Assessment and Recommendations

The Chicago tri-state metropolitan region straddles three US states.

The Chicago tri-state metro-region – the 14-county Chicago-Naperville Joliet Metropolitan Statistical Area (MSA) – is home to approximately 9.5 million people, of whom over 90% live in Illinois, less than 2% in Wisconsin and the remainder in Indiana. It is the third more populous metropolitan areas in the country, and the tenth largest among the OECD metro-regions. Only Los Angeles and New York have larger populations within the US, all three being outstripped by Mexico City, Seoul and, especially Tokyo with its 35 million inhabitants. The City of Chicago, located essentially in Cook County but extending into parts of DuPage County near O'Hare international airport, has a population of 2.7 million (28% of the total metro population) and a population density about ten times higher than the region's average. The fact that the region crosses state boundaries and encompasses a large number of municipal and other service-based administrative units poses particular challenges for its effective governance and development. Beyond the Chicago Tri-State metro-region, the 21-county tri-state region, sometimes referred to as the Gary-Chicago-Milwaukee corridor, is increasingly regarded by civic, business and political leaders as a common economic area, with nascent and growing commuting flows from the seven "external" counties into the Chicago tri-state metro-region.

The region is rich, but does not rank at the top

An economic snapshot of the Chicago Tri-State metro-region shows that it constitutes one of the largest metropolitan economies in the OECD (ranking 8th among the 90 OECD metropolitan areas in terms of GDP). It contributed 3.4 % to US GDP in 2008 and represented 3.1% of the national population in 2010. Similarly, the tri-state region's GDP, at USD 523 billion in 2008, is third in the US behind Los Angeles and New York. In terms of *per capita* GDP, the tri-state region ranks lower than San Francisco, Boston and Houston, as well as Los Angeles and New York. But the tri-state region's *per capita* GDP is nevertheless higher than those of several European metropolitan areas that are usually thought of as being wealthy, such as London, Paris, Stockholm, Milan or Amsterdam.

The region is economically diversified

Key elements of success of the tri-state metro-region are that its economy is both broadly based and responsive to changing demands. Its geographic position ensures that it will continue to be a major and growing transportation hub for both domestic and international traffic, passenger and freight (50% of all US rail freight passes through the metro-region). Its traditional manufacturing industries are declining in importance, although specialisation in this area remains high compared to other US metro-regions and national average (still represents 11.4% of employment). The new sectors of nanotech, biotech, ICT and green engineering are becoming increasingly important, as evidenced by Chicago's high level of patent applications in these domains (ranks 12th among the 90 metro-regions for total patent applications and fifth for nanotechnology). Such innovative activities are aided by both the high proportion of highly educated people in the population. Approximately 34% of the population 25 year-old and over, have at least a Bachelor's degree, a higher proportion than the national average of 28% (estimates for the period 2005-09) and the presence of world-class academic and other research centres. Innovation in the financial sector also has helped maintain Chicago's position as a world-class financial centre, and the leader in derivatives trading. Finally, both the public and the private sectors have worked together in the past to make Chicago an attractive location for corporate headquarters, and an attractive place to live, with its parks, theatres, museums, music centres, world-famous architecture, and lakeside setting. The City of Chicago is regularly placed in the top global city attractiveness ranking.

But its growth has slowed …

The tri-state region's growth rate has been slipping; for most of this century, its GDP growth has lagged behind that of the US average. This slowdown has been even more marked in *per capita* terms. Between 2001 and 2007, real annual GDP growth averaged 1.6% lower than the OECD average for metro-regions (at 2.6%). The tri-state region ranked 50th out 74 OECD metro-regions and 22nd out of 29 US metro-regions. When compared to OECD metro areas using *per capita* GDP growth rates, the tri-state region ranks 56th out of 84 OECD metro-regions. Several US metro-areas have managed to do better than average, and the tri-state region is falling further behind both Los Angeles and New York (Chicago ranks 16th out of the 29 US metro-regions in terms of GDP *per capita* growth). This comparative lack of dynamism can in part be explained by the familiar convergence process: it is easier for less advanced regions to grow faster than leading ones, because the former can borrow and imitate production and distribution methods that have been developed by the latter. Once a metropolitan area converges on the technological frontier, its continued growth depends increasingly on policy advances and innovation that push that frontier further out – a more difficult, costly and riskier process.

The region's working-age population is ageing, and unemployment remains high

The tri-state region's population is comparatively young, and it constitutes the tenth largest labour market in the OECD, but its working-age population is ageing, and employment has not fully recovered from the crisis. The ratio of working-age to total population actually rose earlier this century and since 2007 has stabilised at 68%, much the same as in other metropolitan areas. However, the proportion of prime working-age adults, those aged between 25 and 44, is falling gradually, which could raise challenges in the labour market over the long term. Such challenges could be exacerbated by the fact that older workers who have been laid off in the recession may find it difficult to return to work, especially if they have been unemployed for long periods. Another cause for concern is that both the size of the labour force and the employment rate fell during the first decade of this century, although this partly reflects the severity of the recession, which hit certain industries and certain segments of the population disproportionately severely, raising unemployment and discouraging many from even looking for a job. Unemployment in the tri-state region has risen from its pre-crisis level of 4.9% in 2007 to 10% in 2009, while the employment rate plunged from its pre-crisis level of 72.3% to just over 67% by 2009, a drop closely mirroring that in the US as a whole. Even before the crisis, labour market performance was relatively weaker than that of the nation.

Labour productivity growth rates have also slowed.

A major reason for the tri-state region's disappointing growth performance lies in the productivity of its workforce. Chicago is an attractive place to do business; overall, state and local taxes are not higher than the US average, the industrial composition of the region is more favourable than the national average, and the costs of living are not high. However, decline in participation rates and the ageing of the working age population limits growth prospects. Weak labour productivity growth since the early 2000s is a particular issue to be addressed. Although high in absolute terms – some 15% higher than the US average – its *growth rate* has been weak. One factor may have been the continuing decline in employment in manufacturing, where labour productivity typically grows briskly because of mechanisation, which leads to fewer jobs. Employment rises in the service sector where productivity growth tends to be slower. But this cannot be the whole story: the shift to a service-sector economy is a phenomenon common to most other OECD metropolitan regions, yet the tri-state region's labour productivity growth, at less than 1% annually over 2001-08, ranks 17th out of 26 US metro-regions, and was only about two third of the average for all OECD metro-regions.

The region is underperforming in terms of its percentage share of national output

The under performance of the tri-state region in terms of output and labour productivity growth and job creation since the beginning of the 2000s is a loss not only for the region itself but, given the region's size, for the US economy as whole. A more dynamic Chicago Tri-State metro-region could give an important contribution to national growth. For instance, if the tri-state region would have performed better over 2001-08, *i.e.* under a scenario whereby its contribution to aggregate US growth would have been around 3.4% which is the percentage of its share of the national economy, the aggregate USD GDP growth would have been around 0.4% higher, a modest but palpable effect, which shows the significance of what happens in the tri-state region for the US economy as a whole. In the same vein, if employment in Chicago had grown at the national rate over 1990-2010, the region have gained nearly 600 000 more jobs than it has today.

The region's population is well-educated...

In the tri-state region, the working-age population is comparatively well educated, though perhaps not to the levels that would be expected given its good higher education infrastructure. It ranks 4th among US metropolitan areas in educational achievement, with nearly one third of the tri-state region's population holding a BA degree or higher, and one quarter holding some college or associate degree. Institutes of higher education abound in the region, with over 200 post-secondary education and training institutions, graduating 140 000 annually. Northwestern University and the University of Chicago are ranked in the top 30 of the world's universities for science, and in the top 12 for business, economics and engineering. Chicago's Booth business school was recently ranked first in the world in the *Economist*'s survey of 115 schools. These institutions attract students from all over the world.

... but there is a serious skills mismatch...

Yet skills acquired via the region's education system are useful only if businesses in the metropolitan economy need them; if not, then there is a skills mismatch. And the data suggests that there is indeed a serious mismatch between skills demand and supply in the tri-state region. While aggregated data for the region suggests that the *average* worker in the region has the formal education required to do the *average* job, the data conceals serious issues in certain key parts of the region's skill spectrum. At the high end, there is a large pool of high-skilled, highly educated workers, in principle more than sufficient to fill the jobs available at that level. At the low end, there are large numbers of high school drop-outs (13% in the City of Chicago which is among the highest in the US) and others with limited education opportunities. They far outweigh the number of jobs available for individuals with low skills, even though the tri-state region's manufacturing industry as a whole has not modernised to the same extent as its competitors elsewhere in the US. In the middle of the spectrum, where most jobs lie, there is a marked education gap. Even in the currently depressed labour market, there are not enough individuals qualifying for the jobs that demand some higher educational attainment beyond a high-school diploma.

... exacerbated by significant underemployment, especially among blacks and Hispanics...

The skills divide is linked to a racial divide. Data on employment, unemployment and labour-force participation in the tri-state region reveal diverging trends in work experience by age and race. Between 2005 and 2009, about 75% of young white adults (ages 22-24) were working, compared to fewer than 70% of Hispanics, and only 50% of blacks. For workers aged 16-18, the discrepancy grows: 10% of 16-18 year-old blacks were working in this period compared with over 30% of whites and 25% of Hispanics. As education does not fully account for these low workforce participation rates, it must be concluded that a large number of youths and young adults in the region are neither working nor studying, particularly those who are black. This phenomenon is deeply rooted and predates the crisis. Occupations also tend to vary by race: in the City of Chicago, whites are far more likely to be in management, finance, real estate, the arts, and professional and scientific services than are blacks or Hispanics. Conversely, blacks are far more likely than whites to be working in low-paid occupations in transportation and health care, while Hispanics dominate manufacturing. In the 2007-09 period, unemployment rates of blacks, at 22.4% were nearly four times higher than for whites. Hispanics had unemployment rates of around 10%.

... and made worse by spatial segregation

Social exclusion and spatial segregation both reflect and reinforce labour market issues. The concentration of significant populations with very low skills and little labour force attachment represents a drag on future growth as well as aggravates the shortages in medium-skilled occupations in the labour market. The Chicago Tri-State metro-region's labour market is characterised by a high degree of geographic segmentation that reduces low-income residents' access to employment, since they are likely to find it hardest to bear the cost of commuting. Only 5% of residents in the metro-region live in high-poverty neighbourhoods (in which 35% or more of residents live in poverty), while 20% of poor residents live in high-poverty neighbourhoods. This suggests that poverty is relatively isolated and concentrated in specific neighbourhoods. The poverty rate has increased over 2000-10, with poverty in the City of Chicago increasing faster than in the Chicago Tri-State metro-region, implying an increasing concentration of poverty at the core.

The skills mismatch could worsen...

A mid-level education gap could be filled in part by individuals with superior skills taking up jobs that are below their skill level. This would be a waste of talent, and a waste of educational resources. A better alternative would be to invest in education and training of the lower skilled, to bring them up to the level required by employers. In the tri-state region, this mid-level skill shortage is likely to persist: the share of employment in the region's manufacturing sector, which used to be a major employer of low-skilled workers, has shrunk over time, and is now down to about 8%, as compared with 12% a decade ago, and half of what it was 40 years ago. Investment in high-tech machinery has raised the productivity of those still working in the more successful firms in manufacturing in the tri-state region, but this has also raised the level of basic skills required to operate the machinery effectively. While low-skilled jobs are still to be found in some legacy manufacturing sectors and in some services (for example in hospitality and healthcare delivery), data shows that most future employment creation will require at least a high school diploma.

Too many youth drop out of high school in the inner city, particularly Hispanic and black youth

Although the tri-state region as a whole can claim that it has a lower proportion than the national average of inhabitants with no high school diploma (7.3% compared with 8.5%), the drop-out rate in the City of Chicago, at 13%, is well above the national average of 8.1%, and well above those in many other major cities. Drop-out rates elsewhere in the tri-state region are considerably lower: Naperville, Indian Prairie and Oswego have rates of 3% or lower, with graduation rates of around 95%. The skills divide also reflects racial inequality. Within the City, the black drop-out rate is close to 20% and only half have post-secondary education, whereas the white drop-out rate is about 5% and over 70% have post-secondary education. The Hispanic drop-out rate is a startling 40% and only 30% have post-secondary education. Other ethnic groups, especially Asian, have formal educational outcomes similar to those of whites in the City, and considerably superior to them in the remainder of the metro region.

Many training programmes exist, but spending, much of which is federal, is low by OECD standards.

A wide range of programmes exists; they concentrate on furnishing youth and adults with education, job placement, support services, vocational training and career information. Residents of the City of Chicago alone have 83 separate programmes, of which 39 are administered by the City itself through 13 agencies working with their counterparts at the state and federal level. An additional 41 programmes are administered by the state of Illinois and three by the US Department of Labour (USDOL). That said the US spends only a *quarter* of the OECD average on workforce development programmes for improving the efficiency of the labour market, to train or retrain workers, or for other employment incentives. The USDOL and the federal Department of Education provide much of the funding for worker training, channelling it through programmes administered under the 1998 Workforce Investment Act (WIA). Federal funds are allocated to the local Workforce Investment Boards (WIBs) across the tri-state region that contract with local training entities (academic and private) to provide services. USDOL financing has fallen during the past decade, and the current tight fiscal environment suggests that funding might fall further. The three state governments in the tri-state region have their own budget challenges and are in no position to make up any shortfall. This is all the more problematic as the tight fiscal climate is accompanied by a large increase in the numbers of workers requiring well-targeted employment programmes to help them return to work, or find a suitable first job. It is therefore important that those receiving training acquire the skills that match the needs of business in the tri-state region.

Programme management is uncoordinated

The atomisation of programme management has created a situation in which the plethora of training institutions do not communicate well with each other to coordinate curriculum design and delivery and avoid overlap and duplication, despite sharing common goals. They do not communicate well with the governments that fund them, nor – most importantly – with the business community that needs the skills that these training institutions are supposedly supplying. As a result, in the tri-state region, a large, disjointed training bureaucracy interacts poorly, if at all, with potential employers. As a result of the functional region crossing state lines, key stakeholders also cope with conflicting state priorities for workforce development. Businesses thus benefit from little, if any, inter-state coordination in the design and delivery of workforce development programming that reflects true, region-wide economic development needs. Given the current tight fiscal environment, progress in programme management must be made by improving collaboration between key institutional actors across the tri-state region, including federal funders, state and municipal governments, educational institutions, training service providers, the workforce boards and the business groups. The purpose of increased collaboration is to articulate common region-wide goals and implement region-wide strategic plans to achieve them. Region-wide collaboration should also focus on the development of robust indicators so that stakeholders can measure performance and intervene if necessary to ensure progress in achieving these goals. This should lead to taxpayers' money no longer being wasted on training programmes that equip low-skilled youth with skills and qualifications that may not meet the actual needs of the region's employers. And while in-house training provided by firms tends to benefit employees who already have more than basic education, *public* resources need to be focussed on upgrading skills at the bottom end of the skills hierarchy, and by involving employers in the vocational training curriculum-design and delivery process so that the training service providers can learn which skills are most in demand in key sectors across the region.

...and made worse by petty, destructive intra-region competition to attract businesses

Several recent examples of inter-state squabbling over finite (and diminishing) public resources or over business decisions to locate in a particular part of the tri-state region point to the need to "take a step back" to integrate the true functionality of the region into planning for workforce development and economic development more generally. Empirical evidence in the US and elsewhere demonstrates that trying to increase the number of firms in a limited geographical area by luring them away from nearby localities in the same functional region via tax incentives is self-defeating in the long run, because it invites retaliation, and some of the firms involved may move to greener pastures when the tax breaks terminate, or may have moved to the region anyway even without the tax breaks. It is preferable by far to attract firms by showing that a pool of talent and organisations exists in the region that can help a newcomer exploit it. In the tri-state region, this pretty, predatory zero-sum intra-regional competitive approach to economic growth and job-creation remains all too common.

… Addressing a shortage of high-skilled workers can boost the region's innovation-driven growth potential

Whilst the tri-state region ranks high among OECD regions on many technology-based innovation indicators in terms of *volume*, it ranks only 23th among OECD metro-regions and 11th among the US ones in terms of patents per capita. The region does not rank significantly as a US knowledge hub. Since the tri-state region's economy is closer to the productivity frontier, it is thus not in a position to benefit from "catch-up" growth. The region will therefore have to rely on innovation to sustain growth over the long term. Given that the US is a technological leader in many industrial sectors active in the tri-state region (e.g. financial services, pharmaceuticals, nanotech, information and communication technologies, etc), it is clear that future growth will have to be based on *region-wide* innovation systems that harness the region's entire suite of strengths and assets, starting with its people. Yet, at the high-skill end, data for the tri-state region points to an apparent oversupply of the most highly qualified and skilled adults. At the same time, the region's businesses complain that they cannot attract or retain them. This apparent paradox may indicate a skill-mismatch in this area as well. Stakeholders in the tri-state region need to analyse this issue further in order to define the strategic approaches most able to match high-end skills supply to demand, particularly in innovation-driven emerging business clusters.

The tri-state region has world-class universities and research labs

The tri-state region has strong research assets that can contribute to the innovation process including two world-class universities (Northwestern and the University of Chicago), the federally-funded Argonne National laboratory and the Fermi national Accelerator Laboratory. The excellence of the work conducted in the tri-state region's research facilities shows up in their ability to attract a significant proportion of research funding from the federal government, as well as from the states. These institutions actively contribute to the economic innovation process via licensing, funding start-ups, and working directly with firms. This talent and experience is less well recognised internationally. The Illinois Science and Technology Coalition (ISTC), a venture development organisation, aims to redress this by fostering public-private R&D projects, advocate for funding for R&D initiatives, and collaborating with public and private partners to attract and retain research resources in the region. The tri-state region's stakeholders need to develop and implement tailored *international branding strategies* aimed at both attracting in-bound foreign direct investment and talent and at maximising foreign-market penetration by region-wide firms.

Yet its tertiary education skills are average.

Innovation requires skilled persons to innovate. It also requires skilled persons to recognise the commercial possibilities of an innovation, and implement the results in the marketplace. Although the share of workers with tertiary credentials in the tri-state region is above the national average, Illinois ranks 14th among US states in this regard. In several countries and regions, placement of highly skilled workers into SMEs is promoted by innovation brokers – private-sector or academic organisations set up for the purpose, sometimes publicly funded. Such mechanisms, such as the UK's Knowledge Transfer Partnership, that maps recent graduates against job vacancies in high-tech firms and in emerging, innovation-driven business clusters more generally, could help address the common complaint by employers in the tri-state region that they find it difficult to attract and retain such workers.

Inter-firm and business-academia collaboration could be enhanced...

University research laboratories sometimes produce blockbuster products that give rise to millions of dollars in revenues. But this is rare. Research more typically results in incremental improvements leading to genuine but minor new products or processes that can be commercially exploited. Universities in the tri-state region have technology transfer units, whose staff can advise researchers on the best ways to transform their discoveries into commercially interesting ideas – pointing to the need to forge closer links between local industry and academia. In turn, this could be facilitated by consolidating existing university technology-transfer offices to make them more effective, along the lines of "Springboard Atlantic" in eastern Canada or the Northern Illinois Technology Enterprise Center, based at the Northern Illinois University, which performs these functions on a smaller scale and which should therefore expand its networks.

... as could access to venture capital for start-ups and SMEs in emerging clusters.

Large firms account for most R&D spending and they can afford to maintain research centres. By contrast, in very small firms, research and other innovation-directed activity might be impossible to dissociate from other activities at the individual employee (or entrepreneur) level and hence do not qualify for tax breaks or subsidies. It is sobering that the founders of Netscape, Paypal and YouTube studied at the University of Illinois but went to California to found their initially very small companies, likely because the tri-state region is insufficiently attractive for banks, venture capitalists and angel financiers to invest in high-technology and innovation-driven start-ups. Evidence points to the fact that in the tri-state region, banks traditionally focus their business on large legacy-based firms with a long history of activity in the region. Evidence also points to the relatively low flows of venture capital into Illinois-based firms, compared with those on the west and east coasts, and the Illinois-based recipients are comparatively less successful in generating jobs and revenues from these investments.

The tri-state region's hub functions are a growth driver too

All economic activity in the tri-state region (as in any region) depends to a significant degree on the state of its transportation (and communications) infrastructure. The tri-state region is a major player in the fields of air passenger and freight, trucking and railways, and the efficiency of its transport services, including warehousing and intermodal facilities, affects not only the regional economy, but the entire North American economy. Transportation and logistics generate considerable employment and value-added across the region, with a significant impact on a variety of economic sectors. Important indirect effects (backward and forward linkages) of transportation on other sectors of the economy, along with Chicago's position as main airline hub, have had an impact on headquarter functions and high value-added jobs in the region. Its strong position in railway transport has also translated into innovative activities, such as high patent shares in railways.

..Air transportation works better than ground transportation

O'Hare airport is the second largest in the US for passenger traffic, and fourth in the world, with nearly 70 million passengers transiting through each year. The tri-state region's airports perform important hub functions, and have North America's largest diversity of direct destinations after New York. The tri-state region's position in air cargo transport is less central in terms of volume, but still scores highly in terms of diversity of destinations. On the other hand, problems of surface congestion are longstanding in the tri-state region. One vehicle in six on the interstate highways is a truck – and trucks carry about one half of freight by weight and three quarters by value. They contribute to congestion on urban roads. In addition, and unusually within a major metropolitan region, the tri-state railroad network has many level crossings with road barriers. Freight trains passing through the area are often of the Class 1 variety, with a large number of wagons which sometimes leads to gridlock. Truck congestion costs are estimated at well over USD 3 billion annually, a little more than 1% of the region's GDP, on a par with Los Angeles and New York, and far above those in other US metropolitan areas.

The public transit system is key to the metro-region's attractiveness but inadequate

The Chicago Tri-State metro-region's extensive urban and commuter rail system has helped it rank highly among world cities, but the system is underfunded and is no longer meeting the needs of the regional labour market. The metro-region is among the top 20 OECD metro-regions in terms of suburban growth, and ranked 51st out of 90 OECD metro-regions in terms of population density, below the OECD average and that of the Los Angeles and New York metro-regions. As a result, only 24% of the working population living within three quarters of a mile (1.2 km) of public transport can get to work using public transport within 90 minutes, and in suburban areas this figure drops to 14%.One consequence is road congestion, which imposes higher costs on commuters in the urban areas around the City of Chicago than in any other US metro-region. While expanding the public transit system could reduce congestion and ease labour mobility, and increase jobs in one of the fastest-growing green jobs sectors, the public transit system barely has enough funding to operate, let alone upgrade or expand. The Regional Transport Authority (RTA), which serves six counties and 88% of the population in the Chicago Tri-State metro-region, estimates the cost of maintaining, enhancing and expanding the system over 2007-37 at USD 57 billion.

A comprehensive funding plan is needed, including user charges

To reverse the decline of the Chicago Tri-State metro-region's public transportation system, there is a need for all 21-counties in the Chicago-area 21-county region to contribute actively to regional transportation planning and funding. Beyond making a case for federal and state public transit funding, a regionally coordinated effort could consider two local sources of transit funding: congestion charges and value-capture taxes. Congestion charges should be considered as an integral part of a transport funding package. London has addressed the problem of public transit funding in part through a combination of direct charging for taking an automobile into the city, and competitive contracting out of private bus services. Congestion charges on vehicle use have been considered in the Chicago Tri-State metro-region, but not yet actively pursued, although a preliminary study found support for the concept among a range of stakeholder groups. Additionally, although policy makers may be reluctant to raise taxes, it would be worth considering expanding the existing value capture tax, which would draw from the increase in property values arising from public infrastructure development.

The biggest barrier is the absence of integrated tri-state, multi-modal transportation planning...

To ensure that air, road and rail freight and passenger traffic, including public transport traffic, can move freely and interact efficiently requires planning and implementation at the tri-state regional level, with a clear understanding of the desirable long-term evolution of each mode and how best to harmonise their development over time. This is lacking. As in other major US metropolitan areas – New York with its Port Authority being the exception – there is no single regulatory authority over freight and passenger movements across all modes over the entire tri-state region. This is not necessarily a bad thing *per se*, but in its absence, a variety of private and public stakeholders have proposed solutions over time, mostly partial and many unfunded (with no coherence between them). Intra-regional surface transportation plans have been implemented, primarily aimed at improving rail capacity by focussing on level-crossing choke points. Yet no reference is made to road-rail coherence region-wide or to enhancing air cargo movement. Little thought has been given to the long-term evolution of the entire transportation system – surface, air and maritime – region-wide. And while each state is required to develop and implement a multi-modal transportation plan within its borders, nothing compels states to cooperate in the interests of functional regions that cross state lines. As a result, there has been no meaningful inter-state integrated transportation planning in the tri-state region. If only because interstate commerce falls under the constitutional purview of the US government, an active federal engagement could induce the three states to cooperate more systematically to address region-wide transportation interests in an integrated fashion

... reflecting non-engagement by State and federal authorities

Evidence from across the OECD suggests that when national governments engage with sub-national and regional authorities to pursue policy objectives that reflect the interests of functional regions, they do so in recognition of the importance these functional regions represent to national and international economic performance. They usually engage by using such tools as policy conditionality or financial incentives to encourage cooperation among public authorities on all sides of administrative boundaries that criss-cross a functional region. In the case of the tri-state region, the most important players needing to collaborate on an on-going basis to articulate and implement region-wide, multi-modal integrated transportation plans are at the State level. In the absence of state-driven cooperation , the federal government could encourage the three states to work together to sustain the dynamism of the logistics hub and the efficiency of the tri-state region's transportation networks by designing a multi-modal, long-term, region-wide planning and regulatory-harmonisation framework. Such encouragement could take the form of an inter-state Compact-type arrangement, *i.e.* a legally-binding arrangement between state authorities, sometimes sanctioned by Congress through legislation, which focuses on ensuring inter-state cooperation to achieve common policy outcomes. Encouragement could also take the form of policy conditionality tied to federal transport funding, or of straight fiscal inducements aimed at encouraging dialogue between the various stakeholders in the private and public sectors to design and implement true region-wide, integrated intermodal transportation planning along with its associated region-wide data and performance indicators.

The Chicago-area 21-county region has become specialised in a number of green sectors, particularly building and water

Innovation-driven economic growth in the tri-state region is reflected in the success certain emerging green-tech business clusters have been achieving. The Chicago-area 21-county region stands out for the number of its green business sectors, particularly those related to buildings and water technologies. The Chicago Tri-State metro-region ranks among the top five metro-regions in the US for specialisations in professional energy services, and also has strong specialisations in Air and Water Purification Technologies, Lighting, and Green Architecture and Construction Services. The Milwaukee metro-region is home to the top water-related cluster in the US and the Milwaukee Water Council, which strengthens the water technologies supply chain and research for over 150 firms and institutions. Sectors with strong opportunities for future growth, include green buildings, wind energy, smart grid, vehicle electrification, and water purification and treatment.

Jobs are strongest in the buildings sector, and growth is modest but steady

Green jobs are growing in the Chicago Tri-State metro-region, with building-related activities boasting the largest share. The sectors of professional energy services, green architecture and construction services, HVAC and building control systems, energy-saving building materials, green building materials, and lighting together make up 31% of green jobs in the Chicago Tri-State metro-region, or roughly 11 300 jobs. These are followed by energy-related activities (9.3%), including nuclear energy, biofuels/biomass, wind, battery technologies, smart grid, solar photovoltaic, renewable energy services, solar thermal, geothermal and fuel cells. Going forward, building retrofits are estimated to be responsible for the highest number of new jobs over 2009-20. Energy distribution and supply jobs are next most important in terms of projected job creation, in activities related to smart grid and distributed renewable energy.

Energy-saving building retrofits are a key potential source of jobs and greenhouse gas emissions reductions, but funding is needed.

The built environment in the Chicago Tri-State metro-region presents both an important environmental challenge and green growth opportunity and should be a top priority for a green growth strategy. Building energy consumption accounts for well over half (63%) of the metro region's greenhouse gas emissions and presents an opportunity for an estimated 4 000 new jobs for energy-efficiency retrofitting. As building owners can be deterred by high up-front costs, local institutions such as the Chicago Center for Neighborhood Technology fill the gap by leverages government funds and providing technical advice. Energy service companies (ESCOs) provide another solution, as they can finance the retrofitting out of the subsequent energy savings. However, their use in residential building retrofits in the Chicago Tri-State metro-region is still limited. Another way to reduce the barrier to entry would be municipal low-interest loans repayable through property taxes, but this would require a change in US federal legislation.

Wind energy is promising but not yet price competitive

Chicago has long been known as the "windy city", and it is no coincidence that there is interest in generating more electricity from wind power. Currently, this source of renewable energy accounts for a miniscule 1% or so of the total, but stringent new pollution regulations on coal-fired plants (40% of the total) may force some of them out of business, and drive up the demand for renewable sources. At present, 13 wind energy firms have their headquarters in the tri-state region, and the Chicago-area 21-county region counts over 60 wind companies, including members of the Wisconsin Wind Works in the Milwaukee metro-region. These firms cover a large part of the supply chain, including turbine and tower makers, manufacturers of gears, couplings, bearings and fasteners, as well legal, financial and engineering consulting and diagnostic software designers. With 540 jobs in 2010, the Chicago Tri-State metro-region ranked 6th among US metro regions for wind industry jobs, having experienced 39.3% annual average growth between 2003 and 2010. Nevertheless, the sector is not yet competitive with fossil-fuel energy sources, and its viability still depends on subsidies and regulations, such as mandated or voluntary renewable energy portfolio standards in Illinois, Indiana and Wisconsin.

"True-cost" pricing of water and waste encourages conservation and raises revenue, and highlights the need for a price on carbon

There is a crucial need to set prices that match environmental impact and resource availability. Low energy prices may be stifling renewable energy and energy efficiency innovation. A national price signal, such as in the form of a cap-and-trade programme or a carbon tax, could make renewable energy sources much more cost-competitive with fossil fuel sources, depending on the baseline price that was established. Similarly, water fees in the metro-region could send a more accurate price signal, with the goal of increase efficiency and revenues. Currently, several hundred thousand customers lack water meters, and even when fees are set for water use, they are at levels higher than actual average usage, which discourages conservation. "Pay-as-you-throw" waste fees could raise revenue, increase recycling and reduce waste going to landfill in the region. While this form of pricing successfully operates in hundreds of cities throughout the US and

Europe, it has not been widely applied in the region. Waste and water fees that reflect the true costs of consumption and the limits on the resource's availability provide a further argument for a national pricing signal for carbon that reflects the negative externalities associated with greenhouse gas emissions.

Need to better identify and foster green tech clusters

The Chicago Tri-State metro-region and the Chicago-area 21-county region both have strong green research and development (R&D) assets that contribute to green innovation. These include the Argonne National Laboratory, whose spinoffs include cutting-edge solar and battery technologies, and Milwaukee Water Council, which has launched a venture fund to provide capital to water start-ups and begun work on business incubator. Despite these green research assets, R&D in the region has dropped and venture capital for energy-related start-ups remains low. In addition to the Milwaukee Water Council, two Illinois organisations provide models for attracting venture capital to the green sector. The Illinois Science and Technology Coalition (ISTC), focuses on areas where Illinois businesses and universities can both fill a market gap and stand out in the marketplace. The Illinois Clean Energy Trust, a non-profit clean energy business accelerator, conducts parallel connects researchers with entrepreneurs and financiers to help commercialize new energy-related business opportunities.

Better regional coordination is needed to identify both emerging clusters and financing opportunities

Regional institutions such as CMAP in Northeastern Illinois, SEWRPC and the Milwaukee 7 in Southeastern Wisconsin, and NIRPC in Northwestern Indiana, have an important role to play in regional co-ordination to value and promote the green firms and investments in the Chicago-area 21-county region,. In the short-term, this could take the form of a much-needed inventory of green financing resources and a strategy for pursuing funding opportunities on a 21-county region-wide basis. In the longer term, a regional institution may be needed to provide a convening role for key public and private-sector actors to make difficult decisions across state lines on priorities for infrastructure investment. As the labour market extends across the metro-region, regional information collection on green sector training needs would also be an important step to determining the scale of green training needed.

Effective institutional arrangements are required to address the tri-state region's challenges

Institutional arrangements in the tri-state region are not well adapted to address many of the challenges the area faces. At issue is its extreme fragmentation, exacerbated by the fact that the functional region crosses state lines. The Greater Toronto Area has 28 local and city government entities. Greater London has 34. The Paris metro-region, one of the most fragmented in the OECD, has nearly 1 400. The Chicago tri-state region has 1 700 distinct units, each with its own revenue and responsibilities, often overlapping geographically even at the lowest level. There is no inherent disadvantage in having small local government units: they are close to the communities they serve, and may be the best placed to deliver the services their clients want and are willing to pay for. But proliferation on this scale sometimes leads to myopic decisions, while area-wide consensus and long-term strategic thinking become difficult if not impossible, to achieve.

Existing institutions need to work together on a tri-state regional approach

Stakeholders have already successfully undertaken some projects requiring extensive collaboration and co-ordination across multiple agencies and state jurisdictions. Regional leaders should therefore focus on building region-wide dialogue using *existing regional institutions* to address the region's challenges. They need not create *new* regional institutions. Indeed, efforts must be consistent with the overall regional plans already developed and should be flexible and responsive to the specifics of a given situation. The existing metropolitan planning authorities (MPOs), The Chicago Metropolitan Agency for Planning (CMAP), the Southeastern Wisconsin Planning Commission (SEWRPC) and the Northwestern Indiana Regional Planning Commission (NIRPC), already coordinate transportation and economic development, as well as land use, in their particular metropolitan jurisdictions. Although their legal mandates are geographically limited, there is no barrier to their discussing and collaborating with each other to ensure coherence at the regional level. Some steps have already been taken (NIRPC, 2011), and more should be encouraged.

Advance the tri-state region's functional interests

The Metropolitan Planning Organisations have suggested in their long-term planning exercises that planning should be integrated and multi-sector, focusing on economic development, community liveability, workforce development and region-wide mobility for people, goods and services. In this regard, where it makes sense, the spatial footprint of the integrated planning can in fact extend to the 21-county region, particularly with respect to transportation/logistics planning and economic development more broadly. So, the focus of integrated planning should consider the spatial scale along with the relevance of pursuing multi-sector policy objectives at that scale. In other words, region-wide planning if necessary but not necessarily region-wide planning, at the tri-state or 21-county region of coverage. Integrated, region-wide targeted planning could focus on:

- *Economic Development*, including cluster building, business productivity and innovation capacity in legacy and emerging clusters, particularly in the green economy, international market projection and branding, and attracting foreign direct investment and technological advancements into the tri-state region;
- *Workforce Development*, including human capital formation, attraction and retention, matching skills supply with demand across the tri-state region at all levels of economic activity, enhancing labour productivity and innovation capacity across the tri-state region;
- *Transportation and Logistics Development*, including integrated, intermodal, region-wide plans aimed enhancing the fluid, seamless mobility of people, goods and services into, through and out of the tri-state region.

...in innovation-driven economic development

The Metropolitan Planning Organisations (or the lead convener-stakeholders) across the tri-state region could therefore consider "leading the charge" to build more effective inter-state planning to pursue the tri-state region's economic development objectives. They could consider convening regular stakeholder meetings to enhance, monitor the implementation of, and monitor progress on, integrated regional economic development planning. Stakeholders in the tri-state region's economic development include the chambers of commerce, the business associations and their related non-government organisations, state, county and local governments, in particular the State departments of Commerce and the City of Chicago (by far the largest municipal government in the tri-state region), research institutions and federal research laboratories in the region.

... in an efficient and effective region-wide labour market

Key to sustaining innovation-driven economic performance across the tri-state region is human capital. At issue are the challenges associated with matching skills supply to demand, coupled with ensuring that businesses in the main legacy manufacturing sectors innovate to a degree that their skills needs match those of their counterparts across the country. Additionally, training service providers are not sufficiently coordinating curricula and training services offerings to meet business needs in the emerging innovation-driven clusters. Basic skills for both children and youth and for adults in stressed neighbourhoods across the region are also not being met effectively. Addressing these issues effectively requires the development and implementation of integrated, targeted, region-wide approaches, while reducing overlap and duplication in the provision of basic and advanced education and training services across the region and pooling increasingly scarce public training resources effectively.

... and in integrated, tri-state, intermodal transportation planning

To maximise the logistics hub's potential, key public and private stakeholders need to focus on developing, implementing and monitoring success in the implementation of integrated, intermodal, region-wide plans. Transportation investments will require greater vertical co-ordination at the state and federal level, with priority given to projects with the greatest region-wide return. Regional stakeholders, including elected officials, business leaders, and policy makers, should renew efforts to reform state grant funding allocations to ensure that the tri-state region, a national economic engine, gets a commensurate share of transportation and other infrastructure funding. At the federal level, more efforts could be made to allocate scarce dollars to projects producing the greatest value, with a preference for multi-modal and multi-jurisdictional infrastructure projects (transit systems, bridges, roads, etc.). Examples of such policy conditionality abound across the OECD, including the suite of *Building Canada* federal infrastructure programming or the system of *Contrats de ville* in France.

By "catching the attention" of state and federal authorities

Leading by example is key to demonstrating the relevance of the tri-state region as a region to state and federal authorities. In transportation especially, but in economic development more broadly, true region-wide collaboration across state lines by the region's stakeholders leading to successful outcomes could draw state and federal attention to the need for high-level strategic planning that recognises the tri-state region as a functional, integrated economic engine of the country's national and international economic performance. The potential impact on state and federal decision-makers of bottom-up leadership in the tri-state region should not be under-estimated. Once the region's stakeholders demonstrate the economic relevance of the tri-state region as a region, state and federal authorities will be in a better position to see that it is in their best interest to remove barriers to more systematic inter-state collaboration aimed at enhancing the region's capacity to contribute to America's national and international economic performance.

... building the evidence base through a university-based research network

There is a strong need for data and indicators to monitor performance and measure progress in the implementation of region-wide strategies and plans. More fundamentally, evidence-based policy design and implementation requires evidence: data to define challenges and metrics of performance to understand whether the strategies are achieving the objectives they were designed to achieve. In the tri-state region, there is no shortage of individuals or institutions engaged in measuring performance in the policy areas under review. That said the capacity in the region to harness this information and present it in a way that "tells the region's story" coherently is lacking. Therefore, the region's key private-sector and not-for-profit stakeholders could consider funding a *university-based research centre* in the tri-state region to network with existing researchers and universities to collect relevant research results, data and indicators on the tri-state region and the major challenges it faces.

...and galvanising civic and political engagement in the tri-state region

The tri-state region has traditionally benefitted from significant public-policy leadership in the private and non-profit sectors. The region could thus benefit from leveraging this leadership, which has historically articulated the need to increase the region's competitiveness through a region-wide approach. Indeed the top 100 private foundations alone in the tri-state region control USD 17 billion in assets and USD 1 billion in giving annually. Civic engagement is essential if the region's residents and key institutional stakeholders are to be in a position to evaluate the challenges they face and judge the merits of the strategies designed to address them. The following could be considered as integral components of planning to maximise the economic performance of the tri-state region:

- On-going *community outreach* to neighbourhood organisations, organised labour, philanthropic and not-for-profit institutions and business groups to solicit input to the planning process and participation in monitoring (and measuring) progress in implementing these plans;
- Expanding the organisations of *mayors and county executives* to encompass all members from the tri-state region and ensure that they meet regularly to discuss tri-state level regional issues and the strategies required to address them;
- Regular meetings of the three s*tate governors* meet regularly - perhaps annually by themselves but at other times with their state secretaries of commerce, transportation and workforce development as well – to focus on tri-state region-wide issues and develop and implement integrated cross-boundary strategies to address them;
- Regular meetings of state legislators representing districts from across the tri-state region focussing on tri-state region-wide issues;

- The establishment of a *US congressional caucus* of elected officials representing all parts of the tri-state region to focus regularly on tri-state region-wide issues.

Summing up

The Chicago Tri-State metro-region is an economic powerhouse of international consequence with significant innovation potential but faces several structural challenges related to sustaining innovation-driven economic development, its transportation and logistics-hub functions, the effectiveness of its workforce development strategies over the long term and reducing negative environmental impacts while harnessing the potential of its green sector. These include skills mismatches at the low, medium and high-ends of the workforce spectrum due to uncoordinated and incoherent education and training programming that is fragmented across state lines and de-linked from businesses across the region. These challenges also include a transit system that is underfunded and a lack of integrated multi-modal, region-wide planning to maximize the seamless, fluid movement of goods, services and people into, within, and out of the region. These challenges speak to fragmented relationships between the three stakeholder groups that together drive innovation and ensure long-term growth: businesses, universities and researchers and governments. They speak to the need for tailored, multi-facetted branding strategies to attract foreign investment and talent into the tri-state region and expand foreign-market opportunities for the goods and services produced in the region. Not only are these challenges *not* insurmountable, key stakeholders across the tri-state region are fully cognisant of their significance and of what to do to address them effectively. How to do so relates to the will to enhance the effectiveness of the region's institutional arrangements, particularly those that cross state-lines, in recognition of the tri-state region's functionality and its importance to America's national and international economic performance. As Daniel Burnham, a lead author of Chicago's first comprehensive development strategy, said in 1909, "*Make no little plans*..."