



THE WTCA
TRADE AND
INVESTMENT
REPORT

2018

Global Connections, Local Growth



WORLD TRADE CENTERS
ASSOCIATION



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INTRODUCTION

During this time of geopolitical turmoil, when many national governments are unable or unwilling to advance a positive trade and investment agenda, cities are positioned to lead. This study, conducted in partnership with the World Trade Centers Association (WTCA), is a product of original city-level data analysis¹, as well as polling and interviews with WTCA members around the world. These cities constitute in excess of \$26.7 trillion, or more than 35 percent of global GDP², and nearly 1 billion people. Capturing insights from this unique global network of World Trade Centers (WTCs) in more than 300 cities and nearly 100 countries, this analysis seeks to shed light on how global economic trends are shaping trade and investment at the local level and the innovative ways cities are navigating this “new normal,” building global connections to drive local growth.

While broadly optimistic about the underlying fundamentals and prospects for growth, WTCA members consistently reported that new investments are being shelved amid uncertainty, and more than 71 percent of those polled believe that a significant disruption in trade and investment is likely to occur this year. It is in this context of geopolitical uncertainty that cities are emerging, as local leaders and their supportive networks focus on cutting through the rhetoric and getting on with business. Rather than retreating, businesses and civic leaders are engaging more directly and concretely than many national figures in order to drive growth in their communities and distinguish themselves in the increasingly competitive global landscape. Those able to do so are yielding concrete gains — with globally integrated WTCA cities, for example, capturing nearly a quarter of global greenfield foreign direct investment over the last 15 years. These cities, on average, draw foreign direct investment (FDI) per capita at twice the rate of their respective countries as a whole and export goods on a per capita rate of 1.55 times the national level.³

Continued engagement and integration with the global economy has been and will continue to be imperative for

local growth going forward. Thriving FDI destinations are also engines of job creation. Based on analysis of city-level data, for every \$1 billion in annual FDI, one can expect to see 1.5 percent higher workforce participation as a share of the population.⁴ While economic dislocation and inequality have created strong backlashes against globalization — issues that indeed represent real economic and social challenges that must be addressed — leading cities are growing through greater integration with the global economy, not despite it.

Recognizing this, city leaders are focusing on competitiveness and connectivity to drive growth at home. While other studies focus on national-level impacts, this global study of city centers found that three key factors — human capital, connective infrastructure, and synergies between local and global networks — are differentiating cities, and that access to a skilled workforce and migration are essential to their competitiveness. The following dives deeper into the key enabling factors fostering local growth in emerging cities, identifies ongoing challenges and roadblocks, and contributes data-driven analysis and local insights to this continuing discourse.



HUMAN CAPITAL — SKILLING UP LOCAL WORKFORCES TO STRENGTHEN COMPETITIVENESS

Access to a skilled workforce is arguably the most essential factor in attracting FDI and strengthening local competitiveness, a sentiment consistently echoed by WTCs around the world. This applies across sectors, transcends geography, and is a fundamental driver of local growth and continued prosperity — whether in India or Indiana. Around the world, trends such as technology integration and automation are diminishing the weight of labor cost on investment decisions and are magnifying investors' focus on the capacity and skill sets of local labor forces to meet the increasingly specialized needs of industry.



Quebec: Addressing the Gap by Leveraging an Existing Skills Base

Cities that are successfully stepping up to meet this challenge are:

- addressing chronic and growing skills gaps by focusing on cities' competitive advantages;
- cultivating strategic, skills-focused partnerships aligned with local industries and educational institutions; and
- facilitating inbound flows of human capital, including foreign-born workers.

The rapid evolution and competitive pressures of the economy make human capital investment increasingly urgent and a skills-based focus an imperative — with some global cities already leading the way.

The Evolving Economy and the Growing Skills Gap

Major transformative trends are driving the evolution of how we do business and forcing adaptation and better preparation for the impacts these changes will inevitably bring. Demographic and educational trends are shifting the balance of the labor supply as aging societies' available labor pools shrink and emerging markets' populations expand rapidly without the educational infrastructure in place to provide the skills training that

Faced with limited skilled labor availability, cities and jurisdictions are intensifying their competition over skilled talent — particularly in the fields of engineering and other applied sciences. The current constrained supply of limited skilled labor puts cities and regions endowed with a skilled workforce aligned with emerging industries at a unique advantage. Quebec has been a beneficiary of this trend and provides an illustrative example, with its skilled software engineers specialized in gaming edging out competitors in the industry and attracting a record investment by French gaming powerhouse Ubisoft. Quebec first attracted Ubisoft investment in 1997 and has since leveraged its skilled workforce, cultivated the relationship, and attracted follow-on regional investment topping \$3.5 billion Canadian dollars and creating more than 3,600 local jobs.⁵ Though select locations are well positioned to leverage that advantage now, going forward, strengthening and maintaining competitiveness in the rapidly evolving economy will require a keen focus on and sustained investment in expanding the skilled local labor pool.

businesses will need. Rapid technological change, in particular, is driving new industries, transforming producer and consumer networks — and influencing virtually every aspect of our lives. While holding tremendous potential gains for economies broadly, it's also dislocating lower-skilled workers and risks exacerbating job and wage disparities, fueling socio-economic political tensions, and heightening the blowback on global trade, which is often the scapegoat. These transformational trends across the global economy are resulting in talent shortages across developed and developing countries.

Cognizant of the profound implications technology carries for efficiency and productivity gains, as well as for employment, local governments and business leaders are recognizing that closing the skills gap and investing in workforce skills development — for younger and older workers — must be at the forefront of their local development strategies. Proactive engagement and collaborative action among government, business, and civil society will be essential to identifying solutions to these shared challenges and to addressing fears of displacement from forces related to globalization and the so-called Fourth Industrial Revolution.

While access to skilled labor is essential for local development and growth, it is also the biggest challenge. Educating the future workforce has been a stated priority for public and private leaders for generations, but trillions of dollars spent on secondary and tertiary education have not produced the skilled and competitive labor force to meet the needs of evolving industries that increasingly require technical skills and proficiency in advanced technologies. Worldwide, 40 percent of businesses cannot find candidates they need — the highest level since 2007 — and for the fifth consecutive year, skilled trades are the hardest to find globally, with information technology (IT) roles leaping seven places to second⁶. Broadly speaking, a misalignment between general education attainment and the technical skills that companies need has resulted in a structural mismatch of labor availability and an increasingly acute shortage of and demand for skilled workers that is threatening local growth and exacerbating inequality in both developed and developing markets.

Investing in Skills-Focused Partnerships

While skills training and the future of work represent one of the most pressing and consequential challenges of our time, cities and regions that are prioritizing human capital development are demonstrating gains. Data collected from WTCA cities show that on average, a 1 percentage point higher growth rate of the population with higher education is associated with a boost in GDP growth by a 0.79 percentage point. Further, for every 1,000 people with tertiary education added to a city's population, one can expect an associated \$381,000 in FDI inflows.⁷

However, at the national level, most countries are falling behind in meeting this challenge. According to 2016 statistics from the Organisation for Economic Co-operation and Development, the top 10 countries dedicating the highest levels of public spending on labor training as a percentage of GDP are in Europe, with the majority of developed nations allotting a paltry 0.2 percent⁸ and middle-income countries even less. To date, it simply has not been a public priority. Further, as labor mobility increases and contract employment becomes more prevalent, companies' incentive to invest in in-house worker training diminishes. New incentives and funding approaches are essential to expanding the skilled workforce, and as respondents pointed out, in order to take root and be sustainable, they must be aligned with industries' needs and play to cities' and regions' unique strengths and comparative advantages. According to Nikia Clarke from WTC San Diego, "In order to be an attractive destination for FDI, it used to be all about cost, and now it's all about talent. It's all about innovation and intellectual property. And for San Diego, that's a transition that has transformed how we do economic development."

Collaborative partnerships between businesses and local universities — as well as other educational institutions and, often, key research institutions — are attracting investors, as they enable businesses to access cutting-edge technology, co-develop a pipeline of skilled talent, and foster local business and industry that can become stable sources of employment for the

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— NIKIA CLARKE, WTC SAN DIEGO



Philadelphia's Education and Skills Partnership Pipeline

Philadelphia's "eds and meds" pipeline provides an illustrative example of synergy between academic and industry partners focused on specialized skills development to feed a local economic engine. There, the city is harnessing its rapidly growing millennial population and local universities' strengths in biosciences to train professionals for local medical, pharma, and biotech industries. In 2016, nine of Philadelphia's top 10 largest private employers and 12 of its 15 largest were eds and meds — the network of research universities and hospitals — up from only five in 2000. The cross-sector partnerships represented a major force helping to reverse an economic decline in manufacturing and drive new growth for the city as well as the surrounding region.¹¹

local community over the long term. A range of strategic local partnerships between business and academia are developing, with the models varying by location and area of specialization; however, a central theme emphasized by partners across a variety of projects is the importance of ongoing dialogue and close coordination of curriculums with local employers' needs. Such alignment is key to help ensure the partnerships produce tangible, quantifiable results; reinforce the benefits to both workers and employers; and facilitate progressive training necessary for evolving industry. In addition to the direct benefits to workers and employers from training, multiple studies have demonstrated the positive impacts of knowledge spillovers for family members, adjacent industries, and regional growth as well.^{9 10}

Though there is no singular approach, and each locality has varying levels of public and private involvement, exchanges of international best practices are informing policy innovation and the design of pilot programs around the world, which greater city-to-city collaboration can facilitate. Though strategies vary across jurisdictions, there's a collective call for deeper collaboration among government, business, and civil society to address the skills gap, which is considered crucial for investment and local growth. Skills-based programs targeting industries particularly

vulnerable to technological and/or trade disruption might also help ameliorate political and social tensions festering from fears of transformational change and associated economic insecurity.

Migration- and Immigration-enabling Factors

Migration and immigration are key factors in this competitive landscape, as policies that facilitate or inhibit human capital flows across regions directly impact cities' ability to attract and retain the skilled workers they need. While migration pressures and immigration debates remain highly controversial and fuel

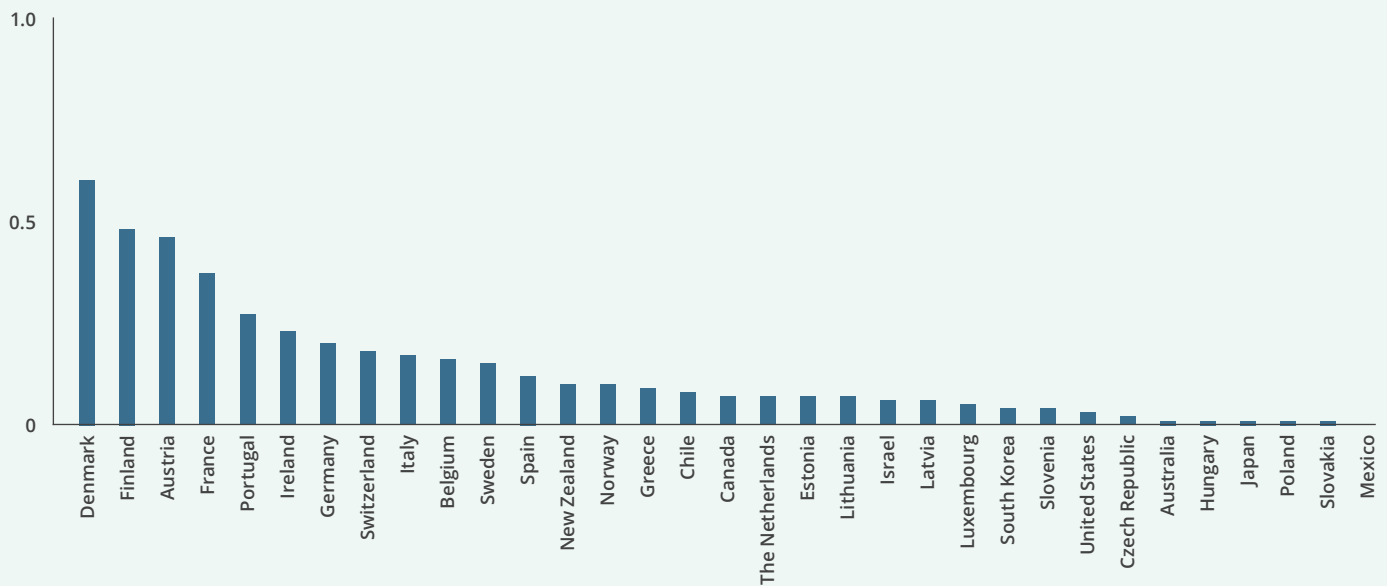
concerns about the economic security of local populations, the positive impacts of foreign-born workers for local economies are compelling, with cities increasingly competing for talent. Among WTCA cities, on average, a 1 percentage point higher net migration rate is associated with a 0.08 percentage point higher GDP growth rate.¹² Additionally, cities that experience greater immigration are attracting more FDI and exporting more, and every 1,000 additional foreign-born citizens are associated with an estimated \$1.2 million increase in FDI flows and \$30 million in additional exports.^{13 14} Local leaders are not only working to welcome newcomers but to proactively attract and integrate foreign-born individuals and their families to regions as part of their economic development strategies. Entrepreneur visas, such as those offered by New Zealand and Canada, aid the effort.

Whether homegrown or foreign-born, competition for talent is intensifying, and jurisdictions able to cultivate and retain talent will gain an edge. The pressure is on, and even Silicon Valley is feeling the pinch, as local companies lament the loss of highly skilled talent to China and emerging growth hubs. In addition to advancing skills-based training and strategic partnerships, an enabling policy environment will remain central to that effort. Contacts from

“For us, there’s an economic imperative to incorporate more immigrants into the community, and it is an important piece of our overall economic development strategy.”

— TIM NOWAK, WTC ST. LOUIS

Public Spending on Labor Training (% of GDP)



SOURCE: OECD



St. Louis: Prioritizing Diversity for Growth

WTCs around the world also emphasized the underappreciated impact of the community in attracting and retaining needed talent; cities that want to attract the most skilled labor and keep them in the community must also be able to offer a high quality of life with vibrant, multicultural, and supportive communities that have affordable housing and good transportation networks. Ed Allison-Wright of WTC Gibraltar observed the impact that the local quality of life has for attracting inward investment: “Some of the key questions investors ask when choosing Gibraltar as the location for the head office are: What is the community like? Will our families be happy to come here? Is there good schooling and extracurricular advancement? We see ourselves as playing a role not only in providing a space but building a place and a community that thrives on a global stage.”

Data and outreach to leaders across markets point to the active integration of foreign-born individuals and their families into the productive network and lattice of cities as critical to harnessing diverse skill sets essential for local growth. Emerging leaders include those that are fostering dialogue among local government, business, and community stakeholders to directly address fears of dislocation and associated socio-economic and cultural tensions and those that are prioritizing inclusion as part of their path forward.

Despite federal efforts to the contrary, St. Louis represents a local government putting immigration at the heart of its growth strategy. Recognizing that it was falling behind other major cities with only 4.5 percent foreign workers compared with other top regions of nearly 20 percent, St. Louis developed the Mosaic Project to attract and retain foreign-born workers to boost the city’s economy and competitiveness. The public-private immigration and innovation initiative between the St. Louis Economic Development Partnership and WTC St. Louis connects 27 partnering agencies that support immigrants in the community, allies with local universities for a four-year career plan for international students, and works with local employers that commit to action items targeting diversity and inclusion in the workplace. According to Tim Nowak of WTC St. Louis, “The data shows us that they [foreign-born workers] are very entrepreneurial, highly educated, and 60 percent more likely to start a business than the native-born in St. Louis, including myself. For us, there’s an economic imperative to incorporate more immigrants into the community, and it is an important piece of our overall economic development strategy.”



CONNECTIVE INFRASTRUCTURE

Connective infrastructure represents the lifeblood of cities everywhere. While geography and natural endowments provide some locations with intrinsic advantages, infrastructure decisions and associated investments in all cities carry major implications for local growth and relative attractiveness as they affect productivity of every segment of the economy and represent a key determinant for attracting FDI in developed and developing economies alike. Though city-level infrastructure connectivity data is limited at the global level, analysis of transport and digital connectivity found that both are strongly correlated with additional inflows of foreign investment, which is consistent with the more geographically limited work that had been done to date.



Dubai Growing as a Global Hub From Infrastructure Investment

Location carries clear benefits or barriers for every city, and connective infrastructure represents a major differentiating factor for enabling growth, attracting FDI, and integrating with international markets. WTCs around the world underscored that direct connectivity begets follow-on investment, as connected cities serve as gateways and hubs for regional economic activity by accelerating the transportation of people and, crucially, lowering the cost of logistics.

Already, local leaders along with coalitions of stakeholders are advancing infrastructure investment strategies that are not only globally connected but also more deeply integrated, increasingly resilient, and smarter. Across the board, WTC leaders pointed to broader and faster digital connectivity as an essential driver of growth — particularly in emerging sectors — but underscored that it does not obviate strategic investments in the local infrastructure assets, such as airports and regional multimodal transport networks, that directly connect business and leisure travelers to urban centers, give life to cities, and enable people and goods to flow more efficiently within metro areas and across borders.

Dubai's aviation sector highlights the manifold economic impacts from airport-related investment. As part of its strategy to diversify its economy and become an international hub for business and tourism, Dubai focused on expanding its airport and air-related infrastructure capacity with remarkable success. According to Oxford Economics, in 2013 the total economic impact of the aviation sector was estimated at \$26.7 billion, with \$10.2 billion of that related to tourism. The sector constituted nearly 27 percent of Dubai's total GDP, supported 416,500 jobs — more than one-fifth of total employment¹⁷ — and has been growing ever since.

Airports Enabling Global Connections and Driving Local Growth

Airports are powerhouses in terms of facilitating business and commerce. Expanding airport capacity and traffic can deliver marked economic gains — for cities vying to become global hubs and those that are landlocked. An analysis of airport passenger traffic, FDI flows, and GDP data from 2005 to 2017 across 207 cities globally found that for every 1,000 people transiting through an airport, one can expect an increase of \$30,000 in FDI inflows, \$940,000 bump in exports, and increase of \$7.3 million in GDP.¹⁵ City-level analysis is largely absent from global infrastructure impact studies due to the lack of available data, but the correlation between airport investments and economic impacts for cities found by this analysis is strong. It aligns with findings of city- and region-specific analyses that examine a broader range of infrastructure, underscoring the importance of strategic infrastructure investments for cities' competitiveness.

When accounting for these city-level impacts across global networks, the economic impacts of greater efficiency and reduced logistics costs compound. In fact, at a higher level, airport and connective infrastructure's capacity to reduce supply chain frictions has much greater implications for cost than do tariffs. The World Economic Forum's Enabling Trade program found that reducing supply chain barriers could boost global GDP up to six times more than removing all import tariffs. Further, WEF found that concurrently tackling border administration, transport, and communication infrastructure — all essential to trade and supply chains — could increase global GDP by an estimated 5 percent and global exports by roughly 15 percent, far exceeding the 0.7 percent projected bump from tariff elimination alone.¹⁶ The new city-level analysis, taken together with national studies, speaks to the strong local impacts of connective infrastructure and the iterative impacts it has across global supply chains with greater integration.

Expanding airport infrastructure and air traffic have been the focus of emerging commercial hubs around the world, notably the United Arab Emirates, and have been at the heart of regional development plans to boost tourism and trade.

In interviews, WTC officials from landlocked cities in particular emphasized the importance of airport infrastructure to their

**“Our port is our airport,
and trade is what brought
us about.”**

— KAREN GERWITZ, WTC DENVER



Among WTCA cities with below average internet penetration, every 10 percentage point increase in household internet penetration is associated with a boost in GDP per capita growth by half a percentage point



Every 10 percentage point increase in household mobile phone penetration is associated with a boost in GDP growth by nearly 0.2 percentage points



Analysis found a positive and significant relationship with public transit passengers and foreign investment such that an additional 1 million passengers is correlated with \$503,000 in additional FDI inflows



Toronto Is Pressure-Testing Scenarios for Transport Networks of the Future

local economies, highlighting the need for expanded capacity and high-level impact of direct international connections. Denver, a landlocked U.S. city, has become a vibrant economic hub largely due to its connective infrastructure. Karen Gerwitz of WTC Denver noted: “We’re in the middle of the country in the U.S. We rely heavily on rail. The reason Denver is even active is because of the rail system [that] goes right through it. The rail has really defined us. Our port is our airport, and trade is what brought us about.” Similar impacts extend from Bogotá to Bucharest. In Bogotá, an emerging urban hub focused intently on attracting international business and investment recently expanded its airport with a new international wing and is investing at least \$1 billion for a new airport and expanded capacity. In Bucharest, the government is planning a \$980 million airport expansion in 2022 in order to manage its surging airport traffic and passenger demand and is considering listing shares and establishing a sovereign wealth fund from profitable state companies to help finance a variety of local infrastructure investments. While the cities have distinct profiles and unique areas of comparative advantage, they all consider

The 2041 Regional Transportation Plan (RTP) for the Greater Toronto and Hamilton Area²⁹ is a multi-stakeholder process considering new mobility systems, business models, and smarter, more resilient infrastructure to more effectively integrate people and businesses in the metropolitan area. The scenario planning yielded six specific insights that are informing multimillion-dollar investment decisions focusing on: moving people not vehicles, high-capacity rapid transit, network thinking, flexible rapid transit for emerging markets, enhanced walkability, and increased land use intensification around core transit hubs to shift user patterns.³⁰ The multimodal, flexible approach focuses heavily on transit operations — including more than \$30 billion Canadian dollars in transit investments — which aim to more effectively manage transport demand, mitigate some of the costs associated with fixed infrastructure, and enable the system to facilitate future growth.

direct connectivity essential to attracting business leaders and consider direct flights from major global hubs critical to competing for FDI. In addition to the direct economic benefits direct connectivity confers, the human interaction it facilitates is an intangible and essential factor for growth that even the fastest digital connections cannot replace.

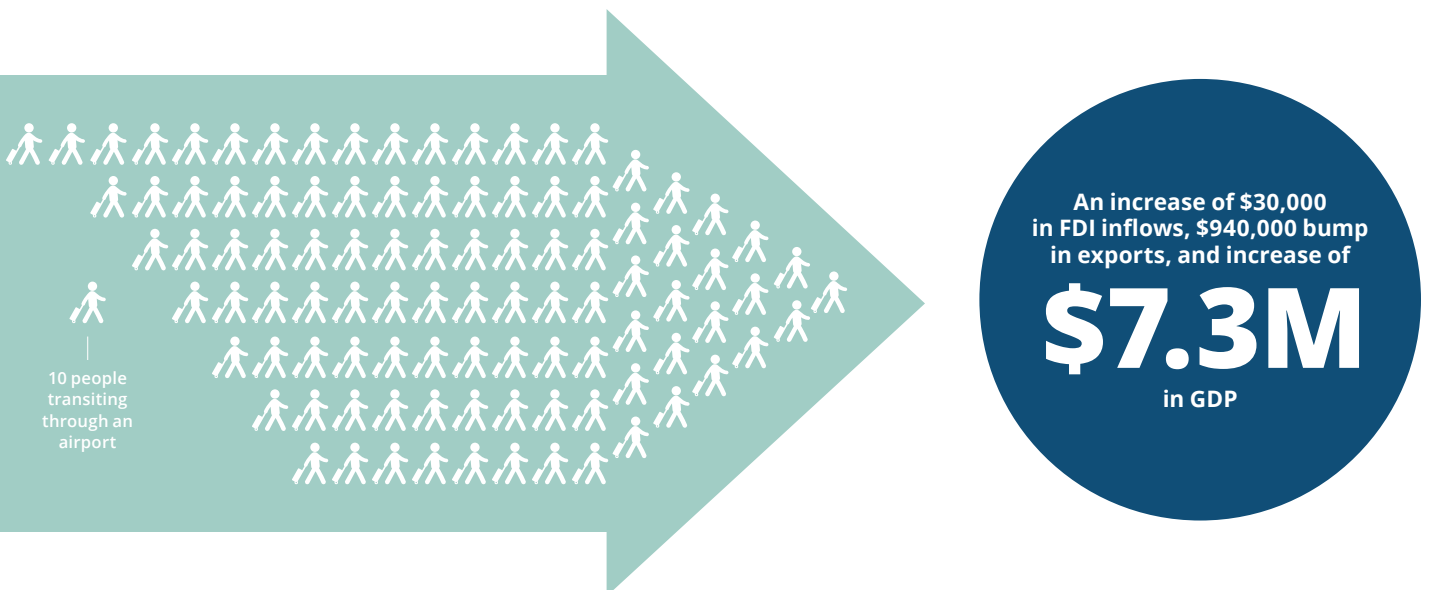
While connective infrastructure is a factor attracting FDI and affecting local competitiveness everywhere, the implications of infrastructure investments in emerging market cities can be profound, particularly in areas that are not strategically located and lack legacy infrastructure, as strategic investments could connect locked regions to existing economic centers and catalyze growth. As noted above, while global city-level data is available only for airport traffic, there is a range of broader city- and region-specific studies that reinforce this finding. For example, a study by the United Nations University looking at infrastructure and city competitiveness in India found that a city's proximity to international ports and highways connecting major domestic markets has the largest effect on attracting private investment, such that a 10 percent reduction in travel time to international ports increases a city's share of national private manufacturing investment by 5.3 percent. Further, a 10 percent increase in road transport links that boost domestic market access increases a city's share of national private manufacturing investment by 5.8 percent.²⁰

Digital Connectivity is Advancing New Industries, Accelerating SMEs

While foundational infrastructure remains paramount for competitiveness, digital connectivity is becoming more pervasive

and enabling the so-called Fourth Industrial Revolution to include robotics, artificial intelligence (AI), the internet of things (IoT), and other advanced technologies driving the evolution of existing industries while giving rise to new ones. Alongside opportunity, potential or actual disruptive forces continue to foster uncertainty and consternation, if not outright fear, about the economic as well as socio-political impacts of digital technologies. The data security, cyber, and transformational risks that continue to surface require closer attention and vigilance across the board, but WTCA business leaders concur that the productive potential of digital technologies presents undeniable opportunities for growth through greater efficiency, evolution of work, and facilitation of e-commerce and services trade, among myriad other potential impacts.

Fueling intrigue and investment, the degree and extent to which advanced digital connectivity will boost growth is still being understood, but a broad spectrum of analysis to date has demonstrated directionally positive impacts. Among WTC cities with below average internet penetration of under 54.5 percent, every 10 percentage point increase in household internet penetration is associated with a boost in GDP per capita growth by half a percentage point. This is in line with findings at the national level. A cross-section of studies assessed by the World Bank on the economic impacts of broadband connectivity found positive economic impacts, with general agreement that impacts were felt after a certain threshold of penetration.²² Though the degree of penetration remains a debate, internet usage has rapidly grown around the world — from almost 2 billion users in 2010 to nearly 3.4 billion users in 2016, according to International Telecommunication Union statistics, which also show the



rapid expansion and redistribution of users toward developing economies.²³ Expansion in underrepresented cities can have a particularly powerful economic impact.

Escalating mobile use across 227 WTC cities, which has reached an average of 95 percent among households, up from just 70 percent in 2005, is attracting investors around the globe. Every 10 percentage point increase in household mobile phone penetration in a city is associated with a boost in city GDP growth by nearly 0.2 percentage points. A boost of this magnitude on the national level would translate into an estimated additional \$100 million in additional GDP in Ghana, \$4.1 billion in Brazil, and \$5.2 billion in India.²⁴ A 2015 study assessing the economic impact of mobile technology across six countries — the United States, Germany, South Korea, Brazil, China, and India — backs these findings. It found that mobile technology contributes more than \$1.2 trillion in GDP, ranging from 2 to 4 percent of each country's GDP and 11 percent in the case of South Korea. It also notably small and medium sized enterprises (SMEs) adopting advanced mobile technologies are growing the fastest — with the 25 percent using mobile services more intensely showing revenue growth two times faster and job growth up to eight times faster than their peers.²⁵ Given that SMEs are a major force driving growth in cities, leveraging mobile technology represents a path for supporting this sector to expand and further integrate into the global economy. Such support stands to be particularly powerful in cities and regions with underdeveloped physical infrastructure and where digital connectivity could help them leapfrog ahead.

As mobile connectivity continues to transform industry around the world as speeds and reliability increase and costs continue to fall, the impacts are especially germane for developing countries, where 91 out of a 100 people have mobile subscriptions versus 10 with a fixed line, and where high-speed wireless penetration is more than four times that of fixed broadband.²⁶ In Ghana, for example, mobile technology is having a transformative impact, particularly with the proliferation of mobile banking and integration of the unbanked into more formalized banking and payments networks. It is unlocking opportunities for emerging businesses and consumers — including illiterate populations, who are becoming more engaged in the economy — and the government is investing in expanded networks. Local WTC leaders emphasized the transformational impact mobile technology has had on consumers and the economy. Togbe Afede XIV of WTC Accra stated: “Now, virtually everybody, even the most illiterate, would get money through mobile banking. Those things are transformational, and technology is influencing life across industries. Of course, that is why investors are looking at Africa, West Africa, and in particular Ghana.” While mobile technology is a major factor drawing investors to Africa broadly, Ghana's political stability is attracting investors to that country as well.

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— TOGBE AFEDE XIV, WTC ACCRA, GHANA

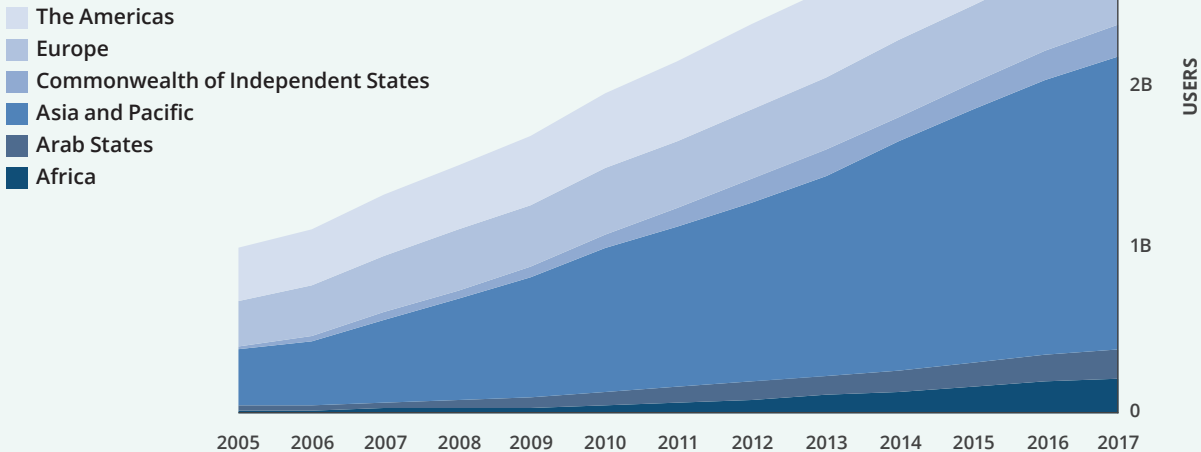
Planning Local Transportation Networks for the Future

Given the funding and multiyear time requirements, national and local governments play critical roles in the prioritization and alignment of connective infrastructure development decisions. The choices of these players, and collaborative private and civic partners, also influence relative attractiveness for FDI. Analysis found a positive and significant relationship between public transit passengers and foreign investment, such that an additional 1 million passengers is correlated with \$503,000 in additional FDI inflows.²⁷ Determining which investments are optimal for a given location and will be resilient under future demands requires innovative and multi-stakeholder planning — and a few leading cities' efforts are notably standing out.

Toronto's approach provides an example of the forward-looking considerations focused on connective infrastructure that will prepare the rapidly growing city for change and enable its evolution. Looking at six major emerging trends impacting the local economy, Toronto is focusing its strategic infrastructure planning on investments that would support growth under a range of pressure scenarios. Considering existing and anticipating future transportation challenges, planners have modeled and projected impacts from the rapid deployment of emerging technologies, extreme climate change, rise of the gig economy — characterized by more independent, short-term contract work in decentralized settings — a user-pay economy, and migration and immigration factors.²⁸ Through the process, they anticipate much greater future demand for transit-oriented infrastructure investments, requiring major shifts in funding allocations to prepare for these changes.

Rapid Rise in Internet Use

Though the degree of penetration remains a debate, internet usage has rapidly increased around the world — from nearly 2 billion users in 2010 to nearly 3.4 billion users in 2016, according to the International Telecommunication Union statistics.



Cities Are Leading on Innovative Financing Models and Partnerships

With public funding constrained and many national governments lagging on major infrastructure investments, the onus of this investment is increasingly being put on the private sector and users — and innovative financing models are needed to spur and sustain investment, including making the projects more bankable and packaged to more closely align with private sector investment horizons and not imposing regressive fee structures on the most vulnerable users. The challenge is complex, with cities around the world testing new models to foster growth and providing for public goods while accounting for environmental and social equity concerns.

Cities are experimenting with innovative public-private partnerships to finance local and more resilient infrastructure, such as the sale of local green bonds for sustainable infrastructure investments aimed at both adaptation and mitigation, which is occurring in multiple WTC cities in the United States, as well as in Paris, Oslo, Gothenburg, London, and emerging economy cities including Mexico City, among others. The use of this financing tool is growing rapidly, with green bond issuance from cities and municipalities more than doubling from \$4 billion in 2014 to \$10.5 billion in 2016.³¹

Other cities are exploring ways to leverage the public sector's ownership of often undervalued or underleveraged public assets

to finance infrastructure investment upgrades. The city of São Paulo, for example, introduced a land development concession mechanism to harness increased value from appreciation with urban densification and new real estate development or improvements, and channels revenues into an urban development fund for projects in the public interest. Between 2004 and 2015, São Paulo collected nearly 11.9 billion reais. Toronto is implementing a similar model, with a unique design applicable to that city's development goals, raising more than \$400 million Canadian dollars from 1998 to 2015.³²

Partnerships aimed at upgrading aging infrastructure are also enhancing mobile connectivity and making cities smarter. In New York City, leveraging its vast but outdated network of phone booths, the Department of Information Technology and Telecommunications contracted with CityBridge to upgrade the infrastructure with Wi-Fi kiosks, providing free high-speed internet, maps, network transportation information, and other connected services — expanding access for visitors and residents, including those without access to broadband. CityBridge made upfront investments, generating local jobs, and is contracted to share half the gross advertising revenue with the city annually, which it estimates will generate more than half a billion dollars in revenue over the first 12 years of the project.³³ Announcements have been made to roll out the concept in London as well, with Sidewalk Labs, an Alphabet

company involved in the New York project, and local U.K. partners.³⁴

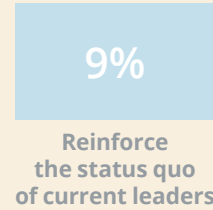
While innovative models for public-private investment are expanding, the onus for infrastructure funding is also increasingly falling on local populations, either by way of increased taxes or fees. As political uncertainty and fiscal constraints stymie national infrastructure projects, greater emphasis will likely be placed on user fees and other models. According to a 2014 global survey, over 80 percent of roughly 250 public sector leaders from local and regional government and more than 200 senior-level private developers, investors, and real estate advisors contend the public's willingness or ability to pay for infrastructure will have a dramatic or significant impact on whether investments move forward.³⁵ The findings underscore the importance of local capacity and political will to advance novel programs and help underwrite the infrastructure so critical to long-term growth and competitiveness. According to city planners and development authorities, meaningful civic engagement by way of public outreach, surveys, and inclusion of historically marginalized communities that have been physically isolated by legacy infrastructure is key to cultivating public support for projects and progressive infrastructure development that will be necessary to further local growth.

Connective Infrastructure is Facilitating Trade and Streamlining Supply Chains

In addition to being foundational for city functioning and attracting FDI, connective infrastructure is the primary enabling factor for interregional and international trade — providing access to new markets and lowering costs for consumers by minimizing costs along the supply chain. WTC representatives emphasized the paramount importance of logistics to local and regional trade and prospects for investment and future growth. Businesses and local leaders are focused on strategies to progressively lower logistics costs through infrastructure integration and technology. Fifty-two percent of those polled, by far the largest share, indicated that increased technology integration will create greater efficiency in trade and logistics, with those interviewed noting the importance of faster data and information flows and, potentially, blockchain — to deepening that integration, strengthening accounting and transfer records, increasing transparency, and generally making logistics networks more fluid. The marriage of physical and digital infrastructure represents the next frontier, with digital technologies already becoming deeply embedded in physical infrastructure — creating myriad opportunities for smarter cities and more efficient networks, as well as cyber risks. Managing these risks remains front of mind for local governments, business leaders, and investors, keenly aware of the immense productive opportunities this union stands to provide.

While fears of increased protectionism abound, with **51%** of those polled expecting protectionism to rise in the next year, a local focus on connective infrastructure and minimizing logistics barriers could be a path forward.

How will further technology integration most significantly impact trade and investment?





GLOBAL CONNECTIONS DRIVING LOCAL GROWTH — THE NETWORK EFFECT

In the face of geopolitical uncertainty and unpredictable national leadership, local stakeholder networks are defining a new era of international diplomatic and commercial engagement that is driven from the bottom up and aimed at fostering local economic growth and prosperity by deepening international ties. The global-local network effects generated are facilitating inbound investment and helping to drive local job creation and productivity while opening new market opportunities for growing local companies. As businesses and investors attempt to navigate evolving global risks, the networks and partnerships that provide local insight, facilitate direct connections, and provide explicit trade support and training are becoming ever more important.



WTC Moscow: A “Knowledge Hub” Leveraging Partners’ Distinct Expertise

The WTC Moscow and its local partners, many of which are housed within the same building, are notable examples of synergistic organizations that are defining clear roles and complementary services for businesses and investors such that the organizations reduce redundancy and focus on core competencies to ensure that companies and investors get the most targeted and comprehensive support possible. Serving as an “intellectual hub” with a Congress Center organizing international export conferences, they partner with the Chamber of Commerce and Industry of the Russian Federation, which provides close connections to the business community. The WTC works closely with Russian Export Center a state-owned economic development agency, which supports SMEs to expand internationally, and with think tanks and local universities on international trade and commerce education and training. The government plays an important supportive funding role for national trade fairs, as well as export training and facilitation, but in collaboration with the distinct organizations with respective expertise. According to Vladimir Strashko at WTC Moscow, “In terms of partnerships, there is a role for the government, but they have to understand they cannot do it in isolation from the business community. The Chamber of Commerce and Industry, with the support of the local WTC, helps connect the two to ensure that businesses’ voices are heard.” Open and ongoing dialogue among these and other partners in their local ecosystem is enabling them to provide more targeted and effective support to businesses in their region.

Strong Local Networks Key to Cities’ Competitiveness

Based on interviews with WTCs around the world, collaboration with other local partners is an essential part of creating an ecosystem that facilitates trade, investment, and growth. While there is significant variation across business environments and cultures, cities setting themselves apart include those with:

- local and regional governments establishing solid connective infrastructure and an enabling environment for business;
- academic institutions cultivating a skilled workforce and driving innovation;
- civil society including chambers of commerce that can serve as ambassadors for business and interlocutors with government; and
- most importantly, a vibrant business sector pursuing new opportunities in the global marketplace.

Each of these entities plays a distinct enabling role in driving the local economy and determining a city’s relative competitiveness.

Local and Regional Governments

Local and regional governments can, without a doubt, play an integral role in creating an enabling environment for local businesses and for attracting investment. WTC members emphasized a range of important roles for local government, including a favorable tax environment, grant funding for SMEs and trade-related support services, and business incentives, among others. In addition, local governments' ability to effectively channel needed public investments into affordable housing, connective infrastructure, and public services aimed at enhancing cities' quality of life was considered a must. They underscored that these public goods are directly in the local governments' purview and are differentiating factors for foreign investment as they directly affect business and industries' ability to do business and to attract and retain the skilled workers they need to grow.

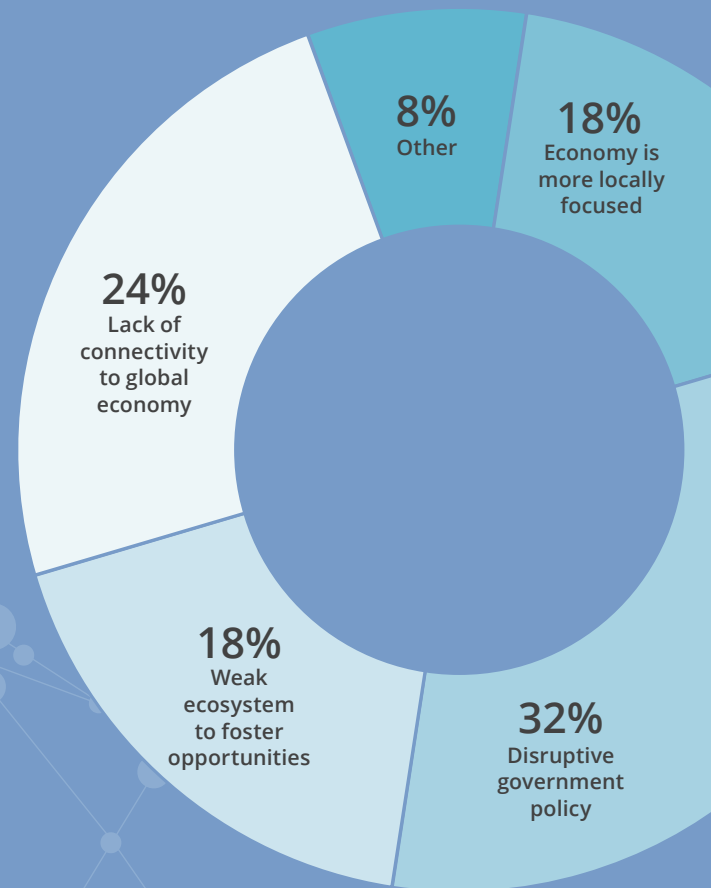
However, while needed partners, local governments can also be one of the most significant barriers to investment. In fact, polling of WTCA members found that disruptive government policy represents the biggest roadblock to facilitating foreign investment and enabling greater trade.

As with national politics, local government planning can also be undermined by political cycles, shifting priorities, bureaucracy, and constrained budgets. WTC members indicated that those with a strategic vision for growth and clear policy framework supportive of business are those attracting investment and fostering local growth.

Academic Institutions

Local academic institutions — including universities, vocational and secondary schools, and skills training programs — can be key to cities' relative competitiveness by cultivating a skilled workforce and fostering innovation. Educational institutions represent a regenerative resource for communities, developing highly trained and skilled workers, as well as advanced research and technology that feed local businesses. Further, they attract foreign students who bring global talent and establish links with countries and academic institutions all over the world. Those foreign students, as several WTCs noted, end up becoming local ambassadors of host cities when they return home.

The various academic and research institutions are fostering local business competitiveness. Strategic partnerships among local academic institutions, local industry, and business networks are stimulating cultures of entrepreneurship and creating regenerative feedback loops within cities, with many leading cities establishing themselves as research and innovation hubs. Virtually all the WTCs contacted for this study had partnerships or working relationships with educational institutions supporting that link between academia and business — by directly



Disruptive Government Policy Among the Largest Roadblocks

supporting international trade education programs, facilitating business partnerships and mentorships, or through engagement with local incubators and accelerators — providing support to new emerging start-ups to expand abroad.

Civil Society

In all local ecosystems, civil society provides the connective tissue among stakeholders and helps define cities' characters. Those WTCA members interviewed highlighted engagement with civil society as key to earning community support for development projects that are aligned with cities' and citizens' long-term interests. Cr. Carlos A. Lecueder of WTC Montevideo, Uruguay, echoed the point: "I think in countries like ours in South America, it's important that civil society organizations act with and toward the government to help them understand the importance of trade, of making agreements, and not concealing political issues or having trade be a matter of ideology of the other country's government."

Other WTC members and mayors from WTC cities referenced a range of integrative tools — including direct outreach, forums, public surveys, polling, and other measures — that can help assess public sentiment and incorporate public feedback into development plans. Not only is this process important for facilitating investment, but mayors and city planners from WTC cities also underscore it as imperative to countering growing inequality and social exclusion afflicting some rapidly growing cities, which — if left unaddressed — can present major risks to local growth and stability. "Uruguay is benefiting from foreign investment No. 1 because of stability from a political and economic point of view, and civil society is helping with that," Lecueder noted.

Local Business Organizations and Networks

Chambers of Commerce and economic development organizations also play key roles in identifying opportunities for public-private partnerships and serve as important links between business and local government. The strength of these businesses and business organizations is integral to foreign investors evaluating the relative attractiveness of cities and to effectively navigating local laws, regulations, and permitting, as well as other issues central to operationalizing investments. Taking on roles as ambassadors, Chambers of Commerce are advancing interests of business and industry at the local level.

The engines of job creation, economic growth, and prosperity, local businesses of all sizes — particularly SMEs — are at the heart of competitive cities. While each city has its own unique composition of businesses and industries, those cities that can focus on and foster the strategic industries and businesses in which they have comparative advantages tend to attract increasingly competitive FDI.



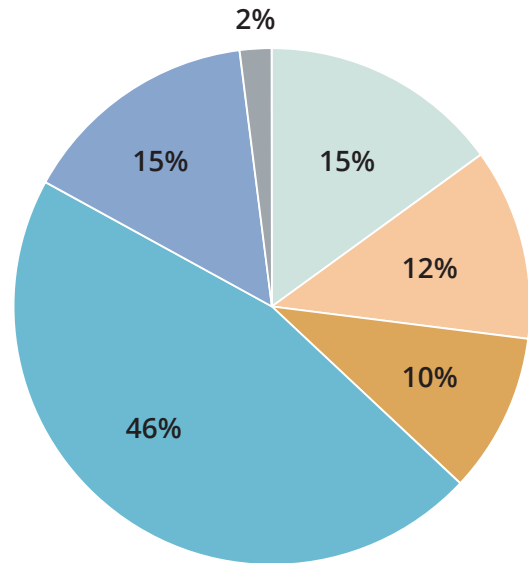
Toronto's MaRS Ecosystem: A Collaborative Model For Local Innovation

Toronto's MaRS, a public-private incubator model, provides an illustrative example of the type of collaborative ecosystem driving the local innovation economy. The platform — which focuses on core areas of energy and environment, finance and commerce, health, and work and learning — brings together educators, researchers, social scientists, entrepreneurs, and business experts in an innovation district to test new business concepts while providing start-ups access to local networks, business mentorship, and needed capital. The partners are advancing novel research and testing new technologies, and entrepreneurs are accessing the support they need to incubate and scale while corporations are tapping into new talent. The local government has provided a consistent supportive funding role for years and has supported nine other incubators throughout Toronto's university system, which are also feeding into the network. According to WTC Toronto, the MaRS project has become a leading model and helped establish Toronto as an innovation hub, with WTCs facilitating the entry of international tech companies to the city.

Collaboration Among Stakeholders Is a Differentiating Factor in Attracting FDI

While each one of the constituent parts of this ecosystem is a major factor in local competitiveness, collaboration among them is a major differentiating factor for attracting FDI. Recent polling of WTCA city leaders from around the world found that collaborative networks of local stakeholders are, by far, the most important factor for attracting quality FDI, contributing to local job creation and long-term economic growth — with nearly half of WTCA members polled (46 percent) considering it the most important driver. Those cities able to exhibit high levels of engagement among business, local government, academia, and civil society tend to more readily identify strategic opportunities, connect the key actors, and facilitate dialogue among the range of stakeholders whose input can either facilitate or impede investments.

WTCA members echoed that ongoing dialogue among local stakeholders to align development goals, policies, roles, and respective core competencies is fundamental to creating a productive ecosystem in which local businesses can thrive. Those cities that are able to integrate into the local ecosystem

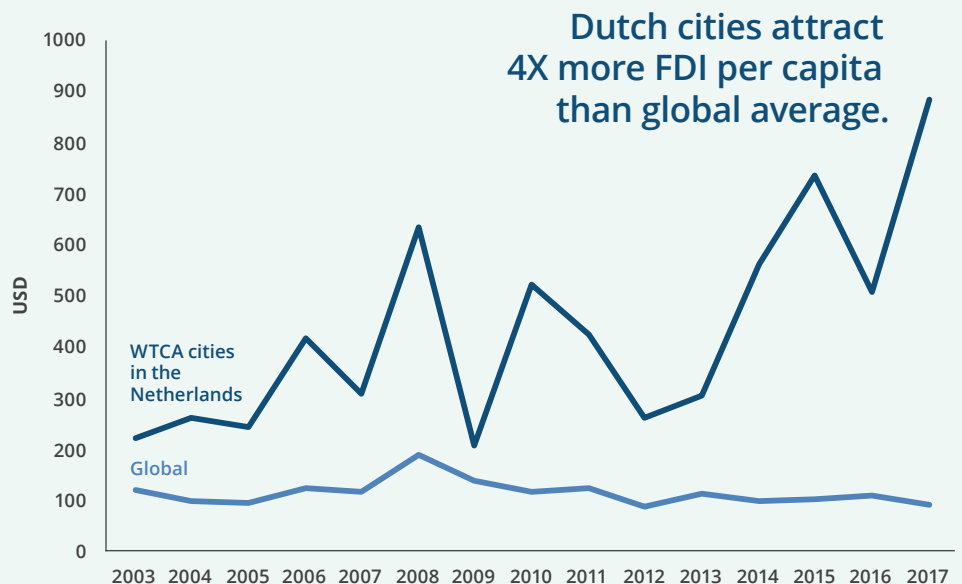


Collaborative network of local stakeholders found most significant driver of local growth and development

- Strong regional connectivity
- Quality of infrastructure
- Supportive local government
- Collaborative network of local stakeholders
- Abundance of human capital
- Other

Magnetic Effects of Dutch Business Networks

The Netherlands Alliance, a partnership of nine World Trade Centers, presents an exceptionally robust example of facilitating local connections and providing direct business and trade support services. Close association with the VNO-NCW, a confederation of 115,000 companies in the Netherlands, provides direct links deep into the local business community and regional employers' associations. The alliance and local partner networks are helping to drive inbound investment, with cities in the Netherlands among the highest performing. In fact, an analysis of city-level data from 2003 to 2017 of WTC cities in the Netherlands found that these cities attracted FDI at an average of nearly four times that of global FDI per capita.³⁷





WTCs-GCI Partnerships Enabling Systematic Evaluation & Strategic Planning

The Brookings-JPMorgan Chase Global Cities Initiative (GCI) is working directly with some WTCA member cities — such as Philadelphia, San Diego, and St. Louis — on multiyear city evaluations and strategic planning to assist city and metro leaders to more thoroughly understand the economic forces at play affecting their local economies and the potential of their unique resource base. Through data-driven assessments, city stakeholders are working with GCI to systematically evaluate local strengths and apply best practices and innovative policy recommendations to chart development plans for revitalizing their local communities and strengthening their competitiveness. WTCs highlighted the value this systematic evaluation, long-term thinking, and planning process have had in identifying where their unique comparative advantages lie and how they can leverage local assets to attract foreign investment and expand businesses' reach into global markets. While predominantly focused on the United States, this collaboration model could be further replicated and adapted to support and link developing cities around the world.

through partnerships with WTCs are yielding demonstrative gains through increased foreign investment, contributing to local and regional growth.

Facilitating Global Engagement

Even in the digital age, face-to-face, human connection among colleagues, potential partners, and investors remains invaluable to doing business, and strong connections with local business networks can provide a direct line into local communities and a platform to evaluate prospective opportunities. According to WTC contacts, the power of globally oriented business networks is paramount to attracting investors, securing new business, and supporting businesses to grow. In fact, two-thirds of WTCA members polled considered strong and direct connections with local business networks as the most important factor to achieve their goals.

WTCs around the world play an integral, connecting role with investors and businesses in both attracting foreign investors to their cities and enabling local businesses to expand their operations regionally and overseas. Across the range of interviews, WTCA members emphasized that core activities — including establishing a physical presence, facilitating direct human-to-human contact and local connections, identifying trusted partners, and providing trade education and technical training. This enables them to access new markets that yield the greatest return on investment and have the highest impact. With growing demand, limited capacity to provide needed services presents one of the biggest challenges.

Providing a Home Base and Matchmaking for Investors

With respect to facilitating inbound investment, physical presence matters, and those cities able to offer a local launching pad are attracting FDI. To this end, WTCs indicated that at an elemental level, the physical office space they are able to provide is powerful as it enables business partners and prospective investors to become immediately plugged into local settings, conduct business, and establish a local presence with minimal, if any, overhead costs. The provision of local office space and networking services facilitates cross-border business and enables prospective investors or partners to have a local presence and flexible work environment to evaluate a local market and business opportunities. Reciprocal access among network partners can provide access to business space in cities all over the world.

As part of their core functions, WTCs and trade and investment agencies also play a key role in identifying local partners for prospective foreign investors. With deep understanding of the local network and industry leaders, WTCs and other supporting business organizations are able to

Ability to connect directly and establish close ties with local business networks critical to attracting foreign investors and achieving project goals

66%
BUSINESS

32%
GOVERNMENT

2%
UNIVERSITY/
EDUCATION
SYSTEM

facilitate direct, personal introductions enabling investors to more readily make valued local connections. Members indicated that partner matchmaking services and direct introductions have been the most demanded of their support services and the most effective in facilitating business.

Preparing Businesses to Grow Abroad

In addition to facilitating inward investment, WTCs are supporting local businesses to become more globally oriented and expand overseas. WTCA members contributing to this study listed a number of key education and support services that they provide to businesses in order to help prepare them to more effectively enter and compete in global markets. Members indicated that fundamental trade education and training are core to this effort. WTCs across cities are providing technical assistance to help firms navigate export/import procedures, understand varying legal and regulatory frameworks, and conduct market research to help firms understand where they are best positioned to compete and how to effectively engage.

Lille: Capturing New Opportunities From Brexit

While Brexit continues to generate uncertainty throughout the region, the French city of Lille is leveraging its position to support U.K. businesses and businesspeople that could be adversely affected by Britain's prospective departure from the European Union. Proximate to England's coast, the city and the local ecosystem of international trade-related organizations are focusing on easing business transit and operations from the United Kingdom, including a dedicated British business lounge to host working travelers. Lille's location and network stand not only to facilitate business in France but to serve as a gateway to Northern Europe. According to Laurie Grzechnik of WTC Lille, "We want to position our region as the first country to welcome businesspeople from England that wish to have business in Europe, not only in France, but Europe. They will need to have a step into Europe after Brexit. There's an appetite for that, and we work a lot with the whole ecosystem of organizations dedicated to business and international trade, so we are in a good position for that."

While some firms are ready to expand into international markets, difficulty identifying trusted international partners was highlighted as a major barrier. Through in-house research capacity and leveraging global databases and business networks, WTCs are able to assist companies in identifying prospective partners and conducting the necessary due diligence to single out competitive and reputable candidates. Such assistance, as WTCA members noted, is exceptionally helpful for new exporters given the geopolitical uncertainty that is contributing to wariness about entering new markets.

Connecting Businesses on a Global Scale

Similarly, targeted trade missions that enable invaluable face-to-face connections are helping to ease fears. Through these missions, local businesses and industries are able to showcase themselves in strategic growth markets, make connections with new markets, and establish working relationships that can lead to concrete business deals. WTC members noted that trade missions tailored to specific industries that incorporate market research, local partner identification, and information on the local legal and regulatory environment were particularly effective and exceptionally helpful for SMEs that have little, if any, exposure to international markets.

Separated by geography, the WTCA network facilitates connections and working relationships among local industries, enabling businesses to share knowledge, address common market challenges, and advance sector interests internationally — whether related to R&D, international trade, supply chains, or other issues. According to its director, Steven Lo, "WTC Harbin is working with WTC São Paulo in Brazil, WTC Montana, WTC Saskatoon, and others around the world on crop technology and connecting it back locally ... making connections but, more importantly, helping them do business together."

Network Effects and Partnerships Particularly Critical for SMEs

SMEs represent the economic engines of local economies around the globe, fueling local growth and employment and constituting 50 to 60 percent of value added³⁹ and 70 percent of jobs in the OECD.⁴⁰ Still, the share of SMEs engaged in international trade is typically under 10 percent.^{41 42 43} WTCs working primarily with this segment expressed that, despite their economic potential, many SMEs often lack the knowledge, capacity, and networks to tap into international markets that could substantially expand their operations and revenue — with significant economic benefits to local communities that could be gained from further expansion into global markets going unrealized.

While large local companies also benefit from the network

effects discussed above, they tend to have greater capacity to capitalize on international trading opportunities and have staff dedicated directly to the task. Conversely, SMEs — most with limited capacity and focused on local and regional markets — are often unaware of the very services they need, how to expand internationally, or have become “accidental exporters” without a clear strategy for growth. In addition, SMEs tend to face higher relative costs and barriers to entry in international trade than larger businesses. Taking what is often perceived to be a major leap into international markets can be an overwhelming if not paralyzing prospect — leaving the majority of unsupported SMEs constrained, unable to scale and reinvest gains from trade into further growth. According to Linda Conlin of WTC Philadelphia, “One of the things we’ve discovered with the export plan, is that many SME and midmarket companies have the capacity to export but have reluctance because of the perception of risk and lack of awareness about what services are available. There’s a growing awareness of the opportunities that global markets present, but we have a long way to go to taking those businesses from focusing on domestic markets to diversifying into global markets.”

Constituting many businesses along supply chains, this segment has the potential to be an economic force multiplier for cities. Virtually all WTCs indicated that SME-targeted, trade-related support services are essential to help unlock this segment’s economic potential, but more capacity is needed. SMEs span a range of goods and services, and local WTCs and other supporting organizations are providing key enabling support services — with major crosscutting functions including trade education and technical training, market research, export plan development, and business and supply chain partner identification and matchmaking. In addition, several WTCs highlighted the impact of “learning circles” where businesses are able to make connections and receive guidance and advice from other exporting businesses. Strengthening for all businesses, these services are particularly helpful for SMEs to bridge knowledge and confidence gaps and orient them toward more global growth. According to Pedro Pablo Alamos Zañartu of WTC Santiago, “There are enormous trade opportunities for Chilean companies, and we focus on teaching businesses how they can be better prepared to face strategic challenges, giving educational tools and professional consulting.”

These types of training and services are not only needed by SMEs but are particularly beneficial for those comprising other underrepresented groups, including women and minority groups. According to Khair Nissa of WTC Noida, “In India, we are seeing a lot of women entrepreneurs. Historically, the female population has never been taken into consideration in our national GDP. But now, we are seeing that women entrepreneurs are important and important factors for GDP growth.

**SMEs
are Local
Economic
Engines...**

**50%-
60%**

of value add in
OECD countries

70%

of jobs in OECD
countries

**...But are
Behind
on Global
Engagement**

10%

or less share
of SMEs are
internationally
engaged



Harbin Drives MoU Among Global Agricultural Hubs

Facing serious local concerns about food security, industries in Harbin, China, and its local WTC are keenly focused on the impact agricultural, water, soil, and related technologies can have on improved productivity, processing, and distribution. Seeking to gain insights from global industry partners, WTC Harbin spurred the broadest-spanning international collaboration of WTCs to date, resulting in a recently signed memorandum of understanding among more than 40 of its members to craft a global, collaborative framework on agricultural trade issues. It brings together WTCs across North and South America, Europe, the Asia Pacific, and Africa with rich agriculturally focused expertise, business networks, and advanced technology to share knowledge, establish working relationships, and address evolving trade issues deeply affecting their local economies. While this MoU is specifically focused on agriculture, such a model could be adapted for other sectors as well.

A lot of policies are now being created to promote women's entrepreneurship." In Louisiana, for example, WTCs are heavily focused on providing SME support and are working with minority Chambers of Commerce (including the Hispanic Chamber and African-American Chamber), Small Business Association, and others to provide trade information and training programs, helping local businesses — particularly in logistics — expand out of regional markets and grow their market share. However, as WTCs around the world reiterated, expanded capacity is needed to support small businesses and entrepreneurs to grow beyond their borders.

Santiago Enabling SMEs To Launch Into Global Markets

Recognizing the importance international trade plays in growing local small businesses, WTC Santiago in Chile provides business development and trade education and technical assistance, including training on software tools and management, business development and marketing, and import and export assistance. While facilitating development of local goods-and-services companies, it also trains companies seeking to enter the rapidly growing e-commerce sector and is reportedly starting to make a big jump through internet sales. WTC Santiago is training over 9,000 people every year on a range of business topics in different languages to strengthen their companies, and is helping businesses to expand within Chile and reach other Latin American and global markets.

ENDNOTES

¹ City-level data for WTCA cities include GDP, FDI inflows, exports, employment, foreign citizens, airport traffic, mobile connectivity, and education. FDI inflows represent greenfield FDI and do not include mergers and acquisitions, as such data are not tracked and reported on a consistent basis.

² GDP is for 225 cities for which data were available, with data sources from Euromonitor International.

³ FDI covers 2003-2017, with data sourced from fDi Markets; export covers 2005-2017 for 78 cities for which data were available from Euromonitor International.

⁴ Sample covers 2005-2017 for 81 cities for which data were available from Euromonitor International and fDi Markets.

⁵ <https://montreal.ubisoft.com/en/ubisoft-announces-the-creation-of-the-ubisoft-saguenay-studio-and-record-investments-in-quebec/>

⁶ https://manpowergroup.com/wps/wcm/connect/389b7a9d-cfe2-4b22-bd61-f0febc709cd6/2016_TSS_Global_Infographic+-+Final.pdf?MOD=AJPERES&ContentCache=NONE

⁷ Sample covers 83 cities for which data were available (from 2005 to 2017) from fDi Markets and Euromonitor International; higher education attainment includes the population attaining tertiary, bachelor's, or master's degrees.

⁸ <https://data.oecd.org/socialexp/public-spending-on-labour-markets.htm>

⁹ <https://www.birmingham.ac.uk/Documents/college-social-sciences/business/events/beyond-wages/stansiebert/2riley-omahony-education.pdf>

¹⁰ <http://www.nber.org/papers/w21607>

¹¹ <https://billypenn.com/2016/01/26/why-eds-and-meds-are-so-strong-in-philly-and-what-could-end-the-trend/>

¹² Sample covers 2006-2017 for 213 cities for which data were available from Euromonitor International.

¹³ Sample covers 2005-2017 for 122 cities for which data were available from Euromonitor International and fDi Markets.

¹⁴ Sample covers 2005-2017 for 63 cities for which data were available from Euromonitor International.

¹⁵ Analysis included airport passenger traffic, FDI flows, and GDP data for 207 cities from 2005 to 2017 from Euromonitor International and fDi Markets.

¹⁶ <https://www.weforum.org/agenda/2013/01/how-can-supply-chains-drive-growth/>

¹⁷ https://cdn.ek.aero/downloads/ek/pdfs/int_gov_affairs/Oxford_Economics_Quantifying_the_Economic_Impact_of_Aviation_in_Dubai_November_2014_Final_v1.pdf

¹⁸ <https://www.bnamericas.com/en/news/infrastructure/colombia-to-tender-new-us1bn-airport-in-mid-20181>

¹⁹ <https://www.reuters.com/article/romania-airports/update-1-bucharest-airports-plans-980-mln-expansion-at-main-airport-idUSL8N1LN419>

²⁰ <https://www.wider.unu.edu/sites/default/files/wp2010-22.pdf>

²¹ Analysis included data for 103 cities from 2006 to 2017 from Euromonitor International.

²² <http://pubdocs.worldbank.org/en/391452529895999/WDR16-BP-Exploring-the-Relationship-between-Broadband-and-Economic-Growth-Minges.pdf>

²³ <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

CONCLUSION

Already, WTCA members are reporting slowing investment and are anticipating a major disruption in global trade and investment to occur within the year, and the recent ratcheting up of protectionist actions portends bumpier roads ahead. It is in this context that cities are positioned to move ahead, navigate through the volatility, and forge new paths for trade and investment that are emerging from the disruption. Though there's no single road map and every city has unique resources and challenges, this analysis shows that there are specific and concrete steps cities can take. The research and the data bear out that investing in human capital, an openness to migration, and connected, smarter infrastructure are strongly associated with inward FDI, increased exports, and ultimately GDP growth and job creation. Those cities that are defining long-term plans based on each city's unique resources, strengthening cooperation among key local stakeholders, and leveraging synergies between local and global networks are attracting higher levels of FDI and enhancing their overall competitiveness. Going forward, those cities that prepare for the risks around the corner and chart a path toward greater international integration will be positioned to gain ground.

²⁴ Analysis included data for 232 cities from 2006 to 2017 from Euromonitor International.

²⁵ <https://www.bcg.com/publications/2015/telecommunications-technology-industries-the-mobile-revolution.aspx>

²⁶ <http://pubdocs.worldbank.org/en/391452529895999/WDR16-BP-Exploring-the-Relationship-between-Broadband-and-Economic-Growth-Minges.pdf>

²⁷ Analysis included data for 64 global cities from Euromonitor International and fDi Markets.

²⁸ http://meetingoftheminds.org/a-future-ready-transportation-plan-for-the-greater-toronto-region-27066?omhide=true&utm_source=Meeting+of+the+Minds+Newsletter+List&utm_campaign=9244d31060-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_cdb70a5ce7-9244d31060-57947281&mc_cid=9244d31060&mc_eid=c1f0a28d2b

²⁹ <http://www.metrolinx.com/en/regionalplanning/rtp/>

³⁰ http://meetingoftheminds.org/a-future-ready-transportation-plan-for-the-greater-toronto-region-27066?omhide=true&utm_source=Meeting+of+the+Minds+Newsletter+List&utm_campaign=9244d31060-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_cdb70a5ce7-9244d31060-57947281&mc_cid=9244d31060&mc_eid=c1f0a28d2b

³¹ https://www.climatebonds.net/files/files/March17_CBI_Briefing_Green_City_Bonds.pdf

³² https://www.researchgate.net/publication/318380923_Land_Value_Capture_and_Social_Benefits_Toronto_and_Sao_Paulo_Compared

³³ <https://www.link.nyc>

³⁴ <https://techcrunch.com/2016/10/25/linknycs-free-wifi-and-phone-kiosks-hit-london-as-linkuk-in-partnership-with-bt/>

³⁵ <https://uli.org/wp-content/uploads/ULI-Documents/Infrastructure-2014.pdf>

³⁶ <https://www.marsdd.com>

³⁷ Analysis based on data from 2003 to 2017 from fDi Markets and includes all WTCA cities, except those in active war zones.

³⁸ <https://www.prnewswire.com/news-releases/over-40-world-trade-centers-sign-broad-agreement-on-worldwide-agricultural-cooperation-300636328.html>

³⁹ https://www.wto.org/english/res_e/booksp_e/world_trade_report16_e.pdf

⁴⁰ <https://www.oecd.org/mcm/documents/C-MIN-2017-8-EN.pdf>

⁴¹ https://www.wto.org/english/res_e/booksp_e/wtr16-2_e.pdf

⁴² <https://www.statista.com/statistics/708151/sme-engagement-in-international-trade-us/>

⁴³ Cited in multiple interviews with respect to those specific WTC cities.



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