



# Turin's Competitiveness

---

## Turin case study

Professor Greg Clark CBE

Dr Tim Moonen

and Jake Nunley

April 2018



Urban Land  
Institute

## About ULI

---

The Urban Land Institute is a global, member-driven organization comprising more than 40,000 real estate and urban development professionals dedicated to advancing the Institute's mission of providing leadership in the responsible use of land and in creating and sustaining thriving communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 76 countries.

The extraordinary impact that ULI makes on land use decision making is based on its members sharing expertise on a variety of factors affecting the built environment, including urbanization, demographic and population changes, new economic drivers, technology advancements, and environmental concerns.

Peer-to-peer learning is achieved through the knowledge shared by members at thousands of convenings each year that reinforce ULI's position as a global authority on land use and real estate. In 2017 alone, more than 1,900 events were held in about 290 cities around the world.

Drawing on the work of its members, the Institute recognizes and shares best practices in urban design and development for the benefit of communities around the globe.

More information is available at [uli.org](http://uli.org). Follow ULI on Twitter, Facebook, LinkedIn, and Instagram.

ULI has been active in Europe since the early 1990s and today has more than 3,000 members across 27 countries. The Institute has a particularly strong presence in the major Europe real estate markets of the UK, Germany, France, and the Netherlands, but is also active in emerging markets such as Turkey and Poland.



**Copyright ©2018 by the Urban Land Institute.** ULI Europe. All rights reserved. No part of this report may be reproduced in any form or by any means, electronic or mechanical, including photocopying or recording, or by any information storage and retrieval system, without written permission of the publisher. ULI has sought copyright permission for all images and tables.

Front cover image: Aerial view of Turin. (Wikimedia)

### Urban Land Institute

50 Liverpool Street  
London  
EC2M 7PY  
United Kingdom

Tel: +44 (0)20 7487 9570  
Email: [ulieurope@uli.org](mailto:ulieurope@uli.org)  
Web: [www.europe.uli.org](http://www.europe.uli.org)

# Contents

.....

Acknowledgements .....	iv
Executive Summary .....	1
Turin: Past and Present .....	3
Turin City Competitiveness .....	5
Governance framework .....	5
Competitive climate .....	8
Agglomeration .....	9
Attractiveness to talent .....	11
Recommendations .....	14
Contributors .....	15
References .....	16

## Acknowledgements

---

The preparation of this report was supported by a group of ULI Europe and ULI Italy staff and members, including:

**Lisette van Doorn**, Chief Executive Officer, ULI Europe

**Elizabeth Rapoport**, Content Director, ULI Europe

**Amanprit Arnold**, Content Manager, ULI Europe

The authors wish to thank all those in Milan and Turin who contributed to the research through participation in workshops and interviews in autumn 2017, as well as the ULI Italy Executive Committee and staff team. A list of those who gave exceptional assistance to the development of this report and the case studies is on page 15.

## Author

---

**Professor Greg Clark CBE**, Senior Fellow, ULI Europe

**Dr Tim Moonen**, Director, The Business of Cities

**Jake Nunley**, Research Associate, The Business of Cities

## About this case study

---

This case study of Turin forms part of a ULI project titled *Milan and Turin: Competitiveness of Italy's great northern cities*.

The information presented includes:

- desk research of (a) academic books, chapters, and articles about Turin's urban economy; (b) independent reports by think tanks, universities, observatories, and real estate organisations; and (c) media commentary about the city since 2015;
- a review of Turin against recognised measures of international performance;
- interviews with Italian urban specialists; and
- workshops held in Turin and Milan on September 18, 2017, with ULI members and other public and private sector leaders.

The case studies of Turin and Milan, and the summary report, are designed to be read together.

## Executive Summary

**Figure 1:** Competitiveness framework

Governance framework	Competitive climate	Agglomeration	Attractiveness to talent
Vision, strategy, and coordination	Costs and business investment	Size and scale of internal market	Human capital, liveability, and opportunity
Land use, planning system, and density	Tax and regulatory framework	Clustered specialisations	Innovation, technology, and enterprise
Infrastructure and services	Political risks	Institutional engagement	Brand, identity, and destination

This case study reviews Turin's competitiveness using a 12-point framework that consists of four main elements (see figures 1 and 2):

- **governance framework**
- **competitive climate**
- **agglomeration;** and
- **attractiveness to talent**

It summarises Turin's strengths and the threats to its competitiveness, and provides recommendations for how to improve its competitiveness.

Turin has made remarkable progress since its most acute period of industrial crisis. Two cycles of physical improvements and cultural investments have transformed the city's quality of place and its local connectivity. The positive impact on the city's arts, culture, public squares, and street life, combined with the singular showcase provided by the 2006 Winter Olympics, has energized the city's tourism economy and its identity as a 'comeback city'.

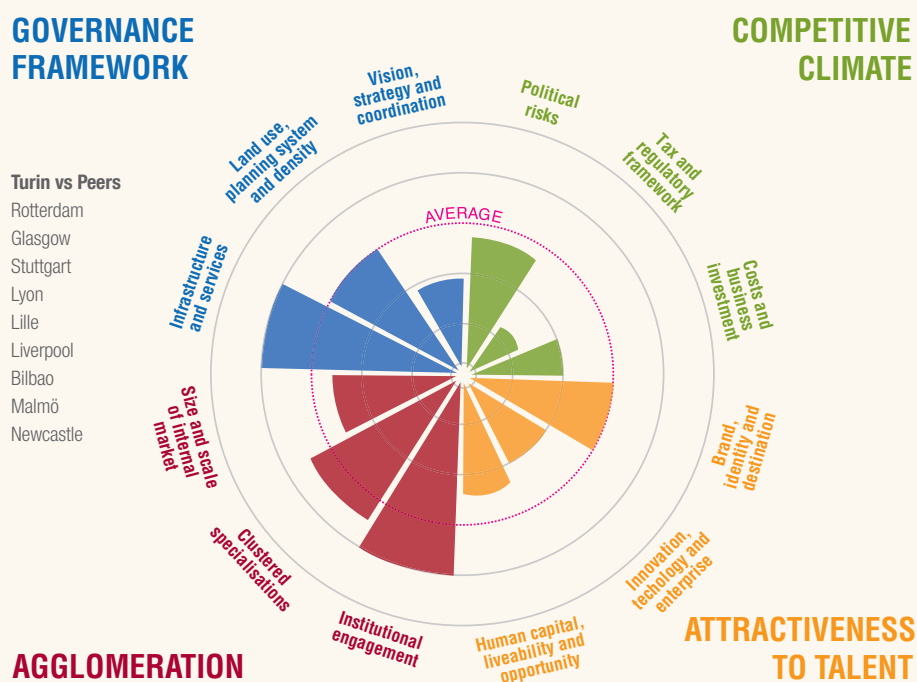
However, Turin has not sustained the momentum over the past ten years. Its relatively small size and reach have been exposed in the fallout from the financial crisis as companies have consolidated their activity in Milan. The city retains its niche capabilities in design, engineering, and advanced manufacturing, but the departure of the Fiat headquarters emphasises the scarcity of large corporate employers and customers. In a context of Italian macro-economic imbalances and fitful reform, Turin has struggled to shore up its jobs base

to attract and retain qualified and multilingual workers, and the emerging startup scene is held back by poor access to capital and creative workspace.

Turin's future competitiveness will rely on the emergence of leaders who can overcome the prevailing nostalgia, galvanise others, and bring into focus a powerful 20- to 30-year vision for

the city and metropolitan area. The populist social agenda of the current city administration means there is presently little appetite for another strategic planning process. But opportunities exist for approaches that overlap with the administration's priorities, and to identify smaller projects that can build optimism and a new mind-set of what Greater Torino has to offer.

**Figure 2:** Illustrative evaluation of Turin according to 12 competitiveness criteria



Note: 'Average' is the performance of Turin's peer cities – Rotterdam, Glasgow, Stuttgart, Lyon, Lille, Liverpool, Bilbao, Malmö and Newcastle.





(ilbusca, iStock)

## Recommendations

### A story fit for the future

Turin needs to tell a new positive story about itself and its future that aligns with the big changes taking place globally – exponential technologies, the rise of Asia, demographic shifts, social networks, the circular economy, and the future of work. A new narrative will help restore private sector confidence and build a broader and more inclusive culture of leadership in civil society. It also can train attention on the strategic initiatives that can gain political backing in the short term.

### Applying Turin's DNA to new challenges

A clear opportunity exists for Turin to expand its role in advanced mobility technology. By optimising its strengths in the auto industry, design, engineering, and transport, the city can become a leader and innovator in automated vehicles, battery storage, integrated transport technology, and information technology systems, as well as the promotion of walking and cycling.

### Adaptation to the Innovation Economy

Turin has a large amount of well-located, reusable, and affordable industrial space that could accommodate creative and innovative activities. A clearer offer to entrepreneurs and growth firms, combined with a value proposition to venture capital, is a necessary first step for Turin to retain more of its talent. Working towards reinventing the city as an enjoyable and well-served location is also likely to be a key factor in attracting new residents.

### Social innovation to build opportunity and prosperity

Turin stands out for its initiatives in social inclusion and innovation – youth employment, inclusive jobs for people at the city fringes, health care, and training. It also has a strong identity as a city that is open to migrants: it is still the only Italian city where more than half its residents were born outside the city. These advantages can be expanded further to

demonstrate that Turin is a model of a competitive city that is able to reach out to all its residents and genuinely expand access to opportunity across the whole income and skills spectrum.

### Partnership with Milan

The character of Turin's co-operation with Milan and the wider trans-Alpine region will be important to its competitive prospects. The city may benefit from smarter co-operation with a competitive mind-set that would allow it to play a clearer set of roles complementary to Milan. Given the obstacles to any formal or governmental approach to regional co-operation, the creation of shared capability and joint projects involving institutions across the region (e.g., the Politecnico, Milan-Malpensa Airport, large firms, sports venues) may offer one way forward. Such a model of co-operation may draw inspiration from Malmö's relationship with Copenhagen and Rotterdam's synergies with Amsterdam.

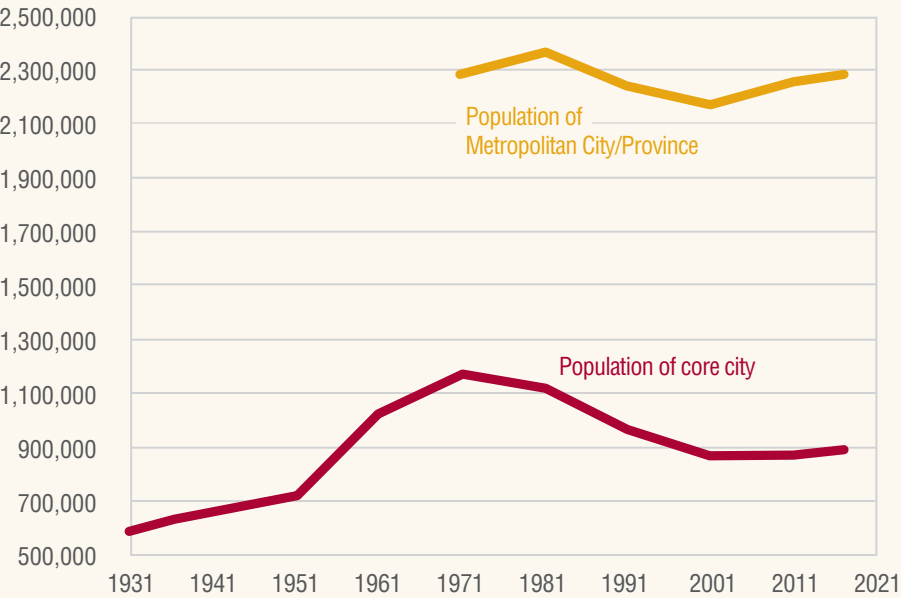
## Turin: Past and Present

Turin emerged as an important centre in the early 20th-century industrial economy while inheriting distinct DNA as a Baroque cultural city, with regal and palatial architecture and the deep influence of the Savoy dynasty. The city region became a hub for industrial production, and as the home of automobile giant Fiat, Turin gained an enduring identity as a 'one-company town'. Turin was also the birthplace of the Italian cinema, television, and telecommunications sectors. Over a 50-year period, the city accumulated many technical and knowledge competencies that underpin its competitive position today.

After 1945, Turin experienced a wave of immigration from across Italy and eastern Europe that nearly doubled its population in 20 years. Rapid economic and social change created a distinct spatial structure in the city, with the affluent east separated from the working-class north and southwest.

Turin's economic model began to unravel in the 1970s, prompted by the oil crisis, technology disruption, and rigidities in factory organisation. The city's overdependence on an increasingly uncompetitive car industry resulted in a major loss of jobs, large areas of vacant land, and a sustained crisis that affected the whole metropolitan area. A cycle of de-urbanisation and the growth of small towns outside Turin unfolded as workers and families sought reduced living expenses and a higher quality of life. A turning point for Turin took place in 1993: the decision to allow cities to directly elect a mayor made it possible for a new cycle of purposeful leadership and strategic planning to emerge. During Valentino Castellani's years as mayor, 1993 to 2001, the city moved beyond clientelism, and the public, private, and civic sectors were mobilised around a new competitive perspective for Turin. The City Council partnered closely with the EU and local bank foundations to begin a sequence of economic, social, and urban renewal programmes.

Figure 3: Population of Turin in the core city and metropolitan region, 1931–2017



Sources: ISTAT, Province of Torino, City of Torino.

Figure 4: Appearances of European cities in global city benchmarking indexes and rankings in the top ten, January 2016 to July 2017.

City	Total benchmark appearances	Percentage of top ten performances
Rotterdam	55	16%
Glasgow	51	6%
Stuttgart	48	8%
Lyon	40	5%
Turin	30	3%
Lille	27	0%
Liverpool	25	4%
Bilbao	20	0%
Malmö	11	9%
Newcastle	9	0%

Note: Data are based on a sample of 300 indexes maintained by The Business of Cities.

Over the course of a decade, culminating in the city's hosting of the Winter Olympics in 2006, Turin re-equipped many of its small and medium-sized enterprises (SMEs) to compete in global sectors and attracted a range of international agencies and institutions.

Turin also re-established a connection with its pre-industrial elegance and majesty. Wine culture, gastronomy, and art were promoted and historic houses, villas, and streets were restored, making Turin a much more appealing place for visitors. The cycle of de-urbanisation

and peripheral development began to reverse, with Torinese workers and families returning to the city centre, served by a more integrated metropolitan rail service.

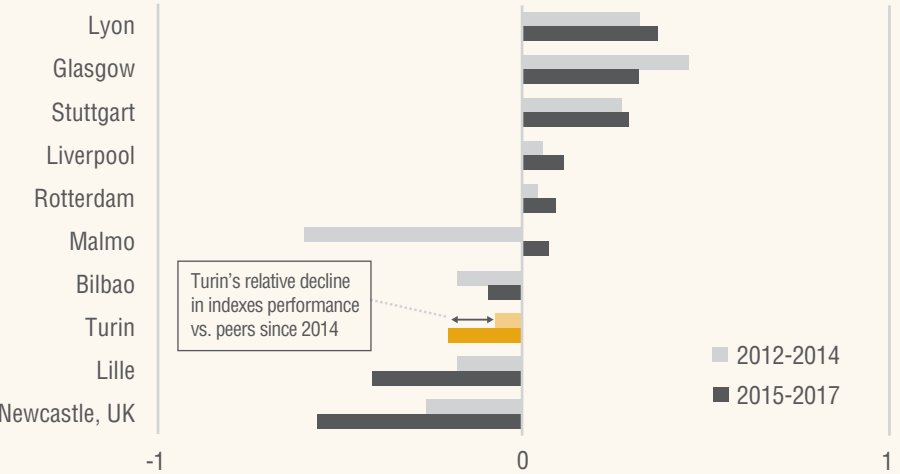
Turin today and its performance in global benchmarks

Today, Turin hosts a diversified economy with globally competitive firms in aerospace, automotive, design, information technology, and life sciences, underpinned by strong programmes to boost research and development, and entrepreneurship. The city's economic size and gross domestic product per capita place it in a peer group of third-tier European cities in transition from an industrial economy to an innovation economy – a group that includes Rotterdam, Glasgow, Lyon, and Bilbao.

Compared with its European peers, Turin is prominent in city benchmarks and indexes. Most measures still assess Turin in terms of the core city rather than the larger metropolitan city, which has a significantly more diversified and rural economy. Across all indexes produced worldwide over the past five years, it is apparent that Turin's performance relative to its peers is weak (see figure 4) and has declined since 2014. Figure 5 shows that Turin's aggregate performance in all indexes has fallen behind that of Bilbao and Malmö, while other cities, such as Lyon and Stuttgart, are making improvements and enacting reforms more rapidly.

A close look at index performance since 2016 (figure 6) reveals that Turin has performed well in terms of its urban planning, transport, and policies for social integration. But it performs less well in indexes assessing human capital, jobs growth, and digitisation.

Figure 5: Comparison of Turin's performance against its European peers across all global and Europe-wide indexes, 2012–2014 vs. 2015–2017



Note: Data are derived from a sample of 300 indexes, calculated using a CODOGO™ algorithm based on the common ELO ratings system.

Figure 6: Five areas of strength and challenge for Turin in global benchmarks, 2016 to 2017

Index	Ranking
IESE Cities in Motion Index: urban planning	12th of 181
Council of Europe Intercultural Cities Index	5th of 77
IESE Cities in Motion Index: mobility and transportation	32th of 181
TomTom Traffic Index, Europe	9th of 43
Sportcal Global Sports Cities Index 2016	83rd of 621
IESE Cities in Motion Index: human capital	109th of 181
Brookings Global Metro Monitor: GDP and jobs growth since 2000	282nd of 300
Numbeo Pollution Index	160th of 201
Nesta, et al.: European Digital City Index	55th of 60
JLL Global 300: Global Attraction Index	193rd of 300



# Turin City Competitiveness

In this section, Turin's competitiveness is assessed using a framework that consists of four main elements:

- governance framework
- competitive climate
- agglomeration; and
- attractiveness to talent

## Governance framework

Figure 7: Evolution of Turin's strategic planning process

Strategy	Strategic themes of strategy	Specific initiatives
Metropolitan Plan 1 (1998–2006)	Identity, promotion, and internationalisation	Torino World Design Capital, Winter Olympics
Metropolitan Plan 2 (2006–2011)	Economic development, knowledge	Torino Wireless
Metropolitan Plan 3 (2015–2025)	Social inequality, opportunity, regional co-operation	Integrated Metropolitan Mobility, Destination Torino (new investment agency)

### Vision, strategy, and coordination

From the mid-1990s until the global financial crisis, Turin established a reputation for inspirational and collaborative leadership and for improved coordination at the city and metropolitan levels. This cycle began when national reform allowed cities to directly elect mayors, giving them more fiscal and financial powers than before. Under Mayor Castellani, Turin launched a master plan in 1995 and in 2000 launched a strategic plan – Italy's first.

As part of the new arrangements, the city government was able to issue bonds to finance infrastructure improvements. Under Castellani, Turin began the first of two cycles of strategic planning with strong citizen and civic consensus and with cross-party agency Torino Internazionale acting as an implementation vehicle. In a city characterised by a relatively centralised system of leadership, many cite Castellani's vision and ability to build consensus as a key factor in the city's turnaround.<sup>1</sup>

Since the global financial crisis, the city's strategic agenda regarding competitiveness has receded. Although another round of strategic planning was mounted on the theme of social inequality, this did not translate into continued progress on the strategic development of the city. Over the past five years, the role of Torino Internazionale has become less about implementation, and more focused on research and advocacy, resulting in the lack of a local agency to drive development.<sup>2</sup>

The establishment of the Metropolitan City of Turin in 2015, partly to give a voice to actors at the edge of the city, has so far been ineffective because the new tier of government was granted relatively minor tasks and responsibilities.<sup>3</sup> The election to city office of the populist Five Star Movement in 2016 has shifted the focus away from competitiveness and towards social and welfare concerns, and from the metropolitan agenda to a strictly municipal approach.

At the same time, Turin's ability to mount a competent metropolitan competitiveness agenda is held back by limited institutional tools with which to engage investors, prioritise sectors, set targets, and promote activities and opportunities internationally. The result is many partial and uncoordinated actions.

Overall, Turin's momentum has slowed, partly because of a loss of confidence associated with the deep economic slowdown, partly because of the current priorities of the city administration, and partly because of a wider leadership vacuum and a prevailing mentality that Turin 'stops at the municipal border'. The conditions and appetite for a big new strategic prospectus are therefore absent. Instead, observers note the need for more tactical leadership to align short-term projects with a longer-term view.

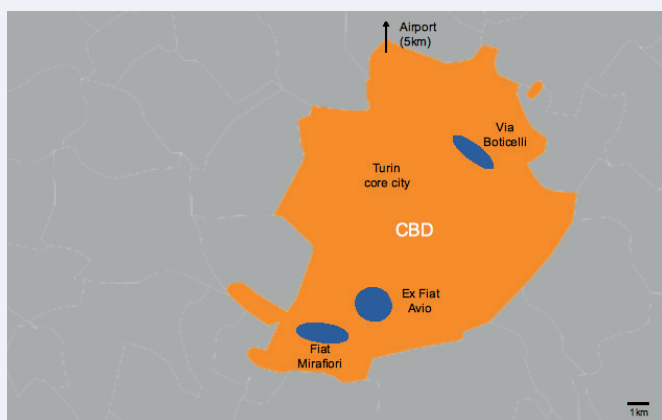
### Land use, planning system, and density

Twentieth-century Turin was a relatively dense city, but deindustrialisation led to widespread depopulation and suburbanisation. Specific plans have been implemented to re-urbanise the core city, and Turin is now an upper-medium-density city by European standards. Its core population density of 6,800 inhabitants per square kilometre is almost 50 per cent higher than that of Manchester and Liverpool,<sup>4</sup> and significantly higher than that of other secondary Italian cities such as Genoa, Palermo, and Bologna.<sup>5</sup>

The crisis of Turin's Fordist production model left more than 10 million square meters of disused industrial property throughout Turin.<sup>6</sup> Over the past 20 years, the city has consolidated growth in four major brownfield 'spines' totalling over 2 million square metres of land, followed by a series of neighbourhood regeneration schemes, in order to develop a more polycentric city.<sup>7</sup> Overall, nearly 60 per cent of Turin's brownfield land has been converted to productive use, with the rest waiting to be reactivated.<sup>8</sup> The redevelopment of the historic Barriera di Milano district, co-financed by the city, region, and European Regional Development Funds, is one of the largest and highest-profile projects of the recent cycle, with a strong focus on human scale, authenticity and attractiveness.<sup>9</sup>

Former industrial areas are now home to some of Turin's most prestigious and successful firms and institutions, such as General Motors and Microsoft.<sup>10</sup> The approval of the new M2 Turin Metro line, together with the extension of the M1 line, has given the conversion of such sites renewed impetus – with several projects now in progress anchored by important institutions (figure 8).

**Figure 8:** The location of major in-progress redevelopment projects in relation to the Turin central business district.



Source: *The Business of Cities*

A good example of this is the redevelopment of the 'ex Fiat Avio' area just south of the city centre, which now hosts both the Regione Piemonte headquarters and the Città del Salute, an aspiring innovation district based around the University Hospital within the City of Health and Science of Turin. Other examples are the redevelopment of Via Botticelli on the northern outskirts of the city near the former Alfa Romeo complex, led by one of the most important distribution chains in Piedmont, and the commercial-led redevelopment of the former Fiat Mirafiori area in the south.

The current city administration has prioritised retention of production facilities, upgrade of peripheral areas, and the prevention of social 'ghettos'.<sup>11</sup> As such, its new plan favours development for housing and retail and production space, and use of funds raised to improve social infrastructure.<sup>12</sup> Several larger mixed-use projects have been cancelled, including the Piazza Mirafiori and Variante 200.<sup>13</sup>

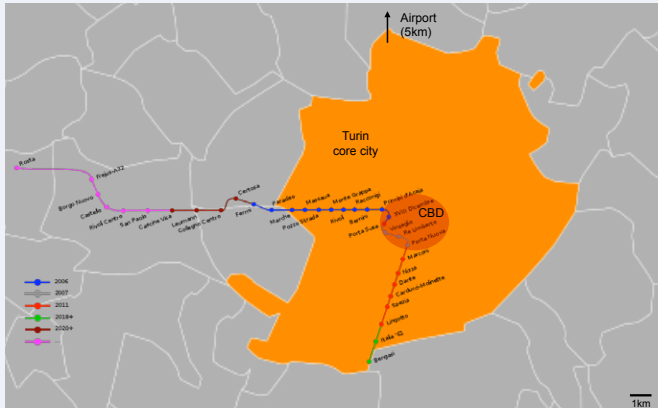
At the wider scale, Turin benefits from the fact that the newly defined metropolitan territory incorporates a range of natural assets, including arable farmland, lakes, rivers and coastal features, mountains, and forests. If pan-metropolitan collaboration can grow, the unique blend of rural and urban elements will become an important design and planning asset for Turin because in many instances the enabling infrastructure is already in place, such as the SFM metropolitan railway system.

### Infrastructure and services

Turin's infrastructure system has become much more competitive since the acceleration that preceded the 2006 Olympics, and further improvements are coming on line in the current cycle. Until 2006, Turin did not have a metro system; today, the city's transport portfolio includes a metro system, a tramway system, and underground railways that provide commuter, regional, and inter-city train services. A high-speed rail link with Lyon is also under construction. Turin still has one of the highest car ownership rates in Italy, but over the past decade efforts to reduce car dependency and promote public transport have been fairly successful.<sup>14</sup>

Turin's metro development is a key driver of development and improved accessibility. Turin's first metro line has been an essential east–west connection that links the city's main employment centres, key railway stations, and hospitals.<sup>15</sup> In 2011, the line was extended southwards to Lingotto so that it now also serves the city's main congress and exhibition centre, the shopping centre and university site at Lingotto, and the Molinette hospital.<sup>16</sup> Construction work on a westward extension to Cascine Visca began in 2016 and will provide an interchange with the Collegno main railway station, while a southern extension towards Piazza Bengasi is also in progress.

**Figure 9:** Turin's current and planned M1 Metro line in relation to the Turin metropolitan area.



Source: Wikipedia

A metro line scheduled to begin operating in the early 2020s will connect the southwestern suburbs with the northern district of Barriera di Milano,<sup>17</sup> linking the Politecnico di Torino and Piazza Castello, one of the major central squares of the city. There are also unconfirmed plans for a third line with stations serving the traditionally underserved community of Venaria Reale and improving access to the Juventus Stadium and Turin Airport.<sup>18</sup>

Turin's opportunity to become part of a larger multi-region economy is boosted by existing and forthcoming high-speed rail links. The Turin-to-Milan high-speed railway line was completed in 2009, cutting the travel

time between the two cities from one and a half hours to 50 minutes. Part of Corridor 5 of the EU's Trans-European high-speed rail network, the line has allowed Turin to capture benefits from regional trade and agglomeration. Commentators note the imperative now to upgrade the digital infrastructure and the natural environment along the Milan–Turin corridor, which is now a strategic axis of growth.

Preliminary work began in 2017 on the Turin-Lyon tunnel, which could halve passenger travel times between the two cities to 1 hour 45 minutes and have a positive effect on rail freight and car transport.<sup>19</sup> However, it remains to be seen when the project will, in fact, come to fruition.

In terms of the city's commuter transport system, upgrades to the city's extensive ten-line tramway network are helping increase speeds and produce time savings.<sup>20</sup> In 2012, Turin also constructed the Passante, an underground north–south rail link from Stura to Lingotto,<sup>21</sup> and plans are in place to link this to the wider suburban railway network.

The upgrade of an already strong infrastructure system is an important competitive asset for Turin. The most commonly observed priorities are to link the network with smarter multi-modal systems and plan much more ambitiously for the future of mobility. Trials with electric cars, the rollout of bike sharing, and the expansion of smart district heating are among the sustainable infrastructure initiatives that can be pursued in the current political environment. At the same time, ongoing improvements to regional connectivity – with Milan, Genoa, Lyon, and others – will be required if Turin is to derive the full benefits of borrowed scale.



The Torino Porta Susa railway station in Turin. (Wikimedia Commons)



## Competitive climate

### Costs and business investment

Turin's competitiveness has been held back in the past by a reputation for a sluggish business environment and stubbornly high labour costs. Today, business costs and the conditions to increase business investment are improving, thanks to recent national reforms that have eased rigidities in the labour market and reduced the barriers to hiring and firing workers.<sup>22</sup>

Business options in the office market are not yet highly competitive. Despite a stock of 1 million square metres of office space in the central submarket and a fairly strong recent track record of take-up, a large portion of Turin's office stock is outdated and not commercially attractive for the local market, mainly due to lack of flexibility and energy efficiency. Unlike Milan and Rome, Turin has not developed a visible office cluster, instead converting former industrial sites spread around the city to office use. The fragmentation and limited availability of grade A product hurts business efficiency and agglomeration.<sup>23</sup>

### Tax and regulatory framework

Turin's tax and regulatory framework has historically been a competitive disadvantage for the city in the international context, as well as in Italy as a whole. Turin not only tends to lag the average for members of the Organisation for Economic Co-operation and Development (OECD) when it comes to starting and doing business, but it also underperforms compared with the rest of Italy.

Turin is ranked as the best of 13 Italian cities for enforcing contracts, but the average cost of dispute resolution is higher than typical in the OECD, and the overall speed of enforcing contracts is a particular challenge – 855 days in Turin, compared with 553 days internationally. Turin is also only ninth among 13 cities nationally for the ease of starting a business and registering property.<sup>24</sup> The average business in Turin must undertake six procedures in order to register to start operations, compared with five across the OECD.

Overall, Italy ranks 50th out of 190 countries worldwide in terms of the ease of doing business, and Turin underperforms with respect to some of its Italian peers.<sup>25</sup> Recent national reforms have started to have a positive impact on business at the national level, including lowering the corporate tax rate from 27.5 per cent to 24 per cent. But it remains to be seen whether these reforms will have specific impacts on business activity in Turin.



The skyscraper of the headquarters of Intesa Sanpaolo. (Massimo Parisi, iStock)

### Political risks

Turin's overall level of political risk is moderate, but three ongoing areas of risk deserve mention:

- **Opposition to high levels of immigration.** Immigration has long been an important enabler for Turin's economy. However when combined with austerity and high unemployment, tensions are becoming more visible, especially between locals, the immigrant population from Africa and the Middle East, and the Roma population.<sup>26</sup> Multi-ethnic tension is viewed as a risk to Turin's strong social cohesion, which could in turn affect whether the city can attract investment in some areas.
- **The rise of Euroscepticism.** Opposition to the EU in Turin and Italy has been rising, which could have implications for Italy's long-term future in the Eurozone and its ability to service its euro-dominated debt.<sup>27</sup>
- **Turin's persistently high debt burden.** Turin has the highest public debt per capita of any Italian city – €3,000 per capita, and close to €3 billion in total.<sup>28</sup> Previously, such a high level of debt was justified by the transformational impact of major infrastructure investments. But today it is a major burden on the city's budget, placing limitations on future borrowing and placing the city at risk of instability if future shocks occur.



## Agglomeration

### Size and scale of internal market

Turin has the competitive advantage of a diverse metropolitan market to serve and very good access to the large market at the heart of western Europe. In spite of Fiat's decline, the city still has many internationally recognised companies, and manufacturing continues to play an unusually large role in the economy. Key domestic companies include BasicNet, FCA, Lavazza, Prima Industrie, and Reply, and foreign corporate headquarters include GM Powertrain, GE-Avio, Denso, Mahindra, and Kimberly-Clark.

Turin is Italy's third-largest economic centre after Rome and Milan. The metropolitan area, with a GDP of €66 billion, is rich in resources, industry, and agriculture and has a large consumer base of 2.3 million residents.<sup>29</sup> This is an important reason why more than 350 multinational companies are based in the region, with annual turnover of €18 billion.<sup>30</sup> But its market size and scale are constrained by a relative lack of large corporate customers and its low labour productivity compared with other northern Italian cities. The latest available data show that productivity in Turin is 16 per cent lower than in Bologna and 40 per cent lower than in Milan, cities that have a higher degree of specialisation in high-productivity sectors.<sup>31</sup>

Turin has the potential to borrow scale through deeper integration with Milan. The sharing or aggregation of assets, improved corridor development, and additional inter-regional and Alpine links are some of the catalysts for such integration.<sup>32</sup> There is some wariness about deliberate collaboration because Turin's advantages of low costs and family-friendliness are not perceived to have increased attraction or specialisation relative to Milan.

How Turin complements and co-operates with Milan to build borrowed scale will be important to the next cycle of its development. While it is unlikely that a formal bi-regional approach can emerge, many institutions and projects have the scope and the incentive to support partnership across the two cities. Chief among these are the two Politecnicos, which could pursue joint projects and positioning, and Milan-Malpensa Airport, which is strategically located between the two cities.

“ We need real co-operation with Milan. Collaboration is the new competition. A new alliance is needed. The integration of the Politecnicos would create a truly world-class university and send an important message. ”

- ULI workshop participant, September 2017

### Clustered specialisations

Turin has diversified its economy over the past 20 years and now has multiple internationally competitive specialisations with strong clustering effects. These specialisations are fostered and reinforced by a busy calendar of trade fairs that showcase art, books, food, technology, furniture, and jewellery, among others.

Five specialisations in particular stand out:

- automotive;
- design;
- information and communications technology;
- aerospace; and
- biotechnology and life sciences.

Turin's most enduring specialisation is in car production, historically dominated by the presence of Fiat.<sup>33</sup> Despite major changes to the structure and organisation of the industry, Turin's car manufacturing sector continues to play a relatively strong role in the local labour market, and over half of the value of Italian automotive output is concentrated in the city.<sup>34</sup> Turin is a strong candidate for selection as the site of the new Manufacturing 4.0 Competence Center, financed by the Ministry of Industry, which would bring with it the possibility that the city could evolve into a collaborative hub for advanced urban manufacturing.

The design and engineering industry has emerged as a strong spinoff from Turin's traditional strengths in the car sector. Industrial design has put Turin on the international map: the city has more than 800 companies specialising in design and now has significant expertise in design training and research. Its educational design cluster includes the Institute of Applied Arts and Design and the European Institute of Design, and a design centre is to be developed in Fiat's Mirafiori factory with the potential to host 2,000 students. Turin also hosts the offices of the World Industrial Design Association and was chosen as the World Capital of Design in 2008.<sup>35</sup> One company, Pininfarina, has been particularly successful: it designed Paris's highly successful and internationally renowned car share scheme Autolib'.

The automotive industry also catalysed the development of Turin's renowned IT cluster, which dates from the 1990s.<sup>36</sup> The Torino Wireless Foundation has provided leadership for the cluster since 2003,<sup>37</sup> creating Europe's first spatially defined wireless internet district, and an official IT innovation cluster was designated in 2009 by the Piedmont Regional Government.<sup>38</sup> Turin now hosts several digital incubators and many new small IT enterprises, and IT capability has grown among existing SMEs. Favourable conditions in the structure and character of the regional economy, together with a qualified research community and prestigious educational institutions, continue to ensure that the IT sector is well embedded in the Torinese economy.<sup>39</sup>

Turin's aerospace cluster is the fourth largest in Europe and the seventh largest in the world, with over 300 companies and a turnover of €6.5 billion.<sup>40</sup> The strength of the cluster is underpinned by five large companies, a strong research system, and networking initiatives such as Turin Piedmont Aerospace. The Aerospace and Defense Meetings Torino, an annual event created in 2007 by the Chamber of Commerce and the Foreign Centre, draws on a business-to-business-event packed calendar and increases the visibility of SMEs in the sector.<sup>41</sup>

Turin's capability in biotechnology and life sciences is boosted by six science and technology parks across the city, one dedicated exclusively to life sciences, and three sector-specific business incubators.<sup>42</sup> The University of Gastronomic Sciences, the world's first such institution, is located in Bra, 40 kilometres from the city centre, and the wider region has a growing reputation in the food innovation sector, not least for its commitment to the global 'slow food' initiative.



Renzo Piano's conversion of Fiat's Lingotto factory. (Flickr)

### Institutional engagement

The legacy of institutions engaging strongly in Turin's economy is a definite competitive advantage for the city. Academic and civic institutions have worked hard to improve the innovation ecosystem and have invested in catalytic initiatives to encourage agglomeration and development, while the Industrial Union of Torino business association aids with internationalisation and cross-sector fertilisation.

Turin's large institutions have often worked together to achieve results. One example is the I3P incubator, which in 1999 became Italy's first university-linked incubator and was founded as a nonprofit joint-stock consortium company. Its shareholders include the Politecnico di Torino, the Chamber of Commerce, and the Torino Wireless Foundation.<sup>43</sup> I3P facilitated the startup of more than 120 companies between 1999 and 2012, turning the region into one of Italy's leading performers for spinoffs.<sup>44</sup> The Fondazione CRT bank foundation partly funded the conversion of old warehouses into incubator facilities, while the EU and Italian ministries are the main funders of operating costs and local banks grant low-interest loans without a guarantee. But without the Politecnico and the strong collaboration with local bodies such as the Chamber of Commerce, the incubator would have lacked the financial support and visibility it needed.

These institutions are also important in supporting knowledge transfer. In the early 2000s, Turin's main bank foundations shifted from traditional philanthropy to an intermediary role between Turin's universities and the private sector, which greatly facilitated movement of people and knowledge transfer between firms and universities.<sup>45</sup> The Politecnico is perhaps still the most active institution, and its city centre base has helped bring it closer to businesses and the government. It also has adapted its courses to the city's new economic reality and converted Fiat's historic production plant into an automotive engineering school. Together with the University of Torino, it is among the main drivers of industrial innovation and of the political and cultural life of the whole city.

Turin's economy is also supported by the Industrial Union of Torino. The business association has 2,000 member companies, 85 percent of which are SMEs, with 200,000 employees. It helps foster new links across industries, but also helps SMEs grow into companies that are internationally oriented and can successfully promote Turin's research on the global stage. It provides the Turin industrial sector with a singular voice about how best to manage the impacts of economic disruption.

## Attractiveness to talent

### Human capital, liveability, and opportunity

Turin has become a much more attractive and appealing city in which to live, with excellent cultural facilities, reasonably priced housing, and a reputation for safety and for upholding the rule of law. Most residents regard life in Turin positively.<sup>46</sup> But this has not translated into a widely shared perception that Turin is a city of special opportunity and appeal for talent. This is primarily because of a stagnant labour market, limited social mobility and integration, and, to a lesser extent, environmental issues such as air pollution.

“Turin has huge geographic advantages – in terms of its hinterland, its mountains, wine, the sea, its family-friendliness. It is one of the best locations in Europe. This is not adequately exploited and marketed.”

- Participant in ULI workshop, September 2017

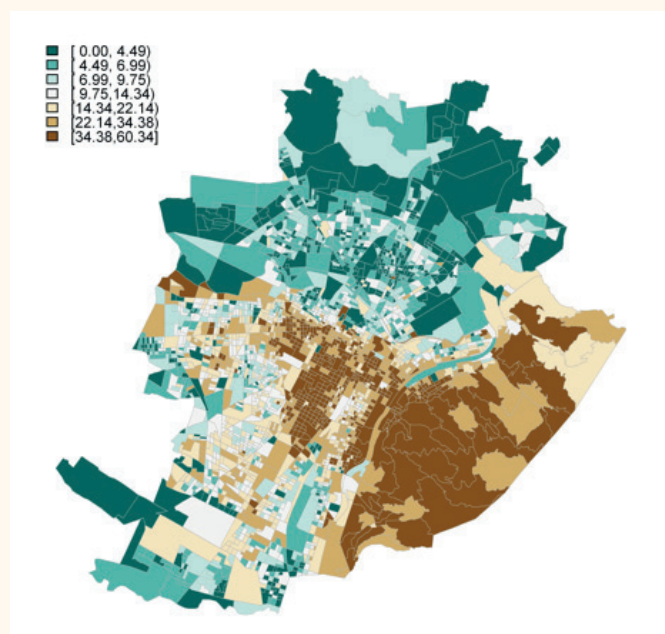
Since the early 2000s, Turin's universities have focused on attracting international students and strengthening the vocational training economy. Torino University now features more than 500 international exchange and co-operation agreements. The Politecnico di Torino has special programmes to support the attraction of South American students and a joint university in Shanghai, and has opened a department explicitly focused on internationalisation and the attraction of foreign students and researchers.<sup>47</sup> Many courses offered to international students are taught in English and look to build on the close links of the city's universities with Turin's vocational industries and institutions such as the European Training Foundation, the International Labour Organization training centre, and the United Nations System Staff College.

However, there is still a perception that Turin's universities need to be even more open to the world. Many international students that choose to study at Turin's universities leave after completing their studies because of the combination of limited job opportunities, barriers to entry in the startup and tech communities, and national immigration policies that do little to promote foreign entrepreneurship.

Overall, Turin performs well compared with its European peer cities in terms of health care and public spaces. EC Eurobarometer data show that 72 per cent of the residents are satisfied with the quality of health care in the city, and 84 per cent are satisfied with the quality and quantity of public spaces.<sup>48</sup> But resident satisfaction has decreased since 2012, and there are still several challenges that prevent Turin from being viewed as a priority destination for the higher skilled:

- **A weak labour market.** The latest available data show that Turin's metropolitan area had a much higher unemployment rate than that of other Italian provinces and northern cities such as Milan and Bologna – 11.9 per cent, compared with 8.2 per cent and 7.2 per cent, respectively, for those two cities.<sup>49</sup> This gap is especially pronounced among younger demographics, which means young people often look elsewhere for opportunity.<sup>50</sup>
- **Social integration.** In 2015, Turin was one of only five cities in Europe where an absolute majority of residents disagreed that the presence of foreigners was good for the city. Tensions between locals and migrants recently sparked violent protests in a former Olympic village used to house immigrant populations.<sup>51</sup> There is also a distinct pattern of geographical segregation within the city, as can be seen from the spatial pattern of educational attainment (see map). These pose challenges for Turin's ambitions for greater social integration.
- **High levels of air pollution.** Turin residents have among the greatest exposure to PM 2.5 particles of all city residents in the EU, and in the winter of 2015 air pollution reached such a dangerous level that the city offered residents free bus and metro rides in a bid to encourage people to use public transport.<sup>52</sup> The pollution is caused partly by vehicles, but also by emissions from inefficient industry, agriculture, and domestic heating.<sup>53</sup> Barometer data show that the majority of residents (63 per cent) are not satisfied with air quality in the city. These outcomes inhibit the city's ambitions in the smart and sustainable city space.

**Figure 10:** Distribution in Turin of adults with university qualifications, by percentage.



Source: UCL INEQ-CITIES Project (2012)

Further improvements in the quality of everyday life are required, and further efforts need to be made to align initiatives of this kind with the social priorities of the current city administration, for example on issues of air pollution and use of public transport.

### Innovation, technology, and enterprise

Invention and innovation are in Turin's DNA. The Piedmont region has 380 laboratories and more than 200 R&D centres, and is the top Italian region for private investment in R&D.<sup>54</sup> The province of Turin has the third-highest number of innovative startups in Italy.<sup>55</sup> And national-level changes to startup visa legislation and the launch of the industry 4.0 initiatives have promoted further entrepreneurship in the city.<sup>56</sup> Although the decline of Fiat has deprived new and small businesses of a major customer for innovative products, the ingredients for innovation remain.

Turin has an especially promising local ecosystem for social innovation. The European Commission recently ranked Turin the runner-up to Amsterdam for municipal efforts to encourage an open innovation culture.<sup>57</sup> Alongside founding Torino Social Innovation, a public programme designed to support new young enterprises working to address social needs, the municipality has also restructured an old industrial building to serve as a centre of open innovation as well as launched a programme dedicated to offering information and technical and financial support for proponents of innovative ideas.<sup>58</sup>

Turin also shows promise in other areas of innovation:

- Turin's incubator system has excellent potential, activating €60 million of risk capital since 2009. Turin is also home to the country's oldest and biggest Italian university incubator, I3P, which is ranked fifth in Europe and 15th worldwide.
- Turin's startup scene is becoming more attractive and visible globally. The UK-based Nesta Foundation recently chose Turin as the location for its Italian business. Nesta Italia, in turn, has rolled out a programme that will be focused on education, health and ageing, art and cultural heritage, and immigration.<sup>59</sup>

But despite progress, significant challenges to Turin's innovation ecosystem remain:

- Turin's market is notoriously difficult to break into. SMEs lack access to capital, which inhibits opportunities for business growth.
- Turin lacks a defined centre of gravity for the startup and tech-hub culture. Access to city government by entrepreneurs or developers seeking to create innovative space is often slow.
- There is still a shortage of investment-worthy startups. In Turin, by some measures there are only around 180 startups, while in Milan, Italy's leading tech city, there are 460.

These deterrents mean that foreign students who take advantage of heavily subsidised education in Turin tend to leave to start companies in other cities.<sup>60</sup>

Therefore, despite significant recent progress, Turin's innovation economy lags that of its European peers in terms of size and scale. Company data show that Turin has about one-third fewer identified innovative tech firms than the average of its European peers. While it has more than Florence and a number comparable to Bologna, it also has significantly fewer than Milan and Rome. Crunchbase's diagnostic analysis shows that none of the identified innovative tech firms in Turin ranks in the top 30,000 worldwide, compared with three in Bologna, eight in Rome, and 19 in Milan.<sup>61</sup>



**Figure 11:** Number of identified innovative companies in Turin, compared with European peers

City	Number of identified innovative companies	Number of global top 30,000 identified innovative companies
Glasgow	275	7
Rotterdam	216	7
Malmö	169	12
Liverpool	164	3
Stuttgart	151	11
Lyon	143	16
Lille	78	5
Bilbao	64	2
Turin	46	0
Newcastle	32	1

Source: Crunchbase, September 2017 figures.

Turin has much progress to make before it can be considered one of Europe's most innovation-oriented medium-sized cities. Given the city's potential vulnerability to technology change, it is imperative that Turin has a positive programme of city-led innovation, increased investment in technology, and measures to attract and retain creative workers in order to face the future with confidence and know-how.

### Brand, identity, and destination

Turin's identity and its messaging in the run-up to hosting the Winter Olympics in 2006 was widely viewed to have become more coherent, confident, and effective. But for many workshop participants and people interviewed for this report, the long economic slowdown and related social challenges appear to have eroded the city's sense of self and sense of direction. This, in turn, has weakened the city's identity in the global marketplace.

Before 2000, Turin was largely regarded internationally as an industrial city and not as a visitor destination. The Winter Olympics proved to be an important milestone for Turin's internal and external identity. Not only did the Games create a spotlight for the city, but they also provided a renewed impetus for branding efforts that began in 2000 as part of the city's first strategic plan. The Olympics helped the city reconnect with its pre-industrial DNA as an accessible and attractive city famous for its wine, gastronomy, and culture.

During this period, Mayor Castellani formed a dedicated partnership with Mercedes Bresso, the member of the European Parliament for the Piedmont region. Both were science-oriented professors with a clear vision for the future of metropolitan Turin, and therefore found it easy to work together to marry the needs of the city and region in the idea that Turin was 'always on the move'.<sup>62</sup> As a result, the mayor was able to realise his

goals – making the municipal government more outward looking, improving relationships with neighbouring municipalities and the Piedmont region, and actively involving the whole region in the debate about Turin's future.

The effects of this cycle of partnership are visible in the fact that from 2002 to 2011 tourist arrivals rose by 90 per cent and the number of international business conferences grew substantially.<sup>63</sup> Growth in leisure and business tourism also owed much to the cycle of infrastructure improvements, particularly in public transport and new museums and attractions.<sup>64</sup>

Over the past decade, however, Turin's culture of governance partnership has weakened, which has produced a perceived disconnect between how the city is branded internally (to residents) and externally (to tourists). The resident brand became increasingly oriented around the 'smart city' message, with a strong focus on transforming the northern 'Barriera di Milano' district into an ecologically and economically smart location.<sup>65</sup> Many of the promotional materials for 'smart city' are produced only in Italian, for local rather than global consumption. Meanwhile, Turin's association with gourmet and authentic food and wine and the links to traditional 'slow food' culture have also been actively promoted.

Turin's identity as a forward-thinking, confident, and historic post-industrial city reached a high-water mark of coherence and clarity before the global financial crisis. Recent changes reflect fragmentation and uncertainty. Questions are now being asked about what the city ultimately should become known for – and how the city's DNA of design, architecture, food, industrial innovation, and sport can align with a positive vision for Turin's role in the future world of cities.

## Recommendations

---

### A story fit for the future

- Turin needs to tell a new positive story about itself and its future that aligns with the big changes taking place globally – exponential technologies, the rise of Asia, demographic shifts, social networks, the circular economy, and the future of work. A new narrative will help restore private sector confidence and build a broader and more inclusive culture of leadership in civil society. It also can train attention on the strategic initiatives that can gain political backing in the short term.

### Applying Turin's DNA to new challenges

- A clear opportunity exists for Turin to expand its role in advanced mobility technology. By optimising its strengths in the auto industry, design, engineering, and transport, the city can become a leader and innovator in automated vehicles, battery storage, integrated transport technology, and information technology systems, as well as the promotion of walking and cycling.

### Adaptation to the Innovation economy

- Turin has a large amount of well-located, reusable, and affordable industrial space that could accommodate creative and innovative activities. A clearer offer to entrepreneurs and growth firms, combined with a value proposition to venture capital, is a necessary first step for Turin to retain more of its talent. Working towards reinventing the city as an enjoyable and well-served location is also likely to be a key factor in attracting new residents.

### Social innovation to build opportunity and prosperity

- Turin stands out for its initiatives in social inclusion and innovation – youth employment, inclusive jobs for people at the city fringes, health care, and training. It also has a strong identity as a city that is open to migrants: it is still the only Italian city where more than half its residents were born outside the city. These advantages can be expanded further to demonstrate that Turin is a model of a competitive city that is able to reach out to all its residents and genuinely expand access to opportunity across the whole income and skills spectrum.

### Partnership with Milan

- The character of Turin's co-operation with Milan and the wider trans-Alpine region will be important to its competitive prospects. The city may benefit from smarter co-operation with a competitive mind-set that would allow it to play a clearer set of roles complementary to Milan. Given the obstacles to any formal or governmental approach to regional co-operation, the creation of shared capability and joint projects involving institutions across the region (e.g., the Politecnico, Milan-Malpensa Airport, large firms, sports venues) may offer one way forward. Such a model of co-operation may draw inspiration from Malmö's relationship with Copenhagen and Rotterdam's synergies with Amsterdam.

## Contributors

---

ULI would like to acknowledge the following people who assisted with the development of this report and the case studies by taking part in research workshops and interviews.

<b>Eugenio Barcellona</b>	Studio Legale Pedersoli
<b>Valentino Castellani</b>	Former Mayor of Turin
<b>Federico De Giuli</b>	Architect, Developer and Entrepreneur
<b>Livio Dezzani</b>	Director of Urban Planning and Programmes, Piemonte Region
<b>Andrea Gavosto</b>	Fondazione Giovanni Agnelli
<b>Barbara Graffino</b>	Talent Garden
<b>Massimo Lapucci</b>	Fondazione CRT
<b>Enrico Maggi</b>	RecchiEngineering
<b>Carlo Micono</b>	AI Engineering
<b>Mario Montalcini</b>	Studio Casetta, Montalcini, Arcozzi–Masino, Menis & Associati
<b>Chiara Morandini</b>	Carlo Ratti Associati
<b>Giovanni Paviera</b>	Vitale & Co Real Estate
<b>Claudio Piccarreta</b>	JLL
<b>Francesco Profumo</b>	President, Compagnia di San Paolo
<b>Emanuela Recchi</b>	RecchiEngineering
<b>Prof Matteo Robiglio</b>	Politecnico di Torino
<b>Prof Andrea Rolando</b>	Politecnico di Milano
<b>Giuseppe Russo</b>	Luigi Einaudi Research and Documentation Centre
<b>Giancarlo Scotti</b>	President, ULI Italy
<b>Domenico Siniscalco</b>	Morgan Stanley
<b>Francesco Tresso</b>	Councillor, City of Turin
<b>Federico Zardi</b>	Piemonte Agency for Investments, Export and Tourism

## References

- <sup>1</sup> Power, A. (2016). Torino City Story. CASE Report. London School of Economics: London. Available at: <http://sticerd.lse.ac.uk/dps/case/cr/casereport106.pdf>; Saccomani, S. (2011). 'Reflecting critically on Turin's Strategic Planning Experience.' Politecnico di Torino. Available at: [http://porto.polito.it/2543293/1/Turin\\_s\\_Strategic\\_Planning\\_experience\\_2011.pdf](http://porto.polito.it/2543293/1/Turin_s_Strategic_Planning_experience_2011.pdf); Colantonio, A., Burdett, R. & Rode, P. (2013). *Transforming Urban Economies: Policy Lessons from European and Asian Cities*. Routledge: Oxon, UK.
- <sup>2</sup> Saccomani, S. (2011). 'Reflecting critically on Turin's Strategic Planning Experience.'
- <sup>3</sup> The Business of Cities Research; Boggero, G. (2016). 'The Establishment of Metropolitan Cities in Italy: An Advance or a Setback for Italian Regionalism?' *Perspectives on Federalism*, 8(3): E1-E22. Available at: <https://www.degruyter.com/downloadpdf/j/pof.2016.8.issue-3/pof-2016-0014/pof-2016-0014.pdf>.
- <sup>4</sup> citypopulation.de (n.d.). 'Torino'. Available at: [www.citypopulation.de/php/italy-piemonte.php?cityid=001272](http://www.citypopulation.de/php/italy-piemonte.php?cityid=001272).
- <sup>5</sup> URBACT (2010). 'Building Healthy and Sustainable Communities.' Analytical Case Study. Available at: [http://urbact.eu/sites/default/files/import/Projects/Building\\_Healthy\\_Communities\\_\\_BHC\\_/outputs\\_media/CaseStudy-Torino\\_Final.pdf](http://urbact.eu/sites/default/files/import/Projects/Building_Healthy_Communities__BHC_/outputs_media/CaseStudy-Torino_Final.pdf).
- <sup>6</sup> Curti, I. (n.d.). 'Urban Renewal.' Available at: [www.comune.torino.it/rigenerazioneurbana/en/](http://www.comune.torino.it/rigenerazioneurbana/en/).
- <sup>7</sup> Winkler, A. (2007). 'Torino City Report,' *Transforming Cities across Europe Interim Report, CASE report 41*. Available at: <http://eprints.lse.ac.uk/5134/1/CASEREport41.pdf>.
- <sup>8</sup> Bet Torino (2014). 'Torino Evolving City: You Can Bet on Torino.' Presentation. Available at: <https://issuu.com/bettorino/docs/2dictardopomeridotto>.
- <sup>9</sup> URBACT (2010). 'Building Healthy and Sustainable Communities.'
- <sup>10</sup> Colantonio, A., Burdett, R. & Rode, P. (2013). *Transforming Urban Economies*.
- <sup>11</sup> Tacconi, A. (2016). 'Revisione Piano Regolatore di Torino.' Available at: <http://www.vicini.to.it/vicini/2017/09/revisione-piano-regolatore-torino/>; Città di Torino (2017). 'Piano Regolatore Generale. Approvato dalla giunta l'atto di indirizzo per la revisione.' Available at: [http://www.comune.torino.it/ucstampa/comunicati/article\\_300.shtml](http://www.comune.torino.it/ucstampa/comunicati/article_300.shtml); Cardia, L. (2015). 'Nova Coop arrives in the former Fiat Mirafiori area: a new production center takes shape.' Available at: <https://rottasutorino.blogspot.co.uk/2015/01/nellarea-ex-mirafiori-arriva-novacoop-per-il-polo-produttivo.html>.
- <sup>12</sup> Versienti, P. (2012). 'Un supermercato e nuovi insediamenti. Ecco la nuova via Botticelli.' Available at: <http://www.torinotoday.it/cronaca/lavori-supermercato-via-botticelli-ex-alfa-romeo.html>; Decorato, A. (2017). 'Torino, il Comune incassa 44 milioni dall'apertura di 13 supermarket.' Available at: <http://www.mole24.it/2017/04/19/torino-il-comune-incassa-44-milioni-dallapertura-di-13-supermarket/>.
- <sup>13</sup> Lo Spiffero (2015). 'Mirafiori, approvato progetto rigenerazione urbana.' Available at: [http://lospiffero.com/ls\\_article.php?id=23003](http://lospiffero.com/ls_article.php?id=23003).
- <sup>14</sup> Eltis (2014). 'A new Sustainable Urban Mobility Plan has been approved in Turin (Italy).' Available at: [www.eltis.org/discover/news/new-sustainable-urban-mobility-plan-has-been-approved-turin-italy-0](http://www.eltis.org/discover/news/new-sustainable-urban-mobility-plan-has-been-approved-turin-italy-0).
- <sup>15</sup> Systra (n.d.). 'Turin Metro – Line 1.' Available at: [www.systra.com/en-project/turin-metro-line-1](http://www.systra.com/en-project/turin-metro-line-1).
- <sup>16</sup> Metro-report.com (2011). 'Torino metro reaches Lingotto.' Available at: [www.metro-report.com/news/single-view/view/torino-metro-reaches-lingotto.html](http://www.metro-report.com/news/single-view/view/torino-metro-reaches-lingotto.html).
- <sup>17</sup> Mapa-metro.com (n.d.). 'Metro of Turin.' Available at: <http://mapa-metro.com/en/italy/turin/turin-metro-map.htm>.
- <sup>18</sup> Revolv.com (n.d.). 'Turin Metro.' Available at: [www.revolv.com/topic/Turin%20Metro&item\\_type=topic](http://www.revolv.com/topic/Turin%20Metro&item_type=topic).
- <sup>19</sup> Grey, E. (2016). 'Turin-Lyon High-Speed Rail Project: controversy at the heart of Europe.' Available at: [www.railway-technology.com/features/featureturin-lyon-high-speed-rail-project-controversy-at-the-heart-of-europe-4896951/](http://www.railway-technology.com/features/featureturin-lyon-high-speed-rail-project-controversy-at-the-heart-of-europe-4896951/).
- <sup>20</sup> Tramditorino.it (n.d.). 'Prossima Fermata: Falchera.' Available at: [www.tramditorino.it/falchera.htm](http://www.tramditorino.it/falchera.htm).
- <sup>21</sup> Schwandl, R. (2006). 'Torino.' Available at: [www.urbanrail.net/eu/it/tor/torino.htm](http://www.urbanrail.net/eu/it/tor/torino.htm).



<sup>22</sup> Eurostat Press Office (2016). *Hourly labour costs ranged from €4.1 to €41.3 across the EU Member States in 2015*. Eurostat Press Release (2016: 61). Eurostat Press Office: Luxembourg. Available at: <http://ec.europa.eu/eurostat/documents/2995521/7224742/3-01042016-AP-EN.pdf/453419da-91a5-4529-b6fd-708c2a47dc7f>.

<sup>23</sup> JLL (2016). *Torino Urban Profile 2016: Real estate market overview*. JLL: London. Available at: [www.centroestero.org/repository/13\\_05\\_2016\\_9\\_30\\_jll-torino-urban-profile-2016.pdf](http://www.centroestero.org/repository/13_05_2016_9_30_jll-torino-urban-profile-2016.pdf).

<sup>24</sup> World Bank (2017). 'Ease of Doing Business in Turin – Italy.' Available at: [www.doingbusiness.org/data/exploreeconomies/italy/sub/turin#starting-a-business](http://www.doingbusiness.org/data/exploreeconomies/italy/sub/turin#starting-a-business).

<sup>25</sup> World Bank (2017). 'Ease of Doing Business in Italy.' Available at: [www.doingbusiness.org/data/exploreeconomies/italy](http://www.doingbusiness.org/data/exploreeconomies/italy).

<sup>26</sup> Amnesty International (2017). 'EU Executive fails to act as pregnant Romani women and infants are rendered homeless in Italy.' Available at: [www.amnesty.org/en/latest/news/2017/06/eu-executive-fails-to-act-as-pregnant-romani-women-and-infants-are-rendered-homeless-in-italy/](http://www.amnesty.org/en/latest/news/2017/06/eu-executive-fails-to-act-as-pregnant-romani-women-and-infants-are-rendered-homeless-in-italy/).

<sup>27</sup> Bryson, J. & Kinnaman, A. (2017). 'A Pre-Election Primer on the Italian Economy.' Special Commentary. Available at: <https://www08.wellsfargomedia.com/assets/pdf/commercial/insights/economics/special-reports/italian-political-risk-20170608.pdf>.

<sup>28</sup> Colantonio, A., Burdett, R. & Rode, P. (2013). *Transforming Urban Economies*.

<sup>29</sup> Eurostat (n.d.). 'Metropolitan Regions Database.' Available at: <http://ec.europa.eu/eurostat/web/metropolitan-regions/data/database>.

<sup>30</sup> Bet Torino (2014). 'Torino Evolving City: You Can Bet on Torino.'

<sup>31</sup> OECD (n.d.). 'Metropolitan areas.' Database. Available at: <https://stats.oecd.org/Index.aspx?DataSetCode=CITIES>.

<sup>32</sup> Power, A. (2016). *Torino City Story*.

<sup>33</sup> School of Geography, University of Leeds (2016). 'Case Study Cities – Turin.' Available at: [www.geog.leeds.ac.uk/research/csj/projects/towardsanewurbandeal/casestudycities/turin/](http://www.geog.leeds.ac.uk/research/csj/projects/towardsanewurbandeal/casestudycities/turin/).

<sup>34</sup> Power, A. (2016). *Torino City Story*.

<sup>35</sup> Colantonio, A., Burdett, R. & Rode, P. (2013). *Transforming Urban Economies*.

<sup>36</sup> Castelli, C., Florio, M. & Giunta, A. (2008). 'The competitive repositioning of automotive firms in Turin: Innovation, internationalisation and the role of ICT,' *Milan European Economy Workshops Working Paper n. 2008-43*. Available at: [http://wp.demm.unimi.it/files/wp/2008/DEMM-2008\\_043wp.pdf](http://wp.demm.unimi.it/files/wp/2008/DEMM-2008_043wp.pdf).

<sup>37</sup> De Poli, C. (2009). 'Clusters and cluster policies: the case of Torino Wireless,' *Proceedings of the XXX Italian Conference of Regional Sciences*. Available at: [www.aisre.it/images/old\\_papers/DEPOLI09.pdf](http://www.aisre.it/images/old_papers/DEPOLI09.pdf).

<sup>38</sup> Torino Wireless (n.d.). 'ICT Innovation Cluster – A bridge enabling competitiveness.' Available at: [https://torinowireless.it/ict\\_innovation\\_cluster.php](https://torinowireless.it/ict_innovation_cluster.php).

<sup>39</sup> De Poli, C. (2009). 'Clusters and cluster policies.'

<sup>40</sup> BCI Aerospace (2017). 'Torino-Piemonte, a leading global hub for aerospace.' Available at: <http://torino.bciaerospace.com/index.php/piemonte-region-aerospace>.

<sup>41</sup> Greco, F. (2015). 'Turin opens the "Aerospace and Defence Meetings" pushing the cooperation between major players and SMEs.' Available at: [www.italy24.ilsole24ore.com/art/business-and-economy/2015-11-18/salone-aerospazio-125547.php?uuid=ACSEeWcB](http://www.italy24.ilsole24ore.com/art/business-and-economy/2015-11-18/salone-aerospazio-125547.php?uuid=ACSEeWcB).

<sup>42</sup> Biotechinitaly.com (n.d.). 'The Piedmont Biotechnology Cluster.' Available at: [www.biotechinitaly.com/pdfuffici/piemonte.pdf](http://www.biotechinitaly.com/pdfuffici/piemonte.pdf).

<sup>43</sup> Power, A. (2016). *Torino City Story*.

<sup>44</sup> The Business of Cities Research.

<sup>45</sup> Colantonio, A., Burdett, R. & Rode, P. (2013). *Transforming Urban Economies*.

- <sup>46</sup> Teleport (n.d.). 'Quality of life in Turin.' Available at: <https://teleport.org/cities/turin/?ref=jobbatical>.
- <sup>47</sup> Politecnico di Torino (n.d.). 'International Campus.' Available at: <http://www.polito.it/ateneo/internazionalizzazione/index.php?lang=en>.
- <sup>48</sup> European Commission (2016). *Quality of Life in European Cities*. Publications Office of the European Union: Luxembourg. Available at: [http://ec.europa.eu/regional\\_policy/sources/docgener/studies/pdf/urban/survey2015\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/urban/survey2015_en.pdf).
- <sup>49</sup> Eurostat (n.d.). 'Metropolitan Regions Database.'
- <sup>50</sup> Ibid.
- <sup>51</sup> UCL INEQ-CITIES (n.d.). 'Turin: Socio-Economic Indicators.' Available at: <https://www.ucl.ac.uk/ineqcities/atlas/cities/turin/turin-sei>.
- <sup>52</sup> Scammell, R. (2013). 'Turin residents most at risk of deadly pollution.' Available at: <https://www.thelocal.it/20131209/turin-residents-most-at-risk-of-deadly-air-pollution>; Perry, F. (2015). 'Turin offers free public transport rides to combat dangerous pollution levels.' Available at: [www.theguardian.com/cities/2015/dec/11/turin-free-public-transport-rides-combat-pollution](http://www.theguardian.com/cities/2015/dec/11/turin-free-public-transport-rides-combat-pollution).
- <sup>53</sup> Giovannini, R. (2017). 'Italia, qui l'inquinamento uccide di più.' Available at: <http://www.lastampa.it/2017/09/28/scienza/ambiente/focus/italia-qui-linquinamento-uccide-di-pi-C07uY1aEC5EdcEwDbVNilK/pagina.html>.
- <sup>54</sup> Biotechinitaly.com (n.d.). 'The Piedmont Biotechnology Cluster.'; Vellar, A. (2015). 'This Is Where Innovations Change Industries: Turin.' Available at: <http://magazine.startus.cc/this-is-where-innovations-change-industries-turin/>.
- <sup>55</sup> Carter, D. (ed.). (2016). *Remaking Post-Industrial Cities: Lessons from North America and Europe*. Routledge.
- <sup>56</sup> Cometto, M. (2013). 'Gran Torino. The City of Turin's startups look at the NYC model.' Available at: <http://tech-and-the-city.com/2013/11/gran-torino-the-city-of-turins-startups-look-at-the-nyc-model/>.
- <sup>57</sup> Research Italy (2016). 'iCapital 2016: Turin is the second innovative European city.' Available at: [www.researchitaly.it/en/success-stories/icapital-2016-turin-is-the-second-innovative-european-city/#null](http://www.researchitaly.it/en/success-stories/icapital-2016-turin-is-the-second-innovative-european-city/#null).
- <sup>58</sup> Open Innovation Center Turin (2017). *Open Innovation Summit 2017: Opportunity Report*. Available at: [www.openinnovationsummit.org/wp-content/uploads/2017/04/opportunity-report.pdf](http://www.openinnovationsummit.org/wp-content/uploads/2017/04/opportunity-report.pdf).
- <sup>59</sup> Romeo, G. (2017). 'Digitale e social innovation, sbarca in Italia Nesta.' Available at: <http://www.ilsole24ore.com/art/tecnologie/2017-10-17/digitale-e-social-innovation-sbarca-italia-nesta-155519.shtml?uuid=AEHXjGqC>.
- <sup>60</sup> Pham, J. (2015). 'Why Turin struggles to build a startup community, and what Seattle can learn.' Available at: [www.bizjournals.com/seattle/morning\\_call/2015/05/why-turin-struggles-to-build-a-startup-community.html](http://www.bizjournals.com/seattle/morning_call/2015/05/why-turin-struggles-to-build-a-startup-community.html).
- <sup>61</sup> Crunchbase (2018). 'Homepage.' Available at: [www.crunchbase.com/#/home/index](http://www.crunchbase.com/#/home/index).
- <sup>62</sup> Vanolo, A. (2008). 'The image of the creative city: Some reflections on urban branding in Turin,' *Cities*, 25(6): 370-382. Available at: [http://ac.els-cdn.com/S0264275108000772/1-s2.0-S0264275108000772-main.pdf?\\_tid=b890b53e-7e7e-11e7-97fb-00000aacb35d&acdnat=1502447018\\_6f8019f5d7329451f5d75bafc34da383](http://ac.els-cdn.com/S0264275108000772/1-s2.0-S0264275108000772-main.pdf?_tid=b890b53e-7e7e-11e7-97fb-00000aacb35d&acdnat=1502447018_6f8019f5d7329451f5d75bafc34da383).
- <sup>63</sup> Ferrari, S. & Guala, C. (2017). 'Mega-events and their legacy: Image and tourism in Genoa, Turin and Milan,' *Leisure Studies*, 36(1): 119-137. Available at: [www.tandfonline.com/doi/pdf/10.1080/02614367.2015.1037788?needAccess=true](http://www.tandfonline.com/doi/pdf/10.1080/02614367.2015.1037788?needAccess=true).
- <sup>64</sup> Olympic.org (2014). 'Turin enjoys on-going tourism legacy of 2006 Winter Games.' Available at: [www.olympic.org/news/turin-enjoys-on-going-tourism-legacy-of-2006-winter-games](http://www.olympic.org/news/turin-enjoys-on-going-tourism-legacy-of-2006-winter-games).
- <sup>65</sup> De Ambrogio, E. (2013). 'Towards Torino Smart City.' Presentation. Available at: [www.itu.int/en/ITU-T/climatechange/symposia/201305/Documents/info/Presentations/s7p6-ElenaDeambrogio.pdf](http://www.itu.int/en/ITU-T/climatechange/symposia/201305/Documents/info/Presentations/s7p6-ElenaDeambrogio.pdf).



**Urban Land Institute**

50 Liverpool Street  
London  
EC2M 7PY  
United Kingdom

Tel: +44 (0)20 7487 9570  
Email: [ulieurope@uli.org](mailto:ulieurope@uli.org)  
Web: [www.europe.uli.org](http://www.europe.uli.org)