change and meet the mutable requirements of foreign customers. They often have problems in penetrating the markets because they do not have control over distribution. The companies in this third group are often involved in an ongoing process of internationalisation lasting years and they turn to the Centro Estero for customised services as a *solution to their problems. It is precisely to meet this kind of diversified and multifaceted requirements that we are developing a variety of "segmented" services".*

What are the best areas of opportunity for Piedmontese companies abroad?

"We must not underestimate the European market, even if it is now defined a "domestic" market; Eastern Europe in particular presents important growth opportunities.

Brazil, Russia, India and China are certainly a target to work towards. This is not new. It is since the beginning of the Nineties that we have been hearing about the prospects of Chinese growth, even if the actual size of the economic boom was unforeseeable. India was and still is a big bet for the auto sector, even though account has to be taken of the great scarcity of infrastructures in the country.

As to the sectors of activity, we must continue to believe in the automotive and component sector in that they are part of the culture and represent a heritage of our Region, and we certainly have attained levels of excellence in these fields. We must continue to promote the agricultural and food sector abroad, both the industrial business and the typical niche products; Piedmontese institutions have, we must say, already made important investments in this field. There certainly may be opportunities for the aeronautical sector and that of environmental technologies. We are working on projects to promote these sector, within the logic of integrating the "Piedmontese system".

Who is going to take up the challenge of "internationalisation" in our area in the future?

"Many are the changes under way in facing this challenge. A possible agreement between the Piemonte Region and Unioncamere may lead to a single direction of the activities abroad. It is important for the system to become rational and homogeneous, keeping in mind that an internationalisation structure must always adapt itself to meet the needs of the enterprises. A fundamental role is to be played by the system of Chambers of Commerce, that which today is most in touch with the companies and through which, on a daily basis, we set up most of our initiatives".

Research and Technological Innovation

Torino and its province are located in Piemonte, a region which ranks among the **top areas** at a national level as far as **research and development** are concerned.

Official statistics by ISTAT (Italian National Statistical Institute) show that in 2003 the expenditure on “intra-muros” research and development activities - i.e. the ones carried out by institutions with their own staff, facilities and equipment - amounted to approximately 1,751 million euros in Piemonte, accounting for 11.9% of the country’s total, as against 22.1% of Lombardia and 17.7% of Lazio, thus ranking Piemonte third at a national level.

In 2003 the expenditure on research and development in Piemonte accounted for 1.6% of the regional GDP, as against 1.2% in Lombardia and 1.9% in Lazio; at a national level this expenditure accounted for 1.1% of the GDP, showing a 1.2% drop as against 2002.

Piemonte ranked third among Italian regions also for the number of people employed in the R&D sector, which amounted to 18,450 people, thus accounting for 11.4% of the country’s total, as against 18.2% of Lombardia and 18.8% of Lazio.

If we analyze the different institutions making up the R&D sector, we can notice that in Piemonte the highest proportion of both investments and people employed in this sector is concentrated in the industry, while the university and the public administration play a secondary role: businesses account for 76.8% of the expenditure on research and absorb 76% of the people employed in this sector (as against 66.1% and 63.7% respectively in Lombardia, and 25.5% and 18.3% respectively in Lazio).

Even though there are few statistics available at a provincial level, we can say that the province of Torino is giving a major contribution to the aforementioned percentages.

A recent study[8] on innovation in Piemonte showed that almost 90% of Piemonte’s researchers belonging to public research establishments (the University of Torino, the University of Eastern Piemonte, the Polytechnic University of Torino and other public research establishments, such as CNR), as well as almost 85% of research facilities of this kind are concentrated in the province of Torino. Furthermore, most companies which can be considered potentially innovative, due to both their size and the sector in which they operate, are based in the province of Torino.

Besides universities, numerous research establishments, both private and public, as well as four technology parks, the ICT district and several bodies contribute to disseminate innovation and act as intermediaries between the research sector and businesses.

Note

(8) Regione Piemonte, Report on innovation in Piemonte, edited CERIS-CNR, 2004

Technology Parks and research centres in Torino and in its province

– *The* **Bioindustry Park***, which is based in Colleretto Giacosa in the so-called Canavese area, aims at promoting and carrying out research in the biotechnological sector, and is well equipped to host laboratories and companies which are willing to start both research and experimental production activities in the following sectors: chemicals, pharmaceuticals, diagnosis, veterinary medicine, food processing, cosmetics, bioengineering, bioinformatics, and IT; it also acts as an incubator for start-ups in these sectors.*

– *The* **Environment Park***, which is based in Torino, was created according to the rules of eco-compatible construction (water cycle management, and use of renewable energy sources), and hosts both companies and research establishments specialising in ICT and in the environment; it is equipped with research laboratories, inter alia an excellence centre for research in hydrogen-related technologies, and promotes innovative start-ups in the fields of eco-efficiency and ICT, by providing them with technical, managerial, and financial support.*

– *The* **C.E.T.A.D. - Centro Eccellenza Tecnologie per Anziani e Disabili** *(excellence centre for technologies aimed at the elderly and the disabled), which is based in Torino, in the Environment Park, aims at promoting, developing and disseminating innovative technologies and services for the rehabilitation and the social inclusion of both the elderly and the disabled; it is equipped with an exhibition area, an outpatients' clinic for rehabilitation, as well as classrooms, laboratories and offices.*

– *The* **Virtual Reality & Multi Media Park***, which is based in Torino, hosts laboratories and companies which study and develop innovative applications in both the multimedia and the audiovisual sector, focussing on virtual reality and new technologies. In September 2003 it employed 30 people.*

Besides the University of Torino, the Polytechnic University and the CNR bodies, among the best-known research establishments in Torino we can also rank: the Mario Boella Institute, operating in wireless technologies, the Galileo Ferraris Electrotechnical Institute, operating in metrology, photometry, acoustics, materials, electromechanics, system engineering, and laboratory accreditation, as well as the research centre of the Italian national TV and radio corporation (RAI), operating in both the audiovisual and the multimedia sector.

4.1 Business locations in high technology sectors

According to **Pavitt's classification**, 62.2% of the locations (both headquarters and local branches) of Piemonte's companies operating in high technology sectors[9] are concentrated in the province of Torino; in some sectors, such as the production of office equipment, computers and IT systems, as well as of electromedical equipment, the concentration rate reaches a peak of 70%.

As against 2003, in 2004 the number of business locations remained virtually unchanged in the province of Torino, with a slight downward trend (43 locations less), while in Piemonte there was a slight increase (+ 1.58%). These data show a virtually stable situation, after an increase in the number of locations in 2003 as against 2002: +12.9% in the province of Torino, and +6.2% in Piemonte.

The number of business locations mainly decreased in the production of basic chemicals, while it increased in the production of office machineries, computers and IT systems, as well as of measuring and control instruments.

Note

(9) According to the well-known Pavitt's taxonomy, the following industrial sections can be identified:

- Production of basic chemicals

- Production of plant protection products and other chemicals to be used in agriculture

- Production of pharmaceuticals, as well as of chemical and botanical products to be used for medical purposes

- Production of office machineries, computers and IT systems

- Production of electrical and electronic devices for the telecommunication sector, including their assembly by their manufacturers

- Production of electromedical equipment (including detachable parts and accessories, as well as equipment repair and maintenance)

- Production of measuring instruments, as well as of control, testing, navigation devices and the like, with the exception of any control equipment for industrial processes

- Manufacturing of aircrafts and spacecrafts.

Table 15

Number of business locations in high technology sectors according to Pavitt's taxonomy – 31/12/2004

Sectors	Torino	Piemonte	Milano	Lombardia	Genova	Liguria
Production of basic chemicals	114	267	763	1,343	69	98
Production of plant protection products and other chemicals to be used in agriculture	1	6	17	47	7	8
Production of pharmaceuticals, as well as of chemical and botanical products to be used for medical purposes	36	70	573	719	30	42
Production of office machineries, computers and IT systems	360	511	698	1,159	96	141
Production of electrical and electronic devices for the telecommunication sector, including their assembly by their manufacturers	86	135	297	413	39	51
Production of electromedical equipment (including detachable parts and accessories, as well as equipment repair and maintenance)	70	100	182	296	32	41
Production of measuring instruments, as well as of control, testing, navigation devices and the like, with the exception of any control equipment for industrial processes	219	328	982	1,415	86	123
Manufacturing of aircrafts and spacecrafts	35	64	49	109	6	9
Innovative sectors total	921	1,481	3,561	5,501	365	513

Source: InfoCamere

Bridging the gap between research and businesses

Michele Patrissi is the director of COREP[10] and I3P[11]. We asked him how we can disseminate innovation among businesses and promote the exploitation of research results by businesses in the Torino area, and he replied with a few remarks, which are reported below.

"We can identify a logical pathway, which starts from research results and leads to an innovation having a spin-off business on the territory. First of all we need to analyze the results achieved in the research sector and select the ones which could have good potential for application in the industry; if they are new inventions, we need to protect them with patents. Some results can be used by existing businesses to improve or innovate their products or manufacturing processes, while others could form the basis of a start-up. This distinction is fundamental if we want to identify the right measures which allow us to maximize the benefits deriving from both categories of results: we should disseminate the former among businesses, by properly selecting them and "transferring" them to companies.

As to the latter category, i.e. results which can form the basis of a start-up, we should provide specific services which can promote the formation of a start-up and support it in its first months activity, for example by creating a business incubator. In both cases we should exploit research results in the industry.

In our area several players are involved in the process starting from research results and leading to their exploitation by businesses, which are thus able to introduce innovative elements in their products or manufacturing processes.

Some of these players carry out research activities (the University and the Polytechnic University of Torino, the CNR laboratories, the Fiat Research Centre and other research establishments), some of them ensure the technology transfer (such as COREP), while others act as business incubators (such as the business incubators run by universities); furthermore, there are public initiatives and activities aimed at bridging the gap between supply and demand in the innovation sector (the "ProvIn" initiative promoted by the provincial administration of Torino and coordinated by Corep, the "ALPS Innovation Relay Centre" project coordinated by the Chamber of Commerce of Torino, etc.).

Notes

(10) COREP (Consorzio per la Ricerca e l'Educazione Permanente – consortium for lifelong education and research) was established in Torino in 1987. Its members are Piemonte's three universities, local authorities, trade associations and important businesses operating in the industrial sector. The Consortium promotes cooperation initiatives between the university and the manufacturing and service sector, as well as with local authorities. It mainly operates in the field of technological innovation and in higher specialisation studies.

(11) I3P, the innovative business incubator of the Polytechnic University of Torino, is a non-profit limited company established by the Polytechnic University of Torino, the provincial administration, the Chamber of Commerce, Finpiemonte, the Torino Wireless Foundation and the municipality of Torino to promote the formation and growth of new businesses by exploiting the creative potential developed in local research centres. In 2004 it ranked first in the third edition of the international Best Science Based Incubator Award.

Unlike other areas, though (mainly abroad, such as in the United Kingdom or in Germany), our players and initiatives have so far developed independently of each other, finding it difficult to be coordinated, thus turning out to be not very efficient. It's like having a table broken down into several parts: if we bevel these parts, we can turn them into jigsaw pieces, which can be reassembled as an organic whole. The usual "bottom-up" approach can be effective if it relies on a joint vision of the issue. In other terms, we should cooperate as if we were part of the same system: fortunately local players are used to do so. The future regional law on research, which is still being discussed, should allow us to take further steps in the right direction".

4.2 A successful case in technology transfer

The network of **Innovation Relay Centres (IRC)** is made up of 76 advisory centres co-funded by the DG Enterprise, Innovation, Networks and Services of the European Commission, and it aims at promoting transnational cooperation in technology. ALPS IRC, which is the Innovation Relay Centre for North-Western Italy, is a consortium coordinated by the Chamber of Commerce of Torino whose further members are the Centro Estero Camere Commercio Piemontesi, the piedmontese Chambers of Commerce, the Chamber of Commerce of Genova and Centro Sviluppo S.p.A., a company based in the Aosta Valley. ALPS IRC mainly aims its activities at SMEs, universities and research centres, and provides consultancy for technology transfer at a transnational level. One of the successful cases in technology transfer is the agreement signed by Raytec Vision, a Piedmontese company based in Moncalieri (near Torino) and the Spanish company Chupa Chups, which was awarded by the European Commission as the best technology transfer agreement at an international level on June 29, 2005, during the celebration of the tenth anniversary of the IRC network.

This Piedmontese company specialises in the development of machines using the X-ray technology to search packed food products for any foreign bodies which could be potentially hazardous to human health, as well as for deficiencies or deformations in the food. The Spanish company, which is well-known in the production of sweets, was assisted by Galatea of Asturias, a Spanish IRC, in its search for technological solutions which could allow for an improvement of its automated production quality control. Raytec Vision provided the Spanish company with tailor-made machinery, customized for the exact shape of its sweets, as well as constant technical support over time.

The Labour Market and Higher Education

In the last decade the Italian and European labour market showed evident difficulties, due to the economic recession which struck the major industrialized countries. The hoary problem of unemployment is not giving a moment off, and national governments have not managed yet to conceive an effective strategy to tackle this phenomenon.

Piemonte is not only the most industrialized region in Italy, but also an area where the manufacturing sector is undergoing a deep crisis, which makes thousands of workers redundant and jeopardizes thousands of jobs. In the last twenty years no alternative activity managed to absorb the market shares lost by industry and not even the occupational growth in the service sector could compensate the losses of the manufacturing sector.

The alternation of recessionary and expansive trends in the economy can be considered a fruitful phenomenon only if the business and production cycle can perk up after a recessionary stage. Internationalisation processes in the market hit the sectors which were already on the line, thus damaging many national manufacturers, and imposing relocation or business reorganisation strategies which ended up cutting the least strategic jobs.

The development of the service sector helped Piemonte only partially to absorb the impact of the crisis and to raise the employment level: the increase in part-time jobs and in atypical contract agreements shows that the volume of employed labour forces remained virtually unchanged. The performance can be considered positive though, and we hope that in the future too there will be great demand for labour in the most dynamic sectors, such as service provision to people and tourism. The future is uncertain for service provision to businesses and for telecommunications, which are more directly linked with the demand in the industrial system.

We should carry out a thorough analysis of our province, which is the de facto core of certain dynamics, so that we can test the reaction capacity of the regional labour market. The **occupational balance** of the province of Torino in 2004 was equal to **902,000** people employed, with an **unemployment rate** of 6%, higher than Piemonte's rate (5%), but lower than the Italian one (8%). Despite the industrial crisis affecting our province, businesses didn't resort so heavily to **social safety valves** in 2004: redundancies decreased by 42% as against 2003. If we analyze this phenomenon in deeper detail, we can notice that 2% of new jobs were created in the agricultural sector, thanks to new tourist and enogastronomic initiatives, 35% in the industry, and 64% in the service sector. As regards the percentage referring to the industrial sector, which also includes jobs in construction, we should stress the important role the Torino 2006 Olympic Winter Games are playing for employment. Workers in Torino can be divided into 666,000 employees and 236,000 self-employed workers, 522,000 men and 379,000 women.

It should be reminded, though, that it is not possible to carry out a thorough analysis of the trends characterizing the main quantities at issue: since **ISTAT (the Italian National Statistical Institute) statistics for the workforce**, which are the main source for analyses in this respect, were radically reorganized in 2004, new statistical series are no longer comparable with previous ones. For quarterly surveys, families making up the sample are now interviewed over the three months, not only in the first week of the quarter; the questionnaire used for the survey has been completely revised, and is now submitted to interviewees by data collectors specifically trained by ISTAT, without resorting to municipal or temporary staff, as happened in the past; the definitions of main variables have been slightly modified, and key questions have now a different place in the questionnaire, thus leading to a significant deviation in estimates. The survey output is different from the one available until 2003, and we can consider it more reliable now, even though it is still under trial.

Table 16

Workers by activity sector and by kind of job in the province of Torino (in thousands) - Average values for 2004

Agriculture	*Employed workers*	*5*
	Self-employed workers	*10*
	TOTAL	15
Industry	*Employed workers*	*256*
	Self-employed workers	*56*
	TOTAL	312
of which, in the strict sense of the word	*Employed workers*	*217*
	Self-employed workers	*30*
	TOTAL	247
Services	*Employed workers*	*405*
	Self-employed workers	*169*
	TOTAL	574
Total	*Employed workers*	*666*
	Self-employed workers	*236*
	TOTAL	902

Source: ORML (Regional observatory on labour market) data processed by the Chamber of Commerce of Torino

Tertiary education offered in Torino is a real strength for the whole region. There are numerous undergraduate and post-graduate courses, all of them excellent: Engineering, Arts, and Economics are the most successful faculties.

Both the **University** and the **Polytechnic University of Torino** are playing a key role in promoting and establishing cooperation and exchange relations with European and non-European universities, thus stimulating mobility and research at an international level by signing cooperation agreements with foreign institutions. Together with Latin America, Europe is the main point of reference for the international activities promoted by Piemonte's universities. Torino is arousing an ever increasing interest as an international training and education centre, and this is also due to the presence of the UN in the city, as well as to the innumerable activities they carry out in association with local authorities. Torino hosts the **Bit (Bureau international du travail**) – the international training centre of the ILO (International Labour Organization) – which promotes the worldwide dissemination of the technological, industrial, commercial, and social development models typical of our society, by organizing cultural exchanges and training programmes which also involve government senior officials. Post-graduate courses are organized for the following subjects: international commercial law, development management, intellectual property, international and diplomatic studies, cultural asset management. Over 120,000 men and women from 170 countries have taken part in these training programmes so far. Torino is also the seat of **Unicri**, the United Nations Interregional Crime and Justice Research Institute, which was established in 1967; it carries out research, training, technical cooperation and documentation/information activities, disseminates information and maintains contacts with professionals and experts operating in crime prevention and in the dispensation of criminal justice worldwide. In 2000 the institute started a cooperation with local authorities and foundations, which led to the implementation of activities at an international level: in the education and training sector, besides all the activities organized for social workers in developing countries, the Master in Criminology and Criminal Policies is worthy of mention. It is organized in association with the law faculty of the University of Torino and offers an insight into the international and the European implications of these subjects. Lectures are given by university professors and by Italian and foreign experts, inter alia representatives of international organizations such as Europol and Interpol. About thirty students from different countries attend the Master course, which develops several action plans ranging from the reform of legal systems to counter-terrorism and counter-trafficking. Torino also hosts the **UN System Staff College**, an excellence centre for the training of the UN staff, which acts as a point of reference for all the activities which are currently carried out by different bodies or specialized agencies with consequent diseconomy and a rise in costs for single member States. The UN staff attending the courses also have the opportunity to familiarize themselves with the multi-faceted local context.

Table 17

Post-graduate courses offered by the University of Torino and by the Polytechnic University of Torino - Academic year 2004/2005

	Number of Master courses	Number of registered students for the academic year 04/05	Number of doctorate courses	Number of registered students for the academic year 04/05	Number of specialization courses	Number of registered students for the academic year 04/05
University	29	665	86	1,290	95	2,646
Polytechnic	14	211	34	581	1	24
Total	43	876	120	1,871	96	2,670
		Post-graduate students Variation 03/04				
Masters		23%				
Doctorates		8%				
Specialization courses		-15%				
Total		-3%				

Source: Regional Observatory for University

The Master in Peacekeeping Management is another noteworthy initiative: not only does it offer programmes with interdisciplinary qualification profiles, but it also disseminates internationalism among all the people who attend these courses to be trained in peacekeeping and in the promotion of peace, justice, safety, and solidarity.

Another important role is played by **Hydroaid** (Water for Development Management Institute), a non-profit association which trains professionals coming from developing countries, where they are in charge of planning, building, and controlling the necessary facilities for water resource management.

Last but not least in the list of international organisations based in Torino is the **Etf (European training foundation)**, a EU agency established in 1994. It was the first European agency to be set up in Italy and offers education and vocational training programmes to EU neighbouring countries. This agency shares expertise and advises on policies in education and training across regions and cultures, helping its partner countries to develop people’s skills and knowledge to promote better living conditions, active citizenship and democratic societies that respect human rights and cultural diversity. At the same time it aims at strengthening the European Union's relations with its neighbouring countries, at reducing immigration flows, at creating new commercial opportunities, and at increasing work safety in Europe.

In this respect we interviewed Mauro Durando, from the Regional Observatory for the labour market:

The unemployment rate in the province of Torino is the highest in Piemonte, together with the one in Novara. What are the reasons of this difference with the other provinces of the region?

"The unemployment rate in Torino, which is now getting closer to the one of other provinces, is higher than elsewhere because Torino is the regional capital, and because most weak subjects are concentrated in bigger cities. If we take a close look at the situation, the industrial crisis has apparently hit more the province of Biella and the whole textile sector".

64% of workers are employed in the service sector. Is a shift from the industrial sector to the service sector under way in our province or do data show that this is already an expanding phenomenon?

"As far as the shift from the industrial sector to the service sector is concerned, there is no doubt that it is in progress, even though it is not so easy and consistent as it may seem: just to make an example, the IT sector, which seemed to be the keystone of economic activities in the province of Torino, has not lived up to its promises. Expectations were too ambitious for this sector, which went through a period of difficulty, but it is now gradually recovering".

What are the most effective ways young people have to find employment?

"I dare say that families are still playing a key role in this respect. More in general, the social network of connections is the first entity helping young people to look for a job; temping agencies and employment agencies rank second and third respectively as intermediaries in job-hunting. In other European regions, such as Rhône-Alpes, where employment services work more effectively, unemployment rates are higher than ours, because there is less social cohesion there. In the province of Cuneo, instead, the unemployment rate for young workers is kept down by well-developed, efficient family and social networks".

Recourse to the wage compensation fund in the industrial sector has decreased by 42% as against 2003: is this due to a recovery or to an increase in dismissals?

"Piemonte's use of the fund in the engineering sector accounts for 32-33% of the country's total. Of course it is a high percentage, but it reflects the peak of the Fiat crisis. Even though this percentage decreased, there has been no significant variation as against the country's total; the high number of dismissals is attributable to the high number of workers who were close to the retirement age".

Is the equation "flexibility = employment" truthful?

"On the one hand flexibility contributes to create new job opportunities, but on the other hand it leads to an actual decrease in the work quality. If you ask me whether flexibility is the right way to increase the employment rate, I can only say that temporary workers account for less than 10% of total workers".

A few remarks to conclude our interview…

"First of all we can say that the increase in the employment rate in Piemonte has been a merely technical phenomenon, which is mainly associated with the following three factors:

- *the surfacing of the black economy*
- *the National Insurance reform (with the consequent freeze on retirements)*
- *temporary jobs.*

That being stated, I am quite optimistic about the future, even though I deem it necessary to get back to the old values associated with the industry, thus trying to prevent young people from losing their interest for technical and manual jobs".

Transport and Infrastructure

Thanks to their geographical location, Piemonte and the province of Torino are a key point on the main routes connecting Central Europe to the Western Mediterranean, even though mountain passes and the natural lie of the land are sometimes a hindrance to the transport of goods and passengers, which becomes slower and more expensive.

As noticed by mobility experts, in the last few years the province of Torino has always been excluded from the major routes for road transport and rail freight, due to its poor accessibility.

Since the province was designated to host the Olympic Winter Games, we have tried to find a remedy for this situation. Among the numerous mobility projects our province is implementing to improve its accessibility and to be further integrated in the European area the following are worthy of mention:

1. the high-speed/high-capacity railway line connecting **Torino, Milano, and Venezia**. Work is progressing rapidly on the Torino-Milano line, and the Torino-Novara stretch is scheduled for completion by the end of 2005. Construction sites are not operational yet on the Italian stretch of the Torino-Lyon line, which is the most problematic one
2. the construction of a second lane on the **Frejus** motorway, between **Savoulx and Bardonecchia**, as well as of a third lane on the Torino-Milano motorway
3. the construction of the **Asti-Cuneo** road link, and the extension of the motorway as far as Nice through the Mercantur tunnel, which is still to be made
4. the enhancement of the transport system in the metropolitan area of Torino, which implies the extension of the existing ring road (by building a new **stretch running east of the city** and **the Torino-Pinerolo road link**, as well as by turning **Corso Marche** into a stretch of the new ring road), and the construction of an underground railway link and a subway line.

Extensive renovation is under way at the airport too, which is trying to set up a network with other airports in Piemonte (Cuneo-Levaldigi and Biella), as well as with Malpensa 2000. The Caselle airport, which is managed by SAGAT S.p.a and is owned by both private and public shareholders, plays a secondary role on a regional scale, due to the proximity of the Malpensa hub: the largest share of both passenger and freight traffic comes from a transport demand which is concentrated in the province of Torino (80% of the total). The airport is now being extended to manage the increase in passenger traffic, which is expected to amount to five million passengers in 2010 and 6.5 million in 2015. Most works are scheduled for completion before the Olympic Winter Games, so that tourists can be adequately welcomed in that period.

Table 18

Railway network managed by the italian railways, sorted by traction and by area [(a)]

Areas (in km)		Electrified railway lines: Double-track lines	Electrified railway lines: Single lines	Non-electrified railway lines: Double-track lines	Non-electrified railway lines: Single lines	Total
Torino	2003	498	522	-	851	1,871
	2001	498	520	-	851	1,870
	1999	505	431	-	892	1,829
Italy	2003	6,253	4,712	44	4,955	15,965
	2001	6,186	4,678	44	5,128	16,035
	1999	6,159	4,502	44	5,387	16,092

Note

a) Since 2000 the railway network has no longer included feeder lines, which were equal to 173 km in 1999.
Source: Istat

The high-capacity Torino-Milano line is an important growth opportunity for both provinces, especially for the activities belonging to the service sector, as well as for high-value added activities. Torino, which is located along the so-called “Corridor 5” connecting Kiev to Lisbon, could represent an important junction in the dry channel that would link the Mediterranean ports of Savona and Genova to Rotterdam going through the industrialized central area of Europe. Upon completion, Corridor 5 should be able to absorb traffic flows coming from Portugal, Spain, France and Switzerland, which are now going north of the Alps, and to channel them on the Genova–Milano and Torino–Milano lines.

The logistic centre which is currently located near Orbassano, a few kilometres from Torino, could be enhanced, and new logistical platforms could be built for international companies operating in logistics, which could be attracted by the high-speed/ high-capacity railway line and by Corridor 5, thus strengthening the local manufacturing sector and connecting it to new logistic districts.

6.1 Statistical data on transport

In 2004 the **Caselle airport** experienced an 11.4% increase in passenger traffic, a 16.6% increase in domestic flights and a 6.1% increase in international flights, while freight traffic decreased by 13.1%.

Table 19

Traffic at the Caselle airport

	Passengers	Freight (tons)	Post (tons)	Domestic flights	International flights
2004	3,123,513	14,776	1,218	239	243
2003	2,804,655	17,013	1,331	205	229
2002	2,787,091	15,047	1,302	194	238
2001	2,820,762	14,986	2,233	240	249
2000	2,814,850	18,575	2,048	213	293

Source: Sagat

At the end of 2003 the **railway network** in the Torino area stretched for 1,871 km: 54% of the network was made up of double-track lines, and 73% of the lines were not electrified. The corresponding percentages at a national level were 69% and 60% respectively.

Table 20

Motorway traffic

	Actual average vehicles (a)				Theoretical average vehicles (b)			
	2004 (c)	2003	2002	2001	2004 (c)	2003	2002	2001
Torino-Milano								
Light vehicles	29,352,468	29,930,365	29,245,260	28,232,385	12,300,162	12,712,950	12,495,410	12,127,125
Heavy vehicles	10,282,038	10,069,985	9,683,450	9,464,815	4,307,820	4,389,125	4,273,785	4,273,420
Torino-Quincinetto-Ivrea (d)								
Light vehicles	13,215,162	12,875,375	12,067,630	11,369,020	6,270,678	6,140,760	5,796,200	5,506,025
Heavy vehicles	2,748,294	2,493,680	2,152,405	1,992,170	1,183,644	1,089,525	970,535	905,565
Torino-Savona								
Light vehicles	14,615,478	14,413,120	13,585,300	13,210,445	5,993,616	5,601,290	5,225,340	4,973,490
Heavy vehicles	3,383,670	3,010,885	2,968,180	2,840,430	1,253,916	1,167,270	1,074,195	1,016,890
Torino-Piacenza								
Light vehicles	25,939,152	24,915,995	23,798,365	22,906,670	8,535,852	8,244,255	7,911,740	7,637,990
Heavy vehicles	10,208,472	9,682,355	9,380,500	8,937,390	4,260,606	4,013,175	3,963,170	3,835,420
Torino-Bardonecchia								
Light vehicles	6,033,876	6,112,655	5,531,210	5,646,185	6,033,876	6,112,655	5,531,210	5,646,185
Heavy vehicles	3,065,250	3,228,060	3,694,530	3,814,250	3,065,250	3,228,060	3,694,530	3,814,250
Frejus tunnel								
Light vehicles	842,166	859,940	953,015	1,122,010	842,166	859,940	953,015	1,122,010
Heavy vehicles	1,250,988	1,247,570	1,475,330	1,548,695	1,250,988	1,247,570	1,475,330	1,548,695

Notes

(a) By "actual average vehicles" we mean all the vehicles which got onto a motorway, independently of the distance covered.
(b) By "theoretical average vehicles" we mean the ratio of the distance covered by the vehicles which got onto a motorway to the length of that motorway.
(c) All data on traffic were calculated by multiplying the daily value referring to average, actual and theoretical vehicles by 366.
(d) Including the Ivrea-Santhià road link.
Source: AISCAT

An increase in the **light vehicle traffic** can be noticed on all motorways of the province, with the exception of both the Torino-Milano and the Torino-Bardonecchia stretches (-1.9% and -1.3% respectively). An upward trend also characterizes the heavy vehicle traffic, with the exception of the motorway leading to Bardonecchia and to the Frejus tunnel, which has experienced a decrease in traffic volume since the Mont Blanc Tunnel reopened.

6.2 Infrastructures in the province of Torino

Istituto Guglielmo Tagliacarne together with Unioncamere analyzed **economic and social infrastructures available in the province**, as they play an important role in determining the competitiveness of an area. In order to assess competitiveness, data must be gathered and selected and then aggregated by category of infrastructures, where the very meaning of infrastructure needs to be defined.

The concept of infrastructure has changed with time and no univocal definition can be found in the literature. For instance, while up to the 80's one of the features characterizing infrastructures was their 'public' nature, this is no longer considered an important aspect. Based on experience, though, it was possible to identify some common characteristics for which a varying level of consensus was determined.

Infrastructures are a heterogeneous group of facilities, comprising hospitals and schools, roads, harbours and airports and more. A synthetic classification normally uses reference categories, depending on the available statistical data. In our case they were:

1) road network
2) railroad network
3) harbours
4) airports
5) energy and environmental plants and networks
6) telephone and IT structures and networks
7) banking and business service networks
8) cultural and recreational facilities
9) educational facilities
10) health structures

The data gathered with this study help to assess the physical standards of the infrastructures in the province and to establish indexes to compare availability against the local demand. The indexes, through a multivariate procedure, differentiate between quantitative measurements (e.g., hospital beds) and qualitative aspects (e.g., hospital availability of special medical equipment).

When these indexes are shown for macro-areas the distribution of infrastructures can be analyzed. They reveal that in the north-west and in the centre of the country infrastructure availability is higher that potential demand on average (by 21.1% and 22.7% respectively); in the north-east it is close to the national average and somewhat below for some categories; in the south it is markedly below average (72,9%).

The infrastructure index for the province of Torino is 6.2% above the Italian average, with a slight improvement over 2001.

Our area produces a high per capita income, but this does not necessarily imply good infrastructures. This is particularly evident in the north-east, where the infrastructure index is close to the national average (107 over 100).

The Torino area enjoys good banking and service networks (index 173 against the regional average of 116) and excellent telephone and IT networks (142 against 92 for Piemonte, although far from 387 of Milano). Compared to the situation of 2001, there is an improvement in banking and service networks (62.5% above the national average in 2001) and a slight downturn in telephone and IT networks (153 in 2001).

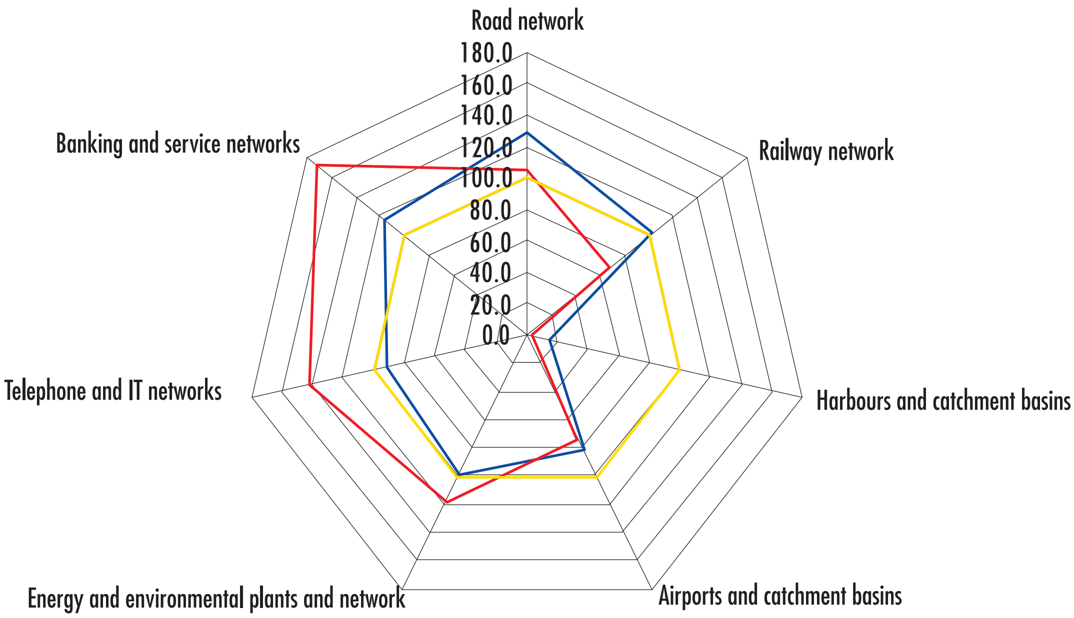
Infrastructures providing access to our province do not enjoy a high level of consensus: the index for roads is lower than the index for the region (105 against 128) but showing some improvement over 2001, when it was 97; railroads are clearly not up to the demand (68 against 103 for Piemonte) as are airports (74), as the Torino airport is disadvantaged by the presence of Malpensa 2000.

The improvement in the road and motorway network in the area of Torino was achieved for a significant part thanks to the works done in view of the Winter Olympics.

The completion of the high capacity railway line between Torino and Milano, with the possible connection with Lyon, will therefore be strategic to ensure a wider reach to our province, producing positive economic effects and facilitating exchanges with France, our main trading partner.

Chart 21

Indicators of economic infrastructures in 2004



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Piemonte Torino Italy

Source: Istituto Guglielmo Tagliacarne

Paolo Balistreri, in charge of Transport and Accommodations for TOROC, was interviewed on transport, infrastructure and quality of life:

High-speed Torino-Lyon railway line: could it bring Torino closer to France (main trading partner) and Europe (Corridor 5)?

"It is now fifteen years since we started talking about the high-speed Torino-Lyon rail line. At the time the High-Speed Rail Committee was established within Federpiemonte, and Corridor 5 was only a rough draft of a rail line designed to connect the East and the West of Europe and to develop trade. The problem now is to respect the deadlines for EU funds for this project, on which both Italy and France widely agree. The risk is that the first fund allocation may not be appropriated in the EU budget. The lay-out of the line is now finalized and we just need to design access to the Torino metropolitan area. We need to start working to comply with goals set at European level, opening a table of negotiations with the local communities to solve all the complex problems that they have brought up, including impact on the environment".

Torino-Milano high capacity rail line: it serves a very large commuter traffic providing new growth opportunities for the two cities, especially in the areas of services and high skill based activities. Genova too could join the TO-MI circuit, thus re-establishing the economic triangle that could be much more than just a metaphor, creating a strongly competitive macro-region. Based on these considerations, how will the high-speed Torino-Milano rail connect with the Torino-Lyon line?

"By the beginning of 2006 the section between Torino and Novara will be operational. The remaining section, to Milano, will require more time and completion will take another couple of years. This high-capacity line will be the solution to all the problems of the old line: travel time will be down to 40 minutes, benefiting commuters and offering new development opportunities for the two regions.

The new Torino-Milano line will bring the two cities closer and, based also on the Torino-Milano-Genova plan, the old line will be able to better serve areas such as Santhià and Vercelli that are excluded from the high-capacity line. More time will be required for the extension to Genova, part of Project 24, a new plan for the Trans-European Networks (TEN). This envisages two sections after Novi Ligure, one heading to Milano and one to Novara, and the Simplon and Gothard tunnels. Our region has a special interest in the line that from Simplon goes through Switzerland and up to Rotterdam, that will require construction of the so called Third Pass. With this Genova will be linked to Central Europe. Construction of the Third Pass will bring to completion the high capacity line, creating a highly competitive European macro-region. Connection of the high capacity Torino-Milano line with the high speed line to Lyon is the logical consequence. Not doing it will be a big loss, as the two lines are mutually complementing".

After a fire broke out in the Frejus road tunnel in July 2005, the question of its doubling is again on the table: what are the pros and cons of this infrastructure?

"The weakness is its being a single-bore tunnel, creating difficulties in case of accidents. Doubling is not a priority in the short term – the high-speed Torino-Lyon rail line comes first – but it may be in the long term, as road traffic, being fast and low-cost, will always complement rail traffic. Doubling of the Frejus tunnel may entail a very high social and environmental price, which we cannot afford right now".

Cuneo-Nice: extending the Asti-Cuneo motorway to one of the most important regions of France. How could our province benefit from being linked to the bordering regions of Rhône-Alpes and Paca?

"I consider construction of the Cuneo-Nice motorway more beneficial that doubling the Frejus tunnel, even if the French are not overly enthusiastic about it. It represents a natural extension of the Asti-Cuneo motorway, which will remain "unfinished" if not reaching Nice. It would have important economic implications, with a link to southern France and from here to eastern Europe (the philosophy of Corridor 5). This would make a higher ranking motorway of the Asti-Cuneo, which will be completed in two years (now Cuneo can be reached turning off from A6 Torino-Savona)".

Capacity development of the Torino-Caselle airport, as part of a system with the other airports in the region (Cuneo-Levaldigi and Biella) and with Malpensa 2000.

"The Olympics provided an excellent opportunity for a complete refurbishing of the Torino-Caselle airport, for which 90 million euros were invested. The airport will be able to handle twice the present traffic. A rail shuttle between Caselle and Lingotto will be experimented during the time of the Games. The airport enjoys high standards in terms of safety, security, accessibility and services.

The creation of an air traffic system is more difficult, in spite of an Act of Parliament passed in 2000 provided for it. Biella is a local airport with limited capacity, which could handle freight if the necessary investments are made. Significant investments were made in the Cuneo-Levaldigi airport, but demand proved lower than expected. Some more time will be needed to see whether this airport's business can take off.

As to Malpensa 2000, it can be linked to Caselle once the road network is completed. No rail connection is planned for the time being".

Construction of the eastern Torino by-pass motorway

"Two are the proposed alternative projects: one for a new eastern bypass and one of the province of Torino for improving the existing road network. Compared with the first hypothesis, the second one requires shorter time and lower financial resources. The new by-pass motorway will certainly

need to be built, but later on, and not only to handle goods transport but rather as part of a global metropolitan mobility system that can stay efficient for 40 to 50 years".

Quality of the environment, security for citizens, health and social services and also sustainability of transport, educational and cultural initiatives, labour market, housing cost: quality of life in an area depends on a wide range of social and economic factors and infrastructures. How does Torino rank in this domain?

"The city is now tackling the question of transport, but for an efficient metropolitan subway system more time is needed. By the time of the Olympics, Subway Line 1 will be in operation from Grugliasco to Porta Susa and then to Porta Nuova. The underground rail link runs a better chance to become an efficient transport system for the metropolitan area that could reach the communities of the Susa valley, once traffic is partially relieved by the high-capacity line.

During the Olympics trains will run at half hour intervals. Service will be available to all passengers and may be extended to Caselle airport".

Which are the points of excellence and which the weaknesses in Torino for 2006? Will the eagerly waited Olympic Games – expected to provide solutions to practically all problems – have an impact on the quality of life of the citizens of Torino? How?

"We have done our best to minimize the impact of the Games on mobility in the metropolitan area. This is the first time trains will play a major role, transporting over half of the expected participants. We hope the service will continue to operate after the Games are over.

We are also trying to encourage use of a car-sharing scheme, as parking in the mountain areas is particularly difficult. All the vehicles provided will meet Euro 4 standards, plus about a dozen running on methane, as the number of filling stations carrying methane is rather limited, especially along mountain roads. GTT are renewing their fleet. The starting times of competitions have also been set so as to avoid interfering with peak hour commuter traffic".

Torino is one of the metropolitan areas with the heaviest car traffic in Europe: every morning 80,000 cars drive into the city and 67,000 leave the city. All his traffic causes massive pollution and is detrimental to the efficiency of public transport, with a dramatic decline in the number and satisfaction of passengers. Can the subway and the underground rail link provide the solution?

"Car parks that allow switching to public transport are being built and they should encourage use of the public service. The new Euro 4 engines with limited environmental impact should bring pollution to levels lower than in the past, even when traffic was lighter. The media can convey misleading messages: the public transport system is upgrading the fleet with vehicles powered by cleaner fuels, methane and hydrogen".

Tourist Industry

Tourist industry report

376,700	More visitors than 2003
47,600	New visitors
1,209,600	Visitors in 2004
25	European countries of origin
20	Non European countries of origin
3,938,000	Total number
261,000	British visitors (largest European group)
75,000	Americans (largest non-European group)
1,115	Accommodation facilities (hotels and other)
52,252	Total sleeping accommodation

The area of Torino has a strong potential to attract tourists, with a wide range of museums, cultural events, convention facilities and winter sports facilities. Demand is undoubtedly growing, so the industry promises to contribute positively to the economy of our province.

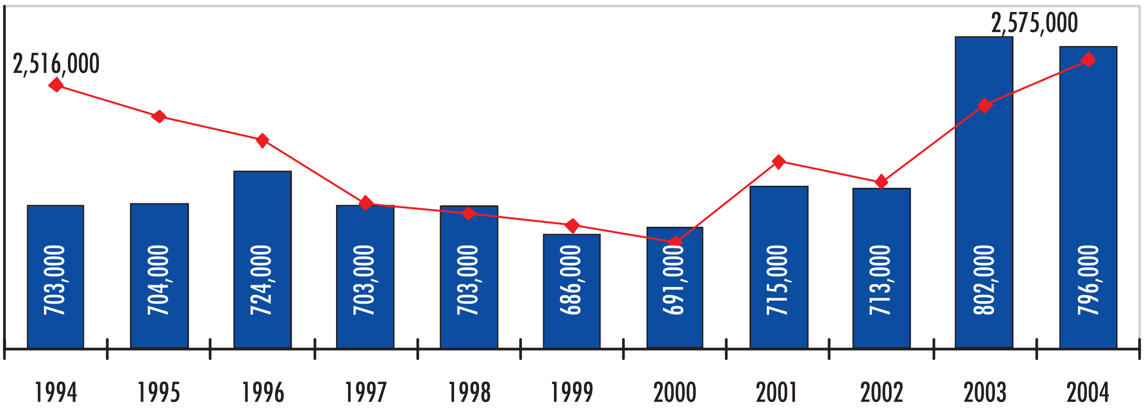
2003-2004 were record years for tourism in Torino, as shown by the data of the Observatory on Tourism of the region of Piemonte. The number of tourists grew, especially that of **foreign tourists**, which doubled in the last decade, coming mostly from France, the United Kingdom and Germany. Torino is **the most frequently visited city in Piemonte**, with over two million tourists coming for leisure, business and conventions. It is followed by mountain resorts, among which Sestrière, Bardonecchia and Sauze d'Oulx are preferred.

7.1 Accommodation facilities

There are 1,115 tourist facility structures in the province of Torino, clustered around three different areas: ATL1, the metropolitan area under "Turismo Torino"; ATL2 in the Susa valley and Pinerolo area under "Montagne Doc"; and ATL3 in the Canavese and Lanzo valleys. Total accommodation is 5,200 beds, with 20% increase in 10 years, showing that a new economic trend is developing. The tourist hospitality industry seems to be focussing in particular on top quality accommodation, with the growth of first class hotels (4 and 5 stars), aiming to promote Torino as a medium-high level tourist destination. In the rest of the province non-hotel accommodation is booming, with B&B and farm and rural tourist facilities (over 220 concerns with a total of 25,500 beds) that increased 60% over 1994.

Chart 22

Tourist flow to the province of Torino - Italian visitors



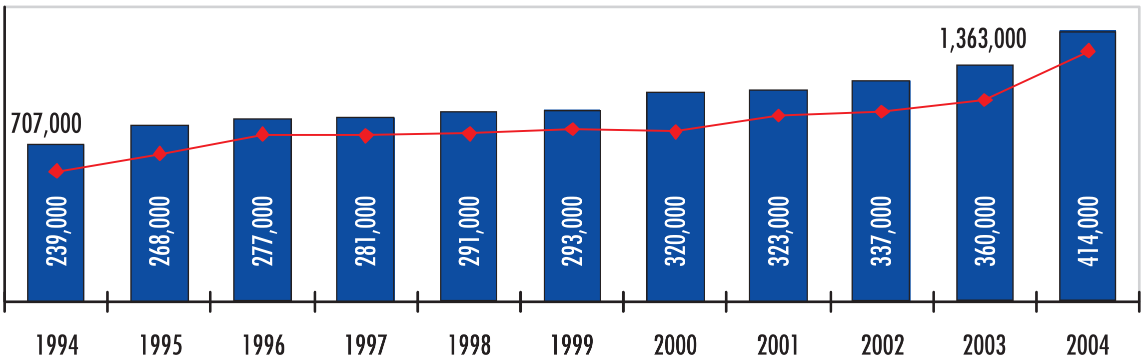
Legend

Incoming *Visitors*

Source: Region of Piemonte, Regional Observatory on Tourism

Chart 23

Tourist flow to the province of Torino - Foreign visitors



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Incoming *Visitors*

Source: Region of Piemonte, Regional Observatory on Tourism

7.2 Visitors to Torino

There is little doubt that Torino is opening up to tourism: 4% more travellers arrived in Torino in 2004 with 11% more visitors that the previous year, confirming the growth trend of 2003 (+11% and +7% respectively).

The figures are impressive: 1.2 million travellers came to the province of Torino in 2004, for a total presence of 4 millions (9.3 million for the whole region). Things have changed in ten years and the economy of Torino has gone, and is still going through a deep transformation: compared with 1994, 28% more tourists have spent at least one night and their presence increased by 22%.

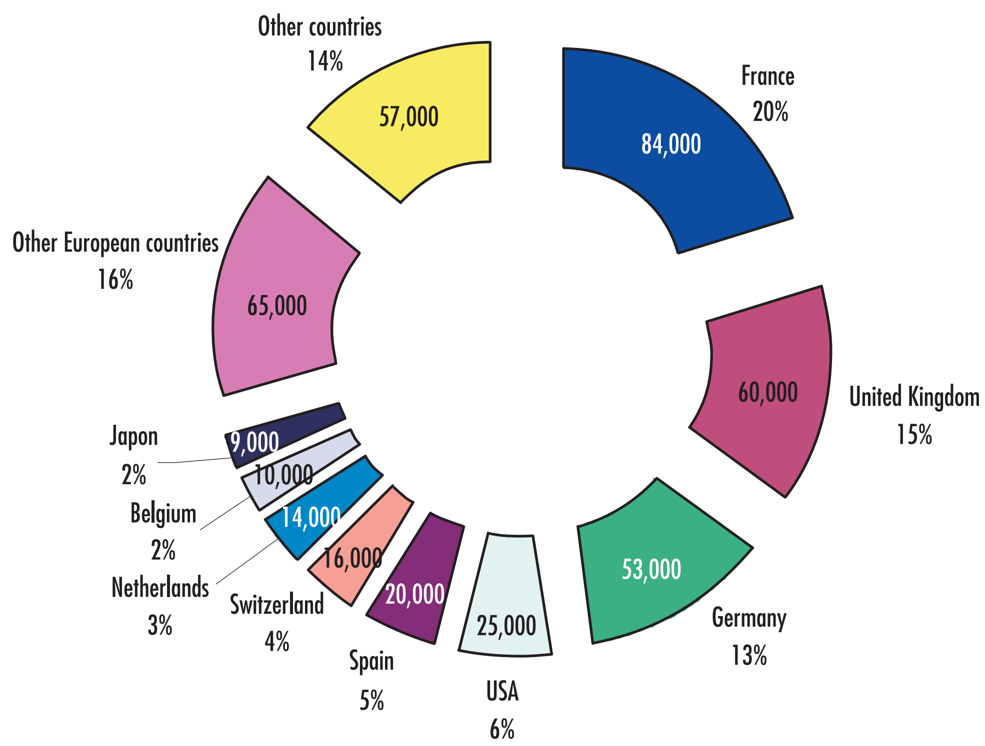
Who are these tourists?

One visitor out of three is non Italian. The 414,000 foreign tourists arrived in 2004 – almost twice as many as a decade ago – come from over 45 different countries. The largest groups are French (more than 84,000 visitors, +24% over 2003, doubling their presence) and British (60,000 visitors in 2004, first in terms of presence). British guests increasingly crowd the skiing resorts in the province, especially Sestrière, Bardonecchia and Clavière, showing that tour operators and airlines effectively promote the Olympic mountains. Ranking third are the Germans, with 53,000 arrivals and +21% presence, followed by the Americans, the largest non European group with 25,000 visitors, and then tourists from Spain, Switzerland and Holland, whose presence doubled with respect to 2003. Fewer tourists come from Sweden, Finland and Norway, but their number is growing at a surprising pace: they were 18,000 in 2004, twice as many as in the previous year. An increase is seen also in the number of tourists coming from Israel, Poland, Russia and Portugal, as well as from the Far East, mostly from Japan and China, although in this case the flow of tourists is somehow mixed with a permanent migration flow, an anticipation of a future international phenomenon. Lastly, from distant New Zealand five times more visitors came in 2004 (4,000) than in 2003.

As to the Italians, not much has changed: our province is still visited mostly by tourists from Piemonte. In 2004 out of 796,000 Italian tourists, one fifth came from our region, 98,000 from Lombardia and 49,000 from Lazio. Many came also from Veneto, Campania, Emilia Romagna and Toscana, although their number saw a small decline with respect to the previous year. The length of stay increased to 3.2 days in 2004.

Chart 24

Foreign visitors in province of Torino by country of origin



Source: Region of Piemonte, Regional Observatory on Tourism

7.3 The choices of tourists

Torino and the Torino metropolitan area continue to attract the largest number of tourists visiting Piemonte, again in 2004. Nine hundred thousand of them arrived, with a presence of over 2.6 million, mainly attracted by international events such as the Book Fair, Salone del Gusto (Food Fair) and Salone del Vino (Wine Fair), as well as by art exhibitions and museums, especially the Cinema and Egyptian museums. Business travellers also come in sizable numbers. In 2004, of the 62,500 new visitors to Piemonte, 57,000 chose Torino, which gave a 15% increase in tourist presence.

A good tourist flow also reached the mountain areas, with a presence of over one million (+3%) in the Susa valley and Pinerolo area.

The Canavese and Lanzo valleys also enjoy an increase of the tourist flow (presence in 2004: 270,000), although it is still mainly local tourism, but there is a good potential for food and wine to represent an attraction to be exploited.

7.4 Business tourism

Business travellers represent a positive contribution to the economy of the province of Torino. Torino Convention Bureau's observatory shows 14% increase in the number of business events and 34% increase of participants. In 2004 the city hosted nearly 3,000 meetings for more that 50 participants and 3,600 smaller ones, with an estimated total of 439,000 participants. Besides the positive contribution to the image of the city, the economic implications are important, considering that it is estimated nationally that business travellers spend an average of 1,000 euro a day for accommodation, restaurants, transport and souvenir purchase. There are also potential positive implications in terms of occupation. Business tourism is expected to grow. Some big events are scheduled between 2005 and 2008, such as the World Congress of Architecture and the Meeting of the European Association for the Study of Diabetes that will be hosted in Torino in 2008; a total of 24,000 participants are expected. Torino can also specialize for hosting smaller meetings, where corporate conventions may play the leading role with 40% of all events. Some 20% of events are organized by public agencies and some more by university faculties.

Also industrial tourism is growing, with visits organized to meet and know industrial concerns in the area, thanks to the world wide reputation of Torino and Piemonte in the fields of research, of creativity, of production and especially of car design. This branch of tourism is still limited to rather small figures, but it may contribute to the creation of a touristic identity and to a better knowledge of the area.

We interviewed Josep Ejarque, former director of Turismo Torino and an expert in metropolitan tourism.

More visitors to Torino in the last two years. The province and especially the metropolitan area are enjoying growing interest; more people come and they stay longer. Is this only due to the coming Olympics and those involved, or is there something more?

"The city has really started to believe in tourism, and this shows. A good work is being done, and in this area the first results start showing after three years in average. Currently tourist flows to Torino are due for the most part, 70%, to business and conventions and for the remaining 30% to leisure. This points to a new trend, where Torino is now seen as a city of culture, while in 1998 82% of visitors came for business reasons and the remaining part for tours of a religious nature. Things are a bit different in the rest of the province, where most tourists go to the mountains, many of them are foreigners and come in the skiing season".

There in an increase in the presence of foreign tourists in particular. Is Torino really part of the circuit of tourist cities? What do they say abroad about Torino? Is there also something new in the way Italians see our city?

"Things are changing. In the imagination of Italians Torino used to be scarcely attractive and abroad it was little known. Now there is growing curiosity for events and initiatives that make the city a place to be discovered".

Is the current promotional effort effective, and which are the strengths?

"Work must be focussed on three areas simultaneously. First of all it is important to develop specific tourist products working together with the members of the tourist trade. An investment needs also to be made to improve the professional skills and management of the tourist industry. And especially it is necessary to work on promotion, i.e. creating a tourist identity".

Comparing European cities: Barcelona, Milano, Lyon and others. Is there a model that should inspire Torino?

" Yes, the model is Vienna. Vienna is similar to Torino as it also lies outside the big European tourist routes and shares the same cultural heritage of baroque art, of history and tradition. Examples are the historical cafés and the tradition of chocolate. The hotel trade is also similar, with a few national hotel chains represented and a good number of family run facilities. The two cities also share the same mix of business, convention and leisure tourism".

In 2004 convention tourism took off. Normally these travellers prefer higher class facilities. Is this the direction the city should pursue? Leisure tourism and business tourism: should the city specialize in one of these areas or is there room (and resources) for both?

"Specialization is quite risky because tourist flows change in rapid cycles. Business tourism is an important area, but alone it cannot help the city stand up to competition. Torino hotel facilities are still heavily oriented to cater for business travellers. The average hotel level is a bit too high for leisure tourism which requires lower prices but at the same time additional facilities, such as pools, fitness centres, restaurants. This is where further development is necessary".

Transport policies. Low-cost airlines and in general low-cost tourist packages to launch Torino and its province. Is this feasible? What are airlines and tour operators doing in this area?

"Local authorities are working in this directions, together with the Torino-Caselle airport management and Ryan Air. Special agreements with airlines are necessary in order to increase the flow of visitors and to bring the city and the province into the circuit of international tourist destinations".