
LSE Cities Next Urban Economy Series

Torino

Reclaiming and diversifying local economic strengths

Global Metro Summit,

The Next Urban Economy

Chicago, 7-8 December 2010

Conference Paper

Ricky Burdett

Andrea Colantonio

Cristina Alaimo

Myfanwy Taylor

Contents

Executive Summary	3
1 Introduction	4
1.1 Background	4
1.2 Torino's transformation	4
1.3 Methodology	4
1.4 Structure of the report	5
2 The metro context	6
2.1 Geography	6
2.2 Economic history	6
2.3 The problem	7
3 Intentionality to advance the next economy	8
3.1 Approach	8
3.2 Governance	9
3.3 Interventions	10
4 The success story	16
4.1 Economic success at the city level	16
4.2 Economic success in the next urban economy	16
5 The financial crisis and future perspectives	20
6 Conclusion	21
Selected bibliography	22
List of interviewees	23

The Next Urban Economy Chicago 7-8 December 2010 Conference paper

Ricky Burdett
Andrea Colantonio
Cristina Alaimo
Myfanwy Taylor

Extended research team
Guido Cocco
Venere Stefania Sanna

Special thanks to
All interviewees
Mauro Ferrari, *Vice-President ANFIA, Associazione Nazionale Fra Industrie Automobilistiche (National Association for the Automobile Industry)*
Valentino Castellani, *Mayor of Torino, 1993-2001*
Antoine Paccoud
Jens Kandt

Production
Adam Kaasa
Nell Stevens

Design
Esterson Associates
Miranda Iossifidis

The LSE Cities Next Urban Economy series

Munich: staying ahead on innovation
Torino: reclaiming and diversifying local strengths
Barcelona: global repositioning of an emerging metro
Seoul: orchestrating an innovation-led economy

In the context of strong metropolitan growth, and the promotion of innovative approaches to urban and regional development policy at city, regional, national and European Union (EU) levels, over the past two decades, the *Next Urban Economy* project looks to three European cities for investigation and analysis. The three cities - Munich, Torino and Barcelona - have each overcome challenging crises in the past and shown significant economic progress and urban transformation in the recent past, especially in terms of promoting innovation, global repositioning and internationalisation, and the fostering of a greener economy. The *Next Urban Economy* series also includes one of the fastest growing cities in Asia, Seoul, as shifting patterns of urban growth increasingly require us to look beyond Europe and North America. Taken together, these city profiles provide city leaders, policymakers and practitioners with valuable resources as they respond to the challenges posed by the current global economic recession and develop their own next urban economy. The city profiles will be available at www.lse.ac.uk/lsecities and www.globalmetrosummit.net.

LSE Cities
London School of Economics
and Political Science
Houghton Street
London WC2A 2AE
United Kingdom
lse.ac.uk/lsecities

First published by LSE Cities, London School of Economics and Political Science, 2010.

This conference paper is intended as a basis for discussion. While every effort has been made to ensure the accuracy of the material of the material in this report, the authors, LSE Cities will not be liable for any loss or damage incurred through the use of this conference paper. If notified, the LSE will rectify any errors or omissions at the earliest opportunity.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission of the London School of Economics and Political Science.

Executive Summary

Overview

Torino has been automaker Fiat's stronghold for decades, earning it the title, 'the Italian Detroit'. Capital of the region of Piemonte (Piedmont), Torino was the heart of the industrial triangle that drove Italy's economic miracle in the 1960s and 1970s. From facing acute crisis just twenty years ago, Torino's auto sector has adapted and recovered, and the city has diversified into new sectors, such as design and aerospace. As post-industrial cities around the globe struggle to remake themselves, the story of Torino offers useful insights about reclaiming and diversifying local strengths.

The challenge

The oil crisis of the mid-1970s and increasing global competition led Fiat to restructure its supply chains, with a negative impact on the local manufacturing-based economy. 100,000 jobs were lost in the 1980s alone. As Fiat restructured its research and training activities and successive mayors failed to take control, Torino faced the prospect of an institutional and economic vacuum.

Leadership and Intentionality to Advance the Next Economy

Torino's adaptation has been driven by a wide range of public and private actors, displaying the entrepreneurial spirit typical of the region. Although the restructuring processes initiated by Fiat were challenging for its suppliers, they were handled well by the industry and led to many former Fiat suppliers becoming more efficient and better able to compete internationally. The local Union of Industrialists and political institutions worked with the area's rich manufacturing base to create a favorable climate that allowed firms to adapt to new conditions and enter new markets. As Fiat concentrated its research and training activities internally, other institutions such as the bank foundations and the Politecnico di Torino, the city's major university, took on new roles, helping to ensure that the expertise built up was not lost and that Torino remained an attractive location for international industry.

The partial devolution of national government power to locally-elected mayors galvanized a new momentum for Torino in the early 1990s, as Mayor Castellani initiated two major planning processes. The strategic plan linked the changes already underway in the city's auto sector to a new vision for Torino as a globally-oriented, innovative and diversified economy, supported by a new city masterplan that enabled Torino's outmoded industrial core to be re-configured for the new economy. City and regional governments went on to play an important role in developing the environment – and in some cases providing the financial resources – for the changes pursued by other economic actors to accelerate, flourish and spread.

Interventions

Attracting financial investment through collaboration. Effective collaboration between Torino city and the Piemonte region enabled them to win significant funding from the European Union, including €2.5 billion from the EU Structural Funds (publicly co-funded locally) since 1989 and €3.3 billion from the European Investment Bank since the mid 1990s.

Reclaiming industrial areas for the new economy. The new

masterplan enabled Torino's outmoded industrial artery and railway running through the centre of the city to be reclaimed for new uses. The 'Spina Centrale' (central backbone) and four brownfield sites are being redeveloped into mixed-use neighbourhoods, and linked back to the urban fabric through new transport infrastructure, including Torino's first metro line and a high-speed link to Milan.

Bridging the gap. Torino's **bank foundations** and the Politecnico bridged the gap between universities, businesses, and private capital.

The **Politecnico** reconfigured its courses for the new economy, attracting foreign firms, students and talent, including GM Powertrain Europe and China's second largest car manufacturer, JAC. The Politecnico's business incubator I3P, jointly owned by city and provincial governments and the Chamber of Commerce, has been a major contributor to Piemonte's emergence as the Italian region with the most university spin-offs.

Torino's bank foundations, Compagnia di San Paolo and Fondazione Cassa di Risparmio di Torino, have played a crucial intermediary role, investing a total of €380m in Torino between 2001 and 2005, sponsoring new research and innovation institutes.

Supporting firms in new sectors and new international markets. The **Unione Industriali di Torino**, its subsidiaries, the Torino Chamber of Commerce and the Piemonte Agency for Investments, Exports and Tourism have each developed a range of programs to help new or struggling firms adapt to changing conditions and enter new international markets, including in the automotive, ICT, mechatronics and aerospace sectors. 'From Concept to Car' is a small but important initiative which helped 152 local auto suppliers secure €41.8 million in export sales from an investment of €4.8 million between 2003 and 2009.

Steering growth towards new economic sectors. In 2008, Piemonte accelerated its efforts once again, setting up twelve Innovation Poles in sectors such as biotechnology, design and ICT. The Innovation Poles bring together private firms with research centres to develop products or processes for new markets, as part of a broader shift towards a regional innovation system. The project has attracted €90 million from the European Union so far.

Results

Torino's efforts, pursued by businesses, philanthropists, industry bodies, universities and city and regional governments, together prevented Fiat's acute crises and subsequent restructuring from devastating the city and wider region. This one-company town has diversified and survived. Between 1999 and 2007, unemployment decreased from 9 percent to 4.7 percent and GVA per capita increased by 15 percent. Despite recent turmoils, Fiat and the automotive industry have adapted and recovered, and Torino has begun to move into new sectors. The design sector generates around €12 billion per year and employs 50,000 people, while the aerospace cluster has a turnover of €2.6 billion and employs 12,500 people. Torino has been hit hard by the global financial crisis, but the adaptability and resilience it has demonstrated over the past two decades stand it in good stead to continue to reclaim and diversify its local strengths as it recovers.

1 Introduction

‘Torino is the daughter of two monarchies: the royal family of the Savoia and FIAT.’

Mario Calderini, CEO, Finpiemonte

1.1 Background

With a GDP of over €25 billion (Eur-Censis, 2004), Torino is one of the strongest and richest cities of Italy - the seventh-largest economy in the world and the fourth-largest in Europe (IMF, 2008), and Europe’s second largest centre of manufacturing after Germany. Torino has an illustrious industrial history, having been home to the production and corporate headquarters of FIAT (Fabbrica Italiana Automobili Torino) since the turn of the 20th century. Torino, together with Milan and Genoa, formed the industrial triangle that provided the backbone of Italy’s economic miracle in the 1960s and 1970s. In the mid-1960s, Torino and the surrounding Piemonte region employed 149,000 workers in the automotive and related sector, comparable to the automotive sector in the U.S. city of Detroit, which employed some 158,000 people in 2005 (Detroit, January 1 2007) and significantly larger than Cleveland’s car manufacturing sector, which employed 37,383 people at its peak in 1963 (Darwin, 1997). Even today, Torino and the surrounding Piemonte region account for around half of Italy’s jobs and over half the national revenues in the auto-related sector (Torino Chamber of Commerce, 2008).

Torino’s present-day success and rich history mask the intense crisis it faced just two decades ago. The oil crisis of the mid 1970s and increasing global competition led FIAT to move its operations out of the city and restructure its supply chains, in common with many other automotive producers around the world, with devastating impact on Torino’s manufacturing-based economy. FIAT production in Torino reduced from 60% in 1990 to 30% in 2002, on top of approximately 100,000 manufacturing jobs that were lost in Torino during the 1980s. These decades represented not just a crisis for FIAT, but a crisis for Torino: as FIAT declined, so too did its welfare and social provisions, which at the time the municipal authorities were not able to provide themselves. Torino faced a leadership vacuum throughout the 1970s and 1980s, which culminated in the appointment of a city commissioner by the national government in 1992 – a clear statement of the city’s acute decline and paralysis.

Having faced such an acute crisis just 20 years ago, Torino’s current performance is remarkable. FIAT and the wider Torino automotive sector have adapted and recovered, employing over 100,000 people, and the region has begun to diversify into design, aerospace, tourism, culture and quality food and wine. Torino is now capable of attracting international firms, including General Motors, Volkswagen and the Chinese car giant JAG, and is home to the HQs of significant international organisations, such as the International Labour Organisation (ILO), European Training Foundation (ETF), the United Nations Interregional Crime and Justice Research Institute (UNICRI) and the United Nations System Staff College (UNSSC).

1.2 Torino’s transformation

This report tells the story of how Torino’s economic resurgence and diversification, both within the automotive sector and beyond, was achieved. Torino’s automotive and

other manufacturing firms began to look beyond FIAT, to new products and new markets, in order to survive, displaying the adaptability and resilience typical of the region. Torino’s powerful universities and bank foundations also adapted, for example by re-configuring courses, investing in start-ups and financing new institutions involving university, business and public sector actors. Torino’s trade bodies, such as the Unione Industriali di Torino (Torino’s Industrial Union) and its subsidiaries (Associazioni di categoria), played an important role in helping firms to adapt and promoting them in new markets and new sectors.

Torino city government initiated several strategies and plans during the 1990s in order to support and spread these transformation processes, creating a climate that enabled the region’s innate entrepreneurial spirit to adapt to a changing global market. Mayor Valentino Castellani became Torino’s first directly elected mayor (as opposed to being appointed through the party system) in 1993. By working in partnership with the regional government of Piemonte, both city and region, regardless of sometime political differences, were successful in accessing significant amounts of EU funding, which were important in accelerating processes of change and enabling key actors and institutions to take on new roles. Mayor Castellani remained in power until 2001, providing Torino with a stability that has been matched by the city’s second mayor, Sergio Chiamparino.

In addition to the adaptations and reconfigurations made by firms themselves and other private institutions, various city and regional policies have played a part in supporting Torino’s economic transformation. Firstly, the outdated and decaying industrial areas in the city, including those vacated by FIAT, were regenerated and remodelled for the new economy and significant investment was made in infrastructure. Secondly, the Piemonte regional government, the Politecnico di Torino, Unione Industriali di Torino and Torino Chamber of Commerce, amongst others, played a role in encouraging the re-tooling of the automotive industry, as part of broader efforts to reposition Torino as a leading centre of industrial design innovation. Thirdly, both city and region sought to transform the international image and reputation of Torino, by hosting major international events, attracting tourists and investing in infrastructure.

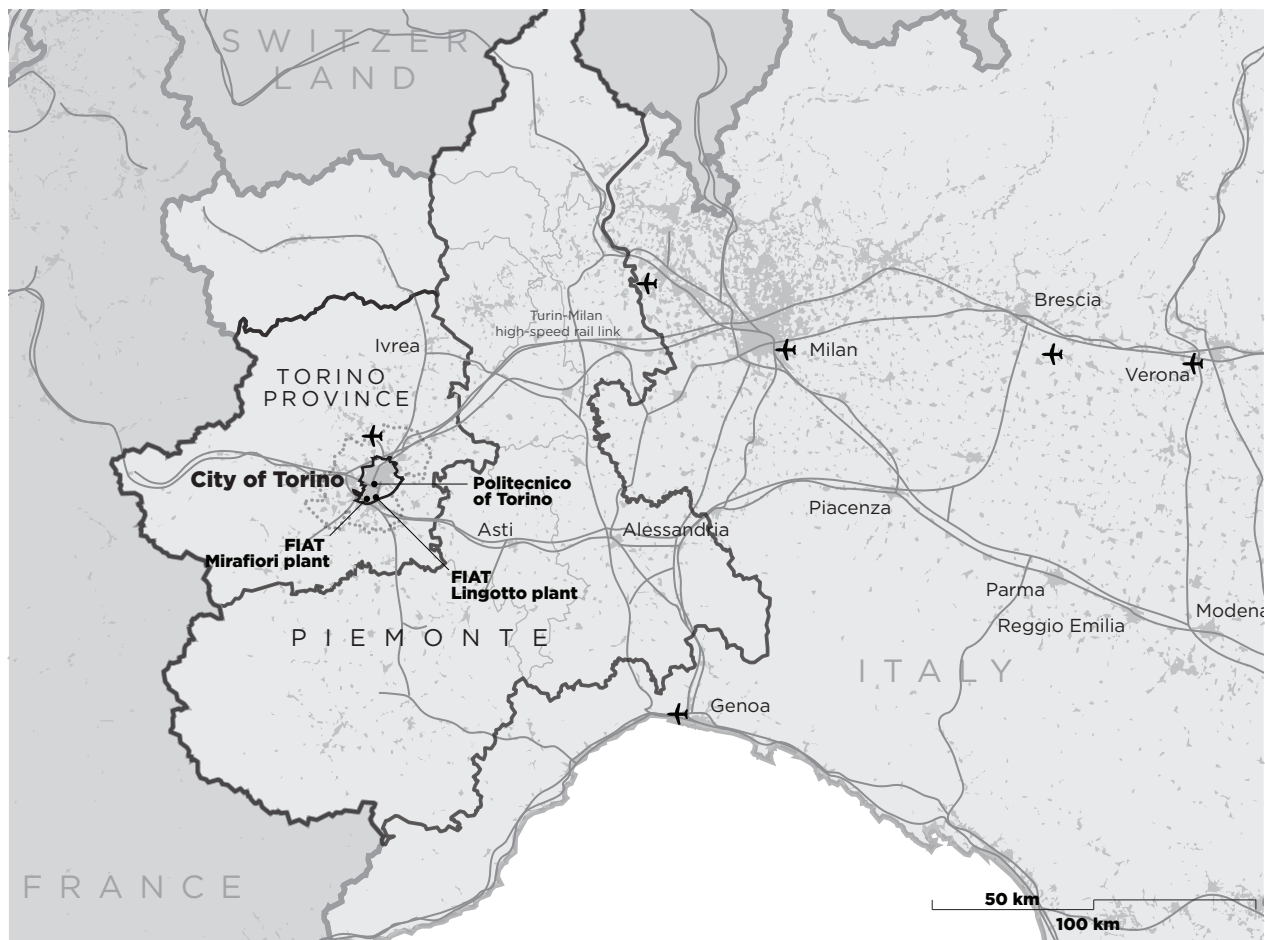
1.3 Methodology

The research methodology for this study has included the following components:

- Academic literature review;
- Background and in-depth interviews with over 15 key stakeholders and experts (listed at the end of this report). Quotes from these interviews are included in italics;
- Data gathering fieldwork in Torino;
- A review of Piemonte and Torino policy; and
- Descriptive statistics.

Torino has been selected for detailed study because of the measurable improvements it has achieved over the past 30 years in the context of significant industrial restructuring and the city’s resilience in overcoming the FIAT crisis. Torino is a particularly interesting case study because of the way in which it has successfully moved away from its historic dependency on FIAT, developing strengths in other

Figure 1
Piemonte Region (Regione Piemonte) **4,424,800 people**
Turin Province (Provincia di Torino) **2,299,103 people**
City of Torino (Città di Torino) **910,188 people**



- regional boundary
- metropolitan boundary
- district boundary
- ✈ airport
- highways
- intercity rail

economic sectors and opening up the city internationally. The focus of this study has not been on its very recent economic performance in the context of the global financial crisis from 2007 onwards, although this is, of course, taken into account (see Section 5).

1.4 Structure of the report

This report is formed of six sections. In Section 2, Torino is placed in context, as its geography, economic history and the lead-up to its transformation are explored. The processes and interventions pursued, and the governance arrangements put in place to do so are then introduced in Section 3. Section 4

discusses the outcomes of Torino's transformation, and identifies key success factors. Section 5 briefly considers the recent financial crisis, and future issues for Torino. Section 6 concludes the report by setting out the main processes and interventions underpinning Torino's transformation.

2 The metro context

2.1 Geography

Torino is the capital of the Piemonte region in North-West Italy, close to the borders of France and Switzerland (Figure 1). Torino city itself is home to a population of 910,188 within an area of 130 km², resulting in a population density of approximately 7,000 inhabitants per km² (ISTAT, 2009). The Torino metropolitan area has not been formally defined or designated, but can be functionally taken to comprise Torino city and 52 surrounding municipalities: the first and second urban belts. The metro area is home to a population of 1,997,975 million within an area of 1,976 km², resulting in a population density of 1,010 inhabitants per km² (Censis, 2007). By population, the Torino metropolitan area is comparable to the Cleveland, Austin and Indianapolis metropolitan areas in the United States.

From a governance perspective, it is also important to consider the region of Piemonte, of which Torino is the capital. Italian regions have had a significant level of autonomy since the constitutional reforms of 2001. The Piemonte region has a population of 4.4 million, and encompasses an area of 25,399 km² (2007).

In this report, Torino metro is approximated either by Torino city or by the Province of Torino (an area of 6,830 km² with a population of 2,277,686 in 2007), given the lack of data available at the metro level. Unless otherwise stated, data refers to the Province of Torino

2.2 Economic history

Torino today is one of the best performing cities in Italy (see Table 1) and also performs well within the European Union. GDP per capita in Torino Province is over 10% higher than the national average (€28,800 compared to €26,000 in 2007) and 23% higher than the European average. The employment rate in Torino Province is 5% higher than the national average (64% compared to 58.7% in 2007), and the unemployment rate is 1.4% below the national average (4.7% compared to 6.1%). The performances of Torino Province and the Piemonte Region are very similar, but GDP per capita and unemployment are slightly lower in Piemonte (€28,600 and 4.2% respectively), while employment is slightly higher (64.9%).

Torino is one of Italy's major manufacturing regions: 24% of the province of Torino's GVA came from manufacturing in 2007, compared to 21.76% for Italy as a whole. The automotive industry is at the core of Torino's manufacturing might, with almost half of Italy's automotive sector employees being located in the Piemonte region (101,780 in Piemonte compared to 103,133 in the rest of Italy in 2008; see Table 2).

Today Torino's manufacturing sector has also diversified towards a variety of other industries, including food, textiles, design and aeronautics. Torino and its region are home to a significant number of major Italian brands, several of which are also renowned internationally, such as Pininfarina and Giugiaro (automotive design), Alenia Aeronautica (aerospace), Lavazza ('Italy's favourite coffee'), Martini (the Italian spirit), Ferrero (the Italian confectioner, whose products include Ferrero Rocher, Kinder and Nutella), Robe di Kappa (the sportswear brand) and Invicta (outdoor accessories). The influential Slow Food movement was founded in Piemonte in 1986, and today boasts almost

Table 1
Torino's economic performance, 2007

	Torino Province	Piemonte Province	Italy
GDP per capita (€)	28,800	28,600	26,000
Employment rate (%)	64	64.9	58.7
Unemployment rate (%)	4.7	4.2	6.1
Population ('000s)	2,248	4,352	59,131

Sources: Eurostat, 2007 and Istat, 2007.

Table 2
The automotive sector in the Piemonte Region compared to the rest of Italy, 2008

	Piemonte Region	Rest of Italy	Total
Number of firms	880	1,316	2,196
Number of employees	101,780	103,133	204,913
Revenues (Billions of Euros)	25.50	24.09	49.59
Population ('000s)	2,248	4,352	59,131

Source: Torino Chamber of Commerce (2008).

100,000 members and a network of 2,000 food communities supporting sustainable production in 150 countries.

The dominance of the automotive district in the Torino metropolitan area can be traced back to 1899 when FIAT was founded. The company expanded dramatically following the outbreak of World War I, culminating with the construction of the famous avant-garde Lingotto factory complex in the 1920s. The automotive sector entered a second wave of growth in the post-World War II period, heralding the beginning of a highly prosperous period for Torino. By the mid-1970s, Torino was a thriving industrial centre and one of Europe's strongest automotive districts, competing with the German cities of Munich (home to BMW), Stuttgart (Daimler Benz) and Wolfsburg (Volkswagen), and the French towns of Boulogne-Billancourt in the Parisian metro area (Renault) and the Sochaux-Montbéliard agglomeration (Peugeot).

Torino's industrial expansion demanded major increases in labour, prompting an influx of unskilled and low-skilled workers from impoverished regions of southern Italy. As a result, Torino's population grew from 700,000 inhabitants in 1949 to 1,202,846 by 1974 (Statistical Department, Torino City Council, 2010), equivalent to an annual increase in population of approximately 21,000. Such rapid expansion put the city's infrastructure and services under intense strain. It also promoted a reactionary approach to land use planning which contributed to Torino's subsequent economically and spatially monocentric form, centred around FIAT's three main production factories: Lingotto, Mirafiori and Corso Dante.

The oil crisis of the mid-1970s brought Torino's economic and demographic growth to a standstill. FIAT began to shift

production out of Torino into new factories in southern Italy, as the price of raw materials increased, the workforce became increasingly unionised, and national financial incentives made the southern Italian regions a more attractive investment prospect. FIAT decentralised its local production processes outside Torino, as did many other automotive manufacturers in other cities during this time. During the 1980s alone, approximately 100,000 jobs were lost in Torino.

2.3 The problem

‘The crisis of FIAT was both a problem and an opportunity for Torino. The city looked at it primarily as an opportunity.’

Deputy Mayor for the Environment, City of Torino

FIAT underwent further crises in the early 1990s and again in the early 2000s, in common with many automotive firms in industrialised countries during this time. Competition increased from Asian producers, and the automotive sector as a whole underwent supply-chain and global restructuring. FIAT dramatically reduced its suppliers, moving to a management model, which delegated more competencies to fewer suppliers in order to achieve a more efficient production process. Between 1990 and 2002, FIAT’s Torino based production decreased from 60% to 30% of total FIAT production, and its Torino-based direct suppliers decreased from 1200 to 350. In 1993, FIAT’s losses amounted to 4.4% of its total revenues.

FIAT’s restructuring had a ripple effect on employment and GVA per capita in Torino. Between 1992 and 1993, GVA per capita decreased much more rapidly in Torino Province and the Piemonte Region than it did in Italy as a whole: a 3.0% decrease compared to 1.5% nationally (Cambridge Econometrics, 2010). A year later, in 1994, Torino Province experienced a 20% increase in its unemployment rate, from 9% to 10.8%, compared to a 0.5% decrease for the Piemonte Region and a 2.1% increase for Italy (Cambridge Econometrics, 2010). The concentration of the unemployment increase in Torino Province reflects the concentration of FIAT plants found there.

FIAT’s decline prompted a social as well as an economic crisis for Torino. For many years, FIAT had played a crucial economic and social role in Torino, providing a range of social benefits to its workers. As FIAT declined, so too did its social provisioning, which the municipal authorities were not equipped to provide themselves. The various centre-left coalitions that governed Torino during the 1970s and 1980s were unable to develop an integrated and effective strategy for tackling the city’s social and political problems: Torino suffered an unstable and ineffective cycle of four mayors in the seven years between 1985 and 1992. This failure of governance ultimately resulted in the Italian government appointing a special commissioner to run the city in 1992.

3

Intentionality to advance the next economy

This section explores the various actors, processes and initiatives through which Torino's adaptation to changing conditions in the automotive sector was progressed. It shows how firms themselves led processes of change as they developed new products and accessed new markets. It describes how the research and training capacities built up by FIAT were kept alive and built upon by new institutions, such as the Politecnico di Torino, and were well linked to private enterprise through the investment made by the bank foundations. It explores the ways in which city and regional governments played an important role by developing the climate and environment – and in some cases providing the financial resources – for the changes pursued by other economic actors to accelerate, flourish and spread. Finally, this section reviews some of the main interventions implemented by this new coalition of actors to reclaim the city's local strengths and promote the growth of new economic sectors.

3.1 Approach

'The turning point for the transformation of Torino is often identified with 1993, with the election of a new mayor.'

Elisa Rosso, Torino Internazionale

In 1993, a change in Italian law paved the way for Torino to directly elect its Mayor for the first time. Until this point, Italian local authorities operated in a strongly centralised system, in which mayors were indirectly elected by a council of elected politicians. Thereafter, Mayors could be directly elected by their own constituencies in all towns with more than 15,000 inhabitants. This reform played an important role in the economic and political transformation of Torino, as well as several other Italian cities.

Valentino Castellani, a former professor at the Polytechnic University of Torino and leader of a civic alliance party, became Torino's first directly and locally elected Mayor in 1993. Castellani and Torino stood at a cross-roads, facing a choice between focusing their energies on resuscitating FIAT or on developing a new and diversified economic future for the city, adapting to FIAT's new reality.

In order to assess whether to focus on resuscitating the ailing automotive sector or to diversify into other sectors, Torino's city authorities undertook an assessment of the automotive sector, and began to consult with local social and economic leaders and organisations. They discovered that FIAT's former automotive suppliers were displaying typical features of the Torinese approach to business: driven by necessity, as well as the presence of buying offices for major foreign auto manufacturers in Torino (including GM, Volkswagen and Ford) they had already begun to innovate and internationalise (Antonelli, 1998; Whitford and Ernietti, 2005). FIAT's former suppliers began to develop new products for other buyers within Italy and internationally, and for other sectors, such as aerospace and train transportation. Other firms continued to supply FIAT, but changed the nature of their businesses, 'learning by doing': as FIAT devolved productive and then design capabilities to its suppliers, they adapted and built up their know-how (Whitford and Ernietti, 2005). Product and process innovation was able to spread amongst many firms, including through the Crescita Guidata (Guided Growth) programme

promoted mainly by FIAT, in which a group of SMEs were selected to pilot an intensive programme of process development and quality control, which they were then asked to pass on to their own suppliers. By the mid 1990s, a significant part of automotive suppliers were already working with international car manufacturers, especially in Germany (Mario Calderini, CEO, Finpiemonte).

Thus, although the restructuring processes initiated by FIAT were challenging for its suppliers, they were handled well by the industry and led to many former FIAT suppliers becoming more efficient and better able to compete internationally. Realising that these processes were already underway, Mayor Castellani chose to pursue a development path for Torino towards further economic diversification and internationalisation, within and beyond the automotive sector.

'The economic regeneration of Torino has been based on a lot of strategy and less market, whilst other cities such as Milan have had little strategy and a lot of market.'

Elisa Rosso, Torino Internazionale

Having chosen his course, Castellani then began to develop a concerted and clear strategy for the economic renaissance of Torino, working closely with the region's industrial actors and institutions. Mayor Castellani realised early on that the transformation of Torino would require the involvement of a wide range of social, economic, political and cultural actors in the city. He recognised the potential of the strategic planning processes undertaken by cities such as Barcelona, and called for an 'internal mobilisation' to inform a strategy for the economic revitalisation of Torino. Torino's first strategic plan was approved in 2000, and a new master plan was ratified in 1995. Both documents were highly influential in Torino's subsequent development, helping to create a climate and environment that enabled the region's innate entrepreneurial spirit to adapt to a changing global market.

'We developed the Strategic Plan through a real 'bottom-up' involvement of the whole city as a team and a gradual process of small steps.'

Valentino Castellani, Mayor of Torino, 1993-2001

In 1998, Castellani began a two-year consultation with the city's most important actors to inform the strategic plan. Two draft plans were produced, before the final plan was signed by 57 public and private leaders in 2000, making Torino the first Italian city to produce a strategic plan. The plan took into account the changes already occurring amongst automotive suppliers, and sought to link them to a strategic vision for the future of Torino. The main aim of the strategic plan was to transform Torino from a Fordist 'one company town' to an innovative and international city with a diversified new economy based on innovation, creativity and tourism. The plan was important not just for the vision it produced but also for the way in which it engaged with a wide range of actors. It was highly participative, involving leaders from several public and private bodies and hundreds of residents, and informal in style, encouraging the involvement of bodies that might otherwise have resisted engagement (Winkler, 2007). For this reason, it has been considered possibly the city's most important recovery tool (ibid). The specific interventions that stemmed from the strategic plan will be discussed in Section 3.3.

The 1995 master plan, Torino's first for 50 years, provided a basis from which Torino could be reconfigured to better support the economic diversification and re-orientation that was beginning to occur, moving from a mono-centric city that was centred around the FIAT factories, to a denser, better connected, polycentric metropolis. The Spina Centrale (Central Backbone) provided a central axis for the physical transformation of Torino, and was envisioned as a strategic growth corridor. This area was formerly the city's industrial artery, and included a major overground railway. The master plan proposed to replace the railway line with a new 12km arterial road, under which a new railway line would run, and along which a series of brownfield industrial zones would be re-developed into mixed-use neighbourhoods. Separate plans were developed in respect of each of these zones (Spina 1, 2, 3, and 4 in Figure 2), together making up an area of 1.4 million square metres. 53% of the land was designated for residential use, 43% for commercial activities and 4% for public infrastructure. The four brownfield sites were also to be linked back to the urban fabric through new transport infrastructure, including Torino's first metro line.

Today, the former industrial areas designated in the 1995 plan are the sites of some of Torino's most prestigious and successful firms and institutions, such as General Motors, Microsoft, JAC (China's second largest car manufacturer) and the new Cittadella Politecnica (see section 3).

3.2 Institutional framework and governance

'The transformation of Torino has been led by a coalition of public organisations and institutions, namely the City of Torino, Piemonte Region and Politecnico, which laid the foundations for a broad development platform involving local economic and social actors.'

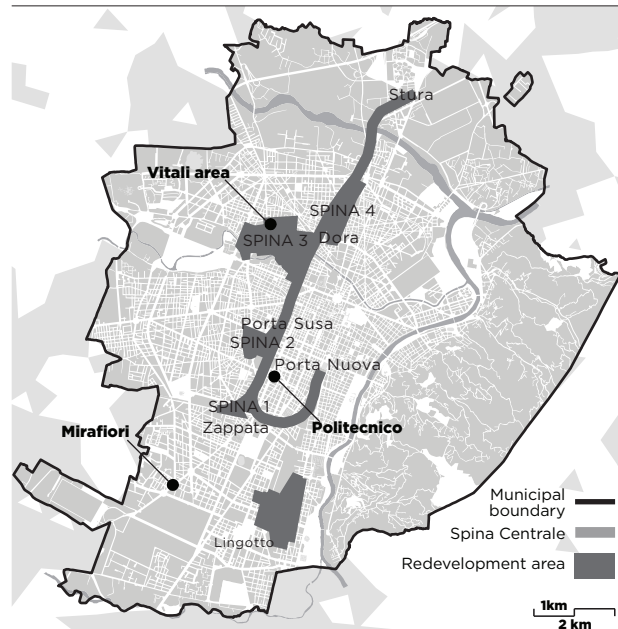
Giovanni Magnano, Housing Department, City of Torino

The Castellani administration and the regional Piemonte government promoted the development of a new institutional and financial governance model for urban and economic development, which was critical to Torino's subsequent transformation. This new model involved:

- The creation of new local development agencies for innovation and internationalisation, including the influential Centro Estero Internazionalizzazione Piemonte (The Piedmonte Agency for Investments, Exports and Tourism; CEI), Finpiemonte (the regional development agency) and Finpiemonte Partecipazioni (Finpiemonte Equity Investments).
- New institutional collaboration between the city of Torino and the Piemonte region, which enabled Torino to share visions for local development and effectively access substantial EU funding with which to pursue its policies in turn.

In addition, in 1997, the municipality of Torino developed an innovative programme called the Special Project for Marginal Neighbourhoods (Progetto Speciale Periferie), setting up a dedicated department within the Council, called the 'Neighbourhood Unit', whose exclusive aim was to address the social problems of degraded neighbourhoods across the city as part of the overall recovery effort. This process was part of a broader institutional restructuring process initiated by the first Castellani administration, which streamlined roughly 17,000 municipal employees in 1993 to

Figure 2
Torino's master plan 1995



12,800 municipal workers in 2004 (Rosso, 2004) and consolidated the 87 departments into fewer administrative units.

Torino's transformation was not solely led by city and regional governments and the new agencies they created: industrial trade bodies, universities and private bank foundations also played a critical role, as well as, of course, firms and entrepreneurs themselves. Torino's trade bodies, such as the Unione Industriali di Torino (Torino's Industrial Union) and its subsidiaries (Associazioni di categoria), helped firms to adapt and promoted them in new markets and new sectors. Torino's bank foundations played a critical role in financing new agencies and start-ups, while the Politecnico di Torino adapted its courses and its interactions with the private sector to the changing economic reality. Together, these actors and institutions made an important contribution to retaining and re-shaping the skills and expertise built up by Torino in the automotive sector. How they did so will be discussed in detail in Section 3.3, after the governance changes initiated by the city and regional governments are introduced.

The creation of new local development agencies

In order to respond to the new strategic plan, the governments of Torino city and the Piemonte region restructured previously existing agencies and created new agencies. These number too many to consider in detail in this report, but an indication of the range and ambition of the new governance arrangements is provided by Example 1. In addition, it is relevant to highlight two of the most significant companies created: Centro Estero Internazionalizzazione Piemonte (the Piemonte Agency for Investments, Exports and Tourism; CEI) and Finpiemonte Partecipazioni, before the actions taken by these companies are discussed in detail in Section 3.3.

In 1997, several agencies, including 'Invest in Torino and

Example 1

Development agencies set up as part of the Strategic Plan

Agency	Nature and Objective
Turismo Torino	A tourist agency to promote and welcome tourism in the Torino area
Invest in Torino and Piedmont (ITP)	An agency to attract investments to Torino and Piemonte
Associazione Torino Internazionale	An association to coordinate and monitor the delivery of the Strategic Plan comprising 120 representatives of economic, cultural and social institutions throughout the area
Convention Bureau	An organisation to promote convention activity
Organizing Committee of the 20th Winter Olympic Games	A non-profit private foundation; to organize the Torino 2006 Olympic and Para-Olympic Games
Film Commission	A Commission to promote the film industry
Six Territorial Pacts	Agreement among neighbouring municipalities
Technological Parks (e.g. Environmental Park and Virtual Reality Multimedia Park)	Parks to attract investments in high added value new economy industries
Fondazione Torino Wireless	A Foundation to promote investments in the information and communications technology sectors

Source: Adapted from Rosso (2004).

Piemonte' and 'Turismo Torino' were created to attract investment and tourists to Torino and Piemonte through a more dynamic governance model. Later, in 2006, these agencies were merged with Centro Estero Camere Commercio Piemontesi (Foreign Service of Piemonte Chamber of Commerce, founded in 1976 to support local SMEs), to form CEI. This merger provided a more direct link to the strategic plan and reduced fragmentation. CEI's main mission is to attract foreign investment and foreign enterprises to Torino and Piemonte more generally. Its programmes include promotion and support services to foreign investors, connecting local companies with foreign partners, and specifically promoting Piemonte's food and wine and tourism sectors internationally.

Finpiemonte, a regional development agency and the financial arm of the Piemonte region, was set up in the 1970s with the aim of facilitating the restructuring of the regional economy after the oil crisis. Finpiemonte has played an important role in Torino's transformation, both by financing regional development projects and creating joint ventures and spin-offs in strategic sectors. It has acted as the holding company for regional science parks and business incubators, has provided an integrating platform for the actions of different agencies, and has re-shaped institutions for technology transfer. In 2007, Finpiemonte was split into two companies: Finpiemonte and Finpiemonte Partecipazioni, which have since carried out these roles. By 2010, Finpiemonte Partecipazioni had developed a portfolio of 33 joint ventures, including Torino Nuova Economia (Torino New Economy; TNE). TNE was set up as a result of an agreement between the Piemonte Region (40% of equities) the City of Torino (40%), FIAT (10%) and the Province of Torino (10%); the agreement was signed in 2005 to

redevelop part of the FIAT Mirafiori plant. Importantly, TNE is responsible for the transformation of the area to promote new economy sectors, including a design centre linked to the Politecnico, which will offer courses in design for over 2,000 students.

Attracting investment through city-region collaboration

'To apply for EU structural funds the city of Torino and Piedmont region developed shared visions for the economic development of the region, which were then implemented through direct liaison with the European commission.'

Elisa Rosso, Torino Internazionale

Castellani realised early on in his leadership that it would be necessary to seek new sources of funding in light of the restructuring processes underway in FIAT. Substantial EU funding and investment were available for bids, but EU rules stated that proposals must be supported by both city and region in order to be successful. For the city of Torino and the region of Piemonte, this provided a strong incentive to work together more closely.

In order to achieve better collaboration, civil servants within Torino city council and the Piemonte regional government began to rotate between the two organisations, facilitating the transfer of knowledge and developing the expertise of the workforce. This happened, for example, in the city and regional departmental offices for housing and urban planning (interview with Giovanni Magnano from housing department, City of Torino).

These efforts were successful: since 1989, the Piemonte region has received a total of over €2.5 billion funding for over 36,000 projects from the European Regional Development Fund and the European Social Fund (publicly co-funded locally). Piemonte was highly successful in accessing these funds, both within Italy and within Europe as a whole. Other than regions such as Sicily and Campania, which received higher amounts of regional funding in light of their poorer status, Piemonte was the most successful Italian region in accessing EU funding. Most of this money was invested in strengthening the industrial production system and the regeneration of dismissed industrial areas, with significant amounts also spent on research, innovation and technology transfer and territorial assets (Regione Piemonte, 2010). Some of the most interesting and significant of these projects are discussed in Section 3.3.

Piemonte was also highly successful in accessing loans from the European Investment Bank, attracting over €3.3 billion between 1993 and 2010 together with local companies such as Merloni, FIAT and Zanussi (European Investment Bank website, 2010). Over €2 billion of this investment was directed towards industry, a further €1 billion towards transportation, and over €100 million towards education (ibid).

3.3 Interventions

In addition to the adaptations and reconfigurations made by firms themselves, a range of interventions were pursued by Torino's city and regional governments, new agencies, industrial unions, universities and bank foundations. Together, these interventions played an important role in creating a climate that enabled the region's innate

entrepreneurial spirit to adapt to a changing global market. In this section, four of the most significant interventions are considered in turn:

- Reclaiming industrial areas for the new economy - the impact of the 1995 master plan and effective public-private collaboration;
- Bridging the gap between universities, businesses and private capital – the role of the bank foundations and the Politecnico di Torino;
- Steering growth towards new economic sectors; and
- Propelling firms into new sectors and new international markets – the role of the Unione Industriali di Torino, the Associazioni di categoria and the Torino Chamber of Commerce.

1. Reclaiming industrial areas for the new economy

As mentioned in Section 3.2 above, the 1995 master plan provided a basis from which Torino could be reconfigured from a mono-centric city centred around the FIAT factories, to a denser, better connected, polycentric metropolis. It proposed the re-development of the old industrial artery and railway running through the centre of Torino, re-using four major industrial sites (Spina 1, 2, 3, and 4) into mixed-use neighbourhoods reconnected with new transport infrastructure. Overall, €2.45 billion of public and private investment was invested in transport infrastructure, including Torino's first metro line and a high-speed rail link with Milano. New public and green spaces were also created.

Redevelopment works began in 2000, and are due to complete in 2010. In total, they will increase the amount of Torino's land available for development by 2 million square metres. Some of the most emblematic re-developments are described below, many of which have been driven forward by spin-off companies created by Finpiemonte (now Finpiemonte Partecipazioni), which are able to operate effectively within the private sector, whilst pursuing the transformation of Torino envisioned by the 1995 master plan. The role of Finpiemonte will be discussed in more detail shortly.

Spina 3 was the site of FIAT-owned steelworks in the city centre until 1978, when they became part of the Teksid group (also owned by FIAT), before winding down in the late 1980s and being sold on. The steelworks remained abandoned until Sinatec, a company set up by Finpiemonte, began a project to transform the brownfield land in 2005. The steelworks today have been transformed into VitaliPark, a building designed to accommodate manufacturing activities with low environmental impact, craft laboratories and service activities for SMEs. It has a total floor space of 15,000 square meters.

'In the booming years FIAT was interested in liaising with national government but the crisis of the 1970s forced this large corporation to consider city authorities as new negotiating partner, especially in relation to the legacy of its territorial assets.'

Deputy Mayor for the Environment, City of Torino

The economic crisis and changes to the national and international economic landscapes have also shaped a new more collaborative working relationship between FIAT and local authorities, especially in terms of the re-use of the out-dated parts of FIAT's economic infrastructure. An

example of this can be seen in the transformation of Lingotto, FIAT's historic production plant and a symbol of Torino's industrial might, which closed down in 1982 as FIAT began to reduce its operations in the city. The changes to Lingotto began in 1985 when it was adapted by internationally renowned architect Renzo Piano into a flexible and versatile space. Today, Lingotto is the site of an automotive engineering school at the Politecnico di Torino, created with the help of EU funding, as well as a congress centre, exhibition centre, auditorium, offices, hotels, a cinema, cafes and restaurants. Today, FIAT has returned to Lingotto: the converted plant is home to the firm's headquarters, including the office of FIAT's Chief Executive.

More recently, Torino Nuova Economia (Torino New Economy; TNE), the aforementioned Finpiemonte Partecipazioni joint venture between the Piemonte region, Torino city, Torino province and FIAT, purchased part of Mirafiori, the historic FIAT plant and the largest Italian industrial plant. TNE are currently developing this part of Mirafiori into a design centre that will bring together all of Politecnico di Torino's research and training activities on design in one place in the city. Construction began in 2007, and involves a total investment of €25 million, €4 million of which comes from the European Union structural funds. When completed in 2011, the design centre will provide 7,000 square meters of floor space, including space for training 2,000 students.

2. Bridging the gap between universities, businesses and private capital

'The shrinking economic power of FIAT felt like a lid slowly removed from a boiling pot. It was only when the lid finally flipped that a series of new civic and social actors other than FIAT began to emerge in Torino.'

Professor Giuseppe Dematteis, Politecnico di Torino

FIAT had traditionally invested in innovation, research and training not only internally itself, but also across its supply chains. FIAT's investment in these areas – in particular in the largest private research centre in Italy, the 850-strong Centro Ricerche FIAT (FIAT Research Centre) and the ISVOR training school, which re-trained automotive workers – thus benefited many Torinese firms. According to Whitford and Ernietti, such investments in 'collective goods', strengthened regional industries and generated capabilities that served firms well when the need came for institutional changes (2005). Thus while FIAT increasingly focussed its research and training activities on its own internal processes rather than on its wider suppliers as it underwent restructuring processes, firms were well placed to adapt to new conditions. Furthermore, FIAT's ability to innovate in engine design continues to play an important role in Torino's attraction to major international car manufacturers. Innovations such as the multi-jet engine, along with others developed by FIAT such as the Common Rail and ABS braking system, have been widely adopted in international automotive markets, and demonstrate the continuing innovative capacities of Torino.

From Torino's dynamic and highly capable workforce and institutions emerged a range of new urban actors, utilising and building on the skills and training resources developed by FIAT. The bank foundations and the Politecnico di Torino

became increasingly important, as they shifted from their traditional roles towards much more active roles as intermediaries between researchers, the private sector and the government. Today these institutions attract new firms to Torino, providing finance, training and research capacities.

Politecnico di Torino

‘The Politecnico is a good example of horizontal integration with GM operation.’

Mario Calderini, CEO, Finpiemonte

The Politecnico di Torino has been a key player in Torino, successfully transforming itself from an institution that was set up to support the mass production industries in the inter-war period, to a key interface between the business, research and policy-making realms. A critical step was the Politecnico’s decision to open a new university campus, the Cittadella Politecnica, in the centre of Torino in one of the former industrial areas. This was important in bringing the Politecnico closer to businesses and to the government, providing it with the ideal location from which to collaborate. Competition for spaces within the Cittadella Politecnica from private companies was intense: 89 firms applied for seven spaces. Amongst the successful applicants were Microsoft and Jac Automotive, the second largest Chinese car manufacturer. Today, the Cittadella is a recognized centre of research and expertise in automotive design and production.

The Politecnico has worked closely with private enterprise, helping to accelerate new business formation through its business incubator and helping to attract major international companies to Torino, working together with other local actors such as FIAT and the city/regional government. For example:

- The business incubator I3P is a not-for-profit joint-stock consortium made up of the Politecnico, the Province of Torino, the Chamber of Commerce of Torino, and the City of Torino. I3P has facilitated the start-up of 122 companies since 1999. This has helped to make Piemonte one of the top-performing Italian regions in terms of spin offs from incubators, with 49 spin-offs (Ferrando, 2009c).
- General Motors (GM), the world’s largest car manufacturer, was initially attracted to Torino by FIAT’s expertise in engine design. In 2000, the two companies formed a cross-shareholding alliance, producing new highly efficient multi-jet engines. When this alliance ended in 2005, GM none-the-less chose to remain in Torino, forming an agreement with the Politecnico to locate its research and training facilities for the production of new diesel engines in the Cittadella Politecnica, employing more than 500 researchers.
- In 1997, the Politecnico and the city government together entered into negotiations with Motorola, the Chicago-based international communications firm, to create Motorola’s European research centre in Torino, as part of Mayor Castellani’s plans to develop Torino’s ICT sector. Two years later, agreement was reached for a provisional investment from Motorola of around €85 million over five years and the creation of 500 jobs for technicians (Ferrando, 2009a). Between 1999 and 2008, Motorola developed 35 new mobile phone models, including the first camera-phone and the first UMTS system (a third-generation mobile

telecommunications technology). Although the research centre closed in 2008 as a result of broader job losses made by Motorola Europe due to the financial crisis, a Torinese ICT firm hired all the engineers and former employees of Motorola in 2009, retaining this expertise within Torino.

The research and training capacities of Torino today are a major draw to international firms. These capacities have their roots in FIAT’s great innovative history, which has been retained and further developed by other Torinese firms and research institutions as well as by FIAT. Within this, the Politecnico has played an important role by adapting its training and research services and facilities for a changing market. The new courses and research capacities of the Politecnico are demonstrably important in firms’ decisions to locate in Torino. The vice presidents of GM Powertrain Europe and Jac Automotive (China’s second largest car manufacturer), for example, have both attributed their decision to locate in Torino to the Politecnico – because of the shared knowledge developed with the Politecnico (in the case of GM) and the automotive engineering courses offered by the Politecnico (in the case of Jac). They say:

‘After the separation from Fiat we decided to stay in Torino because of the shared knowledge we built on the diesel engines. This shared knowledge is an asset on which we want to invest.’

Roger Johansson, vice president of GM Powertrain Europe, in Ferrando, 2009, p.99

‘We chose Torino because it is a place which cultivates very high competences [in the automotive production], particularly due to the presence of the Politecnico courses in automotive engineering.’

Gongh Rehne, JAC vice president, in Ferrando, 2009a, p.116

Today, the Politecnico boasts more than 2,000 employees, six headquarters, over 250 courses, 25,000 ‘clients’, and an annual budget of €300 million. Its budget has increased by 116% over the last ten years (Ferrando, 2009a, p. 94), enabling the Politecnico to expand and diversify its activities. It has attracted increasing numbers of foreign students, especially from China (the number of Chinese students grew from zero in 1990 and just four in 2005, to 338 in 2007), which has created strong bilateral business links between Torino and future export markets.

The bank foundations

‘Foundations (not only bank foundations) play a critical role in generating local human capital.’

Professor Alfredo Mela, Politecnico di Torino

In early 2000s, Torino’s main bank foundations, which are some of the largest in Europe, shifted from traditional philanthropy to an intermediary role between Torino’s universities and the private sector. This development had an important impact on the Torino economy, facilitating personnel movement and knowledge transfer between firms and universities, and initiating developments in emerging sectors such as sustainable mobility and ICT. Between 2001 and 2005, the bank foundations invested a total of €380m in Torino (Database Osservatorio Fondazioni), with Fondazione Cassa di Risparmio di Torino (Fondazione CRT) and Compagnia di San Paolo (CSP) playing particularly influential roles. Fondazione CRT finances over 1,500

projects in Torino annually, and plays an important role in the development of its human capital, investing in the development of young professionals and researchers. CSP is Europe's fourth-biggest bank foundation with total assets of €7.75 billion, and has been a major funder of high-tech industrial development projects. Some of the most important projects funded by CSP have been:

- *The Institute Mario Boella* was created by CSP and the Politecnico in 2000. It is bankrolled by CSP as well as its own consultancy works, with an annual budget of €11.9 million. It employs around 250 researchers in fields such as e-security and satellite navigation, has worked with companies including Motorola, SKF, STMicroelectronics and Telecom Italia as industrial associates, and has signed more than 40 cooperation agreements with important global universities, including UCLA, Berkeley, and the University of Hokkaido.
- *The Higher Institute on Territorial Systems for Innovation (SITI)* was created in 2002, with €23m funding from CSP. Its aim is to carry out research and training in logistics and transport, environmental heritage and urban redevelopment, and environmental protection, including studies on health and mobility in Piedmont, and how to improve the accessibility of a new hospital in Verbania through better private and public transport networks.
- *Torino Wireless Foundation* was created between 2001 and 2003, and was the first of Italy's technological districts (a national policy). It is a good example of successful vertical integration of government, being created and funded by national, regional, provincial and municipal governments, as well as successful institutional partnership with the CSP and Institute Mario Boella. Its aim is to develop Torino's ICT District as an international hub of technology and innovation, through enterprise acceleration, networking, and venture capital. It is considered by the OECD to be 'an unqualified success' (2009, p.46).
- *Real Collegio Carlo Alberto*, an advanced research institute delivering an International Masters in Economics and other initiatives in social sciences.

3. Steering growth towards new economic sectors

Since 1994, Piemonte regional government has promoted growth in new sectors, helping to create a climate in which the diversification and adaptation already underway within many firms might become more widespread, and to attract new international players to Torino and the wider Piemonte region. One of the first major initiatives in this area was the establishment of technology parks, such as Environmental Park and Virtual Reality Multimedia Park in Torino, with the aim of promoting centres of excellence in new fields. However, the general consensus is that these parks did not produce the desired results because, for example, they were 'too far ahead' of what Torino's economic fabric could achieve at the time, they suffered from high debt linked to the investment in real estate and office spaces, and were not supported by adequate entrepreneurial promotion programmes or policies that connected the parks to the university system and local companies.

Enabled by a national law that devolved power in relation to innovation-policies to regional governments, the Piemonte region sought to turn the failing technology parks around by giving them a new role within 12 Innovation Poles. These

innovation poles would form a new Regional System of Innovation, encompassing not only the troubled technology parks but also the new relationships being formed by the Politecnico and the bank foundations as well as by individual firms and industrial bodies. Each innovation pole focuses on a different economic sector, including for example biotechnology, design and ICT, and brings together SMEs with research centres and major firms in order to develop products or processes for new markets. The overall objective of the initiative is to increase local competitiveness at the national and international level, to increase inward investment from abroad and to increase the export capacity of local firms.

This specific initiative can be seen as part of a broader shift from a centrally-organised innovation system, centred around Torino, the historic location of FIAT and its network of suppliers, towards a more regionally balanced, polycentric regional innovation system (Salone, 2010). As Piemonte begins to develop agreements and protocols with other regions, importantly Lombardy (containing the city of Milano), a North-Western macro region is showing the first signs of emergence within Italy (Salone, 2010; Salone and Besana, 2010).

The innovation poles initiative has been developed by the Piemonte region and Finpiemonte, as well as through individual institutions responsible for each innovation pole (see Table 3). The project has attracted €90 million from the European Union so far, of which €52 million has been assigned across all 12 poles: an average of €4.3 million per innovation pole (Regione Piemonte, 2010).

The first phase of the programme has been dedicated to

Table 3
Innovation poles in Piemonte

	Managing institution	Budget (millions of €)	Submitted projects
Agro-Food	Tecnograndia	5.1	31
Sustainable Architecture and Hydrogen	Polight (Environment Park)	6.2	25
Biotech	BiopMed (Bioindustry Park)	3.8	16
Sustainable Chemistry	Consorzio IBIS	3.5	4
Digital Creativity	Virtual Reality & Multimedia Park	2.0	9
Renewable Energy and biofuels	PST della Valle Scrivia	5.4	14
Energy & Mini Hydro	ENERMHY (Gesin)	5.3	19
ICT	Fondazione Torino Wireless	5.8	21
Equipments for renewable energy	Tecnoparco del Lago Maggiore	1.5	4
Meccatronica (Mechanics & Electronics)	Centro Servizi Industrie	7.4	15
New Materials	Consorzio Proplast	4.2	22
Textiles	Città Studi	1.8	7
Total		52	187

Source: <http://www.regione.piemonte.it/innovazione/poli-di-innovazione.html>

attracting research centres, local SMEs and enterprises to the innovation poles, and developing joint projects for products, processes or new markets. The innovation poles are still at a very early stage of development, making them difficult to evaluate at this point. One of the experts interviewed as part of this study, for example, felt that resources were currently being stretched too thinly over too many sectors. However, so far nearly 600 firms have been involved, 70% of which are SMEs, and nearly 400 R&D projects have been developed, with an estimated total value of some €250 million over the next five years (Ferrando, 2009b). At least eight other Italian regions have now introduced a similar policy, reflecting the early success of the Piemonte experience.

In addition to innovation poles, more traditional productive sectors such as textiles, clothing, food and wine have been rediscovered as important local cultural, environmental and economic assets and have been promoted as the region's niche 'excellences'.

As part of the re-discovery of vernacular activities, cultural and creative industries such as publishing, food and wine, began to be promoted through the organization of trade fairs, events, and co-branding campaigns. The emergence of important grassroots movements such as 'Slow Food', which was founded in Piedmont in 1986 to counter the rise of fast life and fast food, helped pave the way for the re-discovery of Piemonte's culinary traditions. With supporters in 150 countries, 100,000 members, and a network of 2,000 food communities which practice sustainable production, the Slow Food movement has become a global phenomenon and a trademark of Piemonte. The movement holds major international fairs in Torino, including Salone del Gusto (Taste Fair) and Terra Madre (Mother Earth), bring consumers and producers together, and have been important in developing the sector in Piemonte. The most recent Salone del Gusto, held at Lingotto in October 2010 was attended by an estimated 200,000 visitors. The first world meeting of the international Terra Madre network in 2004 brought together 5,000 producers from 130 countries, with researchers, students and activists (www.terramadre.org).

4. Supporting firms into new sectors and new international markets

'In the first decade of the 21st century, the overall turnover of the automotive components sector and manufacturing industry increased significantly, contributing to a strong surplus for the local economy.'

Mauro Ferrari, Vice-President ANFIA, Associazione Nazionale Fra Industrie Automobilistiche (National Association of the Automobile Industry)

After FIAT downsized and restructured its Torino production, SMEs in the automotive sector faced the challenge of competing internationally with much larger firms, a challenge also facing firms in sectors such as ICT and aerospace. Here, the actions of the Unione Industriali di Torino and its Associazioni di categoria, Torino Chamber of Commerce and Centro Estero Internazionalizzazione Piemonte (the Piemonte Agency for Investments, Exports and Tourism; CEI) have been important in enabling Torino's SMEs to achieve an international profile and to adapt to

changing international conditions in their relative sectors.

The Unione Industriali di Torino is a voluntary association of companies in Piemonte, made up of around 2,000 companies with a total of some 200,000 employees, with 30 subsidiaries in particular sectors (Associazioni di categoria), for example, automotives and steel manufacturing. The Unione Industriali dates back to 1906, is a member of the main organization representing businesses in Italy, Confindustria and has been an influential agent in Torino's economic diversification and internationalisation.

The specific aims of the Unione Industriali are:

- To promote, protect and defend the interests of industry, representing and advising companies in their dealings with the authorities, administrations and economic and trades union bodies;
- To inform public opinion regarding the perspective and performance of the business community;
- To promote the spread of business and market culture;
- To facilitate corporate growth and development by promoting internationalisation and modern management techniques;
- To provide opportunities for communication between businesses and with other actors and institutions, including key figures in political, economic and cultural worlds;
- To provide first-rate consultancy services and advice for companies; and
- To co-operate with other public and private organisations to encourage the economic and social development of the Province of Torino, safeguarding the role of local industry and business interests (Unione Industriali di Torino).

The specific activities of the Unione Industriali are too many to discuss in detail, but include various initiatives to facilitate internationalisation and to promote R&D. It has organized trade missions, enabling its mainly SME membership (85% are small and 13% are medium-sized) to access international markets and foreign investors. It has provided useful services to individual companies, for example, disseminating studies and analysis of foreign markets and providing information to assist members in accessing regional, national and European research and investment opportunities. One of the Unione Industriali's largest initiatives has been the Mechatronics (a multidisciplinary term combining mechanical, electronic, computer, control and systems design engineering) and Advanced Production Systems Innovation Pole (MESAP). MESAP aims to develop local mechatronics capabilities to operate in international research programmes and in international markets, by funding R&D projects and facilitating networking and collaboration between different mechatronics clusters. Finally, the Unione Industriali has also been an important lobbying body on behalf of Torino businesses. For example, recently, it helped Torino companies to withstand the global financial crisis by re-negotiating the terms of loans with the financial sector for a limited period.

In addition to the Unione Industriali's programmes and initiatives, CEI and the Torino Chamber of Commerce have also developed a range of capacity building and networking programmes, which have again helped firms to adapt and re-configure themselves for new markets. These have included:

- *From Concept to Car*, a project initiated in 2003 to strengthen innovation amongst 152 selected local automotive suppliers, as well as their capacity to operate in foreign markets. From 2003-2009, €4.8 million was invested, generating €41.8 million in export sales. While the total turnover of new business generated is relatively modest, the initiative established a new culture in the industry that has had widespread benefits in securing new work (see Example 2).

- *Think Up ICT*, a project initiated in 2007 to promote Torino's expertise in ICT abroad, involving approximately 80 ICT firms. Between 2007 and 2009, €1.6 million was invested, generating 35 international orders for €3.2 million

- *Torino Piemonte Aerospace*, a project initiated in 2007 to promote the Aerospace district in an international context, involving approximately 70 aerospace firms. Between 2007 and 2009, €1.6 million was invested, generating eight international orders for €11.2 million.

These initiatives seem to be helping firms to access international markets, and to diversify into new sectors. Interviews conducted at the Torino Chamber of Commerce as part of this research suggested that some companies have participated in more than one programme, as they began to diversify from one sector to another e.g. from automotives to aerospace. Firms seem to find these programmes useful in internationalising their business. As the export-manager of Tubiflex, a medium-sized Torinese company that produces pipes and was involved in both From Concept to Car and Torino Piemonte Aerospace, put it:

'I believe that the most important contribution of programmes such as Torino Piemonte Aerospazio is to give visibility to SMEs that they would find hard to acquire by themselves otherwise. In my opinion, the fact that we present ourselves on the global stage under the form of a regional (...) industrial system, with a significant critical mass, helps all of us to reach a level of credibility much higher than what we could otherwise get individually.'

TCC, 2008, p.73

5. Promoting Torino's international profile through mega-events

In order to boost Torino's international image and kick-start its internationalisation in new economic sectors, the city authorities decided to promote Torino as a location for mega-events, including international sporting events and sector-themed promotional events.

The Winter Olympics were hosted in Torino in 2006, and had a catalytic impact on the city's infrastructure investment and the development of new economic sectors. It was a critical moment in the city's transformation. Over €1 billion was invested in infrastructure improvements, including to Torino's airport, roads and rail network (€434 million) (Vanolo 2008, Dansero and Puttilli 2010).

'The Olympic Games were a comprehensive project that catalysed efforts to transform Torino from a social, urban and environmental point of view. It helped us deliver several projects on time.'

Deputy Mayor for the Environment, City of Torino

'For two years before the Olympics, Torino was a giant building site.'

Giovanni Magnano, Head Housing Department, City of Torino

After the Olympics, Torino succeeded in winning the title of World Capital of the Book (together with Rome) in 2006 and World Design Capital in 2008. The city also hosted the World Fencing Championship and the Chess Olympics in 2007, as well as an international exhibition of the Turin Shroud, which attracted several thousands of tourists in 2010. As described above, the slow food international fairs, Salone di Gusto and Terra Madre, have become major international attractions and play an important role in shaping Torino and Piemonte's international reputation.

Mega-event promotion has also been linked to the regeneration of brownfield sites. For example the old railway workshops in the Spina 1, are being regenerated and transformed into a large exhibition space to celebrate the 150th anniversary of Italy's Unification in 2011.

Example 2

From Concept to Car

Objectives

1. To strengthen the capacity of local automotive suppliers to operate in foreign markets and increase their turnover from international contracts.
2. To increase awareness in major strategic international markets that Torino is a centre with unique technical competence and expertise in the automotive industry.
3. To support collaboration between local companies at technical and commercial levels in order to facilitate business opportunities linked to the supply of complex systems.
4. To nurture the development of innovation within and between local companies.
5. To revive the image of Torino and the Piemonte region as a pole for international events.

Approach

This is a project aimed at the entire automotive cluster, not just individual participants, by promoting a territorial system of industrial competence. Strong branding is used to provide coherence and visibility to the project.

150 companies are selected annually, mainly SMEs, as well as the purchasing managers of prestigious foreign car manufacturers. The main activities implemented between 2002 and 2008 have included the following:

- Nearly 1000 Business-to-Business meetings have been arranged between local suppliers and 70 international car manufacturers.
- 18 international trade missions have taken place with participating companies.

- 145 Direct one-to-one assistance to local suppliers for their commercial contacts and negotiations with potential clients.
 - 45 international automotive buyers have been invited to Torino.
- Overall, €4.8 million was invested between 2003 and 2009.

Results

65 international orders have been generated, worth a total of €41.8 million, representing nearly nine Euros of generated sales for every one Euro invested.

Source: Torino Chamber of Commerce (2008)

4

The success story

4.1 Economic success at the city level

Torino and Piemonte's actions over the past 20 years have helped the metro region to improve its economic performance in a period characterized by FIAT's acute crises in the early 1990s and early 2000s. Piemonte recovered from sharp decreases in its GVA in the early 1990s and 2000s, significantly greater than in Italy as a whole, returning to broadly similar growth rates after each crisis (Figure 3). GVA per capita fell slightly in both Italy and Piemonte in 1993, but then returned to growth, with Piemonte continuing to out-perform the rest of Italy, despite a narrowing of the gap in the 2000s (Figure 4).

While unemployment rose in Italy from 10.5% in 1990 to 11.4% in 1999, in Piemonte it rose by only 0.1 percentage points, from 7.2 to 7.3%, remaining significantly below Italian averages (Figure 5). Employment in Piemonte recovered more quickly than in Italy as a whole, in 1994 rather than 1996, and then increased its lead on Italy throughout the 1990s and 2000s (Figure 6). Piemonte GVA per capita remaining higher than the Italian average, although the gap narrowed somewhat in the early 2000s.

As Torino's economic performance improved, the population loss that characterized it prior to 2000 reversed (Figure 7). Between 2000 and 2008, the population of the province of Torino increased from 2.18 million to 2.28 million, finally returning to 1990 levels (2.26 million).

Figure 3
GVA growth rate 1981-2010

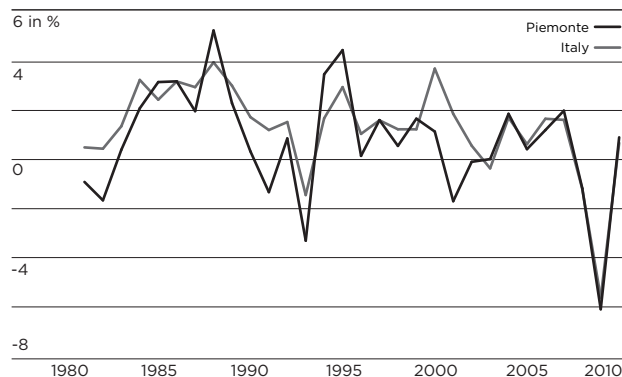
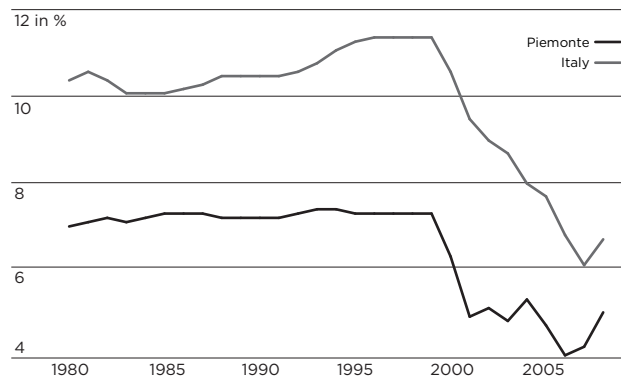


Figure 5
Unemployment rate 1980-2008



4.2 Economic success in the next urban economy

Torino's adaptation and recovery from FIAT's restructuring processes has been driven by an improving performance in innovation; the growth of a diverse range of new economic sectors, including tourism, design and aerospace; and increasing internationalisation. In each of these areas, change has been achieved through a combination of the innovation and resilience of individual firms, the consolidating actions taken by industrial unions and the chamber of commerce, the important roles taken up by the

Figure 7
Population of Torino Province 1980-2008

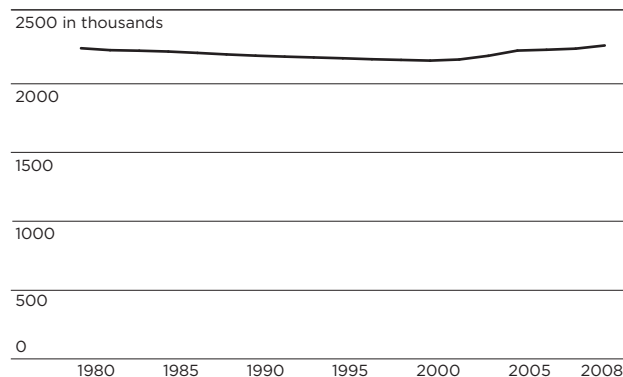


Figure 4
GVA per capita 1980-2010

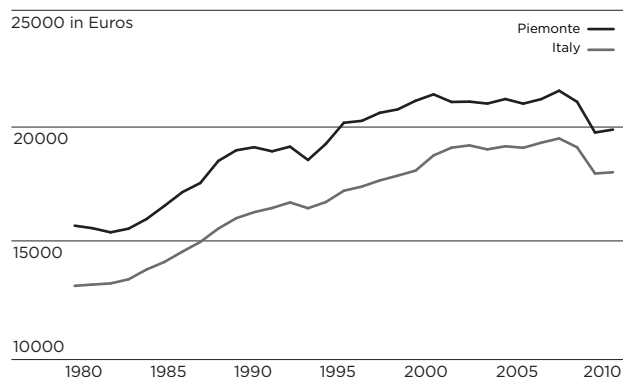
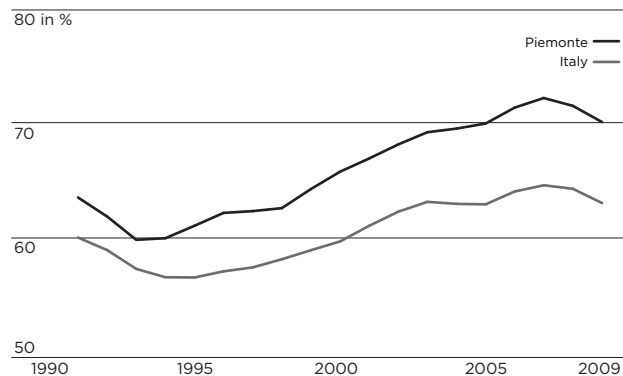


Figure 6
Employment rate 1991-2009



bank foundations and the Politecnico, and by the strategies of the city and regional governments. While it is difficult to assess the relative contributions made by each set of actors, it is clear that public actors have at least played a role in developing the climate and environment – and in some cases providing the financial resources – for the changes pursued by other economic actors to accelerate, flourish and spread.

4.2.1 Innovation

Torino's performance in innovation is demonstrated by the strong increase in its patents per million inhabitants. After a significant decline in the early 1990s, coincident with the major FIAT crisis that led the company to pull back from its important research activities, the Piemonte region quickly turned itself around and has outperformed Italy throughout the 2000s (Figure 8). The number of patents per million inhabitants dropped from 76.287 in 1992 to 65.561 in 1993, however, they rose sharply again by almost 40% from 102,755 in 2000 to 144,166 in 2004. Employment in science and technology has also increased over the past decades, and in recent years Piemonte has started to pull away from Italy, coincident with the major expansion in the research capacity and capability of the Politecnico (Figure 9). From 2005 to 2009, the percentage of workers in science and technology in Piemonte rose from 18.8% to 21.2%, showing an increase of nearly 14%, which is above the 9% national increase.

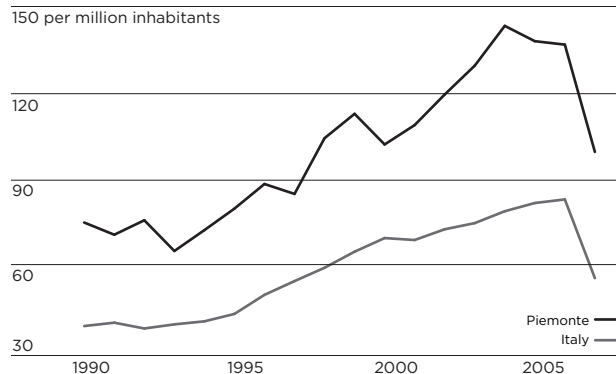
4.2.2. Diversification into new economic sectors, including tourism, design and aerospace

As manufacturing declined in Torino, services grew strongly, driving the city's economic growth. Between 1990 to 2008, Torino's share of employment in services increased by 37%, compared with manufacturing losses of around 38% (Figure 10). Tourism has been a strongly growing sector, linked to Torino's increasing international profile, and the design sector shows signs of being a strong spin-off from Torino's tradition strengths in manufacturing.

Attraction of tourists and foreign students

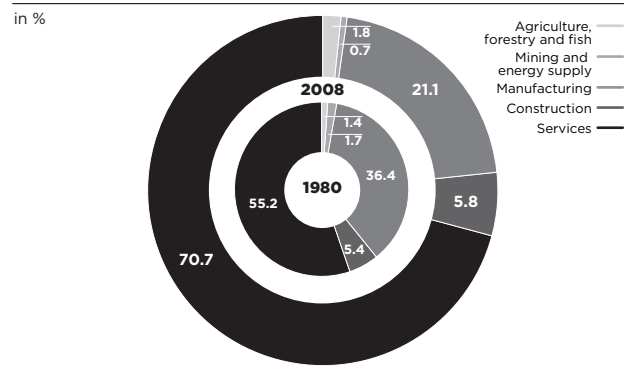
Tourism in Torino has grown from being virtually non-existent twenty to thirty years ago, to attracting some 1.9 million tourists in 2009. The number of international tourists increased rapidly during the mid-2000s, connected to the promotional effect of the 2006 Winter Olympics in Torino

Figure 8
Patents per million inhabitants 1990-2007



Source: Eurostat, 2007.

Figure 10
Employment distribution in Torino Province 1980 and 2008



Source: Cambridge Econometrics, 2010.

and the associated investments in Torino's infrastructure, although this has since tailed off somewhat (Figure 11). Despite this, employment in hotels and restaurants has continued its steady increase (Figure 12), buoyed by the rapid increase in the number of Italian tourists visiting Torino since 2006.

The number of tourists has also been complemented by an increasing number of foreign students, who have begun attending courses in the rejuvenated local university system. Overall, the Politecnico has doubled its registered student number in the last five years (more than 38% in the Faculty of Architecture and over 63% in the Faculty of Engineering). In terms of foreign students hosted by the Politecnico, this increased from in 1999/2000 to 2,533 students in 2008/2009 (10.2% of the total student body) (Ferrando, 2009a). It is also relevant to note that the number of Chinese students grew from zero in 1990 and just four in 2005, to 338 in 2007, the year after the agreement was made between the Chinese firm Jac automotive and the Politecnico in 2006. The increase in foreign students has been important in creating strong bilateral business links between Torino and future export markets.

From the Auto Sector to Transport, Advanced Machinery and Environmental Services

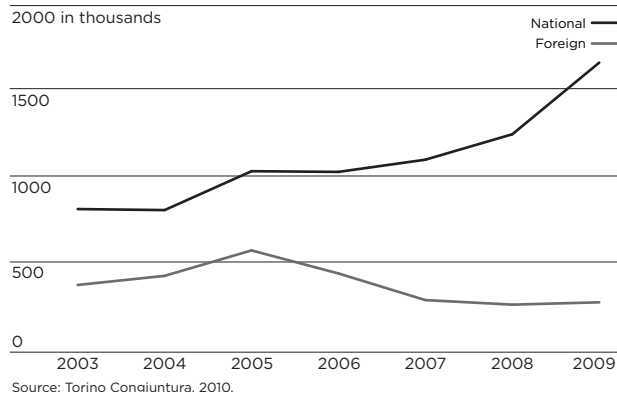
As FIAT declined, many of its former suppliers began to enter new markets and new sectors, aided by the Torino Chamber

Figure 9
Employment in science and technology 1995-2009



Source: Eurostat, 2009.

Figure 11
Number of tourists visiting the Province of Torino 2003-2009



of Commerce and CEI, whose programmes supported numerous firms to adapt to new conditions. Firms began operating in new sectors such as rail transport, aerospace, design and environmental services, for example:

- *Simpro*, an automotive supplier set up in 1986, took part in From Concept to Car (FCTC) in 2006 and now operates in the railway and tyre-recycling sectors;
- *Tubiflex SPA*, another automotive firm, started operating in the aerospace sector in 2006 after taking part in Torino Piemonte Aerospace initiative;
- *OMPECO*, a company traditionally operating in the machinery sector has now also entered the hospital waste treatment business.
- *Golden Car*, which traditionally operated in the mechanic sector, now also produces recycling bins.
- *Sicme Motori*, an enterprise traditionally operating in the automotive/mechanic sector, has recently began the production of mini wind power machinery.

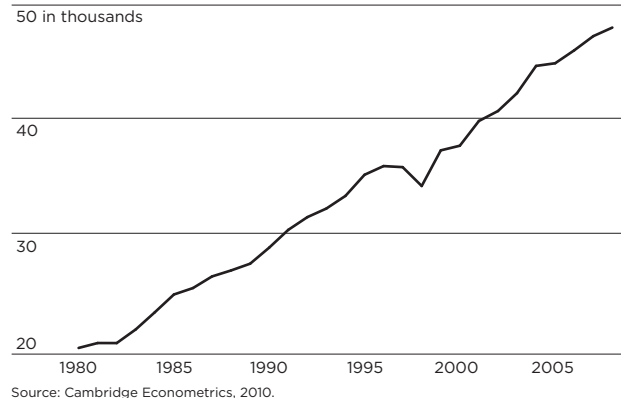
It is difficult to assess the size and the full modalities of the transition of Torino's industries and provide a comprehensive account of the re-tooling story of the Torino's economy. However, there is clear evidence of the re-orientation of local industries towards emerging sectors.

Design

The design sector in particular is beginning to emerge as a strong spin-off from Torino's traditional auto strengths. Some design companies such as Pininfarina, Giugiaro, Bertone and De Tomaso were successful in building their reputations in niche markets in the 1990s by working with auto firms such as Ferrari, Maserati, FIAT and General Motors, and by offering consulting services to other firms. More recently, these firms and activities have declined in importance and their core skills have been either absorbed or are no longer required by the international auto market. However, core design skills have remained alive within Torino's strong manufacturing culture, which cuts across different industries.

A recent report by the Torino Chamber of Commerce detected 770 companies and entrepreneurs operating in the design-oriented economy in Piemonte, generating a total annual income of about €12 billion and employing some 50,000 employees (CCT 2008:8). Based on a sample of 416 firms, the main design application fields are: industrial design (43.3%); automotive design (6.7%); graphic design and

Figure 12
Employment in hotels and restaurants in the Province of Torino 1980-2008



communication (11.9%); interior design (8.3%); fashion design (6.4%) and cultural and territorial design (4.0%), although it is worth noting that a relatively high proportion of data was not available (19.4%) (CCT 2008: 26).

The design-oriented economy in Piemonte is now an established economic sector, including both producers and users or design content and services, directly acquired or from third parties (B2B). The Chamber of Commerce survey suggested that of the companies based in Torino Province (half of the 770 detected), operations were equally distributed between B2B (business to business) and B2C (business to consumer), with the latter group generating a higher income.

Torino now boasts substantial expertise in design training and research. It has established an educational cluster in design, which includes the IAAD (Institute of Applied Arts and Design) and the IED (European Institute of Design); the Politecnico of Torino has also developed new courses in design-oriented disciplines. The new design centre to be developed in FIAT's Mirafiori factory will boost this strength, having the potential to host some 2000 students.

Thanks to the efforts of the city of Torino and the region of Piemonte governments, Torino hosts the offices of ICSID (the World Industrial Design Association) and ICOGRADA (the World Graphic Design Association), and was chosen as World Capital of Design in 2008.

Aerospace and defence

As part of its new post-FIAT economic identity, Torino and Piemonte identified the local aerospace and defence cluster as a sector of new growth. Although FIAT had already founded FIAT Aviazione - Avio (1,803 employees in 2007) an aerospace subsidiary in 1908, it was only in 1990 that the sector was boosted when Alenia Aeronautica (3,729 employees in 2007) was established (Avio and Alenia Aeronautica websites). More recently, Piemonte's aerospace sector has grown strongly and today employs a total of 12,500 people and has an annual turnover of €2.6 billion, with the majority of the cluster being located in the Torino area (CCIAA, 2009, p. 43). Figure 13 shows how the strengths of the cluster come from the existence of five large companies, over 400 SMEs (employing 3,000 people and with an annual turnover of €500 million), a strong research system including three universities, and initiatives such as Torino Piemonte

Aerospace. These include:

- *Thales Alenia Space*, a world leader in satellite system;
- *Alenia Aeronautica*, a specialist in aeronautics for the civil and military sector;
- *Avio Group*, a specialist in civilian and military vehicle engines;
- *Selex Galileo*, the leading Italian company in the design and integration of aviation systems; and
- *Microtecnica*, a producer of equipment and electrical components.

Exports and internationalisation

The total value of exports of Torino grew sharply from 1994 to 1995 and from 2005 onwards as shown in Figure 14. It is difficult to pinpoint exact reasons for these increases but it can be argued that the devaluation of Italian Lira boosted exports in the early 1990s, whilst the second sharp increase in the mid-2000s is linked to both the Winter Olympic Games and the programmes promoted by actors such as the *Unione Industriali di Torino*, the *Associazioni di categoria*, the *Torino Chamber of Commerce* and *CEI* (as discussed in Section 3.3).

The transport sector is Torino's main export sector, responsible for 37% of Torino's exports by value in 2007 (Figure 15), thanks to the adaptation of the automotive sector following FIAT's crises. As FIAT reduced its production in Torino, and restructured its supply chains, Torino's highly entrepreneurial SMEs began to trade with foreign companies, supported in part through the activities of the *Unione Industriali di Torino*, the *Associazioni di categoria*, the *Torino Chamber of Commerce* and *CEI* described earlier. Today, over 40% of firms in the automotive sector are not dependent on the Fiat Group for any of their revenues (Figure 16), while around 40% of firms are reliant on exports for more than 25% of their revenues.

Figure 13
The constituent parts of Piemonte's aerospace sector

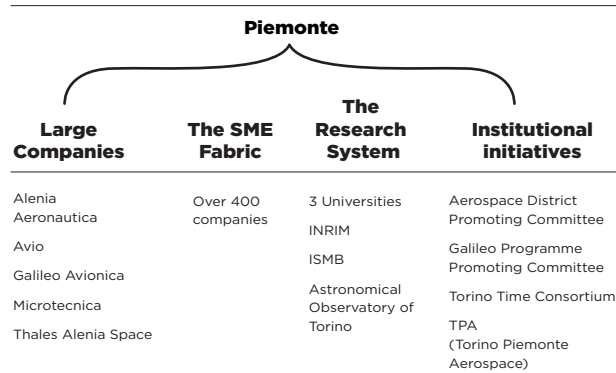


Figure 14
Total value of exports of the Province of Torino 1994-2008

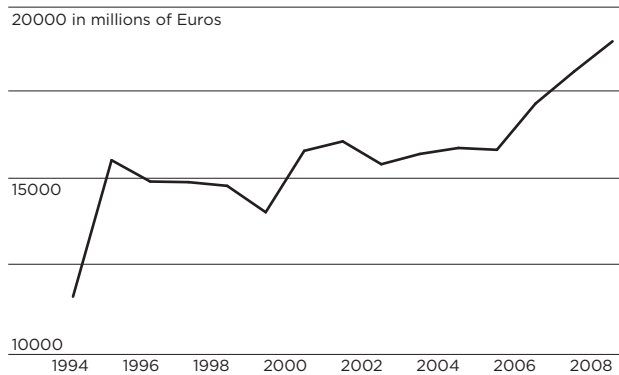
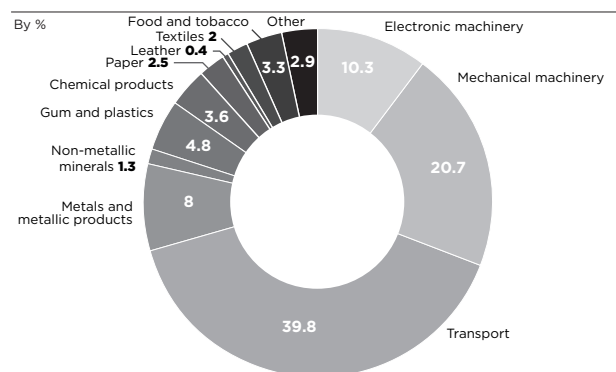
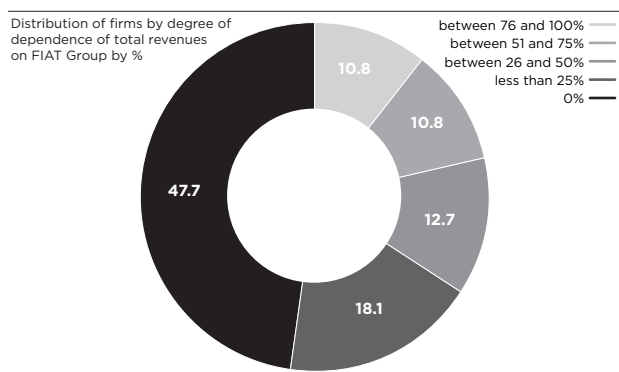


Figure 15
Torino's exports by category in 2007



Source: Torino Chamber of Commerce, 2008.

Figure 16
Dependence on FIAT



Source: Observatory on the Italian Automotive Components Industry 2008, Torino Chamber of Commerce and STEP research

The financial crisis and future perspectives

Torino and Piemonte have been hit hard by the financial crisis.

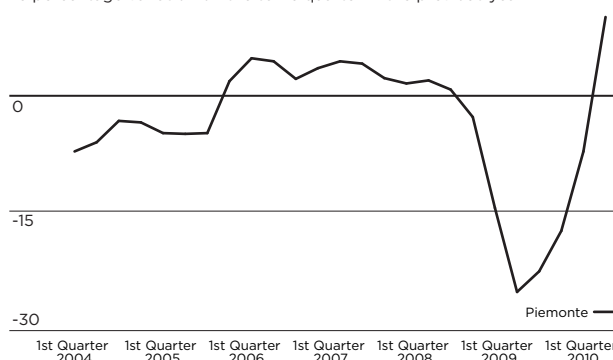
- The GDP of Piemonte, which totalled €126.9 million in 2008, decreased by almost 6% in 2009. The output of manufacturing sector activities dropped by 1.1% in 2009
- Unemployment in Torino rose from 5.6% in 2008 to 8.3% in 2009, a sharper increase than the Piemonte region and Italy as a whole, leaving 86,000 people unemployed.
- The growth rate of new firms registered in the Province of Torino is consistently lower than in other Italian provinces. Bail outs during the first three months of 2010 were up by 51.9% on 2009 levels.
- After years of public investment in urban regeneration and economic development, Torino now has the highest debt per capita of any Italian city - approximately €3,000 per capita or €3.1 billion in total.

So far, Torino has suffered more than other Italian regions because of its industrial base and its close ties to European economies, which have also been badly affected by the financial crisis. A drop in domestic and European demand, in particular from France, Germany and Poland, was a key factor in the contraction in Torinese industrial production and trade. However, as the European outlook began to improve, industrial production and exports have shown signs of recovery in 2010 (Torino's industrial production in the first quarter of 2010 grew by 10.3% and exports by 13.7% on the same period in 2009 (Figure 17). Torino's recovery will ultimately be highly dependent on the general European economic performance, given that most of its exports are currently directed towards EU countries.

Torino's future depends in part on the extent to which it is able to continue to internationalise and diversify its economic base. Although only a very small proportion of Torino's exports are directed towards emerging economies, this has recently been growing at a fast rate. For example, exports to China and Brazil in the first quarter of 2010 were up 52.9% and 78.7% on the same period in 2009, albeit from a low base of 2.6% and 3.1% respectively. The recent acquisition of Chrysler in the U.S. and the success of the FIAT Cinquecento - a best-seller in the

Figure 17
Industrial production in the Province of Torino 2004-2010

15 percentage variation on the same quarter in the previous year



Source: Torino Congiunturo, CCIAAT, 2010.

low-carbon market - may have consequences for the future internationalisation of Torino's automotive sector.

Efforts are underway to increase connections between smaller Torino and Piemonte automotive suppliers and major US producers: a delegation of local authorities, and the workforce from Detroit and Michigan met Torino and Piemonte auto suppliers in 2010, in order to attract them in the Detroit area (Chicago Tribune 27/09/2010). Through initiatives such as this it is hoped that Torino's automotive suppliers can gain access to large producers outside of Europe, diminishing further their dependence on FIAT by accessing rapidly growing international markets. Similar meetings and agreements could be led in other regions, such as China, India and Brazil if appropriate policies and interventions were put in place by local and national authorities.

In addition, the regional government of Piemonte has developed two specific plans, which together provide €890 million funding, in response to the financial crisis: the Piano Straordinario per l'Occupazione (Special Employment Plan) and the Piano Pluriennale Competitivita (Multi-year Competitiveness Plan). These plans are described in Example 3 in more detail.

Example 3

Overview of Piemonte's response to the financial crisis through the Special Employment Plan and the Multi-Year Competitiveness Plan

The Special Employment Plan is focussed on four areas: employment, competitiveness, bureaucratic simplification and access to credit, and some of its specific measures include:

- Support for the creation of new joint Masters or PhDs between

universities and private sector firms;

- Grants for start-up costs, managerial and investment expenses of new firms;
- Funding of new entrepreneurial activities;
- €10 million financing of high potential/high risk high-tech firms, especially those created by young people;
- €120 million funding for firms that aim to improve their efficiency, become more competitive or get into new markets;
- €1.1 million to fund *Centri di Assistenza tecnica* (Centres for Technical Assistance) to support small firms in overcoming bureaucratic problems;
- An amendment to the law in order to speed up the realisation of public infrastructure linked to FDI contracts; and
- Access to credit through regional

financial resources and a guarantee fund for large firms.

The Multi-Year Competitiveness Plan is a five-year plan introducing many concrete measures to foster the economic competitiveness of the regional economy, including:

- A new financial instrument, *Piemontech*, aimed at small high-tech start-ups in a very early stage of development in connection with university business incubators;
- *Portale Piemonte Open Innovation*, a regional 'innovation gateway', gathering together the Intellectual Property assets of SMEs to make them more visible in international markets;
- *Open Laboratories*: research centres where the private sector, universities and final customers gather to develop new applications, technologies or services, some of which the regional government will

select for further investment;

- *Creativity Voucher*: financing young creative people to develop new design or services projects;
- A fund to enable Piemonte SMEs to challenge international breaches in Intellectual Property rights where they occur, by paying up to 75% of the legal expenses of small firms;
- New funding for joint-innovation projects between firms;
- *Re-industrialization fund*: to buy outdated unused physical assets from manufacturing firms to provide them with the necessary liquidity to restructure their production;
- Financing of acquisition of specialized machinery for research centres; and
- A *Private Equity Fund* for firms that, despite having good future potential, are in a difficult financial situation because of the financial crisis.

6 Conclusions

Torino's performance over the past twenty years has been impressive. The city and the region survived FIAT's restructuring processes and emerged with a more diverse economic basis from which to continue its transformation. It remains one of Europe's top automotive cities, and has begun to diversify successfully toward high-value production and services, including specialised auto services, design, aerospace, and quality food and drink.

Torino's adaptation has been driven by a wide range of public and private actors, displaying the entrepreneurial and enterprising spirit typical of the region. Although the restructuring processes initiated by Fiat were challenging for its suppliers, they were handled well by the industry and led to many former Fiat suppliers becoming more efficient and better able to compete internationally. Industrial unions helped firms adapt to new conditions and enter new markets. As Fiat concentrated its research and training activities internally, other institutions took on new roles, helping to ensure that the expertise built up was not lost and that Torino remained an attractive location for international industry. The bank foundations invested in new sectors, accelerating innovation and R&D, and in new institutions which brought business, research and public authorities together. The Politecnico di Torino re-shaped and expanded its courses, took up a new place in the city centre and worked effectively with other public and private actors to bring major international firms and research centres to Torino. Thanks to these efforts, Torino's research and training capacities and skills have been retained and adapted, forming one of Torino's key assets.

Public actors have played an important role in these processes, developing the climate and environment, and in some cases providing the financial resources, for the changes pursued by other economic actors to accelerate, flourish and spread. By working effectively together, the governments of Torino city and the Piemonte region successfully attracted significant amounts of funding from the European Union, enabling institutions to expand and take on new roles, and driving forward numerous initiatives. They created new, dynamic agencies that played a role in supporting the region's internationalisation and diversification, for example, by investing in new companies and promoting the region internationally. They developed a new master plan for the city that provided the basis for the transformation of out-dated industrial land in the city centre for new economic uses, as well as Torino's first strategic plan, which provided a vision for the future of Torino and involved a wide range of city actors. More recently, Piemonte regional government has developed a series of 12 innovation poles, to further develop the regional innovation system linking private businesses, research centres and universities, which are showing early signs of success. Through hosting international mega-events such as the 2006 Winter Olympics and Salone del Gusto, Torino's internationalisation has been enhanced and its economic diversification further developed.

Torino has experienced 15 years of economic growth, rising incomes and employment, and falling unemployment. It has out-performed Italy in all these areas: a major achievement given the shocks that have hit it. Torino's real strength is in its increasing innovation capacities: patents are

rising strongly, as is employment in science and technology. In the last few years, however, Torino has been hit hard by the financial recession, its debt levels rising to the highest level of any Italian city, and its industrial and export based economy feeling the force of falling international demand. Torino's future is currently tied up with that of Europe – still the main destination of its exports – but the city and wider region are starting to look beyond, to the United States, to China and to Brazil, as well as developing a series of measures to respond and adapt to the financial crisis. As Torino seeks to overcome the challenges it is facing, its adaptive and entrepreneurial industrial sector and substantial research and innovation capacities provide the city and wider region with valuable assets for the future.

Selected bibliography

- Antonelli, C. and M. Calderini** (2008). "The governance of knowledge compositeness and technological performance: the case of the automotive industry in Europe" *Economics of Innovation and New Technology* 17(1): 23-41.
- Antonelli, C.** (1987). "The Determinants of the Distribution of Innovative Activity in a Metropolitan Area: The Case of Turin" *Regional Studies* 21(2): 85-93.
- Armstrong, M.** (2007). *A deeper look into our auto industry: the Detroit Region continues to maintain its edge as one of the top manufacturers of cars and car parts in the United States*. Detroit Regional Chamber. Accessed via allbusiness.com.
- Berta, G.** (1998). *Mirafiori*. Bologna, Il Mulino.
- Bianchi, R.E.A.** (1998). *The local system of innovation in the Turin supply chain of the automotive industry*. Paris, CREI. Torino, Dipartimento di Economia.
- Calderini, M.** (ed.) (2007). *Le misure per la Ricerca e l'Innovazione cofinanziate in Piemonte dai fondi strutturali comunitari nel periodo 2000-06. L'individuazione di alcune "best practices"*. Fondazione per l'innovazione tecnologica COTEC.
- Campetti, L.** (2002). *Non Fiat. Come tentare di svendere l'Italia*. Roma, Cooper Castelveccchi.
- Castelli, C., F. Massimo and A. Giunta** (2008). *The competitive repositioning of automotive firms in Turin: innovation, internationalisation and the role of ICT*. WP 2008/43 Seventh Milan European Economy Workshop, University of Milan.
- Castronovo, V.** (2005). *Fiat. Una storia del capitalismo italiano*. Milano, Rizzoli.
- Censis** (2008). "La società italiana al 2008" *Rapporto annuale* 2008: 19-23. Fondazione Censis.
- Ciravegna, L.** (2006). *Turin's automotive cluster: Fiat crisis and the threat of Delocalization*. WP 4/2006 SEMEQ, University of Eastern Piedmont, DESTIN, The London School of Economics.
- Consorzio, A.** (2008). *Design e Creatività sull'asse Torino-Milano*. Consorzio Aster, Associazione Torino Internazionale e Triennale di Milano.
- Dansero, E. and M. Puttilli** (2010). "Mega-Events tourism legacies: the case of Torino 2006 Winter Olympic Games – a territorialisation approach" *Leisure Studies* 29(3): 321-341.
- Darwin, S.** (1997). "Automotive industry". *The Encyclopedia of Cleveland History, Rockefeller Archive Center*. Accessed through ech.cwru.edu.
- Ferrando, M.** (2009a). *Campus all'Italiana*. Alta formazione, ricerca, imprese e finanza nella Cittadella politecnica di Torino. Milano, Il Sole 24 ore.
- Ferrando, M.** (2009b). *Scommessa vinta sull'innovazione. Funziona l'alleanza tra PMI e università: decollano i Poli regionali*. Il sole 24 ore rapporti, 24 November 2009.
- Ferrando, M.** (2009c). *Spin-off record al Politecnico. Primo tra gli atenei italiani con 467 nuove Pmi*. Il Sole 24 ore Nord Ovest, 3 June 2009.
- Ferrando, M.** (2010). *R&S In dirittura d'arrivo la valutazione dei progetti: in palio ci sono 90 milioni. Dalle alghe all'automotive ecco l'agenda hi-tech dei poli*. Il Sole 24 ore Nord-Ovest, 12 May 2010.
- Germano, L.** (2009). *Governo e grandi Imprese. La Fiat da azienda protetta a global player*. Bologna, Il Mulino.
- Lavinia, F.** (2009). *Ricerca e innovazione c'è la grande alleanza. Creati 12 poli con oltre 800 aziende atenei e laboratori*. La Stampa, 4 November 2009, 76-77.
- Malerba, F.** (2000). "Il sistema innovativo italiano". *Economia dell'innovazione*, Malerba (ed.). Roma, Carocci.
- Murst-Confindustria** (1999). *Road Map for Italy*.
- OCSE** (2009). *Regional Reviews of Innovation: Piedmont, Italy*.
- Piemonte Regional Government** (2009). *The Europe Effect – Twenty years of European Development Funds in Piemonte*.
- Piemonte Regional Government** (2010). *Piano per la competitività 2011-2015*.
- Piemonte Regional Government** (2010). *Piano straordinario per l'occupazione in Piemonte*.
- Rizzi, P. and I. Dioli** (2010). "From strategic planning to City Branding: Some Empirical evidence in Italy" *Pasos* 8: 39-49.
- Rolfo, S. and G. Calabrese** (2003). "Traditional SMEs and innovation: the role of the industrial policy in Italy" *Entrepreneurship & Regional Development* 15(3): 253-271.
- Rosso, E.** (2004). *Torino: policies and actions at a metropolitan level*. Torino Internazionale Conference Proceedings Entretien Jaques Cartier Montreal 7-8 October 2004.
- Russo, A. and van der Borg** (2002). "Planning considerations for cultural tourism: a case study of four European cities" *Tourism Management* 23: 631-637.
- Rur-Censis** (2004). *La Ricchezza del Territorio Italiano: Rapporto* 2003. Milano, Franco Angeli.
- Salone, C.** (2010). "Institutional Arrangements and Political Mobilization in the New Italian Regionalism: The Role of Spatial Policies in the Piedmont Region" *European Planning Studies* 18(8): 1207-1226.
- Salone, C. and A. Besana** (2010). "Ercole al bivio: Torino tra primato regionale e aperture macroregionali". *Nord regione globale*. Il Piemonte. S. Conti. Milano, Bruno Mondadori.
- Torino Chamber of Commerce** (2004). *Torino negli ultimi 50 anni. Come sono cambiate popolazione, economia e qualità della vita dagli anni 50 ad oggi*.
- Torino Chamber of Commerce** (2008). *Design-related economy in Piedmont. Final Report*.
- Torino Chamber of Commerce** (2008a). *Rapporto sulla Provincia di Torino*.
- Torino Chamber of Commerce** (2008b). *Torino Economia* 2008.
- Torino Chamber of Commerce and Step Ricerche Srl** (2008c). *Osservatorio della componentistica autoveicolare italiana* 2008.
- Torino Chamber of Commerce** (2009). *2009 World Chamber Congress Competition – Best International Project, From Concept to Car – Torino Chamber of Commerce*, Torino.
- Torino Chamber of Commerce** (2010). *Torino Congiuntura*. 41 April-June 2010.
- Vanolo, A.** (2008). "The image of the creative city: Some reflections on urban branding in Turin" *Cities* 25: 370-382.
- Verganti, R.** (2003). "Design as a brokering of languages: Innovation strategies in Italian firms" *Design Management Journal* 13(3): 34-42.
- Verri, P.** (2005). *Torino: a Future of Knowledge and Creativity*. 41st ISoCaRP Congress.
- Vitali, G.** (2000). *Company relationships in a technological district: the case of the Turin automotive industry*. Ceris-Cnr Institute of Research on Firm and Development of Italian National Research Council.
- Volpato, G.** (1983). *L'Industria Automobilistica Internazionale. Espansione crisi e riorganizzazione*. Padova, Cedam.
- Whitford, J. and A. Ernietti** (2005). "Surviving the Fall of a King: The Regional Institutional Implications of Crisis at Fiat Auto" *International Journal of Urban and Regional Research* 29(4):771-795.
- Winkler, A.** (2007). *Torino City Report*. CASE, London School of Economics.

Additional web resources

Alenia: alenia-aeronautica.it

Avio: aviogroup.com

Centro Estero Internazionalizzazione Piemonte:
centroestero.org

**Chamber of Commerce, Industry, Crafts and Agriculture
of Torino:** to.camcom.it

Database Ufficio di statistica del Comune di Torino: [http://
www.eauvive.it/statistiche/bancadati/tabelle/A_01_01.xls](http://www.eauvive.it/statistiche/bancadati/tabelle/A_01_01.xls)

European Investment Bank: eib.org

Eurostat REGIO Database: [epp.eurostat.ec.europa.eu/portal/page/
portal/region_cities/regional_statistics/data/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/regional_statistics/data/database)

FIAT Group: fiatgroup.com/en-us

From Concept To Car: fromconcepttocar.com

Istat Demographic database: <http://demo.istat.it>

Italdesign Giugiaro: italdesign.it

Piemonte Regional Government: regione.piemonte.it

Pininfarina: pininfarina.it

Politecnico di Torino: polito.it

Slow Food: slowfood.it

Torino Piemonte Aerospace: torinopiemonteaerospace.com

Torino Wireless: torinowireless.it

Unioncamere Piemonte: pie.camcom.it

Unione Industriale Torino: ui.torino.it

List of interviewees

Alessandro Battaglini, Director, Environment Park

Franco Becchis, Director, Fondazione per l'Ambiente

Andrea Bocco, Associate professor, Politecnico di Torino

Mario Calderini, Director Finpiemonte, Regione Piemonte

Marco DeMarie, Director of research, Compagnia di San Paolo

Prof. Giuseppe Dematteis, EU-Polis, Politecnico di Torino

Marta Levi, Assessore – Deputy Mayor – Area

Metropolitana, City of Torino

Giovanni Magnano, Head of Housing and Regeneration Unit, City of Torino

Giampiero Masera and Barbara Barazza, Torino Chamber of Commerce

Prof. Alfredo Mela, Politecnico di Torino

Gianfranco Presutti, Head of Labour and Economic Development Division, City
of Torino

Elisa Rosso, Head of Torino Internazionale

Carlo Salone, Eu-Polis, Politecnico e Università di Torino

Deputy Mayor – Environment, City of Torino

Mario Viano, Assessore – Deputy Mayor – Urban Planning, City of Torino

All interviews were conducted in Torino during July 2010.