LEARNING FROM GLOBAL METROS

A number of European and Asian cities have demonstrated sustained growth over the past three decades, notwithstanding the current economic crisis. Breaking free from historical dependencies, they overcame challenging crises to show progress in economic development. LSE Cities carried out in-depth research of four metro regions in the European Union and Asia, focusing on Munich (Germany), Torino (Italy), Barcelona (Spain) and Seoul (South Korea), to identify the processes, governance arrangements and interventions through which progress has been achieved. The aim is to provide U.S. leaders with valuable resources as they respond to the challenges posed by the current global financial crisis. The main policy lessons are illustrated below, followed by a summary of each global success profile.

Policy Lessons

The four metros offer insightful lessons on successful programs and policies that fundamentally transformed their economy. Though none have been perfectly successful, each has made decisive progress and set the groundwork for future growth, trade, and job creation. We have observed a number of key insights from the European and Asian metros.

An Intentional Government with Partners

The metros demonstrated the essential role of local and regional government (the tier between municipal and national levels) in sustaining and leading, economic development with national and business partners. Examples include:

Achieving vertical and horizontal alignment
A shared vision between Torino and Piemonte enabled them to win significant funding from the European Union

Delivering integrated strategic planning
Torino's new strategic plan helped promote economic diversification in parallel with a revitalized master planning framework

Establishing metropolitan and regional coalitions of public, private, and civic organizations
Munich's Future Bavaria Program invested in knowledge infrastructure and public venture capital

Creating effective intermediary bodies, including public-private partnerships
Barcelona Activa helped create a business incubator and provide seed capital funding to local firms

Establishing innovative public finance vehicles
Finpiemonte Partecipazioni, a public investment holdings company, invested in Torino and its region

Introducing effective metropolitan level government
Seoul realigned central and metropolitan government priorities

Effective governance and partnerships, as demonstrated by these metros, has helped improve the business climate, increased interest by international organizations and firms, and provided the necessary consistency and stability to realize long-term projects.

Internationalization and Trade

All four metros have developed programs to accelerate the internationalization of their economies over the past 30 years, including:

Trade and export promotion through public sector-led programs
Torino's "From Concept to Car" program has delivered new contracts and real jobs

Attracting foreign investment and international institutions
China is now investing significantly in the expansion of the Port of Barcelona

Using international events to spur new international interest
All four cities hosted Olympic Games and continue to organize global gatherings

Supporting internationalization programs among key metro organizations
Politecnico di Torino has significantly increased its international students

The impact of these activities can be seen in the increased number of foreign-owned companies, high- and medium-skilled immigrants, foreign tourists, students and convention visitors.

Innovation and Entrepreneurship

The framework for economic development in the EU and Asia has emphasized the transition to a "knowledge-based" or "knowledge-led" economy. This includes using innovation in processes and products to modernize traditional industries and support entrepreneurship to grow new knowledge-intensive sectors and firms. Described below are a number of such efforts:

Delivering an innovation-led economy through strategic planning
The Munich Cluster program promoted 19 hubs for biotechnology, energy, and environmental technologies

Promoting entrepreneurship
Barcelona and Torino set up business incubators and seed capital funds

Modernizing manufacturing industries and diversifying supply chain activities
The Politecnico di Torino re-tooled and diversified the automotive sector

Promoting investment into cutting-edge science and technology facilities and infrastructures
The Barcelona Economic Triangle now includes three major employment hubs

Re-using industrial land for centers of innovation and technology
Seoul designed the Digital Media City in a former landfill

This modernization has promoted local firms into national and international markets, fostering economic diversification, catalyzing local market revival, and re-orienting traditional manufacturing in emerging sectors.

Human Capital and Quality of Place

In our four metros, the human capital and quality of place agendas have merged with the knowledge economy, attracting new people and talent. To deliver human capital systems, the four metros have been:

Building and developing human capital
Torino successfully upgraded local skills and provided a local supply of university graduates for the new economy

Creating new amenities and quality places
All four cities have pioneered urban improvement projects, from Seoul's rediscovery of its underground river to Barcelona's regeneration of its waterfront

Revitalizing city centers
Torino upgraded its public spaces, removing cars and introducing public art

Supporting talent attraction and retention
The "Do It In Barcelona" campaign and Seoul's reinvention of the Guro district as a major fashion and IT factory hub

The four metros possess a more competitive and better-skilled workforce than they did 20 years ago, with a core set of competencies in both traditional and emerging productions and services. In addition, improvements to the quality of place have successfully attracted international talent and innovative companies.

Green Economy

The 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. The initiatives to advance the green economy include:

Creating national renewable energy policies which are adopted and implemented locally
Germany's feed-in tariffs unleashed unprecedented levels of renewable energy investments

Promoting green economy approaches to sustain economic growth and job creation
Automotive firms in Torino re-oriented their production towards environmental machinery and services

Investing long-term in highly profitable green energy solutions
Munich's city-owned utility company invested strategically in wind and solar energy in Germany and internationally

Expanding green transport infrastructure
All metros continue to invest in rail and high speed rail infrastructure; Seoul and Munich are implementing trials for electric vehicle infrastructure

While data on the impact of green economy policies is only just emerging, lessons from the four metros suggest that green economy initiatives can help sustain employment, grow new markets for business, and improve the quality of life.

Conclusion

The European and Asian examples have pursued different initiatives through an integrated approach, taking action on all five fronts and setting themselves on a path to longer-term success. The case studies suggest that metros that adopt aspects of these five areas—an intentional government with partners, internationalization and trade, innovation and entrepreneurship, human capital and quality of place, and the green economy—will be rewarded in the future.

In the next section, the metros and their programs are defined and highlighted.

MUNICH
STAYING AHEAD ON INNOVATION

POPULATION IN 2010: 3,389,659 • EMPLOYMENT IN 2010: 1,961,927
GROSS VALUE ADDED (GVA) PER PERSON IN 2007: $53,619

Munich is a leading German metropolitan region for high-tech activity, with a powerful innovation system. It is, arguably, Germany's Silicon Valley—with dominant positions in electronics and advanced manufacturing—and is famous for the "Munich Mix" of sectors and company sizes, including world-leading firms like BMW, Siemens, and MAN. Capital of the state of Bavaria, Munich today is one of the top performing cities in Germany, Europe's strongest economy and the fourth largest economy in the world.

The Challenge

By the mid 1990s, Munich's competitive position was under threat. The recession of 1993–1994 dealt a heavy blow to Munich's export-oriented industries and the end of the Cold War triggered a rapid drop in demand in the defense and aerospace industries. German reunification and globalization both threatened to shift growth away from Munich and Bavaria, towards Berlin and to other countries moving up the value chain. City leaders feared that Munich's era of growth might have ended.

Leadership and Intentionality

The Bavaria state government responded strongly to these threats, initiating new strategies to promote innovation and stimulate long-term growth. All state governments in Germany are leading actors in economic development, but the state of Bavaria's decision to sell government-owned shares worth €2.9 billion in order to finance its innovation initiatives made it particularly powerful and effective. City and state governments have provided political stability, enabling Bavaria's visionary leaders to invest in crucial metropolitan infrastructure and universities. A cadre of technically-educated personnel in public agencies ("geeks in government") has also helped to drive change.

The institutional strength of Munich and Bavaria more generally played an important part in the metro's successful recovery.

Institutional thickness to propel innovation. With over 55,000 R&D full time equivalent positions, 13 universities, and an abundance of government-financed research centers, Munich has become a model of "institutional thickness." The profound level of connections between the business, university, and research community is one of Munich's most valuable assets.

Strong service-manufacturing nexus. The region's economic strength and capacity to innovate has further been linked to a particularly strong "service-manufacturing nexus"—a key characteristic of Germany's economy which is centrally based on interacting knowledge-intense services with advanced, knowledge-intense industries.

Interventions

The Bavarian state government initiated a series of programs to stay ahead on innovation, beginning with the Offensive Zukunft Bayern (Future Bavaria Initiative) in 1994 which led into the High-Tech Initiative in 1999 and the Cluster Program in 2006.

The Future Bavaria Initiative. This program had three overlapping activities: investments in "knowledge" infrastructure, knowledge transfer, and a "public venture capital," and high-tech firm formation. Funded through the sale of government-owned shares in a range of enterprises, this €2.9 billion initiative included over 80 projects including the construction of eight new polytechnic colleges and helping over 450 innovative (but risky) start-ups through subsidies and low interest loans.

The High-Tech Initiative. This program concentrated its support on various key technologies, including life sciences, ICT, environmental technology and mechatronics. The HTI was also funded through the sale of government-owned shares, raising €1.35 billion, and built on four "pillars": the expansion of world-class high-tech centers, "technology concepts" for all regions, and a state-wide program of start-up promotion and technological infrastructure.

The Cluster Program. This program was initiated with limited funding but with a highly targeted approach of supporting maturing clusters. The program manages 19 specific clusters, such as biotechnology, energy, and environmental technologies, to support collaboration between firms, researchers, and venture capital.

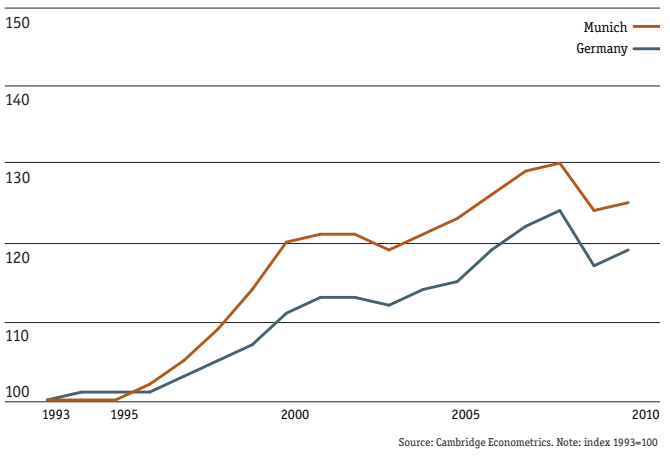
Results

The results culminating from these and other efforts have been impressive. Munich has strengthened its presence in science and advanced manufacturing, for example, with output related to transport equipment more than doubling since 1990. At the same time, Munich is diversifying into new activities, notably biotech and increasingly, "cleantech" activities such as green energy and low-carbon vehicles with a three-fold increase in patents related to climate change mitigation over the last 20 years.

Innovative activity in the metro rose markedly during the 1990s, especially in ICT, biotech, and green industries. Munich's share of patents in Germany has grown from 11 per cent in 1980 to 13 per cent 2007, the third largest in Germany. 2008 economic output per capita has doubled since 1991 (from €32,078 to now €64,625) and is now comfortably above regional and national averages.

In general terms, Munich's success story can be summarized by four key success factors. First, deep connections between public, private and third sector actors—"institutional thickness"—have produced a clear sense of common purpose, and long term, focused policy interventions. Second, consistent state-led policies have supported and advanced economic clusters and innovation. Third, Munich's economic diversity and some world-beating firms have provided economic resilience and helped to spark new ideas. Fourth, the state and the city of Munich invested in the assets that matter, notably in human capital (via public education) and infrastructure (such as the new airport).

Munich
GVA per person (income) 1993-2010, indexed against 1993 levels



Source: Cambridge Econometrics. Note: index 1993=100

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Munich has consistently outperformed the national average in income since the mid 1990s. It suffered a significant drop in income during the recession but is now recovering.

TORINO
RECLAIMING AND DIVERSIFYING LOCAL STRENGTHS

POPULATION IN 2010: 2,286,985 • EMPLOYMENT IN 2010: 1,047,407
GROSS VALUE ADDED (GVA) PER PERSON IN 2007: $30,067

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

The Challenge

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

Leadership and Intentionality

Torino's adaptation was driven by entrepreneurial public and private actors. The restructuring of Fiat proved challenging for its suppliers, and yet many of them emerged more efficient and competitive internationally. The local Union of Industrialists and political institutions worked alongside manufacturers to help firms adapt to new conditions and enter new markets.

As Fiat concentrated transformation internally, other institutions emerged to nurture Torino's burgeoning expertise and attract international industry. Bank foundations accelerated innovation and R&D, and invested in new cross-sectoral institutions. The Politecnico di Torino, the city's major university, modified its courses, relocated to the heart of the city and worked with public and private actors to bring in international firms and research centers.

Devolved national power galvanized momentum for Torino in the early 1990s, as Mayor Castellani initiated two major planning processes. The strategic plan linked the changes in the city's auto sector to a new vision for Torino as a globally-oriented, innovative and diversified economy, supported by a new city masterplan that reconfigured Torino's industrial core. City and regional governments enabled the changes pursued by other economic actors to accelerate, flourish and spread.

Interventions

Attracting financial investment through collaboration. Collaboration between Torino and Piemonte brought in funding from the EU: €2.5 billion from the EU Structural Funds (publicly co-funded locally) since 1989 and €3.3 billion from the European Investment Bank since the mid-1990s.

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

Bridging the gap. Torino's bank foundations and the Politecnico bridged the gap between universities, businesses, and private capital by facilitating investment, innovation, and effective market entry.

The Politecnico reconfigured its courses for the new economy (e.g. automotive engineering, design), attracting foreign firms, students and talent back to Torino. Private firms have taken up positions in the city center campus, including GM Powertrain Europe and China's second largest car manufacturer, JAC. The Politecnico's business incubator 13P, jointly owned by city and regional governments and the Torino Chamber of Commerce, is a major contributor to Piemonte's emergence as the Italian region with the most university spin-offs.

Torino's bank foundations, Compagnia di San Paolo and Fondazione Cassa di Risparmio di Torino, play a crucial intermediary role between Torino's political system and the market place, accelerating innovation in sectors like sustainable mobility and ICT. Between 2001 and 2005, they invested €380 million in Torino, sponsoring new research and innovation institutes.

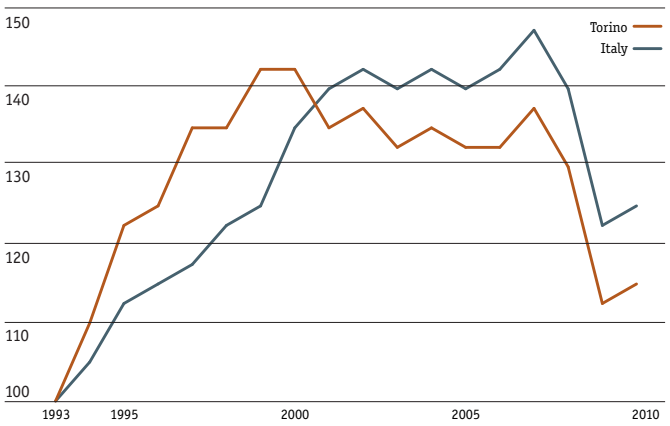
Supporting firms into new sectors and new international markets. The Unione Industriali di Torino, the Torino Chamber of Commerce and the Piemonte Agency for Investments, Exports and Tourism help new or struggling firms primarily in the automotive, ICT, mechatronics and aerospace sectors adapt and enter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

Steering growth towards new economic sectors. In 2008, Piemonte set up twelve Innovation Poles in sectors like biotechnology, design and ICT. They align private firms with research centers as part of a shift towards a regional innovation system, attracting €90 million from the EU so far.

Results

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

Torino
GVA per person (income) 1993-2010, indexed against 1993 levels



Source: Cambridge Econometrics. Note: index 1993=100

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Torino's income grew faster than Italy's in the last decade but has since performed worse than the national average. Its income has stagnated over the whole period.

BARCELONA
GLOBAL REPOSITIONING OF AN EMERGING METRO

POPULATION IN 2010: 5,511,680 • EMPLOYMENT IN 2010: 2,455,666
GROSS VALUE ADDED (GVA) PER PERSON IN 2007: $25,918

Barcelona has achieved an extraordinary transformation in its economy since the 1980s. The capital of Catalonia, the largest economic region in Spain, Barcelona successfully reinvented itself following nearly 40 years of General Franco's dictatorship, strengthening its position in Europe and attracting foreign investment, international entrepreneurs and tourists. While Barcelona has been hit hard by the recent financial crisis, it offers important insights into the fundamentals of urban economic transformation in a country that is Europe's fifth largest economy and the eleventh largest economy in the world.

The Challenge

Franco's death in 1975 heralded the beginning of democracy in Spain, but left Barcelona with a substantial legacy of economic problems, which were compounded by competitive pressure during the 1980s. By 1986, unemployment reached 21 percent and parts of the city fell derelict. The creation of the European Single Market in 1993 provided Barcelona with a unique opportunity for economic renaissance.

Leadership and Intentionality

Democracy brought a strong political mandate for change, seized by Barcelona Mayor Pasqual Maragall. Maragall initiated the city's first highly-participatory strategic planning process in 1988, creating a vision of Barcelona as the capital of the Mediterranean. The government of Catalonia became increasingly powerful in areas such as economic development, infrastructure, and land development. New agencies were created, combining public and private sectors in agile and effective companies and consortiums. This was especially important given the metro's fragmented governance, and effectively involved the dynamic private sector in Barcelona's transformation.

Interventions

City and regional governments and consortia drove forward a set of interconnected initiatives, mobilized by new governance models and a vision of Barcelona's future. These included:

Making the world take notice: For Barcelona, international promotion has been about much more than tourism. Mayor Serra's successful decision to bid for the 1992 Olympic Games shone a light on Barcelona and attracted the international investment needed to kick-start its transformation. Major urban redevelopments and investment in infrastructure have made the most of the city's coastal location, climate, and high quality of life, which the city now affords.

Stimulating entrepreneurship and moving into new sectors: Barcelona's attractive brand is now effectively leveraged to develop priority growth sectors, such as design, media, logistics and biotechnology, and to attract international entrepreneurs.

Barcelona Activa. In 1986, the city council founded Barcelona Activa, a pioneering local development agency. Its creation marked a step-change in Barcelona's approach to employment and economic development, positioning new entrepreneurship. Barcelona was one of the first cities in Spain to create a business incubator and seed capital funds, and the first city in Europe to develop an online business incubator. Barcelona Activa has been quick to respond to changes in technology and new markets, and is committed to a client-oriented approach, which combines both virtual and physical spaces for learning, networking, and collaboration.

Planning for new metropolitan growth and governance. The Barcelona brand is also being leveraged internationally across the metropolitan region through the Barcelona Economic Triangle, providing a taste of the benefits to come when Barcelona's forthcoming metropolitan agency kicks into action.

Barcelona Economic Triangle. This important metro-wide initiative is formed of three sets of clusters, each specializing in different aspects of the next economy. It includes BET in the Llobregat area with and aerospace and logistics focus, Valles area with its science and creative industries focus, and the 22@ district, a significant urban transformation project for the new knowledge economy. The combination of the three creates a metropolitan triangle for next metro economy, which brings together the municipalities and regional government with other players, and involves significant public investments.

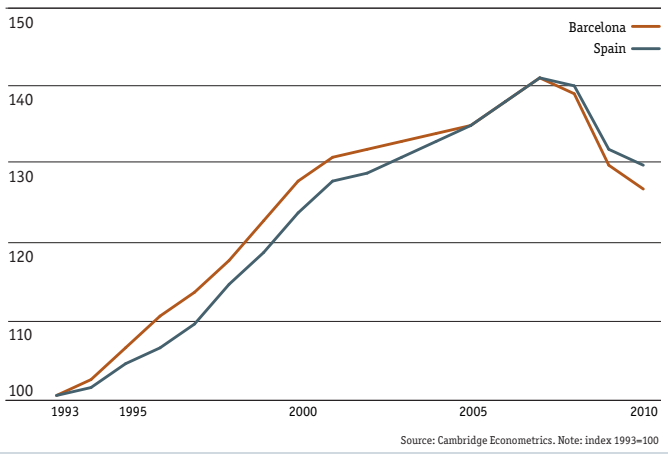
Results

The results of these actions are impressive. Catalonia has grown faster than Spanish and European averages over the past two decades. By 2007, unemployment in Catalonia had fallen to 6.5 percent, a significant achievement given its starting point in the 1980s. Over 8 percent of the working age population engage in some form of business creation activity each year, compared to the European average of 5.4 percent. Barcelona is now ranked as the fourth best city in Europe to do business.

Catalonia is Spain's leading export region, responsible for 27 percent of total Spanish goods exports. Medium-high tech exports now make up 51 percent of all industrial exports by value. The Port of Barcelona is one of the fastest growing ports in Europe, is well positioned in relation to emerging economies, having captured 38% of traffic between China and Spain, and benefits from the largest logistics cluster in southern Europe. Airport and rail capacity have also increased. The city has an operating high-speed rail link to Madrid and a link to France under development. These new infrastructures have allowed a massive increase in tourism. Tourist arrivals grew from 1.8 million a year in 1992 to over 6.7 million in 2008.

While the current global financial crisis has severely impacted Barcelona, it has a robust framework, a clear vision, and a myriad of actors to help it achieve the next stage in its transformation.

Barcelona
GVA per person (income) 1993-2010, indexed against 1993 levels



Source: Cambridge Econometrics. Note: index 1993=100

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Barcelona fared slightly better than Spain in the pre-recession period, but it has been affected by the recession more strongly. It is the only metro profiled that is still in recession.

SEOUL
ORCHESTRATING AN INNOVATION-LED ECONOMY

POPULATION IN 2010: 23,907,009 • EMPLOYMENT IN 2010: 11,887,826
GROSS VALUE ADDED (GVA) PER PERSON IN 2007: $21,372

With almost 30 years of double-digit growth and a string of technological breakthroughs captivating the global market, Seoul earned its reputation as a "miracle economy." Its growth and success can be traced back to central government's vision to transform the country into a global leader in exports. Success is also linked to the collaborative relationship between government and leading conglomerates, which allowed these firms to gain a significant share of global markets in a short time.

Seoul's economic transformation begins in the 1960s when South Korea's central government pursued a policy of export-oriented industrialization. A five-year economic development plan resulted in the growth of the textile and apparel industry as the leading sector in Seoul, marking its entry into the global marketplace.

The Challenge:

With Seoul increasingly tied to the global market, broader economic forces created a new level of uncertainty and vulnerability. Starting in 1970s, oil price hikes, rapid fluctuations in international interest rates, and an increasingly strong won (the Korean currency) boosted the costs of manufacturing goods. Seoul's export economy was undercut by other Asian competitors, encouraging South Korea to shift towards high tech production. These events galvanized new waves of central government policies, public-private partnerships, and initiatives by local government. The effect of the Asian financial crisis of 1997 ensured further sharpening of these policies and programs.

Leadership and Intentionality

South Korea's highly centralized government used its range of powers to orchestrate a competitive future. It identified new market opportunities; incentivized companies to enter specific sectors; promoted collaborative R&D projects in very specific industries; and identified and eliminated market redundancies. In short, the government virtually ensured all the conditions were in place for firms to thrive.

This included:

Advancing research and development in new and emerging sectors: Central government's impact on national industry is exemplified by its focus on the information and communication technology sector. The Electronics Industry Promotion Law increased investments in electronics research and swayed large companies to focus heavily on this sector. The central government also supported the creation of the Korea Institute of Electronics Technology (KIET), which conducted research into semiconductor design, processes, and systems.

Accelerating Market Entry with Public-Partnerships: The central government spearheaded the "Very-Large-Scale-Integration" (VLSI) research consortium when three major Korean semiconductor producers were making overlapping but redundant investments. With a clear vision to produce the world's next generation memory chip, government and private companies pooled their resources to accelerate R&D. Combined efforts not only brought the chip quickly to market, it laid the groundwork for a chip that became the world market leader just a few years later. Samsung, one of the Seoul companies supported by such policies, grew from virtually no global market share in memory chips in 1984 to just over 10 percent of the global market share in 1993.

Interventions

In the past decade, Seoul's economic successes have broadened in large part to a growing number of local actors taking part. Devolution, enacted in 1995, officially allowed locally-elected mayors and governors (at the regional level) to participate. Locally-driven efforts include:

Creating knowledge-based industrial clusters. Seoul city government has pursued an industrial policy known as the Creative Industry Promotion Program that promotes knowledge-based industries as the new engine in Seoul's economy. In 2007, the city government designated six 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. Each industrial strand is associated with a major new development project in Seoul to agglomerate related firms.

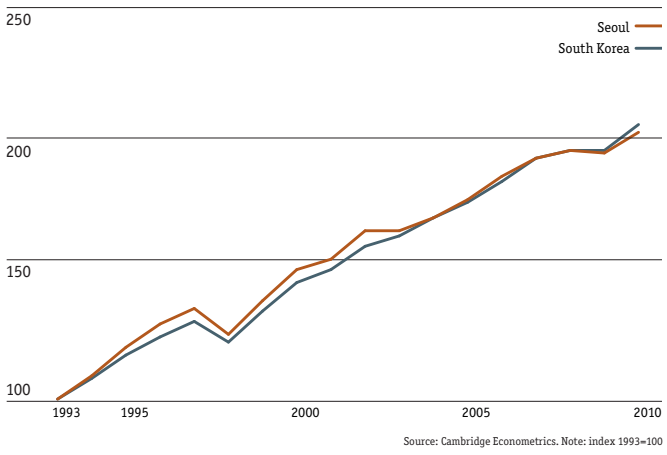
Transforming a former industrial park to a 'digital industrial complex' to advance high-tech industries. The Seoul city government redeveloped this aging former industrial complex in Guro into an urban high-tech industrial complex to nurture and advance high-tech firms. Within a decade, this newly named Seoul Digital Industrial Complex attracted more than 6,700 businesses, primarily consisting of small start-up venture companies, collectively employing more than 100,000 people and earning approximately $8 billion in revenue annually.

Transforming a waste facility into an "information city" to advance the media and entertainment industries. Seoul city government has realized Samgam Digital Media City (DMC), a state-of-the-art information city to nurture and advance the digital media industry. With a size comparable to New York City's Central Park, DMC is completely wired with sophisticated IT infrastructure and services. While still under construction, DMC has attracted several hundred digital media firms and houses over 25,000 employees.

Results

As of 2003, the capital region accounted for 55 percent of all manufacturing firms, 73 percent of total R&D institutions, and 77 percent of Korea's venture companies, and 88 percent of all headquarters of major large enterprises. While the industrial success of Seoul was clearly borne out of strong central government policies and regulations, Seoul's continued economic success thrives in part from partnerships and new policies intentionally designed to improve and support Seoul.

Seoul
GVA per person (income) 1993-2010, indexed against 1993 levels



Source: Cambridge Econometrics. Note: index 1993=100

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Seoul has very closely matched South Korea in terms of income, with a very strong growth pattern only broken by the Asian Financial Crisis at the end of the last decade.