



# Assessing City Economic Performance: The City Economic Capacity Index

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## Executive Summary

Cities are the central drivers of national economies in both the developed and developing world, yet most policy and research continues to focus on the nation state. This report examines the factors which contribute to positive economic activity in cities, and argues that it is important for policymakers, businesses, and non-profits alike to focus on policy decisions and governance at the city level in addition to socioeconomic conditions.

We developed the City Economic Capacity (CEC) index by evaluating, through statistical analysis, theoretically important local policy and contextual variables that could influence economic growth. The CEC index is positively associated with economic performance, as defined by 2012 metropolitan area GDP per capita. Most importantly, our research finds that city government, as a driver of local public policy, can directly influence the CEC variables we used in our analysis. We complemented the CEC data analysis and findings with in-depth case study research of 10 global cities; the case studies helped us to identify city-specific governance characteristics, namely aspects of legal authority, fiscal capacity, and operational capacity, which position cities higher on the CEC index.

The case studies show that each city has taken a different path to economic performance, but none of the cities we studied would have achieved its CEC score without the policy decisions their current and former leaders made. Based on our research, we have found that livability and quality of life variables become increasingly important for sustaining economic performance as a city develops. Secondly, business conditions that have traditionally been considered to be necessary for economic performance, such as the number of Global 500 headquarters, financial sector size, number of hotel rooms, and total number of tourists, begin to matter much less than other factors (including quality of life) once a city is considered to be economically developed. Moreover, both the quality of governance and effectiveness of local policy significantly affect the economic performance of a city, while the existence of democratic governance structures and accountability become increasingly important for city-level economic performance as cities develop and grow.

We find two main trends in the cities examined: (1) the lack of coordination between multiple levels of government can severely impact a city's economic performance by preventing

policy makers at different levels of governance from creating the conditions necessary for a city to improve its economic capacity, and (2) the system of governance (i.e. the strength of the mayoralty and the level of democratization of the system), the quality of governance and the effectiveness of local policy significantly affect the economic performance of a city. Policy matters and will determine the trajectory of a city's development and growth. However, the lack of reliable city-level data is a major obstacle to any research aimed at understanding and assessing the increasing role of cities in the global economy. We found that a lack of data at this level (including basics such as GDP at the city level) was ubiquitous across all of the cities we assessed, regardless of their status as developed or developing. A more concerted collection and use of city-level data on basic economic variables (including measures of inequality and growth) would provide evidence of what works and what doesn't in terms of policy - for policymakers and businesses alike.

## Introduction

### Governance, Policy and Economic Performance

The purpose of this report is to explain the factors that contribute to positive economic activity<sup>1</sup> in cities. We developed the City Economic Capacity (CEC) index by collecting raw data from existing and new sources, identifying key variables of interest for analysis, and using statistical methods to measure the reliability of the index, as evaluated against our proxies for positive economic performance (e.g. GDP/capita). The variables we chose include city contextual variables (i.e. variables are conditions existing within a city), such as:

- Human Capital, as defined by variables such as percent of population with higher education, life expectancy, and population density;
- Physical Infrastructure, as described by transportation coverage, calculated as the total length of rail in km divided by the city's area;
- Livability, including average PM10 air pollution rating, public libraries per 100,000 people, and rent as percent of GDP per capita on a monthly basis; and
- Governance, including the country's Freedom House score, the number of democratically elected legislators per 100,000, and public expenditures per capita.

We then complemented our analysis of variables (including scoring and ranking) with an in-depth analysis of ten global cities chosen in consultation with our client, HSBC. This additional level of analysis was designed to show how public policy can directly influence the CEC scores and, by extension, economic performance (as measured by GDP per capita at the metropolitan level and other proxies of economic performance).

### Why Focus on Cities?

Cities today are home to over half of the world population and account for more than 80% of global GDP.<sup>1</sup> Thus, businesses are increasingly making investment and locational decisions based on opportunities that are available in cities, as opposed to countries. Most

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<sup>1</sup> We use "activity" and "performance" interchangeably in this report; both are a result of a city's economic capacity to grow, perform and encourage economic activity. For a further elaboration of performance and proxies used in this study, see page 21.

economists, however, focus their research on national policies and conditions in order to predict economic performance—this despite the fact that past models have failed to address local variations in performance or to consider city-level variables that may prove to be important drivers of regional and national-level growth.

In order to explain local economic performance, it is necessary to analyze the impact of the local conditions – inclusive of policies- that enable (and disable) economic activity. For example, elements of a city’s history, the national economy or the natural geography will predict the types of industries that can locate within a city. In addition to this, the local (and regional and national) policy environment affects a city’s ability to attract and retain talent, investment and economic production.

The cities we examine in our research include five U.S. cities (Cleveland, Miami, Phoenix, New York, and San Jose) and five non-U.S. cities (Johannesburg, São Paulo, Shanghai, Tel Aviv, and Toronto). All have different governance structures and different forms of government. Most of them have democratically elected leaders, but the number of elected officials per capita differs widely, thus there is significant difference in both the autonomy of city governments and the extent citizens’ views are incorporated when making policies that affect economic performance. In addition, the national contexts within which they operate varies widely in terms of the relationship between the national and regional authority structure and the city’s.

Despite the importance of contextual variables in explaining local economic performance, research on these local variables is extremely limited city-level data is difficult to find. Thus, policymakers and investors still look at nations rather than cities for guidance on an economy’s performance. When city economic assessments are done, national level data is often substituted for city data and local policy is rarely, if ever, considered in the mix. This study will add to the body of knowledge about which local variables (both contextual and policy) enable economic performance in cities, and this alternative analysis will both aid businesses in their investment decisions and help policymakers craft better local policies that can increase local economic performance.

## What is Local Policy?

Local policy includes any laws, regulations, or plans created by the local government that apply only to a specific sub-area of a country. Local policies, which differ between cities and regions within a country, will affect, to varying degrees, the business and living environment along with the economic output of a city. Policies at this level are important because they also help to create the conditions that determine a city's ability to compete with other cities based on factors such as the regulatory environment (e.g. support for and ease of doing business), quality of human capital (e.g. education, talent), and livability (e.g. environmental conditions, housing and infrastructure). For example, local tax rates can impact businesses' decisions to locate in a particular city, amenities such as access to public transportation can affect people's decisions to move to a specific location, and local services such as the quality of education can affect residents' decisions to stay or leave the city.

## Review of the Literature

### Scholarship on Cities and Economic Performance

Academic inquiry into how cities contribute to economic growth is an ongoing effort. In his 1991 book *Geography and Trade*, Paul Krugman argues that the allocation of production between regions has become a major issue for trade theory, thus scholars should not think about trade simply in terms of nations.<sup>ii</sup> His book is an important call to economists to re-evaluate their priorities, but it does not go on to provide specific recommendations that would be useful for policymakers. Two years later, Andrew M. Isserman's survey article, *State Economic Development Policy and Practice in the United States*, found that states may exhibit patterns of growth that are very different from that of the nation.<sup>iii</sup> He emphasizes job quality as a driver of economic performance and mentions that although economic development is seen as a process rooted in the private sector, it requires support through public action. However, the question of whether or not state policy action is directly related to economic performance remains unanswered.

Michael Porter's look at cities as important economic players has widened scholarship on urban drivers of growth.<sup>iv</sup> Porter's Cluster Theory argues that competitive advantage of

localities is due to their ability to concentrate specialized industries in one location, thereby creating industry clusters that drive a city's economy. A similar argument is made by John Parr, who points out that investing in a limited number of planned poles may elicit the most favorable private-investment responses and can lead to long-run improvement in economic performance of a region.<sup>v</sup>

Saskia Sassen coined the term "global city" to refer to cities that function as centers of command and control for the global economy. With their high concentrations of global corporate headquarters, Sassen argues that London, Tokyo, and New York City exert management and executive power that allows them to dominate economic production and activity around the world. According to Sassen, these control functions in a globalized economy are the keys to their economic competitiveness.<sup>vi</sup>

There are, however, scholars who contest the importance of location. The neoclassical growth theory, and in particular the scholar John McCombie, argues that the free flow of labor will, with time, correct resource misallocations and will create a Pareto-efficient allocation of resources.<sup>vii</sup> Ron Martin and Peter Sunley argue that the definition of clusters is arbitrary and that the theory of "clusterization" is too chaotic and describes an act that is too elastic to measure or replicate.<sup>viii</sup> While Allan Pred's theory of multi-locational organizations suggests that connections between locations are much more important than proximity; growth in a particular city stimulates growth in sites along the supply chains of this city's companies, but not necessarily those places that are closest.<sup>ix</sup>

Richard Florida goes beyond traditional human capital theories and argues that the three T's (technology, talent and tolerance) are the preconditions for creative capital and a creative class that is necessary for successful urban economies.<sup>x</sup> His theory builds on that of Jane Jacobs, who argues that the economic viability of cities depends on four major features of urban communities, which are in direct contradiction to the "rational planning" model of the 1960s. These features are (1) mixed uses of space, because it allows for economic and other activity at all times of the day; (2) short city blocks that increase pedestrian mobility; (3) buildings of mixed sizes and ages, which allow for greater socio-economic integration within neighborhoods; and (4) urban density, which concentrates diverse people and reduces barriers

for information and exchange. According to Jacobs, organic and chaotic urban spaces will foster diverse and innovative economies.<sup>xi</sup> Simona Iammarino adds that whatever is done to improve a regional or local economy has to be in line with the local context. This context has usually evolved over several years and cannot be changed quickly.<sup>xii</sup>

In his book *The Wealth and Poverty of Regions* Mario Polese consolidates a number of the theories above and identifies 4 determinants of urban or regional economic success: size, location, costs, and unique events (such as history, politics and technological change).<sup>xiii</sup> He argues that size enables the creation of scale economies in production, trade, transportation and distribution, leads to falling transport and communication costs, facilitates the creation of clusters, provides a wide range of talents, minimizes travel costs, and provides “buzz and bright lights” that attract more and more people, thereby maintaining the city’s high level of human capital. However, there are some variables such as congestion, higher land costs and higher wage requirements that lead businesses to search for different locations. Based on this, Polese differentiates between three types of cities: large dominant cities, specialized in corporate and business services, as well as tradable services (like broadcasting and entertainment); smaller places within easy reach of large urban centers, with strong manufacturing bases and some smaller industry clusters; and the periphery, which builds its economy on resource based industries or on low labor.

Policy plays an important role in how cities and countries perform, and our analysis supports this. According to Paul Peterson’s city limits argument, the ability of firms to migrate puts pressure on city leaders to introduce policies favorable to big businesses.<sup>xiv</sup> Cities that are governed in a federal system have limited legal authority to tax and spend. In order to thrive, they must be responsive to demands of business community through their services and policies. In federalism, this leads to sizeable problems, because by competing with each other cities start lowering taxes to attract business and will in turn lack money to fund their services, as it happened in the United States in the 1960s. However, Petersen has been criticized because he did not provide an alternative path for cities, and he wasn’t able to come up with solutions for cities that were abandoned by their businesses.

Fred Block and Alan Evans argue that even the freest markets depend on legal and political structures, including property rights and contract enforcement.<sup>xv</sup> Government, according to them, has a role to play in issues relating to money, labor and land, and often local innovation can pave the way for regional or national successes. Dani Rodrik adds that governments can play a major role in correcting market failures, and emphasizes that economies need to be diversified in order to specialize.<sup>xvi</sup> On a similar note, Stephen Kline and Nathan Rosenberg argue that research and development is an important component of both economic and technological growth, it does not exist in a vacuum, and a number of other factors including manufacturing, marketing, and sales are crucial to create successful markets.<sup>xvii</sup>

### **Competitiveness/Doing Business Indices**

#### ***“Cities of Opportunity,” 5<sup>th</sup> Edition, PricewaterhouseCoopers & Partnership for New York City, 2012.***

The study looks at 27 developed and emerging cities. To identify what drives a city’s performance and capture what raw data may not easily explain, the two organizations conducted case interviews with notable city figures including Bill Bratton, former New York and Los Angeles Police Commissioner; Narayana Murthy, founder of Infosys; Andrew Chan and Peter Chamley, from engineering firm Arup; Wim Elfrink, of Cisco; and David Miller, former mayor of Toronto and advisor to the World Bank.

The index assesses 29 variables across ten categories including intellectual capital and innovation; technology readiness; transportation and infrastructure; health, safety and security; sustainability and the natural environment; economic clout; ease of doing business; cost; demographics and livability; and city gateway. The 29 variables are tallied in a single unit scale without weighting and aggregated into a final composite score.

#### ***New York City Global Partners***

While this is not an index, it has been a useful source of data for our research. NYC Global Partners is a collaboration between New York City and 92 other cities around the world.

The Partnership has compiled a list of 37 variables based on geography, demographics, the economy, transportation, education, tourism, health, culture and environment. While this offered a wide variety of variables, there was, unfortunately, a great deal of missing data throughout the dataset.

***“2012 Global Cities Index and Emerging Cities Outlook,” A.T. Kearney, 2012.***

The study argues that cities often have more in common with other cities internationally than they do with their national counterparts. Likewise, it argues that that the very infrastructure of the global economy is better defined by urban-to-urban transactions than by country-to-country transactions. It compiles an index of 25 metrics across five dimensions and varying weights including business activity (30%), human capital (30%), information exchange (15%), cultural exchange (15%), and political engagement (10%). How the weights are determined is not specified however.

***“MasterCard Worldwide Centers of Commerce: Emerging Markets Index.” MasterCard Worldwide Insights, 2008.***

The study argues that the economic strength of a city comes from either the country it’s located within or from within a city’s own attributes. Cities lead their national economy in providing momentum and capacity to withstand economic shocks since global commerce is concentrating in major urban centers and cities connect global markets.

This study utilizes an index to understand 65 emerging market cities through selected variables that are thought to drive growth; these are found in the economic and commercial environment (12.8%), business environment (16.6%), economic growth and development (12.8%), commercial connectivity (13.0%), education and IT connectivity (10.6%), financial services environment (10.6%), quality of urban life (10.6%), and risk and security (10.6%). The weights assigned to the variables are based on the panel’s estimate of importance of each dimension as a measure of commercial power and reach.

***“MasterCard Index of Global Destination Cities: Cross-Border Travel and Expenditures 2Q 2011,” MasterCard Worldwide Insights, 2011.***

International travel is a powerful trend that shapes global commerce and underpins the growth of key industries such as transportation, retail, hospitality, and professional services like marketing and advertising in popular tourist destinations. Increased spending by tourists contributes significantly to local commerce and business activities, amplifying the dynamism of these urban economies. Because this index is a ranking mainly based on tourism revenue, there are no specific variables.

***“Global MetroMonitor 2012: Slowdown, Recovery, and Interdependence,” The Brookings Institution.***

This is a comprehensive study of over 300 metropolitan areas. Although we agreed that metro-level variables would be confounding to the question we posed about cities specifically, we applied their findings only when the size of the metro area would not be taken into account. That is, we applied findings only for the purposes of ratios, such as GDP per capita. However, we believe that the approach that the Brookings Institution takes is very sound, and looks less at aggregating large pools of data like other indices and more at understanding the statistical impact of a given input on the city’s economic output (in this case, GDP per capita and employment). The study also helps us to understand the level of importance that the greater metropolis has on the heart of the city and draws on the understanding that the metropolitan area and the city (by its jurisdiction) are highly interrelated.

***“Urban World: Mapping the economic power of cities,” McKinsey Global Institute, 2011.***

McKinsey argues that for businesses, government officials, and foreign investment, designing strategies around the largest cities today is not the right approach; instead, the focus should be on those cities which will provide the biggest contribution to global GDP growth over the next several years. McKinsey has developed a database of 2,600 metro areas encompassing demographic, income, and household variables, which, by examining combinations of key variables, can help determine a city’s economic contribution today and in the future.

Among the top 600 cities identified by McKinsey as the biggest contributors to GDP growth through 2025, the largest contributions will come from developing and emerging markets and “middleweight” cities (those with populations under 10 million). This approach

represents a shift from recent years, where the focus has been on developed markets and emerging economy megacities.

***“Competitive Cities in the Global Economy,” OECD Territorial Reviews, 2006.***

Similar to the Brookings Institution study, the OECD looks at the greater metropolitan area. The assessment argues that urbanization has assigned cities a much larger role in a country’s development than before. The study focuses on OECD nations and 78 metro-regions (with 1.5 million or more inhabitants). One of the main findings is that metro areas enjoy a higher growth rate than the nations they are found in.

***“Global Power City Index 2011,” The Institute for Urban Studies, The Mori Memorial Foundation***

Instead of focusing only on specific variables of finance, livability, etc., the GPCI looks at a variety of functions that express urban strength in order to assess and rank cities' comprehensive power. Thirty-five of the world’s major cities are selected and evaluated based on six main functions representing city strength: economy, research and development, cultural interaction, livability, environment, and accessibility. In addition, the report identifies a local actor (residents) and four global actors who are leading the urban activities in their cities: managers, researchers, artists, and visitors.

**Summary of Literature and Indices**

The above outlined theories and conceptual approaches look at the relationship between cities and local, regional, national and global economic growth. Most of them recognize that cities’ economic performance differs from that of their state, region, or nation; however, they do not put sufficient emphasis on local government and governance conditions (i.e. policies). Moreover, most of the examined indices do not apply specific theories to their models. They usually aggregate a large pool of variables that are expected to contribute to economic growth; however, they rarely parse out the level of significance that specific variables may have on impacting a city’s economic performance.

Most statistical research papers tend to include a literature review that summarizes economic theories that help guide a statistical model specification. Conversely, private institutions tend to base their research questions on internal empirical findings.

Although there is a growing trend of data collection at all levels of governance, many important variables, especially policy variables, are hard to measure. Furthermore, there is inconsistency between emerging theories of economic performance and the types and amounts of data being collected by cities. Thus, there is still insufficient understanding of the drivers of local economic performance and even less of the roles that local governance structures and specific policies might play. Our project intends to bridge this gap, and further elucidate the interaction between local economic performance and the policy choices made by governments.

## Research Objective

The objective of this project is to provide a model that identifies the variables that contribute to a thriving urban economy. This approach is different from earlier research, as it provides a data-driven explanation of the variables and policies that drive economic growth in cities. We are looking at a number of variables (i.e. measures of local conditions, policies and governance) that have the potential to help us better understand local economic performance. As research on these local variables is extremely limited, our study adds to the body of knowledge around which local variables are conducive to economic performance in cities.

We started our research by identifying a set of variables that could explain or contribute to city level economic performance. However, we found that while to the usual assumption is that more data leads to higher quality outcomes, therefore making our outcome variable of interest (in this case various measures of GDP at the local level) easier to explain. However, our findings and experience show that there is a flaw in the traditional logic that more information is better. We found that for a mechanically viable index it is critical to decide which variables are most important, while the excess noise needs to be removed. Therefore, the exercise of constructing a conceptual model requires the quantitative isolation of best available expected variables that in turn reveal a city's capacity for growth.

## Local Governance and the City Economic Capacity Index

In our analysis and parsing of data, we attempt to include only the variables that show a high degree of co-variance. In other words, of the variables that we had at our disposal, the variables that we chose to evaluate further and include in the index tended to move with greater synchronicity, yielding a final output coefficient (a score) that shows how synchronous they are. After achieving the highest level of synchronicity, we identified the ten variables included in the CEC index.

Ultimately, the model demonstrates that city economic capacity is closely associated with levels of GDP per capita at the local level. That is, a city that demonstrates a higher city economic capacity score is expected to have a higher GDP per capita. Those cities that have a high city economic capacity score and a lower current GDP per capita relative to the average of other cities demonstrate that they are under-performing economically, relative to their capacity (and vice versa). Conversely, the model also shows that the growth of GDP per capita<sup>2</sup> is associated with a lower city economic capacity, which we believe can be explained by convergence theory. The theory posits that a lower level of development means the city is starting from a lower economic base, and therefore has more room (i.e. capacity) to catch up to more developed cities by assimilating more advanced technologies or utilizing a lower cost of labor.

We also developed a greater focus on governance and policy variables than many of the indices we reviewed, based on an understanding that governance is one of the key ingredients of economic performance, rather than affecting economic growth exogenously as a result of commercial activity.

Therefore, the aim of the City Economic Capacity index is to identify policies and conditions that contribute to city economic growth.

### Why case studies?

One of the aims of the CEC Index is to identify relationships that tell stories about each city's individualized experience with economic performance. In practice, the data available is

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<sup>2</sup> Between the years of 1993-2007, 2007-2011, and 2011-2012

limited, but our model shows that the quality of data is still good enough to identify basic correlations that are the compass to the key drivers and contextual elements of economic propensity.

To further explore the likelihood of our client's target cities, the study juxtaposes quantitative tests with deep-dive case analysis of ten global cities. From these two components the research demonstrates an analysis of the relationships between data and experience to provide HSBC intelligence and tools for further research. We also make recommendations based on our findings for city level governance and businesses alike, and draw implications from the combination of city economic capacity score findings and case study policy analysis.

## **Methodology: Building the City Economic Capacity Index for Economic Performance.**

Our methodological approach consists of the collection of raw data from existing and new sources, the identification of key variables for city economic performance based on our conceptual model, and the use of statistical methods to measure the reliability of an index to be evaluated against our proxies for economic performance.

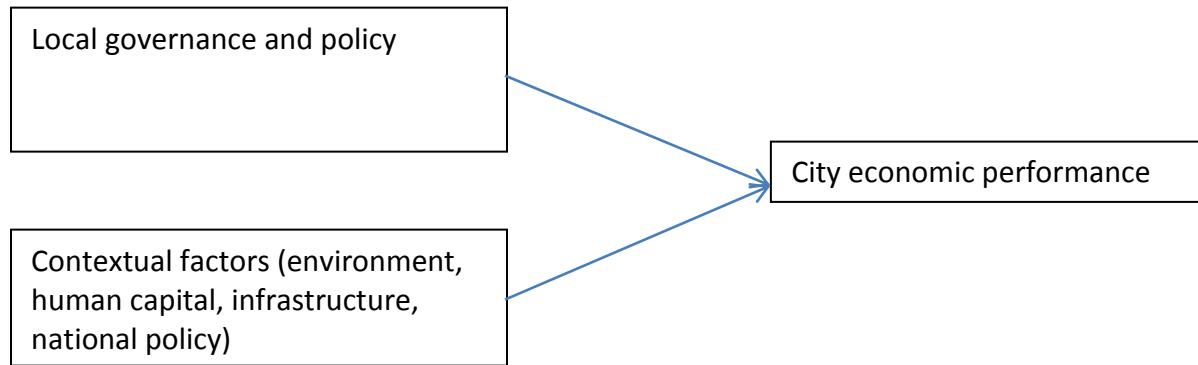
### **Economic Performance**

We use various measures around real gross domestic product (GDP) in purchase price parity terms, including: GDP in 2008 and 2012, GDP per capita in 2008 and 2012, three-year GDP growth (2008-2011), three-year GDP per capita growth (2008-2011), and annual GDP growth over three years (2008-2012) as proxies for economic performance across global cities. These proxies for performance help identify a city's economic trajectory relative to others. High performing proxies illustrate a positive economic trajectory for a city. This is attractive to residents and businesses, assuming these proxies are observable. Significantly high, and/or increasing, per capita GDP signals higher economic opportunities and benefits to current and potential residents, and indicates a growing domestic market for businesses and retail. Similarly, high and/or increasing GDP levels signal deep or high-growth market opportunities for private sector businesses to make significant investments (i.e. financing, providing and developing human capital, or providing proprietary research and technology, etc.).

The attractiveness of high performing proxies draws people and business to the city, and this, in turn, further reinforces economic performance. Conversely, low performing proxies illustrate a negative economic trajectory, and make the city less attractive for residents and businesses to locate. For these reasons, the influence of economic performance on decisions to locate has significant implications for investment and future economic performance.

## Conceptual Model

According to our hypothesis, local government policies influence city economic performance within a system of other influential contextual variables.<sup>3</sup>



As with any analysis of economic performance, the directionality of influence is ambiguous. Theoretically, we expect that economic performance can have a positive effect on a city's human capital, infrastructure, and other characteristics just as easily as these features can, in turn, lead to strong economic performance. However, it is also appropriate to assume that city-level policy measures are likely aimed at stimulating economic growth. Therefore, our hypothesized direction of flow can be safely used to model our analysis.

Attempting to quantitatively or qualitatively identify all the influencing variables for city economic performance would well exceed the scope of our analysis. Similar research examining national-level performance has documented the ever-growing list of variables that conceptually and mechanically participate in explaining growth.<sup>xviii</sup> There is no reason to expect that the list of variables associated with city-level growth would be any shorter.

This significant hurdle poses two critical questions for researchers: 1) what tools can we use to paint a more cognitively and conceptually simplified picture of the variables that influence economic performance and, 2) how can we examine the effect that these variables actually have on economic performance?

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<sup>3</sup> We built our model based on Ester R. Fuchs' analysis of local economic performance and the role of city governance and policy in her article *The Future of the City: Governing the 21st Century City* (2012).

## Question 1: Analytical Tools

The answer to the first question can be found in simple tools such as rankings, scores, and indices. These types of tools seek to consolidate numerous data points for an observation into a single “snapshot” of the concept that those variables are purported to explain. Mechanically, an index can be constructed from any existing set of data. All that is required is to identify the component variables of interest, rank or convert the data points to a common scale for a set of observations, and use simple summative or weighted operations to combine the data points into a single number summary for each observation. However, mechanical simplicity does not indicate that an index consisting of conceivably related variables is of particular value for analysis. There are ways, though, to improve the rigor of an index by analyzing its statistical reliability.

Borrowing tools from psychometrics, we can not only construct an index but also ensure that it is reliable in describing the concept we wish to identify. In our analysis, we hypothesize that local policies and other contextual variables will determine that city’s economic capacity. In other words, we can say that local policies and contexts define a city’s economic aptitude, and that aptitude will then translate into economic performance. Analytically, then, we are interested in building an index that reliably captures a city’s economic aptitude. To do so, we identified and collected data for critical variables that are themselves measures of a local policy or that serve as a proxy for a policy concept, as well as a series of theoretically important contextual variables.

## Question 2: Influence on Economic Performance

Ideally, to truly understand the influence that local policy has on economic performance, we would collect data on a comprehensive list of explanatory variables and control variables; we would then run a regression of these variables on a proxy for economic performance (e.g. average GDP growth), and analyze our resulting coefficients to identify the effect that given policies had on performance.

Unfortunately, such a model is impossible within the scope of our analysis for a number of reasons. Firstly, and most importantly, the number of potential explanatory variables could

be impractically large, as evidence from national-level research shows.<sup>xix</sup> Although we succeeded in developing a “wish list” of such potential explanatory variables (see Appendix 5), such a large number of variables is unwieldy in regression. Additionally, we could not be sure that we had properly specified our model, which would result in large bias in our coefficients. Another limiting factor is our choice of cities for analysis. Because of limitations in data collection and the areas of interest for our client, our set of cities is likely to introduce bias in any regression context; error terms are likely to be non-random, and we cannot be sure that these cities are a trustworthy estimate of the true population values.

In lieu of a regression analysis, we have instead examined simpler relationships between our series of explanatory variables in index form and proxies for economic performance. Simple correlations and plots can provide preliminary insight into the mechanisms at work between local government and economic performance which can be examined in further detail in future research.

## Data

### Sources

We secured raw data from PricewaterhouseCoopers’ (PwC) *Cities of Opportunity* report (2012) to serve as our principal data repository. However, given certain limitations to PwC’s data, we had to make a number of adjustments and corrections:

*Scores:* Many of the component variables of PwC’s index were constructed as scores, based on multi-item summative measures, rankings, or borrowed external indices. Without access to the original data from which these scores were constructed, it is impossible to fill in any missing values for either PwC cities missing a score, or for those cities of interest for our investigation that were not in PwC’s analysis. This effect limited our use of these variables, as discussed below.

*Imputation:* Values for certain variables required imputation from other sources. If data could not be found at the city level, PwC often substituted values from the national level, or in some cases, from similar subnational entities (such as substituting values from Dubai into Abu Dhabi). Although imputation helps to close data gaps, the use of national-level or other

substitute data ran counter to our research objective. This again limited the reach of some potential variables for analysis.

Data were also supplemented with the New York City Global Partners Resource Bank (Appendix 4).

## Collection

Data were collected through in-depth, city-specific research that targeted the true values of variables for cities, instead of relying on national-level or substitute data. Many of the data points were collected directly from official city websites, particularly those related to finances and budget.

## Variables

As previously mentioned, practical limitations to data collection necessitated that we rely on variables from existing PwC or NYC Global Partners datasets, and on variables for which city values were collectable. We sought to include variables that captured the theoretically important local-policy and contextual variables that could influence economic growth:

### Human Capital

- *Percent of population that is foreign born*
- *Percent of population with higher education*
- *Life expectancy*
- *Population density*

### Physical Infrastructure

- *City area (km<sup>2</sup>)*
- *Transportation coverage, as the total length of rail in km divided by the city's area*

### Livability/Quality of Life

- *Average PM 10 air pollution rating*
- *Public libraries per 100,000 residents*
- *Rent as percent of GDP per capita on a monthly basis (in lieu of income)*

### Business Environment

- *Total annual tourists (foreign and domestic)*
- *Total tourism revenue (USD billion)*
- *Total number of hotel rooms*
- *Percent of population working in finance/commerce*
- *Number of Global 500 companies present*
- *Numerical ranking of municipal bond rating*
- *Number of days to start a business*

### **Governance**

- *Country's Freedom House score*
- *The number of democratically elected legislators per 100,000 residents*
- *Public expenditures per capita (natural log)*
- *Number of municipality-oriented international organizations the city belongs to (out of six possibilities)*

### **Index Construction and Reliability**

To build a statistically reliable index, we can tabulate the variables of interest and examine their individual behavior in terms of expected values and variance, as well as examining how these variables co-vary with each other. We chose to assess the consistency of these items using Cronbach's alpha. Alpha is a measure of inter-item consistency reliability, "concerned with the homogeneity of items within a scale."<sup>xx</sup> It examines the covariance of items in a "test" (index, in our parlance), and identifies those items, which co-vary; in other words, those items whose variance changes in the same direction as another item. An average inter-item covariance is calculated from a matrix of item covariances, and this average covariance is used to calculate alpha:

$$\alpha = K\bar{c}/[\bar{v} + (K - 1)\bar{c}]$$

where  $K$  is the number of variables in the test,  $\bar{c}$  is the average of all covariances of the component variables, and  $\bar{v}$  is average variance of each item.

A higher value of alpha indicates that there is better cohesion of the items in the index—in other words, the items vary together. If one item increases, the others tend to increase as well.

We relax two key assumptions in our use of alpha. First, alpha is not robust to non-normal distributions.<sup>xxi</sup> Given our anticipated sampling bias, we anticipate non-normal distributions in our data, which could affect the calculation of alpha. Second, alpha is not resistant to missing data. This weakness not only jeopardizes the calculation of alpha, since data points were not findable for all variables across all observations, but also limits our selection of variables to those with sufficiently complete values for all observations.

Iterations of alpha calculations in Stata identify those variables, which have less covariations than other variables in the system. By removing these variables from the index, one by one, we achieve better cohesion among our component variables, and a higher alpha.

We began by linearly scaling the values of all our input variables into a 0-1 range, where the minimum value in the distribution became 0, and the maximum value became 1. This was calculated as follows:

$$Y = (x - a) / (b - a)$$

where  $Y$  is the observation's value on the 0-1 scale,  $x$  is its original value,  $a$  is the distribution's minimum, and  $b$  the distribution's maximum.

Scales were reversed for those variables that correlated negatively to city economic capacity, such as air pollution levels. (Stata does not require scales to be reversed in advance to calculate alpha, as it automatically reverses the values during calculation).

We iterated the calculations of alpha on the scaled component variables until we reached our highest alpha score, resulting in a final index of 10 component variables (see Findings below). A simple summation of each observation's values on the 10 scaled component variables yielded a City Economic Capacity (CEC) score for that observation. The maximum CEC score is 10 and the minimum is 0.

## Key Results and Findings of data analysis and CEC Index

### Summary of Statistics

In the data analysis of the project, we created input variables such as education, life expectancy, transit etc., and an output variable, namely, economic performance. The raw values, the number of observations, the means and the standard deviations are listed in the table below:

Variable	Obs	Mean	Std. Dev.	Min	Max
area	33	752.1524	967.9732	26.15	5155.01
library	33	2.868182	2.744716	.14	11.1
forborn	32	.224575	.188616	.0046	.783
educ	33	.2204242	.1383101	.004	.59
tottour	33	26.02849	46.81481	.36	186.08
tourrev	32	10.69552	11.43661	.261	48.37
hotel	31	50712.9	60440.26	3700	334000
finance	32	.2207777	.0952231	.048	.3990572
global500	33	6.575758	11.12157	0	47
airpoll	32	44.1875	30.856	12	132
freedom	33	2.393939	1.898838	1	6.5
lifeexp	33	76.84818	6.885991	55.5	82.9
transcov	29	43.98172	54.93704	0	236.06
busstart	29	19.86207	22.27062	2	119
legdens	33	2.145402	2.626582	0	11.58321
lpubexpcap	33	7.865636	1.592017	4.018	10.495
d_gdp3y	33	.2560909	.53987	-.508	1.848
d_pop	33	.0846364	.1581352	-.05	.663
density12	33	30937.45	69671.42	1098	314058
d_density	33	.1821327	.5760457	-.0503	3.26779
rentinc	32	.23275	.213521	.034	.925
intorgs	33	3.393939	1.730957	0	6

### Construction of the CEC Index

Our data team first started with 20 initial variables (which are described in depth in the report's Methodology section). We used the tolls, performed operations, and found the correlation score to be very low. So we removed variables, such as the percent of population that is foreign born, to allow the coefficient to increase. During the process, we reiterated 13 times and dropped many variables until we found that the 10 remaining variables highly related to each other. We found that these variables had the best covariance. As variance increased with one, it increased with the other.

The 10 variables that dropped out:	The 10 variables that remain:
<b>Human Capital</b>	
<ul style="list-style-type: none"> <li>• <i>Percent of population that is foreign born</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Percent of population with higher education</i></li> <li>• <i>Life expectancy</i></li> <li>• <i>Population density</i></li> </ul>
<b>Physical Infrastructure</b>	
<ul style="list-style-type: none"> <li>• <i>City area (km<sup>2</sup>)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Transportation coverage, as the total length of rail in km divided by the city's area</i></li> </ul>
<b>Livability/Quality of Life</b>	
	<ul style="list-style-type: none"> <li>• <i>Average PM 10 air pollution rating</i></li> <li>• <i>Public libraries per 100,000 residents</i></li> <li>• <i>Rent as percent of GDP per capita on a monthly basis (in lieu of income)</i></li> </ul>
<b>Business Environment</b>	
<ul style="list-style-type: none"> <li>• <i>Total annual tourists (foreign and domestic)</i></li> <li>• <i>Total tourism revenue (USD billion)</i></li> <li>• <i>Total number of hotel rooms</i></li> <li>• <i>Percent of population working in finance/commerce</i></li> <li>• <i>Number of Global 500 companies present</i></li> <li>• <i>Numerical ranking of municipal bond rating</i></li> <li>• <i>Number of days to start a business</i></li> </ul>	
<b>Governance</b>	
<ul style="list-style-type: none"> <li>• <i>Number of municipality-oriented international organizations the city belongs to (out of six possibilities)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Country's Freedom House score</i></li> <li>• <i>The number of democratically elected legislators per 100,000 residents</i></li> <li>• <i>Public expenditures per capita (natural log)</i></li> </ul>

However, the variables had very different units of measurement, e.g. a city's GDP and the number of public library. This made it difficult to compare them and to calculate scores. Therefore, the team scaled them linearly from 0 to 1, making them unitless and maintaining their variances.

Then we started to run the operation for Cronbach's alpha. According to the theory of Cronbach's alpha, a value of 0.7 is sufficient for the data to make sense, which meant our coefficient of 0.8276 was fairly reliable (see table below and Appendix 2).

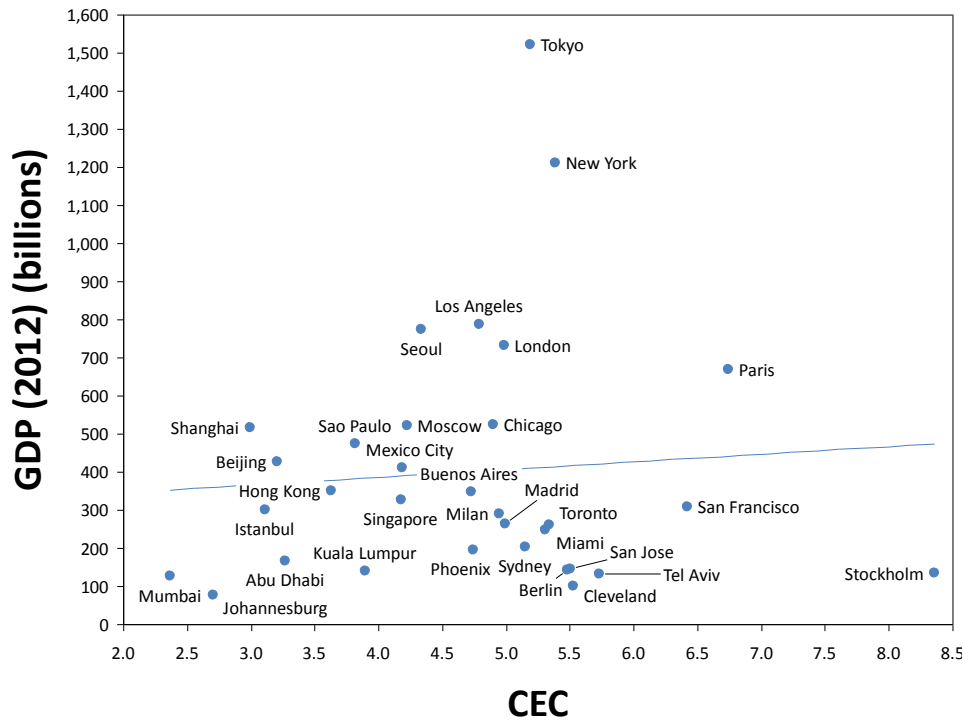
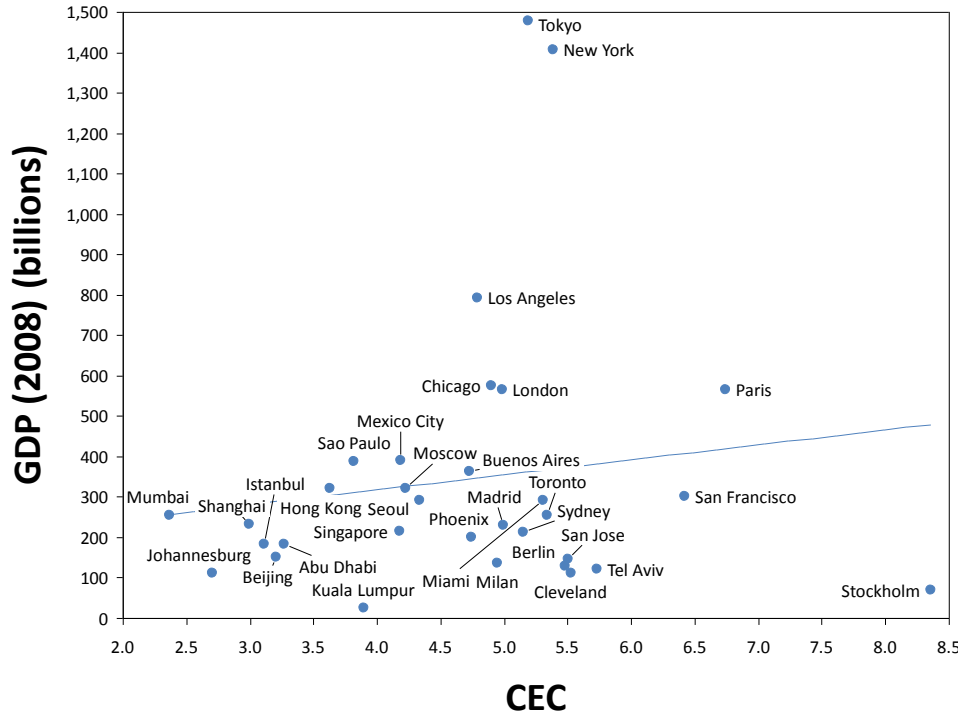
Finally, we took the sum of these 10 variables for each city, in order to generate the final City Economic Capacity (CEC) score.

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
library10	33	+	0.6163	0.4983	.0210104	0.8140
educ10	33	+	0.7381	0.6548	.0198281	0.7978
airpoll10	32	-	0.7450	0.6532	.0194757	0.7980
freedom10	33	-	0.6568	0.4979	.0192884	0.8184
lifexpl0	33	+	0.5220	0.3940	.0218514	0.8229
transcov10	29	+	0.6529	0.5540	.0208718	0.8096
legdens10	33	+	0.4872	0.3618	.0226102	0.8259
lpubexpcap10	33	+	0.5281	0.3993	.0218475	0.8218
density12k10	33	-	0.6069	0.5041	.0214644	0.8136
rentinc10	32	-	0.7713	0.6969	.019578	0.7958
Test scale					.0207815	0.8276

## CEC Index on Economic Performance

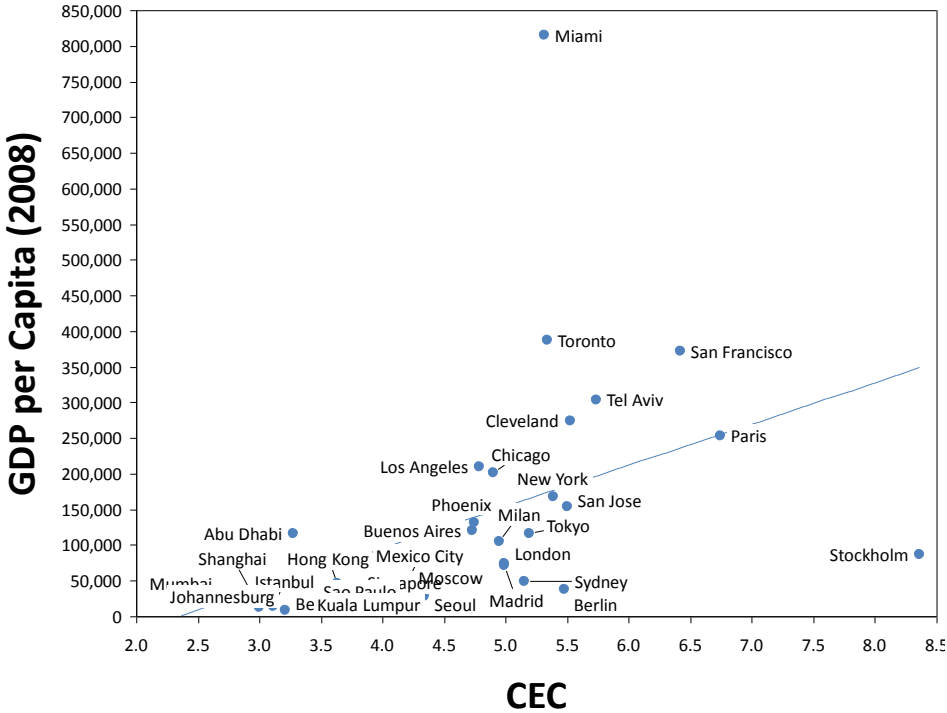
After identifying the ten most relevant variables, we calculated the CEC score for all the 10 sample cities by summing the scores of the 10 variables. Then we correlated the CEC scores with proxies for economic performance such as the GDP in the years 2008 and 2012, GDP per capita in the years 2008 and 2012, as well as the average GDP, and some additional variables.

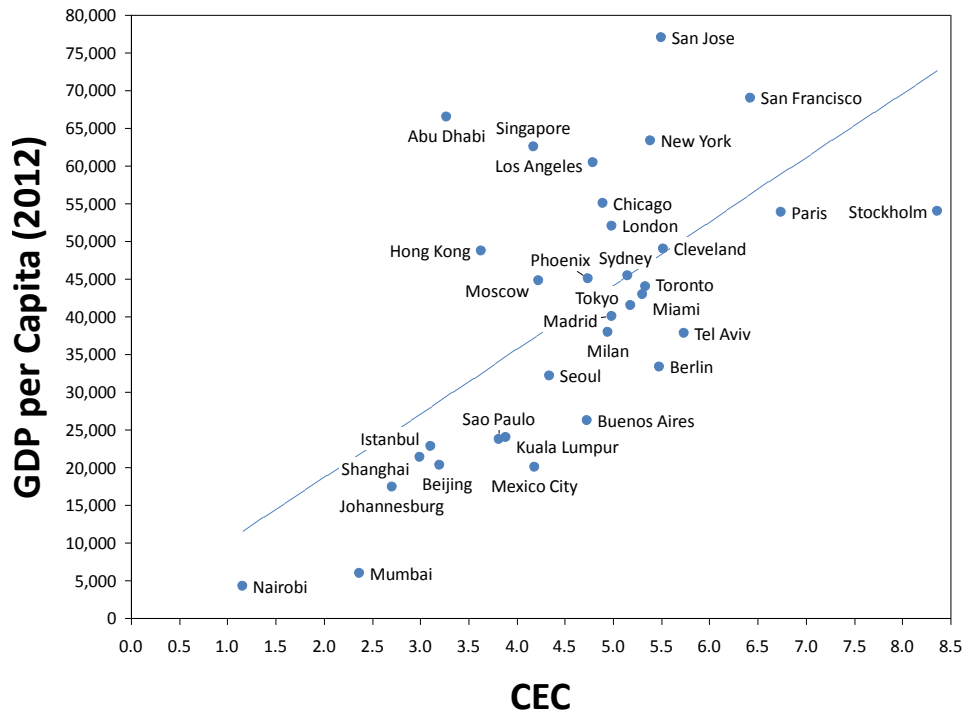
The graphs below show the correlations between cities' individual CEC scores and their GDP in the years 2008 and 2012:



From the graphs we found that the covariance was large and there were two obvious outliers, but later we thought overall GDP could not truly reflect the economic performance because city with larger population would probably have higher GDP but lower economic growth. Therefore, we used GDP per capita to calculate the correlation.

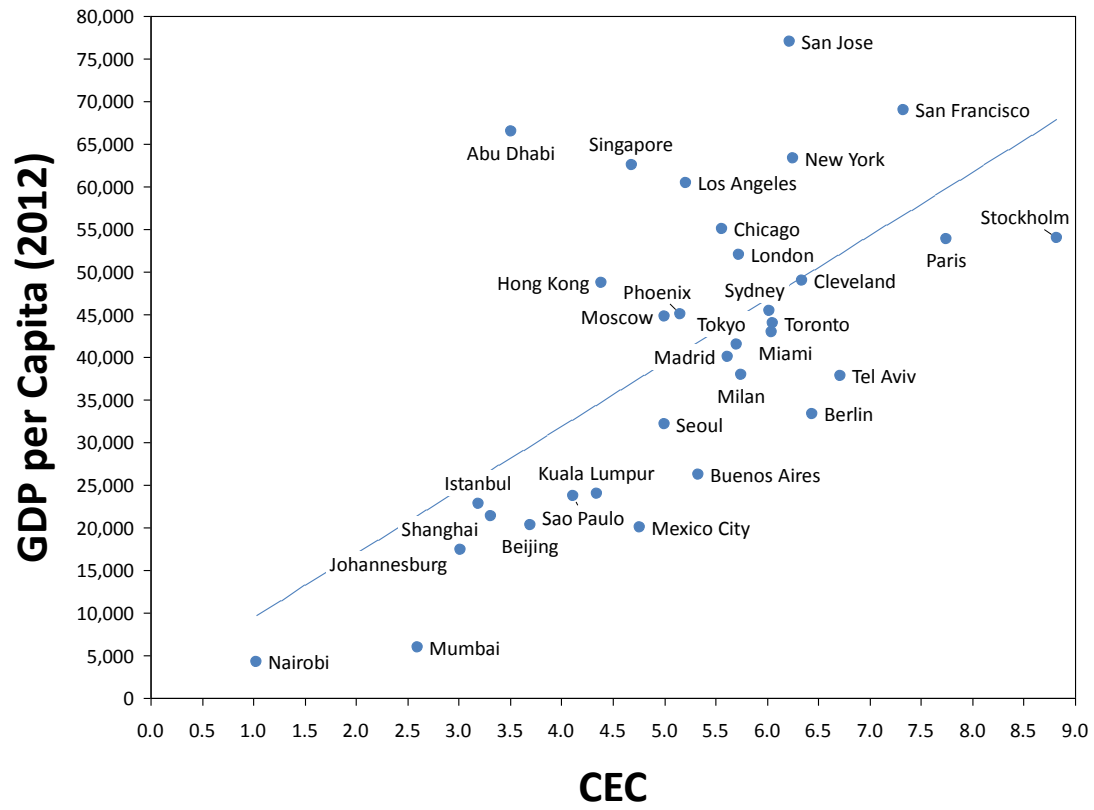
This second set of graphs shows the correlations between cities' individual CEC scores and the respective cities' GDP per capita, in the years 2008 and 2012:





From the graphs we can see the covariance became smaller, though there was still an outlier from the biased sample. The reason why we used GDP per capita instead of the 3-year GDP gap was that economic growth could not reflect the true economic performance of a city, since high economic growth is a characteristic of cities in a developing stage.

However, we found the preliminary run was unreliable because GDP was calculated on the metropolitan level while our population figures were city-only. Also, we discarded the 2008 data because it was unreliable and we only used the 2012 GDP per capita data. After changing population figures to metro area to match the GDP data, we witnessed positive correlation (0.62) between our CEC score and the GDP per capita levels of the year 2012:



## City Case Studies

### Introduction

The detailed collection of case studies that follows is a complement to the data-driven analysis of city economic performance described above, and serves as a qualitative ‘deep dive’ into the roles that city governance and policy play in the mix that determines a city’s capacity to grow. Building on the hypothesis that local governance and policy influences local (and national) economic performance, we took a closer look at what Tel Aviv, New York, Miami, Cleveland, San Jose, Toronto, Phoenix, Shanghai, São Paulo and Johannesburg are doing (and not doing) to catalyze and maintain economic performance. In our research we posed the following guiding questions: What exists at the city level in terms of growth-enabling policies and local government initiatives for economic growth? What is missing? And how does governance structure, fiscal capacity and operational capacity<sup>4</sup> (i.e. the ability to deliver and implement programs and services) determine or influence a city’s approach to economic development?

The ten case studies that follow delve into each of these questions, seeking to unpack the urban-level conditions and ingredients required to foster economic performance in order to glean a sense of the direction of growth in each of these economies, along with implications for city governments and business. In addition to providing background on the economic development trajectories of each city, we look at the systems of government and dynamics within city government and leadership that affect and determine policy choices and the ability to enact and implement pro-growth initiatives and/or sector-specific strategies (e.g. cluster-specific incentives and investments). We also highlight key policy areas of interest for human capital (e.g. immigration), physical infrastructure (e.g. transportation systems and mass transit), livability (e.g. housing and security), and business environment (e.g. local economic clusters).

The ten cities detailed below were chosen based on their regional and global diversity, client interest (i.e. at the request of HSBC) and on a preliminary assessment of their economic

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<sup>4</sup> As described in Ester R. Fuchs’ analysis of local economic performance and the role of city governance and policy in her article *The Future of the City: Governing the 21st Century City* (2012).

performance as either already competitive, on the verge of competitiveness, or not yet competitive. These cities play a role in global, national and/or regional economies and have the potential to either continue growing or regress, based on a mixture of policies and existing local socioeconomic conditions. The central role of governance and policy in our qualitative city-level analysis complements and extends the information provided by the city economic capacity and scoring variables of the CEC index.

Ratings motivate comparison, and comparison motivates performance. By rating and comparing a city's governance and policies for growth, in addition to existing conditions and business environment, our aim is to build on and extend how city economic indices are built, how cities are ranked globally, and point to policy interventions that may help cities on the edge of growth and development.

### **Summary of Case Study Findings**

Most cities that exhibit sustained economic performance have developed policies specifically aimed at increasing livability and cultivating a high quality workforce. In both the construction of the CEC index and the analysis of our case studies, we find that governance and policy play a significant role in determining a city's economic performance. Three out of the ten variables in our index are directly related to governance, i.e. legislative density, or number of democratically elected legislators per 100,000 residents; public expenditures per capita; and political freedom score, which is based on Freedom House's national index. Our findings and qualitative case study analysis strengthens the case that a city's governance structure and capacity has the potential to either help or inhibit economic performance.

Our case studies allow us to delve into the issue more deeply. Overall, we find two main trends: firstly, that a lack of coordination between the multiple levels of government can severely impact a city's economic performance, and that a disconnect between national, regional and city governments can lead to suboptimal outcomes in terms of resource allocation and autonomy at the city level and, secondly, the absence of democratic accountability can be a major hindrance to economic performance as decision makers are not accountable to constituents and may lack the incentives to develop and enact pro-growth policies.

In terms of policy, we have seen that all high CEC cities have in place laws, regulations and plans to improve economic performance and facilitate economic activity. Tel Aviv's policies to foster cultural vibrancy and create an inclusive environment for all kinds of minorities, are seen as crucial to the city's ability to attract a high quality workforce, and thus essential to the city's role as leader of Israel's hi-tech sector and one of the world's major hi-tech hubs. While in New York City, Mayor Bloomberg's efforts to improve the quality of education have led to significant improvements in graduation rates and test scores. In addition, PlaNYC in New York City aims to improve the city's environmental quality and livability as a way to maintain a competitive edge against other global cities. Similarly, Miami's Miami 21 Project places environmental sustainability at the forefront of the city's urban planning and economic development, prioritizing parks and better public transportation for its future growth. And in San Jose, the city is working to revive its downtown area through cultural development and better public transportation after years of losing businesses and residents to surrounding municipalities.

Our case studies also indicate that livability or quality of life variables are often one of the greatest threats to cities' sustained economic performance. While Shanghai has experienced years of impressive growth based on manufacturing and its growing business and financial sectors, local leaders are beginning to acknowledge that high housing prices, a lack of green space, and poor air quality threaten its competitiveness in relation to other global cities like New York, London, and Tokyo. Sao Paulo is also experiencing difficulties managing variables of livability and urban planning such as traffic congestion and affordable housing supply, and a lack of coordination between the local, state, and federal governments is threatening the city's ability to effectively deal with the issues.

Many cities struggle with inequality – Tel Aviv, Miami and Johannesburg provide examples of the existence of sharp disparities among urban dwellers. Inequality is affected by investments in human capital. A city's human capital is a combination of numerous factors, including education investments, incoming talent in the form of immigration, and investment in cultural capital (we used libraries as a proxy variable). Cities that struggle with aspects of human capital tend to struggle with overall city economic capacity – Johannesburg lacks formal

responsibility for education within its boundaries and lack of access to professional training is limiting prospects for residents seeking opportunities in its financial and service economy. São Paulo invests in early education, but a lack of coordination among city and state efforts on education may limit the impact of local efforts. Toronto, Miami and Tel Aviv have capitalized on another area of human capital – immigration and the human capital of foreign-born residents. Favorable policies devoted to integrating new immigrants ensure that their talent and education benefits the local economy either through expertise or entrepreneurship.

Cities in all stages of economic performance and capacity struggle with transit infrastructure – Tel Aviv, Toronto, San Jose, Johannesburg, Shanghai and Sao Paulo are all in the process of re-directing revenue and/or developing partnerships for mass transit projects to ease congestion and increase coverage. At the juncture of physical infrastructure and livability, the housing and real estate sector provides a mixed picture across cities. Phoenix has benefited in part from lax urban planning and building codes that have allowed for low real estate prices, but the provision of public services risks becoming unaffordable and its water supply risks becoming unsustainable if the city continues its pattern of geographic sprawl. Toronto is also facing key quality of life challenges as a result of crumbling transportation and affordable housing that are beginning to jeopardize the city’s continued economic performance.

Cities that manage to maintain critical urban density both in terms of geography and human capital will do better in terms of future economic performance. Housing and transit options go a long way in increasing both, as do investments in livability variables along with a focus on providing resources to cultivate environmental sustainability and equitable opportunities for all residents via education and openness to immigration.

### **Note on Visual Representations of CEC scores**

We are using “heat maps” to show how variable scores (0-1) of each city compare relative to others. Colors are assigned based on a percentile distribution. Values that appear greenest are in the 90<sup>th</sup> percentile or above; yellowest represents the 50<sup>th</sup> percentile; and reddest represents the 10<sup>th</sup> percentile and below. This is especially useful in cases where the values may not be normally distributed or skewed due to outliers. For example, the variable Density was heavily skewed due to cities like Mumbai and Beijing causing the 50<sup>th</sup> percentile to

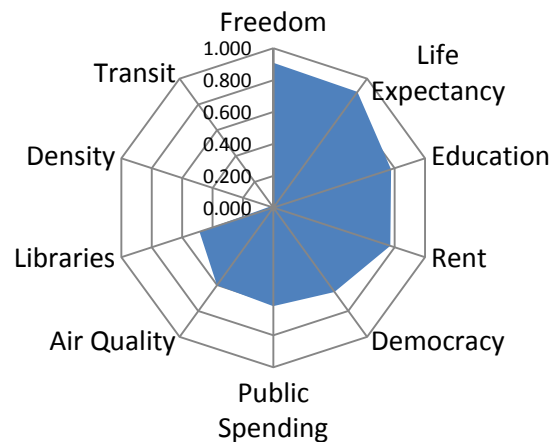
equal 0.17. As a result, cities like New York which scored a 0.03 distribute closely to the 50<sup>th</sup> percentile and are therefore yellow. Additionally, when the values themselves were controlled for outliers at the 10<sup>th</sup> and 90<sup>th</sup> percentiles (see Errata), only the highest value appeared greenest and the lowest value appeared reddest since the 10<sup>th</sup> and 90<sup>th</sup> percentiles were already applied; all other values were colored based on their relative distribution to the 50<sup>th</sup> percentile.



## TEL AVIV: CEC Index Ranking #1

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Freedom	0.909
Life Expectancy	0.898
Education	0.777
Rent	0.772
Democracy	0.653
Public Spending	0.617
Air Quality	0.600
Libraries	0.486
Density	0.022
Transit	
<b>CEC Score</b>	<b>5.734</b>



### City Economic Capacity Score Analysis

With a CEC score of 5.734 out of 10, Tel Aviv is the highest-ranked city in terms of city economic capacity out of the ten we focus on. As the graph shows, most of its values are close to, or even higher than, those of the U.S. and Canada. However, one of the city's critical weaknesses is transit. Although data for it is unavailable, this might reflect that the city does not pay enough attention to this issue. A large number of people commute from the metro area to the municipality and vice versa every day, which leads to massive congestions. This might also be one of the reasons why Israel's air quality score is low compared to other developed cities.

In addition, as the data show, high rents are another major issue that adversely affect city economic capacity. Housing is very limited relative to demand, and there were a number of demonstrations recently in Tel Aviv due to the high prices of living. The reason why this measure is still smaller, on average, in Tel Aviv than in most of our case study cities, might be due to the high inequality in the city: while those who work in the city's booming high tech industry earn almost as much as people in the U.S. Silicon Valley, people in other professions (especially teachers) earn much less than the OECD average.

## Economic Condition

Tel Aviv is the most independent municipality in Israel and has independent municipal policy for a number of issues traditionally reserved for national government authority. While state interventions block other cities, especially the capital Jerusalem, from becoming globally integrated, the lack of such interventions allow Tel Aviv to operate as an open city incorporated in the global economy.<sup>xxii</sup> The city is a post-industrial economy focused on hi-tech industries and a modern service economy and is home to the major financial and economic institutions, newspapers, publishing houses and art institutions in the country.<sup>xxiii</sup> It plays a central role in Israel's economy as the country's banking and finance center, where business and financial services are the dominant sectors of employment: combined with trade they account for half of the jobs.<sup>xxiv</sup>

We will look at the Tel Aviv metropolitan area, rather than the Tel Aviv-Yafo municipality alone, when discussing economic activities. This metropolitan area is composed of three territorial units (defined by the Israel Central Bureau of Statistics): the Tel Aviv District, the Central District and the Ashdod natural area. While the city itself has 404,800 inhabitants, the Tel Aviv Metropolitan Area has a population of 3,401,700, which comprises 42% of Israel's total population.<sup>xxv, xxvi, xxvii</sup> The Tel Aviv Metropolitan area has grown around the historical core of the city of Tel Aviv-Yafo and includes 25 towns, 33 local authorities, and 13 regional councils, which comprise 198 villages.<sup>xxviii</sup> The city has a metropolitan core economy, in which the city residents make up only 35% of the city's workforce, while 65% of jobs are filled by commuters from the metropolitan area. Moreover, 30% of city residents work in the metropolis and beyond.<sup>xxix</sup>

## Governance Structure and Budget

While the national government plays a major role in the municipal issues for other Israeli cities, its impact on Tel Aviv's policies is considerably weaker.<sup>xxx</sup> Tel Aviv was founded in 1909 near the Arab city of Jaffa (Yafo). The current municipal government is in charge of both localities, thus the city is often referred to as Tel Aviv-Yafo. Tel Aviv has always been secular, even though it has been referred to as the first Hebrew city. Since its beginning, city leadership placed a strong emphasis on self-government, encouraging municipal and financial

independence from the national government (and the British Mandate, prior to 1948). The city is growing rapidly due to overseas property investments encouraged by city leaders; the city also benefits from a long tradition of Jewish immigrants from Europe, Russia, the Middle East and Africa.<sup>xxx1</sup>

The metropolitan area comprises a functional economic unit and a composite spatial labor market; nevertheless, the metropolitan area is highly segmented politically. There is no metropolitan governance structure, and the Tel Aviv Metropolitan Area as a geographical-administrative entity was only defined for the purpose of statistical analysis. There are, however, some single-task metropolitan-wide public organizations, comprising of ad-hoc groupings, with sectorial responsibility for the provision of public services. Municipal authorities are responsible for the implementation of policies at the local level (e.g. providing education and welfare services), as well as for local planning, which still requires district-level approval from the relevant ministries. In the Tel Aviv Metropolitan Area there is no institutionalized form of coordination between local authorities, except for an organization of several cities to deal with sewage.

An important law for the localities of Israel, the Municipal Corporations Ordinance, was passed in 1934 when Great Britain held the League of Nations Mandate for Palestine. Its most current form, the Municipal Corporations Ordinance 5724-1964 is the basis for local government structure and its relations with government ministries. According to the governance structure information provided by the Israeli Ministry of Foreign Affairs<sup>xxxii</sup> website, the local authorities in Israel are legal entities, whose competencies and jurisdictions are defined by ministerial orders (mainly from the Ministry of the Interior). Their powers can be grouped in six main areas: legislation; taxation; financial management; joint activities with other bodies; and various general powers.

The services municipalities provide include social welfare services as well as physical infrastructure, roads, water supply, refuse collection and disposal system, sewage, and parks. They are also in charge of environmental protection (e.g. public health, nuisances and cleanliness); while education services are provided with the cooperation of the Ministry of

Education, Culture and Sport. Local authorities also provide financial support to cultural and sports activities (e.g. libraries, museums, youth organizations, theaters).

The municipality of Tel Aviv-Yafo is governed by a mayor and municipal council (with 31 members), democratically elected for five-year terms. In theory, a majority vote in the city council could oppose the mayor's policies, but this happens very rarely as councilors usually focus only on their issues of interest, and have little influence on the mayor.<sup>xxxiii</sup> The mayor and his team are the ones who make almost all local policy.<sup>xxxiv</sup> For FY 2013 the municipality's website reports a city budget of 4.89 billion NIS (approximately \$1.2 billion).<sup>xxxv</sup> In the 90's Tel Aviv had been running a large deficit, but this has since improved.<sup>xxxvi</sup> Mayor Huldai announced on the municipality's website that he has eliminated the budget deficit, and the year 2008 ended with a NIS 21 million (\$5.6 million) surplus.<sup>xxxvii</sup>

Local authorities in Israel are empowered to collect their own local taxes and various other payments for services and concessions. Municipalities prepare their own budgets, which then must be approved by the Ministry of the Interior.<sup>5 xxxviii</sup> The most recent budget proposal of the Tel Aviv Municipality reports that 86% of the city's incomes are self-collected, and the remaining 14% is a contribution from the national government.<sup>xxxix</sup> The major source of revenue is property taxes, which is 71% of the city's incomes. Property taxes collected from residents are the major funding source of most Israeli cities, but in Tel Aviv much of the burden falls on businesses.<sup>xl</sup> Traditionally, 73% of property taxes is paid by businesses (not residents), and the website of the municipality reports that in the first decade of the new millennium there was a rise of 59% in the city's income.

## Local Policy

### Local Policy #1: Human Capital – Immigration

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<sup>5</sup> According to the Ministry of Foreign Affairs, the revenues of local authorities come from three sources: locally-generated income, government participation and loans for balancing the ordinary budget. Until the mid 1980s, government participation was much higher than local revenue, later this proportion has reversed. The government's financial participation falls in two main categories: the general grant and earmarked participation. While the former is not tied to any specific expenditure, the latter is intended to cover the salaries of educational personnel, and the full or partial coverage of local projects. Most of the earmarked funds come from the Ministry of Education, Culture and Sport and the Ministry of Labor and Social Welfare.

Since its establishment in the early 20th century, Tel Aviv has been absorbing Jewish immigrants from Europe, Russia, North Africa and the Middle East. Most of these immigrants are highly educated and very entrepreneurial and choose Tel Aviv for its openness. David Brooks, columnist for the New York Times, writes that the technological cluster of Tel Aviv is “created by a confluence of cultural forces, not money.”<sup>xli</sup> The economic location of the city has played a large role in making the city a viable location for immigrants. Jaffa (Yafo) has been the main entry port of Jewish immigrants, and became the residence of the Jewish elite. The highest educated immigrants chose to reside there even after the central government started encouraging the dispersal of the population.<sup>xlii</sup> The city also has a number of higher education institutions that are attractive for immigrants, among them Tel Aviv University.<sup>xliii</sup>

Since the early 1990's, however, the city has to deal with a new form of immigration as well, namely non-Jewish workers. The city started allowing the recruitment of overseas workers in 1993 to find a “temporary substitute” for Palestinian workers during the intifada. These guest workers were estimated in 2001 to be somewhere between 8 and 17% of the population. To cope with the influx of immigrants Israel adopted the strict guest worker policies that characterized northern Europe in the 60s and 70s.<sup>xliv</sup> Although most of Israel is very strict on non-Jewish immigrants, Tel Aviv is influenced by global attitudes of citizenship.<sup>xlv</sup> The majority of labor migrants choose Tel Aviv above Jerusalem (their exact number is unknown, but it is estimated that Tel Aviv is home to 100,000-150,000 of them, while their number in Jerusalem is 30,000-40,000).<sup>xlvi</sup> In policy terms this means that, although it is not determining their legality, Tel Aviv treats migrants as urban residents who are entitled to municipal services, and provides means to deal with their daily problems regarding welfare, health and education issues. In 1999, the city established a special unit to help out migrants who reside in the central bus station area (which is home to the majority of labor migrants), and it has also established a forum for foreign workers to advise the mayor in issues of labor migration.<sup>xlvii</sup>

The municipal government of Tel Aviv municipality is also the only official body in Israel that accepts the existence of a gay community with special needs, and provides a number of services to deal with their problems, such as shelters for gay and lesbian youth, the municipality, special tax reductions for gay couples, and initiatives to tackle homophobia.<sup>xlviii</sup>

## Local Policy #2: Physical Infrastructure – Transportation

Tel Aviv is well-connected internationally via the Ben Gurion Airport. However, there are a number of transport-related problems when we look at the city in relation to its metropolitan area or to the rest of the country. The condition of the Tel Aviv area's public transportation has been the topic of a large number of newspaper articles and conferences recently. With a large number of commuters, congestion is very frequent and getting worse. The city's population has a preference for private cars,<sup>6</sup> instead of public transportation.<sup>xlix</sup>

The public transportation system is very underdeveloped. Haaretz reports that “[i]n Prague for every 1,000 people, 200 meters of road are allocated to lanes reserved for public transportation; in Zurich it's 350 meters and in the Tel Aviv area only 14 meters. The number of public transportation rides in the Tel Aviv area is 133 per person annually, compared with more than 300 in cities such as Rome, Munich and Amsterdam.”<sup>l</sup> Further, in order to deal with the problem, there are plans to set up a metropolitan transportation authority.<sup>li</sup>

There are also national efforts to deal with the problem of transportation, such as the building of the Trans-Israel Highway (Highway 6), which upon completion will connect a number of peripheral territories to the center and is intended to alleviate the heavy congestion.<sup>lii</sup> The Metropolitan Mass Transit System Ltd., an organization fully owned by the national government, is working on transportation solutions, among others the creation of a rapid rail service to serve the Tel Aviv Metropolitan area. After long delays, it is expected to be operational by 2017.<sup>liii</sup>

## Local Policy #3: Livability – Housing

Municipal lands are limited relative to the huge demand in Tel Aviv with recent protests related to housing conditions.<sup>liv</sup> The central government has a budget on rent subsidies and support for house purchase, which in 2009 was NIS 2.2. billion (\$538 million); 51% of this went on rent-support and mortgage-subsidy schemes for recent immigrants.<sup>lv</sup> The central government is also planning to introduce a national housing scheme, but the Tel Aviv municipality itself has an independent plan for affordable housing which includes support for

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<sup>6</sup> As Pashker et al. found, 54.4 % of men in the Tel Aviv metropolitan area commute by car, compared to only 33.3% of the women, who preferred one-line public bus transport and walking.

renting and purchasing homes. However, according to the OECD's 2011 economic survey, there are legal barriers to this municipal plan that still need to be resolved.<sup>lvi</sup>

The plan would focus on providing housing for young working couples with children by providing them living opportunities that do not cost more than a quarter of the family's monthly income. There are also proposals to provide incentives for developers to include affordable rent units in newly built apartments.<sup>lvii</sup> Some pilot projects have already started in the poorest neighborhoods, such as Shapira.<sup>lviii</sup>

#### **Local Policy #4: Business Environment – High Tech Economy**

Tel Aviv's booming high-tech industry was created with the help of a national policy. The process was supported by a specialized government agency, the Office of the Chief Scientist at the Ministry of Industry and Trade.<sup>lix</sup> Later, in the 90's the national government started a number of targeted programs to support venture capital (Inbal and Yozma), and complementary programs to increase demands for these services (the Technology Incubators' Program, and the extension of the country's regular research and development program).<sup>lx</sup> Although Fontenay and Carmel argue that Israel's high-tech industry is so dense geographically that it can be considered one cluster<sup>7</sup>, most of the leading companies are headquartered in Tel Aviv, making the city the center of the Israeli high tech industry.<sup>lxi</sup>

The industry comprises of a number of Information and Communication Technologies, like software, data communications, electro-optics, hardware design, and internet technologies, as well as medical technology, bio-technology, agricultural technology, materials technology, and military technology.<sup>lxii</sup> The high tech cluster is an outgrowth of the high tech industry of the 70s and 80s, which had a significant military component. For many years the civilian high tech industry grew at a much smaller rate than its military counterpart. The two components have reinforced each other, until the end of the 1980s, when resource constraints on military spending led many entrepreneurs to shift to civilian high tech.<sup>lxiii</sup> However, the military still plays a large role in the country's high tech boom, and the military can be considered a "training ground for the technological elite" which directs the smartest young

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<sup>7</sup> With the major areas being the three biggest cities: Tel Aviv, Jerusalem and Haifa.

adults into the areas of computing and engineering.<sup>lxiv</sup> Much of Tel Aviv's R&D-intensive, advanced hi-tech industry is driven by foreign direct investments. Many of the world's top hi-tech giants have a stake in Tel Aviv.

Bendit et al. found in their empirical study that knowledge-workers seek communities with high socio-economic index values, putting great emphasis on culture and education infrastructure, as well as affordable high quality housing or housing incentives.<sup>lxv</sup> A problem for the long term is that wages in Israel's high tech sector are similar to U.S. levels<sup>8</sup>, thus many businesses contemplate outsourcing some of their activities to lower cost countries such as Russia or India.<sup>lxvi</sup>

## Implications

Tel Aviv's success can be attributed to its ability to attract bright, entrepreneurial immigrants. This capability has been developed in large part thanks to the city's history and its greater degree of independence from the central government.

Our case study has shown that Tel Aviv is a competitive city that is expected to remain a leader in many fields, such as high tech and finance. But it has some issues that may lead to a slowdown in its current progress in the long term. The city needs to address the problems associated with transportation and housing. There is a shortage of apartments, and currently the rents in the city are unaffordable for many entrepreneurial residents, while the large congestions make it very hard for citizens to commute t. If the problem is not addressed in the future, it might drive away entrepreneurial youth who may look for a more livable place in the country, or abroad.

Recent efforts to create affordable housing units are a good sign for the future. However, there is need to scale up these operations. The problems of transportation could be addressed by the creation of a metropolitan area transportation authority, as the majority of

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<sup>8</sup> According to an article on JTA, The Global News Service of the Jewish People, average salaries are lower than those in the U.S. or Western Europe, but so are health care costs, while consumer goods and services cost nearly twice as much, while owning a car may cost even 6 times as much as in the U.S., relative to the average salaries. Steinberg, Jessica: Just how expensive is it to live in Israel? 16 Aug. 2011. 18 Apr. 2013. <<http://www.jta.org/news/article/2011/08/16/3088998/just-how-expensive-is-it-to-live-in-israel>>

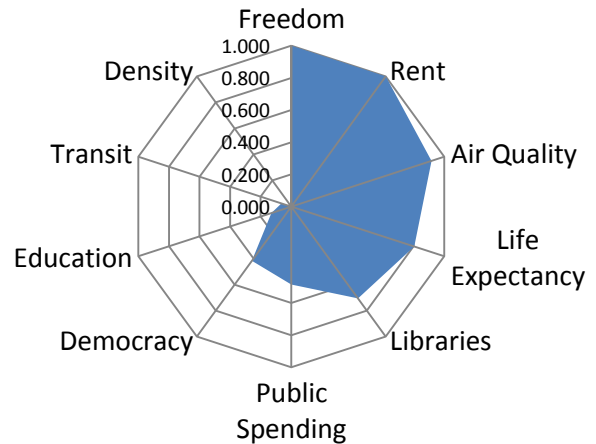
those employed in Tel Aviv-Yafo commute from a different locality. However, at the moment there are no serious attempts at creating such a structure.



## CLEVELAND: CEC Index Ranking #2

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Freedom	1.000
Rent	1.000
Air Quality	0.917
Life Expectancy	0.804
Libraries	0.706
Public Spending	0.485
Democracy	0.417
Education	0.130
Transit	0.064
Density	0.002
<b>CEC Score</b>	<b>5.525</b>



### City Economic Capacity Score Analysis

Cleveland's CEC score result is 5.525, which places it above the average score of 4.839 when compared among the ten case study cities. What is significant and stands out about Cleveland is the high quality of life the city offers, scoring well on rent, air quality, and public libraries per 100,000 people (as a proxy of cultural investment).. Where Cleveland's scores show room for improvement are low population density and low educational investment. We find that the transit variable data in the CEC index may be underrepresented as Cleveland maintains a light rail and bus system throughout the city.

### Economic Condition

The city of Cleveland was incorporated on December 23, 1814 with a population of less than 100 people.<sup>lxvii</sup> It rests on the southern shores of Lake Erie, which is the 10th largest body of fresh water in the world. The city was designed as a connection point for trade via the Cuyahoga River in the early 19th century, making it an important stop heading west, east, or north across the Great Lakes to Canada. Cleveland emerged as an important center for production and manufacturing of commodities during the industrial revolution due to its convenient location. Traditional manufacturing industries such as oil and steel were significant to Cleveland's economy. John D. Rockefeller established Standard Oil Company in Cleveland,

supplying the world's demand for oil fuels.<sup>lxxviii</sup> Cleveland was also home to Robber Barons who, in addition to oil, developed the steel and cars that powered modern America.<sup>lxxix</sup>

Despite successful economic beginnings, Cleveland's economy and population suffered severe setbacks in the 1960s to domestic and global factors. Increasing global competition in oil and steel production, coupled with the difficulty to improve scales of efficiency domestically, led to declines in Cleveland's production.<sup>lxxx</sup> In addition, regional industrial pollution became severe, which tarnished the city's reputation.<sup>lxxxi</sup> Cleveland's urban population peaked with 876,050 residents, making it the 8<sup>th</sup> most populous city in the US in 1960.<sup>lxxxii</sup> However, racial tensions in the city erupted in 1966 in the Hough Riots that resulted in four deaths, many injuries, and approximately 240 fires in the downtown area.<sup>lxxxiii</sup> These events led to "white flight" to the suburbs, and the "brain drain" of educated residents. The 2010 census calculates Cleveland's population declined to 396,815 – losing nearly 100,000 residents within a decade.<sup>lxxxiv</sup> Nevertheless, the city remained relatively economically stable, but declined slowly throughout the decade up until the Great Recession of 2008.

Prior to the Great Recession of 2008, Cleveland's private economy supported an industry base of manufacturing, finance, law, and health care. However, Cleveland, and all of Ohio, experienced significant losses in the housing market collapse of 2008. By 2010, there were a staggering 80,000 home foreclosures in the city.<sup>lxxxv</sup> Adding to economic hardship, National City Bank was sold in a fire sale to PNC Financial, which forced a layoff of 4,000 employees.<sup>lxxxvi</sup>

Soon after the collapse, a number of uncharacteristic changes emerged in Cleveland. The city is re-concentrating an urban population by attracting young, hip people and professionals; it is likely that small redevelopment zones on the East 4<sup>th</sup> and the Warehouse District (West 6<sup>th</sup> and 9<sup>th</sup> street) may have led to a small but significant reorganization of young professionals into the downtown district.<sup>lxxxvii</sup> These areas now host an active and safe night life scene, creating a cluster environment and critical density to attract talent.

In addition, there are controversial economic policy changes to the city. A recent amendment to the Ohio Constitution now allows gambling in the form of one privately owned casino in downtown Cleveland, and revenues are taxed at 33% for public benefit.<sup>lxxxviii</sup> This is the

first instance of legal gambling in the state. One of the casino's primary controversies is economic outflow impact on the inner-city community, which is already financially distressed with low income and education.

Lastly, the city has attracted an estimated \$7 billion dollars of private investment.<sup>lxxxix</sup> Much of this investment is directed at the city's health care services. The Cleveland Clinic is regarded as one of the best medical centers in the world and people travel from around the globe for its care. It registered more than 3,200,000 patient visits in 2009 with around 80,000 hospital admissions.<sup>lxxx</sup>

## **Governance Structure and Budget**

Since the Great Depression, Cleveland has consistently voted with the Democratic Party. The city's racial diversity makes it an anomaly in the otherwise mostly white and Republican State. Ohio, and particularly Cleveland, was highly influential in the 2012 Presidential race; Cleveland provided about 25% of the entire State's Democratic Party votes.<sup>lxxxii</sup>

The Cleveland City Council forms the legislative branch of the city and monitors city departments, approves budget, and enacts city legislation.<sup>lxxxiii</sup> In 2010 the council decreased in size from 21 to 19 seats in accordance to the City Charter, which designates the number of seats to be based on population size.<sup>lxxxiii</sup> One continuing problem of population loss is budget shortfalls, which further compound the State reported multi-billion dollar deficits.<sup>lxxxiv</sup>

The City Charter also establishes the role of the mayor. The document highlights the mayor's executive position that authorizes him the powers to run the city for the people. In addition to powerful managerial responsibilities, the mayor also holds the power to veto city council legislation.

## **Local Policy**

### **Local Policy #1: Human Capital – Education**

Cleveland's "brain drain" problem lingers. Students with higher education depart from the city after completing higher education to seek higher wages and better opportunities in larger cities like Chicago and New York City. In recent years, the city, business community, and education sector have revitalized new policy efforts to attract young professionals to the city.

In light of the 2008 recession, the government and private sector had more difficulty maintaining momentum, but the city's educational institutions laid a ground work for investing despite constraints. For example, Cleveland State University invested in a large expansion in 2006 that successfully attracted talented students to the university.<sup>lxxxv</sup> The Cleveland Marshall School of Law is currently ranked first in the state and boasted an 87% employment rate and 67% in positions requiring a JD, despite a difficult 2010 market.<sup>lxxxvi</sup>

### **Local Policy #2: Livability – Crime**

Crime trends in Cleveland are on an overall downward trend because the city has made great efforts to increase safety, especially downtown. In 2012, the city nearly doubled the size of the downtown police force.<sup>lxxxvii</sup> However, the perception remains that the city is unsafe and progress is inconsistent – crime is slightly up since 2008. Forbes magazine ranked Cleveland as the 9<sup>th</sup> most dangerous city in the country. The rate of crime is three times higher in Cleveland than the national average, but these statistics do not adjust for the densities and differences between the urban city areas and the American average. Consequently, metro area residents are wary to move into Cleveland.

### **Local Policy #3: Business Environment – Economic Development**

The city's greatest challenges are population, education, and labor employment. Therefore, the city must add new population to survive, but to do so will require employment opportunities. With new economic growth, the city could raise revenues to improve education. However, it cannot attract people because of the high crime rate, which is in part due to unemployment, which is the result of poor education. Thus, the population further declines, making matters worse.

Today, a united coalition of public, private, and nonprofit organizations is focused on building value from existing core strengths in education, culture, and medicine to support community conducive to economic growth. In 2004, a handful of economic development and pro-business organizations merged together to form the Greater Cleveland Partnership (GCP). The GCP boasts 14,000 members composed of Northeast Ohio companies and organizations, making it one of the largest metropolitan chambers of commerce in the nation. The group

provides cost-effective group-purchasing programs, advocacy on legislative and regulatory issues, and resources focused on helping companies grow. Their objective is to revitalize and attract talent. University Circle is the focal target of the new city, together with the Cleveland Art Museum, Case Western Reserve University, Cleveland Institute of Music, Cleveland Orchestra, and the nearby Cleveland Clinic. GCP efforts are instrumental for encouraging new populations and businesses to move toward Cleveland through public policy advocacy.<sup>lxxxviii</sup>

Cleveland's collaborative policy efforts are in full force. The top development projects are \$800 million for Horseshoe Casino Cleveland, \$730 million for bridge construction, \$537 million for health care expansion, \$465 million for medical mart exposition center, and \$110 million for East 4<sup>th</sup> Street.<sup>lxxxix</sup> Most recently, the \$500 million East Bank Project will create luxury water front housing and offices of Ernst and Young.<sup>xc</sup> The Uptown Project seeks to bring residents back to the cultural and educational center called University Circle. Last but not least, the Cleveland Medical Mart, to be completed this year, will be the home of a massive medical retail, innovation, and convention space. This space will provide medical retail browsing and sales in 180,000 square feet of medical convention space.<sup>xcii</sup> Ideally, these investments will bring global medical business traffic through Cleveland and leverage existing infrastructure like the Cleveland International Airport, too.

## Implications

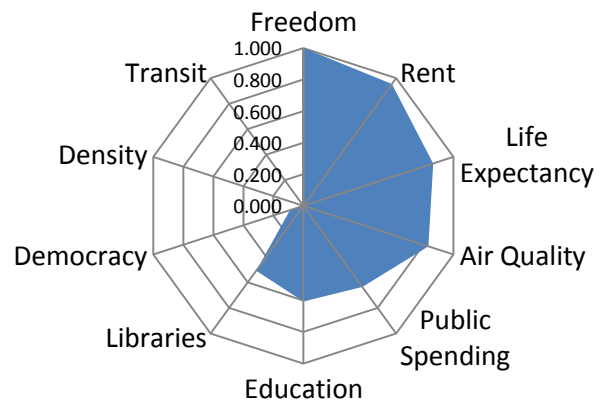
Cleveland has emerged from the Great Recession of 2008 with a new beginning via investments for economic development. The losses in housing, population, and industry opened up opportunities for the health care industry to grow. If successful, however, the public sector should be diligent about industry diversification so the city is not solely dependent on medicine. Cleveland's powerful medical economy could certainly subside and return the city to decline. Synergistic industries such as food, hotels, innovation, engineering, and science could develop.



## SAN JOSE: CEC Index Ranking #3

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Freedom	1.000
Rent	0.954
Life Expectancy	0.865
Air Quality	0.833
Public Spending	0.636
Education	0.607
Libraries	0.509
Democracy	0.089
Density	0.010
Transit	
<b>CEC Score</b>	<b>5.503</b>



### City Economic Capacity Score Analysis

The City of San Jose appears to underperform in density and transit.<sup>9</sup> As our case study highlights, these are two areas of public policy that have challenged the city to reinvent itself into a more high-density urban anchor in the southern Bay Area. Strong areas include human capital, health, and livability in terms of affordable rent. Among US cities, San Jose’s education score ties with New York for first while life expectancy ranks second for U.S. cities. Rent ranks relatively well. This may reflect that San Jose is a vast suburban area, with more housing to jobs in addition to housing increases during the U.S. housing bubble in the mid-2000s. Though its transit score is missing, San Jose has access to regional and local transit systems.

### Economic Condition

The City of San Jose is within Santa Clara County and is Northern California’s most populous city with estimated 967,487 residents.<sup>xcii</sup> The city and county are part of the greater San Francisco Bay Area, a region of 8.4 million people.<sup>xciii</sup> The city underwent significant growth post-World War II and through the 1970s with developments in research, defense, electronic technologies and manufacturing. San Jose portrays itself as “The Capital of Silicon Valley,” a southern region of the San Francisco Bay Area that is home to innovative, technology driven

<sup>9</sup> Note that San Jose did not have a transit value.

industries and famous for companies like Cisco, IBM, HP, Apple, Google, Yahoo, eBay, Intel, AMD, and Adobe. Silicon Valley is a hub for all things tech and has brought the region wealth for its continual innovation.

The driving industries in San Jose make up 25% of total employment and revolve around computer technology and software, electronics, tourism, commercial real-estate, and biosciences. These industries require relatively higher specialized skills and expertise, productivity, value added, and pay above average wages. Maintaining and growing these drivers will be a challenge for the city as these industries have the ability to choose their location; they are not tied to the local community as they serve customers nationally and globally. Below we examine policy initiatives the city is taking to address this concern. Furthermore, the economy is composed chiefly of small- and medium-size firms.

## Governance Structure and Budget

San Jose experienced rapid job and population growth from 1950 through 1970 as a result of City Manager, Anthony Hamann's aggressive annexation program. Incorporating neighboring communities increased the city government's legal oversight and boundaries from a total area of 17 square miles with a population of 95,280 to 136 square miles with a population of about 495,000.<sup>xciv</sup> Annexation actually reduced the city's population density from 5,600 people per square mile to about 3,300 despite population growth.

Urban sprawl resulted from the rapid annexation and challenged the city with high municipal debt, deteriorating public services, and environmental degradation.<sup>xcv</sup> Consequently, San Jose's city council adopted anti-sprawl policies such as urban growth boundaries in the 1970s, and continues to focus on smart growth<sup>10</sup> management.<sup>xcvi</sup> This council is comprised of the mayor, who is elected by the community, and 10 council members who are elected by districts.

Under the city charter, the mayor is responsible for recommending policies, programs, and budget priorities to the city council, which in turn approves policy direction for the city. The

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<sup>10</sup> Smart growth is an urban planning and transportation theory that concentrates growth in compact walkable urban centers to avoid sprawl. It also advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

city charter limits the mayor and council members from serving more than two consecutive terms. A city manager and city attorney are also appointed by the city council. The city manager is responsible for the administration of city affairs, day-to-day operations, and implementation of council policies. The city attorney advises and represents the city and council in all legal affairs. In addition, city boards and commissions were established for the purpose of advising the city council and providing ongoing input into policies and issues affecting the future of the San Jose community.

The annual budget process is participatory and developed by the mayor and city council with regard to prior-year financial results, after which council develops budget priorities and eventually approves the budget. The 2011-2012 adopted operating and capital budgets total \$2.8 billion. Capital funds accounted for 31% and were used for infrastructure improvements. General funds accounted for 27%, which was used for operating expenditures, and the rest 42% were special funds. The 2011-2012 adopted budget addressed a general fund gap of \$115.2 million. To close the gap, the council proposed strategies to reduce employee compensation, services and improve service delivery efficiency.<sup>xcvii</sup>

San Jose's 2011-2012 major sources of general fund revenues were property tax, sales tax, and utility taxes and franchise fees, which accounted for 26%, 19%, and 17% of total sources, respectively. The 2011-2012 adopted capital budget was \$1.06 billion, of which 35% was spent on the airport, 22% in water pollution control plant and sanitation, 15% in parks, and only 7% on traffic.

Regarding San Jose's fiscal capacity, the city benefits from a strong credit rating, which saves money in debt obligation. Also, in addition to federal, state and county tax, San Jose residents voted for a possible city sales tax measure this February to support city services.

Federal and State of California control taxation capacity and business regulations. City government of San Jose initiates various policies to improve livability, business environment and innovation. It delivers regular operational services directly or indirectly to residents and report the service delivery highlights annually.

## Local Policy

### Local Policy #1: Human Capital – Immigration

A Kauffman Foundation study found that between 2006 and 2012, 43.9% of Silicon Valley start-ups were founded by immigrants.<sup>xcviii</sup> As the “Capital of Silicon Valley”, San Jose is one of the most diverse and immigrant-rich cities in the country and one of the most prosperous and innovative. Its embrace of immigrants is an essential strength of its economy and culture. Though immigration policies come from federal lawmakers, the effects resonate on a local, personal level. City agencies provide healthcare, welfare and other public services to residents regardless of immigration status. Refugees receive job training and English language instruction. The city council also adopted a resolution in 2007 stating that “The City of San Jose will assure that legal and undocumented immigrants do not fear interacting with their local government authorities.”<sup>xcix</sup>

San Jose’s direct implementation of pro-immigrant policies and programs will better allow immigrant populations to participate economically. Moreover, high-skilled immigrants have the potential to better utilize their talents for business and growth opportunities with exposure to Silicon Valley and access to educational institutions in the city. San Jose will continue to benefit from immigrant talent by promoting favorable immigration policies.

### Local Policy #2: Physical Infrastructure – Transportation

Currently, San Jose enjoys access to regional and local public transit systems. The San Jose government partners with regional transportation agencies such as San Francisco Bay Area Rapid Transit District (BART) and the Santa Clara Valley Transportation Authority (VTA) to plan and construct transit projects within the city. The two are the main transit providers in San Jose. BART is a heavy-rail public transit and subway system (with connections to the VTA) that provides transit services to San Jose and the greater Bay Area, including San Francisco. VTA also provides services for the entire county including San Jose and acts as the county’s congestion management agency.<sup>c</sup>

The VTA was formed in 1995 and ridership peaked in 2001. But it has fundamental problems: low ridership, low productivity, and the lowest fare box recovery in North America.

Measure A, a 30-year half-cent transit sales tax, was passed in November 2000. The Transit Sustainability Policy was adopted in February 2007 and focused on turning VTA service into a cost-effective service that met market needs. There is a VTA 2030 plan that expands highway and transit using state and federal funding.<sup>ci</sup> Moreover, the San Jose has significant policy goals to encourage the shift away from automobile use toward transit and other transport modes. The city's updated General Plan (Envision 2040) proposes to reduce driving from 80% to 40% of trips by 2040.<sup>ci</sup>

Envision 2040 interconnects land use and transportation policies to reduce travel distances with compact by mixed-use development.<sup>ciii</sup> Land use policies aim to allow for increased mixed-use, high-density purposes, particularly residential and commercial uses. This will provide a foundation of people and business activity needed to support the demand for transit in these areas.

In July 2012 the U.S. Congress passed a piece of legislation to fund surface transportation, such as road repairs, mass transit and other critical repair and expansion projects for two years. The apportionment to California is \$39,283,077 – the highest in the country.<sup>civ</sup> San Jose will benefit from these funds. 35.8% of the total funds will account for the costs of California's high-speed rail covering the geographical segments of San Jose.<sup>cv</sup>

Despite California's preference for the automobile, the city is committed to bringing high-speed rail and BART to San Jose with the goal of supporting a balanced transportation system and reduction in motor vehicle usage.

### **Local Policy #3: Livability – Downtown Redevelopment**

Downtown San Jose was once the city's economic and social center, and an anchor of the South Bay. However, exogenous forces<sup>11</sup> and city-led actions<sup>12</sup> led to rapid suburbanization and undermined downtown's role as a major business and social center. Without a strong downtown presence, the identity of San Jose was transformed into the bedroom community for Silicon Valley.<sup>cvi</sup> The city is sometimes referred to as "the Bedroom of Silicon Valley" instead of the capital. Suburbanization left the city with too few businesses and too much housing.<sup>cvi</sup> As

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<sup>11</sup> The emergence of Silicon Valley to the North and highway construction by the State

<sup>12</sup> City Manager, Anthony Hamann, allowed large-scale retail development and annexation policies

opposed to attracting workers, San Jose residents commute to neighboring municipalities within Silicon Valley and the greater Bay Area. Such a persistent imbalance could significantly strain fiscal resources as a small corporate tax-base provides insufficient revenue to support the high public service demands of a population approaching 1 million. In addition to urban growth boundaries, San Jose created a Redevelopment Agency (RDA) to direct business revitalization and attraction.

Attracting retail, businesses, and people back to downtown has been difficult. Shopping center development in other neighborhoods and abandonment by private developers has challenged RDA's retail initiatives. Attracting businesses for downtown office development is hindered by job growth in Northern San Jose near Silicon Valley, direct competition from corporate campuses with free parking, and limited leasable area to build. Regarding the latter, the airport flight path limits a building height; high parking expectation requires significant space for car storage; but the city's high water table limits underground parking.<sup>cviii</sup> All this contributes to expensive, unattractive space for large businesses. Lastly, increasing population density has been slow. Initial home building of townhomes only allowed for moderate density land use, while high-rise apartments for high density land use were stopped with the housing market collapse and the Financial Crisis in 2008.

San Jose's focus on downtown as a destination for visitors has been successful. The RDA has been able to attract both residents and tourists by promoting facilities for cultural attractions, museums, sports, and conventions. The city's efforts preventing new hotel development in the 1980s (unlike its retail development policy) also helped to concentrate hotels in downtown and absorb the inflow of visitors during large events.<sup>cix</sup> RDA worked against the tide of suburbanization to revitalize downtown for over three decades. Instead of a central business district, downtown is shaping up to be the South Bay's central social and cultural district. Despite its successes and failures, the RDA had much legal authority and fiscal capacity beyond the city budget to selectively inject funds and implement redevelopment efforts. This resulted from state enabling legislation for tax increment financing in 1952<sup>13</sup>.<sup>cx</sup> RDA

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13 Tax increment financing is essentially borrowing against the future increases in property-tax revenues. That is, when property value increases, there is an increase in tax revenue – this is the "tax increment". Future tax increments are used to finance debt that is issued today to pay for redevelopment. TIF was designed to channel

subsequently became California's second largest redevelopment agency as measured by tax revenue, and San Jose's go-to for funding and approval of almost all major projects in the last several decades.<sup>cxix</sup> Investment in downtown alone reached \$2 billion from the 1980s until RDA's effective closure in February 2012.<sup>cxii</sup>

RDAs across California were closed as a result of severe state budget difficulties and the City of San Jose became RDA's successor, left with \$3.8 billion of its outstanding debt.<sup>cxiii, cxiv</sup> It remains unclear how cities in California will fare with an end to RDAs. Holding revenue constant, the fiscal capacity of San Jose will be hurt as it must, at minimum, service RDA debt obligations. If the city chooses to continue providing financing to redevelopment areas, capacity for service delivery and the ability to finance infrastructure and business incentives for future economic development and growth could suffer.

#### **Local Policy #4: Business Environment – Global Networks**

As the "Capital of Silicon Valley", it is no surprise that several of San Jose's high growth industries such as computer science and technology, electronics, and biosciences exist in Silicon Valley, which overlaps several municipalities within Santa Clara County. These industry clusters surrounding science and technology intertwine San Jose's economic future and health with the broader Silicon Valley region. Therefore, San Jose's success is dependent on a strong Silicon Valley, and vice versa. San Jose is making efforts to leverage its strong association with Silicon Valley to attract and keep related businesses in the city and in Silicon Valley. Since its 2003 Economic Strategy Report, the Office of Economic Development (OED) has been forging global connections with other innovation regions for mutual economic benefit and to create a competitive advantage.<sup>cxv</sup>

Over the last five years, the city has experimented with different models for relating to other technology regions globally to accelerate business partnerships, trade, and inward investment. Notable accomplishments from 2004-2009 include an economic partnership agreement with the Cambridge-East England region for collaboration in higher education,

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funding toward improvements in distressed, underdeveloped, or underutilized parts of a jurisdiction where development might otherwise not occur.

business attraction, and aviation and a working relationship with Oulu, Finland<sup>14</sup> that resulted in 15 wireless prospects and five Finnish start-ups locating in San Jose.<sup>cxvi, cxvii</sup> These partnerships will be vital for San Jose. They not only bring investment and jobs into the local economy, but they also position the city at the forefront of innovation and growth within industries in which the city has a comparative advantage. As in the case with Oulu, coordination and partnerships between public and private entities can greatly facilitate and increase business opportunity while reducing procurement pressures on the city's resources<sup>15 cxviii</sup>.

Other pro-business initiatives include supporting the small business, start-up culture characteristic to the city for both tech and non-tech firms. The city's 2003 Economic Strategy called for the establishment of new businesses and the growth of existing businesses, from venture-backed start-ups to mom-and-pop small businesses.<sup>cxix</sup> This recognizes the importance of growth-oriented businesses for job creation and the opportunity of small business for residents, including new immigrants. From 2004-2009, the city has established Business Owner Space<sup>16</sup>, assisted with the expansion or relocations of companies in North San Jose and Edenvale<sup>17</sup>, and expanded the Enterprise Zone program, which offers state tax incentives to businesses located in redevelopment areas.<sup>cxx, cxxi</sup>

Such initiatives are authorized and implemented at the city level, giving San Jose the ability to stimulate its economy and job creation. However, critiques argue that such incentives in the form of tax credits and subsidies are straining the city's financial resources and capacity to deliver other important services such as education, policing, cleaning, park space, and building maintenance in poorer areas. The balance between housing/community services and

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<sup>14</sup> The City of Oulu is a leading powerhouse and hub for wireless communications technology development in Europe. The city has a pool of talented software and hardware engineers, is home to Nokia and Nokia Siemens Networks, and has large R&D functions with over 800 high-tech companies.

<sup>15</sup> Oulu companies were sponsored by Global Connexus, a private management consulting firm in San Jose, and by Finnish Innovation Centers and Tekes, two business development programs in Finland.

<sup>16</sup> This is a San Jose-Silicon Valley network of 35 organizations offering comprehensive support services to entrepreneurs and small business owners. This Web 2.0 site and materials were translated into Spanish and Vietnamese; nearly 70,000 businesses have been served since BOS was launched in October 2007.

<sup>17</sup> North San Jose and Edenvale are two of three areas in which the city is focusing economic redevelopment in, Downtown being the third. Referred companies include: eBay, Cisco, Hitachi Global Systems, IBM, Epson Electronics, Sony, Brocade, Ultratech, Redback/Ericsson, Nanosolar, SoloPower, SVTC, Stion, Solar Junction, BD Biosciences, Equinix, Electroglas, IDT, Stryker Endoscopy, Photon Dynamics, CTS, Underwriters Laboratories, and VNUS Medical Devices.

job creation is central the issue of redevelopment. For now, it appears that San Jose is leaning towards jobs.<sup>cxix</sup>

## Implications

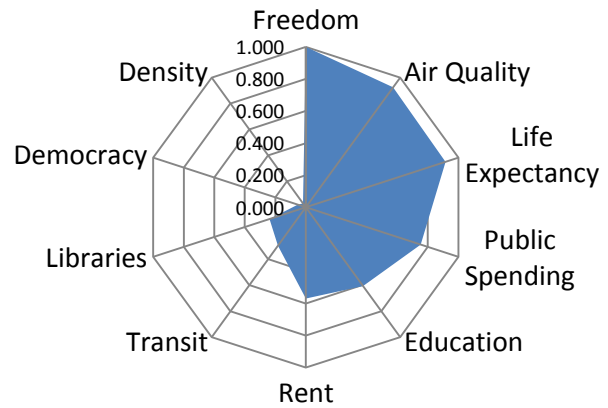
City government is one of many players that affect San Jose's economic competitiveness. State-enabling legislation and funding once empowered the city's redevelopment efforts, while global partners in the form of private and public partnerships continue to bring economic and business opportunities. The city, itself, can actively promote business via incentives and subsidies, but the city's physical environment and land use are important to keep businesses local. The city is also leading by promoting long-term partnerships with public and private entities regionally and globally to advance shared goals. Pro-immigration policy also supports the development of a skilled, local workforce. Going forward, fiscal constraints at the local and state level will continue to challenge San Jose.



## NEW YORK CITY: CEC Index Ranking #4

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Freedom	1.000
Air Quality	0.925
Life Expectancy	0.916
Public Spending	0.753
Education	0.607
Rent	0.569
Transit	0.296
Libraries	0.238
Democracy	0.053
Density	0.030
<b>CEC Score</b>	<b>5.387</b>



### City Economic Capacity Score Analysis

New York City scored a 5.387 on the CEC index, or fourth highest of the cities measured. New York City also over-performs in terms of its GDP output, meaning that there are other variables that are helping New York City's performance beyond the CEC index variables. Of the ten variables, New York City performed well compared to its global competitors on: percent of population with a higher education degree, life expectancy, air pollution (as measured by PM<sub>10</sub> annual average), public expenditures, and rent as a proportion of income (although this is because the variable is calculated as rent as a percent of GDP per capita). Among its American competitors, New York City also performed well in terms of population density and transit coverage. Overall, the CEC index and GDP performance indicate that New York City is a highly competitive global city.

### Economic Condition

New York City is the United States' largest and most economically powerful city. Today, the New York City metropolitan area contributes almost 10% of U.S. GDP and serves as a global center of culture and commerce.<sup>cxxiii</sup> The geography of New York City in a naturally sheltered harbor allowed it to grow into the largest port in the U.S. in the 18<sup>th</sup> and 19<sup>th</sup> centuries. Over the years, the city also developed as a center for manufacturing, commerce, and banking, while

cultural attractions such as the Broadway theatre district and museums such as the Metropolitan Museum of Art established the city as a cultural center.

New York City has had a colorful and varied history, from the migrations of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries to the economic turbulence of the 1970s and the terror attacks of 2001. Throughout its history the city has proven to be resilient and dynamic, and more recently it was one of the last cities in the U.S. to enter the global recession in 2009 and one of the first to exit, losing fewer jobs in the process.<sup>cxxiv</sup>

New York City today is the headquarters for dozens of Fortune 500 companies including Bank of America, JP Morgan Chase, Verizon Communications, and Pfizer. The city is known as a center for finance and banking, which accounts for an estimated 27% of the city's employment. However, the economic base includes wide mix of industries including health and medical services, information technology, and professional services such as law and consulting. In addition, the city has a strong competitive advantage in the creative industries such as fashion, design, and architecture.<sup>cxxv</sup>

New York City also capitalizes on its density by fostering small businesses and providing numerous tailored services to encourage their growth. Density rewards entrepreneurship and experimentation by providing sufficient numbers of customers for niche markets and softening the blow of failure by creating room for talent to be absorbed by other businesses.<sup>cxxvi</sup> With one of the highest population densities in the United States, New York City boasts nearly 200,000 small businesses, ranking second in the country only after Los Angeles County.<sup>cxxvii</sup>

## **Governance Structure and Budget**

New York City's governance revolves around a strong mayor and a unicameral legislature made up of 51 City Council members. The mayor and the city council are responsible for passing all legislation, including the budget and local taxes, and the mayor has veto power over all legislation. The mayor is elected to four-year terms and has a three-term limit, which the city council changed from a two-term limit in 2009, allowing current mayor Michael Bloomberg to run for a third term.

The government is more centralized than in many cities and is responsible for public education, public safety, sanitation, water supply, correctional institutions, libraries,

recreational facilities, and human services. The executive branch, which under Mayor Bloomberg is directed by seven deputy mayors, is responsible for implementing policies that are passed by the City Council. The strong mayor system means that the mayor has more power to act unilaterally within these policy areas, and also that he or she is directly accountable to voters.

New York City has the largest budget of any city in the U.S. In FY2013, the city's operating budget was \$61 billion. About 30% of the budget went to education, 20% to social services, 18% to benefits and pensions, and about 10% to police, fire, and corrections.<sup>cxxviii</sup> To pay for the budget, New York City has a property tax that ranges from 10.3% to 18.6% of assessed property value, sales tax of 8.9%, and an income tax between 2.9% to 3.6%, making it one of the only cities in the U.S. with a personal income tax.<sup>cxxix, cxxx, cxxxi</sup> As a result, New York City residents have one of the highest local tax burdens in the country, along with some of the most extensive public services in the country.

In addition to the operating budget, New York City also allocates about \$10 billion per year for its capital budget. After the fiscal crisis of the 1970s, New York City has maintained strict fiscal controls that provide the city with the best municipal bond ratings in the U.S., and therefore lower borrowing rates.

## Local Policy

### Local Policy #1: Human Capital – Mayoral Control of the Public Education System

New York City boasts a relatively high proportion of its population with a bachelor's degree or higher, tied for fourth of the 32 cities with a score of 0.607. However, many of these degree-holders were not educated in New York City, but are instead transplants drawn to the opportunities that the city has to offer. In fact, the city's sprawling public education system, which is responsible for educating 1.1 million children, does not compare to global competitors such as Hong Kong and Singapore, although it has improved substantially over the past few years.

One of Mayor Michael Bloomberg's first major undertakings as a newly elected mayor was to fix New York City's public school system. In his first state of the city address in 2002, the

mayor announced an aggressive plan to wrest control of the system from the New York City Board of Education and put it under mayoral control.<sup>cxxxii</sup> Although the plan was ambitious, at the time no one doubted that New York City's education system was in shambles: In the 2001-2002 school year, all five of New York City's boroughs had the worst average math and science test scores of all of the state's 62 counties at nearly every grade level.<sup>cxxxiii</sup>

Mayor Bloomberg believed that the source of the problem was the governance structure of the system, in which the mayor shared power with the seven-member NYC Board of Education as well as local community boards. The Board of Education set instructional guidelines, hired the chancellor, and developed the system's capital budget, but the mayor was responsible for implementing the operational budget. In addition, 32 separate community school boards oversaw elementary and middle schools and hired school superintendents. As a result, the system was constantly plagued by politics and infighting, invited patronage for jobs, and had few lines of accountability to ensure children were receiving a quality education.<sup>cxxxiv</sup>

To implement his plan of mayoral control, Mayor Bloomberg struck a major deal with the United Federation of Teachers to dismantle the Board of Education and consolidate control under the Department of Education, an executive agency. Mayor Bloomberg appointed a chancellor to head up the Department and eliminated the city's community boards, replacing them with 10 regional districts under direct command of the chancellor.<sup>cxxxv</sup>

Over the past decade, the resulting mayoral control has allowed the Department of Education to experiment with a number of ambitious (and often controversial) measures to improve the city's schools. For example, Mayor Bloomberg changed rules so that teacher tenure is harder to obtain, created a system of teacher evaluations, and closed more than 100 under performing schools while opening 576 smaller public schools and charter schools in their place.<sup>cxxxvi</sup> These and other changes have helped New York City improve both high school graduation rates and test scores: High school graduation rates have increased in the city by 40% since 2002, compared to just 9% in the rest of the state, and 82% of publicly educated students tested proficient in math and 69% tested proficient in English in 2009, up from 42% and 38%, respectively, in 2002.<sup>cxxxvii, cxxxviii</sup>

While much more work needs to be done for New York City's public schools to compete with the likes of Hong Kong, Seoul or Singapore, the improvements are a positive sign of progress. Further improvements would increase New York City's global competitiveness in the future by providing the city with a higher-quality workforce that is homegrown, but questions remain whether the Department of Education will continue to enjoy its independence from politics once Mayor Bloomberg leaves at the end of 2013.

## **Local Policy #2: Physical Infrastructure – Mass Transit and the NYC Subway**

New York City's 100-year old subway system is by far the most extensive public transportation system in the U.S. Over the past century, the subway system has fueled New York City's economic and population growth by offering an accessible and efficient system for residents. Today around 55% of New Yorkers use mass transit to commute to work, including on buses, ferries, and light rail, compared to 4.9% in the U.S. as a whole.<sup>cxvix</sup> As a result, New Yorkers that use public transit spend an average of \$10,000 less on transportation-related costs than Americans that drive.<sup>cxli</sup> With over 720 miles of routes, 5.4 million riders per day, and 1.7 billion trips a year, the subway system allows New Yorkers to live more densely, move with relative ease around the city, and breathe cleaner air by reducing auto dependence.<sup>cxlii</sup>

The New York City subway system is operated by the Metropolitan Transit Authority (MTA), a statewide public benefit corporation, which is governed by a 19-member board that includes four members recommended by the mayor of New York City.<sup>cxliii</sup> Through continued capital investments, the MTA is expanding the subway system to better serve overcrowded areas and prepare for new development needed to accommodate the city's expected additional 1 million residents by 2030. One such project is the Second Avenue subway line, a project that has been in the works since 1929 to relieve the crowded Lexington Avenue line along the Upper East Side, which today carries an estimated 1.3 million passengers a day.<sup>cxliiii</sup> The line is particularly important to meet the needs of for Mayor Bloomberg's planned expansion of the Midtown East business district, which the mayor claims is necessary to attract corporate headquarters and compete with global cities like Hong Kong and Shanghai.<sup>cxliiv</sup>

### Local Policy #3: Livability – Parks and Waterfront Development under PlaNYC

New York City has been referred to as a “concrete jungle,” but the city has a history of investing in its green space ever since it created Central Park in 1857, the first landscape park in any American city.<sup>cxlv</sup> In the past several years, New York City has focused on adding more green spaces and improving environmental quality under a long-term sustainability plan called PlaNYC. Recognizing the need to compete for both tourists and a high-quality workforce, which demands green spaces and good public amenities, Mayor Michael Bloomberg released PlaNYC in 2007 to improve livability, enhance environmental quality and prepare the city for a projected 1 million more residents by 2030.<sup>cxlvi</sup>

The plan, which was updated in 2011, sets citywide goals for the year 2030 across the areas of housing, parks, brownfields, waterways, water supply, transportation, energy, air quality, solid waste, and climate change.<sup>cxlvii</sup> One of the goals of PlaNYC is to ensure that every New Yorker lives within a ten-minute walk of a park by 2030. Mayor Bloomberg sees parks as key to continued economic development because they improve residents’ quality of life, increase property values, and mitigate air and water pollution.<sup>cxlviii</sup> By 2011, the city had established more than 700 acres of new parkland, created 260 “green streets” out of unused road space and brought 250,000 more New Yorkers within a 10-minute walk of a park.<sup>cxlix</sup>

PlaNYC also prioritizes opening up the city’s extensive waterfront for public use. Although New York City has more miles of waterfront than Seattle, San Francisco, Chicago, and Portland combined, New Yorkers have lacked access to it for decades. In 2011 New York City released a waterfront development plan called *Vision 2020* to implement PlaNYC’s recommendations. Initiatives include opening the Luna Amusement Park at Coney Island, creating a two-mile long East River Waterfront Esplanade walkway in lower Manhattan, and developing a proposed a mixed-use, middle-income housing development at Hunter’s Point South in Long Island City, Queens that includes 5 acres of waterfront parkland.<sup>cl, cli</sup> These projects will create local construction jobs, increase housing and property values, and most of all, will attract new residents to New York City who are drawn to waterfront living.

#### Local Policy #4: Business Environment – Small Business Support and Clustering

New York City is known as a global center for financial services and banking, but one of the reasons why the city fared well during the recent financial crisis is because the vast majority of the city's economic activity actually stems from a diverse array of other industries. These include health and medical services, information technology, and professional services such as law and consulting, fashion, design, and architecture. New York City has policies aimed at actively expanding its competitive advantage in these and other areas, both through government agencies such as the NYC Department of Small Business Services (SBS) and public-private partnerships including the New York City Economic Development Corporation (NYCEDC).

Under the current administration, SBS has become an integral part of an effort to improve conditions for small businesses to operate in New York City. For example, SBS created the NYC Business Express service to help new businesses navigate local, state, and local regulations and created the NYC Business Solutions program to provide a suite of services that includes planning, financing, and incentives.<sup>clii</sup> The mayor also set up training programs through New York City's workforce development program to match employees to the needs of small business employers.<sup>cliii</sup> As a result of these and other efforts, small businesses constitute a large proportion of New York City's economy, accounting for more than half of the employment in the city, which makes the city more dynamic and resilient even in difficult economic times.<sup>cliv</sup> Now, New York City's small business policies are being replicated globally.

Public-private partnerships also play a role in helping New York City build out its key industries through a strategy of clustering. Clustering policies include providing help to interrelated businesses with facility siting, infrastructure development, financing and/or workforce training, with the goal of capturing a large portion of the supply chain of a particular industry.<sup>clv</sup> NYCEDC has developed programs to develop or maintain clusters in New York City in the areas of applied sciences, biosciences, clean technology and energy, fashion, financial services, food manufacturing and retail, industrial manufacturing, and media and emerging technologies.<sup>clvi</sup>

One interesting approach has been through the establishment of “incubators” that allow aspiring small business owners to rent out spaces at very low rates for activities such as food manufacturing and fashion design. Another notable project is the announcement of a joint Cornell and Technion graduate school campus on Roosevelt Island, which is the result of a competitive application process for an engineering and applied sciences campus. New York City will contribute the site on Roosevelt Island and \$100 million in funding, an investment that help the city will train and develop a local workforce in engineering and the applied sciences.<sup>clvii</sup>

## Implications

New York City has proven to be a highly competitive and resilient city, bouncing back even after major economic shocks in the 1970s and early 2000s. Part of New York City’s resilience is likely due to the city’s density and diverse economic base, which have allowed the city to evolve and adapt quickly to new economic situations. Moreover, the city has benefitted from a succession of proactive mayors who have capitalized on the city’s strong-mayor system to undertake bold initiatives. Under Mayor Bloomberg in particular, New York City’s politics have been relatively free of political infighting, made possible in part by the Mayor’s personal wealth, and the city has benefitted from the Mayor’s commitment to “data-driven policy” even in controversial areas like education. Therefore, the biggest question mark for New York City’s near future may then be the outcome of the 2013 mayoral election—which unfortunately so far has been characterized by a field of surprisingly weak candidates.

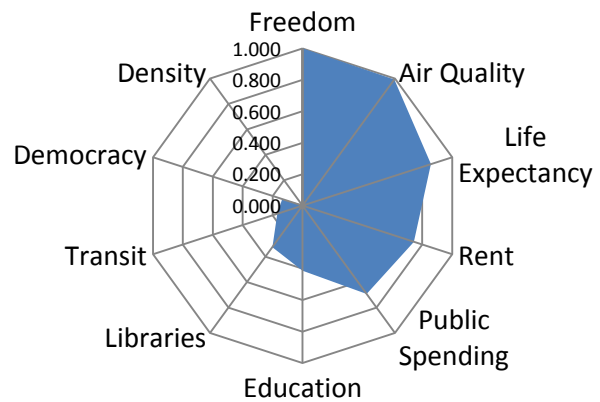
New York City is likely to continue as a highly competitive global city, although some trouble areas lie ahead. For one, New York City must continue improving its education system to enhance its pool of homegrown talent and compete with other global cities. Perhaps even more significantly, Hurricane Sandy demonstrated that climate change poses a significant threat to New York City, in particular from flooding along the city’s 520 miles of coastline. Still, the city has proved to have the governance capacity to address major challenges in the past.



## TORONTO: CEC Index Ranking #5

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Freedom	1.000
Air Quality	0.992
Life Expectancy	0.858
Rent	0.744
Public Spending	0.693
Education	0.413
Libraries	0.326
Transit	0.169
Democracy	0.136
Density	0.010
<b>CEC Score</b>	<b>5.341</b>



### City Economic Capacity Score Analysis

Surprisingly, Toronto was low in the overall CEC index ranking. In terms of the CEC score, the most critical weaknesses are education, density, libraries per 100,000 (or cultural capital), and transit. Our case study reflects the transit component, as Toronto is struggling with adequate local and regional transit infrastructure and investment. A low education score (% of population with higher education) is surprising given significant presence and growth in high skilled industries and services, and Toronto's ability to attract diverse, talented new labor in the form of highly qualified new immigrants.

Toronto tends to rank high in global city livability reports. Air quality (first among cities in the sample), freedom, and rent appear to corroborate this. The city is investing in new housing to ensure access for residents, including new immigrants and prevent outmigration to the suburbs.

### Economic Condition

Toronto is Canada's largest city with 2,615,060 residents and a population density of 4,149.51 per square kilometer, while the Greater Toronto Area, or region, has a population of 6,054,191.<sup>clviii, clix</sup> Located at the heart of the region, Toronto is the vital economic center for the region and province at large. In 2011, Toronto contributed \$146 billion in GDP, while the

Toronto Region as a whole produced \$286 billion in GDP, which accounts for approximately 10% of Canada's national GDP. Also, the region's GDP is nearly half of Ontario's GDP and is expected to grow at 4.2% to \$571 billion over the next five years.<sup>clx</sup>

The City of Toronto is home to a wide range of industries and business services, where no one industry or sector dominates its mixed economy. The three largest industries include (by percentage of GDP) Financial Services (14%), Real Estate (14%) and Wholesale and Retail Trade (12%). Key business sectors are: financial services, life sciences, information and communications technology (ICT), clean-tech and green energy, food and beverage, and creative industries.<sup>clxi</sup> Toronto's economic diversity gives it resilience to downturns in any given sector and provides a broad base for growth.

The larger region's economy expanded gradually in 2012 with an estimated total output (adjusted for inflation) growth between 1.6% and 1.9%, which is roughly the same as annual regional population growth (1.7%).<sup>clxii</sup> Therefore, output per capita (real GDP) remained essentially unchanged in 2012 in the Toronto region. Seasonally adjusted unemployment rate for the city (9.3%) remains higher than elsewhere in Canada, including the rest of the Toronto region (8.4%); however, the city participation rate (67.1%) is increasing faster.<sup>clxiii</sup>

## **Governance Structure and Budget**

Toronto city, as it exists today, was established in 1998 as a result of the amalgamation of central Toronto and 5 surrounding municipalities. This amalgamation was a critical milestone in the governance structure of the city, as it was able to, for the first time, develop and release an Official Plan in 2002 in which it set the strategic direction for the city and its areas, including 230 site- and area-specific policies. The amalgamation was quickly followed in 2004 by the New Deal for Cities, a sweeping decentralization effort by then-PM Paul Martin that promised "new money, new power, and a new seat at the table" for Canadian cities.<sup>clxiv</sup> The New Deal resulted in a series of agreements between Canadian urban centers and the provincial and federal governments that transferred federal fuel tax revenues to cities for the maintenance and development of local infrastructure.

A joint Toronto-Ontario review of the City of Toronto Act of 1997 led to the approval of Bill 53 (also known as the 'Stronger City of Toronto for a Stronger Ontario Act') in 2006 by

provincial legislature, and saw a broadening of powers with more autonomy for Toronto's government, a diversification of revenue source aimed at easing pressure on property taxes, and the ability of Toronto to enter into agreement with other governments.<sup>clxv</sup> However, despite revisions in governance and a certain amount of devolution, Toronto still struggles with relatively low productivity, lagging growth, depreciating infrastructure, urban sprawl and suboptimal integration of immigrant workers.

The city is led by the mayor and 44 councilors, each elected by voters and representing one of the city's wards. The council is at the core of city governance and holds legislative and operational power. A proposal that came into force in November 2006 gives the mayor the right to appoint a deputy mayor and the heads of council committees. The mayor heads the executive committee, largely comprised of members appointed by the mayor and includes the deputy mayor, the chairs of standing committees and four other members, with the power to draft the city's budget and oversee finances. However, city by-laws, including the budget, must still be passed by a majority of council members, and each member of council, including the mayor, has only one vote.

Despite this centralized structure, the mayor wields relatively low power in comparison to other examples of 'strong mayor' city models (i.e. Chicago and NYC).<sup>clxvi,clxvii</sup> There are a few reasons for this, including competition with the Province's premier, whose offices are located less than a mile from the Mayor's seat in the city and who exercises broader powers of implementation and taxation.<sup>clxviii</sup> The provincial level of governance, also based in Toronto, is vested with more authority than municipalities and all aspects of municipal governance, including finance, the scope of local powers and governance structure, is subject to provincial scrutiny.<sup>clxix</sup> The mayor's powers of appointment are limited to council committee chairs along with the executive committee and deputy.

The two largest sources of revenue for the city are property taxes and provincial grants and subsidies.<sup>clxx</sup> This heavy reliance on traditional taxation instruments denotes a lack of taxation and revenue generation power for city administration. According to the OECD, the dependence of local governments on property tax revenues declines when taxing powers increase or are increased at the local level.<sup>clxxi</sup> Cities in Canada, Australia and the United States

(with the exception of New York City) are largely dependent on property tax revenues – and do not have the autonomy to set their own income tax rates. In general, the level of decentralization of power is inversely related to a city’s reliance on property tax revenues.<sup>clxxii</sup> There is scope and authority for further diversification of city revenue sources through the taxation powers provided by the City of Toronto Act (2007) – including land transfer taxes, personal vehicle taxes, parking, and advertising taxes, and excluding income and most types of sales taxes.<sup>clxxiii</sup> The Province would need to amend the City of Toronto Act to give the city the additional authority to levy a fuel and hotel tax. However, the impact of new taxation schemes on the local business environment would need to be carefully evaluated for potential impacts on the cost of doing business in the City.

The level of property tax rates on business is higher in the City of Toronto relative to other local governments in the region and this has undermined the city’s appeal to businesses.<sup>clxxiv</sup> In 2008, the industrial property tax rate in the city was one of the highest among municipalities in the GTA, and its commercial property tax was the highest; business relocation outside the city has contributed to sprawl.

Responsibility for crafting economic development policies is generally divided among federal, provincial, and city governments. The federal and provincial levels control tax regimes, trade and investment rules and labor rules and share responsibility on science policy and innovation.<sup>clxxv</sup> Municipalities in the Toronto region – including the city – work to attract businesses and administer sector-specific policies and incentives.

## Local Policy

### Local Policy #1: Human Capital – Immigration

Toronto consistently ranks well in its capacity to attract highly qualified immigrants, along with its ability to culturally integrate new Canadians. Over 45% of Toronto’s population is foreign-born and on average 50% have higher education (university and graduate education), adding substantially to the pool of available talent and human resources from which businesses can draw.<sup>clxxvi</sup> Projections estimate that by 2031, almost 80% of Toronto residents will be immigrants or children of immigrant parents.<sup>clxxvii</sup> Policies related to immigration, social

integration and cultural diversity are divided and shared among the federal, provincial and local levels of governance. The federal government sets immigration policy, sharing responsibility with the provinces and municipalities for immigration settlement and housing, while municipalities provide local services. Immigration is an example of a relatively well-integrated policy area, and the Canada-Ontario-Toronto Memorandum of Understanding on Immigration and Settlement formalizes cooperation between all levels on immigration and settlement.<sup>clxxviii</sup>

However, immigrant employment rates in Toronto lag behind Canadian-born workers. Figures from 2006 showed unemployment rates among very recent immigrants of core working age (25 to 54 years) at 11%, substantially higher than the 4% for locals.<sup>clxxix</sup> Programs that focus on bridging qualifications, training and internships could narrow the gap, along with federal efforts to advance applications for credential recognition of prospective immigrants while they are still abroad.

## **Local Policy #2: Physical Infrastructure – Transportation**

Toronto consistently rates highly on global city indices of ‘livability’ and standard of living.<sup>clxxx</sup> However, according to its own performance assessments, the Toronto is a dismal performer when it comes to moving people, with the Toronto Board of Trade issuing a “D” grade for transportation infrastructure and ranking Toronto 19th out of 23 global cities.<sup>clxxxi</sup> Consistent under-investment and poor integration with land use planning and development mean that population growth and regional sprawl have overcome the current system. There is no unified metropolitan government for the Toronto region, rather local and regional municipalities. These municipalities compete for investment. The lack of an economic and infrastructure investment strategy for the Toronto region has resulted in sprawled development and a general lack of alignment between transit and land use.<sup>clxxxii</sup> The fiscal architecture of the region is such that education property taxes are lower for office space in the suburbs in comparison with the city of Toronto, and property taxes are higher for rental units as opposed to condominiums and single-family homes, contributing to low density development, a fragmented transit system, and severe road congestion.<sup>clxxxiii</sup>

Despite the setbacks, demand for public transit is high, as demonstrated by the relatively high modal split for mass transit in the Toronto region (23% in 2006). But given the

poor infrastructure and coverage, 71% of the region's commuters still depend on cars to get into the city. This means high congestion, long commutes, and high costs. In 2006 the estimated annual economic costs were estimated at CAD\$ 2.7 billion (~USD \$2.16 billion) for the Greater Toronto and Hamilton Area.<sup>clxxxiv</sup> In an effort to improve regional transport integration, a regional transport agency (Metrolink) was created in 2006 and in recent years fares and ticketing have been consolidated. At the city level transit remains a contentious issue, particularly around the upcoming 2013 mayoral and provincial elections. The relatively small federal stimulus package for transport was dedicated to road rehabilitation and provincial and federal subsidies for the Toronto Transit Commission were non-existent in the 2012 operating budget.<sup>clxxxv</sup> Mayor Rob Ford's ambitious (and controversial) plans for an expanded subway system hinge on limited city and private funding, with a slim chance of provincial support in 2014. However, recently the city council approved an investment of CAD\$500 million (~USD\$502.5 million) to connect and expand the city's existing cycling network.<sup>clxxxvi</sup> A recent report from the City Manager, Deputy City Manager and Chief Financial Officer urged increased fundraising for better transportation through a regional sales tax, gas tax, commercial parking levy and tolls.<sup>clxxxvii</sup>

### **Local Policy #3: Livability – Affordable Housing**

Demand for rental housing continues to grow in the Toronto region due to consistent flows of immigrants and a limited supply of rental construction targeted to high-income consumers. Although there is a considerable vacancy rate of rental homes in the City of Toronto, these vacant homes will not be enough to accommodate population growth and demand. Moreover, as large waiting lists for social housing and other variables show, housing affordability continues to challenge the city's livability and economic inclusion.<sup>clxxxviii</sup> In response, there are numerous programs in place to support rental housing and housing affordability. The federal and provincial governments provide funding for housing allowances and rent supplements, and have recently adopted policies to address challenges to rental housing construction and repair. The City of Toronto's affordable housing framework for 2010-2020, *Housing Opportunities Toronto*, aims to assist 257,700 households over the next ten years.<sup>clxxxix</sup> To achieve this goal, the plan identifies 67 actions to be taken by the city, provincial

and federal governments, as well as the private and non-profit sectors, and calls for new investment of CAD\$484 million (~USD\$486 million) annually over the next decade.

These policies could be intensified by a regionalized and harmonized rental and affordable housing approach. The City of Toronto has more available rental housing than other municipalities in the region, but it also has the highest average housing costs and rents in Canada, which might constrain housing opportunities for low income residents and new immigrants.<sup>cxci</sup> To increase the housing mix in the Toronto region, a regional approach to housing would be required, so that municipalities other than the City of Toronto also increased their share of social and rental housing. This could be achieved by empowering and encouraging municipalities in the region to introduce inclusionary zoning in areas where new development is planned.<sup>cxci</sup> In order to increase the affordable housing mix in the Toronto region, agreements could be made on a region-wide level regarding the share of affordable housing to be included in new developments, as city-regions in the Netherlands have done.<sup>cxcii</sup> The province might also consider sanctioning municipalities that are failing to meet affordable housing targets, as municipalities in France do.<sup>cxciiii</sup> Authority and capacity at the city level rests in the Toronto Community Housing Corporation, the largest provider of social housing in Canada and the second largest in North America.<sup>cxciiv</sup>

#### **Local Policy #4: Business Environment – Land for Businesses**

In addition to affordable housing, the City of Toronto must also consider land use and development for businesses (a.k.a. 'employment land'). The city can support economic growth by allowing existing businesses to expand and new businesses to start up in terms of space occupied and by ensuring an adequate supply of land to accommodate the city's commercial and industrial employment growth forecasts.<sup>cxci</sup> This will help concentrate businesses into the city center and reduce sprawl, as well as increase the property tax base, thus adding to Toronto's fiscal capacity. However, residential land development in the city is preferable when converting commercial use land. This is due to several factors, including: population growth, the municipal property assessment system, high municipal property tax rates, development charges, and other real estate market forces in real estate.<sup>cxci</sup>

One suggestion to strengthen policies that ensure supply of employment lands is to revise the municipal property assessment system. The market value of employment lands is determined in part by expectations about future uses, which are strongly influenced by the market value of adjacent properties. This methodology adversely impacts industrial lands and smaller commercial properties in close proximity to lands that have been, or are planned to be, redeveloped for higher density uses (e.g. residential).<sup>cxcvii</sup> Residential condominium developments have resulted in higher assessed values, and therefore property taxes, of nearby commercial properties. These increases are passed on to tenants who may then seek to relocate to less costly areas or municipalities in the region. If enough tenants are impacted, prudent property owners are led to consider conversion to residential uses, thereby permanently reducing the inventory of lands available for employment uses.<sup>cxcviii</sup>

Maintaining land supply for employment uses is necessary, but not a sufficient condition for economic growth if there no demand for it. Currently, the city has a significant stock of older industrial buildings, which were vacated with the decline in manufacturing industries post-NAFTA. Redevelopment of these industrial spaces for office use would be productive - generating jobs, wages, tax revenue, and profits. However, the city government reserved these building for industrial uses in the past, given the large size of manufacturing at the time, and prohibited office development within these specifically-designated 'industrial areas'.<sup>cxcix</sup> Today, modern manufacturing processes have increased in scale, making many older industrial buildings unsuitable. Therefore, city policy should allow for these properties and buildings to be repurposed and re-designated for other employment uses and industries. For example, while a 14 foot ceiling height is no longer suitable for industrial uses, it is highly attractive for people working in growing sectors such as computer gaming and film production. Re-designating building use is also an option the city can undertake to better utilize its current building stock.

The city's strategic plan recommends two policies to ensure employment land supply: 1. Request the Ontario Minister of Finance, in consultation with MPAC<sup>18</sup>, give consideration to

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<sup>18</sup> Municipal Property Assessment Corporation is a non-share capital, not-for-profit corporation whose main responsibility is to provide its customers - property owners, tenants, municipalities, and government and business

making the necessary regulation that would have commercial and industrial operations in areas of rapid development within the City assessed at their current use rather than highest and best use implied by market value, and 2. Ensure Official Plan policies and Zoning By-law regulations provide flexibility to permit compatible offices within employment areas.<sup>cc</sup> The first policy recommendation is beyond the city's legal authority, unlike the second; regional and provincial cooperation and planning could help address this concern. For now, the city has the potential capacity and authority to allow for better productive uses of its buildings. These policies could preserve designated employment areas for employment uses and stimulate office space growth in urban centers.<sup>cci</sup> By focusing growth in high-density areas while advocating transit-oriented, walkable, and mixed-use developments with a range of housing options, Toronto is actively pursuing policies that mitigate urban sprawl and promote livability. The challenge, however, will be striking a balanced approach in land use allocation and securing sufficient resources to improve the transit system serving the city.

## Implications

Although the City of Toronto ranks is a consistent performer on international city livability rankings, it struggles with basic infrastructure provision and upgrading in transportation and housing. Greater Toronto regional cooperation and coordination can help to address both as inter-municipal competition has increased the costs of transport and housing for city residents and workers. Land use allocation between housing and business could be problematic if not properly balanced; re-designated/repurposed space from industrial buildings requires a city decision while changes to property valuation will require provincial agreement and cooperation.

In terms of leadership while the mayoral position is somewhat structurally weak relative to the premiership of the province, an advocate mayor who lobbies for federal and provincial

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stakeholders - with consistent and accurate property assessments in the Ontario Province. Every municipality is a member of MPAC.

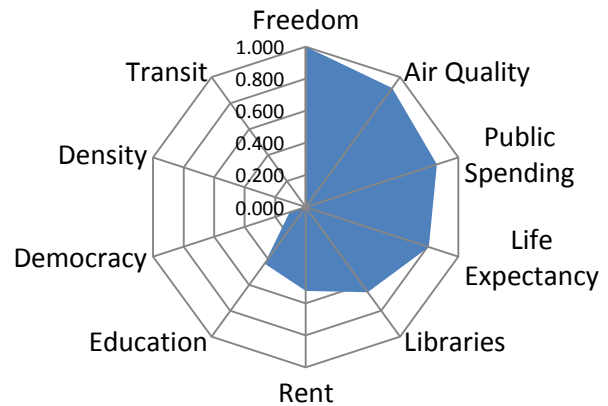
resources for the city will help to promote the interests of the city at all levels of governance and will help to attract funding for infrastructure.



## MIAMI: CEC Index Ranking #6

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Freedom	1.000
Air Quality	0.917
Public Spending	0.860
Life Expectancy	0.807
Libraries	0.657
Rent	0.523
Education	0.436
Democracy	0.106
Density	0.006
Transit	
<b>CEC Score</b>	<b>5.312</b>



### City Economic Capacity Score Analysis

According to its CEC score (5.3 out of 10), Miami ranks sixth among the ten case study cities. The city scores especially well in areas such as quality of life such as life expectancy, air quality, as well number of libraries. Part of this may be explained by the city's relatively high performance in public spending, discussed below. Although we were unable to find and assess a reliable measure for transit, the city does have fairly strong transit coverage, ranging from a subway, buses, and trollies, and has invested a great deal since 2001 in its infrastructure.

### Economic Condition

Miami is one of the largest commercial, financial, and trade centers in the United States. Between 2001 and 2008, the city enjoyed an annual average growth rate of 5.6%.<sup>ccii</sup> However, this was counterbalanced with the housing crash that followed. In the U.S. context, according to the Milken Institute, Miami is in the 10<sup>th</sup> percentile or below for both 5-year and 1-year GDP growth leading up to 2011.

Nevertheless, according to a 2012 study by UBS, Miami ranks as the second richest city in the United States (behind Los Angeles), and seventh richest in the rest of the world based on domestic purchasing power parity. This is a slight decline from ranking first in the U.S. and fifth in the world in 2009; however this decline has been a similar trend to other major cities in

United States.<sup>cciii</sup> Despite this high ranking, when considering the greater Miami-Dade area as a whole, the county measures 74% of county population that is classified as low income. This suggests that despite a high concentration of wealthy individuals in the city center, there is a sizable income disparity in the surrounding area.<sup>cciv</sup>

Despite more recent economic shortcomings, for the areas of trade, housing, and tourism, Miami owes a great deal to its close ties with Latin America. Miami-Dade county is the largest metro area in the U.S. to have a Hispanic majority. Such elements have led many to see Miami as the de facto capital of Latin America and easily the largest gateway for U.S. companies to the Latin American market.<sup>ccv</sup> Among a throng of American businesses such as FedEx, Kraft, Microsoft, and Oracle that headquarter in Miami for their Latin American markets, companies such as Telemundo call Miami home for access to the U.S. market. When the Free Trade Area of the Americas (a proposed extension of NAFTA) was proposed, Miami was proposed to be the headquarters of its secretariat.

For a city once known better as a destination for tourists and retirees, Miami has quickly gained more prominence as a crossroad for trade, travel, and communication in the Americas, akin to Hong Kong and Singapore in Asia. Trade out of South Florida has more than doubled in the past ten years from \$50 billion in 2002, to \$113 billion in 2011, and has reported trade surpluses amounting to \$26 billion. This contrasts greatly with the rest of the United States which perennially runs trade deficits.<sup>ccvi</sup>

To support this growing direction towards Latin America, Miami underwent a significant expansion of its commercial real estate alongside the real estate bubble in the U.S. Some 50 high-rise buildings were erected in part to coincide with the city's growth and to accommodate the growing flock of business and economic attention to the city. Just as much as Miami witnessed an even larger real-estate boom than the rest of the United States, it too witnessed an even larger real-estate bust starting in 2007, witnessing one of the highest overall foreclosures in the nation following poor economic times. Nevertheless, alongside Phoenix, Miami has recorded one of the strongest recoveries to home prices in mid-2012.<sup>ccvii</sup>

Miami also ranks as one of the world's leading tourism destinations. Although Miami ranked behind New York, Chicago, and Los Angeles for international visitor spending (as of

2011), it nevertheless ranks 16<sup>th</sup> among a group of top 20 cities, generating some \$8.7 billion in tourism revenues. This speaks of the strong role that tourism plays in the city's overall economy. It was built during the commercial real-estate boom of the earlier 2000s, the Four Seasons Hotel erected what is now the tallest building in the city, and third in the nation.<sup>ccviii</sup> It was built just in time for the FTAA conference that took place in November of 2003 signaling that the city has gone in the direction of fostering the development of both trade and tourism.

## Governance Structure and Background

Perhaps the most prominent influence on governance in Miami's history is the wave of Cuban immigrants that followed the Cuban Revolution of 1959. The first wave predominated in the 1950's to the 1970's and later in the 1980's to 1990's to include a multitude of other immigrants, comprising of several nationalities. The discussion below will demonstrate how this has been a significant influence on the most recent governance structure and the city's leadership starting from the 1990s.

The wave of Cuban immigrants of the 1950s to the 1970s has resulted in a substantial constituency of Cubans living in Miami today, and ultimately other Latin Americans.<sup>ccix</sup> Starting from 1996 – a generation following the first wave – each of Miami's five mayors since then were Cuban-born Americans. This demonstrates a great deal of influence that immigrants (chiefly the Cuban population) have on the city's direction and goals, and the policies that come with it.

Nevertheless, the 1990s were an important turning point for the city. The period saw a number of financial scandals in the Mayor's Office leaving the city as the fourth poorest in the U.S. in 1996. An attempt to dissolve the city and merge it into one entity with Miami-Dade County culminated, but was rejected by voters. That year same, Joe Carollo – the first of the five most recent mayors – took the mayoralty and the city had seen periods of some of its highest growth.

Manny Diaz's entry into the mayoralty in 2001, in particular, was a true windfall for the city economically, namely in pulling the city up from junk bond status and pushing for a much greater investment into infrastructure and quality of living projects (discussed further in the section for Miami's urban planning, #3.3 below). Diaz was the fourth of the five most recent mayors and maintained his position for eight years until 2009.

Miami-Dade County covers the south-east corner of Florida, and comprises a total of 34 municipalities. This brings about an important distinction for governance structure. Ultimately, the structure is designed to include an executive mayor of the county (Miami-Dade) as well as an executive mayor for each municipality within the county (in this case the City of Miami). Both mayors are elected through direct citizen vote. Moving down the chain of command, each municipality has a set number of commissioners, with Miami having five in particular, also elected through direct elections

The executive mayor of Miami-Dade has the power to veto commission action and, as of 2007, was given additional powers in providing greater oversight for the day-to-day operations of Miami-Dade.<sup>ccx</sup> The City of Miami specifically (currently under the mayoralty of Tomas Regalado) has five commissioners of its own.

The City of Miami raises budgetary funds through a combination of taxes on areas such as property<sup>19</sup> and franchises, revenues from activities such as licensing and permits, fines, and interests, among other sources. Expenditures go towards general purposes, pensions, and public safety, of which the latter accounts for nearly half of all expenditures. In the month of August of each year, the Mayor, alongside the City Manager and the Director of Management and Budget complete their review and initial approval of all budget submissions provided by various departments for approval.<sup>ccxi</sup> Miami's outsourcing of services to the city is not particularly different from that of other major cities. Contracting services accounts for \$13.7 billion, or about 15%, of the city's total operating expenses.<sup>ccxii</sup>

## Local Policy

### Local Policy #1: Human Capital – Immigrants

Miami's percentage of foreign-born residents is 51.2% in 2011, ranking second behind Dubai. This is approximately four-times the U.S. national average of 13%.<sup>ccxiii</sup> It shares this stage with the likes of Toronto (#3) and the Borough of Queens in New York City (#4). Due to its geographic proximity and present population composition, Cuba remains the largest source of

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<sup>19</sup> Accounting for over half of tax revenue.

immigrants, accounting for some 34% of the population and 47% of the foreign born population.<sup>ccxiv</sup>

Despite federal level control for setting immigration policy, Miami has frequently been at the forefront of immigration reform due the strong influence immigration has had on Miami's development. Most recently, Mayor Regalado participated in a march urging Congress and the President to pass immigration reforms that would give millions of undocumented workers legal status.<sup>ccxv</sup> Florida Senator Marco Rubio, also a Cuban American who grew up in Miami, has, by many respects, led the charge. Challenges for immigrant policy could have strong implications for social and economic equality and inclusion for Miami's workforce, and will need to be addressed, especially if immigration is expected to increase from Latin American.

## **Local Policy #2: Physical Infrastructure – Ports**

Among its global peers, Miami ranks 48<sup>th</sup> out of the top 50 on Mercer's Infrastructure Ranking.<sup>ccxvi</sup> Though lagging behind its American peers as a port city and gateway to Latin America, Miami's ports are arguably the city's greatest commercial asset. In March 29, 2013, at "Port Miami", U.S. President Obama laid out the national infrastructure plan advocating the restoration and modernization of vital infrastructure such as bridges, railroads, as well as ports. The port employs 176,000 people and grosses annual revenues of \$94.7 million, crucial not only to the city's economic growth, but also to the city's budget.

Port Miami is commonly called the "Cargo Gateway to the Americas." In terms of trade, Latin America and the Caribbean account for 54.2% of the goods that pass through the port. The share of Asian markets have been increasing their presence in the city; while the region's exports to the U.S. have been incrementally shifting from the west coast entries to the east coast, Miami has become a more favorable destination. China alone accounts for 25% of imports handled by Miami.<sup>ccxvii</sup> Nevertheless, it is only the ninth-largest port in the United States and is only a fledgling player in the global community. The U.S. Department of Commerce announced in August of 2012 that Miami will be a Foreign Trade Zone, which is slated to double the port's cargo traffic and foster job growth.<sup>ccxviii</sup>

Furthermore, Port Miami also supports luxury services and tourism, known as the "Cruise Capital of the World." Carnival, Royal Caribbean, and Norwegian Cruises (the three

largest operators) dock many of their cruises in the port today (though, Port Everglades in Broward County, Florida, has more recently been the home of the largest carriers).<sup>ccxix</sup> With greater expected demand for port facilities, Miami will need to effectively invest in its port to fully participate in and sustain the economic activity the port generates.

### **Local Policy #3: Livability – Urban Planning**

According to Mercer, Miami ranks 110th in the world in terms of cost of living, making it a relatively affordable city among its most immediate peers such as New York, Chicago, and Los Angeles. However, it is outranked in terms of quality of living.<sup>ccxx</sup> In the early 2000s Miami was still a crime-ridden and economically flat city. Under the governance of Mayor Manny Diaz, the city has made some arguably large strides. Its municipal bond rating went up from junk status to its current A+. This can in part be attributed to Diaz who bolstered the city's economy through public works, parks projects, and building museums, while successfully reducing crime, thus improving overall quality of life.<sup>ccxxi</sup> Since taking office, the city saw its population climb up by over 10% in just four years, similar to what was seen in the 1970s (during the first immigration wave), and a major improvement from the 1990s which saw only 1% for the decade.<sup>ccxxii</sup>

Diaz also identified the importance of environmental sustainability to help ensure economic prosperity. He argues that his greatest achievement in office was the Miami 21 Project which sought to build a “Miami of the 21st Century”.<sup>ccxxiii</sup> The plan entailed a “holistic approach to land use and urban planning.” The goal was to foster economic development through historic preservation, creating parks and open spaces, arts and culture, and effective transportation.<sup>ccxxiv</sup> Additionally, Miami has been ranked as one of the greenest and cleanest cities for its year-round good air quality and its many green spaces.<sup>ccxxv</sup>

### **Local Policy #4: Business Environment – Latin America Focus**

Despite large strides by Miami since 2001, Forbes ranks Miami 181<sup>st</sup> in the U.S. for doing business and for career advancement, based on cost of doing business, job growth, and education of its constituents. Also mentioned above, the Milken Institute ranks Miami in the 10<sup>th</sup> percentile of 200 major U.S. cities in GDP growth both for five-year and one-year periods leading up to 2011. These results could be attributed to the major housing bubble crash of 2008

which hit Miami especially hard, and put the city as #2 on Forbes' list of "America's Most Miserable Cities" in 2010. However, this should not have affected the policy infrastructure for pro-business conditions, suggesting that Miami's growth, though noteworthy, may not have been made adequately sustainable. These conditions make it especially difficult to make an argument for Miami's best practices in fostering a pro-business environment.

However, it bears reemphasizing that many well-established U.S. companies choose Miami as a gateway into Latin America, and vice-versa. Therefore, for individuals and organizations that focus on commerce between the U.S. and Latin American, Miami is quite strong and should remain a major contributor for future growth.

## Implications

Considering that Miami came from being one of the poorest cities in the U.S. only twenty years ago, Miami draws a meaningful case for how a city can harness its competitive advantage of location and human capital to capitalize on industry connections between the U.S. and Latin American region. Though the 2008 housing crash affected Miami significantly, this was no doubt precipitated by the average annual growth of 5.6%.<sup>ccxxvi</sup> The city is finally enjoying an upswing since 2008, and the development that took place between 2001 and 2008 has left a permanent infrastructure from which it can now continue to grow.

Miami's current major focus on intermediating trade will continue to benefit the city from commercial flow of goods through its port, but this does not necessarily mean that Miami is markedly more responsible for the output of the goods themselves. In many, albeit superficial, respects, Miami bears a strong resemblance to Hong Kong and Singapore. Both Asian cities are major ports and launch-pads for the Asia-Pacific region. However, while trade puts them on the map, it is financial services (and financial intermediation as well) that has the most meaningful effects on their growth.

Miami, can learn from this model and has the groundwork to facilitate doing so; but areas where they can truly leverage the economic growth in Latin America are through services that yield a greater return than ports. While Miami has tried to be one of the staunchest advocates for immigration reform, these efforts may have diverted the city from a potentially greater focus on attracting talented human capital from within, not outside of, the United

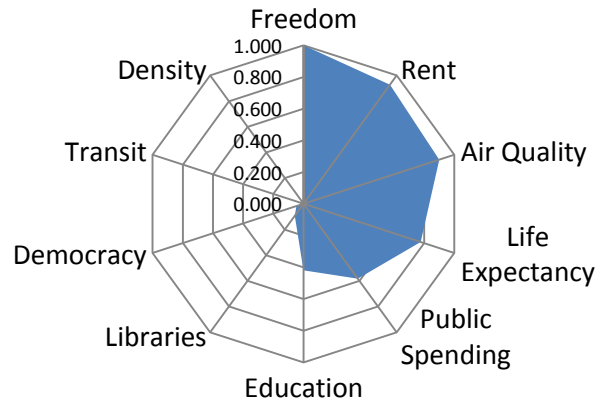
States. Policy should do more to attract talented human capital, immigrant or not. It can do so, but in turn it will need to improve on its infrastructural and overall appeal of the city as well. To its benefit, the market potential is very much there.



## PHOENIX: CEC Index Ranking #7

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Freedom	1.000
Rent	0.928
Air Quality	0.900
Life Expectancy	0.777
Public Spending	0.583
Education	0.419
Libraries	0.093
Democracy	0.047
Transit	0.000
Density	0.000
<b>CEC Score</b>	<b>4.747</b>



### City Economic Capacity Score Analysis

Phoenix scores a 4.747 in terms of city economic capacity. The city benefits from certain economic advantages, in particular competitively priced housing. However, the city scores low on certain infrastructure and livability measures including density, education, cultural capital (libraries) and transit coverage. The city has been able to grow despite a development pattern that favors sprawl.

### Economic Condition

Phoenix's dominance as a territorial, state, and regional economic powerhouse began when the first railroads connected the bustling town with supply centers and product-hungry markets to the east and west. The city grew on the classics of the Arizona economy, the 5 C's: cattle, climate, cotton, copper, and citrus. However, by the 1940s, Phoenix, more than other Arizona cities, thrived as a distribution center, eventually abandoning agriculture and mining in favor of burgeoning manufacturing and industry.

The city's economy grew quickly during the 20<sup>th</sup> Century, as manufacturing prospered and the tourism industry took off, profiting from the favorable climate. As the city and its metropolitan area swelled in population during the 1980s and 1990s, the economy diversified into the technology and service sectors.<sup>ccxxvii</sup> By 2007, nearly 30% of the metro area's residents

were employed in technology or professional services (excluding education and healthcare), while less than 1% were employed in agriculture.<sup>ccxxviii</sup>

The recent economic crisis had powerful negative impacts on the city's economy, as the city had been a national trendsetter in housing prices. Although prices were below other growing Sun Belt cities, Phoenix's growth rates were nearly exponential in the years leading up to the recession. When the housing bubble burst, Phoenix was one of the first cities to absorb the impact. GDP contracted between 2008 and 2012 by nearly 3%, and population decreased by nearly 4%, reversing decades of growth. True to its name, however, the city recovered quickly in comparison to other Sun Belt cities. After reaching a low in 2009, housing prices have once again begun to grow. Population is expected to increase as competitive housing prices and growing wages challenge nearby Sun Belt cities, particularly in California.<sup>ccxxix</sup>

Some of the city's recovery can be attributed to rapid response to the housing crisis; as foreclosures mounted, the real estate industry bought up vacant homes and converted them to rentals, lowering vacancy rates and attracting young professionals and families with below-market prices.<sup>ccxxx</sup> However there is also evidence that despite its seemingly chaotic sprawl, Phoenix is actually a business-oriented city from a geospatial perspective; the city appears to have multiple central business districts that facilitate inter-business commerce and communication, which aids economic growth.<sup>ccxxxii</sup> As housing prices rise and Phoenix's GDP recovers, the city may expect substantial population, economic growth but its ability to sustain this growth depends on natural limitations.

## Governance Structure and Budget

In 1913, as part of an overarching charter reform for the city, Phoenix became one of the first American cities to adopt a council-manager form of local governance. In this form of government, the council, directly elected by residents, appoints a city manager who takes on the executive powers of governance, while the council itself retains legislative authority. The position of mayor is typically ceremonial. The system was far from perfect in its first 40 years, however, as statutorily weak managers remained beholden to the political interest of council members.<sup>ccxxxiii</sup> Gradual modifications to the city charter, empowering the manager position and diluting individual legislative power by increasing the number of councilors from four to seven,

resulted in more durable administrations.<sup>ccxxxiii</sup> Phoenix is the largest municipality in the U.S. to use the council-manager system.

Within the council-manager structure, it is the council, and to a less impactful degree the mayor, which is responsible for legislation and the formulation of city-wide policy. There are currently eight council members directly elected by district; the election for mayor is city-wide. The city manager is head of the executive branch, and is fully responsible for the day-to-day operations of the city and serves as an advisor to the council on suggested policy measures.<sup>ccxxxiv</sup>

The city is governed by a charter that ensures Phoenix partial home-rule, subject to limitations imposed by state legislation or court rulings. The charter grants the council the authority to assess and levy those taxes that are permissible for the city to collect under Arizona state law. Municipalities in Arizona are permitted to levy sales tax on top of existing state and county levies. Phoenix's levy, at an additional 2%, translates into one of the heaviest sales tax among U.S. municipalities.<sup>ccxxxv</sup> Arizona municipalities are not permitted to levy income taxes. Phoenix's property tax rate currently stands at \$1.82 per \$100 of assessed value. Studies have indicated that the combination of Phoenix's tax policies is particularly burdensome to lower income levels (likely as a result of the high sales tax), whereas at higher levels of income the tax burden is lower relative to other U.S. municipalities.<sup>ccxxxvi</sup> Phoenix's total operating fund revenues in FY 2011-2012 came to over \$2.9 billion. The city generated \$540 million (18.6% of revenues) through local sales and property taxes and licensing fees. An additional 10% of total revenues were collected from shared state taxes. Nearly 9% of revenues came from state and federal grant transfers. In the preceding fiscal year, these figures were 17.4% for locally generated revenue, 10% for shared state taxes, and 8.1% for state and federal grants.<sup>ccxxxvii</sup> Since the 2009 appointment of city manager David Cavazos, the executive has placed emphasis on both closing the \$227 million budget deficit (which it successfully did in 2011), and on reducing spending city-wide by \$100 million by 2015. To date, the city's Innovation and Efficiency Task Force's recommendations have led to savings of \$60 million.<sup>ccxxxviii</sup>

The city's 15,000 employees are ultimately responsible for the provision of public services, under the direction of the city manager's executive powers. However, the city was a pioneer in the 1970s of the practice of managed competition, in which municipalities allow

private competitors to bid against public service providers for delivery of specific services. This approach seeks to combine the benefits of private competition with the assurance that the city is ultimately responsible for services. The goal is to stimulate public organization improvement through competition from the private sector. Phoenix opened waste collection to private bidding in 1979 and continues to rotate bidding areas cyclically for short term contracts.<sup>ccxxxix</sup>

## Local Policy

### Local Policy #1: Human Capital – Immigration

Phoenix’s foreign born population was 20.2% in 2011, compared to the U.S. average of 13%. However, in 2010 Arizona Governor Jan Brewer signed SB 1070, a controversial piece of legislation that criminalized undocumented immigration (a purview of the federal government) and authorized state and local authorities to stop individuals to check for papers. The bill generated backlash around the nation, and elicited strong responses from municipal-level officials, including Phoenix Mayor Phil Gordon. Mayor Gordon championed a resolution from the U.S. Conference of Mayors that opposed the bill on civil rights, economic, administrative, and jurisdictional grounds.<sup>ccxi</sup> Although the U.S. Supreme Court ultimately struck down various provisions of the law, the impacts of the bill on Phoenix’s immigrant population are unclear. As the city is required to execute state laws, local officials have very little recourse to oppose it aside from litigation.<sup>ccxli</sup> Given the opposition to the bill, it is likely that Phoenix officials worried about the impact of the bill on the city’s immigrant populations. However there is not yet ample evidence to ascertain the effect that the bill had on immigration levels in Phoenix or Arizona as a whole. There is preliminary evidence that some sectors of the Phoenix economy, including convention services, have suffered business losses due to the negative impact of the state’s laws on its image and reputation.<sup>ccxliii</sup>

### Local Policy #2: Physical Infrastructure – Water

Phoenix’s geography—in the center of the arid Sonoran Desert—means that water policy is central to the city’s survival. The Hohokam Indians had constructed a series of canals that connected their residential areas to the nearby Salt River. When the city site was

rediscovered in the mid-19<sup>th</sup> Century, the new inhabitants once again returned to canals and irrigation policy to turn the dry Salt River Valley into a productive agricultural landscape.

The Salt River, because of its origins in the mountainous east, is prone to cycles of flooding and drought. The 1902 National Reclamation Act paved the way for the residents of the Phoenix area to embark on more permanent solutions to irregularities in the water supply. The Salt River Project (SRP), effectively a private-public partnership between private citizens and the state of Arizona, is a network of dams and artificial lakes that provides reserves of water to smooth out supply fluctuations. The program of dam construction and irrigation was completed through the 1920s and 1930s and increased the city's water supply dramatically while effectively draining the river.

Throughout the 20<sup>th</sup> century, Phoenix expanded its water managements through the Salt, Verde, and Colorado Rivers and diversionary dams and canals, and five local treatment plants for use by the entire metropolitan area.<sup>ccxliii</sup> Careful water management policy is critical for a growing city situated in the middle of a desert. The city's water department stresses that supplies are not in danger, but that it is the responsibility of both private and public users to minimize usage beyond critical needs, and the city has largely been successful in conserving water: consumption levels in 2012 were lower than a decade before.<sup>ccxliv, ccxlv</sup>

As part of the current city manager's Innovation and Efficiency Task Force, a Water Services Advisory Panel analyzes the policy implications of the city's predicted supply and demand issues. In a report submitted in February 2013, the panel suggested that water management policy has been appropriate to date, but still needs improvement. Of note is that by current estimates, Phoenix is outperforming relative to predicted performance measures from the mid-2000s. This is attributed to the financial crisis, which reversed Phoenix's decades-long trend of population growth. As demand for water increases, legal storms are brewing between the seven states which rely on the Colorado River that is threatened by increasing demand as population rises in the Southwest and climate change.<sup>ccxli</sup> Facing high usage competition and legal obstacles with California, Phoenix's supply alternatives are uncertain, and a renewed focus on easing demand side pressures is needed.

### Local Policy #3: Business Environment – Housing

Housing prices doubled in Phoenix between 2004 and 2006, followed by a drop to near-2001 levels by 2009.<sup>ccxlvi</sup> While housing prices did rise during the U.S. housing bubble, Phoenix still maintained more affordable housing stock compared to other Sun Belt cities, effectively draining these cities of their population despite lower wage levels.<sup>ccxlviii</sup> Some economists attribute this relative advantage to Phoenix's more permissible building codes, which allow the city to rapidly increase its housing supply while maintaining low costs.<sup>ccxlix</sup> Phoenix's real estate and construction sectors thrived as a result, stimulating enough growth to keep Phoenix competitive vis-à-vis its denser rivals.

The recession hit Phoenix badly, leading to tens of thousands of foreclosures. However, the Phoenix real estate industry seized the opportunity to buy up foreclosed housing, and turn much of it into rental accommodation. This lowered vacancy rates while allowing companies to invest in housing construction.<sup>cccl</sup> While the other Sun Belt cities are limited by zoning and building restrictions that restrict development of new housing stock. Phoenix's more permissible zoning codes permit new developments and low prices.<sup>cccli</sup>

### Implications

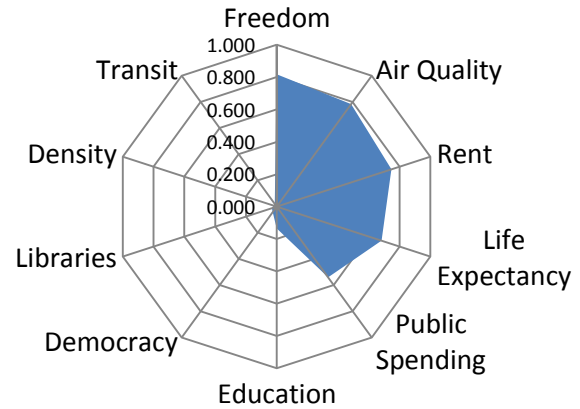
Although Phoenix has proven resilient in the face of economic challenges, it is debatable if its current trends are sustainable as the city expands. Demand for resources, particularly water, will increase at a time when supplies are in jeopardy. Denser development may allow Phoenix to use resources more efficiently while securing future growth.



## SÃO PAULO: CEC Index Ranking #8

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Freedom	0.818
Air Quality	0.783
Rent	0.746
Life Expectancy	0.682
Public Spending	0.541
Education	0.135
Democracy	0.042
Libraries	0.031
Density	0.020
Transit	0.020
<b>CEC Score</b>	<b>3.818</b>



### City Economic Capacity Score Analysis

São Paulo has a low city economic capacity score of 3.818, near the bottom of the CEC index. The city scored well on housing affordability and livability variables (air/environment, life expectancy).

However, the CEC scores reveal the city's main bottlenecks: education, transit system and cultural capital. The city of São Paulo is primarily responsible for early childhood education, thus it has low autonomy to pursue the needed reforms to improve overall education. São Paulo desperately needs a better transportation system, and some argue that expanding the subway, which is responsibility of the State government, is the right strategy. São Paulo's cultural activities mostly take place at private areas, thus a large number of the population is excluded.

### Economic Condition

São Paulo is home to Brazil's largest economy, accounting for a GDP of \$220 billion, 12% of the national total. This is twice the size of the country's second largest city by GDP, Rio de Janeiro.<sup>ccli</sup> According to a study conducted by Brazil's Statistics Bureau, São Paulo's area of economic influence extends as far as to the Amazon region, stressing the relevance of the city of São Paulo to virtually every region of the country.<sup>ccliii</sup>

São Paulo has a broad and diverse economy, which distinguishes it from most of the other Brazilian cities that rely only on a few exporting sectors or government programs. Until the 1980's, the city has been viewed as a major manufacturing city, but since then the process of “deindustrialization” has led various sectors to move upstate or to other regions in the country. In 1970, the metropolitan region was home to 44% of the country's manufacturing activity, while this figure today is less than 25%.<sup>ccliv</sup> This suggests that despite changes, the city remains an important manufacturing hub, receiving large investments in the last decade in sectors such as publishing, printing, information technology, Internet, food and pharmaceuticals.

Despite a decrease in manufacturing industry employment by 38.1% from 1988 to 1999, 18% of the economically active population is still employed by the sector.<sup>cclv</sup> The rest is employed by the services sector, mostly small enterprises and financial services. Therefore it has rapidly emerged into a “service metropolis”. This transition has led to an economic and social polarization of the city: increasing informal and domestic services on one hand and advanced services related to the international economy on the other.

São Paulo is Brazil's main link to the global economy, and holds almost all local branches of foreign companies and banks, as well as their support services (consulting firms, auditing firms, legal counsel, press agents, and advertising agencies). São Paulo is also the financial capital of Latin America having presence of 18 out the 25 world's largest banks, and home to the region's largest stock exchange, where roughly \$3.5 billion is traded daily.<sup>cclvi</sup>

## **Governance Structure and Budget**

All levels of government in Brazil are currently elected by direct vote; all have the power to make laws relevant to their jurisdiction, plans and projects, and have budgets made up of specific taxes. The Federal Constitution of 1988 determines the actions at each level and the budget funds available to them. At all levels of government, the executive branch is the one that elaborates public policies and budgets, submitting them to the legislative branch for approval.

The municipal administrative structure is made up of the executive branch (city government) and the legislative branch (city council). Law enforcement and public safety are not within the city's governing structure; instead they are left to the federal and state

governments. São Paulo, due to its budget, is the only city in the country to have a municipal court of auditors, which is an autonomous and powerful body that became a political instrument to support or block actions by elected administrations.

The municipality is responsible for establishing standards for zoning, plots, land use, land occupation, road networks, environmental protection, and cultural heritage protection, among others. In 2001 a federal law called the "Statute of the City" was passed, regulating articles of the Brazilian constitution regarding the social function of property. The Statute of the City defines instruments for urbanization and land ownership regularization, raising real estate values, participating in planning processes, etc. Several of these instruments are included in the municipalities' master plans. São Paulo is currently in the process of approving a new master plan in the city council.

The level of municipalities' autonomy and decentralization was expanded by the Constitution of 1988. Municipalities are in charge of a large portion of healthcare, education and housing policies, and therefore often receive insufficient budget funds from the state and federal governments for their management and investment – which has produced contradictory effects. The municipal revenue base is made up of local taxes such as those on urban building and territory property, on services and improvement fees and contributions, and transfers from the state government and, on a smaller scale, from the federal government.

Mayor Fernando Haddad, of the Workers' Party, heads the current city administration and its coalition holds the majority of seats at the city council (28 out of 55). However, the number of votes required to pass a draft bill varies according to its nature. In addition, a portion of the city council members, even when part of the so-called "ruling coalition," negotiate their support for each bill up for vote according to technical and political-ideological motivations, personal interests or to peddle their own motivations. Therefore, although a majority government has managed to pass important bills in the past (for example progressive urban property tax rates), it frequently faces a great deal of difficulty in doing so.

Municipal politics are highly polarized and the parties from the center traditionally do not have much political influence locally. With exception to one election, the last few electoral runoffs have always been between candidates from the left and the right with opposing views

on priorities for public policies. Overall, the rightwing candidates' priorities for the city are major public construction projects (mainly for the building of roads), public safety, social programs, real estate business, dialogue with the business community and privatized administration. The leftwing candidates' priorities are improving public services (education and healthcare), housing, transportation, democratic management, participatory budgeting and dialogue with social movements. Nevertheless, these differences have been a little shuffled in recent administrations, in which both sides turned out to be open to cooperation, and carried out all kinds of policies.

São Paulo City expenditures and investments are coordinated by the Municipal Planning, Budget and Management Secretariat (SEMPLA), which is in charge of the São Paulo City Planning System. SEMPLA's current structure was established in 2010. It results from the fusion of two secretariats, the Municipal Planning Secretariat (SEMPLA) and the Modernization, Management and Debureaucratization Secretariat (Secretaria de Modernização, Gestão e Desburocratização). In previous years, SEMPLA used to be in charge of urban planning too, not only the budget and economic planning. In 2009 this function was transferred to the Municipal Secretariat of Urban Development. The City Planning system's fundamental task is to develop and execute the city budget, as an instrument to control and monitor governmental actions.

These actions, in turn, are divided into two categories: (1) direct visibility (such as income generation, transportation, and leisure), and (2) indirect visibility (such as urban infrastructure, security, health, education, and environment). The city planning system operates through three local laws: the Multi-Year Plan (PPA, or Plano Plurianual), the Law for Budgetary Guidelines (LDO, Lei de Diretrizes Orçamentárias) and the Law for the Annual Budget (LOA, or Lei do Orçamento Anual). All three must be passed by the city Council after being presented by the Mayor and his secretaries.

City special funds all are allocated in the PPA and LOA. All of these special funds (with one exception) are linked to a specific Secretariat and are managed by a Secretariat Board, usually headed by the Secretary.<sup>cclvii</sup> The total income of the city was BRL35.6 billion (approximately USD17 billion), in the year 2011. According to the 2011 LOA, 41% of this came from "tributary income" (that is, from city taxes, fees, and improvement contributions), 36%

from intergovernmental transfers (mainly State VAT, or “ICMS,” transfers), and the remaining 23% were composed of capital income (11%) and other operating incomes, such as contributions, property, and services. City expenses (a total of BRL35.6 billion) went to personnel (BRL8.5 billion), interests (BRL3 billion), running expenses (BRL17.2 billion), investments (BRL6.5 billion), and other (BRL0.4 billion).<sup>cclviii</sup>

São Paulo outsources to contractors a large part of the services it provides, such as road maintenance and construction. Payments to third parties accounted to approximately BRL11 billion (approximately BRL6 billion) in 2011, or 30% of total budget. Services that are fully delivered by the municipality include, among others health and education.

## Local Policy

### Local Policy #1: Human Capital – Education

Local government is responsible for the formal education of children and youth. There are nearly one million children enrolled in the municipal education system, most of them in nurseries. High school and large part of elementary school education is provided and operated by the State government.

The municipality is investing in healthy recreational options as well. The municipality has recently introduced a new program, called Unified Educational Centers (CEUs), which is intended to benefit the city’s poorest regions through recreational, intellectual, and social growth. Each of the 45 units has capacity for around 2,500 children. Open on weekends, the units also serve as large recreation centers for the community. These programs are meant to expand children’s education opportunities and create a space for leisure.<sup>cclix</sup>

On one hand, opinion leaders and opposition politicians have criticized the implementation of CEUs, because, according to them, they demanded large investments that would otherwise be allocated to improve the quality of Elementary education, a policy area that falls mostly under the jurisdiction of the State government. On the other hand, CEUs had a tremendous positive response from the community and received an approval rate of over 90% in some neighborhoods, which definitely helped to build the political capital of the Worker's party who implemented the policy.

In the political context of the City and State of São Paulo, it is not surprising that the City government worked on a new program instead of supporting or collaborating with State efforts.

### **Local Policy #2: Physical Infrastructure – Transportation**

Traffic in São Paulo is suffering from massive congestions, due in part to the late development of mass public transport systems; the metro was planned in the 1930s but the first line only started to operate in 1974. Today the metro is still only 71 km (approximately 44 miles) long for a city of 19 million people, compared with Mexico City that has a metro system of 206km (approximately 125 miles) for almost the same population. On the other hand, the city has 18,000 km of streets, and 15,000 urban buses and almost four million cars. Today people spend an average of 42.8 minutes to get to work. But even with terrible traffic, most city habitants would not think twice about buying a car if they could afford it; and would use that car as their main form of transport. <sup>cclx</sup>

Two prominent solutions to improve traffic congestion are investing in the metro system and expanding bus corridors in the city. São Paulo's first metro lines were built in the 1970s by the federal government. But the constitution of 1988 handed urban transport to states and cities, which had less money and no experience of such projects. Years without investment or maintenance followed.

In addition to lack of resources and experience, political coordination between the state and city government has been problematic. The state has been ruled by the Social Democrats for over the past two decades, which had only two years in the city government in the early 2000s (former mayor Jose Serra resigned to run for President and left office before completing the four years mandate).

### **Local Policy #3: Livability – Housing**

The agents involved in formulating and implementing municipal housing policy in São Paulo come from various sectors of the municipal, state, and federal government. About 10% of the resources allocated to housing policy come from a special Municipal Housing Fund (Fundo Municipal de Habitação, or FMH). The rest of the investment comes from appropriations from

municipal budgets and formal agreements reached with state and federal agencies as well as international financial institutions.

Historically, policies towards slums in São Paulo were almost always municipal, with little support from the federal and state governments, which had more funding. Rightwing parties focused on large construction projects such as Cingapura with the support of Inter-American Development Bank that were later halted by leftwing administrations, which prioritized urbanization actions and community engagement arguing that the large constructions did not serve a significant population and were used for marketing purposes.

While policies for favelas have a history of priorities and major investments in public action, the same does not occur in the case of sub-standard housing (cortiços). Only in 1989, during the Luiza Erundina administration, were they recognized as the object of public policies, when the first cortiço upgrading program was formulated. The initiative, however, did not go beyond the scale of pilot program and was interrupted by the following two administrations. The program was resumed when the Worker's Party returned to the city government in 2001.

There were major differences and interruptions in formulating and carrying out policies between liberal and conservative administrations. Federal and state government remained almost absent throughout the past two decades in participating in the policymaking, except through a few programs, mostly focused on financing.<sup>cclxi</sup>

#### **Local Policy #4: Business Environment – Bureaucracy**

São Paulo has long been criticized for having one of the most morose processes to open a business. According to the World Bank's doing business survey, it takes 119 days for an entrepreneur to open a business in Brazil's largest city compared to only 9 days in Mexico city.<sup>cclxii</sup> Even within Brazil, this number is arguably too large and has created tensions between the multilateral and the Brazilian government for choosing São Paulo as a benchmark for the study.

The State government has a program to reduce bureaucracy and accelerate the opening of enterprises that is run in 22 cities of the São Paulo state, but did not included the capital up until recently. In 2008, the city government launched its own program and only four years later

it adhered to the state-wide program.<sup>cclxiii</sup> Entrepreneurs will be able to do most of the documentation and forms online, which is expected to dramatically drop the waiting time.

## Implications

The city of São Paulo, as all Brazilian municipalities, enjoys considerable budgetary autonomy on both the tax and spending sides. The institutional culture of Brazil's administration remains overlapping responsibilities, creating coordination problems which are compounded by Brazil's federal structure. Coordination can happen both because of political will or legal overhauling. Reforming the legal and fiscal responsibility of state, city and federal government is an ambitious and almost unimaginable undertaking, thus making political will a priority for policymakers. As a development of this coordination problem, São Paulo has accumulated large debt to pay for the services that it has to provide, thus the main action needed is a fiscal adjustment. The City must renegotiate the terms of the debt with the federal government and embark in a dramatic fiscal reform to adjust the size of the government with what it has autonomy to pay for.

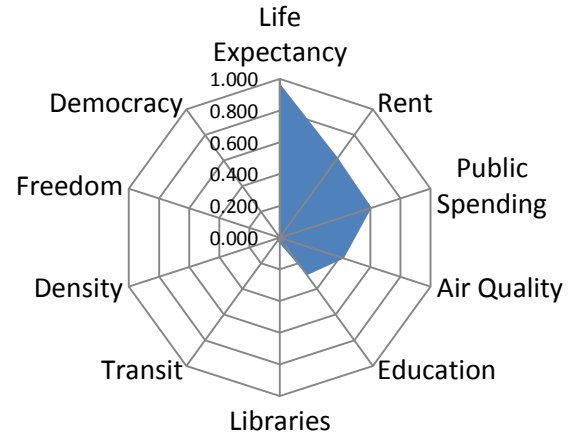
São Paulo has been a difficult case, because it has never faced an administration where city, state, and federal governments were run by the same coalition. As a result, housing policies were not as effective as they could be, the subway system is not large enough to accommodate São Paulo's commuters, and budget for improving quality of schools were not topped up by all levels of governments, leaving São Paulo behind on its competitive edge.



## SHANGHAI: CEC Index Ranking #9

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Life Expectancy	0.972
Rent	0.622
Public Spending	0.609
Air Quality	0.425
Education	0.293
Libraries	0.037
Transit	0.029
Density	0.011
Freedom	0.000
Democracy	0.000
<b>CEC Score</b>	<b>2.998</b>



### City Economic Capacity Score Analysis

Shanghai has an overall CEC score of 2.998, the second lowest score among our case study cities. Shanghai performs well in freedom and life expectancy, which indicates the people pay close attention to the healthcare. However, low scores in democracy, density, air quality, cultural capital and education drag down the overall CEC score of the city.

The CEC scores reveal the city's main problem in physical environmental, housing price and education. Even though the past few years have witnessed rapid economic growth, the overall living conditions have not increased a lot. As a result, the Shanghai government would need to enact relevant policies to improve the air quality and adopt policies to control the housing price such as the recent Housing Restriction Policy. Shanghai's education is noted internationally for its high performance, so the CEC score is surprising.

### Economic Condition

Shanghai is the largest city by population in China and one of the four province-level municipalities of the country. It is a famous global city with influence in commerce, culture, finance, media, fashion, technology and transportation. It is also one of the major financial centers and container ports in the world. Since 1992, Shanghai has been maintaining double-

digit growth every year (with the exception of 2008 and 2009 due to the global financial recession).<sup>cclxiv</sup> The three largest service industries are financial services, retail, and real estate.

Shanghai plays a central role in the region, as it is the third-largest financial center (right after Hong Kong and Singapore) in Asia with 787 financial institutions (of which 170 are foreign-investments).<sup>cclxv</sup> After a decade of development, Lujiazui, the newly developed district on the east side of the Huangpu River, has become the Central Business District (CBD) of Shanghai and ranks fifth in the 2011 Global Financial Centers Index which was published by the City of London. In addition, the Shanghai Stock Exchange ranks third among all stock exchanges worldwide, while Shanghai Future Exchange ranks first in the world in terms of trading volume.<sup>cclxvi</sup>

The high economic growth of Shanghai can be attributed to its fast-pace technological adaptation. Manufacturing of automobiles, electronic and communication equipment, petrochemicals, steel products, equipment assemblies and biomedicine had been widely regarded as the six pillar-industries of Shanghai.<sup>cclxvii</sup> The automotive industry in particular is poised to reach an international level with Dazhong Car Co., as the bellwether of the sector. Today, there are many industrial areas, of which Zhangjiang Hi-Tech Park is the most prominent.

Shanghai is also a fashionable city where most of the Chinese flagship stores of international designers are situated and is home to the Chinese media sector, led by the Shanghai Media Group (SMG). In turn, Shanghai's economic performance has attracted many international conferences to the city. In 2012, Shanghai hosted 780 international gatherings, up from 754 in 2011.<sup>cclxviii</sup> The resulting high demand for hotel rooms leads to a prosperous hotel industry.

The Shanghai government does not put much emphasis on agriculture - as it mainly focuses on developing forestry and fisheries due to a shortage of arable land. However, advantageous geographical location, moderate temperature, sunlight and fertile soil, make Shanghai famous for its high yield of agricultural production, some of which is exported to foreign countries.<sup>cclxix</sup>

Shanghai's chief industry drivers are finance, real estate, insurance and transportation. By comparison with much of the rest of China, the city also has a vibrant entrepreneurial and small business environment, and is widely regarded as the best place to start a business in China

for the following reasons: (1) there is enough funding provided by investors, which brings more opportunities of financing support; (2) the continuous economic growth of technologic innovation makes the government willing to offer more and more policy support; and (3) the plentiful human resources in Shanghai enable entrepreneurs to find partners for themselves.<sup>cclxx</sup>

During the past few years, the tertiary industries has been growing rapidly, now providing the majority of employment opportunities. This includes the wholesale and retail industry at 15.6%; transportation at 7.5%; finance at 2.2%; and real estate at 3.1%.<sup>cclxxi</sup> Natural resources, on the other hand, have decreased during the past couple of years due to the imbalances in supply and demand, which has led to a shrinking in the rare earth sector.

One important area associated with the high economic growth of Shanghai is Pudong area (on the east side of the Huangpu River). Two decades ago, Pudong was mainly farmland and countryside. The area used to be very underdeveloped, with very small demand from people to live there. However, since 1993, the government was determined to turn Pudong into a multi-function modern area. Pudong is home to the Lujiazui and Zhangjiang Hi-Tech Parks, and the Pudong International Airport, which was opened in 1999. It could play an important role in turning Shanghai into an international economic center.

## **Governance Structure and Budget**

Like all the other governing institutions in Mainland China, the governance of Shanghai is a dual party-government system. Normally the communist party chief (officially termed “Communist Party of China Shanghai Municipal Committee Secretary”) outranks the mayor.<sup>cclxxii</sup> Since Shanghai is administratively equal to a province and is directly controlled by the central government, the mayor of Shanghai occupies the same level as provincial governors.

Generally speaking, there is no independent legislative process in Shanghai and the Shanghai government must follow any law enacted by the central government. However, since Chen Liangyu, took municipal leadership in 2002, the friction between the “Shanghai clique” (led by Chen Liangyu) and the central government (under Hu Jintao) intensified because Chen believed the wealth produced in Shanghai should only benefit Shanghai’s residents. As a result, from 2002 to 2006, before Chen was charged with corruption, Shanghai’s level of autonomy

even surpassed that of several autonomous regions and Shanghai's economic development considerably deviated from national policies.

After Chen's dismissal, the communication between the Shanghai clique and the central government increased and from then on Shanghai actively followed the policies enacted by the central government. Nevertheless, the Shanghai government has adopted some regional policies as well, such as the Housing Restriction Policy that aims at controlling the housing bubble. At the same time, any policy adopted by the Shanghai government needs be approved by the central government first.

Shanghai is geographically divided into 16 districts and 1 county and administratively divided into 44 ministries.<sup>cclxxxiii</sup> Each district and ministry has its own leader and those leaders normally report their works to the municipal committee secretary and the mayor.

The fiscal capacity of Shanghai is mainly based on tax revenues. Every year, the local government collects taxes and sends the revenue to the central government. The central government then allocates the money to different cities according to their development needs. As a result, Shanghai's budget increases every year as the central government regularly seeks to expand Shanghai's role as a commercial hub. The 2013 fiscal budget totaled \$64.4 billion, 7.5% increase from the year of 2012. Education expense is the largest part of the entire budget. While this may be mainly due to the fact that education industry accounts for the majority of the municipal labor force, there is also a great deal of emphasis on education in the city. In the most recent OECD Program for International Student Assessment (PISA) survey, Shanghai ranked as the highest-scoring city in terms of mathematics and sciences.<sup>cclxxxiv</sup>

Each year, the departments of Shanghai's government and districts drafts a budget report where the municipal party secretary and the mayor will hold a board members' meeting to decide which items to approve and how much to allocate to each item. Once approved, the Shanghai government will allocate the relevant budget to each department and district to develop education, agriculture and other areas of interest.

Shanghai's government is not responsible for legislation; instead, the central government of China directly enacts legislation or policy. Nevertheless, it may allow the city's government to create area specific legislation or policies. That is to say, the legal authority is

centralized, and the central government is the principal governing body, whereas Shanghai is responsible mainly for administrative matters. Therefore, Shanghai has the legal responsibility to implement policy enacted by the central government, but it may also implement policy of its own if approved by the central government.

The Shanghai government and its ministries normally implement policy. However, sometimes it is more effective and efficient for them to hire professional institutional contractors to help implement policies. The Shanghai government also hires contractors to help them deliver services. One example is the “Careful Breakfast Project” which is implemented by hiring food companies to deliver high-quality breakfast to citizens.

## Local Policy

### Local Policy #1: Human Capital – Internal Migration and Citizenship

China has used a household registration system known as the “Hukou” system throughout its history. It officially identifies a person’s age, place of residence, and family information such as one’s surname, parents, and spouse. More importantly, the system bounds a person’s work status to two general categories of “urban” and “rural”. Effectively, a “rural” Hukou holder does not have the legal right to work in an urban setting. The purpose to exclude workers was to control mass internal migration, even in China’s recent modern history. Therefore, a person can ultimately stay in a given city if their Hukou identifies them to that city. Furthermore, in addition to employment, residents living in areas not identified by their Hukou could be denied rights to education and other public services, even send back their original residence. Therefore, the Hukou has become a symbol of one’s citizenship within China. Legally, a person can only possess one Hukou, so there is possibility to transfer a Hukou to a new place of residence; however the bureaucracy is extremely complicated, forcing many to migrate and work in cities informally.

Among all the cities in China, Shanghai experiences the highest internal migration, with tens of thousands of people flowing into the city year after year in search of better job opportunities and higher living standards. According to government records, there are a total of 23 million people living in Shanghai, but 7.8 million of them do not have Shanghai Hukou. The

city will need to better accommodate the informal migrants already living in the city as well as the migrants expected to come to the city to ensure better economic and social inclusion and equality.

Shanghai has made it easier to obtain a Shanghai Hukou – for some. During the past two decades, Shanghai’s government has emphasized the importance of education and human capital by offering Hukou registration to well-educated people. Everyone else who desires a Shanghai Hukou must undergo a grading system that may qualify them to receive one and become legal “citizens” of Shanghai. By favoring educated people, Shanghai supports its growing needs for a high-skilled human capital, but still ignores the large amounts of people wanting to fully participate in the city legally and openly.

Enforcement of the Hukou has reportedly relaxed over time, and reforms such as transferability continue to be encouraged. However, the existence of the system itself continues to limit participation, and forces people to obtain Hukous illegally as well as work informally as a non-citizens within their own country. Without legal rights and access to the city’s services, people are identified and associated along class lines and lack economic rights of participation. This poses a great challenge to Shanghai, as one of China’s largest urban centers, to improve inequality and foster a strong workforce.

### **Local Policy #2: Physical Infrastructure – Public Transportation**

Shanghai’s public transportation is extensive, and is largely based on buses, subways, taxis and the light railway. All together, there are 436 transportation lines, which account for 14,492 Miles.<sup>cclxxv</sup> Anyone can go from one stop to the destination within one hour by the public transportation. In recent years, Shanghai government has put a great emphasis on the Bund region (to the west of the Huangpu River) to increase mobility within the city’s center and reduce traffic congestion. The project has three parts: extending the dam, expanding the highway and beautifying the nearby environment.

### **Local Policy #3: Livability – Housing and Parks**

Given Shanghai’s strong emphasis in being a modern commercial center, green spaces have been sacrificed for commercial development. Therefore, in the recent years, green space

via parks has been an area in which the Shanghai government has endeavored to investment in with projects like Zhongshan Park in the city center and the Century Park in Pudong are recent examples. In addition, the Shanghai government endeavors to improve the living standards of people by reforming the water-providing plan. With the new water-providing system, the output of the water can reach up to 700,000 cubic meters and the quality of water will be improved as well.

The housing price in Shanghai is incredibly high due to the housing bubble, which was generated during the past decade. In order to constrain the hike of housing prices, the Shanghai government has adopted a series of policies such as the housing restriction policy. However, due to the continuous urbanization and an imbalanced supply and demand, the housing prices still continue to climb. This may challenge the city's attractiveness and affordability as the cost of living continues to rise.

#### **Local Policy #4: Business Environment – Small Business**

The municipal government of Shanghai is proactive in encouraging entrepreneurship and enacting policies to stimulate small business and investment. However, starting a small business in Shanghai is challenging and a myriad of small businesses go bankrupt every year due to the fierce competition. In order to help more small businesses survive, the city government adopted tax incentives to stimulate the development of entrepreneurship and small business. Many small and middle-sized businesses are foreign-owned, given the relative ease for foreigners to make direct investments in Shanghai. Shanghai may want to further foster foreign participation in the economy to support its growth.

#### **Implications**

During the past two decades, Shanghai's government has made economic development its first priority, which directly resulted in an overwhelming hot money flow into Shanghai. Too much investment has resulted in hiking living expenses, including the cost of food, transportation, and housing, which put more and more financial pressures on its citizens. Fortunately, Shanghai's government has realized the problem this poses and has enacted the relevant policies to control living expenses and raises in salaries. Economic performance and

sustainability should be related to growth in both the economy and living standards. Shanghai government has done a lot for economic growth but this has been challenged by decreasing living standards.

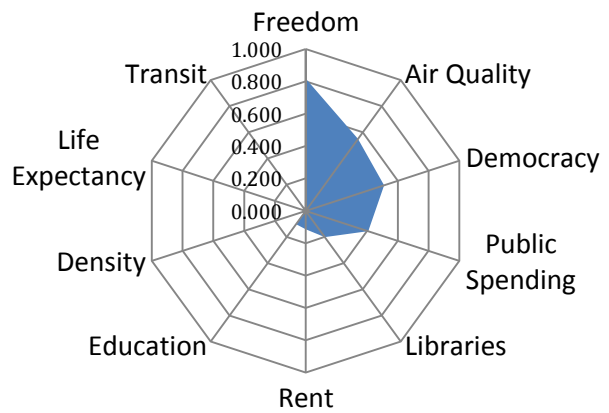
Therefore, we recommend that the Shanghai government enact policies that combine living quality with economic growth. For instance, the government may lower the tax rate or raise the base salary to increase the purchasing power of its residents. Increasing spending from people will stimulate economic growth despite the decreased tax revenue for the government. Simultaneously, the government should increase the tax rate for high-margin domestic institutions, individuals, and investors to restrain the arbitrage in order to control housing prices, while lowering the tax rate for foreign direct investment in order to attracting more investment from abroad.



## JOHANNESBURG: CEC Index Ranking #10

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Freedom	0.818
Air Quality	0.550
Democracy	0.510
Public Spending	0.407
Libraries	0.201
Rent	0.114
Education	0.102
Density	0.005
Life Expectancy	0.000
Transit	0.000
<b>CEC Score</b>	<b>2.707</b>



### City Economic Capacity Score Analysis

Johannesburg ranks last in the CEC index, with an overall score of 2.707. The city has critical weaknesses in the public provision of education and investment in human capital and also in its sprawled, low-density development and lack of affordable housing. These findings are in keeping with our analysis of Johannesburg’s lack of investment in education (below) and highly politicized federal expenditures on education. In addition, the city has experienced a drastic retreat from the inner city downtown area, resulting in highly unequal development and economic growth. Tenuous land ownership and a lack of integrated land use and development at the city level underlie the low density score.

Johannesburg’s strong economic performance is driven by its finance and service economy. However, this economy growth is not equitably distributed throughout the city. The city’s economy is dynamic, but plagued with a lack of investment in human capital and a privatization of public services that could threaten the sustainability of its economy and growth. Decision-making is highly centralized at the city level and driven from the national level by the African National Congress (ANC) political party; only half of council members are democratically elected and the city’s mayor is appointed by the ANC.

Johannesburg will need to increase investment in human capital at the city level to ensure adequate and equitable access to economic opportunity and social integration. Crime

rates are also likely to decline with greater integration. The city's fledgling public transit system will need to be extended to meet demand for affordable transport for workers who live on the outskirts and in townships. In addition, land use and development planning needs to be participatory and transparent and focus on the central business district, or inner city, while capitalizing on the current cooperation with City Improvement Districts (CIDs) and public-private partnerships.

## Economic Condition

Johannesburg is the focal point for South Africa's private sector including banking, insurance, accounting, communications and technology. Since 1980, the city has emerged from its traditional manufacturing and mining base with a strong tertiary sector and population of over 3 million. It is home to almost three-quarters of national corporate headquarter offices and is the financial services capital of South Africa and the Southern Africa sub region. OR Tambo international airport provides the main air transit hub in southern Africa, adding to the city's appeal as a place to do business in the region. As of 2008 there were 290,000 businesses in the formal sector in the city employing about 840,000 people, 70% of the country's bank headquarters and 45% of travel agencies were located in Johannesburg.<sup>cclxxvi</sup> Recent growth in cultural development, tourism and IT has also contributed to growth.

The city contributes more to South Africa's GDP than any other city in the country at 14.98% in 2012 - only slightly ahead of Cape Town's 14.01%.<sup>cclxxvii</sup> If the conurbation of East Rand is included in the calculation, the wider region contributes almost 23% to the national economy. Since Johannesburg-based data collection began in 1996, the city has shown positive real GDP growth, peaking at 6.5% in 2002, and regularly outpacing the national growth rate.<sup>cclxxviii</sup> Between 1996 and 2004, the city's economy grew at a real annual average rate of 4.5%, while Gauteng's economy expanded at a pace of 3.9%, and the national economy at 2.9%.<sup>cclxxix</sup> The city contributes 17% of the national economy's gross value added (GVA) tax income and 44% of the Gauteng regions GVA income. An interesting observation is that Johannesburg's growth is generally counter-cyclical to national growth; the city's economy slows down while the national economy speeds up, and vice versa. One explanation is that the concentration of head offices makes economic activity more dependent on cyclical shifts in

corporate profitability as compared to the national economy, which is more dependent on agriculture, mining and manufacturing.

## Governance Structure and Budget

The general structure and function of national and local politics in South Africa is well summarized by Eusebius McKaiser, a political analyst, when he notes that "[s]oft power has had value in South Africa political culture. South Africans' relationships with politicians and political parties are not reducible to data-driven decisions."<sup>cclxxx</sup> The most lucrative and competitive jobs in South Africa are in national and local politics due to their ease of access to public funds and influence. In 2012 the Economist noted that "... [b]ecause the stakes are so high, competition for power is bitter and sometimes bloody, particularly at the local level."<sup>cclxxxi</sup> The reason for this is that the country's political system – mirrored at the local level – is largely insulated from accountability to voters.

Over the last decade, Johannesburg has gone through different stages of local government development: a multiplication of small racially-based municipalities under the apartheid regime was replaced by a federation of four councils in the interim arrangement (1995-2001), which brought together previously divided black and white areas. More recently, the city went through a unification process in 2000 with local government elections that saw Johannesburg emerge as a unified metropolitan council led by an executive mayor.<sup>cclxxxii</sup> In 2004 the city's five sub-councils were amalgamated into the larger metropolitan authority now known as the "City of Johannesburg."

The city of Johannesburg is the political headquarters of the African National Congress (ANC) party, which dominates local and national politics, including the governance of the city (see below). This allows for considerable local agency and autonomy in decision-making, but it also means that the ANC sets the local, regional and national agenda for planning and other policies.<sup>cclxxxiii</sup> The Johannesburg 2030 Vision document acknowledges that "[c]ity administrators are policy-takers rather than policymakers."<sup>cclxxxiv</sup> This means that city politics and policies are largely determined by policies made at the national level.

City governance is dominated by a council, which is made up of elected and proportional representatives. This hybrid system reflects the larger national political structure of South

Africa. The country operates on party lists at general and provincial elections; this means that individual Members of Parliament are not appointed by or accountable to voters and that party managers (or whips) wield enormous influence in party hierarchies and positions. At the municipal level a system of constituencies (or wards) allows voters to determine only half of the Council seats. Tanja Winkler of the University of Cape Town states that “[a] centralized approach to policy making, and a dominant party system that rewards loyalty to the party above all else effectively eliminates the need for wider, more open political structures and processes to affect participation...[a]ccountability then tends to flow toward party structures and not to residents...”<sup>cclxxxv</sup>

The City Council is the body that makes policy, oversees implementation and also serves as a bridge between political parties. The council has the authority to pass by-laws, approve budgets and development plans, impose rates and other taxes, charge service fees for the use of municipal services like water and electricity, impose fines, and borrow money to sustain its projects and activities. Each province in South Africa determines the structure of local government in its region. Gauteng province, run by the ANC, has opted for an executive mayor system. Johannesburg’s revised city model (as of April 2012) is ruled by an Executive Mayor by the ANC’s national executive office; the mayor leads the ten-person Mayoral Committee. The revised city governance model defines the key areas of intervention and desired outcomes as: governance, economic growth and job creation, social development, and sustainable human settlements and spatial restructuring. The municipal administration is headed by the City Manager, supported by an executive management team.

By the late 1990s the city government had accumulated a large overdraft and needed a monetary bailout from the National Treasury.<sup>cclxxxvi</sup> This crisis was due to the inheritance of unpaid debts resulting from the rent and service boycotts during the struggle to end apartheid.<sup>cclxxxvii</sup> In the 1995 post-apartheid restructuring of the city, the ANC led the city’s economic and social integration under the “One City, One Taxpayer” slogan. This underscored an effort to unify and redistribute the city’s resources across racial and economic boundaries. Economic integration is ongoing and far from participatory. The City Council made a brief foray

into participatory budgeting in 2004 prior to local elections, but has since refrained from a consultative budgetary process.

The main financial bases of local government are property taxes - historically indexed on land values alone – and charges for services. The City of Johannesburg Council approves the budget developed by the Mayoral Committee for Finance in line with the Johannesburg 2040 strategic plan. The majority of revenue comes from property taxes (anticipated 17% in 2012-2013), water and sewer service fee collection (18%), electricity provision (38%), and operating grants from the provincial and national governments (14%).<sup>cclxxxviii</sup>

Johannesburg's transformation has gone through numerous versions, with varying degrees of success. Economic development plans and visioning exercises (e.g. iGoli 2002, Johannesburg 2030 Vision) were developed by consultants with links to ANC leadership, often with the criticism from civil society that key city policies (e.g. the Inner City Regulation Charter, Human Development Strategy, and the Growth and Development Strategy) were pre-packaged behind closed doors. Following the economic crisis, noncore assets were sold off and service delivery was transferred to independent business units.

The city administration is tasked with the delivery of basic services, but in addition to the 15 agencies or municipal-owned entities that provide basic services the city also runs various agencies to oversee land use management, municipal roads and public transport, informal trading, food markets, parks and recreational areas, libraries and local tourism. Among these agencies are City Power, Johannesburg Water, Pikitup, Johannesburg Theatre, Johannesburg Tourism Company and City Parks. Under the revised city model of 2012, all municipal entities and departments signed binding service level agreements, with some key city services supplied by separate, self-contained entities, each entering into separate service agreements with the city, and must be self-funding, receiving no annual grants from the city. They provide billable services direct to individual households.

The private sector plays a large role in supplementing service delivery and localized governance in Johannesburg. City Improvement Districts (CIDs), as public-private partnerships, are widely utilized in Johannesburg to effectively fill in the gaps of service delivery where the city has neither resources nor capacity. CIDs are either legislated in formal agreements with the

city government or voluntary associations of local businesses in a given area of the city. The services provided by a CID supplement local authority and are funded and operate exclusively within the boundaries of the CID. These services include security, cleaning and maintenance of shared public spaces, marketing, and physical infrastructure (including transportation and parking).<sup>cclxxxix</sup> CIDs operate with private funds from levies on local businesses, or joint funding schemes between the private and public sector.

## Local Policy

### Local Policy #1: Human Capital – Education

Johannesburg has no responsibility for education provision within the city; this service is the domain of provincial government with substantial support from the national government. This lack of local resources for education provision has severe consequences for human capital and economic development in the city. The economic and social inequalities facing South Africa are mirrored in Johannesburg and generally persist because of the failures in the education system to administer, target and deliver adequate resources. The World Economic Forum ranks South Africa 132rd out of 144 countries in primary education, and gives it a 2 on a scale of 1-7 in math and sciences.<sup>ccxc</sup> Racial divides persist in high school graduation rates – while 75% of white students complete high school, only a third of black students do.<sup>ccxci</sup>

Yet education is not failing young South Africans due to a lack of expenditure – education costs about a sixth of government expenditure, or 5-7% of GDP.<sup>ccxcii</sup> On the contrary, mismanagement and powerful teachers' unions' intent on protecting membership have led to low quality service provision. South Africa needs about 25,000 new teachers each year, but only 10,000 qualify.<sup>ccxciii</sup> This lack of human capital trickles down into local economies, with thousands of jobs unfilled and skill shortages across the city's economy. Businesses operating in Johannesburg are faced with a shortage of managerial, technical and professional skills.<sup>ccxciv</sup>

### Local Policy #2: Physical Infrastructure – Public Transportation

Rea Vaya, Johannesburg's Bus Rapid Transit (BRT) system, was launched in 2009 and is the first system of its kind in Southern Africa. The project is a partnership between the City of Johannesburg and private partners.<sup>ccxcv</sup> The longer-term vision for the system is that by 2020

75.8 miles of mainline BRT corridors served by 150 stations and 155.3 miles of formal feeder routes will serve 80% of commuters in an affordable and sustainable system.<sup>ccxcvi</sup> Congestion and reliance on informal mini-bus are challenges to mobility, with many workers spent more than two hours commuting per day and 10% of income on public transport costs. A critical aspect of Rea Vaya is that it is an inclusive and integrated project involving former taxi drivers to become bus operators, or bus maintenance managers, and equity partners, which helps to align incentives.<sup>ccxcvii</sup> It also integrates with a wide range of other services, including feeder vehicles, pedestrian corridors, bicycles, metered taxis and private cars. The expected medium term benefits include improved social inclusion and urban density. Capital expenditure approximated R3.5 billion (\$467 million USD) and as part of its long-term financing plan, the project was designed as a public-private partnership with HSBC playing the lead role in arranging commercial debt.<sup>ccxcviii</sup> The city has applied for the designation as a Clean Development Mechanism (CDM) project under the United Nations Framework Convention on Climate Change along with federal funding for the project.<sup>ccxcix</sup> In this arrangement, credits from the emission savings of the Rea Vaya project would be trading in regional and national carbon markets. There is high demand from commuters for Rea Vaya services, with multiple planned expansions to the services. However, costs to riders have been rising, with the Johannesburg Mayoral Committee approving an increase of 16.5% in fares for the 2012/2013 year.<sup>ccc</sup>

### **Local Policy #3: Livability – Security**

A survey between 1998–2000 compiled by the United Nations Office on Drugs and Crime ranked South Africa second for assault and murderer capita and first for rapes per capita among 60 countries.<sup>ccci</sup> In an effort to improve the city’s image as a safe place to live and do business, city government has responded by increasing police presence and activity and increased video surveillance – as of December 2008, every street corner in Johannesburg central is under CCTV surveillance.<sup>cccii</sup> While city efforts and private security firms have contributed to lower crime rates in recent years, the city’s leadership has yet to tackle the underlying socioeconomic and land ownership inequities that underlie the economic motivation behind criminal activity.<sup>ccciii</sup>

### **Local Policy #4: Business Environment – City Center Development and Revitalization**

At the core of Johannesburg's spatial and economic reality is a high level of socioeconomic inequality – a high poverty rate resides alongside an urban middle and upper-middle class participating in global financial markets and international trade. At least 27% of the population is officially unemployed and more than 300,000 households live informally.<sup>ccciv</sup> There has been little direct integration between formal and informal economic sectors. Between 1996 and 1999, the informal sector grew from 9.6% to 16% of total employment, as economic and employment opportunities for residents without formal education were limited.<sup>cccv</sup> In general, the city's links with global business are enjoyed by an economic elite congregated in well-guarded pockets of the city, mainly in northern suburbs. Meanwhile, the country's social variables are floundering. The country's Gini index was 63.1 as of 2009.<sup>cccvi</sup> Johannesburg has one of the most inequitable societies on the planet, where a small, well-connected economic elite has accrued vast amounts of wealth.

In addition to providing basic services, CIDs are also seen as a solution to economic development. Johannesburg is faced with a declining inner city, the suburbanization or informalization of retail activity, the decentralization of office parks, and continuing “white flight” out of inner residential areas to highly fortified suburbs.<sup>cccvii</sup> These trends run parallel to high levels of unemployment and poverty, rising crime rates, and a burgeoning informal economy; the urban geography and economy is still highly determined by past segregation when the inner city was reserved for the white population and the outer townships and peripheries for black residents.<sup>cccviii</sup> Today, the economic elite and middle class has largely suburbanized into specific city zones, fortified suburbs and gated communities, mainly in the northern areas of the city. Suburban CIDs in these zones engage in competition for businesses as companies leave the inner city in search of safer locations and wealthier target markets. In addition, suburban CIDs also compete with local government and inner city CIDs for management of economic development policy and governance. The government of Johannesburg has largely embraced the privatization of service delivery and aspects of economic governance. In her examination of CIDs, Elisabeth Peyroux notes that “[t]he alliances between business and property owners and the metropolitan council can be explained by a convergence of interests as far as maintenance, improvement and control of urban space

are concerned. CIDs contribute to enhancing the city's economic value through the strengthening of the property market: the appreciation of property values and business activities in the nodes generates more tax revenues for the local government."<sup>cccix</sup>

## Implications

Despite a vibrant financial and service economy, Johannesburg is a highly inequitable city with low access to quality education; economic attainment opportunities are largely suburbanized. Business and local development efforts are mostly privatized, i.e. the domain of City Improvement Districts, which reflects on the availability of local governance capacity and resources. The city's transparency in policy development and participatory governance is also questionable. This may affect the long-term sustainability of the city's economic growth.

## Findings and Recommendations

Based on our research, we identify three trends or commonalities among our case study cities that shed light on the drivers of local economic performance. First, although in the initial stages of a city's development economic output sometimes comes at the expense of livability and quality of life variables, once a city is more economically developed, these variables become increasingly important for sustaining economic performance. Second, once a city is considered economically developed, business conditions that have traditionally been considered to be most important for economic performance begin to matter much less than other variables, including those associated with quality of life and livability. Finally, both the system of governance (i.e. the strength of the mayoralty, the level of democratization of the system) and the quality of governance and effectiveness of local policy significantly affect the economic performance of a city. Policy matters and will determine the trajectory of a city's development and growth.

Of interest is that the correlation between our CEC index and GDP growth is very weak. However, this is not surprising because cities with low GDP per capita are theoretically expected to have higher growth due to economic convergence. We find that economic growth can occur in cities that lack the key variables we identified for livability and strong governance via co-variance, but once a city is considered economically developed these variables become much more significant in terms of a city's ability to sustain economic performance.

### Livability is Key for Sustained Economic Performance

The importance of livability for economic performance is clearly evident in our City Economic Capacity index. Our CEC index includes five variables that we consider to be variables of livability: Number of libraries per 100,000 people; level of air pollution measured as presence of PM<sub>10</sub>; average life expectancy; transportation coverage; and rent as a proportion of GDP per capita. Because these variables account for half of our final CEC index scores, we conclude that livability variables are a particularly important component of a city's economic performance when measured as GDP per capita.

Cities with high GDP growth but relatively low GDP per capita, such as Shanghai and Beijing, tend to underperform in the CEC index. Cities in earlier stages of development appear to

trade economic growth for livability while they attempt to “catch up” to developed cities. However, the CEC index suggests that after a certain level of economic development, variables of livability will become increasingly important for these cities to sustain their economic growth.

Our analyses of the ten case study cities reinforce these findings. Most cities that have sustained economic performance over the years have undertaken policies to increase their livability, which they have used specifically as a way to attract and retain businesses and a high quality workforce. PlaNYC in New York City and the Miami 21 Project, for example, have placed environmental sustainability at the forefront of increasing livability and attracting human capital and talent, while San Jose is working to revive its downtown area through cultural attractions and better public transportation as a way to reestablish itself as the capital of Silicon Valley.

Variables of livability are also often some of the greatest threats to cities’ continued economic performance. In Shanghai, high housing prices, a lack of green space, and poor air quality are major threats to successfully competing with cities like New York, London, and Tokyo, while São Paulo is struggling to balance its rapid urban growth with urban planning. Moreover, even cities in later stages of their development are dealing with threats to their economic performance from declining livability conditions. Phoenix’s urban sprawl threatens a severely limited water supply and the ability to continue providing affordable basic public services, while Toronto currently faces challenges in maintaining its transportation infrastructure and affordable housing supply that are threatening to inhibit its future economic performance.

Our CEC index and case studies both indicate that livability variables are essential for cities to attract and retain the businesses and residents needed for economic performance. Policy makers in developing cities such as Shanghai and São Paulo currently seeking to balance their economic growth with quality of life factors may wish to look to Cleveland for an example, where pollution and urban crime turned the once-thriving city into an unattractive place to live and invest. Only recently has Cleveland been able to capitalize on improvements in livability, including an affordable housing supply and newly redeveloped neighborhoods, to begin attracting residents and businesses back to the city.

## Traditional Business Variables are Less Important as Cities Develop

The CEC index and case study analyses also show that the business variables that are traditionally thought to be necessary for economic performance are actually much less consequential than existing theory predicts. It is particularly surprising that the CEC index does not contain a single variable that we would consider to be a traditional measure of local business friendliness. Variables that dropped out of the index due to a lack of co-variance include: number of days to start a business; number of Global 500 headquarters; percent of employment in finance; number of hotel rooms; and total number of tourists. However, this is not to say that these variables are not helpful for economic performance. Rather, the CEC index shows that cities can demonstrate economic performance even when they demonstrate variability on business-oriented variables - particularly if they perform well on our key variables of livability and governance. Cities like San Jose, San Francisco and Tel Aviv do not boast large numbers of Global 500 headquarters and do not have particularly low tax rates, yet they still perform well in the index and often outperform their peers in terms of GDP per capita.

Our case study analyses support this conclusion. The cities we analyzed are pursuing a wide variety of policies to make it easier to do business within their boundaries. The clearest trend that emerges from the case studies is that policies to support small businesses and encourage economic diversity appear to have fueled economic growth and have helped protect against economic downturns. For example, New York City is known as a center of business and finance, yet the city has been proactive in setting up innovative programs specifically to support its small businesses. Today, more than half of New York City's employment comes from small and medium-sized businesses, which likely helped the city withstand the 2009 recession. Similarly, San Jose's strong economic performance is linked to the tech giants of Silicon Valley, and Tel Aviv benefits from the military's demand for research and development, yet both cities have implemented successful policies that allow smaller startups to capitalize on the resulting high tech clusters that greatly contribute to economic performance and growth. Cleveland's economy, by contrast, depended on the manufacturing sector throughout the 1950s and 60s, but the city failed to make a successful transition to a service- and information-based economy when its large manufacturing plants moved to cheaper locations in the 1970s.

Overall, our case studies indicate that economic performance is more related to economic diversity than it is to traditional business measures. Although due to issues with data collection the CEC index does not include all of the business measures we would have liked to test, our quantitative analysis appears to back this conclusion since many of the traditional business measures we did collect did not co-vary and dropped out from the final index.

## **Governance and Policy Matter**

In both the construction of our City Economic Capacity index and the analysis of our case studies, we find that governance and policy play a significant role in determining a city's economic performance and the sustainability of this performance. Three out of our ten variables in our index are directly related to governance: legislative density, or number of democratically elected legislators per 100,000 residents; public expenditures per capita; and political freedom score, which based on Freedom House's national index. This suggests that a city's governance structure and capacity has the potential to either help or inhibit economic performance.

Our case studies allow us to delve into the issue more deeply. First, the lack of coordination between multiple levels of government can severely impact a city's economic performance; the divided responsibility for crafting policies among national, regional and city governments can lead to suboptimal outcomes. Secondly, the absence of democratic accountability can serve as a major roadblock to economic performance and growth, and can affect optimal resource allocation. While democracy may indeed slow down decision making processes, the lack of accountability may have adverse effects on the livability of the city, and may drive away highly qualified human capital. Lack of coordination is a major issue in Toronto and Sao Paolo, while a lack of accountability can be observed in Shanghai and Johannesburg.

In terms of policy, we have seen that all our well-performing cities have in place laws, regulations and plans to improve the economic performance of their cities; in addition, these cities have the operational capacity, strong executive leadership structure, and autonomy required to deliver services and strategic initiatives. Tel Aviv's policies to foster cultural vibrancy and create an inclusive environment for all kinds of minorities, are seen as crucial to the city's ability to attract a high quality workforce, and thus essential to the city's role as leader of

Israel's hi-tech sector and one of the world's major hi-tech hubs. In New York City Mayor Bloomberg's efforts to improve the quality of education have led to significant improvements in graduation rates and test scores. These policies are important because they create the conditions that enable cities to compete with others and to maintain their role as global economic powerhouses.

## Errata

### Controlling for Outliers at the 10 – 90 Percentiles

	Tel Aviv	Cleveland	New York	San Jose	Toronto	Miami	Phoenix	Sao Paulo	Shanghai	Johannesburg
Air Quality	0.63	0.96	0.96	0.87	1.00	0.96	0.94	0.82	0.44	0.57
Density	0.06	0.00	0.08	0.03	0.03	0.02	0.00	0.05	0.03	0.00
Education	1.00	0.18	0.84	0.84	0.57	0.60	0.58	0.19	0.40	0.00
Freedom	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.00	0.82
Legislative Density	1.00	0.72	0.09	0.15	0.24	0.18	0.08	0.07	0.00	0.89
Libraries	0.71	1.00	0.35	0.74	0.47	0.96	0.14	0.05	0.05	0.29
Life Expectancy	0.92	0.83	0.94	0.89	0.88	0.83	0.80	0.70	1.00	0.00
Public Spending	0.69	0.54	0.84	0.71	0.77	0.96	0.65	0.60	0.68	0.45
Rent	0.81	1.00	0.60	1.00	0.78	0.55	0.98	0.79	0.65	0.00
Transit Coverage		0.12	0.56		0.32		0.00	0.04	0.05	0.00
<b>CEC Score</b>	<b>6.722</b>	<b>6.346</b>	<b>6.254</b>	<b>6.222</b>	<b>6.062</b>	<b>6.050</b>	<b>5.157</b>	<b>4.116</b>	<b>3.315</b>	<b>3.023</b>

## Controlling for Outliers at the 10 – 90 Percentiles (ranked scores)

(Variable scores ranked from highest to lowest for each city)

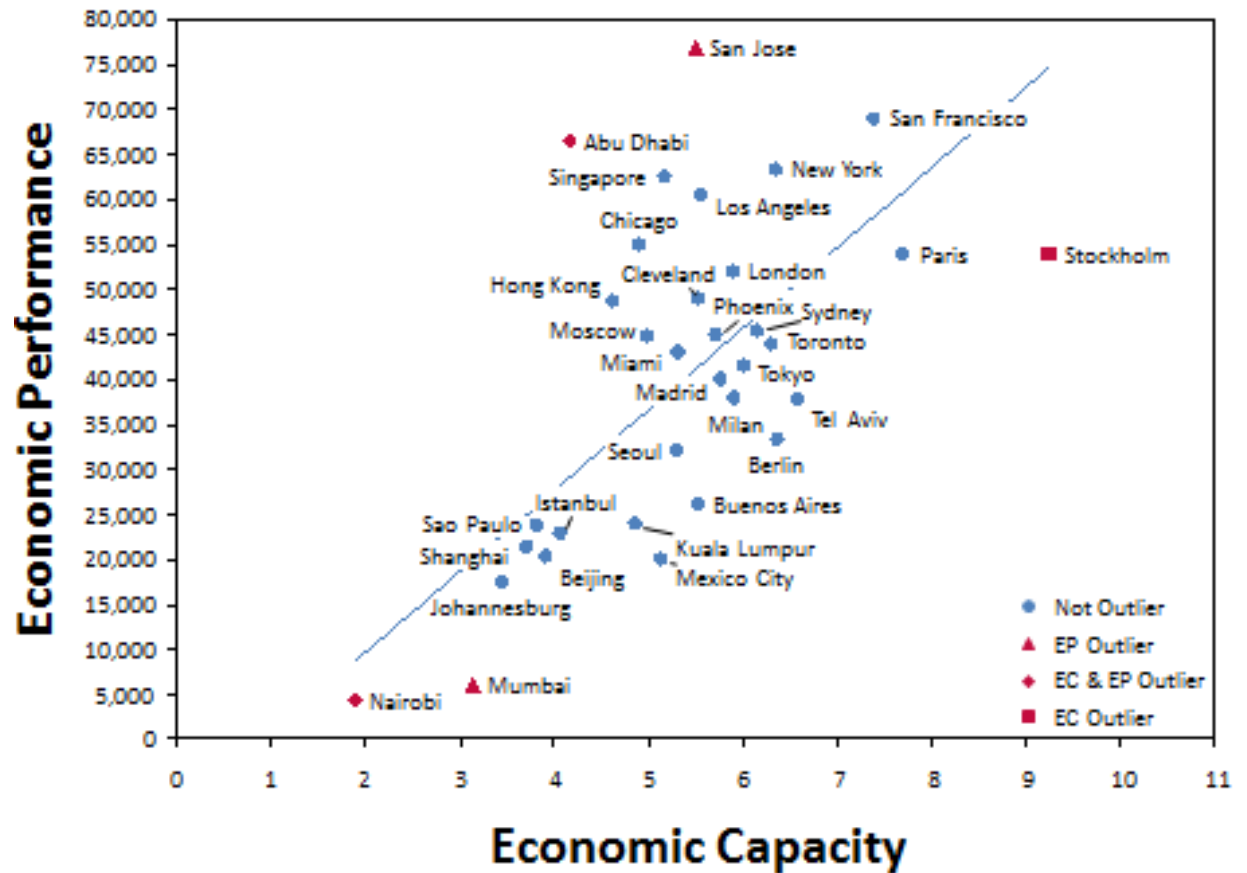
Tel Aviv	Cleveland	New York	San Jose	Toronto					
Education	1.00	Libraries	1.00	Freedom	1.00	Freedom	1.00	Air Quality	1.00
Legislative Density	1.00	Freedom	1.00	Air Quality	0.96	Rent	1.00	Freedom	1.00
Life Expectancy	0.92	Rent	1.00	Life Expectancy	0.94	Life Expectancy	0.89	Life Expectancy	0.88
Freedom	0.91	Air Quality	0.96	Public Spending	0.84	Air Quality	0.87	Rent	0.78
Rent	0.81	Life Expectancy	0.83	Education	0.84	Education	0.84	Public Spending	0.77
Libraries	0.71	Legislative Density	0.72	Rent	0.60	Libraries	0.74	Education	0.57
Public Spending	0.69	Public Spending	0.54	Transit Coverage	0.56	Public Spending	0.71	Libraries	0.47
Air Quality	0.63	Education	0.18	Libraries	0.35	Legislative Density	0.15	Transit Coverage	0.32
Density	0.06	Transit Coverage	0.12	Legislative Density	0.09	Density	0.03	Legislative Density	0.24
Transit Coverage		Density	0.00	Density	0.08	Transit Coverage		Density	0.03
<b>CEC Score</b>	<b>6.722</b>	<b>6.346</b>	<b>6.254</b>	<b>6.222</b>	<b>6.062</b>				

Miami	Phoenix	Sao Paulo	Shanghai	Johannesburg					
Freedom	1.00	Freedom	1.00	Freedom	0.82	Life Expectancy	1.00	Legislative Density	0.89
Public Spending	0.96	Rent	0.98	Air Quality	0.82	Public Spending	0.68	Freedom	0.82
Libraries	0.96	Air Quality	0.94	Rent	0.79	Rent	0.65	Air Quality	0.57
Air Quality	0.96	Life Expectancy	0.80	Life Expectancy	0.70	Air Quality	0.44	Public Spending	0.45
Life Expectancy	0.83	Public Spending	0.65	Public Spending	0.60	Education	0.40	Libraries	0.29
Education	0.60	Education	0.58	Education	0.19	Transit Coverage	0.05	Education	0.00
Rent	0.55	Libraries	0.14	Legislative Density	0.07	Libraries	0.05	Life Expectancy	0.00
Legislative Density	0.18	Legislative Density	0.08	Density	0.05	Density	0.03	Transit Coverage	0.00
Density	0.02	Transit Coverage	0.00	Libraries	0.05	Freedom	0.00	Density	0.00
Transit Coverage		Density	0.00	Transit Coverage	0.04	Legislative Density	0.00	Rent	0.00
<b>CEC Score</b>	<b>6.050</b>	<b>5.157</b>	<b>4.116</b>	<b>3.315</b>	<b>3.023</b>				

## CEC score correlations with GDP/capita

Outliers Not Controlled		
City	EC Score	GDP/capita
Tel Aviv	5.734	\$37,767
Cleveland	5.525	\$48,993
San Jose	5.503	\$76,919
New York	5.387	\$63,238
Toronto	5.341	\$43,905
Miami	5.312	\$42,915
Phoenix	4.747	\$44,955
Sao Paulo	3.818	\$23,704
Shanghai	2.998	\$21,364
Johannesburg	2.707	\$17,418

Controlled @ 10th & 90th Percentile		
City	EC Score	GDP/capita
Tel Aviv	6.72	\$37,767
Cleveland	6.35	\$48,993
New York	6.22	\$63,238
San Jose	6.25	\$76,919
Toronto	6.06	\$43,905
Miami	6.05	\$42,915
Phoenix	5.16	\$44,955
Sao Paulo	4.12	\$23,704
Shanghai	3.32	\$21,364
Johannesburg	3.02	\$17,418



Note: Outliers by GDP/Capita below the 10<sup>th</sup> percentile and above the 90<sup>th</sup> percentile are not included in the Trend-line.

**Appendix**

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## Appendix 1 – Summary Statistics

```
. sum area library forborn educ tottour tourev hotel finance global500 airpoll freedom lifeexp
transcov busstart legdens lpubexpcap d_gdp3y d_pop density12 d_density rentinc intorgs
```

Variable	Obs	Mean	Std. Dev.	Min	Max
area	33	752.1524	967.9732	26.15	5155.01
library	33	2.868182	2.744716	.14	11.1
forborn	32	.224575	.188616	.0046	.783
educ	33	.2204242	.1383101	.004	.59
tottour	33	26.02849	46.81481	.36	186.08
tourev	32	10.69552	11.43661	.261	48.37
hotel	31	50712.9	60440.26	3700	334000
finance	32	.2207777	.0952231	.048	.3990572
global500	33	6.575758	11.12157	0	47
airpoll	32	44.1875	30.856	12	132
freedom	33	2.393939	1.898838	1	6.5
lifeexp	33	76.84818	6.885991	55.5	82.9
transcov	29	43.98172	54.93704	0	236.06
busstart	29	19.86207	22.27062	2	119
legdens	33	2.145402	2.626582	0	11.58321
lpubexpcap	33	7.865636	1.592017	4.018	10.495
d_gdp3y	33	.2560909	.53987	-.508	1.848
d_pop	33	.0846364	.1581352	-.05	.663
density12	33	30937.45	69671.42	1098	314058
d_density	33	.1821327	.5760457	-.0503	3.26779
rentinc	32	.23275	.213521	.034	.925
intorgs	33	3.393939	1.730957	0	6

## Appendix 2 – Alpha Iterations (x13)

```
. alpha area10 library10 forborn10 educ10 tottour10 tourev10 hotel10 finance10 global50010
airpoll10 freedom10 muninum10 lifexp10
> transcov10 busstart10 legdens10 lpubexpcap10 density12k10 rentinc10 intorgs10, item
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4903	0.4505	.015709	0.4584
library10	33	+	0.4693	0.4153	.0153532	0.4535
forborn10	32	+	0.8483	0.3287	.0087354	0.7635
educ10	33	+	0.5887	0.5450	.0149869	0.4470
tottour10	33	-	0.3991	0.3414	.0155365	0.4566
tourev10	32	+	0.1045	0.0391	.0174455	0.4869
hotel10	32	-	0.3337	0.2872	.0163846	0.4696
finance10	32	+	0.1445	0.0700	.0170651	0.4818
global50010	33	-	0.2666	0.2085	.0163207	0.4691
airpoll10	32	-	0.4936	0.4372	.0152301	0.4519
freedom10	33	-	0.4339	0.3556	.0150598	0.4507
muninum10	26	+	0.0784	0.0031	.0172119	0.4858
lifexp10	33	+	0.4462	0.3914	.0158263	0.4614
transcov10	29	+	0.4540	0.4011	.0156625	0.4598
busstart10	29	+	0.4506	0.4087	.0159844	0.4645
legdens10	33	+	0.2387	0.1803	.0166815	0.4746
lpubexpcap10	33	+	0.5813	0.5355	.0150899	0.4489
density12k10	33	-	0.3756	0.3211	.0159926	0.4636
rentinc10	32	-	0.5051	0.4541	.0153039	0.4528
intorgs10	33	+	-0.2614	-0.3295	.0199335	0.5227
Test scale					.0157769	0.4847

```
. alpha area10 library10 educ10 tottour10 tourev10 hotel10 finance10 global50010 airpoll10
freedom10 muninum10 lifexp10 transcov10
> busstart10 legdens10 lpubexpcap10 density12k10 rentinc10 intorgs10, item
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4411	0.3629	.0088983	0.7525
library10	33	+	0.5144	0.4151	.0083488	0.7442
educ10	33	+	0.6689	0.5968	.0079771	0.7324
tottour10	33	-	0.3893	0.2812	.0087828	0.7554
tourev10	32	+	0.1991	0.0783	.0095956	0.7728
hotel10	32	-	0.3793	0.3000	.0090547	0.7560
finance10	32	+	0.4079	0.2873	.0087841	0.7575
global50010	33	-	0.1629	0.0526	.0095334	0.7714
airpoll10	32	-	0.6488	0.5659	.0079943	0.7352
freedom10	33	-	0.6493	0.5374	.0073723	0.7287
muninum10	26	+	0.1281	-0.0134	.0095933	0.7738
lifexp10	33	+	0.3941	0.2864	.0089807	0.7602
transcov10	29	+	0.7195	0.6606	.0079024	0.7302
busstart10	29	+	0.3789	0.3028	.0090621	0.7572
legdens10	33	+	0.5561	0.4726	.0083599	0.7421
lpubexpcap10	33	+	0.4340	0.3297	.0088239	0.7558
density12k10	33	-	0.4854	0.3933	.0086679	0.7497
rentinc10	32	-	0.6903	0.6211	.0079133	0.7310
intorgs10	33	+	0.0293	-0.1077	.0103132	0.7928
Test scale					.0087354	0.7635

```
. alpha area10 library10 educ10 tottour10 tourev10 hotell10 finance10 global50010 airpoll10
freedom10 muninum10 lifexpl0 transcov10
> busstart10 legdens10 lpubexpcap10 density12k10 rentinc10, item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4488	0.3719	.0105948	0.7839
library10	33	+	0.5243	0.4275	.009956	0.7768
educ10	33	+	0.6883	0.6202	.0095009	0.7652
tottour10	33	-	0.3882	0.2811	.010483	0.7876
tourev10	32	+	0.2233	0.1032	.0113346	0.8018
hotell10	32	-	0.3763	0.2971	.0108056	0.7876
finance10	32	+	0.3662	0.2438	.0106589	0.7930
global50010	33	-	0.1799	0.0712	.0112702	0.8005
airpoll10	32	-	0.6465	0.5644	.0095986	0.7698
freedom10	33	-	0.6079	0.4882	.009115	0.7709
muninum10	26	+	0.1825	0.0401	.0112471	0.8013
lifexpl0	33	+	0.4235	0.3203	.0106137	0.7900
transcov10	29	+	0.7053	0.6442	.0095338	0.7659
busstart10	29	+	0.4244	0.3515	.0106771	0.7862
legdens10	33	+	0.5385	0.4538	.0100721	0.7767
lpubexpcap10	33	+	0.4677	0.3682	.0104141	0.7856
density12k10	33	-	0.5119	0.4235	.0102708	0.7804
rentinc10	32	-	0.6975	0.6307	.0094709	0.7650
Test scale					.0103132	0.7928

```
. alpha area10 library10 educ10 tottour10 hotell10 finance10 global50010 airpoll10 freedom10
muninum10 lifexpl0 transcov10 busstart10
> 0 legdens10 lpubexpcap10 density12k10 rentinc10, item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4361	0.3562	.0118066	0.7951
library10	33	+	0.5434	0.4458	.0109376	0.7855
educ10	33	+	0.6836	0.6130	.0105571	0.7764
tottour10	33	-	0.4299	0.3234	.0114444	0.7950
hotell10	32	-	0.4125	0.3335	.0118668	0.7958
finance10	32	+	0.3349	0.2066	.0119685	0.8060
global50010	33	-	0.2376	0.1277	.0122382	0.8067
airpoll10	32	-	0.6601	0.5791	.0105267	0.7782
freedom10	33	-	0.6256	0.5057	.0100233	0.7807
muninum10	26	+	0.1600	0.0141	.0125069	0.8121
lifexpl0	33	+	0.3991	0.2907	.0118362	0.8016
transcov10	29	+	0.6674	0.5988	.0107253	0.7796
busstart10	29	+	0.4117	0.3364	.0118618	0.7968
legdens10	33	+	0.5276	0.4395	.0112177	0.7882
lpubexpcap10	33	+	0.4813	0.3799	.0114637	0.7946
density12k10	33	-	0.5327	0.4469	.0112253	0.7879
rentinc10	32	-	0.6955	0.6283	.0104527	0.7748
Test scale					.0113346	0.8018

```
. alpha area10 library10 educ10 tottour10 hotell10 finance10 global50010 airpoll10 muninum10
lifexpl0 transcov10 busstart10 legdens10
> 0 lpubexpcap10 density12k10 rentinc10, item
```

```
Test scale = mean(unstandardized items)
```

item-test	item-rest	average interitem
-----------	-----------	----------------------

Item	Obs	Sign	correlation	correlation	covariance	alpha
area10	33	-	0.4328	0.3429	.0104326	0.7729
library10	33	+	0.5254	0.4134	.0096351	0.7629
educ10	33	+	0.6893	0.6100	.009107	0.7483
tottour10	33	-	0.4182	0.2983	.0101324	0.7741
hotell10	32	-	0.3817	0.2915	.0105931	0.7757
finance10	32	+	0.3395	0.1969	.0105951	0.7861
global50010	33	-	0.2460	0.1245	.0108514	0.7866
airpoll10	32	-	0.6117	0.5126	.0093514	0.7572
muninum10	26	+	0.2298	0.0671	.0109777	0.7903
lifexp10	33	+	0.4208	0.3008	.0103464	0.7785
transcov10	29	+	0.6751	0.5997	.0092919	0.7525
busstart10	29	+	0.4338	0.3517	.0104161	0.7733
legdens10	33	+	0.5372	0.4397	.0097866	0.7632
lpubexpcap10	33	+	0.5095	0.3980	.0099304	0.7689
density12k10	33	-	0.5498	0.4563	.0097765	0.7625
rentinc10	32	-	0.6760	0.5976	.0091263	0.7493
Test scale					.0100233	0.7807

```
. alpha area10 library10 educ10 tottour10 hotell10 finance10 global50010 airpoll10 freedom10
muninum10 lifexp10 transcov10 busstart10
> 0 legdens10 lpubexpcap10 density12k10 rentinc10, item
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4361	0.3562	.0118066	0.7951
library10	33	+	0.5434	0.4458	.0109376	0.7855
educ10	33	+	0.6836	0.6130	.0105571	0.7764
tottour10	33	-	0.4299	0.3234	.0114444	0.7950
hotell10	32	-	0.4125	0.3335	.0118668	0.7958
finance10	32	+	0.3349	0.2066	.0119685	0.8060
global50010	33	-	0.2376	0.1277	.0122382	0.8067
airpoll10	32	-	0.6601	0.5791	.0105267	0.7782
freedom10	33	-	0.6256	0.5057	.0100233	0.7807
muninum10	26	+	0.1600	0.0141	.0125069	0.8121
lifexp10	33	+	0.3991	0.2907	.0118362	0.8016
transcov10	29	+	0.6674	0.5988	.0107253	0.7796
busstart10	29	+	0.4117	0.3364	.0118618	0.7968
legdens10	33	+	0.5276	0.4395	.0112177	0.7882
lpubexpcap10	33	+	0.4813	0.3799	.0114637	0.7946
density12k10	33	-	0.5327	0.4469	.0112253	0.7879
rentinc10	32	-	0.6955	0.6283	.0104527	0.7748
Test scale					.0113346	0.8018

```
. alpha area10 library10 educ10 tottour10 hotell10 finance10 global50010 airpoll10 freedom10
lifexp10 transcov10 busstart10 legdens10
> 0 lpubexpcap10 density12k10 rentinc10, item
```

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.4320	0.3484	.0130771	0.8057
library10	33	+	0.5617	0.4573	.012078	0.7959
educ10	33	+	0.6879	0.6126	.0117762	0.7889
tottour10	33	-	0.4703	0.3594	.0126515	0.8055
hotell10	32	-	0.3970	0.3146	.0131842	0.8069
finance10	32	+	0.3792	0.2466	.0132712	0.8171
global50010	33	-	0.2765	0.1589	.0135557	0.8173
airpoll10	32	-	0.6731	0.5898	.0115696	0.7878

freedom10		33	-	0.6585	0.5358	.0109777	0.7903
lifexp10		33	+	0.3744	0.2556	.0131427	0.8129
transcov10		29	+	0.6721	0.5984	.0119834	0.7924
busstart10		29	+	0.3732	0.2908	.0131683	0.8079
legdens10		33	+	0.5188	0.4231	.0125884	0.8017
lpubexpcap10		33	+	0.4441	0.3300	.0128579	0.8080
density12k10		33	-	0.5156	0.4235	.0125616	0.8008
rentinc10		32	-	0.6820	0.6081	.011666	0.7874
-----							
Test scale						.0125069	0.8121
-----							

```
. alpha area10 library10 educ10 tottour10 hotell10 finance10 airpoll10 freedom10 lifexp10
transcov10 busstart10 legdens10 lpubexpcap
> 10 density12k10 rentinc10, item
```

Test scale = mean(unstandardized items)

Item		Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10		33	-	0.4310	0.3452	.0142921	0.8117
library10		33	+	0.5640	0.4565	.0131631	0.8018
educ10		33	+	0.7189	0.6470	.0126697	0.7919
tottour10		33	-	0.3776	0.2547	.0143228	0.8189
hotell10		32	-	0.3608	0.2741	.0145436	0.8148
finance10		32	+	0.4243	0.2913	.0142558	0.8204
airpoll10		32	-	0.6715	0.5853	.0126116	0.7937
freedom10		33	-	0.6621	0.5366	.0119203	0.7964
lifexp10		33	+	0.4210	0.3030	.0141116	0.8159
transcov10		29	+	0.7025	0.6319	.0129153	0.7958
busstart10		29	+	0.3758	0.2913	.0143655	0.8136
legdens10		33	+	0.5326	0.4355	.0136727	0.8067
lpubexpcap10		33	+	0.4569	0.3406	.0139786	0.8133
density12k10		33	-	0.4920	0.3947	.0138243	0.8084
rentinc10		32	-	0.6875	0.6125	.0126848	0.7927
-----							
Test scale						.0135557	0.8173
-----							

```
. alpha area10 library10 educ10 hotell10 finance10 airpoll10 freedom10 lifexp10 transcov10
busstart10 legdens10 lpubexpcap10 density
> 12k10 rentinc10, item
```

Test scale = mean(unstandardized items)

Item		Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10		33	-	0.3876	0.2949	.0154249	0.8165
library10		33	+	0.5668	0.4542	.0139659	0.8036
educ10		33	+	0.7482	0.6784	.0132487	0.7904
hotell10		32	-	0.2852	0.1908	.0158303	0.8213
finance10		32	+	0.4616	0.3254	.0149632	0.8205
airpoll10		32	-	0.6731	0.5828	.0133565	0.7951
freedom10		33	-	0.6465	0.5108	.0127425	0.8011
lifexp10		33	+	0.4823	0.3658	.0146556	0.8136
transcov10		29	+	0.7110	0.6382	.0136494	0.7965
busstart10		29	+	0.3741	0.2857	.0153016	0.8158
legdens10		33	+	0.5411	0.4404	.0144901	0.8081
lpubexpcap10		33	+	0.4806	0.3612	.0147441	0.8141
density12k10		33	-	0.4831	0.3805	.0147562	0.8113
rentinc10		32	-	0.6993	0.6230	.0133822	0.7931
-----							
Test scale						.0143228	0.8189
-----							

```
. alpha area10 library10 educ10 finance10 airpoll10 freedom10 lifexp10 transcov10 busstart10
legdens10 lpubexpcap10 density12k10 re
```

```
> ntinc10, item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
area10	33	-	0.3208	0.2213	.0175814	0.8236
library10	33	+	0.5484	0.4303	.0156367	0.8073
educ10	33	+	0.7692	0.7016	.0146086	0.7905
finance10	32	+	0.5044	0.3695	.0165167	0.8216
airpoll10	32	-	0.6698	0.5756	.0148805	0.7977
freedom10	33	-	0.6178	0.4705	.0144284	0.8079
lifexp10	33	+	0.5306	0.4169	.0160266	0.8125
transcov10	29	+	0.7235	0.6510	.0151182	0.7978
busstart10	29	+	0.3696	0.2787	.0170967	0.8190
legdens10	33	+	0.5392	0.4353	.0162152	0.8115
lpubexpcap10	33	+	0.4928	0.3719	.0163337	0.8157
density12k10	33	-	0.4907	0.3862	.016424	0.8137
rentinc10	32	-	0.6936	0.6136	.0149198	0.7957
Test scale					.0158303	0.8213

```
. alpha library10 educ10 finance10 airpoll10 freedom10 lifexp10 transcov10 busstart10 legdens10  
lpubexpcap10 density12k10 rentinc10  
> , item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
library10	33	+	0.5417	0.4185	.0176264	0.8112
educ10	33	+	0.7717	0.7018	.0163207	0.7920
finance10	32	+	0.4968	0.3554	.0186348	0.8261
airpoll10	32	-	0.6854	0.5914	.0165438	0.7985
freedom10	33	-	0.6082	0.4530	.0162804	0.8130
lifexp10	33	+	0.5437	0.4277	.01787	0.8142
transcov10	29	+	0.7094	0.6316	.0170083	0.8011
busstart10	29	+	0.3467	0.2519	.0193448	0.8236
legdens10	33	+	0.5279	0.4189	.0183108	0.8157
lpubexpcap10	33	+	0.5078	0.3839	.0182162	0.8174
density12k10	33	-	0.5368	0.4351	.0181419	0.8132
rentinc10	32	-	0.7025	0.6222	.0166546	0.7972
Test scale					.0175814	0.8236

```
. alpha library10 educ10 airpoll10 freedom10 lifexp10 transcov10 busstart10 legdens10  
lpubexpcap10 density12k10 rentinc10, item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
library10	33	+	0.5811	0.4538	.0185712	0.8116
educ10	33	+	0.7492	0.6670	.0175477	0.7963
airpoll10	32	-	0.7242	0.6307	.0173224	0.7974
freedom10	33	-	0.6242	0.4589	.0172186	0.8167
lifexp10	33	+	0.5312	0.4030	.0191708	0.8187
transcov10	29	+	0.6757	0.5838	.0184536	0.8075
busstart10	29	+	0.3532	0.2495	.0207815	0.8276
legdens10	33	+	0.4883	0.3637	.0200235	0.8238
lpubexpcap10	33	+	0.5285	0.3977	.0192678	0.8188
density12k10	33	-	0.5924	0.4895	.0190816	0.8128
rentinc10	32	-	0.7349	0.6548	.0175079	0.7966

```
-----+-----
Test scale | .0186348 0.8261
-----+-----
```

```
. alpha library10 educ10 airpoll10 freedom10 lifexp10 transcov10 legdens10 lpubexpcap10
density12k10 rentinc10, item
```

```
Test scale = mean(unstandardized items)
```

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
library10	33	+	0.6163	0.4983	.0210104	0.8140
educ10	33	+	0.7381	0.6548	.0198281	0.7978
airpoll10	32	-	0.7450	0.6532	.0194757	0.7980
freedom10	33	-	0.6568	0.4979	.0192884	0.8184
lifexp10	33	+	0.5220	0.3940	.0218514	0.8229
transcov10	29	+	0.6529	0.5540	.0208718	0.8096
legdens10	33	+	0.4872	0.3618	.0226102	0.8259
lpubexpcap10	33	+	0.5281	0.3993	.0218475	0.8218
density12k10	33	-	0.6069	0.5041	.0214644	0.8136
rentinc10	32	-	0.7713	0.6969	.019578	0.7958
Test scale					.0207815	0.8276

## Appendix 3 – Analysis of CEC score on Proxies for Economic Performance

```
. sum pepscore gdp08 gdp12 gdp08 gdp12 d_gdp3y d_gdpavg d_gdp08
```

Variable	Obs	Mean	Std. Dev.	Min	Max
pepscore	33	4.645212	1.433634	.993	8.375
gdp08	33	3.34e+11	3.32e+11	1.20e+10	1.48e+12
gdp12	33	3.85e+11	3.31e+11	1.34e+10	1.52e+12
gdp08	33	123810.9	155742.5	3949	815435
gdp12	33	124985.4	129349.2	4270	602348
d_gdp3y	33	.2560909	.53987	-.508	1.848
d_gdpavg	33	.0854848	.1886069	-.21	.806
d_gdp08	33	.2863636	.9042102	-.759	4.481

```
. corr pepscore gdp08 gdp12 gdp08 gdp12 d_gdp3y d_gdpavg d_gdp08
(obs=33)
```

	pepscore	gdp08	gdp12	gdp08	gdp12	d_gdp3y	d_gdpavg	d_gdp08
pepscore	1.0000							
gdp08	0.2361	1.0000						
gdp12	0.1928	0.9277	1.0000					
gdp08	0.4892	0.1236	0.0083	1.0000				
gdp12	0.6232	0.1177	0.0360	0.9624	1.0000			
d_gdp3y	-0.0613	-0.1954	0.1418	-0.3041	-0.1985	1.0000		
d_gdpavg	-0.0745	-0.2614	-0.0362	-0.3105	-0.2468	0.6608	1.0000	
d_gdp08	-0.0670	-0.2219	-0.0669	-0.2501	-0.2017	0.4501	0.9495	1.0000

## Appendix 4 – Data Sources and Operationalization

### PricewaterhouseCoopers *Cities of Opportunity*

#### Cities

Abu Dhabi	Johannesburg	Moscow	Shanghai
Beijing	Kuala Lumpur	Mumbai	Singapore
Berlin	London	New York	Stockholm
Buenos Aires	Los Angeles	Paris	Sydney
Chicago	Madrid	San Francisco	Tokyo
Hong Kong	Mexico City	Sao Paulo	Toronto
Istanbul	Milan	Seoul	

#### Data

Intellectual capital and innovation	Ease of doing business	Economic clout
Math/Science skills attainment *	Ease of starting a business**	Number of Global 500 headquarters
Percent of population with higher education	Resolving insolvency **	Financial and business services employment
Research performance of top universities	Employee regulations *	Attracting FDI: Number of greenfield projects
Intellectual property protection *	Operational risk climate *	Attracting FDI: Capital investment
Entrepreneurial environment *	Ease of entry: Number of countries with visa waiver *	Productivity
Libraries with public access		
Sustainability and the natural environment	City gateway	Health, safety and security
Natural disaster risk	Hotel rooms	Crime
Air pollution	International tourists	Health system performance *
Transportation and infrastructure	Cost	Technology readiness
Public transport systems	Total tax rate	Broadband quality score
Mass transit coverage	Cost of rent	Digital economy score
Housing	Consumer Price Index	Software and multimedia development and design
Demographics and livability		
Cultural vibrancy		
Quality of living		
Working age population		*Country-level data
Traffic congestion		**Data based on countries' most populous city

## **Operationalization**

### **Intellectual capital and innovation**

#### **Math/Science skills attainment\***

Top performers' combined mean scores on the math and science components of the Program for International Student Assessment (PISA), an Organization for Economic Co-operation and Development (OECD) assessment of 15-year-olds' academic preparedness. Top performers are defined as those students who scored in the top two proficiency levels (Level 5 and Level 6) on the math and science portions of the test. Comparable examinations are used wherever possible to place cities not included in the OECD assessment.

#### **Percent of population with higher education**

Number of people who have completed at least a university-level education divided by the total population. A university-level education is set equivalent to a bachelor's degree or higher from a US undergraduate institution.

#### **Research performance of top universities**

Sum of the scores of each city's universities included in the world ranking of top-performing research universities. Scaled scores are based on the number of articles published, number of citations to published work, and the quantity of highly cited papers. The scoring accounts for social sciences papers but not humanities papers. The rankings favor large universities, universities with medical schools, and universities that focus predominantly on the "hard sciences" rather than social sciences and humanities. The performance ranking is carried out by the Higher Education Evaluation & Accreditation Council of Taiwan.

#### **Intellectual property protection \***

Leading business executives' responses to the question in the World Economic Forum's Executive Opinion Survey 2010 that asks, "How would you rate intellectual property protection, including anti-counterfeiting measures, in your country? (1=very weak; 7=very strong)." The survey covers a random sample of large and small companies in the agricultural, manufacturing, non-manufacturing, and service sectors.

#### **Entrepreneurial environment \***

Measurement of the entrepreneurial attitudes, entrepreneurial activity, and entrepreneurial aspirations in a country using the Global Entrepreneurship Index (GEINDEX). The GEINDEX integrates 31 variables, including quantitative and qualitative measures and individual-level data and is produced by the Center for Entrepreneurship and Public Policy, George Mason University

#### **Libraries with public access**

Number of libraries within each city that are open to the public divided by the total population and then multiplied by 100,000.

### **Ease of doing business**

#### **Ease of starting a business\*\***

Assessment of the bureaucratic and legal hurdles an entrepreneur must overcome to incorporate and register a new firm. Accounts for the number of procedures required to register a firm; the amount of time in days required to register a firm; the cost (as a percentage of per capita income) of official fees and fees for legally mandated legal or professional services; and the minimum amount of capital (as a percentage of per capita income) that an entrepreneur must deposit in a bank or with a notary before registration and up to three months following incorporation. Assessment scores gathered from Doing Business 2012, The World Bank Group.

#### **Resolving insolvency \*\***

Gauges the weaknesses in existing bankruptcy law and the main procedural and administrative bottlenecks in the bankruptcy process by looking at three category areas: time and cost required to resolve bankruptcies and the

recovery rate of the claim from the insolvent firm. Assessment scores sourced from Doing Business 2012, The World Bank Group.

**Employee regulations \***

Sum of three rank scores from the World Bank’s Doing Business study including: ratio of minimum wage to average value added per worker; notice period for redundancy dismissal (for a worker with 20 years of tenure, in salary weeks); and paid annual leave for a worker with 20 years of tenure (in working days).

**Operational risk climate \***

Quantitative assessment of the risks to business profitability in each of the countries. Assessment accounts for present conditions and expectations for the coming two years. The operational risk model considers 10 separate risk criteria: security, political stability, government effectiveness, legal and regulatory environment, macroeconomic risks, foreign trade and payment issues, labor markets, financial risks, tax policy, and standard of local infrastructure. The model uses 66 variables, of which about one-third are quantitative. Data produced by Economist Intelligence Unit’s Risk Briefing.

**Ease of entry: Number of countries with visa waiver \***

Number of nationalities able to enter the country for a tourist or business visit without a visa. Excludes those nationalities for whom only those with biometric, diplomatic, or official passports may enter without a visa.

Demographics and livability

**Cultural vibrancy**

Weighted combination of city rankings based on: the quality and variety of restaurants, theatrical and musical performances, and cinemas within each city; which cities recently have defined the “zeitgeist,” or the spirit of the times; and the number of museums with online presence within each city. The “zeitgeist” rankings take into account cultural, social, and economic considerations.

**Quality of living**

Score based on more than 30 factors across five categories: sociopolitical stability, healthcare, culture and natural environment, education, and infrastructure. Each city receives a rating of either acceptable, tolerable, uncomfortable, undesirable, or intolerable for each variable. For qualitative indicators, ratings are awarded based on the Economist Intelligence Unit analysts’ and in-city contributors’ judgments. For quantitative indicators, ratings are calculated based on cities’ relative performances on a number of external data points. Data produced by the Economist Intelligence Unit Livability ranking.

**Working age population**

Ratio of a city’s population aged 15-64 to the total population of the city.

**Traffic congestion**

Measure of traffic congestion and congestion policies for each city scored on the level of congestion, as well as the modernity, reliability, and efficiency of public transport.

Sustainability and the natural environment

**Natural disaster risk**

Risk of natural disasters occurring in or near a city. Counted hazards include hurricanes, droughts, earthquakes, floods, landslides, and volcanic eruptions.

**Air pollution**

Measure of outdoor air pollution levels based on annual mean concentrations of particulate matter 10 micrometers (PM10) in diameters or less, which reflect the degree to which urban populations are exposed to this fine matter. Figures are based on daily measurements or data that could be aggregated into annual means. In the absence of

annual means, measurements covering a more limited period of the year were exceptionally used. Figures were sourced from the World Health Organization's Public Health and Environment database, which is of global scope aiming to provide data at both national and city levels.

## Economic clout

### **Number of Global 500 headquarters**

Number of Global 500 headquarters located in each city, as per the CNN Money Fortune Global 500 list.

### **Financial and business services employment**

Number of jobs in financial and business services activity as a share of total employment in the city. Financial services includes "banking and finance," "insurance and pension funding," and "activities auxiliary to financial intermediation." Business services includes a mix of activities across the following subsectors: "real estate and renting activities"; "IT and computer related"; "R&D"; "architectural, engineering, and other technical activities"; "legal, accounting, bookkeeping, and auditing activities, tax, and consultancy"; "Advertising"; and "Professional, scientific, and technical services and business services where not elsewhere classified." Data sourced by Oxford Economics.

### **Attracting FDI: Number of greenfield projects**

Number of greenfield (new job-creating) projects in a city that are funded by foreign direct investment. Data cover the period from January 2003 through July 2011. Figures provided by fDi Intelligence.

### **Attracting FDI: Capital investment**

Total value of greenfield (new job-creating) capital investment activities in USD in a city that are funded by foreign direct investment. Data cover the period from January 2003 through July 2011. Figures provided by fDi Intelligence.

### **Productivity**

Productivity is calculated by dividing the gross domestic product (GDP) in 2012 US dollars by employment in the city. Data provided by Oxford Economics.

## Transportation and infrastructure

### **Public transport systems**

Measure of the efficiency, reliability, and safety of public transport networks to residents and visitors in each city. The extensiveness and integration of the systems are also factors. Cities are further differentiated by the extent of multi-modal transport systems, including subway, bus/bus rapid transit, taxi, light rail, tram/trolley/streetcar, commuter rail, and bike share systems.

### **Mass transit coverage**

Ratio of kilometers of mass transit track to every 100 square kilometers of the developed and developable portions of a city's land area. A city's developable land area is derived by subtracting green space and governmentally protected natural areas from total land area.

### **Housing**

Measure of availability, diversity, cost, and quality of housing, household appliances, and furniture, as well as household maintenance and repair. This measure is produced by the Mercer Quality of Living reports.

## Technology readiness

### **Broadband quality score**

Measurement of the quality of a broadband connection in a given country using the Broadband Quality Study. This index is calculated based on the normalized values of three key performance parameter categories: download

throughput, upload throughput, and latency. A formula weights each category according to the quality requirements of a set of popular current and probable future broadband applications. The Broadband Quality Study is an index produced by SAID Business School University of Oxford and Universidad de Oviedo, sponsored by Cisco.

#### **Digital economy score**

Assessment of the quality of a country's information and communications technology (ICT) infrastructure and the ability of its consumers, businesses, and governments to use ICT to their benefit. Data were sourced from the digital economy rankings, "Digital Economy Rankings 2010—Beyond E-readiness," by the Economist Intelligence Unit.

#### **Software and multimedia development and design**

Combined score for each city from fDi Benchmark's "Software Development Centre" and "Multi-Media Design Centres" profiles. Both indices gauge a city's performance based on the quality (weighted 70 percent) and the cost (weighted 30 percent) of the location as well as 120 quality competitiveness measures. For software development, these measures include availability and track record in ICT, availability of specialized-skills professionals such as scientists and engineers, access to venture capital, R&D capabilities, software exports, quality of ICT infrastructure, and specialization in software development. For multi-media design, measures include the size of the location's leisure and entertainment sector, its specialization and track record, information technology infrastructure, quality of life, and skills availability

#### City gateway

##### **Hotel rooms**

Count of all hotel rooms within each city.

##### **International tourists**

Annual international tourist arrivals for 100 cities collected by Euromonitor International. Euromonitor's figures include travelers who pass through a city, as well as actual visitors to the city

#### Cost

##### **Total tax rate**

Measure of the total taxes and mandatory contributions payable by the business in the second year of operation, expressed as a share of commercial profits. The total tax rate is designed to provide a comprehensive measure of the cost of all taxes a business bears. The World Bank Group, Doing Business 2012 reports the total tax rate for calendar year 2010.

##### **Cost of rent**

Monthly rent for a one-bedroom apartment in the city center (in USD). Figures provided by Numbeo, a worldwide cost-of-living database.

##### **Consumer Price Index**

A relative measure of the price of consumer goods by location, including groceries, restaurants, transportation, and utilities. The CPI measure does not include housing expenses such as rent or mortgage. Figures provided by Numbeo, a worldwide cost-of-living database.

#### Health, safety and security

##### **Crime**

Amount of reported crimes in a city such as petty and property crimes, violent crimes, and street crimes. Data are from the Mercer Quality of Living reports.

### Health system performance \*

Measurement of a country's health system performance made by comparing healthy life expectancy with healthcare expenditures per capita in that country, adjusted for average years of education (as years of education are strongly associated with the health of populations in both mature and emerging countries). Methodology adapted from the 2001 report, "Comparative efficiency of national health systems: Cross-national econometric analysis."

\*Country-level data

\*\*Data based on countries' most populous city

Website: <http://www.pwc.com/us/en/cities-of-opportunity/index.jhtml>

Report: <http://www.pwc.com/us/en/cities-of-opportunity/assets/cities-opp-2012.pdf>

## New York City Global Partners Resource Bank

Data is collected from many sources, including city, regional and national government sources, as well as international organizations and academic documents. After selecting data on the website, the source and year of the information will appear when you place your cursor over the data point. The linked sources are not under the control of NYC Global Partners, and NYC Global Partners is not responsible for the contents of any linked site, or any changes or updates to such sites.

### Cities

Africa/Middle East	Asia Pacific	Europe		North America	South America
Accra	Bangalore	Amsterdam	Lisbon	Baltimore	Bogotá
Addis Ababa	Bangkok	Antwerp	London *	Boston	Buenos Aires
Cape Town	Beijing *	Barcelona	Luxembourg City	Calgary	Caracas
Cairo *	Delhi	Belfast	Lyon	Chicago	Córdoba
Dubai	Dhaka	Berlin	Madrid *	Cuernavaca	Curitiba
Istanbul	Guangzhou	Brussels	Milan	Edmonton	Lima
Jerusalem *	Ho Chi Minh City	Bucharest	Moscow	Los Angeles	Medellín
Johannesburg *	Hong Kong	Budapest *	Munich	Mexico City	Rio de Janeiro
Lagos	Jakarta	Copenhagen	Oslo	Monterrey	Santiago
Nairobi	Karachi	Dublin	Paris	Montréal	São Paulo
Tel Aviv	Manila	Dusseldorf	Prague	Ottawa	
	Melbourne	Edinburgh	Prishtina	Panama City	
	Mumbai	Geneva	Rome *	Philadelphia	
	Seoul	Glasgow	Rotterdam	Santo Domingo *	
	Shanghai	Hamburg	St. Petersburg	Toronto	
	Shenyang	Heidelberg	Stockholm	Vancouver	
	Singapore	Helsinki	The Hague	Winnipeg	
	Sydney	Istanbul	Vienna		
	Tokyo *	Kiev	Warsaw		
	Taipei				* Historic Sister City

## Data

People	Education	Culture
City Population (millions)	Students Enrolled in Higher Education	Number of Museums
Metro Population (millions)	Percent of Population with Higher Education (%)	Number of Cultural and Arts Organizations
Foreign Born	Higher Education Institutions	
Annual Population Growth		
Economy	Tourism	Environment
GDP Per Capita (thousands \$, PPP rates, per resident)	Total Tourists Annually (millions)	Green Spaces (km2)
Primary Industry	Foreign Tourists Annually (millions)	Air Quality*
Secondary Industry	Domestic Tourists Annually (millions)	Laws or Regulations to Improve Energy Efficiency
Share of Global 500 Companies (%)	Annual Tourism Revenue (\$US billions)	Retrofitted City Vehicle Fleet
Unemployment Rate	Hotel Rooms (thousands)	Bike Share Program
Poverty Rate		
Health	Geography	Transportation
Infant Mortality (Deaths per 1,000 Births)	City Area (km2)	Public Transportation
Life Expectancy in Years (Male)	Metro Area (km2)	Mass Transit Commuters
Life Expectancy in Years (Female)		Major Airports
Physicians per 100,000 People		Major Ports
Number of Hospitals		
Anti-Smoking Legislation		

\* One particular type of pollutant (known as PM10), is measured here to determine Air Quality. The Air Quality Guidelines, published by the World Health Organization (WHO), state that to prevent ill health, those levels should be lower than 20.

<http://www.nyc.gov/html/unccp/gprb/html/global/global.shtml>

## Appendix 5 – Variables of Consideration

	Bucket	Variable name	Variable description
1	City Size	City Area (km2)	City Area (km2)
2	City Size	Metro Area (km2)	Metro Area (km2)
3	Community Culture & Civil Society	PPPs	Number of local public-private partnerships for economic development (non-infrastructure)
4	Community Culture & Civil Society	NFP funding	Level of public funding for nonprofits per capita
5	Community Culture & Civil Society	Funding for museums and the arts per capita	Level of citywide public spending for museums and the arts (combination of local, state and national)
6	Community Culture & Civil Society	Libraries with public access	Number of public libraries per capita
7	Community Culture & Civil Society	Cultural vibrancy	Weighted combination of rankings based on restaurants, theater, museums, and “zeitgeist” -
8	Community Culture & Civil Society	Quality of living	score based on sociopolitical stability, healthcare, culture and natural environment, education, and infrastructure. Source: Economist Intelligence Unit Livability ranking
9	Community Culture & Civil Society	Funding for libraries	Level of citywide public spending for libraries (combination of local, state and national)
10	Demographics	City population	City population
11	Demographics	Metro population	Metro population
12	Demographics	Foreign born	Foreign born
13	Demographics	Population growth	Annual population growth
14	Demographics	Working age population	Working age population
15	Demographics	Population density	Density per (km2)
16	Demographics	Economic inequality	distribution of wealth on a scale of 0-100
17	Demographics	Retirement age population	Retirement age population
18	Economic Development & Commercial Environment	Total tourists annually	Total tourists annually (millions)
19	Economic Development & Commercial Environment	Annual tourism revenue	Annual tourism revenue (\$US billions)
20	Economic Development & Commercial Environment	Hotel rooms	Hotel rooms (thousands)
21	Economic Development & Commercial Environment	Financial and business services employment	
22	Economic Development & Commercial Environment	Number of global 500 headquarters	Number of global 500 headquarters
23	Economic Development & Commercial Environment	Operational risk climate	quantitative assessment of risks to business profitability based on security, political stability, government effectiveness, legal and regulatory environment, macroeconomic risks, foreign trade and payment issues, labor markets, financial risks, tax policy, standard of local infrastructure. Source: Economic Intelligence Unit Risk Briefing
24	Economic Development & Commercial Environment	Contract enforcement	

25	Economic Development & Commercial Environment	Resolving insolvency	
26	Economic Development & Commercial Environment	Primary Industry	
27	Economic Development & Commercial Environment	Secondary Industry	
28	Economic Development & Commercial Environment	Consumer price index	Consumer price index
29	Economic Development & Commercial Environment	Econ development (diversification?) strategy	Existence of an economic development (diversification?) strategy for at least 5 years
30	Economic Development & Commercial Environment	Marketing strategy	Existence of a city branding/marketing strategy for at least five years (dummy)
31	Economic Development & Commercial Environment	Tax breaks to key industries	Tax breaks to key industries
32	Education	Students Enrolled in Higher Education	Students Enrolled in Higher Education
33	Education	Research performance of top universities	Research performance of top universities
34	Education	Education spending	Level of public spending on k-12 education per capita
35	Education	Teacher evaluations	Existence of teacher evaluations
36	Education	Percent of population with higher education	number of people with equivalent to bachelors degree or higher from a US undergraduate institution divided by the total population
37	Education	Math/science skills attainment	combined mean math and science scores
38	Education	Secondary school dropout rate	
39	Education	National education spending per capita	
40	Energy Infrastructure	Public spending on energy infrastructure	Level/rate of public spending on energy infrastructure per capita (ideally combination of local, state and national)
41	Energy Infrastructure	Energy diversification plan	Existence of energy supply diversification plan that includes renewable energy sources
42	Energy Infrastructure	# of yearly electricity shortages	# of yearly electricity shortages
43	Energy Infrastructure	Energy reliance	MW in-city generation / MW imported via transmission
44	Environmental Policy	Public spending on the environment	Level of public spending on environment (EPA budget) per capita (ideally combination of federal, state and local)
45	Environmental Policy	Trash collection	Rate of trash collection
46	Environmental Policy	GHG per GDP	Energy use/GHG emissions per dollar of GDP
47	Environmental Policy	Air pollution	Environmental quality: Air quality (>PM 10), water quality, recycling rate
48	Environmental Policy	National GHG	Existence of national GHG target
49	Environmental Policy	GHG reduction	Existence of a citywide GHG reduction target for at least 5 years
50	Fiscal Policy	Balanced budget	presence of balanced budget clause
51	Fiscal Policy	Capital controls	Presence of capital control i.e. FX controls

52	Fiscal Policy	Intergovernmental transfers	Proportion of the local budget that comes from national government
53	Fiscal Policy	Municipal debt per capita	Municipal debt per capita
54	Fiscal Policy	Donations from private sector	Donations from private sector
55	Fiscal Policy	Municipal bond rating	Municipal bond rating
56	Fiscal Policy	PPP Financing	yoy growth of PPP financing
57	Governmental Institutions, Corruption and Transparency	Performance indicators	Existence of performance indicators. Performance indicators are publicly available measures that a city tracks to track city performance and progress toward certain goals.
58	Governmental Institutions, Corruption and Transparency	Competitive government contract process	Existence of a policy to award contracts based on a competitive process
59	Governmental Institutions, Corruption and Transparency	Freedom House Ranking (Measure of democracy and political freedom)	Freedom House Ranking (Measure of democracy and political freedom)
60	Governmental Institutions, Corruption and Transparency	National governance structure	Type of government at the national level
61	Governmental Institutions, Corruption and Transparency	National press freedom	
62	Governmental Institutions, Corruption and Transparency	Exec budget proposal	Executive office has ability to propose budget (dummy variable)
63	Governmental Institutions, Corruption and Transparency	Exec budget veto	Executive office has ability to veto budget (dummy variable)
64	Governmental Institutions, Corruption and Transparency	National government budget control	National government can propose or veto a local budget
65	Governmental Institutions, Corruption and Transparency	Number of decision-making bodies	Number of decision-making bodies
66	Health	Local Health spending per capita	Local Health spending per capita (ideally combination of local, state and federal)
67	Health	Preventive health programs	Existence of preventive/community health programs for at least five years (dummy)
68	Health	Doctors per capita	Doctors per capita
69	Health	local average life expectancy	local average life expectancy
70	Health	national Infant mortality rate	national Infant mortality rate
71	Health	National health spending per capita	National health spending per capita
72	Health	Obesity rate	
73	Housing	Affordable housing strategy	Existence of affordable housing strategy last 5 y
74	Housing	Public spending on housing	Level of public spending on housing per capita in city (combined local, state and national if possible)
75	Housing	Gov. backed low income mortgages	Existence of government-backed mortgages for low-income housing
76	Housing	Cost of rent	Median rent

77	Housing	Rent as percent of income	Average proportion of household income paid on housing
78	Housing	Housing	Measures the availability, diversity, cost and quality of housing, appliances, furniture, maintenance and repair
79	Housing	Existing housing stock gap	
80	Housing	National affordable housing strategy	Existence of national affordable housing strategy
81	Immigration	Immigrant services	Existence of an immigrant services agency
82	Immigration	Public spending on immigrant services per foreign born	Level of public spending on immigrant services (ideally combination of local, state and national funds spent locally)
83	Immigration	Highly skilled immigrants	Number of high-skilled visas available per capita
84	Immigration	Immigrants in higher education	Percent of first generation immigrants in a city that achieve higher education degree
85	Research, Technology & Innovation	High tech clustering	Existence of clustering strategy for high tech/science-based industries
86	Research, Technology & Innovation	R&D expenditure	Research and development expenditure (% of national GDP, 2008-2010)
87	Research, Technology & Innovation	Intellectual property protection	Perception of intellectual property protection
88	Research, Technology & Innovation	Fixed broadband	Fixed (wired) - broadband subscriptions per 100 inhabitants (national, 2011)
89	Research, Technology & Innovation	Mobile broadband	Active Mobile-broadband subscriptions per 100 inhabitants (national, 2011)
90	Research, Technology & Innovation	Quality of universities (2011)	Quality of universities (2011)
91	Research, Technology & Innovation	Number of patents	
92	Research, Technology & Innovation	Digital economy	
93	Research, Technology & Innovation	Software development and multi-media design	
94	Research, Technology & Innovation	mobile phone subscriptions	
95	Security & Crime	Public spending on police and fire protection	Public spending on police per capita (ideally combination of local, state and national)
96	Security & Crime	Ex-offender reintegration	Existence of ex-offender reintegration programs for at least 5 years
97	Security & Crime	Number of police per capita	Number of police per capita
98	Security & Crime	Number of fire stations (firemen?) per capita	Number of fire stations (firemen?) per capita
99	Security & Crime	Reported crime rate	Reported crime rate per capita
100	Security & Crime	Murders per 100,000	Murders per 100,000
101	Security & Crime	Fire fatalities per 100,000	Fire fatalities per 100,000
102	Security & Crime	Country Instability	
103	Small Business	Public spending on small business services	Public spending on small business services per capita (ideally combination of local, state and national)
104	Small Business	One stop shops	Existence of "one stop shops" for permitting new small businesses for the past five years (dummy)
105	Small Business	Industry clustering strategy	Existence of an industry clustering strategy for at least five years (dummy)
106	Small Business	Business opening	Average number of days to open a business
107	Small Business	Opening cost	Average cost of opening a business
108	Small Business	SMSEs per capita	Registered "Small and Medium Scale Enterprises" (SMSEs) per capita
109	Small Business	National "Ease of Doing Business" ranking	National "Ease of Doing Business" ranking

110	Small Business	SB Incubators	Existence of small business incubators for the past five years (dummy)
111	Tax Policy	Total tax rate	business tax rate
112	Tax Policy	Local revenue control	Local revenue collected and spent locally per capita
113	Tax Policy	Tax perception	Perception of tax levels
114	Tax Policy	Tariff levels	Tariff levels
115	Tax Policy	Degree of progressiveness of the national tax system	Marginal income tax rate
116	Tax Policy	National tax rate of top 10% of income earners (or 5%, or 1%)	National tax rate of top 10% of income earners (or 5%, or 1%)
117	Transportation Infrastructure	Long-term capital plan for mass transit	Long-term capital plan for mass transit with dedicated revenue stream
118	Transportation Infrastructure	Public spending on transportation infrastructure	Level/rate of public spending on transportation infrastructure per capita (ideally combination of local, state and national)
119	Transportation Infrastructure	Public transit usage	Percentage of population commuting by public transportation
120	Transportation Infrastructure	Traffic Congestion	Average commute time
121	Transportation Infrastructure	National infrastructure investment rate	National infrastructure investment rate
122	Transportation Infrastructure	Mass transit coverage	ratio of kilometers of mass transit to 100 sq. kilometers of developed or developable land area, minus green space and government protected natural areas
123	Transportation Infrastructure	Intercity connectivity by plane, train or boat	
124	Urban Planning	Long-term planning	Existence of a long-term city plan for at least 5 years (dummy)
125	Urban Planning	Public spending on urban planning	Level of public spending on environment (city planning agency budget) per capita (ideally combination of federal, state and local)
126	Urban Planning	Park space	added park space per capita in the last 5 years
127	Urban Planning	Natural disaster	Existence of natural disaster mitigation plans for at least 5 years
128	Urban Planning	Flood risk	Existence of coastal flood risk to at least 10% of the developed area of the city
129	Urban Planning	Permit time	Average number of days to register a property/permit new development
130	Urban Planning	Informal settlements	Percentage of population living in informal settlements
131	Water Infrastructure	Public spending on water infrastructure	Level/rate of public spending on water infrastructure per capita (ideally combination of local, state and national)
132	Water Infrastructure	Long Term capital plan for water infrastructure	Long term capital plan for water supply maintenance/improvement with dedicated revenue stream
133	Water Infrastructure	Water System Capacity	water storage capacity that supplies the city
134	Water Infrastructure	# of water main breaks	# of water main breaks
135	Water Infrastructure	Drinking Water	Prevalence of improved drinking water
136	Water Infrastructure	Sewage	Rate of sewage treatment
137	Workforce	Job Retraining	Existence of job re-training programs for the unemployed for the last 5 years (dummy)
138	Workforce	Employee regulations	Ratio of minimum wage to average value added per worker, notice period for redundancy dismissal, paid annual leave for worker with 20 years of tenure.
139	Workforce	Public spending on workforce development	Level of public spending on workforce development
140	Workforce	Informal economy	Proportion of workforce in informal economy
141	Workforce	National labor mobility	

142	Workforce	National labor market restrictions	
143	Workforce	National minimum wage (PPP)	National minimum wage (PPP)
144	Workforce	Local minimum wage (PPP)	Local minimum wage (PPP)

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