BARCELONA

REPORT

2011

OBSERVATORI BARCELONA

In 2010, in a context of clear recovery of the global economy, Barcelona pulled out of the most severe recession experienced in decades. Nevertheless, growth economic is still modest and the magnitude of the consequences of the crisis for companies, financial entities and the job market leads experts to predict a long recovery process, which poses complex challenges.

In this situation, the municipal government's top priority can be no other than to drive the recuperation of economic activity and the creation of employment, in order to move towards a productive model that allows our companies to gain competitiveness and generates opportunities for residents –particularly those who are unemployed.

The City Council is working towards this goal in coordination with trade unions CCOO and UGT, business organizations Foment del Treball and Pimec, and the Government of Catalonia under the framework of the Agreement for Quality Employment in Barcelona. This joint action instrument has allowed for a wide-reaching network of programs and services to be rolled out in the city to foster job orientation and placement, which drives new economic activity.

On the other hand, it must be noted that the municipal government's policy of austerity has been compatible with an investment of more than 3,000 million euros during the 2007-2011 period. This unprecedented investment has had a significant effect on improving public space and helping the economy recovery.

Obviously, beyond the short-term actions to ease the effects of the crisis, reactivation of the economy requires ambitious middle and long-term thinking, as Barcelona has been able to do in previous recessions to pull out even stronger.

In this sense, we must appreciate the fact that the Barcelona Metropolitan Area now has a new government body, which has a valuable new instrument –the Barcelona Strategic Metropolitan Plan 2020- that establishes a view of the future we want to work towards for 2020: consolidating the BMA as one of the most attractive and influential European regions for global innovative talent, with a model of quality social integration and cohesion. A vision where concepts like sustainability, the city as a capital of the Mediterranean area, global leadership in knowledge-driving sectors and, at the same time, fostering the competitiveness of traditional sectors and attracting innovative talent are key.

Certainly, Barcelona has made a clear commitment to continue being not just an attractive city with a high quality of life, but an economic motor with a rich productive fabric oriented towards activities that incorporate more knowledge, creativity and innovation –keys to competitiveness in the 21st century.

This is why, recently, we have been able to take stock of the progress made over the first ten years of the 22@ innovation district, an emblematic project that is already a benchmark for other cities and has made it possible for the Poblenou district to now have 7,000 companies with an important presence of knowledge-intensive activities.

One of the important challenges Barcelona is facing today is how to apply this transformation philosophy in other areas of the city -like the Zona Franca area- and drive strategic clusters that allow for the creation of true innovation ecosystems in areas like agrifood, creative industries and technology.

The Barcelona area is the main export hub in the Spanish economy and experts agree that the exports sector is one of the key vectors for pulling out of the crisis. However, in order to strengthen this sector's competitiveness and dynamic, we must continue working to improve connectivity infrastructures. The future Sagrera station will, without a doubt, be an important step forward in this regard -both in terms of intra-metropolitan connectivity and in that with the European network- and will make a significant contribution to the effective articulation of the Barcelona-Lyon mega-region. We must continue working, however, on other key areas, like the strategic value of the Mediterranean corridor and increasing intercontinental connections at the airport.

Barcelona aims, thus, to project itself internationally on a global level, on a Mediterranean level, and on a European level; but also pays particular attention to policies of proximity, quality public spaces, and economic and social balance in the city's 73 neighborhoods. The promotion of proximity-based retail and the renovation of municipal markets are particularly relevant policies in this sense, given the unique role these activities play in generating wealth, urban dynamics and social cohesion.

In a context where competition between regions and metropolitan areas -the true driving forces behind the global economy- is ever stronger, one of our city's most important assets in the process of economic recovery is the positive international positioning it has achieved, as the Barcelona Observatory reports demonstrate year after year.

By presenting this, the ninth yearly report, I would like to congratulate the technical team for their work, thank all those institutions and organizations that support this labor, and confirm, once again, that public/private collaboration, in its many manifestations, is and will be one of the keys to progress in Barcelona.

Jordi Hereu i Boher
Mayor of Barcelona

I am pleased to contribute to the Barcelona Observatory report, for the first time, an unpublished analysis of the economic situation in the Barcelona Metropolitan Area (BMA) in 2010 and forecasts for 2011, based on a survey on the business climate carried out by the Barcelona Chamber of Commerce and the Catalonia Institute of Statistics.

2010 was a little better than 2009. Economic activity began to recover positive growth rates and the feared return of the recession did not come to fruition. Furthermore, some sectors began to have positive results in 2010. In fact, the year closes with a smaller decrease in the annual GDP than expected, although we can't speak of recovery given that jobs are not yet being created.

Our survey on the business climate in the BMA shows that the sectors with the best results in 2010 were industry and tourism and, to a lesser degree, business services. In fact, the industrial and hotel sectors registered increased turnover and, at the end of the year, showed that business progress began to be moderately positive. Nevertheless, there has been no appreciable improvement in retail trade or construction, which even worsened.

Exports were a key element to explain that the decrease in GDP was lower than initially expected and, specifically, in explaining the improved evolution of industrial activity. In these difficult moments, our companies have looked abroad to take advantage of recuperation in other European economies as well as the opportunities in emerging economies, like China, where potential for growth is high.

Specifically, the results of our survey of companies in the BMA show an increase in the percentage of industrial export companies in 2010 and the recuperation of growth in exports, leaving behind the downward trend of 2009.

Furthermore, we must highlight that evolution in industry, both in the BMA and the Catalan sector, has been better than in the Spanish industry, showing that our industry is recovering more quickly than that in Spain and, therefore, that we continue to be leaders in the country.

These elements that are beginning to pull us out of the crisis are our economy's strength and, therefore, we must foster them. On one hand, exports will be key to defining when and how we pull out of the crisis. On the other hand, significant growth in exports will drive productive investment, which will be another decisive element to pulling out of the crisis. And, this way, we will be able to build a new growth model based on the pillars that drive increase of productivity and competitiveness in our economy and, therefore, elevate its potential for growth while driving the creation of jobs.

From a sectorial point of view, industry and tourism are driving the way out of the crisis. I have already spoken of industry, but tourism is another foundation of our economy. Barcelona closed off the year with a record high of 7,133,524 visitors. The number of passengers at the Barcelona airport totaled nearly 30 million in 2010, consolidating El Prat as one of the top ten airports in Europe. Furthermore, our city has regained its second-place position on the world ranking for international meetings for the first time since 2005.

Looking towards 2011, forecasts for companies in the Barcelona Metropolitan Area improve compared to 2010 and, moreover, are better than those for the Catalan economy, particularly regarding investment, according to the results of our survey on business climate. Forecasts made by businesspeople in the BMA point to growth of investment of roughly current 3% compared to relative stagnation expected for Catalonia. Industry will be the main sector driving investment in the BMA, with an expected increase of 13%, nearly double that expected in Catalonia; and in second place, the hotel sector, which expects growth of nearly 3%, triple that of Catalonia.

Forecasts for growth of exports in industry are also positive, with 4% for the BMA. This growth is less than that registered in 2010, but still high enough to drive investment. Therefore, we are on the right road, even though we still have a long way to go.

I would like to finish by thanking the technical team for their work and effort to continually improve the Barcelona Observatory project, and all those organizations that, once again, have collaborated by providing information and enriching the contents of this report we are presenting.

Miquel Valls i Maseda
President of the Barcelona Chamber of Commerce

BARCELONA

SUMMARY

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INTRODUCTION

2011

2010 was characterized by the recovery of the global economy and the main OECD countries, which registered positive GDP growth in a context of dynamic international trade and reactivation of manufacturing. This positive evolution also took place in Spain and Catalonia, where indicators like exports and tourism were growing at a good pace by the end of the year, but with a much more moderate increase in the GDP due to weak internal demand and an important decrease in public expenditure. The slight recuperation in activity has led to improved business confidence rates and better expectations for 2011 in terms of investment, exports and turnover, as shown in the analysis of the business climate in the Barcelona Metropolitan Area carried out by the Chamber of Commerce.

In this context, where economies like that of Spain are subjected to a high degree of uncertainty, this report prepared by the Observatory shows that Barcelona maintains its positive positioning on an international level, in addition to having a highly recognized city brand. It is particularly relevant in this regard that Barcelona continues to be ranked among the top five European cities for business according to Cushman & Wakefield's European Cities Monitor, for the sixth consecutive year. Moreover, it is still ranked the best city for workers' quality of life, and this same report ranks Barcelona second in Europe in terms of promoting itself as a business center and the fourth most recognized by executives surveyed. Likewise, the city is ranked near the top of other prestigious lists, like that of FDI Magazine (from the Financial Times) which puts Barcelona fifth on its ranking of European cities and regions of the future 2010/2011, and the Toronto Board of Trade Scorecard on Prosperity 2010, which ranks the city the third most prosperous in the world and the most attractive in terms of business environment.

Based on these favorable results, the Barcelona City Council, Chamber of Commerce, Government of Catalonia and other private and public economic stakeholders coordinate and develop joint actions and programs to consolidate the Barcelona brand and its international positioning. In fact, cooperative leadership continues to be the trait that characterizes development policies in the city, and the Barcelona Metropolitan Area (BMA) has a new government body with a valuable instrument, the Barcelona Strategic Metropolitan Plan, which is the result of a consensus reached by a number of institutional, economic and social stakeholders and poses a shared roadmap for the 36 municipalities in the area for 2020. This map is inspired by the desire to consolidate the BMA as one of the most attractive and influential European regions for global innovative talent with a quality model for social cohesion and integration.

The city also has an integrated policy based on consensus of the stakeholders to promote quality employment and foster the creation of new companies, two essential objectives given the current state of the job market. In this regard, under the framework of the Local Agreement for Quality Employment signed in 2008 –promoted by the Barcelona City Council, Foment de Treball and Pimec- work has been done to reactivate the economy, help the unemployed and drive new professions and quality employment. This initiative has helped more than 160,000 participants and created some 15,000 jobs: 6,500 through the creation of 3,400 new companies and 8,500 through placement programs.

Barcelona's commitment and sustained action over the past decade to move towards a new model of economic growth based on knowledge, innovation and creativity has produced visible results. Noteworthy in this regard is the level of development achieved by the 22@ project, which in its first ten years has doubled the number of companies working in the district, for a total of 7,000. Based on this positive example, the Government of Catalonia and the Barcelona City Council are now jointly promoting the Barcelona Economic Triangle, which is made up of three zones of economic activity in the Barcelona area -22@, Delta BCN/Barcelona Innovation Zone and Parc de l'Alba- with more than 7 million square meters of surface area devoted mainly to knowledge-intensive activities and the ability to generate more than 200,000 new jobs. Furthermore, Barcelona has recently been recognized as the best city in Spain, 22nd in Europe and 54th in the world, for doing science of excellence (Nature, October 2010). Barcelona was also recognized as a "City of Science and Innovation" in 2010 by the Ministry of Science and Innovation for its commitment to driving R&D, and was the only city with more than 100,000 inhabitants to receive this distinction. This commitment has made it possible for Barcelona to boast 210 technology parks and technology and research centers and nine international benchmark science and technology facilities in 2010.

Experts agree that internationalization of the economy will be one of the main driving forces behind recovery. For an economy like Barcelona's, characterized by a strong foundation in exports, this is a strategic opportunity that requires the appropriate support infrastructures (a port with increased capacity, airport with good international connections, etc.) that will allow the city to make the most of its potential. Additionally, the future high-speed train station in Sagrera, in addition to being a new hub of economic activity in the northern part of the city, will generate a change in scale from the metropolis towards the gradual and effective creation of the BarceLyon megaregion, which could become Barcelona's natural unit of growth.

Regarding urban tourism, in which Barcelona is an international benchmark, the City Council passed the city's Strategic Tourism Plan 2015 in October 2010. This plan lays the foundation for tourism based on a model that fosters a balance between residents and visitors and proposes the actions needed to guarantee economic, social and environmental sustainability, as well as continuity and consolidation of Barcelona's international leadership in this area.

In the area of training and human capital, Barcelona is committed to creating a strategic Higher Education cluster to reinforce strategies to attract and retain talent through assets like being the only city in Europe to have two business schools of internationally renowned prestige (IESE and ESADE). The city already has a significant number of workers with tertiary education and, according to the Times Higher Education Ranking, the UB and Unviersity Pompeu Fabra (UPF) are among the top 200 in the world. Furthermore, the Polytechnic University of Catalonia has been named an International Campus of Excellence for its project "UPC Energy Campus, Energy for Excellence". It must also be noted that the Barcelona City Council received the Eurocities 2010 award for its "Do it in Barcelona" program. This initiative is promoted by Barcelona Activa and aims to attract business talent and activity to the city.

In line with the 2010 Strategic Metropolitan Plan, Barcelona aims to become a benchmark of sustainability for cities in warm climates. Stressing the compact urban model of a Mediterranean city, Barcelona has been working for over a decade on energy efficiency and savings, promoting renewable energy, sustainable mobility and environmental improvement, thanks to the commitment of the Administration, companies and general society. In this regard, municipal policy to support proximity-based retail sales and municipal markets, in addition to promoting activity with a highly significant economic impact, is also in line with the city's values of sustainability and social cohesion.

Barcelona, thus, is facing the coming decade with a strategic roadmap based on the steps toward recovery registered in 2010 and the positioning of the Barcelona city brand as a benchmark in quality on an international level. The current context, in which reactivation of the Catalan and Spanish economies is taking place at a slower pace that in many OECD countries, makes it more necessary than ever to drive the move towards a productive model based on knowledge, creativity and sustainability, all of which are key to competitiveness and quality employment in the 21st century.

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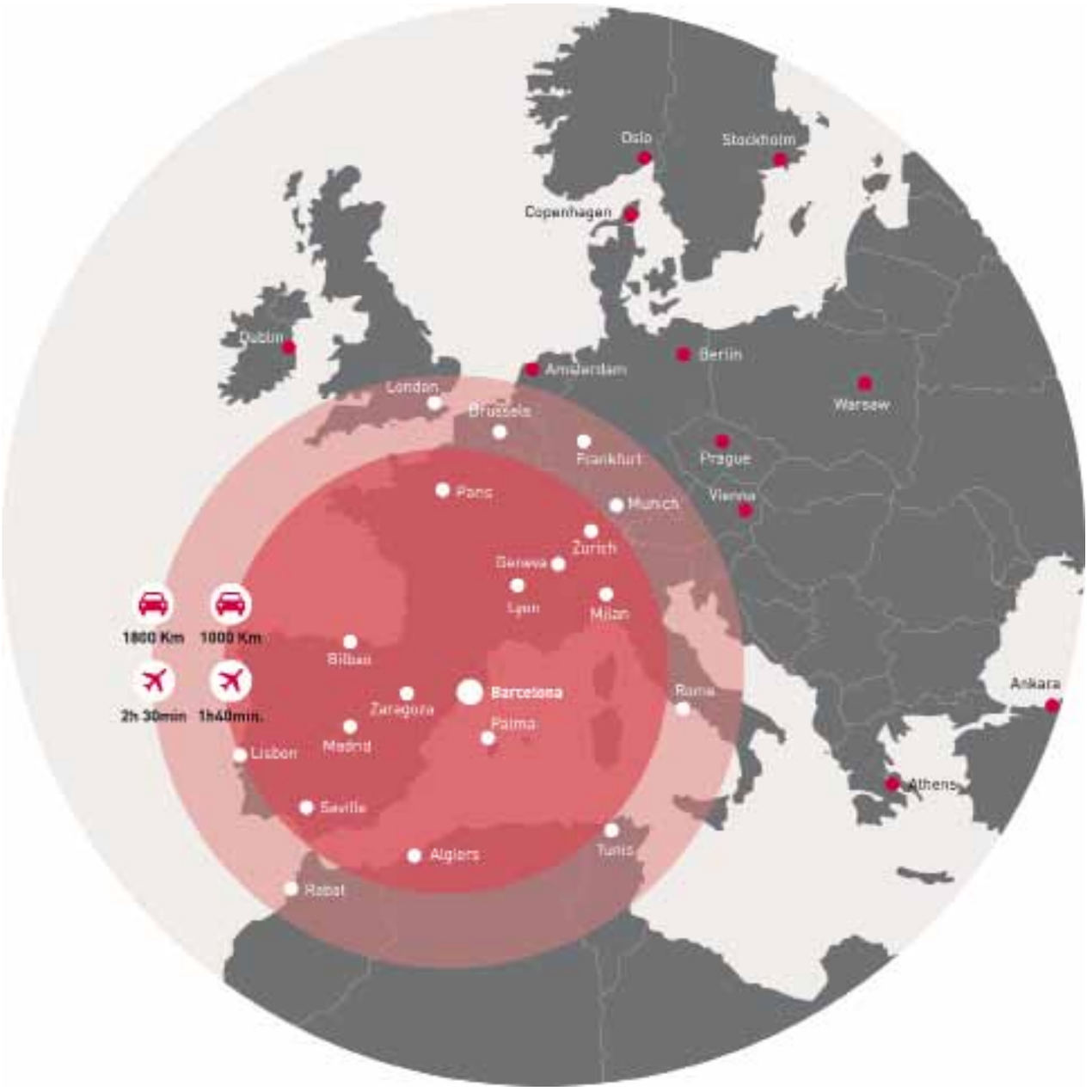
DATASHEET

2011

BARCELONA DATASHEET 2010



GEOGRAPHY	
Surface area (km²)	102.2
Population	1,619,337
Foreign population (% of total)	17.5
Density (inhabitants /km²)	15,845
Climate (Can Bruixa Observatory)	
Average monthly temperature*	18.1
Yearly rainfall (mm)*	549.6
Hours of sun*	2,711.5

ECONOMY	
MACROECONOMIC DATA:	
GDP (year-on-year growth, %) -Catalonia	0.1
Social Security Affiliates	1,015,007
Unemployment rate 16-64 year-olds (%)	16.2
Employment rate 16-64 year-olds (%)	66.2
Activity rate 16-64 year-olds (%)	79.0
CPI (average var. %)-Barcelona Prov.	2.0
Exports (millions of €) Barcelona Prov.	37,979.13
Imports (millions of €) -Barcelona Prov.	53,882.61
Investment abroad (millions of €) -Catalonia (Jan-Sept)	1,093.3
Foreign investment (millions of €) -Catalonia (Jan-Sept)	2,756.34
Companies -Barcelona Prov.	458,918
Foreign companies in Catalonia	3,407
RETAIL AND TOURISM	
Retail establishments -Barcelona Prov.	71,838
Shopping areas	24
Municipal markets (number and surface area m²)	43,206,769
Hotels	
Number	328
Bed-spots	65,718
Tourists	7,133,524
INFRASTRUCTURES	
Airport	
Runways (number and length in m)	3/3352;2660;2540
Maximum capacity flights/hour	90
Passengers	29,209,595
Port	
Land surface area (ha)	828.9
Docks and tie-ups (km)	20.3
Total transit (thousands of tons)	42,877.0
Barcelona Fairgrounds	
Halls*	52
Visits*	2,983,097
Surface area of halls (m²) *	747,263

TRAINING AND CITY OF KNOWLEDGE	
Catalan universities	12
University students in Catalonia (2009/2010)	233,538
Foreign schools (Barcelona Prov.)	30
Technology parks, technology and research centers in Barcelona	212

QUALITY OF LIFE	
Beaches (number and meters)	7;4,410
Bike lanes (km and bicing users)	180;119,529
Public libraries (number and users)	36;5,982,936
Museums, collections and exhibit spaces (number and users) *	41;17,509,002
Public sporting facilities (number and users) *	1,671; 182,367
Theater, concert and cinema viewers*	13,818,356

Note : Data from 2010, except *2009
Source: AENA, Barcelona City Council, Caixa Catalonia Provincial Yearbook, Barcelona Fairgrounds, Government of Catalonia, Idescat, INE, National Institute of Meteorology, Spanish Ports, Secretary of State for Trade, Turisme de Barcelona and Barcelona Institute of Culture, Ministry of Education.

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THE OBSERVATORY

2011

We are pleased to present the Barcelona Observatory 2011 Report.

The Barcelona Observatory is an initiative of the Barcelona City Council and the Barcelona Chamber of Commerce, in collaboration with numerous institutions in the city that, year after year, participate in the project by producing information and making key contributions regarding their sectors of activity.

This ninth edition of the Barcelona Observatory Report aims to continue providing references that can be used as a base for decision-making by economic stakeholders interested in doing business or establishing companies in Barcelona, to attract talent and support bids to hold events, or to open headquarters in the city of Barcelona. With this aim, as every year, the report presents Barcelona's positioning compared to the main cities in the world in a group of benchmark economic and social indicators.

The 2011 report is presented in a clear, direct format, the characteristics of which, some new to this edition, are summarized below:

• A selection of significant indicators that give readers an efficient summary of the most relevant figures regarding the city's positioning, its characteristics and the challenges it faces. Specifically, the current report presents 28 indicators, two of which are new: population employed in creative and cultural industries in European regions, which is part of the knowledge society chapter, and top European cities in terms of internal transport, which is found in the chapter on sustainability and quality of life.

• Visual elements for each indicator, graphs or maps, to facilitate understanding of the results and analysis of their evolution over time.

• A synthesis table, which brings all the indicators together in order to see Barcelona's overall positioning.

• An article written by the Barcelona Chamber of Commerce, which presents, for the first time, an analysis of the business climate in the Barcelona Metropolitan Area in 2010 and forecasts for 2011, including comparisons to Spain and the European Union and a special focus on the main economic sectors. It presents, the current situation in Catalonia and the city of Barcelona in the context of business people's opinions, as well as their outlook on the future.

This publication includes the following sections:

• A general introduction on the current situation and preferential lines of action for the city in terms of its economy.

• A section with the results of 28 indicators presented in six areas: business, knowledge society, tourism, sustainability and quality of life, prices and costs, and labour market and training.

• An article written by the Barcelona Chamber of Commerce Department of Economic Studies analyzing the business climate in 2010 and forecasts for 2011 in the economy of the Barcelona Metropolitan Area.

• An article from the London School of Economics and Political Science LSE Cities project, presented at the Global Metro Summit in Chicago on 7-8 December 2010 entitled Policy lessons and opportunities from metros in the EU and Asia.

• A synthesis showing Barcelona's positioning compared to the main benchmark cities presented in a visual format.

The Barcelona Observatory Report is characterized by the following traits:

• It is built on a series of indicators, preferably on a city level but which can be extended to other territorial levels.

• The data is obtained for a sample that, in some cases, reaches a total of 60 cities from around the world. It must be noted that for some indicators, due to the sample size, only a selection of the main urban areas is shown.

• The indicators incorporate, when possible, a geographic representation of their evolution, which allows readers to evaluate progress in each specific area.

• The information comes from international institutions and organizations of renowned prestige.

• The data and information collected is as updated as possible, given existing availability.

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RESULTS

2011

Introduction

After experiencing one of the most severe economic crises in decades in the OECD countries and a significant drop in GDP, 2010 was marked by the Spanish and Catalan economies pulling out of the recession and a gradual recuperation in a good number of indicators. Growth, however, was modest and below the level of other developed countries. This evolution, driven by the dynamic foreign trade sector, has led to a recovery in business confidence rates and more positive expectations in terms of investment, exports and turnover in Catalonia for 2011, as shown in the Eurochambers annual survey.

In this context, the city of Barcelona maintains, for the sixth consecutive year, its ranking as one of the top five European cities for business, according to the executives surveyed for the Cushman & Wakefield European Cities Monitor 2010 report. Moreover, this report ranks Barcelona second in terms of promotion as a business center and the fourth most recognized by executives as a business center. These results are in line with other rankings on an international level, like that of FDI Magazine (from the Financial Times), which puts Barcelona fifth on its ranking of European cities and regions of the future 2010/11 and first among cities in Southern Europe in this regard. Likewise, the Scorecard on Prosperity 2010 report (created by the Toronto Board of Trade) ranks Barcelona the third most prosperous city in the world and first in terms of attractive work environment.

Other relevant indicators show that, overall, the city maintains its international positioning, even in this complex situation. This is seen, for example, in the attraction of foreign investment projects –which grew slightly- and the number of international meetings, an area in which Barcelona is ranked second in the world. The entrepreneurial activity rate (EAR) is still above the European average, although it has decreased in absolute numbers due to the recession.

The City Council, Chamber of Commerce and other local public and private stakeholders are working together to consolidate the Barcelona brand and its international positioning by attracting funding and foreign companies, supporting strategic urban clusters, attracting and retaining talent, internationalizing innovative companies and holding congresses. This proactive strategy and the instruments through which it is carried out enjoy increasing international renown, as shown by the 2010 Eurocities award given to the Barcelona City Council for its "Do It In Barcelona" program –an initiative promoted by Barcelona Activa to attract talent and business activity to the city- and the Entrepreneurial Region Award 2011, given to Catalonia by the European Union Committee of Regions for its strategic development of plans to support SMEs.

BARCELONA

CITY FOR BUSINESS

Top cities in Europe for business in 2010

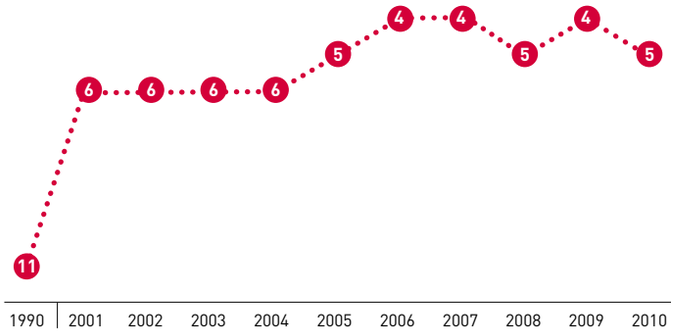
Barcelona, fifth best European city for business

According to the European Cities Monitor –published for the past 21 years by consulting firm Cushman & Wakefield based on opinions from top executives at 500 European companies– Barcelona was ranked fifth among the best cities to do business in 2010. It was only surpassed by London, Paris, Frankfurt and Brussels, which moved up a spot from the 2009 ranking.

It must be noted that Barcelona has been ranked in the top five for the past six years, which demonstrates its consolidated prestige as a city for business and, furthermore, it is one of the cities that have shown the most progress since 1990, along with Madrid and Berlin.

Furthermore, the same report highlights Barcelona as the second best city in terms of promoting itself, fourth most recognized by executives as a business center and sixth in terms of office availability and ease of transport for internal mobility.

Positioning of Barcelona



Source: Cushman & Wakefield, European Cities Monitor

Ranking 1990	City	Ranking 2009	Ranking 2010
1	London	1	1
2	Paris	2	2
3	Frankfurt	3	3
4	Brussels	5	4
11	Barcelona	4	5
5	Amsterdam	8	6
15	Berlin	9	7
17	Madrid	6	8
12	Munich	7	9
6	Dusseldorf	15	10
9	Milan	10	11
13	Manchester	16	12
7	Zurich	13	13
8	Geneva	11	14
14	Hamburg	12	15
19	Stockholm	20	16
16	Lisbon	17	17
-	Birmingham	14	18
18	Lyon	19	19
-	Dublin	18	20
23	Prague	21	21
20	Vienna	28	22
-	Leeds	24	23
25	Warsaw	23	24
-	Copenhagen	25	25
-	Istanbul	27	26
-	Edinburgh	-	27
-	Rome	22	28
10	Glasgow	29	29
21	Budapest	26	30
-	Helsinki	31	31
-	Bratislava	-	32
24	Moscow	32	33
-	Oslo	33	34
-	Bucharest	30	35
22	Athens	34	36

Note: In 1990, the study only included 25 cities. In 2010, 34 cities were included.
Source: Cushman & Wakefield, European Cities Monitor 2010

Entrepreneurial activity in OECD countries in 2009

Barcelona is still above the European average

According to data from the Global Entrepreneurship Monitor (GEM), the entrepreneurial activity rate (EAR) for residents in the province of Barcelona in 2009 was 6.7%. This is above the EU (5.8%), Spanish (5.1%) and Catalan (6.4%) averages and also surpasses other benchmark European countries like the United Kingdom (5.7%), France (4.4%) and Germany (4.1%).

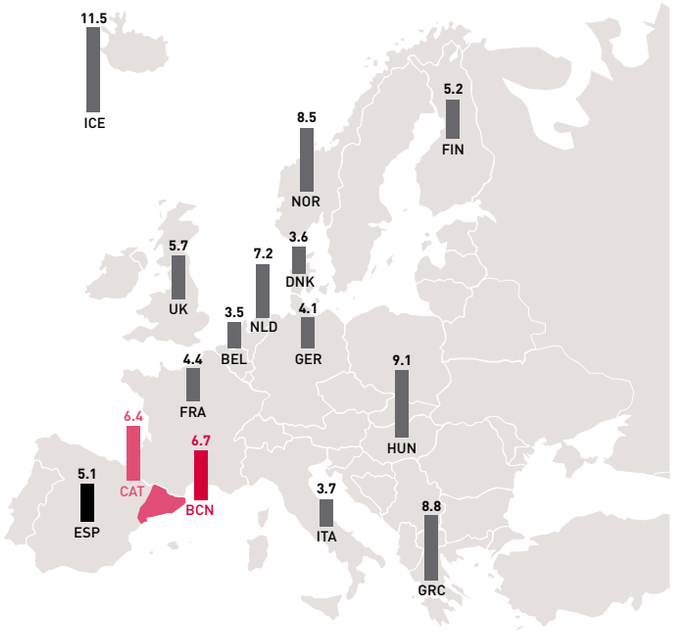
Overall, and as a result of the recession, the EAR has been decreasing over the past two years in OECD countries. In Barcelona, this indicator fell significantly in 2009 (-10.3%) causing the area to move down in the European ranking. However this decrease is lower than the Spanish average and that of benchmark countries like France and the United States.

Moreover, it must be noted that only 0.9% of companies in Barcelona reported closing their doors last year, which is one of the lowest rates in all the countries participating in the GEM project. Furthermore, the rate of business regeneration –which measures the rate of closure versus that of new entrepreneurs– is more favorable in the province of Barcelona (26%) than in Catalonia (39%), the European Union (49%) and Spain (62%).

Country	Entrepreneurial activity (% of population)
Iceland	11.5
Hungary	9.1
Greece	8.8
Norway	8.5
United States	8.0
Switzerland	7.7
Netherlands	7.2
Barcelona	**6.7**
Catalonia	**6.4**
EU Average	5.8
United Kingdom	5.7
Finland	5.2
Spain	**5.1**
France	4.4
Germany	4.1
Italy	3.7
Denmark	3.6
Belgium	3.5
Japan	3.3

Note: Entrepreneurial activity includes new companies (less than 3 months of activity) and start-ups (3 to 42 months of activity).
The statistical source contains a total of 45 countries. The countries of reference are selected samples.
Source: Global Entrepreneurship Monitor (GEM), Catalonia Executive Report 2009

Entrepreneurial activity 2009 (% of population)



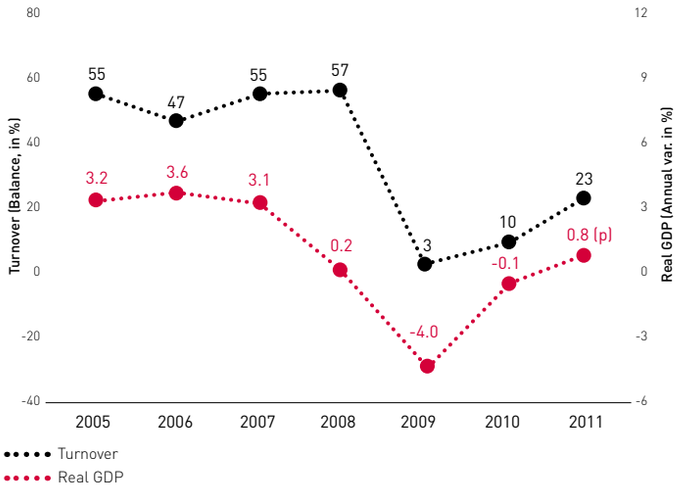
Source: Global Entrepreneurship Monitor (GEM), Catalonia Executive Report 2009

Business outlook in European regions for 2011

Catalonia has a better forecast for exports than the euro zone as a whole

The business outlook for Catalonia in 2011 is better than in 2010, according to the results of the Eurochambers survey. On one hand, sales are expected to grow, possibly above the 2010 rate, giving Catalonia a more positive forecast than Spain as a whole and other European regions like Scotland. Likewise, exports are expected to increase more rapidly, putting Catalonia among the European regions with the best forecast for this area, above Stockholm, Eastern Austria and Bavaria as well as all other Spanish regions. On the other hand, businesspeople expect investment to stop falling in Catalonia in 2011. These forecasts are more favourable than those for Spain and other regions like London and Eastern Austria but not as optimistic as those for the euro zone as a whole, where moderate growth in investment is expected in 2011.

Business outlook in Catalonia



(p) Barcelona Chamber of Commerce forecast (January 2011)
Source: Eurochambers of Commerce and Idescat

Region (CITY)	Turnover (Balance in %)
Stockholm (STOCKHOLM)	67
Estonia (TALLINN)	58
Poland (WARSAW)	57
Denmark (COPENHAGEN)	55
Baden-Württemberg (STUTTGART)	50
West Midlands (BIRMINGHAM)	43
Turkey (ISTANBUL)	40
Ile de France (PARIS)	39
Portugal (LISBON)	37
South Holland (ROTTERDAM)	36
London (LONDON)	34
Central Italy (ROME)	31
North Holland (AMSTERDAM)	31
North West (MANCHESTER)	29
Eastern Austria (VIENNA)	27
Northwest Italy (MILAN)	27
EU-27	**27**
Euro-16	**26**
Catalonia (BARCELONA)	**23**
Valencian Community (VALENCIA)	19
Basque Country (BILBAO)	17
Spain	**7**
Central Hungary (BUDAPEST)	7
Community of Madrid (MADRID)	-6
Greece (ATHENS)	-36
Scotland (EDINBURGH)	-41
Bavaria (MUNICH)	-
Berlin (BERLIN)	-
Hessen (FRANKFURT)	-

Region (CITY)	Exports (Balance in %)
Portugal (LISBON)	58
Denmark (COPENHAGEN)	57
Baden-Württemberg (STUTTGART)	50
Catalonia (BARCELONA)	**45**
Stockholm (STOCKHOLM)	45
Eastern Austria (VIENNA)	44
Valencian Community (VALENCIA)	41
Bavaria (MUNICH)	38
Poland (WARSAW)	37
Hessen (FRANKFURT)	36
Spain	**35**
Community of Madrid (MADRID)	35
Ile de France (PARIS)	35
Euro-16	**34**
Basque Country (BILBAO)	31
Berlin (BERLIN)	31
EU-27	**30**
Central Hungary (BUDAPEST)	27
Turkey (ISTANBUL)	27
Central Italy (ROME)	25
South Holland (ROTTERDAM)	25
North Holland (AMSTERDAM)	23
Estonia (TALLINN)	19
Northwest Italy (MILAN)	18
Greece (ATHENS)	18
West Midlands (BIRMINGHAM)	17
London (LONDON)	8
North West (MANCHESTER)	8
Scotland (EDINBURGH)	4

Region (CITY)	Investment (Balance in %)
Central Italy (ROME)	50
Stockholm (STOCKHOLM)	35
Poland (WARSAW)	34
Estonia (TALLINN)	31
Bavaria (MUNICH)	30
Turkey (ISTANBUL)	30
Baden-Württemberg (STUTTGART)	21
Denmark (COPENHAGEN)	19
Northwest Italy (MILAN)	14
Euro-16	**11**
Berlin (BERLIN)	11
EU-27	**10**
South Holland (ROTTERDAM)	10
Hessen (FRANKFURT)	10
Ile de France (PARIS)	8
Portugal (LISBON)	7
North Holland (AMSTERDAM)	5
West Midlands (BIRMINGHAM)	4
North West (MANCHESTER)	3
Central Hungary (BUDAPEST)	2
Catalonia (BARCELONA)	**0**
London (LONDON)	-3
Basque Country (BILBAO)	-3
Eastern Austria (VIENNA)	-6
Valencian Community (VALENCIA)	-10
Spain	**-12**
Scotland (EDINBURGH)	-17
Community of Madrid (MADRID)	-17
Greece (ATHENS)	-24

Note: The balances are calculated as the difference between the percentatge of increase and percentage of decrease. The statistical source contains a total of 111 regions. The regions of reference are selected samples.
* Sample average.
Source: Eurochambres, The Business Climate in Europe's Regions in 2011

Main European regions in terms of foreign investment projects in 2009

Catalonia maintains its sixth place ranking in terms of foreign investment received

The European Investment Monitor report, written by consulting firm Ernst & Young, shows that Barcelona was once again ranked sixth among European regions in terms of foreign investment projects received in 2009, only behind London, Ile de France, Rhône-Alpes, Dusseldorf and the Community of Madrid, and surpassing Milan, Frankfurt and Dublin.

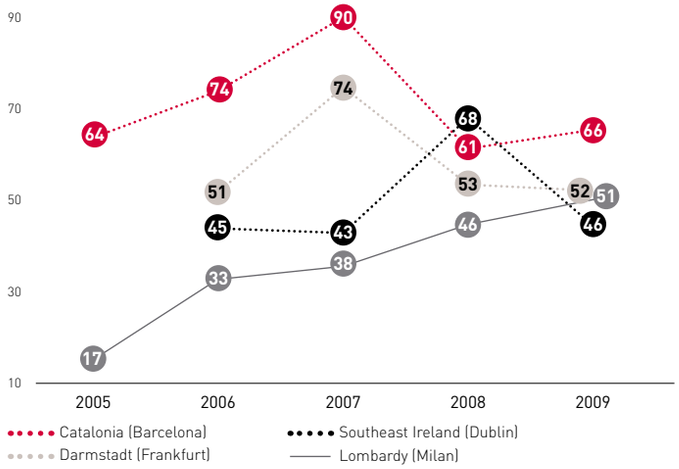
Despite the international economic and financial recession, the number of foreign investment projects in Catalonia showed a slight recovery in 2009, with a total of 66 –a level similar to that of 2005- while most regions leading the ranking saw these numbers decrease with regards to 2008. This shows that Barcelona still inspires confidence for foreign investments and is still attractive as a region for doing business and establishing companies.

It must be noted that provisional data from Invest in Catalonia for 2010 show growth with regard to 2009, with a total of 69 direct foreign investment projects in Catalonia, nearly half of which (34) were in the city of Barcelona.

Projects 2008	Region (CITY)	Projects 2009
262	London (LONDON)	266
222	Ile de France (PARIS)	170
58	Rhône-Alpes (LYON)	81
99	Dusseldorf (DUSSELDORF)	73
80	Community of Madrid (MADRID)	66
61	Catalonia (BARCELONA)	66
56	Moscow (MOSCOW)	54
53	Darmstadt (FRANKFURT)	52
46	Lombardy (MILAN)	51
68	Southeast Ireland (DUBLIN)	46

Source: Ernst & Young's European Investment Monitor, 2010

Foreign investment projects (number)



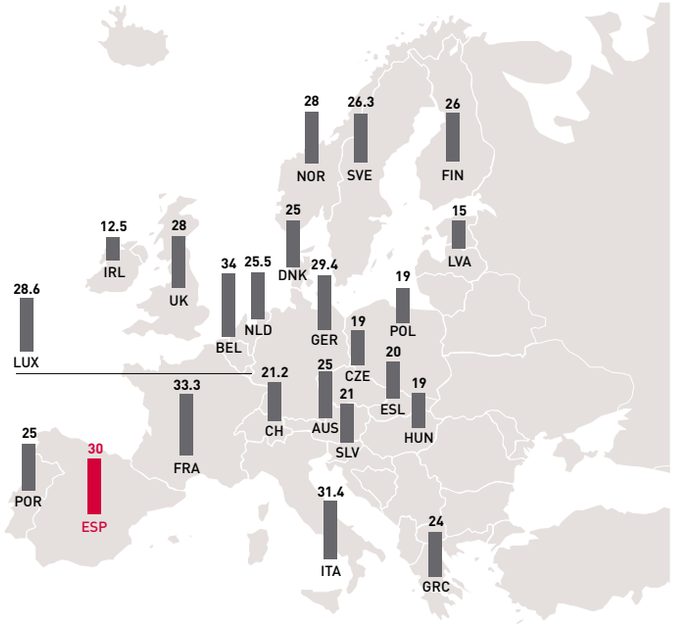
Source: Ernst & Young's European Investment Monitor, 2010

Corporate tax and VAT in countries around the world in 2010

After the reform, the VAT rate is still one of the lowest in Europe

Spain is still near the top of the international ranking in terms of corporate tax, with one of the highest rates among benchmark countries and above the EU average. Therefore, despite the decrease in this tax over recent years, current business tax rates hinder competitiveness with regards to other economies in terms of attracting foreign investment to set up companies. The Spanish economy's competitive position is more favourable with regards to indirect taxes, in a context of general belt tightening in Europe that has led some countries to carry out tax reforms in order to reduce public debt. In Spain, VAT went up 2% to 18% in 2010. It must be noted that, despite this increase, the Spanish tax rate is still the fourth lowest in the European Union, surpassing only Cyprus, Luxemburg and the United Kingdom.

Corporate Tax 2010 (%)



Source: KPMG, KPMG's Corporate and Indirecte Tax Rate Survey 2010

Country	VAT Rate (%)	Corporate Tax Rate (%)
Japan	5.0	40.7
United States	-	40.0
Argentina	21.0	35.0
South Africa	14.0	34.6
India	12.5	34.0
Belgium	21.0	34.0
France	19.6	33.3
Italy	20.0	31.4
Canada	5,0	31.0
Tunisia	18.0	30.0
Spain	**18.0**	**30.0**
Australia	10.0	30.0
Germany	19.0	29.4
Luxemburg	15.0	28.6
United Kingdom	17.5	28.0
Norway	25.0	28.0
Sweden	25,0	26.3
Finland	23,0	26.0
Netherlands	19.0	25.5
Denmark	25.0	25.0
Portugal	21.0	25.0
Austria	20.0	25.0
China	17.0	25.0
Israel	16.0	25.0
South Korea	10.0	24.2
Greece	23.0	24.0
Switzerland	7.6	21.2
Slovenia	20.0	21.0
Slovakia	19.0	20.0
Hungary	25.0	19.0
Poland	22.0	19.0
Czech Republic	20.0	19.0
Hong Kong	-	16.5
Latvia	21.0	15.0
Ireland	21.0	12.5
Cyprus	15.0	10.0

Note: The original database included 166 countries, however the table only shows a selection of benchmark countries
Source: KPMG, KPMG's Corporate Tax Rate Survey 2010

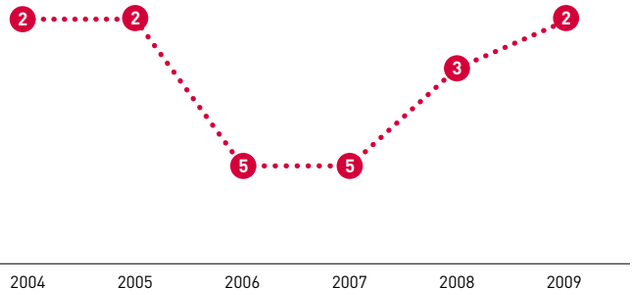
Main cities in the world for holding international meetings in 2009

Barcelona, ranked second in the world

According to data from the International Congress and Convention Association (ICCA), Barcelona was ranked second in the world in 2009 for holding international meetings, with a total of 135, ahead of Paris and only behind Vienna, which held 160.

Despite the fact that (according to the ICCA) the number of meetings held in Barcelona has decreased by 2.2%, the city has still moved up in the ranking and is back in the second spot it occupied in 2004 and 2005, consolidating its position in the top five for the sixth consecutive year.

Positioning of Barcelona



Source: International Congress and Convetion Association

International Meetings 2008	City	Variation 2008/2009 (%)	International Meetings 2009
145	Vienna	10.3	160
138	Barcelona	-2.2	135
154	Paris	-14.9	131
112	Berlin	15.2	129
128	Singapore	-7.0	119
88	Copenhagen	17.0	103
90	Stockholm	13.3	102
103	Amsterdam	-4.9	98
89	Lisbon	10.1	98
87	Beijing	10.3	96
91	Buenos Aires	-1.1	90
91	Seoul	-1.1	90
105	Budapest	-17.1	87
73	Madrid	19.2	87
90	Prague	-4.4	86
90	London	-7.8	83
82	Istanbul	-2.4	80
71	Sao Paulo	11.3	79
74	Bangkok	2.7	76
83	Athens	-9.6	75
84	Brussels	-13.1	73
72	Kuala Lumpur	0.0	72
70	Rome	-1.4	69
67	Hong Kong	0.0	67
59	Taipei	8.5	64
41	Rio de Janeiro	51.2	62
70	Sydney	-12.9	61
63	Shanghai	-7.9	58
83	Tokyo	-30.1	58
55	Montreal	3.6	57
36	Zurich	58.3	57
71	Helsinki	-21.1	56
66	Dublin	-22.7	51
40	Oslo	25.0	50
46	Cape Town	6.5	49
57	Edinburgh	-19.3	46
47	Munich	-2.1	46
56	Vancouver	-17.9	46
32	Milan	34.4	43
46	Santiago, Chile	-10.9	41
52	Geneva	-25.0	39
34	Kyoto	8.8	37
42	Toronto	-14.3	36
39	Boston	-10.3	35
27	Tallinn	29.6	35
28	Lima	21.4	34
30	Goteborg	10.0	33
44	Mexico City	-25.0	33
34	Glasgow	-5.9	32
45	Warsaw	-28.9	32
33	Hamburg	-6.1	31
41	Washington D.C.	-24.4	31
31	Krakow	-3.2	30
43	Melbourne	-30.2	30
37	Valencia	-18,9	30

Source: International Congress and Convention Association (ICCA) 2009

Introduction

Barcelona's continued commitment in recent years to move towards a productive model based on knowledge, innovation and creativity as key driving forces behind economic growth has allowed the city to generate a significant critical mass in areas like scientific research and productive activities with high value added and technology content, which contribute to both its international positioning and economic recovery.

The most emblematic example of this commitment is the Barcelona Metropolitan Area's Barcelona Economic Triangle, made up of three poles of economic activity with more than 9 million square meters devoted predominately to knowledge-intensive activities, which will be able to generate more than 200,000 new jobs. The three areas that make up the triangle have important projects already underway and high potential for attracting talent and new investment opportunities: 22@ in the Besòs area is home to the information and communication technology, medical technology, media, design and energy clusters; DeltaBCN/BZ Barcelona Innovation Zone in the Llobregat area specializes in aerospace technology, agrifood and mobility; and Parc de l'Alba in the Vallès area is devoted to science and technology, with benchmark facilities like Creàpolis, the Alba Synchrotron and the UAB Research Park.

Regarding knowledge inputs, Barcelona's continued growth in Research and Development (R&D) expenditure is noteworthy. This indicator was at 1.68% of the GDP, 0.3% higher than in Spain (1.38%). Furthermore, the recession hasn't stopped the growth of R&D workers in Catalonia that began in 1997 and this group totaled 47,324 in 2009, up 1.7% from the previous year. In total, the Barcelona area had 212 technology parks and research and technology centers in 2010, as well as 9 benchmark science and technology facilities on an international level. Regarding higher education, it must be noted that, according to the Times Higher Education Ranking, the UB and the University Pompeu Fabra (UPF) are ranked among the top 200 universities in the world, and the UB is ranked 44th in life sciences and 49th in clinical and health sciences.

This strategy of driving research allowed Barcelona, in 2010, to consolidate its sixth place ranking in Europe for scientific production and to reach 18th on the world ranking. Additionally, the magazine Nature ranks Barcelona the best city in Spain, 22nd in Europe and 54th in the world for doing science of excellence, up 11 positions in the global ranking between 2000 and 2008.

Regarding the productive fabric, the Barcelona area now has one of the larger job markets in Europe in terms of critical mass in value added sectors. In fact, in 2009, despite the economic situation that led to a decrease in absolute numbers, Catalonia was ranked fifth among European regions in terms of workers employed in high and mid-to-high technology manufacturing sectors, seventh for knowledge and high-technology intensive services (up three positions in the ranking) and fifth for number of workers in the science and technology sector. Additionally, Barcelona was the sixth European region in volume of workers in creative and cultural industries in 2006, another sector that is key to driving economic growth.

Regarding innovation, Barcelona has seen a slight decrease in the number of PCT patent applications as a result of the economic climate, while the total number of technology patents continues to grow –up 18.7% from 2007 to 2008– as does the ratio of patents per million inhabitants –up 3.93 from 2007 to 2008.

As a result of its commitment to driving R&D, Barcelona was recognized as a "City of Science and Innovation" in 2010 by the Ministry of Science and Innovation, being the only city with more than 100,000 inhabitants to receive this recognition.

KNOWLEDGE SOCIETY

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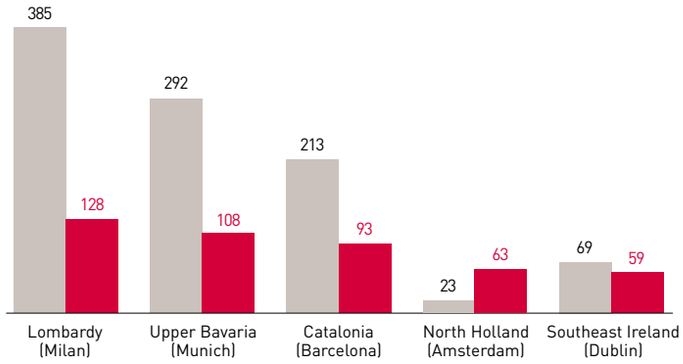
Population employed in technological manufacturing and services in European regions in 2009

Catalonia, ranked fifth and seventh among European regions in tecnological manufacturing and services

In 2009, Catalonia continued to be ranked among the top five European regions for number of workers employed in high and mid-to-high technology manufacturing, with a total of 212,856 workers in these sectors. In a year when most of the benchmark regions experienced a decrease in the number of workers employed in high value added areas, Catalonia lost one position to Ile de France, which now joins Lombardy, Stuttgart and Upper Bavaria at the top of the ranking. Furthermore, Catalonia is also one of the European regions with the highest relative weight of employment in high and mid-to-high technology manufacturing, which makes up 6.7% of the total, even though, as in most regions, this number has experienced a downward trend over the past decade.

Regarding total employment in high technology knowledge-intensive services, Catalonia has moved from the tenth to the seventh position on the European ranking from 2008 to 2009. With a total of 92,724 workers in these activities, Catalonia is ranked lower than Lombardy and Upper Bavaria but above Darmstadt, Berlin and Southern Finland, being one of the top European regions in terms of progress in this regard over the last decade. It must be noted that, despite the economic climate in 2009, both the number of workers in these sectors and their relative weight in the total employed population grew in Catalonia reaching a total of 2.9%. Furthermore, in the city of Barcelona salaried workers in high technology knowledge-intensive sectors make up 5.7% of the total, up 4.3% in 2010.

Population employed in knowledge-intensive high-technology services and high and mid-to-high technology manufacturing (thousands of people)



Employees in high and mid-to-high technology manufacturing

Employees in knowledge-intensive high-technology services

Source: Eurostat

Employees in knowledge-intensive high-technology services (% of total employed population)	Employees in knowledge-intensive high-technology services	Region (CITY)	Employees in high and mid-to-high technology manufacturing	Employees in high and mid-to-high technology manufacturing (% of total employed population)
3.00	128,493	Lombardy (MILAN)	384,704	8.97
2.81	54,698	Stuttgart (STUTTGART)	347,027	17.82
4.84	108,007	Upper Bavaria (MUNICH)	292,325	13.09
6.46	337,315	Ile de France (PARIS)	223,915	4.29
2.91	**92,724**	**Catalonia (BARCELONA)**	**212,586**	**6.68**
2.73	60,078	Düsseldorf (DÜSSELDORF)	190,667	8.68
1.42	52,868	Istanbul (ISTANBUL)	172,412	4.63
4.30	80,051	Darmstadt (FRANKFURT)	168,041	9.02
2.52	64,419	Rhône -Alpes (LYON)	149,343	5.84
3.29	30,694	Basque Country (BILBAO)	84,251	9.04
8.05	234,686	Community of Madrid (MADRID)	81,365	2.79
2.79	50,692	South Holland (ROTTERDAM)	79,189	4.35
4.99	77,199	Berlin (BERLIN)	76,522	4.94
5.30	69,539	Southern Finland (HELSINKI)	72,325	5.51
5.65	126,379	Lazio (ROME)	71,399	3.19
4.16	59,196	Southeast Ireland (DUBLIN)	69,342	4.87
2.33	25,426	West Midlands (BIRMINGHAM)	67,152	6.16
4.42	54,791	Central Hungary (BUDAPEST)	66,521	5.37
1.92	37,174	Provence-Alps-Cote Azur (MARSEILLE)	63,820	3.30
1.35	27,352	Valencian Community (VALENCIA)	58,879	2.91
2.02	27,147	Ankara (ANKARA)	49,804	3.71
4.91	181,462	London (LONDON)	48,949	1.33
2.46	28,365	Greater Manchester (MANCHESTER)	43,271	3.75
6.01	52,675	Denmark (COPENHAGEN)	42,778	4.88
3.23	54,860	Attica (ATHENS)	41,649	2.45
2.82	28,480	Southwest Scotland (GLASGOW)	38,162	3.78
3.99	51,182	Lisbon (LISBON)	37,899	2.96
4.36	33,588	Zurich (ZURICH)	37,626	4.88
4.86	50,613	Bucharest (BUCHAREST)	33,325	3.20
3.36	22,988	Zagreb (ZAGREB)	24,896	3.64
5.34	42,519	Vienna (VIENNA)	24,492	3.08
4.48	63,042	North Holland (AMSTERDAM)	23,251	1.65
2.33	22,269	Eastern Scotland (EDINBURGH)	21,128	2.21
6.91	45,311	Prague (PRAGUE)	18,527	2.82
2.61	24,345	Languedoc-Roussillon (MONTPELLIER)	13,304	1.43
4.92	19,819	Brussels (BRUSSELS)	10,668	2.65
6.55	38,971	Oslo (OSLO)	9,667	1.63

Note: Knowledge-intensive high-technology services include IT, telecommunications, and research and development.
The original database includes 314 regions, however this table only shows a selection of benchmark regions.
Source: Eurostat

Population employed in science and technology and Research and Development in expenditure European regions in 2009

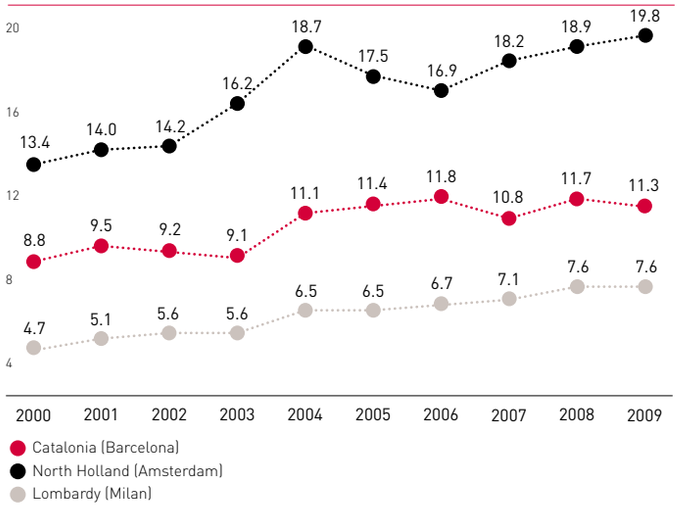
Catalonia, fifth European region in terms of science and technology employment

With 630,000 workers with tertiary education devoted to science and technology, Catalonia was once again ranked fifth among European regions in 2009, surpassed only by Ile de France, London, Community of Madrid and Denmark, and ranked above territories like Lombardy, Upper Bavaria and Amsterdam.

After strong growth in these activities from 1998-2008, the general decrease of employment in 2009 also affected the science and technology arena in Catalonia with a 3.4% decrease in this indicator. Despite this downturn, the region has maintained the same position on the ranking for the past seven years and the percentage of workers devoted to science and technology has grown with regard to the total by 2.5% since 2000.

In 2007, research and development (R&D) expenditure made up 1.47% of the Catalan GDP, above levels seen in London and Dublin but still far from those leading the ranking like Denmark, Upper Bavaria and Stockholm. This indicator has continued on an upward trend over recent years, reaching 1.68% of the Catalan GDP in 2009, which is above the Spanish average (1.38%) but below both the EU average (2.1%) and the Lisbon objective for 2010 (set at 3%). For the same year, Catalonia generated one fourth (25.2%) of all internal R&D expenditure in Spanish companies, surpassed only by Madrid (28.3%).

Population employed in science and technology (% of population*)



* Population between the ages of 15 and 74
Source: Eurostat

Total Internal R&D Expenditure (% GDP) 2007	Internal R&D Expenditure in the Business Sector (% GDP) 2007	Region (CITY)	Science and technology workers (thousands) 2009	Science and technology workers (% population*) 2009
-	-	Ile de France (PARIS)	1,414	16.5
1.05	0.39	London (LONDON)	1,046	18.0
1.92	1.13	Community of Madrid (MADRID)	889	18.2
2.55	-	Denmark (COPENHAGEN)	670	16.3
1.47	**0.93**	**Catalonia (Barcelona)**	**630**	**11.3**
1.07	0.31	Mazowsze (WARSAW)	607	14.7
-	-	Lombardy (MILAN)	565	7.6
0.85	0.24	Sofia (SOFIA)	556	9.4
-	-	Rhône-Alpes (LYON)	514	11.7
4.32	3.40	Upper Bavaria (MUNICH)	466	14.0
3.36	1.39	Berlin (BERLIN)	444	15.9
-	-	Istanbul (ISTANBUL)	439	4.7
5.85	5.43	Stuttgart (STUTTGART)	436	14.1
3.11	2.63	Darmstadt (FRANKFURT)	398	13.6
-	0.68	North Holland (AMSTERDAM)	396	19.8
-	-	Attica (ATHENS)	391	12.9
1.73	1.37	Düsseldorf (DÜSSELDORF)	370	9.8
-	0.73	South Holland (ROTTERDAM)	362	13.4
-	-	Lazio (ROME)	361	8.4
0.95	0.38	Valencian Community (VALENCIA)	354	9.1
3.39	2.36	Southern Finland (HELSINKI)	353	17.5
-	-	Provence-Alps-Cote Azur (MARSEILLE)	345	9.8
4.17	3.13	Stockholm (STOCKHOLM)	334	22.2
0.81	0.23	Lithuania (VILNIUS)	313	11.9
1.28	0.84	Southeast Ireland (DUBLIN)	302	12.4
0.93	0.70	Central Hungary (BUDAPEST)	296	13.1
1.31	0.48	Bucharest (BUCHAREST)	276	15.3
-	-	Ankara (ANKARA)	262	7.8
1.87	1.52	Basque Country (BILBAO)	262	15.9
1.76	0.96	Lisbon (LISBON)	237	11.0
1.93	1.15	Hamburg (HAMBURG)	228	16.0
-	-	Oslo (OSLO)	210	25.7
1.07	0.33	Greater Manchester (MANCHESTER)	209	10.8
-	-	Zurich (ZURICH)	200	19.3
0.49	0.13	Eastern Scotland (EDINBURGH)	193	13.0
0.59	0.19	Latvia (RIGA)	192	10.7
1.27	0.74	West Midlands (BIRMINGHAM)	190	9.9
-	-	Languedoc-Roussillon (MONTPELLIER)	184	9.8
2.12	0.63	Southwest Scotland (GLASGOW)	174	10.8
2.60	1.14	Prague (PRAGUE)	167	16.9
3.62	2.13	Vienna (VIENNA)	159	12.1
0.98	-	Zagreb (ZAGREB)	133	10.5
1.11	0.52	Estonia (TALLINN)	125	12.1
1.38	0.79	Brussels (BRUSSELS)	107	13.4

*Population between the ages of 15 and 74
Note: Workers with higher education in science and employed as professionals or technicians.
Internal expenditure includes capital, current and labor expenses for both researchers and administrative personnel linked to research activities in proportion to the GDP.
The original database includes 314 regions, however this table only shows a selection of benchmark regions.
Source: Eurostat

Population employed in creative and cultural industries in European regions in 2006

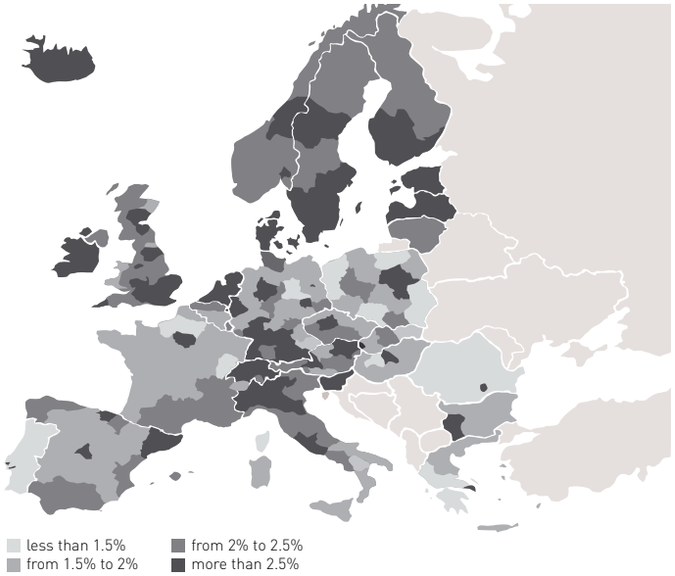
High concentration in the creative and cultural industry in Catalonia

According to a recent report by the European Cluster Observatory, Catalonia had a total of 153,202 people working in the creative and cultural industry in 2006, ranking the area sixth among European regions in this regard. This value is higher than that of benchmark regions like Rome, Munich and Stockholm and is only surpassed by the regions of Ile de France, London, Lombardy, North Holland and Madrid. Moreover, Catalonia shows relative specialization in creative and cultural industries, with a localization coefficient of 1.3.

Ranking 2006	Region (CITY)	Workers in creative and cultural industries	LC
1	Ile de France (PARIS)	301,895	1.53
2	Inner London (LONDON)	235,327	2.19
3	Lombardy (MILAN)	195,848	1.28
4	North Holland (AMSTERDAM)	195,646	1.56
5	Community of Madrid (MADRID)	172,800	1.58
6	Catalonia (BARCELONA)	153,202	1.30
7	Denmark (COPENHAGEN)	124,352	1.28
8	Lazio (ROME)	118,047	1.51
9	Upper Bavaria (MUNICH)	97,050	1.59
10	Stockholm (STOCKHOLM)	86,239	2.16
11	Central Hungary (BUDAPEST)	82,429	1.73
12	Outer London (LONDON)	80,845	1.28
13	Berks, Bucks and Oxon (OXFORD)	80,628	1.82
14	Attica (ATHENS)	78,920	1.26
15	East Holland (NIJMEGEN)	74,064	1.39
16	Andalusia (SEVILLE)	71,843	0.74
17	Ireland (DUBLIN)	70,602	1.18
18	South Holland (MAASTRICHT)	70,543	1.28
19	Darmstadt (FRANKFURT)	68,238	1.23
20	Piedmont (TURIN)	66,291	1.04
21	Cologne (COLOGNE)	65,341	1.28
22	Southern Finland (HELSINKI)	64,500	1.43
23	Veneto (VENICE)	63,024	0.89
24	Stuttgart (STUTTGART)	61,626	1.17
25	Berlin (BERLIN)	60,736	1.53

Note: LC is an indicator that measures employment in creative and cultural industries compared to total employment in the region. LC → 1 indicates overrepresentation of employees in these industries.
Source: "Priority Sector Report: Creative and Cultural Industries", Europe Innova -European Cluster Observatory, 2010

Regional concentration of the workforce in creative and cultural industries



Source: Priority Sector Report: Creative and Cultural Industries, Europe Innova - European Cluster Observatory, 2010

The subsectors most highly represented in Catalonia are those related to printing, publishing and book, magazine and newspaper sales –which make up 2.7% of the European total and are ranked fourth on the continent; radio and television –a field in which Catalonia makes up 2.8% of all employment in Europe an is ranked fourth; and advertising, with 1.8% of the European total and ranked seventh.

It must be noted that most of the Catalan creative and cultural industry is concentrated in Barcelona, which in 2010 made up 61.1% and 51.8% of employment in the BMR and Catalonia, respectively.

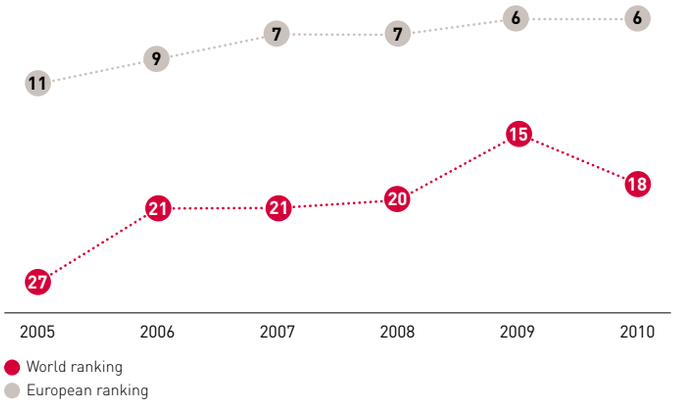
Main cities of the world in terms of scientific production in 2010

Barcelona maintains its ranking as the sixth city in Europe

According to provisional data from the UPC Land Policy and Assessment Center's report on scientific production in the main cities of the world, Barcelona generated a total of 11,798 scientific publications in 2010, allowing the city to maintain its sixth place ranking in Europe but dropping it down three positions in the global ranking to 18th. According to these results, scientific production in Barcelona is similar to that in cities like Chicago, Cambridge Massachusetts, and Berlin, and higher than that of Munich, Oxford and San Francisco.

Furthermore, the journal Nature ranks Barcelona first city in Spain, 22nd in Europe and 54th in the world for doing science of excellence, gaining 11 positions in the global ranking between 2000 and 2008.

Positioning of Barcelona



Source: Created by the UPC LPAC using data from the SCI (Science Citation Index)

World ranking 2009	City	World ranking 2010	European Ranking 2010	Publications 2010
1	Beijing	1	-	34,936
2	London	2	1	28,192
3	Tokyo	3	-	27,691
4	Paris	4	2	25,025
5	New York	5	-	22,880
7	Seoul	6	-	22,687
6	Boston	7	-	22,315
8	Shanghai	8	-	17,581
9	Moscow	9	3	13,419
11	Los Angeles	10	-	13,044
10	Madrid	11	4	12,997
12	Rome	12	5	12,771
14	Toronto	13	-	12,502
13	Baltimore	14	-	12,431
16	Philadelphia	15	-	12,212
18	Chicago	16	-	11,995
21	Houston	17	-	11,964
15	Barcelona	18	6	11,798
17	Cambridge Massachusetts	19	-	11,773
20	Berlin	20	7	11,667
19	São Paulo	21	-	11,258
24	Osaka	22	-	10,116
22	Munich	23	8	10,101
23	Milan	24	9	9,982
25	Montreal	25	-	9,489
26	Cambridge	26	10	9,464
31	Zurich	27	11	9,222
27	Hong Kong	28	-	9,213
30	Melbourne	29	-	8,702
28	Amsterdam	30	12	8,615
33	Pittsburg	31	-	8,509
29	Singapore	32	-	8,427
32	Oxford	33	13	8,333
34	San Francisco	34	-	8,037
35	Stockholm	35	14	7,839
38	Copenhagen	36	15	6,551
37	Prague	37	16	6,172
36	Athens	38	17	5,995
41	Warsaw	39	18	5,915
40	Manchester	40	19	5,648
39	Lyon	41	20	5,501
49	Naples	42	21	5,239
48	Dublin	43	22	4,903
43	Mexico City	44	-	4,896
42	Edinburgh	45	23	4,821
44	Brussels	46	24	4,791
50	Hamburg	47	25	4,781
47	Rio de Janeiro	48	-	4,772
45	Toulouse	49	26	4,695
52	Turin	50	27	4,548
46	Buenos Aires	51	-	4,352
56	Saint Petersburg	52	28	4,349
58	Yokohama	53	-	4,328
53	Montpellier	54	29	4,286
51	Nova Delhi	55	-	4,268
55	Valencia	56	30	4,247
60	Lisbon	57	31	3,989
57	Marseille	58	32	3,837
59	Basel	59	33	3,785
54	Glasgow	60	34	3,727
62	Tel Aviv	61	-	3,618
63	Liverpool	62	35	3,468
61	Frankfurt	63	36	3,390

Note: It must be taken into account that data for 2010 is from December, while the reports regarding previous years were compiled in April or May of the following year. This data must therefore be considered provisional and is highly likely to underestimate the value of this indicator.
Source: Polytechnic University of Catalonia –Land Policy and Assessment Center. *Report on the evolution of scientific production in main cities around the world*, 2010. December 2010.

Patent applications in the main OECD provinces in 2008

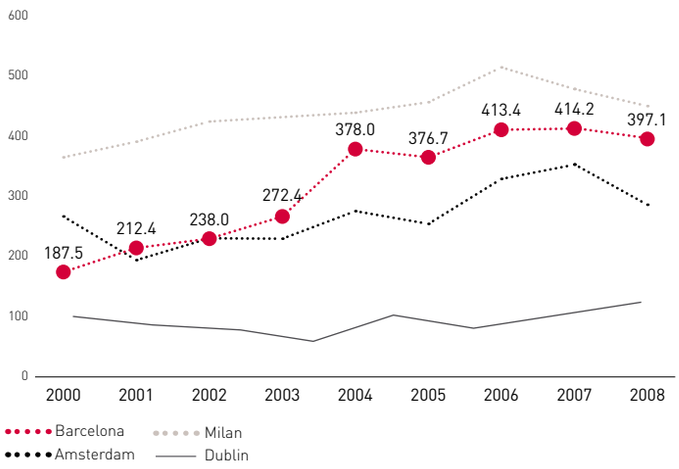
Barcelona shows a new increase in the number of technology patents

In 2008, Barcelona registered 397 PCT patent applications, by inventors' residence, with a ratio of 74.92 patents per million inhabitants, surpassing the number registered in areas like Amsterdam, Oslo and Dublin.

Due to the recession, some benchmark provinces like Milan and Amsterdam experienced a significant decrease in this indicator over the past year, while in Barcelona the downturn has been more moderate and led to level similar to that seen in 2006. Despite all this, the significant steps forward over recent years put PCT patents in Barcelona up 111.8% from 2000 to 2008.

Furthermore, companies in Barcelona generated a total of 95 technology patents, up 18.7% from 2007 with an inter-annual improvement of the ratio of patents per million inhabitants of 3.9. With this evolution, the increase in number of PCT technology patents in Barcelona over the 2000-2008 period was 207.1%, surpassing Dusseldorf and Milan for the first time.

PCT Patents* (number)



* Patent Cooperation Treaty
Source: OCDE

PCT technology patent applications 2008	PCT technology patent applications per million inhabitants 2008	Province (CITY)	Total PCT patent applications per million inhabitants 2008	Total PCT patent applications 2008
4,434	347.56	Tokyo (Tokyo)	638.88	8,151
3,063	321.50	Silicon Valley (SAN JOSE)	566.50	5,397
1,079	46.71	New York (NOVA YORK)	152.07	3,513
1,035	125.93	Boston (BOSTON)	358.07	2,942
762	39.07	Los Angeles (LOS ANGELES)	114.75	2,237
708	80.32	Osaka (OSAKA)	218.94	2,195
949	94.62	Seoul (SEOUL)	237.30	2,091
462	71.00	Houston (HOUSTON)	155.75	1,627
449	43.04	Chicago (CHICAGO)	350.96	1,593
349	130.57	Stuttgart (STUTTGART)	220.64	1,437
500	191.76	Munich (MUNICH)	486.75	1,300
783	172.43	Seattle (SEATTLE)	451.78	1,178
524	270.99	Stockholm (STOCKHOLM)	569.35	1,101
220	-	Paris (PARIS)	233.40	691
346	250.78	Uusimaa (HELSINKI)	484.89	670
65	21.86	Düsseldorf (DÜSSELDORF)	188.00	641
186	54.64	Berlin (BERLIN)	-	573
216	-	London (LONDON)	-	558
114	32.83	Rotterdam (ROTTERDAM)	139.95	484
47	-	Rhône (LYON)	117.79	459
81	20.73	Milan (MILAN)	-	421
95	**17.97**	**Barcelona (BARCELONA)**	**74.92**	**397**
122	19.91	Madrid (MADRID)	139.13	364
66	25.06	Amsterdam (AMSTERDAM)	-	286
108	-	Montreal (MONTREAL)	45.91	281
99	59.28	Vienna (VIENNA)	152.32	255
127	-	Toronto (TORONTO)	-	244
55	109.60	Copenhagen (COPENHAGEN)	17.81	224
28	2.20	Istanbul (ISTANBUL)	427.42	215
54	13.35	Rome (ROME)	46.29	187
82	-	Bouches-du-Rhône (MARSEILLE)	-	186
56	-	Dublin (DUBLIN)	241.60	134
60	108.63	Oslo (OSLO)	-	130
31	-	Manchester (MANCHESTER)	67.21	114
14	13.00	Brussels (BRUSSELS)	-	108
24	9.72	Valencia (VALENCIA)	98.61	103
39	23.00	Budapest (BUDAPEST)	-	97
39	-	Edinburgh (EDINBURGH)	32.20	79
29	-	Hérault (MONTPELLIER)	18.95	77
15	3.81	Attica (ATHENS)	-	59
11	9.67	Biscay (BILBAO)	38.95	47
11	-	Birmingham (BIRMINGHAM)	-	45
6	5.28	Prague (PRAGUE)	36.97	42
21	-	Glasgow (GLASGOW)	19.89	40
4	2.36	Warsaw (WARSAW)	-	32
6	3.14	Lisbon (LISBON)	17.07	29

Note: Counting patents according to the inventor's region of residence
The statistical source contains a total of 1,742 provinces. The provinces of reference are selected samples
Source: OECD

Introduction

2010 reaffirmed the solid recovery that began in Barcelona's tourism sector in 2009. In fact, according to data from Turisme de Barcelona, the city closed the year with record highs in key indicators: 7,133,524 visitors –up 10.1% from 2009, mainly due to increased numbers of foreign visitors– and more than 14 million overnight stays –9.6% more than the previous year. Furthermore, supply in the sector continues to grow: at the end of last year, the city of Barcelona had 328 hotels –up 2.2%– and in 2009 Barcelona moved up to the second position on the ranking of European urban areas in this regard, with 127,430 bed-spots, surpassed only by Paris.

In October 2010, the City Council passed the 2015 Strategic Tourism Plan for the city of Barcelona, which lays the foundation for a tourism model that fosters a balance between residents and visitors and proposes the necessary actions to guarantee economic, social and environmental sustainability in this sector, as well as the continuity and consolidation of the city's international leadership as an innovative destination and a benchmark in the field. In this context, environmental sustainability will be key to the sector's competitiveness, implementing a Responsible Tourism System in the city of Barcelona through the "Biosphere Destination" certification, making it the first urban destination in the world to receive BIOSPHERE certification.

The recent enlargement of the Barcelona airport has allowed for its development as a benchmark connection airport for the Mediterranean, with facilities to cover current demand and grow over the coming years to serve up to 55 million passengers per year. In 2010, the number of passengers served by this airport was nearly 30 million, making El Prat one of the top ten airports in Europe. Moreover, in June 2010, the Barcelona airport was recognized as the best in Europe with more than 25 million passengers at the ACI Europe 2010 awards. This award recognizes excellence and objectives met regarding quality service, commercial supply, safety and environmental awareness.

Likewise, the Port of Barcelona continues to be the top port in Europe and the Mediterranean in terms of cruise passengers, and was ranked the fourth best homeport in the world by the World's Top 20 Cruise Homeports 2009.

BAR
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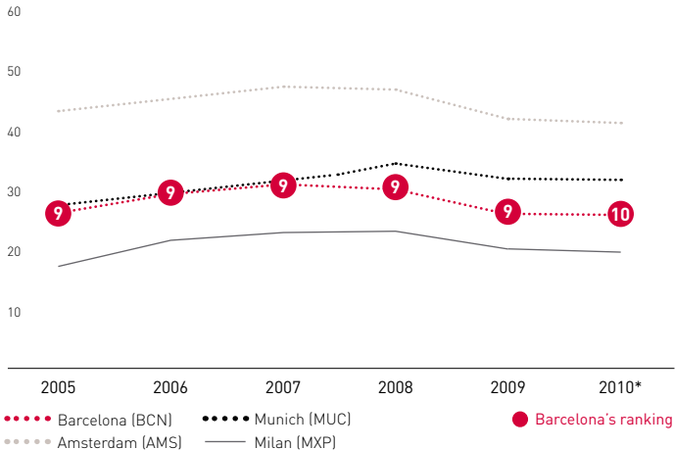
Top European airports by passenger volume in 2010

Barcelona, among the top ten airports in Europe

In 2010, the Barcelona airport received a total of 29,209,595 passengers, up 6.5% from the previous year. Evolution over the first eleven months of the year –the latest data provided in the ACI Europe Airport Traffic Report, which provides international comparisons– shows El Prat airport among the top ten airports on the European ranking by number of passengers, down one position from ninth due to the incorporation –for the first time– of Istanbul. Furthermore, the Barcelona airport has registered a higher inter-annual increase in passengers than the four largest airports on the continent.

It must be noted that in 2010 the El Prat airport offered intercontinental flights to 34 destinations, with 148 weekly frequencies, in line with its growth strategy and fostering the airport as a hub for the Mediterranean zone.

Passengers (millions)



* Accumulated data from January through December 2010
Source: Airport Council International, ACI Europe Airport Traffic Reports

City (Airport)	Variation 2009/2010 (%) January-November	Passengers January-November 2010
London Heathrow (LHR)	4.1	61,071,215
Paris Roissy (CDG)	3.5	53,839,620
Frankfurt (FRA)	5.6	49,224,096
Madrid (MAD)	4.4	46,168,789
Amsterdam (AMS)	11.1	41,968,544
Rome-Fiumicino (FCO)	8.6	33,585,584
Munich (ZHR)	10.8	32,194,509
Istanbul (IST)	12.4	29,751,077
London Gatwick (LGW)	2.8	29,482,000
Barcelona (BCN)	**6.4**	**27,122,284**
Paris Orly (ORY)	3.5	23,249,077
Antalya (AYT)	12.6	21,358,096
Zurich (ZHR)	4.6	21,100,297
Moscow Domodedovo (DME)	16.2	20,638,512
Palma de Mallorca (PMI)	-3.5	20,390,514
Copenhagen (CPH)	12.2	19,944,662
Vienna (VIE)	12.1	18,248,972
Moscow (SVO)	28.4	17,929,475
Düsseldorf (DUS)	10.3	17,761,321
Oslo (OSL)	7.8	17,712,799
Milan - Malpensa (MXP)	9.4	17,544,272
London Stansted (STN)	-7.4	17,355,408
Manchester (MAN)	1.5	16,747,400
Brussels (BRU)	6.6	15,974,616
Stockholm - Arlanda (ARN)	12.1	15,670,939
Athens (ATH)	-9.6	14,422,840
Berlin (TXL)	10.7	13,957,237
Lisbon (LIS)	4.4	13,016,183
Hamburg (HAM)	8.8	12,062,804
Helsinki (HEL)	13.6	11,940,075
Malaga (AGP)	9.2	11,435,974
Geneva (GVA)	10.3	10,860,848
Prague (PRG)	-4.3%	10,814,270
Istanbul (SAW)	nd.	10,648,006
Cologne /Bonn (CGN)	-0.5	9,247,480
Nice (NCE)	4.3	9,011,462
Alicante (ALC)	1.5	8,897,409
Moscow Vnukovo(VKO)	13.7	8,815,096
Stuttgart (STR)	11.0	8,635,755
Gran Canary (LPA)	2.3	8,589,242
Warsaw (WAW)	9.2	8,125,984
Edinburgh (EDI)	-3.9	8,125,424
Birmingham (BHX)	-4.0	8,084,214
Milan Linate (LIN)	10.7	7,653,375
Budapest (BUD)	3.3	7,623,822
Milan- Orio al Serio (BGY)	5.6	7,123,922
Berlin (SXF)	9.2	6,752,125
Tenerife Sud (TFS)	6.2	6,657,035
Glasgow (GLA)	-0.5	6,191,335
Naples (NAP)	7.1	5,210,810

Source: Airports Council International. Airport Traffic Report, Nov 10

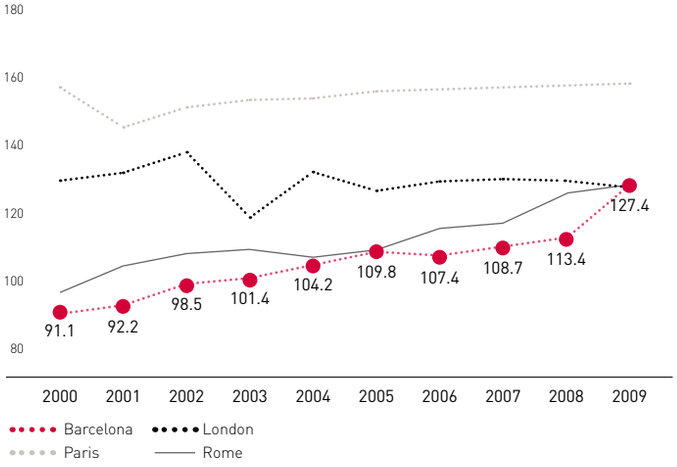
Hotel bed-spots in top European provinces in 2009

Barcelona, second urban agglomeration in the EU with most hotel bed-spots

In line with this indicator's upward trend over recent years, the number of hotel bed-spots in the province of Barcelona increased by 14,028 to a total of 127,430 in 2009. This growth puts Barcelona second on the ranking of hotel capacity in the main European urban agglomerates, surpassing Rome and London, and only behind Paris. Furthermore, Barcelona is sixth on the global ranking of all European provinces by number of hotel bed-spots.

Overall, the evolution of hotel bed-spots in Barcelona since 2000 has shown a more pronounced and positive growth dynamics than the top urban-tourism destinations like Paris, Rome and London.

Hotel bed-spots (thousands)



Note: This chart compares Barcelona to the main urban-tourism areas in Europe
Source: Eurostat

Bed-spots 2008	Province (CITY)	Bed-spots 2009
156,330	Paris (PARIS)	156,488
113,402	Barcelona (BARCELONA)	127,430
122,557	Rome (ROME)	127,077
124,920	London (LONDON)	124,920
96,547	Madrid (MADRID)	102,750
79,668	Berlin (BERLIN)	86,513
77,381	Milan (MILAN)	80,550
67,753	Prague (PRAGUE)	68,708
62,168	Attica (ATHENS)	61,882
49,005	Vienna (VIENNA)	50,911
46,099	Munich (MUNICH)	50,066
45,812	Lisbon (LISBON)	46,870
42,559	Dublin (DUBLIN)	43,635
36,526	Budapest (BUDAPEST)	38,958
38,886	Valencia (VALENCIA)	38,643
27,155	Manchester (MANCHESTER)	36,751
32,071	Frankfurt (FRANKFURT)	33,717
31,250	Bouches-du-Rhône (MARSEILLE)	30,858
31,170	Brussels (BRUSSELS)	30,706
27,544	Rhône (LYON)	27,352
26,863	Uusimaa (HELSINKI)	26,940
20,911	Düsseldorf (DÜSSELDORF)	21,369
20,434	Birmingham (BIRMINGHAM)	20,434
22,677	Warsaw (WARSAW)	20,083
18,900	Hérault (MONTPELLIER)	18,804
18,268	Edinburgh (EDINBURGH)	18,268
16,882	Bucharest (BUCHAREST)	18,097
16,997	Oslo (OSLO)	17,750
17,418	Glasgow (GLASGOW)	17,418
15,054	Stuttgart (STUTTGART)	15,139
10,932	Biscay (BILBAO)	11,082
10,914	Riga (RIGA)	10,907
8,457	Vilnius (VILNIUS)	9,514
6,594	Gran Zagreb (ZAGREB)	6,692
8,326	Sofia (SOFIA)	6,121

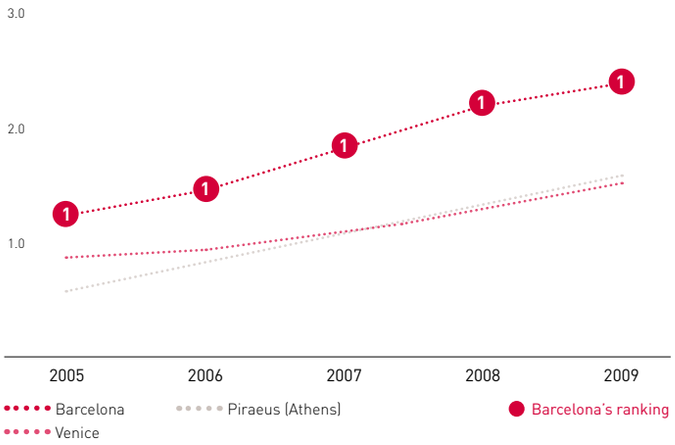
Note: The original database includes 1,372 provinces, however this table only shows a selection of benchmark provinces
Source: Eurostat

Cruises at top European ports in 2009

Barcelona maintains its position as the number one port in Europe and the Mediterranean

Barcelona continued to be –for the ninth consecutive year– the top homeport in Europe and the Mediterranean for cruise operators in 2009. Specifically, the number of cruisers in the Port of Barcelona was 2,151,465, up 4% from 2008. This is moderate growth compared to some competitors but puts the port over the two million mark for the second consecutive year. Furthermore, the Port of Barcelona is ranked fourth in the world as a homeport according to data from "World's Top 20 Cruise Homeports 2009", published by the Dream World Cruise Destination magazine, only behind American ports of Miami, the Everglades and Canaveral.

Cruisers (millions of passengers)



Source: Med Cruise 2009

Passengers 2008	City (Homeport)	Variation 2008/2009 (%)	Passengers 2009
2,069,651	Barcelona (Port)	4.0	2,151,465
1,818,616	Rome (Civitavecchia)	-0.9	1,802,938
1,290,000	Athens (Piraeus)	16.3	1,500,000
1,215,088	Venice (Port)	16.9	1,420,980
1,131,147	Palma Mallorca (Port)	-6.6	1,056,215
971,258	Southampton (Port)	8.6	1,054,900
772,000	Savona (Port)	-7.7	712,681
555,819	Copenhagen (Port)	21.4	675,000
547,905	Genoa (Port)	22.6	671,468
222,130	Kiel (Port)	31.2	291,388
273,187	Dover (Port)	-5.1	259,222
226,079	Amsterdam (Port)	-19.7	181,548
133,660	Harwich (Port)	1.0	135,000
89,791	Hamburg (Port)	41.3	126,839
127,300	Bremerhaven (Port)	-1.0	126,000

Source: MedCruise, Cruise Europe and individual port data

Introduction

The Barcelona Strategic Plan 2020 poses sustainability and climate change as the main challenges and, at the same time, opportunities to face changes and make the region more competitive by 2020. It also proposes that the Barcelona Metropolitan Area become a benchmark in sustainability for warm-climate cities. This strategic commitment confirms that improving energy efficiency, using renewable energy sources, improving air quality and noise pollution levels, and making transport more sustainable are key to competitiveness in the global economy.

Including sustainability in the framework of the area's competitiveness agenda enhances the many initiatives carried out in the city with joint public/private participation in the fields of urban life, Agenda 21, business, economic promotion and urban transformation. It is also a step forward in transversal awareness of the importance of fighting climate change. Related to this topic, the Observatory has included a comparative study carried out by university experts published in the journals Environmental Science and Technology and Nature Journal, which puts Barcelona among the top cities analyzed from around the world in terms of lowest levels of greenhouse-gas emissions.

In the field of sustainable mobility, it must be noted that in 2010 Barcelona was ranked sixth among top European cities in terms of internal transport according to the European Cities Monitor, while, on the other hand, the 2009 "Opinion survey on quality of life in 75 European cities" showed favorable results for assessment and use of public transport in the city. Furthermore, Barcelona continues to work towards implanting electric vehicles in the city through the public/private platform LIVE (Logistics for the Implementation of the Electric Vehicle) and the MOVELE plan. In 2013, the city will hold the most important international symposium on electric mobility and technology in the sector: World Electric Symposium and Exposition.

Efforts to improve the city's environmental profile were recognized in 2010 as Barcelona was selected by the European Commission as one of ten candidates for the Green European Capital 2012-2013 award although Barcelona received the best technical marks of all the finalists, in the end bids from Vitoria and Nantes were chosen.

Companies and private entities in Barcelona also show a remarkable commitment to sustainability despite the impact of the recession, as shown in the number of EMAS certifications. With a total of 194 entities through September 2010, the province of Barcelona leads the European ranking, above benchmark environmentalist countries like Finland, Sweden and Norway.

Finally, it must be noted that Barcelona is one again ranked the best city in Europe for workers' quality of life, for the 13th consecutive year, according to Cushman & Wakefield. This privileged position gives the city a huge competitive advantage in attracting tourists, companies, and professionals. In this same line, rankings carried out by American magazines like Forbes, Askmen, Monocle's and Time Out agree that Barcelona is one of the best cities in the world to live, according to their readers.

BARCELONA

SUSTAINABILITY AND
QUALITY OF LIFE

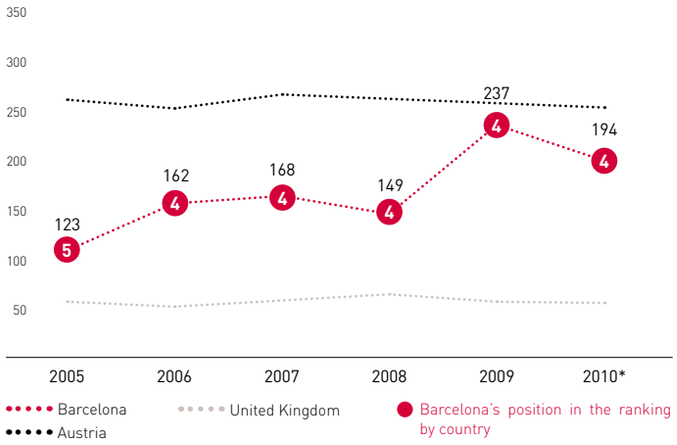
European companies' commitment to the environment in 2010

Companies in the Barcelona Metropolitan Area consolidate their commitment to the environment

In September 2010, according to the latest available data, Barcelona, the province and Catalonia registered 79, 194 and 259 EMAS certifications, respectively. These levels are near the top of the European ranking by number of certifications, surpassing benchmark environmentalist countries like Finland, Sweden and Norway. Likewise, it must be noted that Spain is ranked second in Europe –surpassed only by Germany- with 1,217 EMAS certifications, 21.3% of which are from Catalonia and 16%, from the Barcelona area.

Furthermore, according to the ISO Survey 2009, Spanish companies received a total of 16,527 ISO 14001 certifications, making Spain the first country in Europe and third in the world for this type of certification for the fifth consecutive year.

EMAS Certifications (number)



* Data through September 2010
Source: European Commission, Eco-Management and Audit Scheme (EMAS)

Country	EMAS Certifications 2010 *
Germany	1,395
Spain	**1,217**
Italy	1,035
Catalonia	**259**
Austria	250
Barcelona Province	194
Denmark	91
Barcelona	79
Portugal	75
Sweden	75
Greece	67
United Kingdom	62
Belgium	60
France	34
Czech Republic	26
Finland	22
Norway	22
Hungary	21
Poland	20
Ireland	8
Netherlands	5
Slovakia	5
Latvia	5
Cyprus	5
Romania	4
Slovenia	3
Estonia	3
Luxemburg	2
Malta	1
Lithuania	0
Bulgaria	0

* Data through September 2010
Source: European Commission, Eco-Management and Audit Scheme (EMAS) and Government of Catalonia Department of Territory and Sustainability. September 2010

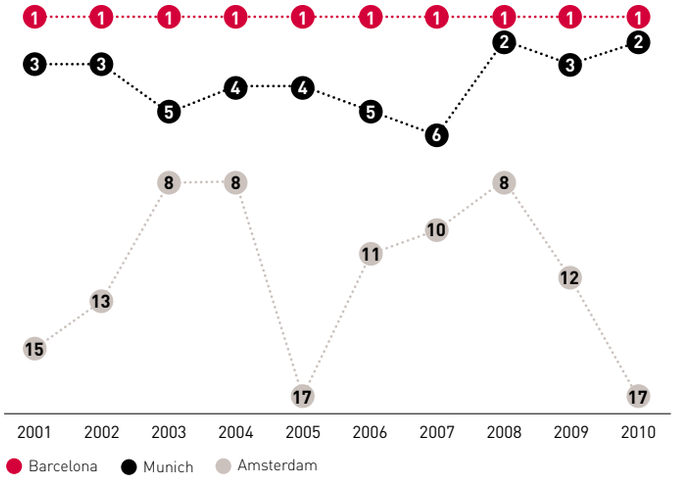
Top European cities in terms of workers' quality of life in 2010

Barcelona, top European city in workers' quality of life for the past 13 years

According to executives surveyed in 2010 for Cushman & Wakefield's European Cities Monitor, Barcelona is once again –for the thirteenth consecutive year- the best European city in terms of workers' quality of life. Following Barcelona in this ranking are Munich, Stockholm, Paris and Zurich. It must be noted that, while Munich has recovered the second position on this ranking it held in 2008, the other cities have shown notable progress, jumping up three or more positions in the past year.

Barcelona's privileged position regarding workers' quality of life is an asset that allows the city, year after year, to be ranked among the best European cities for doing business, as this is a key factor in companies' decision to locate to Barcelona, as well as for attracting and retaining talent and creative professionals.

Top European cities in quality of life (ranking)



Source: Cushman & Wakefield, European Cities Monitor

Ranking 2009	City	Ranking 2010
1	Barcelona	1
3	Munich	2
6	Stockholm	3
7	Paris	4
9	Zurich	5
5	Madrid	6
8	Copenhagen	7
-	Edinburgh	8
2	Geneva	9
11	London	10
10	Hamburg	11
19	Vienna	11
21	Berlin	13
4	Oslo	13
14	Lyon	15
16	Brussels	16
12	Amsterdam	17
29	Helsinki	18
17	Dublin	19
14	Lisbon	19
13	Rome	19
24	Düsseldorf	22
22	Manchester	23
17	Leeds	24
20	Milan	25
22	Birmingham	26
24	Frankfurt	26
27	Prague	28
-	Bratislava	29
28	Athens	30
24	Glasgow	31
31	Budapest	32
30	Bucharest	33
31	Istanbul	34
33	Warsaw	35
34	Moscow	36

Source: Cushman & Wakefield, European Cities Monitor 2010

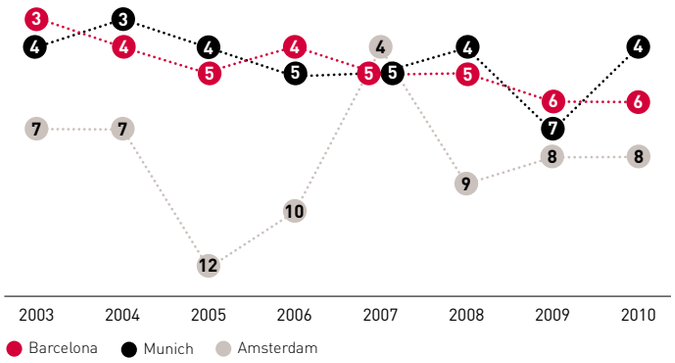
Top European cities in terms of internal transport in 2010

Barcelona continues to be ranked among the top ten European cities in terms of internal transport

In 2010, Barcelona maintained its position among the top ten best European cities for internal transport –the indicator that measures ease of movement within the city- according to the European Cities Monitor. In 2009, Barcelona was ranked sixth, preceded by London, Paris, Berlin, Madrid and Munich, and surpassing Stockholm, Amsterdam and Zurich.

Due to its importance in analyzing sustainable mobility, it must also be noted that according to the European Union's 2009 "Opinion survey on quality of life in 75 European cities", Barcelona is one of the cities where public transport is used most often and with one of the highest rates of satisfaction. In fact, 73% of those surveyed use public transport daily or once a week and a similar proportion (74%) are very or quite satisfied with urban public transport –up 10% from the previous survey carried out in 2006. Moreover, Barcelona is one of the large European cities with the shortest travel time to place of work or study -67% of those surveyed reported it took them 30 minutes or less. These favorable results must be linked to the compact city model and public policies to drive sustainable mobility developed over recent years.

Top European cities in internal transport (ranking)



Source: Cushman & Wakefield, European Cities Monitor

Ranking 2009	City	Ranking 2010
1	London	1
2	Paris	2
3	Berlin	3
4	Madrid	4
7	Munich	4
6	Barcelona	6
5	Stockholm	7
8	Amsterdam	8
9	Zurich	9
13	Manchester	10
10	Frankfurt	11
12	Brussels	12
16	Geneva	13
22	Düsseldorf	14
10	Leeds	15
22	Helsinki	16
18	Vienna	16
15	Birmingham	18
17	Hamburg	18
25	Oslo	18
-	Edinburgh	21
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21	Lyon	23
13	Copenhagen	24
20	Dublin	24
26	Lisbon	24
28	Prague	24
19	Glasgow	28
31	Rome	29
-	Bratislava	30
31	Budapest	30
29	Bucharest	32
26	Moscow	33
29	Warsaw	33
34	Istanbul	35
33	Athens	36

Source: Cushman & Wakefield, European Cities Monitor 2010

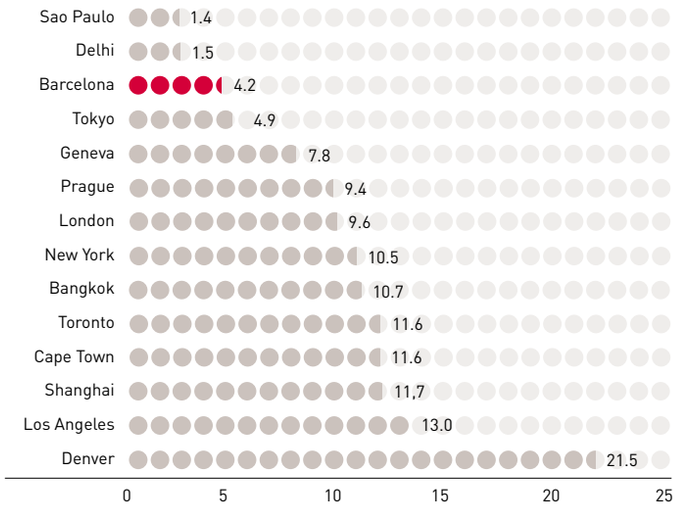
Greenhouse-gas emissions in world cities in 2009

Barcelona has one of the lowest per capita levels in the world

According to prestigious journals like the American Chemical Society's Environmental Science and Technology and Nature Journal, Barcelona has one of the lowest greenhouse-gas emission levels of all cities in the world, with 4.2 equivalent tons of CO_2 per capita. Of the cities studied, only Sao Paulo and Delhi had lower levels of emissions, while cities like Prague, London and New York showed levels twice as high as those in Barcelona.

Furthermore, according to the 2010 European Cities Monitor, Barcelona has moved up in the ranking of European cities free of pollution to its current 13th place ranking. Despite all this, the city must continue working to improve contamination levels that lead to elevated concentrations of nitrogen dioxide particles in the atmosphere.

Greenhouse-gas emissions (E.T. CO_2 per capita)



Source: Environmental Science and Technology. American Chemical Society. The Century of the City. Nature Journal

City	E.T. CO_2* per capita
Sao Paulo	1.4
Delhi	1.5
Barcelona	**4.2**
Tokyo	4.9
Geneva	7.8
Prague	9.4
London	9.6
New York	10.5
Bangkok	10.7
Toronto	11.6
Cape Town	11.6
Shanghai	11.7
Los Angeles	13.0
Denver	21.5

* Equivalent Tons CO_2
Source: Environmental Science and Technology. American Chemical Society. The Century of the City. Nature Journal

Introduction

In 2010, prices recovered around the world, as well as in Catalonia and Barcelona. The main factor behind this evolution was the upward trend in oil prices and basic raw materials in international markets, on top of which, in Spain, VAT and other indirect tax rates were raised. As a result, consumer prices in the province of Barcelona rose 2% in 2010, at a clearly higher rate than the previous year (+0.5%) and with a positive differential compared to the average in the Euro zone (+1.6%).

The Catalan economy moved out of the recession in 2010, however activity is still weak –particularly in regard to internal demand- and readjustment of the real estate market continues. In this context, and favored by depreciation of the euro versus the dollar, Barcelona continues to hold a globally competitive position in terms of prices when compared to the main cities in Europe and the world. According to data from Mercer Human Resource Consulting, Barcelona has fallen in the ranking of cost of living in world cities from number 38 to 49 –putting it on the lower end of the cities analyzed–.

Likewise, rental prices have fallen in Barcelona for offices, housing and, in particular, industrial space, which tends to reinforce its relative competitiveness. Regarding retail space, prices have also fallen on some of the city's most emblematic streets, like Passeig de Gracia, Avinguda Diagonal and Rambla Catalunya. Regarding salary costs, the 2010 UBS report shows that Barcelona maintains its position in the middle of the ranking of salary levels in cities studied around the world, ranked 29th.

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PRICES AND COSTS

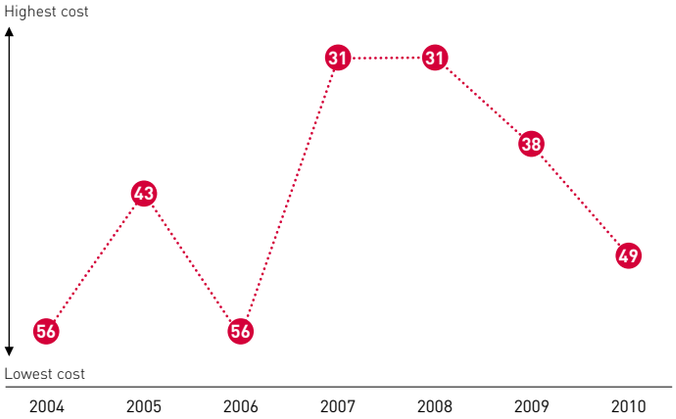
Cost of living in world cities in 2010

Barcelona improves eleven positions on world ranking

In 2010, Barcelona was ranked 49th in terms of cost of living in world cities according to the annual study carried out by Mercer Human Resource Consulting comparing 200 basic products and services in 143 countries around the world. The city improved eleven positions from 2009 and shows a downward trend for the second consecutive year. This way, the city gains competitiveness due to relative decreasing of prices. It must be noted that all European cities in the top 50 fell in the ranking from their positions the previous year –due to the change in the exchange rate of Euros to Dollars- and for Rome, Dublin and Athens, this decrease was also significant.

2009 was characterized by low price indexes and 2010 saw the recuperation of the upward trend in prices on an international level. Specifically, consumer prices in Barcelona increased 2% last year, putting inflation on a similar level to pre-crisis years. Despite this increase, which was above the European average, Barcelona still maintains a competitive position in terms of cost of living in European and world cities.

Barcelona's ranking



Source: Mercer Human Resource Consulting. Worldwide Cost of Living Survey–city rankings

Ranking 2009	City	Ranking 2010
-	Luanda	1
1	Tokyo	2
-	N'Djamena	3
3	Moscow	4
-	Geneva	5
2	Osaka	6
-	Libreville	7
6	Zurich	8
5	Hong Kong	8
7	Copenhagen	10
10	Singapore	11
14	Oslo	11
-	Victoria	13
-	Seoul	14
11	Milan	15
-	Beijing	16
16	London	17
13	Paris	17
17	Tel Aviv	19
-	Nagoya	19
-	Sao Paulo	21
-	Bern	22
-	Niamey	23
-	Sydney	24
12	Shanghai	25
18	Rome	26
8	New York	27
21	Vienna	28
-	Rio de Janeiro	29
46	Saint Petersburg	30
19	Helsinki	31
34	Dakar	32
-	Bangui	33
-	Melbourne	33
-	Amsterdam	35
-	Baku	36
30	Bratislava	37
-	Guangzhou	38
-	Noumea	38
28	Athens	40
27	Douala	40
22	Shenzhen	42
25	Dublin	42
-	Istanbul	44
34	Abidjan	45
-	Havana	45
-	Prague	47
-	Brazzaville	48
38	Barcelona	49
48	Frankfurt	50
26	Abu Dhabi	50

Source: Mercer Human Resource Consulting. Worldwide Cost of Living Survey–city rankings 2010

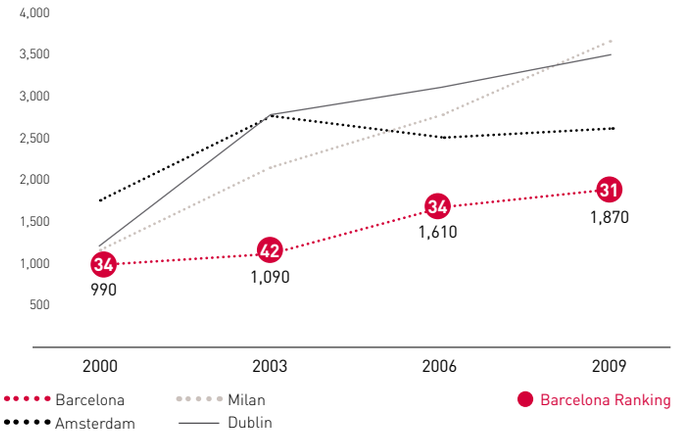
Housing rental prices in world cities in 2009

Barcelona continues to be competitive, with lower than average prices for world cities

In 2009, the average housing rental price in Barcelona was $1,870 per month according to the Union of Swiss Banks. This prices continues to be competitive compared to main cities in Europe and the world, like London, Paris, New York, Frankfurt and Brussels, and puts Barcelona 33% below average for the cities in the sample.

The recent crisis, of which the real estate market was one of the main detonators, has stopped the sharply upward trend in housing prices registered beforehand. In this context, between 2006 and 2009 the increase in housing rental prices in Barcelona was more moderate than in most cities analyzed –with an average yearly variation of 5%- keeping Barcelona in the bottom half of the table of urban areas in the sample.

Housing rental prices ($/month)



Source: Price & Earnings around the Globe, UBS

City	Housing rental ($/month) 2009
New York	8,330
Tokyo	7,200
Hong Kong	7,150
Dubai	4,990
Moscow	4,470
Chicago	4,410
Miami	4,260
Helsinki	3,920
Sydney	3,800
Singapore	3,660
Milan	3,570
Dublin	3,500
London	3,450
Seoul	3,400
Los Angeles	3,360
Paris	3,280
Geneva	3,230
Zurich	2,930
Frankfurt	2,900
Brussels	2,880
Toronto	2,770
Oslo	2,720
Amsterdam	2,580
Copenhagen	2,440
Rome	2,390
Budapest	2,340
São Paulo	2,310
Vienna	2,260
Rio de Janeiro	2,240
Kiev	2,000
Barcelona	1,870
Ljubljana	1,870
Madrid	1,830
Stockholm	1,830
Berlin	1,820
Athens	1,800
Montreal	1,800
Warsaw	1,750
Bratislava	1,630
Buenos Aires	1,560
Shanghai	1,430
Prague	1,370
Santiago, Chile	1,310
Lisbon	1,270
Vilnius	1,220
Johannesburg	1,180
Sofia	1,180
Mexico City	930
Riga	860

Note: Rental prices include all housing-related costs and are based on apartments built after 1980 (4 bedrooms, kitchen, bathroom and garage) with a middle-class level of comfort.
The original database includes 73 cities, however this table only shows a selection of benchmark cities.
Source: Prices &Earnings around the Globe 2009, UBS

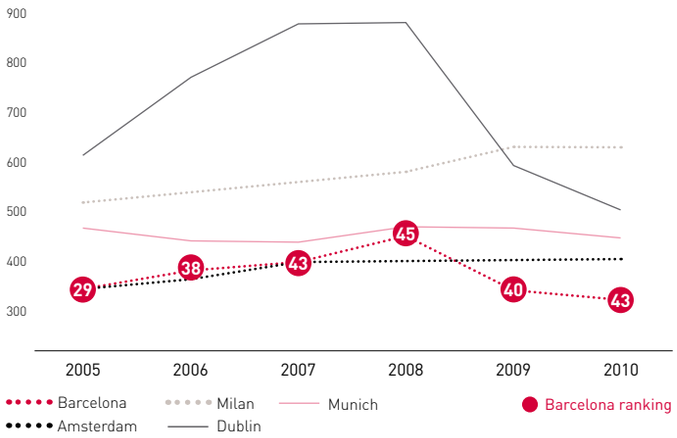
Office rental prices in world cities in 2010

Barcelona continues to gain competitiveness in office rentals

According to the Global Market Rents report carried out by Richard Ellis, yearly office rental prices again fell in Barcelona in 2010, reaching 313€/m², less than one third the price in London. This is roughly a 6% decrease and puts Barcelona among the 35 cities in the sample with the largest drop in office rental prices. This downward trend can be seen in all Spanish cities –especially Valencia where prices fell 15.9%- and on a European level has particularly affected cities like Dublin and Lisbon.

Affordable office rental prices allow Barcelona to continue on the lower part of the ranking of benchmark cities, gaining competitiveness with regard to Vienna, Boston, Amsterdam, Munich and Milan. This increased competitiveness in prices, in addition to a new generation of quality office spaces, makes Barcelona even more attractive for establishing companies and doing business.

Office rental prices (€/m²)



Source: CB Richard Ellis, Global Market Rents

City	Office rental (€/m²)
Tokyo	1,248.00
Moscow	1,042.88
Mumbai	1,032.00
London	984.06
Paris	923.66
Sao Paulo	888.00
Rio de Janeiro	850.00
New Delhi	801.00
Dubai	752.74
Hong Kong	731.00
Geneva	679.61
Zurich	664.68
Luxemburg	652.07
Istanbul	622.09
Milan	620.88
Stockholm	578.17
Seoul	560.00
Frankfurt	554.84
Edinburgh	552.22
Manchester	539.81
New York	526.00
Dublin	524.00
Rome	505.49
Glasgow	502.58
Athens	492.26
Oslo	485.75
Toronto	466.00
Madrid	455.29
Sydney	451.00
Shanghai	439.00
Brussels	436.36
Munich	435.16
Helsinki	425.56
Buenos Aires	421.00
Washington D.C.	419.00
Warsaw	413.33
Amsterdam	400.91
Prague	396.00
Boston	343.00
Copenhagen	332.31
Vienna	331.58
Hamburg	330.32
Barcelona	**313.48**
Lisbon	303.30
Montreal	303.00
Mexico City	298.00
Berlin	294.00
Santiago, Chile	288.00
San Juan, Puerto Rico	284.00
San Francisco	268.00
Atlanta	178.00

Note: Yearly price includes all occupation costs for offices located in the city center.
The original database included 175 cities, however this table shows only a selection of benchmark cities.
Source: CB Richard Ellis, Global Market Rents 2010

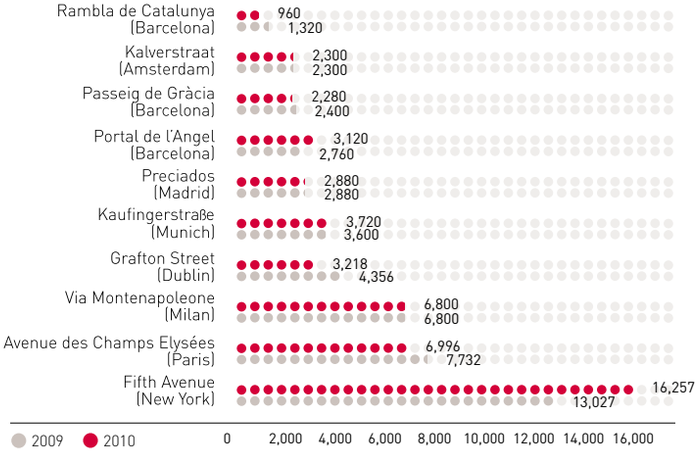
Retail rental prices in world cities in 2010

Barcelona continues to be well positioned to attract retail activity

For the second consecutive year, the effects of the recession and weak demand have taken a negative toll on retail rental prices in world cities. In fact, according to Cushman & Wakefield's Main Streets Across the World study, in 2010 retail rental prices fell 1.2% globally, 4.4% in European cities, and 10.2% in Barcelona.

Of the four shopping streets analyzed in Barcelona, the only one to show an increase in rental prices was Portal de l'Angel –up 13%- which gained a position, making it 22nd on the ranking of the most expensive streets in selected world cities. On the other hand, prices decreased 5% on Passeig de Gracia, 21.4% on Avinguda Diagonal and 27.3% on Rambla de Catalunya. Overall, however, Barcelona is still well positioned to attract retail shops, and rental prices on Portal de l'Angel are still 50% lower than on the main shopping streets of London, Paris and Rome.

Retail rental prices (€/m²)



Source: Cushman & Wakefield

City	Street	Retail rental (€/m²) 2010
New York	Fifth Avenue	16,257
Hong Kong	Causeway Bay	14,620
Tokyo	Ginza	7,711
London	New Bond Street	7,345
New York	Madison Avenue	7,303
Paris	Avenue des Champs Elysées	6,996
Milan	Via Montenapoleone	6,800
Rome	Via Condotti	6,700
Zurich	Bahnhofstrasse	6,020
Seoul	Myeongdong	4,844
Paris	Rue du Faubourg St Honoré	4,787
London	Oxford Street	4,764
Los Angeles	Rodeo Drive (Beverly Hills)	4,394
Sydney	Pitt Street Mall	4,116
Munich	Kaufingerstraße	3,720
São Paulo	Iguatemi Shopping	3,539
Chicago	North Michigan Avenue	3,515
San Francisco	Union Square	3,515
Frankfurt	Zeil	3,240
Vienna	Kärntnerstraße	3,240
Dublin	Grafton Street	3,218
Barcelona	**Portal de l'Angel**	**3,120**
Melbourne	Bourke Street	3,087
Madrid	Preciados	2,880
Moscow	Tverskaya	2,857
Shanghai	East Nanjing Road	2,851
Singapore	Orchard Road	2,787
Stuttgart	Königstraße	2,700
Athens	Ermou	2,640
Berlin	Tauentzienstraße (south)	2,640
Hamburg	Mönckebergstraße	2,640
Toronto	Bloor Street	2,595
Madrid	Serrano	2,580
Amsterdam	Kalverstraat	2,300
Barcelona	**Passeig de Gràcia**	**2,280**
Copenhagen	Strøget	2,141
Kuala Lumpur	Suria KLCC	1,985
Prague	Na Prikope/Wenceslas Square	1,980
Istanbul	Abdi Ipekci (European side)	1,959
Oslo	Karl Johan Gate	1,884
Birmingham	High Street	1,856
Vancouver	Robson Street	1,824
Rio de Janeiro	Rio Sul Shopping	1,816
Newcastle	Northumberland Street	1,755
Manchester	Market Square	1,755
Edinburgh	Princes Street	1,729
Rotterdam	Lijnbaan	1,700
Brussels	Rue Neuve	1,625
Valencia	Colon	1,560
Mumbai	Linking Road, Western Suburban	1510
Beijing	Wanfujing	1,509
Lyon	Rue de la République	1,473
Stockholm	Biblioteksgatan	1,466
Helsinki	City Centre	1,440
Seville	Tetuán	1,440
Bilbao	Gran Via	1,440
Tel Aviv	Ramat Aviv	1,346
Marseille	Rue St Ferréol	1,326
Saragossa	Pl. de la Independencia	1,260
Beirut	ABC Centre Achrafieh	1,225
Budapest	Váci utca	1,200
Kuwait City	Raya Mall	1,061
Barcelona	**Rambla de Catalunya**	**960**
Lisbon	Chiado	960
Barcelona	**Avinguda Diagonal**	**660**

Note: Yearly price per square meter.
The original database includes 177 cities, however this table shows only a selection of benchmark cities.
Source: Cushman & Wakefield, Main Streets Across the World 2010

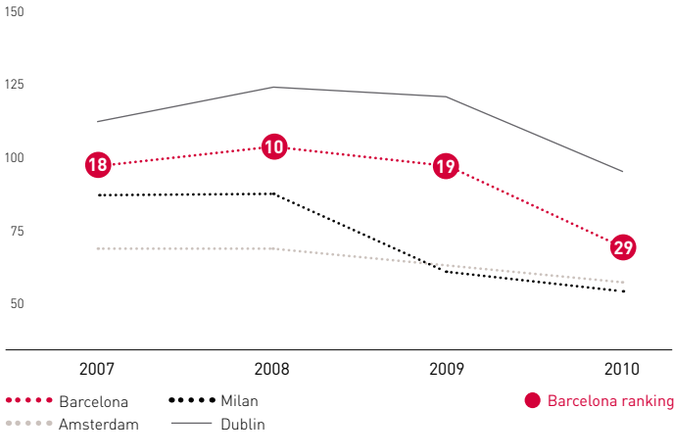
Industrial-land rental prices in European cities in 2010

Barcelona gains competitiveness in industrial-space prices

According to the Cushman & Wakefield report entitled Industrial Space Across the World, Barcelona gained competitiveness in 2010 in terms of the price of industrial space, down 10 positions to 29th on the ranking of world cities. Rental prices for industrial space in Barcelona are currently at 72€/m²/year, which is 20% lower than the previous year –one of the most noteworthy decreases in the sample studied–.

The price of industrial land in Barcelona is lower than in benchmark cities like Frankfurt, Munich, Dublin and London. Due to the effects of the crisis, the city is no longer on the higher end of this ranking, reinforcing its competitiveness regarding attraction of industrial investment and establishment of foreign companies in the growth stages.

Highest price for premises over 5,000 m² (€/m²/year)



Source: Cushman & Wakefield. Industrial Space Across the World

City	Industrial-land rental price (€/m²/year) 2010
Tokyo	151.73
London - Heathrow	146.52
Hong Kong	127.88
Oslo	121
Geneva	115.40
London - Hammersmith	113.34
Zurich	108.61
Helsinki	108
London - Gatwick	101.66
Paris	100
Dublin	97
Sydney	92.83
Edinburgh	90.01
Stockholm	89.63
Singapore	88.48
Ben Gurion International Airport	88.18
Amsterdam Schiphol Airport	85
Bristol	83.34
Madrid	80
Zagreb	78
Munich	78
Moscow	76.75
San Francisco Peninsula	76
São Paulo	72.98
Birmingham	72.23
Glasgow	72.23
Frankfurt	72
Hamburg	72
Barcelona	**72**
Malmö	70.25
Rio de Janeiro	69.49
Goteborg	67.83
Copenhagen	67.20
Düsseldorf	66
Athens	66
Manchester	65.56
Cardiff	65.56
Newcastle	63.34
Stuttgart	63
Leipzig	63
Warsaw	63
Istanbul	62.79
Leeds	62.78
Taipei	62.73
Durban	62.11
Cape Town	62.11
Johannesburg	62.11
Rome	62
Sofia	60
Berlin	60
Cologne	60
Amsterdam	60

Note: The original database included 136 cities, however this table only shows a selection of benchmark cities
Source: Cushman & Wakefield. Industrial Space Across the World 2010

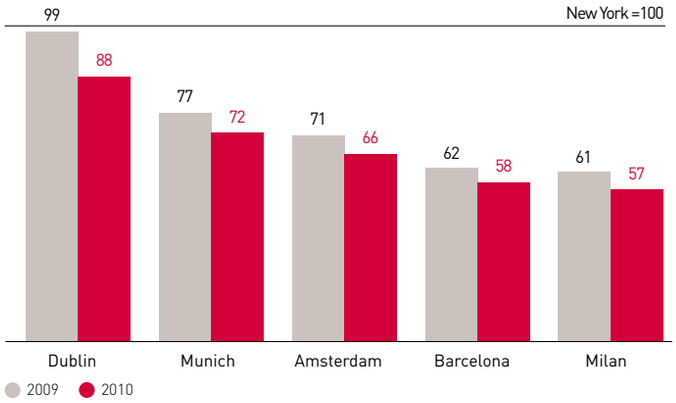
Wage levels in world cities in 2010

Barcelona maintains its position in the middle of the world ranking

According to the UBS report Prices & Earnings Around the Globe, Barcelona is ranked 29th in the world of the 72 cities analyzed and 19th in Europe regarding net wage levels –down 5 and 3 positions respectively from 2009–. Despite this decrease, Barcelona is still in the middle of the ranking of net salaries in Europe and the world, above cities like Milan, Rome and Prague.

There was also a generalized downward trend in net wages in European cities in 2010, as illustrated by the cases of Dublin, Copenhagen and Helsinki. One of the main factors contributing to this fact was the depreciation of the Euro versus the Dollar, as the ranking is based on net wage levels in New York City.

Net salary level (index New York =100)



Source: Prices & Earnings Around the Globe, UBS 2010

Gross Wage (New York = 100)	City	Net Wage (New York = 100)
122	Zurich	126
117	Geneva	113
100	New York	100
93	Sydney	99
91	Los Angeles	92
102	Oslo	92
80	Luxemburg	91
118	Copenhagen	88
75	Dublin	88
77	Tokyo	86
79	Miami	82
78	Montreal	82
79	Toronto	82
80	Chicago	79
82	Stockholm	79
73	London	78
75	Helsinki	77
82	Munich	72
79	Frankfurt	72
79	Brussels	72
68	Vienna	70
71	Berlin	68
65	Lyon	67
65	Paris	67
54	Nicosia	66
73	Amsterdam	66
52	**Madrid**	**60**
53	Auckland	58
52	**Barcelona**	**58**
60	Milan	57
40	Dubai	55
44	Tel Aviv	50
42	Lisbon	46
44	Athens	45
48	Rome	45
35	Hong Kong	44
33	Taipei	40
37	Seoul	40
34	Sao Paulo	39
31	Moscow	36
34	Johannesburg	36
30	Singapore	35
41	Ljubljana	34
26	Manama	34
30	Rio de Janeiro	31
27	Istanbul	28
24	Prague	26
24	Tallinn	26
18	Doha	25
24	Warsaw	24
20	Bogota	24

Note: Gross salary per hour is calculated based on 14 professions. Net salary is calculated after taxes and social security payments.
The original database includes 72 cities, however this table only shows a selection of benchmark cities.
Source: Prices & Earnings Around the Globe 2010. UBS

Introduction

After the deep impact of the crisis on European job markets in 2009, labor downsizing clearly began to level off in 2010 with the world economy growing at a good pace, driven by dynamic emerging countries, the United States and some countries in the Euro zone. In Barcelona, Catalonia and Spain, however, experts expect reactivation to be slow and recuperation of jobs lost during the recession to take years.

In fact, the recent global economic recession has led to a generalized deterioration of labor-related indicators in the European Union, which has affected the Spanish and Catalan job markets with particular intensity. This process has caused a sharp increase in unemployment rates –reaching nearly double the European average– and led Catalonia's employment rate to fall below the European average in 2009 for the first time in ten years.

In this adverse context, Barcelona's economy has experienced an intense period of downsizing and destruction of jobs. In spite of this, the city's employment rate –66.2% in the fourth quarter of 2010– is still above the European average, with the differential reaching nearly 7% in the case of the female employment rate. Overall, the effects of the recession on Barcelona have been more moderate than in its surroundings and the city finished off the year with one million workers affiliated to Social Security and an activity rate of 79%, which is nearly 8% above the European average.

Coordinated action under the framework of the Agreement for quality employment in Barcelona 2008-2011 reached by the City Council, trade unions CCOO and UGT, business organizations Foment de Treball and Pimec, and the Government of Catalonia has been key to promoting programs and services on par with the needs of the city and its residents. This instrument of consensus and coordination has allowed the city, through Barcelona Activa, to roll out an extensive network of effective actions to foster job orientation and placement as well as driving the generation of economic activity, focusing especially on high-risk groups and taking palliative measures that seek out short-term effects with a preventative standpoint and the goal of transforming the city's productive model and the quality of its job market. As a result of this joint effort, roughly 15,000 new jobs have been created so far: 6,500 through the creation of 3,400 new companies and 8,500 through employment placement programs.

Regarding human capital, Barcelona continues to be a leader in business training of excellence, as it is the only European city with two educational institutions –IESE and ESADE– ranked among the top ten business schools in the world according to the Financial Times and The Economist Intelligence Unit. Furthermore, the number of workers that hold a university degree in Catalonia increased to 37% (for men) and 41% (for women) in 2009, above the European Union average.

BARCELONA

LABOUR MARKET AND TRAINING

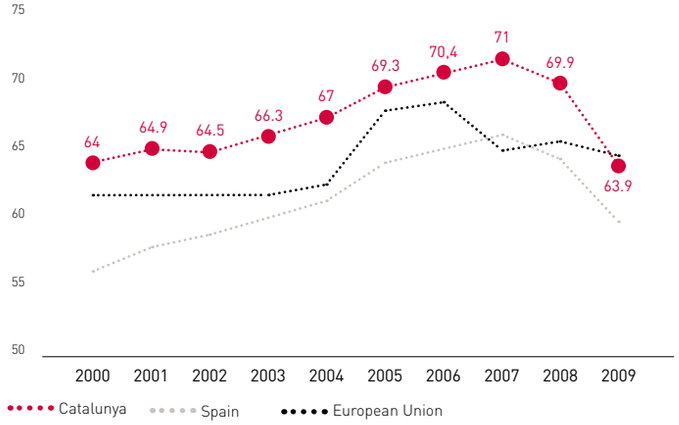
Employment rate in European regions in 2009

Female employment rate in Catalonia stays on par with European average

The crisis that has affected the world economy over recent years has led to an intense readjustment of the job market and a general decrease in employment rates in European job markets, particularly in Spain and Catalonia. Thus, in 2009, the employment rate in Catalonia was 63.9%, down 6% from 2008 and below the European average for the first time in ten years. Despite this decrease, the region's rate is still higher than that of Spain as a whole and regions like Dublin, Birmingham and Brussels. Unlike the previous year, 2009 also saw a decrease in the female employment rate in Catalonia, down 3.6%, after a period of sustained growth, reaching a high of 58.6%. This is still on par with the European average, but far below leading regions on the continent where this indicator is above 70%.

Regarding the city of Barcelona, the total employment rate in the fourth quarter of 2010 was 66.2%, with female employment reaching 65.3%. This rate dropped much more moderately (-0.6%) than in 2009, staying above both the Spanish and European averages.

Employment rate (%)



Source: Eurostat

Female employment rate (%) 2009	Variation 2008/2009 (%)	Region (CITY)	Variation 2008/2009 (%)	Employment rate (%) 2009
73.2	0.5	North Holland (AMSTERDAM)	-0.2	78.1
76.2	-2.3	Oslo (OSLO)	-2.1	77.7
75.3	1.0	Denmark (COPENHAGEN)	-0.7	77.4
70.2	0.4	South Holland (ROTTERDAM)	0.0	76.1
71.5	0.8	Upper Bavaria (MUNICH)	0.3	76.1
74.6	-0.5	Stockholm (STOCKHOLM)	-1.0	76
69.7	0.2	Stuttgart (STUTTGART)	-0.6	74.7
66.9	0.8	Darmstadt (FRANKFURT)	0.2	72.2
70.6	-1.1	Southern Finland (HELSINKI)	-2.3	71.7
64.2	0.2	Prague (PRAGUE)	0.2	71.7
67.8	1.3	Hamburg (HAMBURG)	0.7	71.6
66.4	-3.2	Eastern Scotland (EDINBURGH)	-3.5	71.1
67.2	-0.4	Sofia (SOFIA)	-0.6	70.4
65.9	0.8	Southwest Scotland (GLASGOW)	-1.0	68.4
64.4	2.1	Vienna (VIENNA)	0.7	68.1
62.1	0.7	Düsseldorf (DÜSSELDORF)	0.0	67.8
60.3	-1.7	London (LONDON)	-2.4	67.2
61.7	-1.5	Greater Manchester (MANCHESTER)	-1.3	66.7
63.2	-1.4	Ile de France (PARIS)	-0.9	66.7
63.7	-1.6	Lisbon (LISBON)	-2.0	66.5
60.3	-1.7	Community of Madrid (MADRID)	-3.6	66
56.1	-1.0	Lombardy (MILAN)	-1.2	65.8
63.5	2.6	Berlin (BERLIN)	-0.7	65.2
60.7	-0.4	Rhône -Alpes (LYON)	-0.9	64.8
59.3	1.3	Mazowsze (WARSAW)	0.2	64.8
58.6	-0.4	EUROPEAN UNION	-1.3	64.6
57.7	-1.5	Basque Country (BILBAO)	-3.7	64.2
58.6	**-3.6**	**Catalonia (BARCELONA)**	**-6.0**	**63.9**
57.2	1.0	Bucharest (BUCHAREST)	0.5	63.8
63	-3.3	Estonia (TALLINN)	-6.3	63.5
58.2	-2.9	Southeast Ireland (DUBLIN)	-5.5	62.8
52.4	0.2	Attica (ATHENS)	-0.9	62.5
56.8	0.0	Provence-Alps-Cote Azur (MARSEILLE)	0.1	61.7
56.1	-0.4	Central Hungary (BUDAPEST)	-1.1	61.6
56.3	-1.0	West Midlands (BIRMINGHAM)	-2.3	61.4
60.9	-4.5	Latvia (RIGA)	-7.7	60.9
54	-0.5	NEW MEMBER STATES*	-1.0	60.2
60.7	-1.1	Lithuania (VILNIUS)	-4.2	60.1
52.8	-2.1	SPAIN	-4.5	59.8
48.6	-0.4	Lazio (ROME)	-0.8	59.4
51.7	-3.7	Valencian Community (VALENCIA)	-6.5	58.2
52.1	-2.3	Languedoc-Roussillon (MONTPELLIER)	-2.4	56.4
49.3	0.9	Brussels (BRUSSELS)	-0.5	55.1
21.7	1.0	Ankara (ANKARA)	-1.5	42
19.6	-1.2	Istanbul (ISTANBUL)	-3.3	41.5

Note: Active population between 15 and 64 years old
The original database includes 314 regions, however this table only shows a selection of benchmark regions.
* Not including Bulgaria and Romania
Source: Eurostat

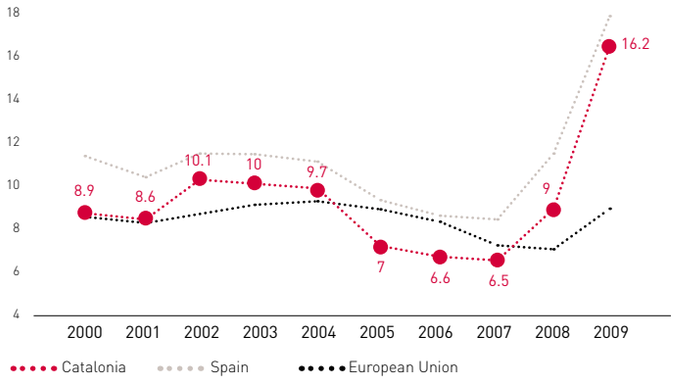
Unemployment rate in European regions in 2009

Unemployment rate further from the European average

In 2009, the impact of the economic recession caused unemployment rates to rise in all European regions, which has hit Spain and Catalonia particularly hard. In this context, the unemployment rate in Catalonia rose 7% to 16.2% in 2009, increasing the gap with the European average (8.9%) and benchmark regions but still staying 1.8% below the Spanish average. Likewise, the region's female unemployment rate reached 15.2%, up 6.2%. It must be noted that in Catalonia the female unemployment rate is lower than the male rate, while in most European regions the opposite is true.

In the city of Barcelona, the global unemployment rate was 16.2% and the female unemployment rate was 12.9% in the fourth quarter of 2010. These figures represent an increase of 0.8% and a decrease of 1.8%, respectively, compared to the same period of the previous year. With this evolution, the city's unemployment rates are still below the Catalan and Spanish averages.

Unemployment rate (%)



Source: Eurostat

Female unemployment rate (%) 2009	Region (CITY)	Unemployment rate (%) 2009
3.2	Prague (PRAGUE)	3.1
3.4	North Holland (AMSTERDAM)	3.2
3.0	Oslo (OSLO)	3.6
3.6	South Holland (ROTTERDAM)	3.6
3.6	Bucharest (BUCHAREST)	4.0
3.9	Sofia (SOFIA)	4.1
3.9	Upper Bavaria (MUNICH)	4.2
5.3	Stuttgart (STUTTGART)	5.2
6.4	Lombardy (MILAN)	5.4
6.2	Mazowsze (WARSAW)	6.0
5.4	Denmark (COPENHAGEN)	6.1
6.0	Darmstadt (FRANKFURT)	6.2
6.1	Central Hungary (BUDAPEST)	6.6
6.5	Stockholm (STOCKHOLM)	6.8
6.4	Southern Finland (HELSINKI)	7.0
5.7	Hamburg (HAMBURG)	7.1
5.6	Southwest Scotland (GLASGOW)	7.4
6.5	Eastern Scotland (EDINBURGH)	7.5
6.4	Vienna (VIENNA)	7.5
6.7	Düsseldorf (DÜSSELDORF)	7.7
7.8	Ile de France (PARIS)	8.4
10.8	Lazio (ROME)	8.5
8.9	Rhône -Alpes (LYON)	8.7
11.1	Attica (ATHENS)	8.8
8.9	**EUROPEAN UNION**	**8.9**
9.1	London (LONDON)	9.0
9.2	**NEW MEMBER STATES***	**9.0**
8.2	Greater Manchester (MANCHESTER)	9.5
9.6	Provence-Alpes-Cote Azur (MARSEILLE)	9.5
9.9	Lisbon (LISBON)	9.8
11.5	Basque Country (BILBAO)	11.0
7.6	Southeast Ireland (DUBLIN)	11.3
14.6	Ankara (ANKARA)	12.2
9.9	West Midlands (BIRMINGHAM)	13.1
10.4	Lithuania (VILNIUS)	13.7
11.6	Berlin (BERLIN)	13.7
10.6	Estonia (TALLINN)	13.8
13.5	Languedoc-Roussillon (MONTPELLIER)	13.9
13.9	Community of Madrid (MADRID)	14.0
15.7	Brussels (BRUSSELS)	15.7
18.9	Istanbul (ISTANBUL)	15.9
15.2	**Catalonia (BARCELONA)**	**16.2**
13.9	Latvia (RIGA)	17.1
18.4	**Spain**	**18.0**
21.0	Valencia Community (VALENCIA)	21.2

Note: Population over 15 years old.
The original database includes 314 regions, however this table only shows a selection of benchmark regions
*Not including Bulgaria and Romania
Source: Eurostat

Workers with tertiary education in European regions in 2009

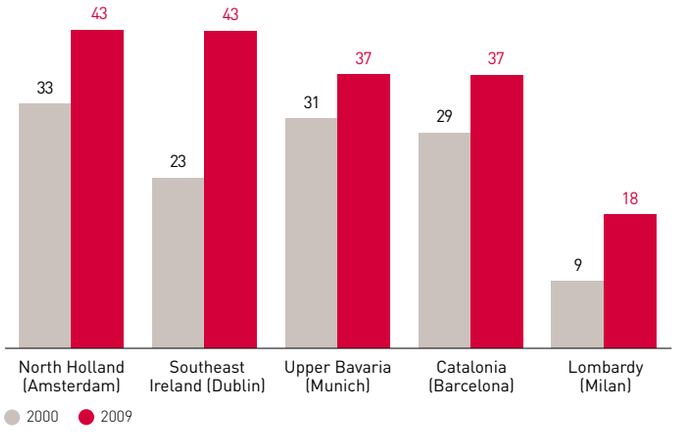
The percentage of catalan workers with tertiary education increases

In 2009, 36.9% of all workers in Catalonia held university –according to data from Eurostat- which shows a significant increase of 2.5% from the previous year. This indicator is above both the European Union (29.7%) and Spanish (36.7%) averages and also surpasses benchmark regions like Upper Bavaria, Stuttgart and Rhône-Alpes.

The percentage of female Catalan workers with university training is once again higher than the total (40.7%), up 2%. Despite being slightly below the Spanish average (41.4%), this indicator is clearly higher than the European average (32.5%) and nears that of countries like Denmark.

Overall, although the clear progress of higher education in Catalonia in 2009 must be valued positively, more work must be done to put the region's level of studies on par with those in Northern Europe.

Workers with tertiary education (% of total workers)



Source: Eurostat

Female workers with tertiary education 2009 (% of total)	Region (CITY)	Total workers with tertiary education 2009 (% of total)
55.62	Brussels (BRUSSELS)	52.12
55.74	Basque Country (BILBAO)	51.79
52.07	London (LONDON)	50.08
36.86	Community of Madrid (MADRID)	44.29
46.97	Ile de France (PARIS)	44.27
49.17	Stockholm (STOCKHOLM)	43.97
44.85	North Holland (AMSTERDAM)	43.37
48.03	Southeast Ireland (DUBLIN)	43.15
46.19	Eastern Scotland (EDINBURGH)	42.97
44.32	Berlin (BERLIN)	42.20
42.93	Southwest Scotland (GLASGOW)	38.37
43.62	Lithuania (VILNIUS)	37.64
45.19	Southern Finland (HELSINKI)	37.21
43.57	Sofia (SOFIA)	37.21
41.84	Denmark (COPENHAGEN)	37.12
36.90	South Holland (ROTTERDAM)	37.01
40.70	**Catalonia (BARCELONA)**	**36.90**
41.42	**Spain**	**36.66**
31.52	Upper Bavaria (MUNICH)	36.54
56.13	Ankara (ANKARA)	36.13
37.83	Greater Manchester (MANCHESTER)	35.40
41.75	Mazowsze (WARSAW)	35.08
38.28	Attica (ATHENS)	34.03
36.33	Bucharest (BUCHAREST)	33.86
27.17	Stuttgart (STUTTGART)	33.82
36.60	Central Hungary (BUDAPEST)	33.23
29.01	Darmstadt (FRANKFURT)	32.82
35.94	Rhône -Alpes (LYON)	32.78
35.14	West Midlands (BIRMINGHAM)	32.70
32.67	Prague (PRAGUE)	32.41
36.86	Valencian Community (VALENCIA)	32.21
36.11	Languedoc-Roussillon (MONTPELLIER)	32.08
35.51	Provence-Alpes-Cote Azur (MARSEILLE)	31.51
38.36	Latvia (RIGA)	30.94
31.73	Vienna (VIENNA)	30.48
32.55	**EUROPEAN UNION**	**29.72**
23.44	Düsseldorf (DÜSSELDORF)	27.08
29.87	Lisbon (LISBON)	25.75
29.19	**NEW MEMBER STATES***	**24.21**
42.43	Istanbul (ISTANBUL)	22.92
28.53	Lazio (ROME)	22.82
22.11	Lombardy (MILAN)	18.34

Note: % between 25 and 64 years old with university degree.
The original database includes 314 regions, however this table only shows a selection of benchmark regions
* Not including Bulgaria and Romania
Source: Eurostat

Best European business schools in 2011

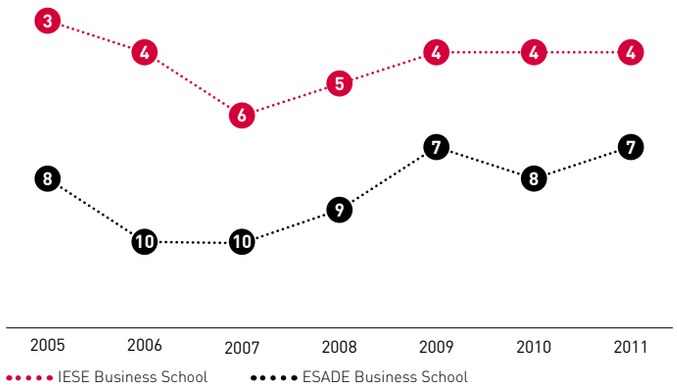
Barcelona continues to lead as a city of training of excellence

Two of the city of Barcelona's business schools, IESE and ESADE, are ranked 4th and 7th among the top 100 full-time MBA programs in Europe according to the Financial Times report, with ESADE moving up two positions from the 2010 ranking, putting it ahead of the University of Oxford Saïd Business School. Likewise, these prestigious institutions are ranked among the top 25 schools in the world, 9th and 21st, respectively, with IESE up two positions from 2010. Furthermore, in 2011 EADA also joined the top twenty-five European schools for the first time, ranked 24th.

On the other hand, the Economist Intelligence Unit's 2010 full-time MBA ranking puts IESE first in Europe and fifth in the world, while ESADE is ranked 7th in Europe and 20th in the world.

These rankings show Barcelona's competitiveness as a hub of training of excellence and make it the only city with two educational institutions among the top ten business schools in Europe.

Position on European ranking



Source: Financial Times

European Ranking 2011	Business School	City	World Ranking 2011
1	London Business School	London	1
2	Insead	Fontainebleau	4
3	IE Business School	Madrid	8
4	**IESE Business School**	**Barcelona**	**9**
5	IMD	Lausanne	14
6	HEC París	Paris	18
7	**ESADE Business School**	**Barcelona**	**21**
8	University of Cambridge: Judge	Cambridge	26
9	University of Oxford: Saïd	Oxford	27
10	SDA Bocconi	Milan	28
11	Manchester Business School	Manchester	29
12	City University: Cass	London	32
13	Cranfield School of Management	Cranfield	34
14	Rotterdam School of Management, Erasmus University	Rotterdam	36
15	Imperial College Business School	London	37
16	Lancaster University Management School	Lancaster	41
17	Durham Business School	Durham	55
18	Vlerick Leuven Gent Management School	Gant	55
19	Warwick Business School	Coventry	58
20	Hult International Business School	London	61
21	Birmingham Business School	Birmingham	68
22	University of Strathclyde Business School	Glasgow	74
23	University College Dublin: Smurfit	Dublin	78
24	**EADA**	**Barcelona**	**84**
25	University of Edinburgh Business School	Edinburgh	88
26	Bradford School of Management/TiasNimbas Business	Bradford	90
27	Leeds University Business School	Leeds	94
28	Politecnico di Milano School of Management	Milan	96
29	EM Lyon Business School	Lyon	100

Source: Financial Times

BARCELONA

SYNTHESIS

2011

In an environment marked by the global economy pulling out of the recession, the Barcelona Observatory Report 2011 shows that the city maintains a good positioning on an international level and a recognizable city brand. At the same time, it also clearly manifests the complexity of the challenges the city faces and the strategic importance of its commitment to a change in productive model

Firstly, in the opinion of top European executives, Barcelona is still ranked among the top five cities in Europe for doing business and second in the world for organizing international meetings. Likewise, business forecasts for 2011 are better than the previous year in terms of turnover, exports and imports. Regarding direct foreign investment, Catalonia maintains the sixth position on the ranking of European regions with the largest number of projects received. However, the recession has led to a loss in the indicator of entrepreneurial activity in Barcelona, although it is still above the European average.

One of the key focal points in Barcelona's strategy is the change towards a productive model based on knowledge and creativity though, after some years of clear progress in this field, the indicators collected in this report show less favorable results. On one hand, Barcelona continues to progress as a hub of scientific excellence, is still ranked sixth in Europe for scientific production and, according to the journal Nature, went up 11 positions in the world ranking between 2000 and 2008. Moreover, the Barcelona area has one of the job markets with the largest critical mass in value-added sectors in Europe. Catalonia maintains its position among the top five regions with the highest number of workers in high and mid-to-high technology manufacturing and science and technology, has moved up three positions on the ranking for high-technology and knowledge-intensive services –reaching seventh- and is among the top six European regions in terms of employment in creative and cultural industries. At the same time, however, the negative effects of the economic climate can be seen in some of the employment indicators analyzed in this chapter and PCT patents, although the positive evolution of technology patents is noteworthy.

Barcelona is a benchmark in urban tourism in Europe and this is one of the city's strengths in the current complex climate. This can be seen in the fact that in 2009 the city became the second urban area in the EU with the most hotel bed-spots –up two positions from the previous year-, kept its first-place ranking as the best homeport for cruises in Europe and the Mediterranean, and the El Prat airport's position among the ten main airports in Europe, after showing the highest growth among large airports.

Sustainability and the environment have gained importance in cities' strategic development policies and Barcelona is moving in the same direction. Thus, for example, companies in the area continue to be at the top of the European ranking of EMAS certifications and the city has one of the lowest per capita CO2 emission levels –according to reliable scientific studies- and is in the top ten in Europe for internal transport. Regarding quality of life, Barcelona is ranked first for the thirteenth consecutive year.

In a year of recovering prices worldwide, Barcelona gained competitiveness in terms of costs. In fact, the city has improved its position in the world cities cost of living ranking –falling 11 places in 2010. Likewise, rental prices for office, retail and industrial land also fell considerably as a result of weak demand and the readjustment of the real estate market. This makes Barcelona more attractive for doing business and establishing companies when activity starts up again. However it must also be noted that salary levels fell in comparison to benchmark cities, in good part due to the loss of value of the Euro versus the Dollar.

In terms of training, the growth in percentage of workers with tertiary education is noteworthy, with values close to or above those found in benchmark European cities. Likewise, Barcelona offers business training of renowned prestige on a European and international level and is the only city with two business schools –IESE and ESADE- among the top ten in Europe.

Once again it must be noted that the least favorable indicators are those related to the job market, as the employment rate in Catalonia has fallen below the European average and the unemployment rate has grown considerably. Although employment and unemployment rates in the city are more favorable, the socioeconomic importance of these indicators make them a top priority in public policies.

According to the analysis of the business climate carried out by the Barcelona Chamber of Commerce, which is being included in this report for the first time this year, the progress of business in the Barcelona Metropolitan Area (BMA) improved in 2010, showing a more moderate drop in sales, prices, employment and investment (between 4% and 5% each) than in 2009. By sectors, industry and tourism had the best results in the BMA, followed by business services. Exports in industry grew, leaving behind the decline experienced in 2009, and the number of industrial export companies rose more in the BMA than in Catalonia. On the other hand, the intensity of the crisis in conjunction with rising oil prices made increased competitiveness and production prices more relevant among the factors limiting business progress, although weak demand continues to be at the top of the list and financing difficulties still abound.

The forecasts for 2011 in the BMA show improvement and surpass those for Catalonia. On one hand, sales and employment will fall more moderately in 2010, between 1% and 2%. On the other hand, the forecast for growth in investment in the BMA is noteworthy, 3.3% in 2011, compared to that of Catalonia. The industrial and hotel sectors have the best forecast, as both expect increased turnover and investment -higher in the industrial sector- and that employment will stop falling.

This context of recovery, albeit feeble compared to emerging economies and some developed countries whose economies are growing at a good pace, poses important challenges for Barcelona from a competitive standpoint. In this regard, the article from the London School of Economics and Political Science LSE Cities Series led by professor Richard Burdett included in this report -based on a study of Munich, Seoul, Turin and Barcelona- suggests some key metropolitan development strategies: a) active, aligned and intentional government with private sector and institutional partnership; b) internationalization, global positioning and trade; c) knowledge economy, innovation-based entrepreneurship and modernization of manufacturing; d) strong link between human capital and attractive, distinctive cities; and e) green economy, resource efficiency and decarbonization. In line with their analysis, cities that develop active, aligned and integrated methods taking into account these five ingredients –as the four cities analyzed have over the past 30 years- and work to strengthen their international positioning, promote the diversification and reorientation of their economies, invest in quality of life and space to produce and attract human capital, and make the transition towards a green economy, will be rewarded in the future.

	Best cities for business 2010	Entrepreneurial activity rate 2009[1,3]	Export business outlook 2011[1,2]	Foreign investment projects 2009[2]	Corporate tax, 2010[1,3]	International meetings 2009	Workers in high and mid-to-high technology manufacturing 2009[1,2]	Population employed in science and technology 2009[1,2]	Population employed in creative and cultural industries 2006[2]	PCT patent applications 2008[1,2]	Scientific production 2010
1	London	Iceland	Lisbon	London	Japan	Vienna	Milan	Paris	Paris	Tokyo	Beijing
2	Paris	Hungary	Copenhagen	Paris	United States	**Barcelona**	Stuttgart	London	London (Inner)	San Jose	London
3	Frankfurt	Greece	Stuttgart	Lyon	Argentina	Paris	Munich	Madrid	Milan	New York	Tokyo
4	Brussels	Norway	**Barcelona**	Düsseldorf	South Africa	Berlin	Paris	Copenhagen	Amsterdam	Boston	Paris
5	**Barcelona**	United States	Stockholm	Madrid	India	Singapore	**Barcelona**	**Barcelona**	Madrid	Los Angeles	New York
6	Amsterdam	Switzerland	Vienna	**Barcelona**	Belgium	Copenhagen	Düsseldorf	Warsaw	**Barcelona**	Osaka	Seoul
7	Berlin	Netherlands	Valencia	Moscow	France	Stockholm	Istanbul	Milan	Copenhagen	Seoul	Boston
8	Madrid	**Barcelona**	Munich	Frankfurt	Italy	Amsterdam	Frankfurt	Sofia	Rome	Houston	Shanghai
9	Munich	Catalonia	Warsaw	Milan	Canada	Lisbon	Lyon	Lyon	Munich	Chicago	Moscow
10	Düsseldorf	United Kingdom	Frankfurt	Dublin	Australia	Beijing	Bilbao	Munich	Stockholm	Stuttgart	Los Angeles
11	Milan	Finland	Madrid	-	Tunisia	Buenos Aires	Madrid	Berlin	Budapest	Munich	Madrid
12	Manchester	Spain	Paris	-	**Barcelona**	Seoul	Rotterdam	Istanbul	London (Outer)	Seattle	Rome
13	Zurich	France	Bilbao	-	Germany	Budapest	Berlin	Stuttgart	Oxford	Stockholm	Toronto
14	Geneva	Germany	Berlin	-	Luxemburg	Madrid	Helsinki	Frankfurt	Athens	-	-
15	Hamburg	Italy	Budapest	-	United Kingdom	Prague	Rome	Amsterdam	East Holland	**22 Barcelona**	**18 Barcelona**

1 This ranking refers to a selected sample
2 This ranking refers to regions or provinces
3 This ranking refers to countries
4 Ranking from lowest to highest value

	Airport passengers 2010	Hotel bed-spots 2009[1,2]	Cruise passengers 2009	EMAS Certification, 2010[3]	Workers' quality of life 2010	Best cities in internal transport 2010	CO_2 Emissions[4]	Cost of living 2010	Housing rental prices 2009[1]	Office rental prices 2010[1]
1	London Heathrow (LHR)	Paris	**Barcelona**	Germany	**Barcelona**	London	Sao Paulo	Luanda	New York	Tokyo
2	Paris Roissy (CDG)	**Barcelona**	Civitavecchia	Spain	Munich	Paris	Delhi	Tokyo	Tokyo	Moscow
3	Frankfurt (FRA)	Rome	Piraeus (Athens)	Italy	Stockholm	Berlin	**Barcelona**	N'Djamena	Hong Kong	Mumbai
4	Madrid (MAD)	London	Venice	Catalonia	Paris	Madrid	Tokyo	Moscow	Dubai	London
5	Amsterdam (AMS)	Madrid	Palma Mallorca	Austria	Zurich	Munich	Geneva	Geneva	Moscow	Paris
6	Rome-Fiumicino (FCO)	Berlin	Southampton	Denmark	Madrid	**Barcelona**	Prague	Osaka	Chicago	Sao Paulo
7	Munich (ZHR)	Milan	Savona	**Barcelona**	Copenhagen	Stockholm	London	Libreville	Miami	Rio de Janeiro
8	Istanbul (IST)	Prague	Copenhagen	Portugal	Edinburgh	Amsterdam	New York	Zurich	Helsinki	New Delhi
9	London Gatwick (LGW)	Athens	Genoa	Sweden	Geneva	Zurich	Bangkok	Hong Kong	Sydney	Dubai
10	**Barcelona (BCN)**	Vienna	Kiel	Greece	London	Manchester	Toronto	Copenhagen	Singapore	Hong Kong
11	Paris Orly (ORY)	Munich	Dover	United Kingdom	Hamburg	Frankfurt	Cape Town	Singapore	Milan	Geneva
12	Antalya (AYT)	Lisbon	Amsterdam	Belgium	Vienna	Brussels	Shanghai	Oslo	Dublin	Zurich
13	Zurich (ZHR)	Dublin	Harwich	France	Berlin	Geneva	Los Angeles	Victoria	London	Luxemburg
14	Moscow Domodedovo (DME)	Budapest	Hamburg	Czech Republic	Oslo	Düsseldorf	Denver	-	-	-
15	Palma de Mallorca (PMI)	Valencia	Bremerhaven	Finland	Lyon	Leeds		**49 Barcelona**	**31 Barcelona**	**43 Barcelona**

1 This ranking refers to a selected sample
2 This ranking refers to regions or provinces
3 This ranking refers to countries
4 Ranking from lowest to highest value

	Retail rental prices 2010[1]	Industrial land rental prices 2010[1]	Wage levels 2010[1]	Employment rate 2009[1,2]	Unemployment rate 2009[1,2,4]	Workers with tertiary education 2009[1,2]	European Business schools 2011
1	New York – Fifth Avenue	Tokyo	Zurich	Amsterdam	Prague	Brussels	London - London Business School
2	Hong Kong - Causeway Bay	London - Heathrow	Geneva	Oslo	Amsterdam	Bilbao	Fontainebleau - Insead
3	Tokyo - Ginza	Hong Kong	New York	Copenhagen	Oslo	London	Madrid - IE Business School
4	London - New Bond Street	Oslo	Sydney	Rotterdam	Rotterdam	Madrid	**Barcelona - Iese Business School**
5	New York - Madison Avenue	Geneva	Los Angeles	Munich	Bucharest	Paris	Lausanne - IMD
6	Paris - Avenue des Champs Elysées	London - Hammersmith	Oslo	Stockholm	Sofia	Stockholm	Paris - HEC París
7	Milan - Via Montenapoleone	Zurich	Luxemburg	Stuttgart	Munich	Amsterdam	**Barcelona - Esade Business School**
8	Rome - Via Condotti	Helsinki	Copenhagen	Frankfurt	Stuttgart	Dublin	Cambridge - University of Cambridge: Judge
9	Zurich - Bahnhofstrasse	London-Gatwick	Dublin	Helsinki	Milan	Edinburgh	Oxford - University of Oxford: Saïd
10	Seoul - Myeongdong	Paris	Tokyo	Prague	Warsaw	Berlin	Milan - SDA Bocconi
11	Paris - Rues du Faubourg St Honoré	Dublin	Miami	Hamburg	Copenhagen	Glasgow	Manchester - Manchester Business School
12	London - Oxford Street	Sydney	Montreal	Edinburgh	Frankfurt	Vilnius	London - City University: Cass
13	-	Edinburgh	Toronto	Sofia	Budapest	Helsinki	Cranfield - Cranfield School of Management
14	**22 Barcelona - Portal de l'Àngel**	-	-	-	-	-	Rotterdam - Rotterdam School of Management, Erasmus University
15	**35 Barcelona - Passeig de Gràcia**	**29 Barcelona**	**29 Barcelona**	**27 Barcelona**	**40 Barcelona**	**17 Barcelona**	London - Imperial College Business School

1 This ranking refers to a selected sample
2 This ranking refers to regions or provinces
3 This ranking refers to countries
4 Ranking from lowest to highest value

BARCELONA

MONOGRAPHIC

2011

BUSINESS CLIMATE IN THE BARCELONA METROPOLITAN AREA Situation in 2010 and outlook for 2011

Barcelona Chamber of Commerce Department of Economic Studies

Table of Contents

Executive summary

• The progress of business in the Barcelona Metropolitan Area (BMA) was bad in 2010, but better than in 2009.

• Sales, sales prices, employment and investment have fallen between 4% and 5%, in current terms, each in 2010, less than in 2009.

• Industry and tourism are the two sectors with the best results in the BMA, better than in Spain and, in the case of the hotel sector, better than in Catalonia as well.

• Exports in the industrial sector grew, leaving behind the downward trend of 2009. Moreover, the number of export companies in the BMA increased in 2010, and did so more than in Catalonia.

• The slight improvement in internal demand in 2010 made weak demand lose importance as a factor limiting the progress of business. Financing difficulties also decreased in importance but were still high. The construction sector is the most affected by both of these factors.

• However, the intensity of the crisis and increased oil prices led to increased importance of competition and production costs. The hotel sector was most affected by the first factor and industry by the second.

• Outlook for the BMA in 2011 show improvement above that in Catalonia.

• Sales and investment will fall more moderately than in 2010, between 1% and 2%, in current terms, in 2011.

• The forecast for growth of investment in the BMA in 2011 is noteworthy 3%, in current terms, versus the stagnation predicted for Catalonia.

• The industrial and hotel sectors have the best outlook for 2011. Both are expected to increase turnover and investment, more in the case of the industrial sector, and employment will stop decreasing.

1. Results of the survey on business climate for the economy overall and by sectors.

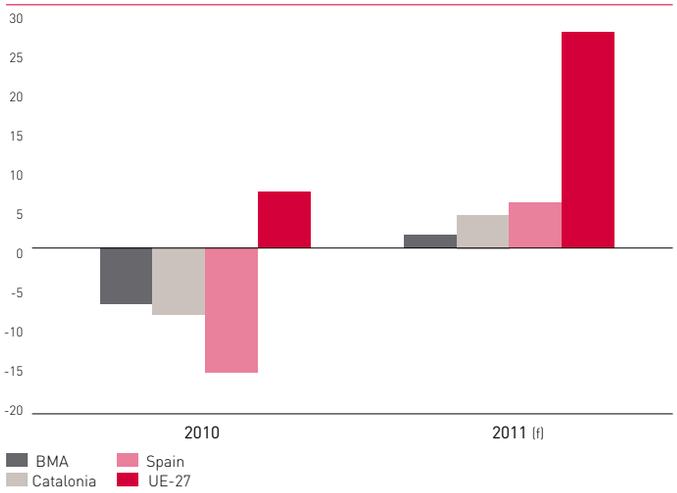
The worst of the recession was left behind in 2009. In 2010, the progress of companies in the Barcelona Metropolitan Area (BMA) was still bad, but not so much so as the previous year, which was the low point of this cycle.

The decrease in sales slowed down in 2010 compared to 2009, while sales prices also dropped less than the previous year. Likewise, employment and investment continued to drop in 2010, but at a more moderate pace than in 2009.

These results are in line with those of Catalonia and Spain, but differ from the more positive evolution of sales in the EU-27, where they began to grow slightly in 2010.

Sales in the BMA are expected to return to positive growth in 2011, but the forecast is not as positive as that for the European Union.

Graph 1.1. Evolution of sales in the economy overall. Situation in 2010 and outlook for 2011, compared to Catalonia, Spain and EU-27.
Balances[2], in percentage



(f) Forecast
Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain and EU-27).

[1] The balance is the difference between the percentage of companies with an increase in sales and the percentage of companies with a decrease in sales.
[2] Results for the economy overall are an aggregate of the results from the manufacturing industry, construction, retail trade, hotels and business services, which represent 46% of the economy in the BMA (in terms of Social Security affiliation members)

Table 1.1. Business climate in the economy overall[1].
Compared to Catalonia and Spain and the EU-27

Economy overall	BMA	Catalonia	Spain	UE-27
Situation in 2010				
Business progress	Bad	Bad	---	---
Evolution in 2010 vs. 2009				
Sales volume	↑	↑	↑	↑
Sales prices	↑	↑	←	---
Employment	↑	↑	↑	↑
Investment	↑	↑	↑	↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain and EU-27).

↑ **Increase and improvement** from previous year
↓ **Increase and worsening** from previous year
→ **Increase and no change** from previous year
= **Stagnation and improvement** from previous year
↑ **Decrease and improvement** from previous year
↓ **Decrease and worsening** from previous year
← **Decrease and no change** from previous year
= **Stagnation and worsening** from previous year

[1] Results for the economy overall are an aggregate of the results from the manufacturing industry, construction, retail trade, hotels and business services, which represent 46% of the economy in the BMA (in terms of Social Security affiliation members).

Sectorial results

The improvement in the progress of business in the BMA in 2010 can be explained, mainly, by the favorable evolution of the manufacturing industry and the hotel sector and, to a lesser degree, that of business services. However, the construction sector was slightly worse in 2010 than in 2009 and retail trade were still in the red but stable.

The **manufacturing industry** in the BMA improved progressively throughout 2010 and by the fourth quarter showed moderately positive progress of business, which wasn't true of the Catalan industry as a whole despite the fact that it also improved throughout the year. Moreover, industry in the BMA registered positive growth of sales in 2010, which was better than Spanish industry, which was still decreasing. Sales prices practically stopped falling in 2010, a fact that also hasn't yet been seen in the Spanish industry. Both facts are indicative of a faster recovery of industry in the BMA and in Catalonia than in Spain. Regarding exports, it must be noted that even in this difficult economic climate companies are working abroad, as shown by the increase in the percentage of industrial export companies from 2009 to 2010 (68% to 73%), higher than that of Catalonia (72% and 75%). Likewise, it must be noted that exports of these companies grew in 2010, leaving behind the decrease of 2009, while drops in employment and investment slowed in the BMA in 2010.

In the BMA **construction** sector, the decrease in turnover was more pronounced in 2010 than in 2009, while in Catalonia as a whole the decrease remained stable. The drop in sales prices also increased in the BMA. However, the decrease in employment slowed, while the fall in investment nearly came to a halt in 2010.

In **retail trade**, businesspeople in the BMA show that the progress of business was moderately less negative in 2010 than in 2009. However sales didn't improve, they only stabilized. In Spain, on the other hand, the decrease only slowed. The decrease in prices in the BMA, however, slowed, as did the fall in employment and investment.

The **hotel sector** showed favorable evolution in 2010 and the progress of business by the fourth quarter was rated moderately positive by businesspeople in the sector in the BMA. The same can't be said of Catalonia in general. Therefore, for the year, the sector showed more favorable evolution in the Barcelona Metropolitan Area than in Catalonia. Thus, turnover in the sector grew in 2010 in the BMA, while in Catalonia the decrease drew to a stop but hasn't yet registered positive growth. And, if we compare evolution in the hotel sector in the BMA with that of Spain as a whole, the difference is greater yet, given that turnover in Spain fell less than previous years but hasn't given signs of stopping. Sales prices still fell in 2010 in the BMA, but less than in 2009. Investment and employment showed similar evolution: more moderate decreases in 2010 than in 2009. In Spain, however, there is no improvement in employment but the downward trend has nearly stabilized.

Regarding **business services** in the BMA, progress of business in 2010 wasn't as bad as in 2009. However, the decrease in turnover slowed down, as did drops in employment and investment. On the other hand, the decrease in sales prices stabilized in 2010 with regard to 2009. Therefore, the results in this sector compared to the previous year haven't improved as much as in the industrial or hotel sectors, which in the fourth quarter were positive.

Table 1.2. Business climate in the manufacturing industry.
Compared to Catalonia and Spain

Manufacturing industry	BMA	Catalonia	Spain
Situation in 2010			
Business progress	Bad	Bad	---
Evolution in 2010 vs. 2009			
Sales volume	↑	↑	↑
Exports	↑	↑	↑
Sales prices	↑	↑	↑
Employment	↑	↑	↑
Investment	↑	=	↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 1.3. Business climate in construction.
Compared to Catalonia and Spain

Construction	BMA	Catalonia	Spain
Situation in 2010			
Business progress	Bad	Bad	---
Evolution in 2010 vs. 2009			
Sales volume	↓	←	↑
Sales prices	↓	↓	↓
Employment	↑	↑	↑
Investment	↑	←	←

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 1.4. Business climate in retail trade.
Compared to Catalonia and Spain

Retail trade	BMA	Catalonia	Spain
Situation in 2010			
Business progress	Bad	Bad	---
Evolution in 2010 vs. 2009			
Sales volume	←	↑	↑
Sales prices	↑	↑	↑
Employment	↑	↑	↑
Investment	↑	↑	↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

↑ **Increase and improvement** from previous year
↓ **Increase and worsening** from previous year
→ **Increase and no change** from previous year
= **Stagnation and improvement** from previous year
↑ **Decrease and improvement** from previous year
↓ **Decrease and worsening** from previous year
← **Decrease and no change** from previous year
= **Stagnation and worsening** from previous year

Table 1.5. Business climate in the hotel sector.
Compared to Catalonia and Spain

Hotel sector	BMA	Catalonia	Spain
Situation in 2010			
Business progress	Bad	Bad	---
Evolution in 2010 vs. 2009			
Sales volume	↑	↑	↑
Sales prices	↑	↑	↑
Employment	↑	↑	↑
Investment	↑	↑	↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 1.6. Business climate in business services.
Compared to Catalonia [3]

Business services	BMA	Catalonia
Situation in 2010		
Business progress	Bad	Bad
Evolution in 2010 vs. 2009		
Sales volume	↑	↑
Sales prices	↑	↑
Employment	↑	↑
Investment	↑	↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

↑ **Increase and improvement** from previous year
↓ **Increase and worsening** from previous year
→ **Increase and no change** from previous year
= **Stagnation and improvement** from previous year
↑ **Decrease and improvement** from previous year
↓ **Decrease and worsening** from previous year
← **Decrease and no change** from previous year
= **Stagnation and worsening** from previous year

3. This data from the survey can't be compared to the Spanish data because it is classified as "other services", which includes other sectors in addition to business services.

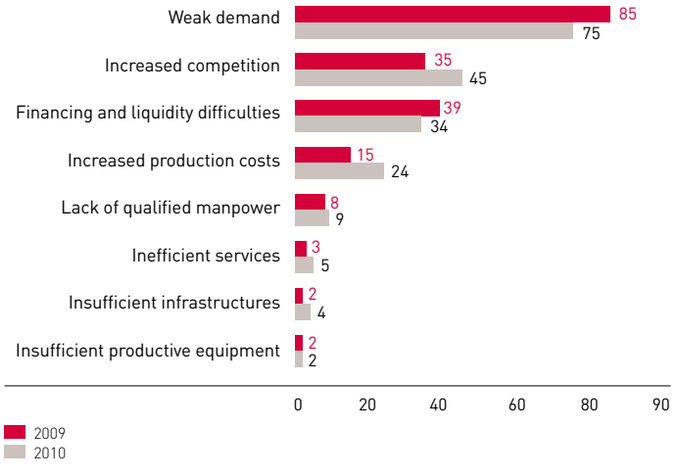
2. Factors that limit the positive progress of business in the economy overall and by sector.

Weak demand is the factor that most limited positive progress of business in the BMA in 2010, just as in the previous year. However it has lost importance given the slight improvement in internal demand compared to 2009. This result differs from that in Spain, where this factor gained in importance.

In 2010, increased competition and production costs also increased in importance –the second and fourth most important factors limiting the progress of business according to companies in the BMA–. The first can be explained because in a recession competition between companies for the limited demand becomes more intense. The second is directly related to higher oil prices and, therefore, increased energy costs. It must be noted that this factor affects the BMA more than the rest of Spain.

On the other hand, financing difficulties –third factor most noted by companies– decreased in importance in the BMA in 2010, although still high, in contrast to the increase in Spain as a whole.

Graph 2.1. Factors that limit the positive progress of business in the economy overall. Comparison 2009-2010. (Percentage[4])



Source: Barcelona Chamber of Commerce and Idescat
4. This question is measured as the percentage of companies that listed each of the factors, weighted by the importance the company has in its sector by number of workers.

Sectorial results

The industrial sector registered the most significant decrease in importance of **weak demand** as a factor limiting the progress of business in the BMA in 2010, followed by the hotel sector. To the contrary, weak demand gained some ground in construction, which with the retail trade sector are the most affected by this factor. Regarding construction, the increase in lack of demand occurred in the last quarter of 2010, when demand was weakened by the VAT increase. It must be noted that weak demand was more important in the Spanish industrial sector than in that of the BMA in 2010, which once again shows that recovery is taking place more quickly in the BMA than in the rest of Spain.

The sector where **increased competition** gained the most ground in 2010 in the BMA was business services, where it was ranked the second factor to most limit the positive progress of business, when in 2009 it was ranked third. However, this factor lost importance in 2010 in the hotel sector, although it was still ranked second in importance. It must be noted that, in general, this factor is affecting companies in the BMA more than in Spain as a whole, although in industry the difference is smaller.

Financing difficulties lost importance in all sectors in the BMA in 2010, except for the hotel sector, where the influence of this factor stabilized, although this sector suffers the least in this regard. The sector where this factor has lost importance the most is in construction, which is also the sector that has suffered most from financing difficulties.

The sector where importance of **increased production costs** increased the most in the BMA in 2010 was the industrial sector, where energy costs carry a higher weight in the business cost structure than in other sectors. Therefore, in this sector, this factor moved up to the third in importance, above financing difficulties. However, this factor's increase in importance was seen in all sectors in the BMA.

Table 2.1. Factors that limit the positive progress of business in the economy overall. Compared to Catalonia and Spain (Percentage)

Economy overall	BMA	Catalonia	Spain
Weak demand	75 ↓	76 ↓	77 ↑
Increased competition	45 ↑	44 ↑	33 ↑
Financing and liquidity difficulties	34 ↓	35 ↓	36 ↑
Increased production costs	24 ↑	24 ↑	---
Lack of qualified manpower	9 ↑	9 ↑	7 ↑
inefficient services	5 ↑	6 ↑	---
Insufficient infrastructures	4 ↑	4 =	---
Insufficient productive equipment	2 =	3 =	4 ↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 2.2. Factors that limit the positive progress of business in the manufacturing industry. Compared to Catalonia and Spain (Percentage)

Manufacturing industry	BMA	Catalonia	Spain
Weak demand	66 ↓	70 ↓	82 ↑
Increased competition	37 ↑	40 ↑	33 ↑
Financing and liquidity difficulties	32 ↑	35 ↑	---
Increased production costs	29 ↓	28 ↓	37 ↑
Lack of qualified manpower	5 ↑	6 ↑	---
inefficient services	4 =	6 ↑	9 ↑
Insufficient infrastructures	3 ↑	3 ↑	5 ↑
Insufficient productive equipment	3 ↑	4 ↑	---

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 2.3. Factors that limit the positive progress of business in construction. Compared to Catalonia and Spain (Percentage)

Construction	BMA	Catalonia	Spain
Weak demand	87 ↑	86 =	86 ↑
Increased competition	56 ↑	51 ↑	35 ↑
Financing and liquidity difficulties	50 ↓	56 ↓	52 ↑
Increased production costs	20 ↑	15 =	---
Lack of qualified manpower	12 =	10 =	8 ↑
inefficient services	6 ↑	5 =	---
Insufficient infrastructures	3 ↓	4 ↓	---
Insufficient productive equipment	2 =	3 =	5 ↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

↑ **Increased importance** as a factor limiting progress of business from previous year
↓ **Decreased importance** as a factor limiting progress of business from previous year
= **Same importance** as a factor limiting progress of business as previous year

Table 2.4. Factors that limit the positive progress of business in retail trade.
Compared to Catalonia and Spain (Percentage)

Retail sales	BMA	Catalonia	Spain
Weak demand	87 ↓	87 ↓	81 ↑
Increased competition	40 ↑	39 ↑	33 ↑
Financing and liquidity difficulties	28 ↓	28 ↓	31 ↑
Increased production costs	20 ↑	19 ↑	---
Lack of qualified manpower	9 ↑	8 ↓	7 ↑
inefficient services	6 ↑	7 ↑	---
Insufficient infrastructures	5 ↑	6 ↑	---
Insufficient productive equipment	3 =	3 ↑	4 ↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 2.5. Factors that limit the positive progress of business in the hotel sector.
Compared to Catalonia and Spain (Percentage)

Hotel sector	BMA	Catalonia	Spain
Weak demand	80 ↓	81 ↓	78 ↑
Increased competition	68 ↓	52 ↓	27 ↑
Financing and liquidity difficulties	24 ↑	32 ↑	---
Increased production costs	23 ↑	23 =	29 ↑
Lack of qualified manpower	9 ↑	12 ↑	10 ↑
inefficient services	9 ↑	12 ↑	---
Insufficient infrastructures	8 ↑	10 ↑	---
Insufficient productive equipment	3 =	4 ↑	7 ↑

Source: Barcelona Chamber of Commerce and Idescat (BMA and Catalonia) and Chambers of Commerce (Spain)

Table 2.6. Factors that limit the positive progress of business in business services.
Compared to Catalonia and Spain (Percentage)

Business services	BMA	Catalonia
Weak demand	68 ↓	70 ↓
Increased competition	45 ↑	43 ↑
Financing and liquidity difficulties	26 ↓	28 ↓
Increased production costs	16 ↑	17 ↑
Lack of qualified manpower	13 ↑	11 ↑
inefficient services	5 ↑	5 ↑
Insufficient infrastructures	4 ↑	3 =
Insufficient productive equipment	2 =	2 =

Source: Barcelona Chamber of Commerce and Idescat

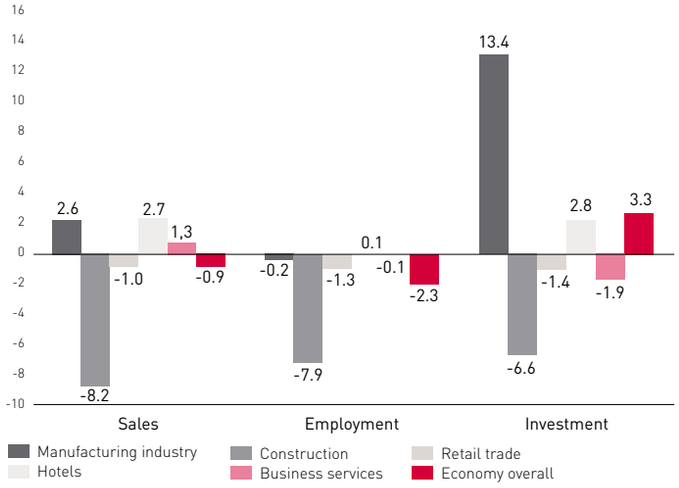
↑ **Increased importance** as a factor limiting progress of business from previous year
↓ **Decreased importance** as a factor limiting progress of business from previous year
= **Same importance** as a factor limiting progress of business as previous year

3. Quantitative evolution of the main variables for the economy overall and by sector. Situation 2010 and forecast for 2011.

In 2010, sales and investment for companies in the Barcelona Metropolitan Area fell nearly 4%, in current terms, while the decrease in employment was slightly higher, 4.5%. These results are in line with those of Catalonia as a whole. The differences are found in the sectorial results, which will be analyzed below.

The forecast for 2011 shows an improvement compared to 2010, particularly in investment as sales and employment continue to fall although at a slower rate than the previous year. Thus, in the BMA, sales will register a moderate decrease, around 1%, in current terms, while employment will fall roughly 2.3%. Therefore, economic recovery will not arrive in 2011. However, investment will grow roughly 3.3%, while in Catalonia it will be near stagnant.

Graph 3.1. Forecast for the evolution of the main business variables for the economy overall and by sector, 2011.
(Annual rate of variation, in percentages)



Source: Barcelona Chamber of Commerce and Idescat

Sectorial results

Situation in 2010

The quantitative evolution of sales, investment and employment in the Barcelona Metropolitan Area in 2010 confirm what has already been seen on a qualitative level: the most favorable evolution were that of the industrial and hotel sectors.

Thus, in 2010 **sales** in the manufacturing industry and hotel sectors increased roughly 2% each, while in construction there was a sharp drop-off (-15%) and, to a lesser degree, in retail trade (-6%), and in business services it has nearly leveled off (-0.2%). It must be noted that these results for the hotel and business services sectors are better than those for Catalonia as a whole, where turnover fell 2% and 1%, respectively, On the other hand, growth of sales in industry in the BMA is slightly lower than in Catalonia (3%).

Companies in the industrial sector in the BMA estimate **exports** grew 7%, in current terms, in 2010, slightly less than in Catalonia where growth reached nearly 9%.

In 2010, **employment** fell in all sectors analyzed except the hotel sector, which was stable (0.3%), while in Catalonia this factor decreased in all sectors analyzed. The most notable fall in employment was in the construction sector, while industry, retail trade and business services were similar, roughly 2% each.

Investment also fell more sharply in the construction sector (-10%), followed by the hotel and business services sector (-3% each) and, finally, industry (-1%). Retail sales remained relatively stable. If we compare these results with those of the rest of Catalonia, we see that investment evolution was worse in the industrial and hotel sectors in the BMA, as these showed slight growth in Catalonia.

Forecast for 2011

Companies in the Barcelona Metropolitan Area expect that 2011 will be better than 2010 and, in general, report better perspectives than those for the Catalan economy. The sectors with the best outlook are industry and hotels, which also had the best results in 2010.

In fact, **sales** are expected to grow in the industrial and hotel sectors (by nearly 3%) as well as in the business services sector, although to a lesser degree (1%). In construction, however, a significant decrease is expected (-8%), although it will be less than in 2010 and even more moderate in the retail trade sector (-1%). All of these forecasts are better than those for the Catalan economy as a whole, although the hotel sector is particularly noteworthy as turnover is expected to stagnate in Catalonia in 2011.

Forecasts for growth of **exports** in the BMA industry show a slowing from the 7% registered in 2010 to 4% in 2011, in current terms, which is slightly lower than that expected in Catalonia (5%).

Forecasts for **investment in the BMA** in 2011 are quite varied in the different sectors. On one hand, investment is expected to grow in the industrial and hotel sectors, which leave behind the downward trend of 2010. The first sector is particularly noteworthy, with an expected growth of 13%, nearly double that of Catalonia (7%). In the hotel sector, growth in investment is also expected to increase above that of Catalonia in general (3% and 1% respectively). On the other hand, investment in construction is expected to continue falling in the BMA (-7%), as will that in business services and retail trade (roughly 2% in each case).

The anticipated fall in **employment** in construction and retail trade explains the fact that the overall forecast for the BMA will still be negative even though the other sectors (industrial, hotel and business services) expect a leveling off or slight growth. Compared to Catalonia, better perspectives for the evolution of employment in the industrial and hotel sectors in the BMA are noteworthy. These two sectors show leveling off versus the moderate decreases expected for Catalonia in 2011.

Table 3.1. Quantitative evolution of the main business variables for the economy overall. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Economy overall	BMA	Catalonia
Situation in 2010		
Sales	-3.9	-3.9
Employment	-4.5	-4.5
Investment	-3.7	-3.3
Forecast for 2011		
Sales	-0.9	-1.8
Employment	-2.3	-2.7
Investment	3.3	-0.5

Source: Barcelona Chamber of Commerce and Idescat

Table 3.2. Quantitative evolution of the main business variables for the manufacturing industry. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Manufacturing Industry	BMA	Catalonia
Situation in 2010		
Sales	1.9	3.2
Exports	7.4	8.7
Employment	-2.2	-1.8
Investment	-1.4	1.4
Forecast for 2011		
Sales	2.6	1.9
Exports	4.3	5.4
Employment	-0.2	-1.2
Investment	13.4	6.9

Source: Barcelona Chamber of Commerce and Idescat

Table 3.3. Quantitative evolution of the main business variables for construction. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Construction	BMA	Catalonia
Situation in 2010		
Sales	-15,4	-16,3
Employment	-11,7	-11,8
Investment	-10,1	-13,0
Forecast for 2011		
Sales	-8,2	-9,6
Employment	-7,9	-8,1
Investment	-6,6	-10,9

Source: Barcelona Chamber of Commerce and Idescat

Table 3.4. Quantitative evolution of the main business variables for retail trade. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Retail trade	BMA	Catalonia
Situation in 2010		
Sales	-5.8	-5.7
Employment	-2.5	-3.1
Investment	0.2	-0.9
Forecast for 2011		
Sales	-1.0	-1.5
Employment	-1.3	-0.9
Investment	-1.4	-1.7

Source: Barcelona Chamber of Commerce and Idescat

Table 3.5. Quantitative evolution of the main business variables for the hotel sector. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Hotel sector	BMA	Catalonia
Situation in 2010		
Sales	2.3	-2.4
Employment	0.3	-3.4
Investment	-2.7	1.7
Forecast for 2011		
Sales	2.7	-0.3
Employment	0.1	-1.4
Investment	2.8	1.0

Source: Barcelona Chamber of Commerce and Idescat

Table 3.6. Quantitative evolution of the main business variables for business services. Situation 2010 and forecast for 2011, compared to Catalonia
(Annual rate of variation, in percentages)

Business services	BMA	Catalonia
Situation in 2010		
Sales	-0.2	-1.4
Employment	-1.7	-1.4
Investment	-2.6	-2.1
Forecast for 2011		
Sales	1.3	0.5
Employment	-0.1	-0.2
Investment	-1.9	-1.5

Source: Barcelona Chamber of Commerce and Idescat

Note on methodology:
See methodology used in the Survey on business climate carried out by the Barcelona Chamber of Commerce and Idescat (data for Catalonia and the Barcelona Metropolitan Area): http://www.idescat.cat/pub/?id=clem&m=m

Sectors in the survey on business climate:
Manufacturing industry: CCAE 09: 10-38
Construction: Construction of buildings (CCAE 09: 412) and civil engineering (CCAE 09: 42)
Services: Retail trade (CCAE 09: 47, except 473, 4779, 478 and 479) and Sales and repair of motor vehicles and motorcycles (CCAE 09: 45, except 452); Hotels (CCAE 09: 551) and Business Services (CCAE 09: 59, 60, 62, 63, 69-74, 77, 78, 80, 812, 82 and 951)
These sectors represent 46% of all workers (Social Security affiliation) in the BMA.

4. List of graphs and tables

Graphs

Tables

POLICY LESSONS AND OPPORTUNITIES FROM METROS IN THE EU AND ASIA

Index

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

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.

This document acts as a companion to the LSE Cities *Next Urban Economy* series, bringing out the main policy lessons emerging across all four metros. In producing this overview, we have simplified and condensed more complex and nuanced issues in order to bring out the main findings. This summary should therefore be read in conjunction with the four individual city profiles, which provide a much more detailed analysis and will be available at www.lse.ac.uk/lsecities and www.globalmetrosummit.net

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Introduction

A number of European and Asian metros have demonstrated sustained growth over the past two decades. Breaking free from their historical dependencies, they have overcome challenging crises in the past and demonstrate significant progress in economic development across their metropolitan regions. Following a rigorous process of selection, LSE Cities carried out in-depth research of four metro regions in the EU and Asia to identify metro regions that have shown resilience in the face of economic hardship. The study settled on Munich (Germany), Torino (Italy), Barcelona (Spain) and Seoul (South Korea), and sought to identify the processes, governance arrangements and interventions through which progress has been achieved.

In their own way, each of these metros has had to deal with periods of profound economic decline or uncertainty – due to a range of economic and political factors - but have found ways to respond to these challenges in a proactive and effective way. Torino, for decades a one-company town, suffered from the decline of the auto-manufacturer Fiat; Munich had to cope with the collapse of the Berlin Wall; Barcelona had to deal with decades of dictatorship and isolation; while Seoul had to respond to the Asian Crisis of the late 1990s and loss of competitive edge. Each of our metros is at a different point in its re-development cycle: for example, Munich's re-development dates back to 1945, while Torino's present development cycle is much more recent.

The aim of the study has been to provide city leaders, policymakers and practitioners in the US with valuable resources as they respond to the challenges posed by the current global financial crisis and develop their own next urban economy. This report summarises the main policy lessons emerging from this detailed work, acting as a companion document to the four metro reports.

Munich, Torino, Barcelona and Seoul each offer a distinctive lens on the next urban economy; none have been perfectly successful, but each has made decisive progress, out-performing their peers, and building more opportunities for future growth, trade, and job creation. Many of the experiences of these metros also underpin and reinforce knowledge that US metros already possess and have taken a lead on. These include the primary importance of a good business climate and environment for investment; connectivity and productive infrastructure; the essential entrepreneurial spirit and corporate presence that is the backbone of a dynamic economy; and the depth and range of anchor institutions.

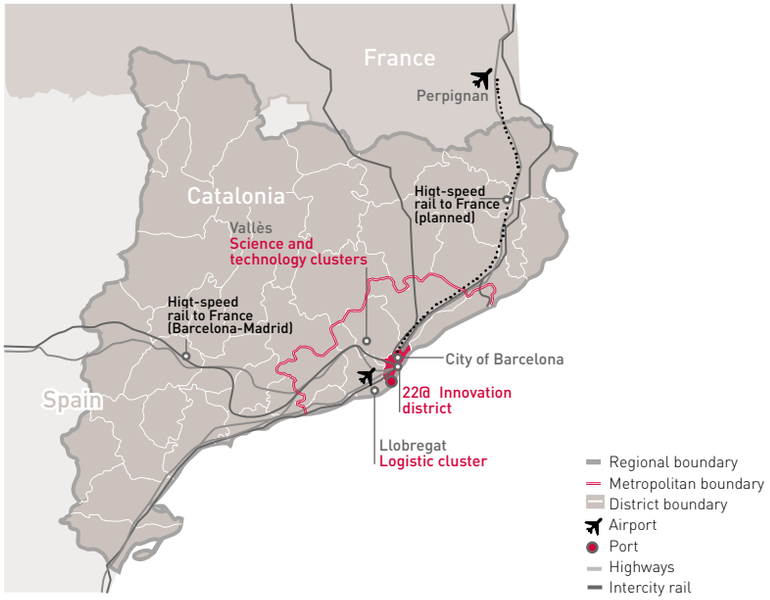
In addition to these 'lessons from America', we can also now observe some key insights from our four metros in the EU and Asia that can contribute to our shared knowledge of the required platform for the next urban economy.

These are:

- Active, aligned and intentional government with private sector and institutional partnership;
- Internationalisation, global positioning and trade;
- Knowledge economy, innovation-based entrepreneurship and modernisation of manufacturing;
- Strong link between human capital and attractive, distinctive cities; and
- Green economy, resource efficiency and decarbonisation.

The following sections define these elements, which appear to be both common to the experience in our four case study metros, and, at the same time, appear to add additional dimensions to the common economic development practices of US metros.

Map 1
Autonomous Community of Catalonia 7,475,420 inhabitants
Barcelona metropolitan region 4,992,193 inhabitants
City of Barcelona 1,621,537 inhabitants



Source: LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

2. Active, aligned and intentional government with private sector and institutional partnership

2.a Active, aligned and intentional government

Overview

Each of our metros demonstrates the essential role of local and regional government (the tier between municipal and national levels) in sustaining, and at times leading, economic development. In addition to the need to foster a good local business climate and environment for investment, three other fundamental roles are observable:

1. Local and regional governments must act together across a metro/regional economy, building a common economic agenda and pooling their roles and competences around a single and shared future-oriented economic development strategy.

2. There must be a mutual dialogue between these metro/regional future-oriented economic development strategies and federal programmes and strategies, vertically integrating to the national level in order to better progress metro, regional and national development.

3. Governments must lead the process of economic investment with sustained financing for the productive platform of metros, focusing on hard and soft economic assets including through innovative investment instruments and financial institutions that combine both private and public sectors.

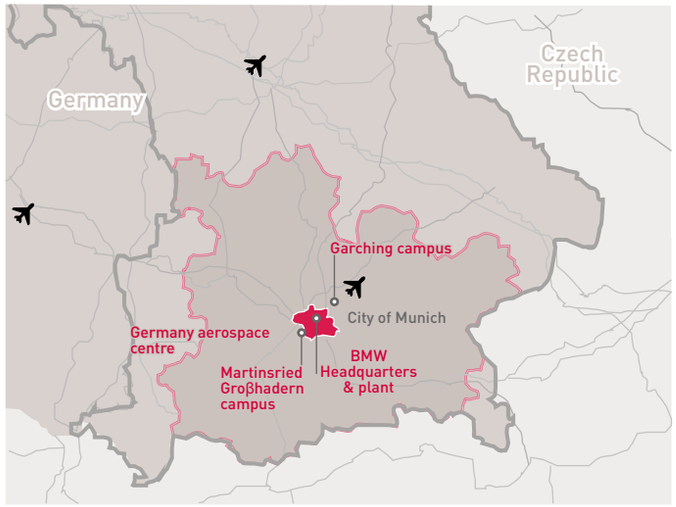
More than any other observable feature, progress in Munich, Seoul, Barcelona and Torino has come from aligning 'tiers of government' and 'cycles of government' around a shared economic strategy, and substantially raising the rate of investment in the productive platform of these metros.

Shared intentionality and strategy has been developed by local and regional political leaders from different parties (including those 'in power' and those 'not in power' working together). This approach has enabled a 'consensus strategy' to be built that endures for a whole business cycle, or even several, and is not subject to major changes with electoral cycles, providing stability and enabling long-term agendas to be pursued.

Multiple tiers of government have participated actively in such development strategies often including local, regional, national and supra-national entities (e.g. the EU), responding to an inter-institutional framework that incentivises collaboration and coordination between different tiers of government. Those metros and regions that have developed consensual and intentional strategy across their local and regional governments have been rewarded with more public investment than those that have not.

While this approach has been common to all four metros, each has pursued an integrated agenda in slightly different ways. These experiences offer US metros wishing to achieve greater institutional alignment a rich resource, and are thus set out in detail in the following pages, considering in turn setting up metropolitan and regional coalitions; achieving vertical and horizontal integration; delivering strategic planning; creating effective intermediary bodies; establishing innovative public finance vehicles; and introducing effective metropolitan level government.

Map 2
Bavarian federal state 12,510,331 inhabitants
Munich meropolitan region 5,200,000 inhabitants
City of Munich 1,330,440 inhabitants



Source: LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

Setting up metropolitan and regional coalitions of public, private and civic organisations

Munich's leaders have been able to build on a long tradition of close working across party lines, spatial levels and public and private sectors, from the City of Munich to the State of Bavaria. In turn, this builds on both a historic sense of Bavarian identity and the continuity of a politically unified State, and confidence in technologically-driven development.

Working across the public and private sectors has been a common theme in **Barcelona's** development throughout the past thirty years. Through joint ownership of consortia, Barcelona was able to effectively deliver major urban change programmes, combining private sector flexibility and financial freedoms with public sector resources and powers. By involving key private and public sector agencies in strategic planning processes, a broad coalition for change has been mobilised.

Achieving vertical and horizontal institutional integration

Torino city council and Piemonte regional government realised that they would need to work closely together in order to access substantial EU funding and investment: EU rules required proposals to be supported by both city and region. Civil servants rotated between the two organisations, facilitating knowledge transfer, and regional and city plans were aligned. Torino and Piemonte were highly successful in accessing these funds, both within Italy and within Europe as a whole: 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). 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.

Seoul has become much more effective at local implementation of national, centrally-led economic and urban policies. The Seoul municipal government, the Incheon municipal government and Gyeonggi provincial government had directly elected mayors and governors from 1995, who had their own visions and strategies for growth in the Seoul Metro Region (SMR). They effectively lobbied the national government of South Korea to lift restrictions on land development and foreign investment in Seoul, which were imposed to control excessive growth of Seoul at the expense of other regions. This allowed the development of industrial clusters in Seoul, such as the Guro Digital Complex and the Digital Media City.

Barcelona has become a model of collaborative and partnership working over the past thirty years, pioneering new approaches to governance by involving a wide range of actors in its strategic planning processes and in project delivery. The Strategic Plan Association, for example, was important as much for the way in which it was able to bring all relevant institutions together (including the Barcelona Chamber of Commerce, the Port of Barcelona and the University of Barcelona, in addition to the City Council), as it was for the plans that it actually delivered

Delivering integrated strategic planning

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 Lyon (France), 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.

Barcelona developed an overarching vision for the future of through collaborative and consensual strategic planning processes throughout the 1990s and 2000s. This includes a strong collaboration between the Autonomous Region of Catalonia which for decades has been controlled by the centre-right and regional nationalists, with the City of Barcelona has been solidly left-of-centre since the death of General Franco. Although specific objectives were adapted over the years, they continued to emphasise the need for Barcelona to occupy a strong strategic role in the Mediterranean region of Europe and to become a City of Knowledge, providing stability and clarity of vision. The shared vision and the links developed through the strategic planning process enabled Barcelona's transformation to be pursued through many different initiatives and by many different actors in an ambitious and experimental manner.

The Bavarian State and **Munich's** city leaders also developed a long-term vision for the city and wider region in the early 1990s – to raise innovative capacity, diversifying and greening the economy in the process. This vision has been implemented through a series of flexible, overlapping initiatives, and draws on the metro's historic economic and social strengths. The Bavarian State devised an economic development programme of unprecedented scale and duration, reinforcing the established political paradigm of fostering innovation.

Through a combination of industrial policy and spatial policy, the central government of South Korea successfully built the information and communication technology (ICT) sector in the **Seoul** Metro Region into a globally significant player. Supported by spatial planning acts such as the 1977 Industrial Placement Act and industrial policy acts such as the 1997 Special Measure for the Promotion of Venture Business and the Informa-

tion and Communications Technology Industry Promotion Act, since the early 1990s, Seoul's tertiary sector has increased its contribution to the metro economy from 69.7% in 1990 to 83.5% in 2005.

Creating effective intermediary bodies, including public-private partnerships

Barcelona has made extensive use of municipal companies and public-private consortia to deliver its various programmes of urban change, from the delivery of the 1992 Olympic Games infrastructure, to the development of metropolitan strategic plans and the delivery of programmes to support Barcelona's economic transformation. This model has been effective in bringing different parts of municipal, regional and national government together in one body, resolving disagreements and avoiding problems of poor coordination, as well as involving key private sector actors, mobilising Barcelona's entrepreneurial, ambitious and cohesive business community to drive the development of the city and broader region together with state actors. For example, the local economic development agency Barcelona Activa, has been described by the OECD as a 'leader amongst its international peers' (2009, p.5). Its creation in 1986 marked a step-change in Barcelona's approach to employment and economic development, positioning new entrepreneurship at its heart. Barcelona Activa launched one of the first business incubators and seed capital funds in Spain, and later Europe's first online business incubator.

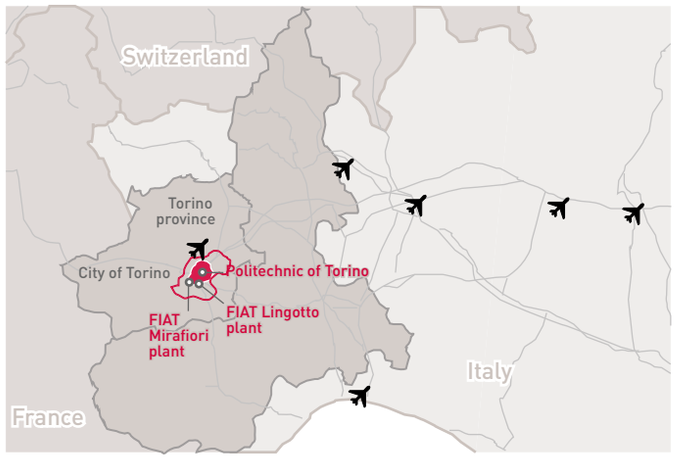
Munich has benefited from being the home of a number of leading public research bodies, such as the Max Planck, Helmholtz and Fraunhofer Institutes. The Fraunhofer Institute is an early example of the Bavarian State's proactive policy approach: established after the war as an initiative by the Bavarian Economic State Secretary, and predominantly active in Bavaria, it later grew into a national institution. Set up to drive applied research and innovation, it also serves as an important tool to leverage substantial private investment in R&D. These groups have helped deliver the vision, through R&D and public-private collaborations. Munich has also set up new agencies such as Bayern Innovativ, designed to foster technology transfer between researchers and SMEs.

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 to foster economic development, internationalise and modernise the local productive base. These include for example 'Invest in Turin and Piedmont', and 'Turismo Torino' (Torino Tourism), which have promoted a series of ad hoc initiatives to attract foreign direct investment and stimulate tourism in Torino and Piemonte, and which later merged with the international branch of the Piemonte Chamber of Commerce to form 'Centro Estero Internazionalizzazione Piemonte' (the Piemonte Agency for Investments, Exports and Tourism).

Establishing innovative public finance vehicles

As noted above, **Torino** and the wider Piemonte region received a significant level of public funding from EU Structural Funds, including the European Regional Development Fund, since 1989. In 2007, the financial activities of the Piemonte Region were restructured. Finpiemonte, the regional financial institute set up in the 1970s, was split into two companies: Finpiemonte and Finpiemonte Partecipazioni, the former being a development agency offering grants for economic growth and the latter a mixed capital venture, where the majority is owned by the regional government. Finpiemonte Partecipazioni now boasts a portfolio of 33 joint ventures, including 'Torino Nuova Economia' (Torino New Economy) involving regional, provincial and city governments and Fiat, which is responsible for re-developing part of a Fiat plant for the new economy, including a design centre linked to the Politecnico di Torino, Italy's leading technical university.

Map 3
Piemonte region 4,424,800 inhabitants
Torino province 2,299,103 inhabitants
City of Torino 910,188 inhabitants



Source: LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

In **Barcelona**, land values have been successfully leveraged to provide the finance for urban change programmes. In the case of the 22@Barcelona innovation district, for example, two new land use classifications were created connected with the knowledge economy, and density restrictions were raised in order to incentivise development and to subsidise infrastructure investment.

Munich is the capital of the region of Bavaria. The LfA Foerderbank Bayern is Bavaria's State Bank, founded in 1951 to finance the post-war economic rebuilding, has played an important role in the restructuring process towards an innovation-driven high-tech economy, in Bavaria in general and in Munich in particular. Bavaria's most prominent public financial instrument, BayernKapital, is a 100% subsidiary of LfA. Founded in 1995, it provides venture capital for high-tech start-ups and is a pioneering instrument in the German context, since replicated by several other States.

Introducing effective metropolitan-level government

In the four case study metros, although directly elected metropolitan governments have not always been the norm, there have been many productive examples of effective metropolitan partnership and strategic planning (as described in Section 2.a), as well as effective collaboration between local and regional governments. Barcelona, Munich, and Torino have wider regional governments (Catalonia, Bavaria, and Piemonte) that have important micro-economic instruments at their disposal. In the case of the Seoul Metropolitan Region (SMR) it consists of the Seoul Metropolitan Government, Incheon Metropolitan City Government and Gyeonggi Provincial Government, all of whom have equal powers. The combination of regional governments, with strong economic instruments and resources acting in concert with local governments that have place-making powers and objectives lies at the heart of the European case studies.

Although tensions between Catalonia and **Barcelona** led to the abolition of a Barcelona metropolitan authority in 1987, public actors have displayed willingness and capability to work collaboratively on strategic projects, achieving horizontal and vertical integration on individual projects. The city and the region are now in agreement about the need for an integrated metropolitan body again, in order to address infrastructure deficits at a metro scale and to realise the competitive potential of the metro internationally.

In **Munich**, formal metro governance institutions do not exist. Rather, strategy has been led from above by the Bavarian state (regional) government and below from local city government. A clear sense of common purpose has driven policy forward, which in turn derives from close networks between public and private sectors; strong and stable public institutions; and, political leaders (of all parties) committed to investing in technology and innovative capacity.

The formalisation of the **Torino** Metropolitan Area is not yet apparent. A National Law for the creation of the Metropolitan Area of Torino, was approved in 2000, but a metro government is not yet operational. Nonetheless, economic transformation was achieved through close cooperation between the municipalities and regional authorities. Political consultation, consensus building and aligned interventions between these two tiers of government have generated a stable political environment, which was a key success factor in the winning of the Winter Olympics in 2006.

Focusing on the longer-term to achieve lasting change and transformation

Barcelona has consistently looked beyond its immediate challenges and opportunities. Mayor Pasquall Maragall was instrumental in realising that the 1992 Olympic Games alone would not be sufficient to secure Barcelona's long term economic future, and in initiating one of Europe's first strategic planning processes. Backed by a strong political mandate for change, Barcelona's leaders have been able to pursue long-term projects such as the upgrading of crucial connectivity infrastructure, providing the stability, consistency and commitment needed to deliver them.

In **Munich** there was a clear sense that economic transformation was a long term process. Programmes were future-focused, and even now aim to stimulate investment in 'future technologies' such as high-speed fibre optic networks and infrastructure for electric cars. Public leaders have been committed to technological investments even when these have been politically unpopular (for example, aspects of biotech and nuclear power).

In **Seoul**, the emergence of the ICT sector in the Seoul Metropolitan Region (SMR) has been closely related to the central government's long-term strategic plan to promote the semiconductor industry, which dates back to the late 1960s. There were three major involvements of the central government in promoting the semiconductor industry: (a) the first was the Electronics Industry Promotion Law enacted by the Ministry of Commerce and Industry (MCI) in 1969; (b) in 1976, the central government supported the creation of the Korea Institute of Electronics Technology (KIET), which conducted research into semiconductor design, processes, and systems; (c) the central government spearheaded the 'Very Large Scale Integration' (VLSI) research consortium in the mid-1980s when the overlapping investments of three Korean major semiconductor producers were reinforcing inefficiency in the sector.

Overall impact of active, aligned and intentional government

The overall impact of having active, aligned and intentional government for our metros in the EU and Asian metros has included:

- Increased attention to, and knowledge of, the external environment and market for the metro amongst public officials;
- A clear and consistent story about the future, even when the present is tough;
- Increased public investment from multiple governmental sources, and through public financial intermediaries;
- More effective leveraging of partnerships with businesses and institutions, with business leadership groups within the region playing a critical role as guardians of an ambitious future vision and as key informers of the contents of strategy;
- Enhanced coordination acting to improve the business climate, despite fragmented jurisdiction; and
- Longer-term thinking through political cycles and between tiers of government.

By pursuing active, aligned, and intentional government, our metros have avoided problems of coordination failure, excessive path dependency and a low investment/low return equilibrium.

2.b Private sector and institutional partnership

Overview

The second aspect of this lesson from our metros in the EU and Asia is the character of private sector and institutional partnership developed in each context. As mentioned above, an important benefit of active, aligned and international government is that it can effectively leverage greater partnerships arrangements from non-governmental players including business, institutions, and civic organisations.

Each of the four case study metros demonstrates the importance of effective private sector leadership and partnership. Three fundamental roles are observable:

1. Business leaders, industrial unions and research institutions must be empowered and facilitated to play leadership roles in metros' transformation processes, driving innovation within and between their institutions and sectors.

2. Public sector agencies and governments must work together with private sector actors, engaging them in collaborative planning processes, involving them in formal institutions, and pursuing individual strategic alliances and innovations.

3. Private investment and innovative financing models must be used to accelerate metro development, working in partnership with universities and public agencies to combine public and private sector strengths.

This active business and institutional partnership has worked in a variety of ways in each of the four metros, as demonstrated below, creating powerful coalitions for change.

Sustaining collaborative governance and the reinforcement of a productive business climate

In **Torino**, former Fiat automotive suppliers led processes of transformation by seeking out new international clients and diversifying into new sectors, with highly positive results for the industrial sector These processes were supported and enhanced by other local actors, including the local Union of Industrialists, the Politecnico di Torino and bank foundations, as well as the city and regional governments. 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.

The Paju LCD cluster in **Seoul** has successfully emerged as the result of the continued strategic cooperation of global firms, central government, and local governments (Lee and Huh, 2009). It is clear that the strategic requirements of each key stakeholder can only be met when a healthy state of cooperation is maintained. As a result, the needs of the transnational corporation (such as LG Philips), which aims to extend its production sites and increasing its business markets, the central government's interests in enhancing national competitiveness, and the local governments' interest in boosting regional economy have led to successful strategic cooperation among them.

Fostering institutional leadership

The Polytechnic University of **Torino** has emerged as a key anchor institution in the advancement of the urban economy of Torino. With an estimated economic impact of €636 million linked to its activities, this institution has been a crucial player in: (a) attracting global foreign firms such as General Motors, JAG (China's second biggest car manufacturer), Microsoft and Oracle to the 'University City', a new 170,000 square metre university campus developed in a centrally located dismissed industrial area; (b) brokering between foreign firms and the municipality of Torino; (c) offering tailored educational courses to upgrade local skills and human capital; (d) promoting business incubator programmes, for example IP3, which has facilitated the start-up of 122 companies since 1999; and (e) increasing the number of foreign students, especially from China, who establish strong links with the city's economic base and develop bi-lateral business opportunities.

The Unione Industriali di **Torino** has also played an important leadership role in driving forward Torino's economic diversification and internationalisation. It 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 (Associazione di categoria), for example, automotives and steel manufacturing. It promotes the interests of local industries, works together with other public and private organisations to encourage Torino's development, and provides a range of services and opportunities for local businesses. Its activities have included international trade missions, which enable its mainly SME membership (85% are small and 13% are medium-sized) to access international markets and foreign investors, and a Mechatronics Pole 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.

Sustaining levels of private investment and increasing financial innovation

The Future Bavaria Initiative in **Munich** has three overlapping activities: (a) investments in 'knowledge' infrastructure; (b) knowledge transfer, and a 'public venture capital'; and (c) high-tech firm formation. Funded through the sale of government-owned shares in a range of enterprises such as the region's energy company, this €2.9 billion initiative ran over 80 individual projects including the construction of eight new polytechnic colleges and seed funding to over 450 innovative (but risky) start-ups through subsidies and low interest loans.

As noted above, **Munich** is also home to Bayern Kapital, a pioneering instrument in the German context, since replicated by several other States. It attempts to fill in the gap in the financing of newly founded high-tech companies whose products have not yet reached a sufficiently marketable stage to have access to much needed seed-capital in the private market.

Torino's bank foundations, especially Compagnia di San Paolo and Fondazione Cassa di Risparmio di Torino, have played a crucial intermediary role between Torino's university system, businesses and private capital, thus facilitating investment, innovation and effective marketisation in sectors such as sustainable mobility and ICT. Between 2001 and 2005, they invested a total of €380 million in Torino, sponsoring new research and innovation institutes.

Fostering a shared innovation system and productive business environment

At a city level, Barcelona Activa has played an important role in **Barcelona's** transformation by creating spaces and networks through which entrepreneurs can gain advice, information, make contacts and access start-up funding and other resources. In 2007, it supported the creation of 700 companies (generating 1,500 new jobs per year) and provided advice and monitoring to almost 1200 businesses. Four years after entering Barcelona Activa's business incubator, businesses have a 84% survival rate, employ 9.8 staff on average and have an average turnover of €980,000. According to the OECD, Barcelona Activa is no longer seen as an institution to 'help entrepreneurs', but rather as a 'facilitator for growth' (2009, p.50).

In **Munich**, an active, enabling state has coordinated economic development, with significant assistance from public research agencies like the Fraunhofer Institutes. Within this framework, a number of leading private companies have played important business leadership roles, in particular BMW and Siemens. Evidence shows these firms have a 'halo effect' on the metro's smaller R&D intensive firms, engaging them in collaborative R&D activity and via supply chain relationships, both as customer and as client.

Institutions such as **Munich's** Chamber of Commerce and Industry (CCI) play an important role in informing public policy and providing a platform through which the business sector and government communicate. These are statutory in the German context – that is, every business has to be a member of its local CCI. In Munich, unlike several other regions in Germany, the boundaries of the association coincide with political boundaries, thus facilitating communication and allowing the chamber to bring its full weight into play. The Munich CCI is the biggest in Germany and the second biggest in Europe, just behind Paris. One of the policy matters it seeks to influence is the strategic direction taken at the universities, such as the modernisation of the curriculum or the establishment of new faculties. Overall one might say that the CCIs are trying to strengthen commercial awareness and a job-world focused education in a traditionally more aloof academic environment.

Overall impact of business and institutional partnership

With active, aligned and intentional government in place our four metros have been able to leverage effective business and institutional partnerships. The overall impact of this has included:

- Non-governmental reinforcement of inter-governmental working and consensus;
- Clarity about sector opportunities and priorities;
- Shared investment and joint venture between public and private sector;
- Attraction and retention of business partners;

• Rapid and close diffusion of intelligence, knowledge and know-how between public and private sectors on competitive environment, innovation, and next economy agendas; and

• Improved advocacy for external investment.

By pursuing private and institutional partnership these metros have been able to maintain inter-governmental consensus, set appropriate sector and cluster priorities and understand the competitive environment effectively.

3. Internationalisation, global positioning and trade

Overview

Each of our metros demonstrates the value of embracing and enhancing internationalisation, in order to compete effectively in international markets. Three fundamental roles are observable:

1. Metros must take advantage of opportunities to reposition themselves towards emerging economies through adapting their strategic connectivity infrastructure for a changing international market and building new relationships with key players in these markets.

2. Public institutions and industrial bodies must work together with firms and research centres to adapt to changing international conditions, diversifying into new sectors and expanding into new markets by acting together at scale and building productive connections between business, research institutes and public agencies.

3. Local and regional governments must make use of effective institutions, promotional platforms and international events to build their reputation abroad, in order to attract tourists, international entrepreneurs, foreign investment and international institutions to their metros.

The dynamic process of political and economic change in both Europe and Asia since the end of World War Two has accelerated rapidly in the past 20 years. The emergence, growth, and enlargement of the EU has paralleled the evolution of the Asian 'growth spurt' and development of ASEAN and substantial cross-border economic development activity in Asia. These phenomena have reduced barriers to trade, and increased both labour mobility and capital flows, between countries within both Europe and Asia.

They have offered substantial opportunities for metros to redefine their 'offer' and their 'advantages' in a rapidly internationalising environment, breaking free from older established roles within domestic economies. As mobility has increased, former 'national urban hierarchies' have been dissolved, as capital has been more free to cluster in some places rather than others and metros have been more free to compete for investment, population, visitors and knowledge. This has created a great spur for intentional metro economic development activity.

Each of the four metros - Seoul, Munich, Barcelona and Torino - has undertaken programmes of accelerated internationalisation of their economies over the past 30 years, reinforced both by policy cycles and by market investment, preparing them very well to succeed in the more open global era in which all metros now find themselves. In effect, European and Asian continental economic integration has prepared these metros for a more global system by requiring them to embrace internationalisation much sooner, and seek opportunities in emerging markets within their own continent. This has enabled them to be globally oriented in their economic strategies and to know how to navigate growth patterns in other markets.

The metros have developed specific activities to make the most of new global opportunities, as detailed below. These experiences offer metros in the US and elsewhere valuable insights as they seek to adapt to the ever-evolving international markets.

Global repositioning towards emerging markets

The development of connectivity infrastructure has been a fundamental part of plans to secure Barcelona's place in Europe and the world and to become a City of Knowledge since the late 1980s. Successive strategic plans have continually emphasised the importance of investing in the metro's port, airport, roads and rail network in order to increase the capacity of its firms to compete in international markets, and to secure **Barcelona's** international position. For example, the changes proposed in the 1994 'Plan Delta' will enable the Port of Barcelona to double in size, and are estimated to have an impact on the wider Catalan economy equivalent to 1.7% of Catalan GDP when complete. By joining up this expansion with much improved connectivity and logistics services, as well as a growing network of inland terminals, the Port of Barcelona is seeking to challenge some of the better-established ports of Northern Europe such as Rotterdam and Hamburg, and to capture an increasing proportion of traffic between Europe and Asia. Likewise, high speed rail is seen as a critical element in establishing Barcelona's position as the capital of the Mediterranean and an internationally competitive economic centre. A high-speed rail link to Madrid has been in operation since 2008, cutting travel time between the two cities to just two hours and 38 minutes. The forthcoming link to the French high-speed rail network will bring several south-western European cities within four hours of Barcelona, such as

Lyon, Marseille and Bordeaux in France, Genova in Italy and Geneva in Switzerland.

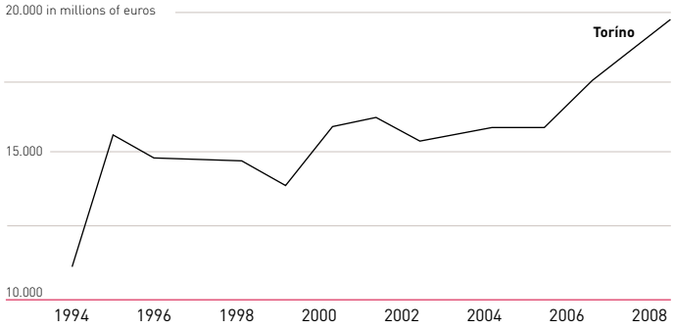
The new **Munich** Airport, which opened in 1992, had been in the making for several decades, while the cold war was still in full swing and no-one expected the fall of the Iron Curtain. It was thus a lucky accident that its completion coincided with the opening of the markets of Eastern Europe and the rising economic giants in Asia. It certainly came at the right time for Munich, which found its location in the global political and economic geography being repositioned. In the competition for the most important 'gateway city' to the East, the airport provided an important advantage for the city, which now serves as a prime East-West node, outperforming both Vienna and Berlin.

Trade and export promotion

Exports have been a key ingredient of **Torino's** economic transformation and recovery. Both public and private institutions have been important in helping firms expand into new markets, especially the Unione Industriali, Torino Chamber of Commerce, and 'Centro Estero Internazionalizzazione Piemonte' (the Piemonte Agency for Investments, Exports and Tourism, or CEI). The Unione Industriali has organised trade missions, enabling its mainly SME membership (85% are small and 13% are medium-sized) to access international markets and foreign investors, and provided useful services to individual companies, such as disseminating studies and analysis of foreign markets and providing information to assist members in accessing regional, national and European research and investment opportunities. CEI and the Chamber of Commerce have also developed a range of programmes, including From Concept to Car (initiated in 2003 to strengthen innovation and internationalisation amongst 152 selected local automotive suppliers), Think Up ICT (initiated in 2007 to promote Torino's expertise in ICT abroad, involving approximately 80 ICT firms) and Torino Piemonte Aerospace (initiated in 2007 to promote the Aerospace district in an international context, involving approximately 70 aerospace firms). Each of these programmes has generated important international orders for Torinese firms: in the case of From Concept to Car, for example, an investment of €4.8 million generated €41.8 million in export sales for the companies involved. While the total turnover of new business generated is relatively modest, the initiative established a new culture in the industry which has had widespread benefits in securing new work.

Overall, Torino's exports increased continuously in the 2000s, reaching almost €19 million in 2008. The EU still represents the main destination of Torino's production and services. However, exports towards Brazil, China and other emerging economies have been increasing steadily in percentage terms over the past few years. For example, Chinese imports from Torino increased by 3.8% in 2009 despite the current economic climate.

Total value exports of the Province of Torino, number of exports 1994-2008

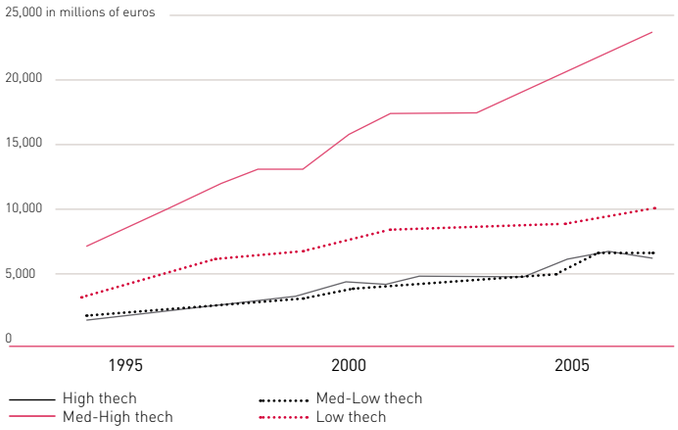


Source: Torino Conjuntura
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

Barcelona's ambition and foresight in maritime trade is complemented by the export policies of agencies such as ACC1Ó, the Catalan innovation and internationalisation agency, and the Barcelona Chamber of Commerce. ACC1Ó runs a network of 35 business promotion centres and 19 business platforms, which offer services to exporting firms, including market analysis, identifying contacts, logistical and practical support, and quick and inexpensive overseas office space, enabling SMEs to more effectively access international markets. Barcelona Chamber of Commerce has, for example, signed collaboration agreements with MIT and Silicon Valley's Plug and Play Tech Centre, providing opportunities for Barcelona researchers and innovators in the US, as well as developing strategic relationships in emerging economies and sectors through programmes such as China Correspondent and Business Bridges.

Catalonia is Spain's leading export region, responsible for an average of 23.4% of the country's exports over the last ten years, and growing at an annual rate of 5.5% between 2000 and 2008. Exports represent one third of Catalan GDP and 16% of Catalan firms are regular exporters (Chamber of Commerce of Barcelona, 2010). Medium-high technology exports increased significantly during the late 1990s, while high technology goods also increased throughout the 1990s and 2000s, albeit from a lower base.

Value of Catalonia industrial exports by technological content (1994-2007)



Source: Idescat.
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

Attracting foreign investment and international institutions

The promotion of **Barcelona** to international investors and international businesses has been a key task of the City Council and the Government of Catalonia, through platforms such as 'Do it in Barcelona' and 'Invest in Catalonia'. Today, Barcelona has an enviable international reputation and brand. It is the fourth European destination for international investments and for business and has been the top European city for quality of life since 1998 (European Investment Monitor, 2008; European Cities Monitor).

In 1998, the South Korean government lifted the restrictions on foreign investment in Korean venture capital partnerships and adopted various measures to increase tax benefits for venture capital. This gave foreign investors the opportunity to support the growth of new firms in Seoul, particularly in the ICT sector.

In the case of **Munich** it is the Regional State Government that plays the major role in promoting FDI as well as the export orientation of local businesses. Beginning in the 1990s, the Bavarian government established more than 20 representation offices all over the world advising native businesses on export opportunities abroad as well as networking with investors abroad and advertising the location Bavaria.

The Piemonte Agency for Investments, Exports and Tourism was the first Italian agency dedicated to strategic internationalisation. Together with the Politecnico di Torino it played a crucial role in the internationalisation process of local economy clusters in **Torino** and the wider Piemonte region. Over 660 foreign companies have invested in Piemonte, the second highest rate of FDI inflows in Italy.

Using international events to spur new international interest

Barcelona's use of major events to shine an international spotlight on the city and to drive its economic development dates back way beyond the 1992 Olympic Games – in 1929, for example, it hosted the World Exhibition. The 1992 Games achieved unprecedented success in attracting private investment, securing the basis for Barcelona's transformation.

Since hosting the Winter Olympics in 2006 **Torino** has consistently invested in mega event infrastructure and the city's branding capacity. In 2006 Torino became World Capital of the Book and in 2008 World Design Capital. Moreover, the city leveraged on its leadership position within the design sector, and in 2004 was chosen to host the offices of the ICSID (The World Industrial Design Association) and ICOGRADA (the World Graphic Design Association). The re-discovery of Piemonte's culinary traditions through the 'slow food' movement has now become a global phenomenon and a trademark of Piemonte, especially through its major international fairs, Salone del Gusto (Taste Fair) and Terra Madre (Mother Earch). The most recent Salone del Gusto in October 2010 attracted an estimated 200,000 visitors.

In **Seoul**, there has been a recent trend of delivering large-scale exhibitions and hosting major international events in order to raise the global profile of the Metro Region and stimulate tourism and investment interest. Seoul has hosted two FIFA World Cups and the Olympic Games since 1985, as well as hosting the Ceramic Biennale, the International Sky Leisure EXPO and the Korea International Boat Show.

Encouraging international tourism to create jobs and build identity, and celebrating cultural and linguistic diversity to be visible as an open and 'international' city

Tourism has proved to be not just an industry but also a mechanism for opening up a metro to international talent, events, and investors, and building a visible brand and identity in international markets.

The Olympic Games in 1992 delivered a big boost to **Barcelona's** international reputation and to its appeal as a tourism destination, not only through the international exposure that accompanied the Games, but also the significant investments that were made in its natural, cultural and infrastructural assets, particularly the reclamation of the waterfront and 4.5km of beach. This success was sustained through the creation of the consortium, Barcelona Tourism, which developed and delivered Barcelona's tourism programmes, and through the sustained investment in

infrastructure, especially hotels and airport capacity. From attracting less than 700,000 tourists in 1981 and 1.8 million in 1992, in 2008 Barcelona attracted over 6.7 million visitors. Barcelona earned the title of European city with the highest tourism growth rate, with tourism growing by more than 100% between 1990 and 2001.

Tourism has long been an important part of **Munich** life and a significant contribution to the city's as well as the region's economic success. With around seven million overnight stays annually (Stadt Muenchen, 2004), in equal parts made of business and tourist visits, the city uses its natural as well as cultural assets strongly to tout its position in the world. The popular motto of 'Laptop and Lederhosen' often used by politicians in the context of Bavaria also sums up the Munich city-marketing strategy as being both a location of serious business as well as one of rustic charm. The city's soft location factors play an important role in attracting and maintaining highly skilled people, as confirmed by local business representatives and public officials. In addition, the (in)famous Oktoberfest has to be one of the city's most successful marketing assets, drawing visitors from around the globe and rendering Munich one of the best-known German cities in the world.

These days **Munich** presents itself as an internationally-oriented city with a diverse population, welcoming visitors and new citizens from all over the world alike, combining a strong Bavarian identity with a global outlook. Only a few decades ago, however, the picture was a very different one, with the city maintaining a much more localised orientation. According to Prof. Thalgott, retired head of planning of Munich, hosting the Olympic Games in 1972 had a strong impact on opening up the city to the world as well as inducing a positive attitude of the population towards 'modernisation'.

Local actors in **Torino** have focused their efforts in improving the city's international image, and fostering tourism. Sviluppo Piemonte Turismo for example, is an agency set up to market the international image of Torino, especially within the mega-events hosting. The number of tourists visiting Torino increased significantly in past years, from 1,050,047 per year in 2002 to 1,482,822 in 2008. Nonetheless foreign tourists decreased steadily from 2005 onwards, and there is no evidence, at least in Torino's case, of a significant impact on jobs.

As a means to foster new businesses and create employment within the Province of Gyeonggi in Seoul, the government is providing targeted support to the tourism sector. Amongst other interventions, tours of the demilitarised zone and agricultural villages are being promoted.

Addressing the international dimensions of the knowledge economy

Major local development projects such as the creation of new facilities in IT, Science, Culture, Medicine, Media have had a distinctive international orientation, designed to attract international audiences, or users, and appeal to international markets.

Barcelona and Catalonia have long made use of cluster initiatives to drive the development of priority growth sectors, such as energy, logistics, media, biotechnology and ICT. These cluster policies have made explicit use of the Barcelona brand, leveraging this to attract international investors, businesses and workers. The 22@Barcelona innovation district is a good example of this, with housing and work spaces being intermingled in a highly walkable district, attractively located near the waterfront and the new high-speed train links, in order to appeal to a young, mobile and international workforce. Most recently, the Barcelona Economic Triangle has been used to provide a single promotion platform for three of the most strategic clusters in the metropolitan region. Together, these three areas provide seven million m2 of land with the potential to generate more than 200,000 new jobs. The Barcelona Economic Triangle brings together the relevant municipalities and regional government with other players, and makes effective use of the Barcelona brand to attract international investment and businesses.

In **Munich**, economic development strategies for the past two decades have sought to develop a strong presence in life sciences, and then to help growing firms embed themselves in global markets. Initial investments focused on R&D in universities and public research bodies, then on technology transfer, then on marketing and promotion assistance. A number of policy instruments focus on promoting the internationalisation and export-orientation of SMEs in particular by reducing the barriers to entry in the international market. 'Low-key' interventions such as establishing a joint presence at trade fairs are effectively used and continuously refined in close collaboration with the businesses targeted. More recently, Munich firms are embarking on a similar internationalisation process in 'cleantech' goods and services, particularly green energy and electric vehicles.

Overall impact of internationalisation, global positioning and trade

The overall impact has been that these metros have all seen substantial increases in the numbers of foreign tourists, students, and convention visitors, the numbers of high and medium skilled immigrants arriving, and the numbers of foreign owned companies locating within the metros.

As well as these 'inward investment' effects, our four metros have also seen international markets for their products grow and exports increase, and in addition their roles as ports, gateways, and hubs (at varying geographical scales) emerging and increasing. Equally, many have engaged in international R&D and innovation oriented collaborations. Export

growth has been an important aspect of how these metros have internationalised but has not been the sole factor: the combined effect of the different elements has been mutually reinforcing.

Encouraged by continental economic integration, our case study metros have orientated their strategies to be attractive for international firms, talent, and investors. They have become more global in their orientation, multi-lingual, and open to flows of people, capital, goods, and ideas. The four metros have seen the need to be attractive and competitive, in order to win shares on international markets, recognising their underlying assets and opportunities. They have succeeded in building distinctive images and offerings, designed to appeal to multiple global audiences, rather than remaining stuck in historical positions within national urban systems and hierarchies.

4. Knowledge economy, innovation-based entrepreneurship and modernisation of manufacturing

Overview

Each of our metros demonstrates the value of pursuing the transition to a knowledge and innovation based economy. Three fundamental roles are observable:

1. Metro governments must make use of strategic planning processes to establish the need for economic transformation, to identify priority growth sectors, and to provide a vision around which specific interventions can be pursued.

2. Public institutions, working together with key industrial actors and anchor institutions, must support and enhance the efforts of economic actors to modernise and innovate, investing in R&D and start-ups, promoting entrepreneurship and creating inter-institutional networks and programmes that facilitate joint learning and innovative partnerships.

3. Governments at all levels must play a role in creating the environment from which new industries can evolve and emerge, by investing in new facilities and infrastructure and re-modelling out-dated industrial land.

The framework for economic development in the EU and Asia has emphasised the transition to a 'knowledge-based' or 'knowledge-led' economy for over a decade now. This has focused on the modernisation of traditional industries with innovation in processes and products, as well as the growth of new knowledge-intensive sectors. Metros and regions have been encouraged to recognise that, in the new integrated global economy, they could not compete on price with rapidly emerging markets and nations, and must, instead, compete on the basis of modernisation, skills, science, creativity and innovation. This policy message has been backed up by substantial public investment, and has also been reinforced consistently by private sector players in their interactions with metro governance representatives.

For example, the creation of innovative regions has been a key priority in Europe as part of a decade-long move towards an 'information society', supported by EU regional programmes and the European Investment Bank. It has also been actively supported by national policies in Germany, Spain, and Italy, and by regional governments such as Bavaria, Catalonia, and Piemonte. In South Korea, the foundation of national economic development strategy has been technology and innovation-led investment in electronics, digital media and clean-tech industries.

These national and supra-national frameworks have helped to drive context-specific programmes and initiatives in each of our four metros, some of which are illustrated in the following discussion.

Delivering a knowledge-led economy through strategic planning

The strategic planning processes of the 1990s and 2000s were critical in establishing the need for economic transformation in **Barcelona** towards the knowledge economy. Sectors such as design, biotechnology, logistics, media and aerospace have been promoted through the Barcelona brand and incentivised through strategic cluster initiatives. Most recently, the platform, Barcelona Economic Triangle, has been used to provide a common promotion platform for such initiatives at three strategic clusters in the metropolitan region.

In **Torino's** Strategic Plan of 2000 design was identified as one of the clusters to be developed and promoted. Now the design-related economy in Piemonte has acquired the status of an economic sector on its own referring to producers and users of design content and services, directly generated or acquired from third parties (B2B); it includes the traditional activities relating to production of services or objects and more innovative activities of experience design or cultural design with reference to the tourism, cultural and food and wine sectors. A set of institutions, education facilities and professional bodies such as the Politecnico, the IAAD (Institute of Applied Arts and Design) the IED (European Institute of Design) and the University of Gastronomic Sciences, are part of a network of actors that has a constant and fruitful relationship with the local SMEs and large firms.

Through its Creative Industry Promotion Program, the **Seoul** city government has pursued an industrial policy that promotes creative industries as the new engine in the knowledge-based economy. In 2007, the city government designated six creative industries as the new growth engines: tourism; design and fashion; digital content; conventions; research and development

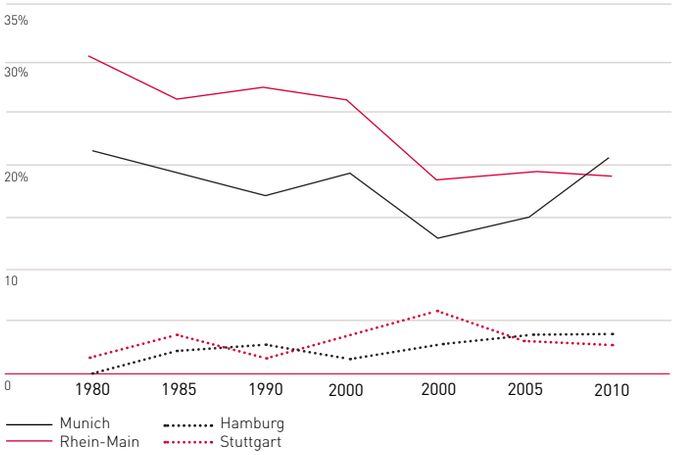
(R&D) in information technology (IT), nanotechnology (NT), and biotechnology (BT); and financial and business services.

In the case of **Munich**, three key programmes were initiated by the State of Bavaria, both to secure the competitive position of the metropolitan region's existing firms and to engage with new ideas and new technologies: the Future Bavaria Initiative, the High-Tech Initiative and the Cluster programme. Munich's institutional thickness – including strong and stable public institutions, productive public-private partnerships, political leaders committed to investing in technology and innovation and a common purpose and flexibility – has been an important factor in the success of these programmes.

Fostering innovation

Munich's 'active state' has been crucial in delivering on the metro's long term economic objectives. In growing a green economy, in particular, it is essential to shape markets, foster long term investment and generate public demand. Munich's economic development vision is innovation-centred, and aims to help the metro 'stay ahead', maintaining its position as a high-tech, ideas-rich city. During the 1990s, state and city leaders took steps to renew the metro's innovation capacity, building on long term strengths in high-value manufacturing, and diversifying into new 'game changers' such as life sciences and green industries.

Metros share of German biotech patents 1980-2007



Source: Statistisches Bundesamy, OECD. Stat.
Notes: 1) Patents to EPO by inventor region of residence.
2) Patents by priority year.
3) Spatial Units are German Metropolitan Regions, proxied using best-fit Spatial Planning Regions.
4) Sample of metros, so shares will not sum to 100.

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Interventions centred on (a) heavy investment into science, technology and education; (b) strengthening existing networks between public, private and research communities; (c) establishing new institutions to promote innovation, entrepreneurialism and foreign investment, namely Bayern Innovativ, Bayern Kapital, and Invest in Bavaria; Bayern Innovativ was set up in 1995 in the context of the Future Bavaria Offensive to promote cooperation and networking between actors in business and research, and does so by setting up working groups, organising congresses, connecting individual partners and more; (d) re-using inner-city brownfields created by restructuring processes as well as wider political dynamics (retreat of the American forces in the 1990s), thereby turning a threat into an opportunity, and creating new spaces for growth, such as the Garching and Martinsried clusters.

As Fiat increasingly focused its research and training activities on its own internal processes rather than on its wider suppliers as it underwent restructuring processes, a range of new urban actors emerged in **Torino**, utilising and building on the skills and training resources developed by Fiat. Firms themselves adapted to the new conditions they faced, and 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. Local authorities in Torino and Piemonte regional government played an important role, turning the failing 'technology poles' into 12 more effective 'innovation poles', forming a regional system of innovation that would also encompass the new relationships being formed by the Politecnico and the bank foundations as well as by individual firms and industrial bodies.

Innovation poles in Piemonte

	Managing institution	Budget (milions of euros)	Submitted projects
Agro-Food	Tecnogranda	5.1	31
Sustainable Architecture and Hydrogen	Polight (Environment Park)	6.2	25
Biotech	BiopMed (BioindustryPark)	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 and Mini Hidro	ENERMHY (Gesin)	5.3	19
ICT	Fondazione Torino Wireless	5.8	21
Equipments for renewable energy	Tecnoparco del Lago Maggiore	1.5	4
Mechanics and Electronics	Centro Servizi Industrie	7.4	15
New Material	Consorzio Proplast	4.2	22
Textiles	Città Studi	1.8	7
Total		**52**	**187**

Font: http://www.regione.piemonte.it/innovazione/poli-di-innovazione.html
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Promoting entrepreneurship

According to the OECD, Barcelona Activa has been one of the most important actors in **Barcelona's** transformation from an industrial economy to a knowledge economy over the last thirty years. From a small business incubator hosting 16 companies in 1986, it now runs a range of initiatives to promote entrepreneurship, including providing spaces for networking and collaboration, as well as running services and programmes for entrepreneurs.

By investing into setting up a city-wide high capacity telecommunications infrastructure **Munich** is taking a big step in supporting 'garage entrepreneurialism', in particular in the media industries – one of the most prolific sectors of the Munich economy. Both individual entrepreneurs as well as small enterprises will benefit from an infrastructure currently available to large companies only. Also see comments on Bayern Kapital below.

In 1997, the South Korean government launched its own venture capital funds and established a programme to provide match funding for venture capital. This contributed to the development of the ICT cluster in the Gangnam areas of **Seoul**.

Entrepreneurship in **Torino** has been driven by a wide range of actors, starting with businesses themselves and aided and enhanced by government, universities, bank foundations and business groups. The business incubator I3P, for example, 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, helping to make Piemonte one of the top-performing Italian regions in terms of spin offs from incubators. Piemonte is now developing a regional innovation system, based around 12 innovation poles.

Modernising manufacturing industries and diversifying supply chain activities

In **Torino**, suppliers of the automotive sectors have diversified their production to meet new, diverse needs and serve international markets. Some 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, while others applied their technical knowledge and capability to new sectors, such as aerospace and rail transport. These adaptations spread to many firms, as suppliers learned best practices from each other and from foreign firms who relocated to Torino. In addition they shared knowledge, dropped out-dated techniques and products, and merged or split up according to market mechanisms. This evolution was aided by other actors, such as the Politecnico di Torino, which adapted its courses and research to the changing economy and has been a key factor in major firms' decision to locate in Torino, including General Motors, Motorola and JAC, China's second largest car manufacturer. Other city and regional government initiatives, such as the innovation poles and the sector-specific programmes such as *From Concept to Car*, and *Torino Piemonte Aerospace*, have also been important in encouraging diversification to spread.

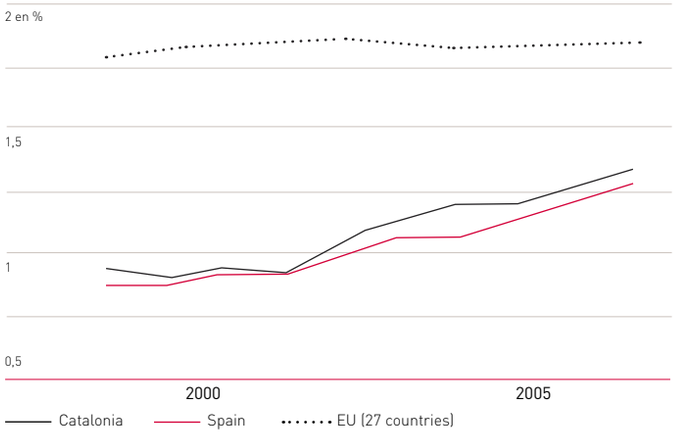
From October 2009, Samsung Electronic Corporation (SEC) in Seoul began pursuing a cluster strategy whereby it has re-named its complexes located in Suwon as the 'Samsung Digital City'. Though this cluster was a success before it was renamed, the concentration of ICT plants and activity in the Samsung Digital City has created huge demand for R&D support and supply chain activity. SEC now employs around 21,000 workers in the Suwon complex, of which one third are R&D workers. Its first and second tier suppliers in Suwon also provide more than 10,000 jobs (Nam, 2009).

Promoting investment into cutting-edge science and technology facilities and infrastructures

The Barcelona Economic Triangle encompasses seven million square metres of land for knowledge-intensive activities in the **Barcelona** Metro

Region, with the potential to generate more than 200,000 new jobs. It is formed of three sets of clusters, which include a number of cutting-edge facilities as well as major strategic transport infrastructure. The ALBA Synchrotron Light Source, the cornerstone of the energy cluster, Parc de l'Alba, is a new-generation synchrotron (electron accelerator), and the largest scientific installation in Spain.

R&D Spending as a percentatge of GDP 1998-2007



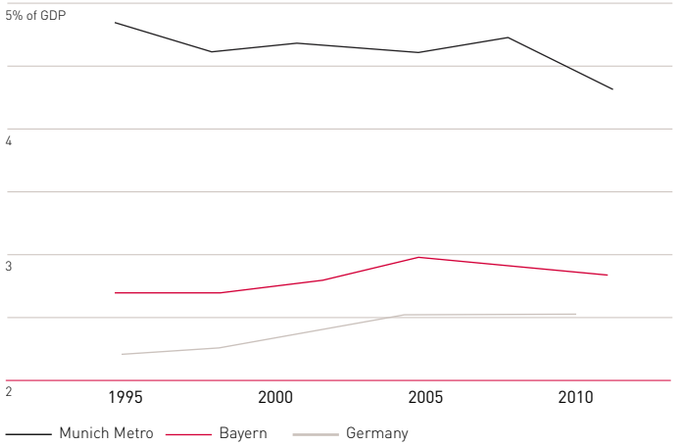
Source: Eurostat
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

In **Munich**, State as well as local actors have time and again displayed a strong capacity in winning federal funding for existing research institutions or for the development of new institutions and the carrying-out of innovative pilot projects, which contributed to pushing the metro economy forward. These successes were supported by the collaborative capacity and broad goal alignment between state and city actors.

One such catalyst was the federal BioRegio competition, running from 1995-2005, which provided €26 million in funding for the Munich biotech region. While no direct link can be shown between winning the competition and the number of biotech start-ups it can be argued that participation in the competition provided an impetus for biotech firms to cooperate more strategically.

The attraction of new national research centres such as Fraunhofer Institutes depends in large part on investments by the State Government as well as, in the case of Fraunhofer, the existence of a thriving business community that collaborates in applied research. Existing Universities in the Metro Region play a crucial role in developing new science facilities and attracting federal and state funding for this. The Munich Gene Centre, established in 1984, developed out of a cooperation between Ludwig Maximilian University and the Max Planck Institutes and is now forming an important element of the Martinsried technology cluster.

Research & Development spending 1995-2007



Source: Eurostat
1) GERD measures total public and private sector R&D spend.
2) GERD is expressed as a share of GDP

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In **Seoul**, the relaxation of the Industrial Placement and Factory Construction Act by central government eased the regulation against venture business boosting. This deregulation permitted the construction of apartment-type firms for venture business in the Seoul Metro Region and has directly contributed to the emergence of the Teheran Valley, in southern Seoul, which is now considered to be the richest centre for ICT activity in South Korea.

Re-using industrial land for 'new economy' purposes

The 22@Barcelona innovation district in **Barcelona** is transforming 200 hectares of industrial land into an innovation district in which knowledge-intensive activities will concentrate and develop. As is typical for Barcelona, it links to and consolidates a series of other transformations in the area, including the introduction of high-speed rail and the renovation of

the waterfront. By introducing a new land classification, 22@ (activities whose primary productive resource is talent), and a new requirement that landowners must include no less than 20% 22@ activities in their developments, the aim is to transform the area into a hub for knowledge-intensive industries such as research, biological sciences, design, engineering, and media. Although it does not complete until between 2015 and 2020, as at September 2007, 60% of industrial land had already been refurbished. As at December 2009, some 1,502 businesses were located in 22@Barcelona, employing 44,600 workers. Despite the global financial crisis, the volume of business conducted in the innovation district increased by 5.4% between 2008 and 2009, to around €6 billion during 2009. Although more time is needed before the extent of the economic transformation is clear, the proportion of economic activity within the area that can be classed as '22@ activities' has been steadily growing year on year, as has the proportion of firms in the area that employ high-skilled individuals and undertake R&D.

In **Torino**, several out-dated industrial sites in the city centre have been reconverted for new economy uses, enabled by the changes made in the 1995 Master Plan, and the €2.45 million investment in transport infrastructure that followed it. 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 two million square metres. The site of a former Fiat-owned steelworks in the city centre has been transformed into VitaliPark, a building with a floor space of 15,000 square metres, designed to accommodate manufacturing activities with low environmental impact, craft laboratories and service activities for SMEs. Lingotto, Fiat's historic production plant was adapted in 1985 by internationally renowned architect Renzo Piano into a flexible and versatile space that is today the site of an automotive engineering school of the Politecnico di Torino. Part of Mirafiori, another historic Fiat plant, is also being developed by a joint-venture between the Piemonte region, Torino city, Torino province and Fiat, 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.

In **Seoul**, industrial areas that were once used for low-value, light manufacturing are now being redeveloped to house high-value firms, specialising in high-tech R&D, prototyping and services, such as digital content. One such case study is the Guro Digital Complex, formerly the Guro Industrial Complex, which housed textiles and clothes manufacturing in the 1960s. By 2008, through a mix of fiscal incentives, industrial policy and land use planning, over 16 new buildings were built by the municipal government, designed for high value, IT related activities. 6,784 firms now occupy the Guro Digital Complex employing approximately 109,000 people. The project is not complete, and more construction is underway for facilities and 'apartment-type' (compact) factories to house similar firms.

Overall impact of knowledge economy, innovation-based entrepreneurship and modernisation of manufacturing

The overall impact of these initiatives has been that our metros have all been able to take a lead in the transition to the next economy by both stimulating new enterprises and jobs in wholly new sectors, and by modernising existing industries to increase productivity and diversify markets, rather than remaining 'de-industrialising', 'rust belt' cities with limited economic vision. Important relationships have been built between business, government and higher education, and attention has been focused on economic diversification and entrepreneurship.

In the process, much industrial land has been cleaned up and converted for new uses and infrastructure investment in new modes of production has been substantial. Through such initiatives, new jobs and enterprises have been created, and our four metros have become part of the high competitive value chains of both new sectors and more established industries. Although, our metros have been shaken by the crisis in varying ways, they have all been more resilient than they would have been with less diversified economies.

5. Strong link between human capital, and attractive, distinctive cities

Overview

Each of our metros have successfully pursued efforts to develop human capital, improve quality of life and quality of place, and transition towards a knowledge-based economy. Three fundamental roles are observable:

1. As university systems adapt to changing economic conditions, they must work together with local and regional governments to fully realise the benefits of new and re-configured courses and research priorities and attract students, researchers and businesses in innovative partnerships.

2. Local and regional governments must work in innovative partnerships with the private sector to invest in the metro's natural and built environment and cultural amenities in order to support high quality of life and to compete internationally.

3. Metros must develop a powerful and distinctive image, innovatively leveraged in international markets to develop and attract human capital, investment and tourists, and to grow strategic sectors.

In our four metros the 'human capital', 'quality of life', and 'quality of place' agendas have merged with the 'knowledge economy' agenda. Competitive cities in a knowledge-led economy also need to be places

that produce human capital, and are attractive to mobile people and talent. Part of that attraction is quality of life in compact cities that offer a mixture of uses and lifestyle choices. To deliver human capital systems that both produce skilled people and attract them from elsewhere, the four metros have pursued action on a variety of fronts, as set out below.

Building and developing human capital

In **Torino**, the Politecnico reconfigured its courses for the new economy (e.g. automotive engineering, design), which attracted foreign firms and talent back to Torino. Private firms have taken up positions in the new university campus in the city centre, including GM Powertrain Europe and China's second largest car manufacturer, JAC. The Politecnico's business incubator 13P, jointly owned with city and provincial governments and the Torino Chamber of Commerce, has been a major contributor to Piemonte's emergence as the Italian region with the most university spin-offs. More generally, the expertise built up by Fiat has been retained by its former suppliers, as they diversified into new sectors and new markets, and remains a major attractor for foreign firms.

Munich and Bavaria are recognised within Germany as one of the States with the most rigorous education system, and one that emphasises academic 'elite' building. Locally this is manifest in the recent years' efforts to build up Munich's main universities as globally recognised elite institutions. This is balanced on the other hand by the specific German system of vocational training – a joint system of state-provided schooling and business-provided practical training that assumes the character of a 'social contract' at the core of the country's cooperative society model. The City of Munich contributes to the building of human capital by being the only German city without the status of a federal state that runs its own public schools – widely described as being of high standard while accessible to all strata of society (incurring no fees). In addition the city offers language courses and other training programmes designed to foster the integration of its diverse population.

Developing a better 'quality of life offer' and creating new amenities

Barcelona has been ranked as the highest European city in relation to quality of life since 1998 (European Cities Monitor). This high ranking relates to its natural assets, such as its attractive climate and location on the coast, and its cultural assets, such as the rich Catalan language and culture, architecture, gastronomy and lifestyle, both of which have been enhanced by sustained investment by city, regional and national governments over the last 30 years. The urban reconfiguration and reclamation of the waterfront and 4.5km of beach which accompanied the 1992 Olympics were crucial in reconnecting the city's natural and cultural assets and attracting tourists and entrepreneurs. Today, investments in infrastructure, such as the new high-speed train link to Madrid (already in operation) and France (under development) are explicitly linked to Barcelona's ability to attract skilled labour and international entrepreneurs through, for example, cluster initiatives such as 22@Barcelona Innovation District.

Seoul has increasingly recognised the need to present a globally attractive city to attract international investment. Since Mayor Lee Myung-Bak, the city has undertaken publicly-funded initiatives to improve public services and attractiveness of the city. The widely publicised Cheonggyecheon stream restoration project, whereby the city removed 5.8km of highway to reveal the old stream underneath, brought international attention to Seoul. It demonstrated the city's commitment to improving the physical environment for its citizens, by removing congestion, reducing air pollution in downtown Seoul, and providing amenities for cultural activities, wellbeing and general enjoyment of the city.

In **Munich**, while the city is privileged by its natural setting, lessons as to building and maintaining a high quality of life can nonetheless be learned. Access to its natural assets is open to all of its citizens rather than at the exclusive disposal of its richer inhabitants. The high quality of its public spaces is both supported by and in turn reinforcing a sense of civic pride. This attitude to inclusiveness pervades the city's history, displaying an ongoing effort to integrate the influx of migrants to the city, from rural Bavaria in earlier times to the international migrants of today.

Over 650 foreign companies have already set up operations in **Torino**, where quality of life has become a key factor for this location, as claimed by the Politecnico di Torino. The continuing influx of foreign students further demonstrates the diversity and vitality of Torino's cultural appeal. The University in Piemonte in 2007/2008 attracted 4,578 foreign students, who form 4.6% of the total student body; this is an increase of over 17% on the previous year.

Munich's economic performance: headlines for 2007

	Munich city	Munich Metro*	Germany
GVA per worker (€)	70,030	64,875	51,530
Employment rate (%)	-	83.9	74
Unemployment rate (%)	6.2	4.3	8.6
% with tertiary education	23.60	30.8	24.3
Population ('000s)	1,312	4,313	82,218

Source: Cambridge Econometrics, Eurostat, Statisches Bundesamt Baynsches landesamt juer statistik.
Note: Munich Metro. is aprroximated by oberbayern NUTS 2 area.
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities.

Delivering urban regeneration and revitalising city centres

Barcelona has been at the forefront of attempts to reuse and revitalise city space for the new economy. Investment has been at the heart of the city centre revival. The City Council started small, investing in run-down public spaces in order to demonstrate their capacity to change the city and to bring back confidence in Barcelona amongst its own citizens as much as amongst its potential investors. Building on this, sustained investment in roads, green space, new offices, hotels and homes provided the basis from which the new knowledge economy could take root in Barcelona. In the case of the 22@Barcelona innovation district, for example, the aim has been to create a new central area within Barcelona, with the density, connectivity and mix of the urban fabric being seen as a key asset in the development of new economic strengths in knowledge-intensive sectors such as design, media and ICT.

The city's 1995 Master Plan and 2000 Strategic Plan enabled **Torino's** outmoded industrial artery and railway running through the centre of the city to be re-claimed for new uses. The 'Spina Centrale' and four brownfield sites were re-developed into mixed-use neighbourhoods, and linked back to the urban fabric through new transport infrastructure. Since the mid-1990s, €2.45 billion of public and private capital has been invested in the regeneration of Torino's urban fabric, with special emphasis on transport infrastructure. As a result Torino now has a metro line, a high speed train linking the city to Milan, shared public and green spaces, and new cultural and research centres. Today, the former industrial areas are home to new institutions and firms, such as the design and engineering research and training centres of the Politecnico di Torino, General Motors, Volkswagen and the Chinese car giant JAG, and major international organisations, such as the International Labour Organisation, European Training Foundation, the United Nations Interregional Crime and Justice Research Institute and the United Nations System Staff College. Torino's cultural and historic amenities, including the Museo Egizio and the Mole Antonelliana, have also been renovated and promoted, as part of broader efforts to re-discover the city and the region's vernacular activities and cultural and creative industries.

Branding initiatives and metropolitan identity building

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. 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 (a designation conferred by the International Council of Societies of Industrial Design) and continues to host international sporting events and slow food fairs, such as Salone del Gusto and Terra Madre.

Seoul is keen to become a globally attractive city, and to that end the current Mayor Oh Se-Hoon has given Seoul the title 'the Soul of Asia' and implemented a 'Creative City Policy'. Creative and design-led initiatives and projects, such as Zaha Hadid's Dongdaemun Fashion District and Daniel Liebskind's Yongsan International Business District, have led to designations of Seoul by UNESCO as the UNESCO City of Design in July 2010 and World Design Capital 2010. Seoul has also hosted a number of global conferences, including the C40 Large Cities Climate Summit in 2009 and more recently, the G20 and G8 Summits in November 2010.

Barcelona has been developing and promoting its brand internationally throughout the last 30 years. From the urban revitalisation and mobilisation of civic pride of the Olympic period, Barcelona has more recently sought to capitalise on its brand in a diverse set of ways. The consortium, Barcelona Tourism, was created to develop a tourism promotion programme for the city, while the trade fair body, Fira de Barcelona, sought to boost Barcelona's profile as a business destination. Strategic platforms were created to promote priority growth sectors and to attract foreign entrepreneurs and foreign investment. According to the OECD, the Barcelona brand is 'universally accepted and promoted by all the key organisations and is clearly a unifying message' (2009, p.40). Thus, as well as attracting tourists, businesses and investors, the Barcelona brand can be considered to have a mobilising effect within Barcelona itself. Through platforms such as the Barcelona Economic Triangle, the Barcelona brand is now being leveraged across the metro and Catalonian region more generally.

Barcelona's economic performance: Key indicators for 2007

	Barcelona province	Catalonia	Spain
GVA (20.000 prices in milions of €)	88,162 (74.1% of Catalonia)	133,775 (18.7% of Spain)	716,630
GVA per workers (€)	36,244	36,201	34,742
Employment rate (%)	74.2	75.8	67.4
Unemployment rate (%)	6.6	6.5	8.3
Population ('000s)	5,332 (75.3% of Catalonia)	7,085 (15.9% of Spain)	44,475

Source: Cambridge Econometrics andof Catalonia's of Spain's and Indescat
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

Supporting talent attraction and retention

Building on the international boost given to **Barcelona's** reputation as a result of the 1992 Olympic Games, strategic platforms were created to attract foreign entrepreneurs, researchers and investors to Barcelona and Catalonia. These included 'Invest in Catalonia', the international promotion body of the Government of Catalonia, and 'Do it in Barcelona', the promotional platform of Barcelona Activa.

Munich is a city with a strong historic identity. Its leaders have always used its spectacular natural setting and high quality of life as a means of retaining skilled workers and their families. State and metro also invest heavily in high-quality public services, in particular school, higher and vocational education. A third pillar is investment in key infrastructure – the city has developed a new airport and expanded its metro and rail networks.

The Milano-Torino ('MI-TO') axis is already heralded as a brand that has enabled **Torino** to attract highly-skilled workers, even from Milan; Torino is promoting its high quality of life and the fact that 'smaller' means 'more liveable' in order to attract these workers. Contrary to initial expectations, the high speed train between the two cities is slowly becoming a Torinese competitive advantage.

Overall impact of strong link between human capital, and attractive, distinctive cities

Each of our four metros has a strong and effective core city within it, and in all cases the core city is the anchor of the metro area. From a human capital perspective, although there is some diffusion of institutions across the metro area, the core city hosts most of the universities, specialist colleges and institutes and is the hub of human capital system in each metro.

The universities and other institutes are becoming increasingly internationalised and specialised. They are attracting international talent and are increasingly engaged with business at multiple levels. These human capital systems serve to both produce skilled people and to attract from outside. They are underpinned by deepening labour markets and high quality of life which provide the combination of both employment and quality of life choices that mobile talent workers seek. In turn these stronger labour markets have spurred and encouraged city centre living and urban regeneration, contributing further to quality of life and further reinforcing the human capital and talent attraction strategies of the metros. These strategies have also been reinforced by the growth of urban tourism which has further supported investment in culture, amenity, and quality of leisure and life style choices.

Through their various initiatives to link human capital to attractive, distinctive cities, our four metros now possess a more competitive and better-skilled workforce, with a core set of competencies in both traditional and emerging productions and services. Superior quality of life has acted as a magnet for attracting international talent and innovative companies.

6. Green economy, resource efficiency and decarbonisation

Overview

Each of our metros have understood the unique opportunity of shifting towards a green economy and combining environmental sustainability with new business opportunities, job creation and a more resilient metro economy. Three fundamental roles are observable:

1. Local, regional and national governments must create a strong policy framework and invest in green energy and green transport for their metros, setting them on a more sustainable and secure energy footing, decarbonising travel and investing in a more competitive future economy.

2. Working together with business and research institutions, local and regional governments must identify the sectors of the green economy into which their metros might specialise and compete, and target policy and investment on these sectors in order to drive innovation and gain a first mover's advantage.

3. Metro governments must emphasise the principles of compact city development in strategic (spatial) planning processes, in order to maximise the economic and environmental benefits of its urban form.

Our four metros have been encouraged to shift towards a green economy through multiple initiatives and incentives, but most important has been the sea-change in public opinion towards much lower carbon living and systems, and awareness within business of the growth potential of 'cleantech' products and processes. In many cases these initiatives are not yet operating at scale, nor are they fully effective. However there have been some notable successes, some of which are outlined below in relation to our four metros.

Long-term investment and a strong policy framework to drive green energy solutions

Germany's feed-in tariffs have unleashed unprecedented levels of renewable energy investments that are further accelerated by Munich's own ambitious renewable targets. The **Munich** city government is pursuing a long term vision to reduce carbon emissions per head by 80% in 2050

(from the level of 1990) and to draw all of its energy supply from renewable sources by 2025. While reducing carbon emissions is an explicit climate protection policy, the transition towards renewables is also seeking to avoid dependence on the Russian gas monopoly. The ability to set political targets for its publicly owned utility company (SWM) allows the city to pursue these goals. In turn these goals drive the internationalisation of SWM as it seeks to exploit a range of renewable energy sources in the locations most suitable – solar power in Spain and wind power in the UK amongst others. SWM is building its capacity as renewable energy provider by partnering with technology firms including Siemens, other utility companies and local partners in these countries. Rather than a case of exporting technology this learning process may well lead to green technology innovations being 'imported' to the Munich Region and feeding back into local innovation processes.

In relation to **Barcelona**, a city and regional energy plan have been produced, in addition to the national policies of the Spanish government for feed-in tariffs for renewable energy. The key initiative of the Barcelona energy plan was a Solar Thermal Ordinance, which required all new buildings and those undergoing major refurbishment to include solar energy sources to provide for 60% of hot water supply. This was the first Solar Thermal Ordinance introduced by a European municipality, and has since been rapidly introduced into Catalonia and Spain's legislation and is now being replicated in over 20 Spanish cities. So far, Barcelona's Solar Thermal Ordinance has led to a ten-fold increase in the amount of solar thermal square metres (in terms of licenses requested) in Barcelona. The success of the measure has been associated with the way in which it was developed through successful partnership working, technical input and knowledge/skills development. In addition, renewable energy initiatives have been included in major new developments in Barcelona, such as Forum 2004's urban solar power station (10,700m^2 of photovoltaics), district heating and cooling system and energy efficient buildings. The 2006–2015 Catalan Energy Plan includes a target to increase the percentage of primary energy consumption from renewables from 2.9% in 2003 to 9.5% by 2015, and of generation of electricity to 24.0% by 2015, through a programme of work including the creation of energy research institutes and the development of an industrial plan for the energy technology sector.

Promoting green economy approaches to sustain economic growth and job creation

In **Torino**, Fiat has produced and sold the Fiat 500, a hugely successful retrospective design small car, which has the lowest carbon emissions of any car in its class and has become very popular across the world. In addition, many of Fiat's former suppliers have moved into new sectors, including environmental services. For example, Sicme Motori recently began the production of mini windpower machinery, Golden Car now also produces recycling bins, and Simpro now operates in the railway and tyre-recycling sectors.

Looking forward, **Munich's** leaders are focused on two main economic development fields. The first is 'e-mobility' – a cluster of activities including low-carbon and electric vehicles, electric car grids and the next generation of high-speed rail. The second is 'future infrastructure' – the city plans to have a 100% renewable electricity supply by 2025, and the SWM is developing an ultra-fast fibre optic network in anticipation of future commercial and household demand.

Munich has been running a so-called 'Energy Saving Programme' since the end of the 1980s. It supports private investments into energy saving measures, for example installing state-of-the-art insulation in residential buildings. This programme not only contributes to reducing the city's carbon footprint but also to supporting local businesses and employment. Efforts to promote local solar energy production via the new 'Solar Initiative Munich' are feasible only in the context of the German Renewable Energy Sources Act, a policy in place since 2000 that guarantees renewable energy producers a set feed-in tariff over a 20 year period.

One of the cluster projects within the **Barcelona** Economic Triangle is the Parc de l'Energia, a 25,000 square meter park which brings together teaching centres, R&D centres and energy businesses. The new park also includes Fusion for Energy, a new European agency which will monitor and coordinate an international collaboration project for the development of nuclear fusion.

Expanding green transport infrastructure

In **Barcelona**, connection to the Spanish High Speed Rail Network has reduced the need for air travel between Barcelona and Madrid, decreasing the carbon intensity of domestic travel around Spain. In a similar way, the planned high-speed rail connection to France is also likely to reduce the need for air travel to and from Barcelona. Other examples of Barcelona's investment in green transport infrastructure include the current expansion of its metro network to include a new 47.8km, mainly subterranean, metro line, the expansion of its tramways and the introduction of the 'Bicing' cycle-hire scheme.

Torino has also invested in a metro line and a high-speed rail link to Milan, generating both environmental and economic benefits to the city and the region. Sustainable mobility and ICT have also been boosted by the crucial intermediary role between Torino's political system and the market place played by Torino's bank foundations, Compagnia di San Paolo and Fondazione Cassa di Risparmio di Torino, which have accelerated innovation in both sectors.

The governments of Incheon, **Seoul** and Gyeonggi Province have collaborated to establish a bus rapid transit system (BRT) in the Seoul Metro Region, which traverses into Seoul city, Incheon city and parts of Gyeonggi Province. This is in addition to the extensive subway/underground system that extends from downtown Seoul outwards into the Metro Region. More recently, Kim Moon-Soo, the Governor of Gyeonggi Province in the Seoul Metro Region, strongly advocates the central government-led construction of the GTX, the Seoul metropolitan high-speed train system. The Governor actively advertises GTX as a true green transportation revolution, which will improve competitiveness by resolving the chronic traffic congestion problems of the Seoul Metro Region while reducing environmental emissions.

Committing to strategic (spatial) planning to advance compact city development and the integration of land-use, urban design and transport

Barcelona has created new urban centres linked to new transport hubs, such as the 22@Barcelona Innovation District, seeking to maximise the economic and environmental benefits of its compact and mixed urban form. At a metropolitan and regional scale, spatial planning and land development policies continue to emphasis the compact-city model, supported by the necessary transport infrastructure, and in particular the metro's rail and metro networks.

Munich's 'compact, urban and green' paradigm has enabled efficient, green transport and improved quality of life. The development of brownfield sites within the city increased density and mixed use and led to better local accessibility, public transport access and helped to promote walking and cycling. Public transport connectivity is critical within the metropolitan region, which consists not just of Munich and its periphery, but several other second tier cities within a 60-80km distance. Metropolitan region leaders have not only connected Munich to its hinterland by greener transport but to its broader national and international context in Central Europe. A number of investments have been key, including the 1971 urban rail system and upgraded rail lines linking Munich via Augsburg and Ingolstadt to Germany's high-speed rail network.

In **Seoul**, where population density places high pressure on land, urban regeneration has been used to systematically recycle polluted urban land and to improve the physical and natural environment. The Digital Media City in Seoul is a local government-led redevelopment project that reuses an area near an old landfill site, south of the river. New buildings are being constructed by the city to house new ICT industries and related service companies. Moreover, as previously mentioned, the Cheonggyecheon stream restoration and landscape project in downtown Seoul has reduced congestion, and provided a pleasant 5.8km pedestrian path in the busiest part of the city from Gwanghwamun in the heart of Seoul east to Dongdaemun (East Gate) of Seoul.

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.

Torino's economic performance, 2007

	Torine 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

Source: Eurostat, 2007 and Istat, 2007.
LSE Cities, London School of Economics, www2.lse.ac.uk/LSECities

Overall impact of green economy, resource efficiency and decarbonisation

By increasing their energy efficiency and their capacity to generate cleaner energy, our metros have strengthened their resilience in an increasingly volatile global (energy) market. While data on the impact of green economy policies on overall economic performance and job creation is only just starting to emerge, the four metros suggest that taking action on a range of green and low carbon initiatives can certainly help sustain employment, grow new markets for business, and improve the quality of life and identity of the metros themselves.

7. Concluding comments

EU and Asian metros have learned much from US metros over the past 50 years about the importance of capable city leadership and business-focused economic development. As we approach the next urban economy, EU and Asian metros have developed practices of their own that can add to the global knowledge on how to fully realise the potential of the metropolitan platform to achieve economic progress and meet other important goals.

Our four metros in the EU and Asia have pursued their different initiatives through an integrated approach, taking action on all five fronts and setting themselves on a path to longer-term success. These five ingredients have been:

1. Active, aligned and intentional government with private sector and institutional partnership;

2. Internationalisation, global positioning and trade;

3. Knowledge economy, innovation-based entrepreneurship and modernisation of manufacturing;

4. Strong link between human capital, and attractive, distinctive cities; and

5. Green economy, resource efficiency and decarbonisation.

The experiences of Munich, Barcelona, Torino and Seoul over the last 30 years offer important insights to US metros seeking to develop their next urban economy. The LSE Cities series of case studies suggest that metros that develop active, aligned and integrated approaches - strengthening their international position, fostering economic diversification and re-orientation, investing in quality of life and place to produce and attract human capital, and shifting towards a green economy – will be rewarded in the future.