

## Trends. The Shifting Urban Economic Landscape: What Does it Mean for Cities?

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Cities are the driving force of economic growth. According to the United Nations, more than half the world's people now live in urban areas—in towns and in cities of all sizes. By 2025, the urban population is expected to have grown by another billion people, a huge majority of them in developing countries. At that point, 2.5 billion people—more than half the world's urban population—will likely live in the burgeoning cities of Asia. China is expected to have more than triple, and India double, the number of urbanites in the United States today.

Urbanization is not new. For centuries, people have packed up and moved from their rural homes in search of better-paid urban livelihoods. But today's urban shift is unprecedented in scale and speed. It is no hyperbole to say that we are amid the most significant economic transformation the world has ever seen.<sup>1</sup>

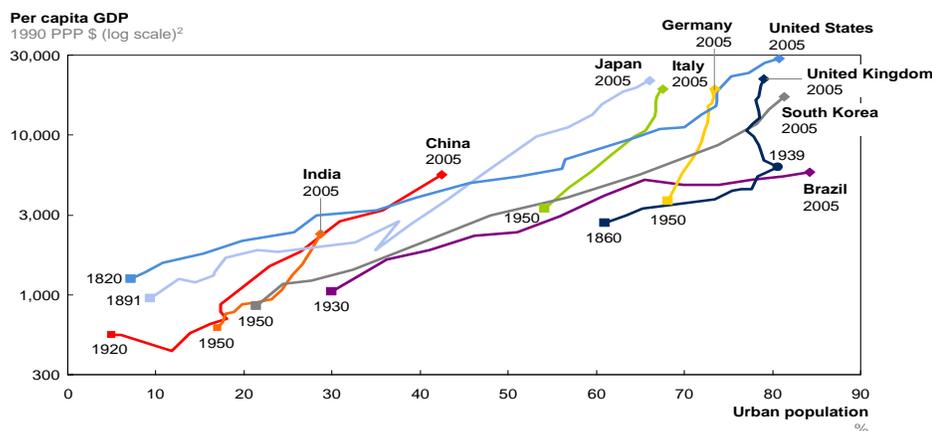
### The productivity advantage of cities

Densely populated centers—cities—enjoy powerful economies of scale, and for centuries urbanization and per capita GDP have moved in tandem (figure 1).<sup>2</sup> One reason for cities' economic advantage is their often disproportionate numbers of skilled workers. Many cities have better education and training systems that feed the talent pool and attract students from elsewhere, many of whom stay. In India, higher education attainment is increasing five times faster in urban households than in rural households. And in China, many high school graduates come to Shanghai every year to further their education. The city's 60 institutions produce at least 100,000 graduates every year, and more than a quarter of the city's labor force has had a college education.

**Figure 1. Per capita GDP has risen in tandem with increases in urbanization**  
Per capita GDP and urban population

#### Per capita GDP has risen in tandem with increases in the urbanization rate

Per capita GDP and urbanization<sup>1</sup>



1 Definition of urbanization varies by country; pre-1950 figures for the United Kingdom are estimated.

2 Historical per capita GDP series expressed in 1990 Geary-Khamis dollars, which reflect PPP.

SOURCE: Population Division of the United Nations; Angus Maddison via Timetrics; Global Insight; Census reports of England and Wales; Honda in Steckel & Floud, 1997; Bairoch, 1975

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*Note:* Definition of urban varies by country; pre-1950 figures for the United Kingdom are estimated. Historical per capita GDP series expresses in 1990 Geary-Khamis dollars, which reflect purchasing power parity.

In large cities, businesses can access more customers and employees and benefit from a broader supplier and service base. With a large number of customers at their doorsteps, cities are instant markets for many kinds of businesses—professional and personal services and shops, restaurants, and entertainment venues. One example is financial services. Just 24 cities account for nearly 95 percent of global equity market capitalization.<sup>3</sup> In Brazil, almost half of all deposits are in São Paulo and Rio de Janeiro. And the world’s 27 megacities—with populations of 10 million or more today—generated 25 percent of worldwide deposits in 2007 (box 1).

**Box 1. The McKinsey Global Institute’s Cityscope**

The McKinsey Global Institute Cityscope, a database of more than 2,600 urban regions, makes it possible to understand the evolving shape of global urban economies and extract city rankings and groupings by region, variable, and type of city.

The cities in the database are defined by integrated metropolitan areas rather than specific city jurisdictions, aggregating neighboring cities into a single urban center where appropriate. Examples include Rhein-Ruhr in Germany; Los Angeles, Long Beach, and Santa Ana in California; and Mumbai and Thane in India. In this fairly broad definition, which considers where people live and work regardless of distance, the city center is a small fraction of the city—in both area and population. Included in Cityscope are all metropolitan areas with a 2010 population of at least 150,000 in developed countries and all cities with a 2010 population of at least 200,000 in emerging regions.

Demographic and economic variables are estimated by city for 2010 and 2025: total population; population from birth to age 14, ages 15–64, and ages 65 or older; total number of households and average household size; number of households in four income brackets; and city GDP and per capita GDP in U.S. dollars measured with three different exchange rates (market, real, and purchasing power parity). Available economic data by city are limited and fragmented, and no single source can provide data on all Cityscope cities for any of the variables. For the base year 2010, we drew from a wide range of sources to collect existing city-level data, assessed the data for consistency across sources and variables before finalizing the metrics, and used the data to identify patterns for estimating variables for cities where data are not available. Despite best efforts, there remains room to improve and sharpen the available data.

For 2010 GDP, our data sources were the McKinsey Global Institute’s India and China models for city-level GDP, national statistical offices, and C-GIDD (box figure 1). We estimated city-specific GDP growth rates from 2010 to 2025 using approaches that reflected whether the city had past GDP growth data available.

**Box figure 1. The McKinsey Global Institute used four sources to gather city GDP figures for 2010**

**MGI used four sources to gather city GDP figures for 2010**

GDP estimation approach  
%; number of cities

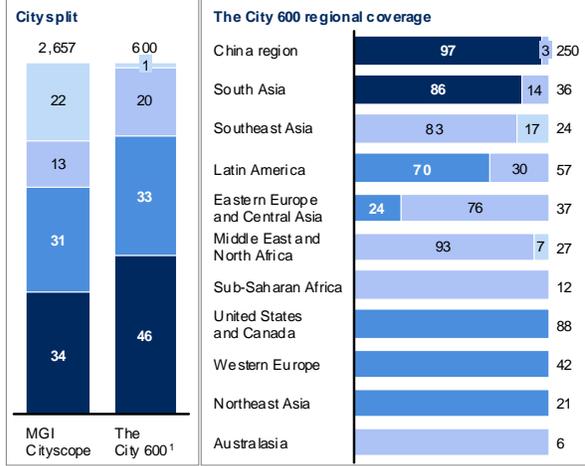
**Sources**

**Econometric estimation**  
GDP estimated with an econometric model based on available data from statistical offices, third-party data providers, and the McKinsey model

**Third-party data providers**  
Per capita GDP estimations applied to population data from local/central sources to calculate absolute GDP

**National statistical offices**  
Data from national as well as regional statistical sources (e.g., Eurostat for Western Europe)

**MGI models**  
Cities and estimation of GDP based on MGI Model for India and China



1 The City 600 is a subset of the Cityscope database with the top 600 cities ranked by absolute GDP growth for the period 2010–25.

SOURCE: McKinsey Global Institute Cityscope 2.0

Source: McKinsey Global Institute Cityscope 2.0.

a. The City 600 is a subset of the Cityscope database with the top 600 cities ranked by absolute GDP growth for 2010–25

To estimate households and household size in 2010, we used the McKinsey Global Institute’s India and China models, national statistical offices, and C-GIDD. For 2025 we used our household size econometric model with birth rates, death rates, and regional dummies as drivers. We used the model to forecast the decline in cities’ household size, reflecting convergence to a regional minimum. Sources for estimates of the number of household by income bracket in 2010 were the McKinsey Global Institute’s China model, national statistical offices, and C-GIDD. For 2025, we used our income distribution model and adjusted past patterns of changes with expected growth in per capita GDP.

In emerging markets, large, well-known cities are on the strategic radars of international companies far sooner than smaller, less known cities. And the presence of companies reinforces a city’s popularity. The more jobs available in an urban center, the more people flock there in search of opportunity. As one university graduate told the McKinsey Global Institute, “All of China’s graduates want to go to Beijing or Shanghai for jobs. That is why there is such an oversupply in these cities.”<sup>4</sup> Cities also offer the developed infrastructure that companies need to function—and that workers need to be productive. Access to reliable utilities and telecommunications matter for nearly all businesses today. And mass transit systems ferry throngs of workers to their workplaces each day—at speed.

Once a critical mass of companies collects in a major metropolis, more companies tend to cluster around them. Large cities often become the center of a group of satellite cities with strong business and transport links—creating powerful network effects. New York and Los Angeles, the United States’ two megacities, are each at the heart of a cluster of nearby cities that benefit from their large neighbor. Bridgeport-Stamford, for instance, has built a

successful niche business in finance, leveraging its proximity to New York City. Together, the “mother city” and its satellites benefit enormously from agglomeration effects. This clustering is happening all over the world. In China, for instance, the cluster around Shanghai on the Yangtze River Delta is now a world-famous economic dynamo. Less well known is the cluster of Guanzhou in the south, a rapidly growing export-driven business center. In India, 14 urban clusters are home to approximately 17 percent of the country’s population but will likely account for 40 percent of urban GDP in 2030.<sup>5</sup>

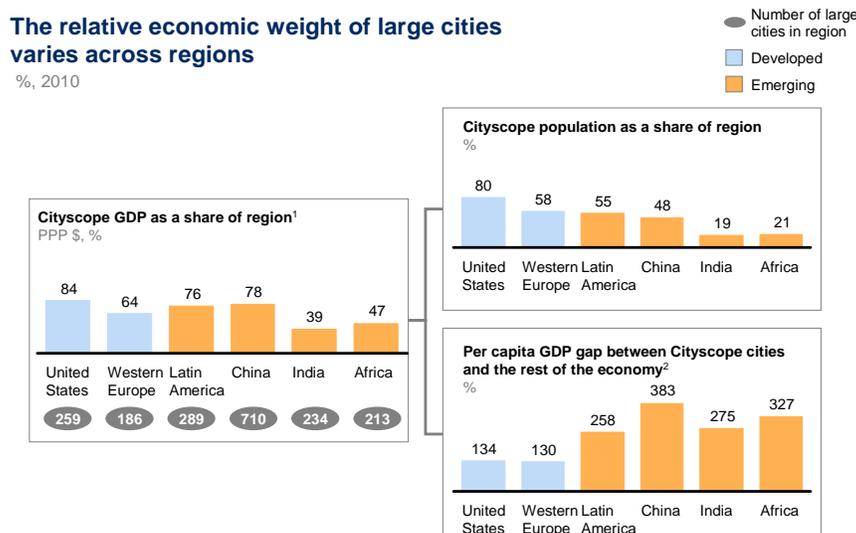
The final element of urban economies of scale is the delivery of services, including water, power, and telecommunications. Because cities have so many customers in a confined area, service delivery is cheaper. Delivering a liter of water to a city can cost as little as half that of delivering the same liter to a small village, because in cities suppliers can use common depots. McKinsey research found that in large cities, delivering several other services can similarly cost up to 50 percent less than in small villages. Some types of infrastructure, like international airports, are economically viable only when they serve large cities. Indeed, according to McKinsey estimates, a city of 5 million people needs about \$5 million of investment per daily flight. But for a city of 1 million, the necessary investment rises to nearly \$13 million. And once a city has an international airport, it becomes more attractive to both people and businesses. With their many productivity benefits, cities have historically offered two to three times the countryside’s average standard of living.<sup>6</sup>

### **Regions vary in the maturity of their urbanization**

Some regions are urbanizing faster than others. To understand the economic weight of cities across the globe, we focus on the world’s 2,600 large cities, defined in developing regions as metropolitan areas with at least 150,000 people and in developed regions as those with at least 200,000 (see box 1). Collectively, the 2,600 are home to 38 percent of the world’s population but 72 percent of global GDP. Yet the role of large cities in the economy varies by country and region (figure 2). A major reason is that some regions urbanized centuries ago while others still have a long way to go.<sup>7</sup>

Europe—with Britain in the vanguard—and the United States shifted from rural to urban living in the 18th and 19th centuries, as industrial revolutions transformed their economies and vaulted them to global economic and political power. Europe industrialized and urbanized about 100 years before the United States, but today the latter is the world’s most urban region. Around 80 percent of the U.S. population lives in large metropolitan areas, which in 2010 generated almost 85 percent of the nation’s GDP and nearly 20 percent of world GDP.<sup>8</sup> Between now and 2025, large U.S. cities are expected to contribute more to global economic growth than the 355 large cities in all developed countries combined. The economic clout of U.S. cities is largely due not to its megacities (New York and Los Angeles) but to its broad swath of 257 middleweights—among them Chicago, Dallas-Fort Worth, and San Francisco-Oakland—home to 30 percent of the U.S. population and generating 37 percent of U.S. GDP.

**Figure 2. The relative economic weight of large cities varies across regions**



1 Cityscope cities defined as having populations above 150,000 in 2010 in the United States and Western Europe. In China, Latin America, India and Africa, only cities with 200,000 inhabitants or more in 2010 are included. GDP figures are in PPP \$.  
2 The rest of the economy includes cities with less than 150,000 inhabitants as well as rural areas.  
SOURCE: McKinsey Global Institute Cityscope 2.0; McKinsey Global Institute analysis

*Source:* McKinsey Global Institute Cityscope 2.0; McKinsey Global Institute analysis.

*Note:* Cityscope cities defined as having populations of at least 150,000 in 2010 in the United States and Western Europe. In China, Latin America, India, and Africa, only cities with at least 200,000 inhabitants in 2010 are included. GDP figures are in purchasing power parity dollars. The rest of the economy includes cities with fewer than 150,000 inhabitants, as well as rural areas.

Europe, despite its early start, is less urban than the United States, with only about 55 percent of its population in large cities, accounting for less than 65 percent of GDP. Traditionally, Europeans have been less inclined to move within their home nations and to neighboring countries than have the highly mobile U.S. population. One reason Europeans tended to stay put in the past is that European authorities provided generous unemployment benefits and other social transfers, allowing people more time to look for a job locally rather than move to where a suitable position is available.<sup>9</sup> Whether this mobility gap will remain, however, is an open question. While mobility in the United States has been falling since 1990 and now stands at a 50-year low, a likely decline in regional investment and employment support in the European Union, together with more flexible cross-border labor regulations, may lead to increasing mobility there.

Latin America is also relatively mature in its urbanization, having had large-scale urban growth in the second half of the 20th century. Today, 289 cities in the Cityscope database are home to 55 percent of the Latin American population and generate more than 75 percent of the region’s GDP. As in the mature urban economy of the United States, middleweight cities are taking up the baton of growth.

During Latin America’s rapid growth over 1950–70, its megacities may have been the unintended by-product of import-substitution policies.<sup>10</sup> Yet many of the region’s large cities were unable to provide the infrastructure and services to keep up with their rapid expansion. The urban scale benefits have been gradually turning into diseconomies. Today, many large

cities struggle with traffic gridlock, urban sprawl, slum housing, crime, and pollution—making them not only less pleasant but also less productive. Long traffic jams on the daily commute are sure to compromise a worker’s productivity.

As a result, most of the region’s top 10 cities have had slower GDP growth over the past two decades than their middleweight peers, and we expect this trend to continue. Latin America’s middleweights are expected to generate more than 65 percent of the region’s growth over 2010–25. Growth in the populations and per capita GDPs of these middleweights is likely to outpace that of the region’s four megacities.

China is right in the middle of its large-scale urban shift. Over the past 10 years alone, the share of the population in towns and cities has increased from 36 percent to 50 percent, and according to the United Nations its urban population could expand from around 555 million in 2005 to 910 million in 2025.<sup>11</sup> That increase is larger than today’s entire U.S. population. Policies enabling large-scale urban migration are part of why China’s share of urbanites has expanded so rapidly,<sup>12</sup> and large cities are now the cornerstone of China’s economy. In 2010, more than 700 metropolitan areas with 200,000 or more inhabitants collectively accounted for 78 percent of the nation’s GDP. Cities of all sizes continue to grow faster than smaller towns and rural areas, and we expect large cities to generate more than 90 percent of China’s GDP growth to 2025.

India, while also urbanizing on a monumental scale, is still fairly early in its transition to an urban economy. Only 30 percent of Indians live in cities of all sizes. And fewer than one in five Indians live in the country’s roughly 230 large cities—about a third the number in China. State borders appear to limit mobility, and economic policies favoring small-scale local production have encouraged people to stay closer to home. Yet the number of people in India’s towns and cities increased from 290 million in 2001 to an estimated 340 million in 2008—and could hit 590 million by 2030.<sup>13</sup> This process is now accelerating. Indeed, the country took nearly 40 years (1971–2008) to add 230 million people to its urban population but could take only half that time to add the next 250 million. By 2030, urban areas of all sizes could generate 70 percent of net new jobs in India, contribute more than 70 percent of GDP, and drive a near quadrupling of per capita income. Even this expansion is likely to increase the share of urbanites from around 30 percent today to only 40 percent in 2030.

Africa, the second-fastest growing region over the past decade, is also still early in its urbanization, with 213 large cities generating around \$0.8 trillion in GDP, almost half the regional total. By 2025, the GDP of these cities should almost triple to more than \$2 trillion, approaching a 60 percent share, and middleweight cities are expected to outperform the region’s largest city, Lagos. Urbanization, along with a young and growing labor force and an expanding consumer class, will continue to propel the region’s rapid economic growth.<sup>14</sup>

### **Mass urbanization is shifting the global economic balance**

The world economy’s center of gravity is shifting from the advanced economies of the West to the emerging powerhouses of the East and South—at a speed and scale like never before. Mass urbanization in China, India, and other emerging nations is an enormous part of this

movement. This shifting of the globe's economic tectonic plates has profound economic consequences. In the short term, urbanization is propelling incomes in the developing world, a bright spot in an otherwise still fragile global economy; in the long term, it has the potential to reshape the world for governments and businesses alike.

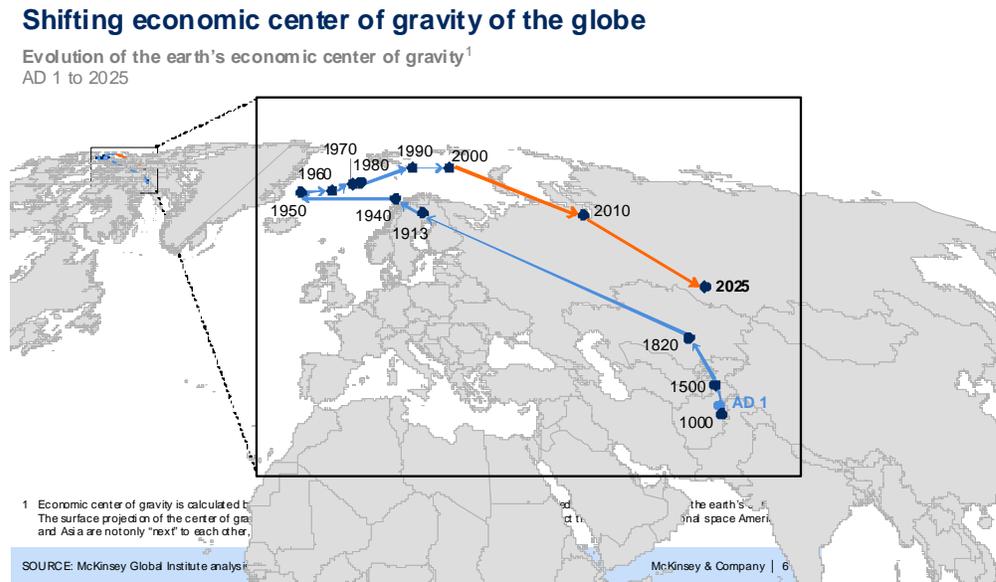
Rapidly expanding consumer classes with income for discretionary goods and services—previously devoted mainly to such basics as food, shelter, and clothing—will create vibrant new markets. And they have already triggered an investment boom. As cities try to keep pace with their expansion and the demands of their armies of new consumers, they will have to continue investing in buildings and the infrastructure to deliver housing, water, and power and to transport goods and people. The additional consumption and investment that will have to accompany the new urban consumer classes has the potential to inject an estimated \$30 trillion of spending a year into the world economy by 2025.

*Today's mass urbanization is unprecedented in speed and scale*

China is urbanizing on 100 times the scale of Britain in the 18th century and at more than 10 times the speed. As a result, the global balance—measured by the Earth's economic center of gravity—is shifting back to Asia at a speed never before seen (figure 3).<sup>15</sup>

For centuries, most people lived on close to subsistence incomes, population grew slowly, migration was limited, and the Earth's economic center of gravity was fairly stable. But industrialization and urbanization, first in Europe and the United States and then in developing countries, have driven rapid shifts in that center. Japan's postwar economic renaissance began the swing back to the East in the 1980s, but the most recent decade has seen the fastest shift ever in the world's economic balance. Over 2000–10, the center of gravity shifted about 140 kilometers a year—to the South and particularly to the East. That is about a third faster than the post–World War II movement away from Europe toward North America.

**Figure 3. The globe's shifting economic center of gravity**



Source: McKinsey Global Institute analysis.

Note: Economic center of gravity is calculated by weighting locations by GDP in three dimensions and projecting to the nearest point on the Earth's surface. The surface projection of the center of gravity shifts north after 1950 as Japan industrialized rapidly, reflecting the fact that in three-dimensional space North America and Asia are not only "next" to each other but also "across from each other."

In a short three years from 2007 to 2010, the swing in economic balance away from the United States and toward China was remarkable. Over that period, the GDP of large Chinese cities rose from 20 percent of that of large U.S. cities to 37 percent. These were unusual economic times. The United States was in recession or growing only slowly, while China was continuing to grow rapidly. In those three years alone, three more Chinese cities became megacities—one new megacity a year. In more mature economies, where urbanization is reaching a plateau, only Chicago is expected to hit 10 million people by 2025.

The shift in economic balance is not bilateral between the United States and China, or even from West to East. The balance is shifting to the South, too. In 2007, the GDP of Latin America's cities was 26 percent that of their European counterparts, but by 2010 that share had risen to 37 percent.

**Just 600 cities could generate two-thirds of global GDP growth—and half that growth could come from 443 cities in emerging economies**

Urbanization is a global phenomenon with the broadest possible impact on the way we live and on the balance of world economic power. But the economic clout of cities is highly concentrated and likely to remain so.

The top 600 metropolises measured by their contribution to global GDP growth—the "City 600"—are today home to just over one in five of the world's people, but their economic power far outweighs their collective size. Together, they generated \$34 trillion of GDP in

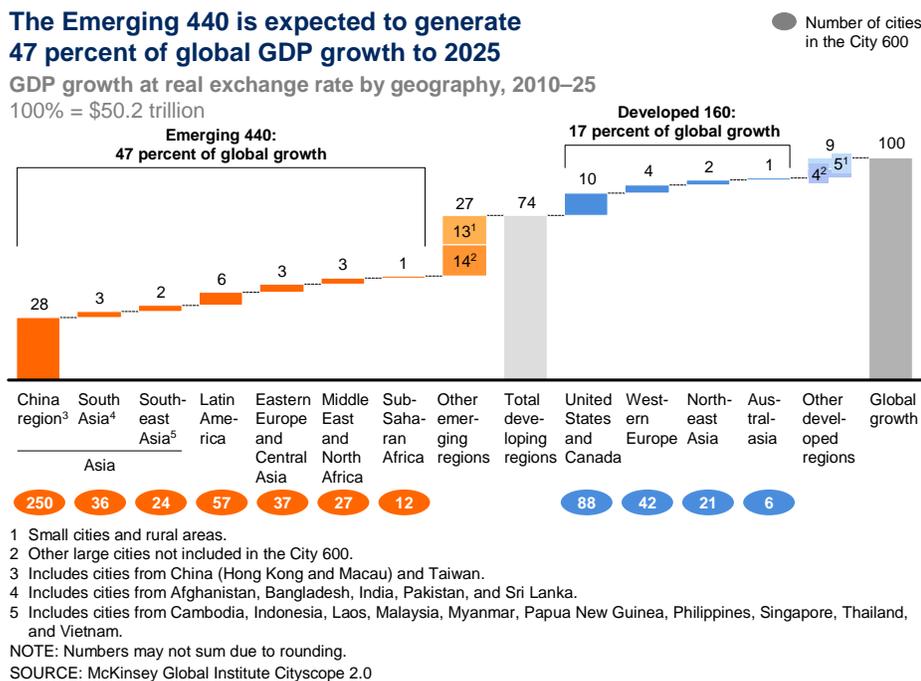
2010—or more than half the world total. We see them continuing to be hugely important for the global economy—, between them contributing an estimated \$30 trillion of additional GDP (in expected real exchange rates), or nearly 65 percent of world growth.<sup>16</sup>

However, an even more important group within the City 600 will likely be the most powerful driver of the world economy—the “Emerging 440,” or 443 cities that we expect to generate 47 percent of global GDP growth over 2010–25 (figure 4). Only 20 cities in the Emerging 440 are megacities, including São Paulo, Moscow, Mexico City, Istanbul, Lagos, and Dhaka.<sup>17</sup> These 20 are set to generate almost \$6 trillion in GDP growth by 2025—a 7.6 percent compound annual growth rate, nearly twice the world economy’s 4 percent. The rest of the Emerging 440 comprises middleweights, which are expected to grow even faster, at an 8 percent annual rate, and to account for almost \$18 trillion of GDP growth by 2025, or 35 percent of the total.

The middleweights in the Emerging 440 are in 57 countries and every continent except Oceania. China has 236 of them. One is Haerbin in the northeast, whose growth took off early in the 20th century when the Chinese Eastern Railway, a spur of the Trans-Siberian Railroad, opened and ran through the town, and which has built a strong industrial base leveraging its excellent transport connections. Today, Haerbin is an up-and-coming middleweight city of nearly 6 million people and the headquarters of Haerbin Electric Corporation, which generates half of China’s hydro and thermal power. Haerbin is also home to the world-famous International Ice and Snow Sculpture Festival. Other Chinese cities in the Emerging 440 are the inland transportation hub of Lanzhou, with 2.6 million people, and China’s largest coal port of Qinhuangdao, with 1.2 million.

Latin America is home to 53 middleweights in the Emerging 440. Brazil’s third largest city of Belo Horizonte, the capital of Minas Gerais state, has rich mining and agriculture resources. And the car manufacturing city of Puebla is Mexico’s fourth largest urban center, with more than 2.6 million inhabitants. India boasts 28 cities in the group, including Bangalore, with 8 million inhabitants and globally known as the center of the country’s information and technology industry, and Pune, which specializes in the automotive and pharmaceutical industries. Africa and the Middle East together contribute 37 middleweights to the Emerging 440, including Angola’s capital Luanda, the world’s third largest Portuguese-speaking city, Kumasi, which produces almost half of Ghana’s timber, and Port Harcourt, the center of Nigeria’s oil refining industry.

**Figure 4. The Emerging 440 is expected to generate 47 percent of global GDP growth to 2025**



Source: McKinsey Global Institute Cityscope 2.0.

Note: Numbers may not sum due to rounding.

- Small cities and rural areas.
- Other large cities not included in the City 600.
- Includes cities from China (Hong Kong SAR, China, and Macau SAR, China) and Taiwan, China.
- Includes cities from Afghanistan, Bangladesh, India, Pakistan, and Sri Lanka.
- Includes cities from Cambodia, Indonesia, the Lao People’s Democratic Republic, Malaysia, Myanmar, Papua New Guinea, the Philippines, Singapore, Thailand, and Vietnam.

The increasing power of the emerging urban world is compelling, but it would be a mistake to write off the cities of developed economies as unimportant. Today, the GDPs of Tokyo, New York, and London would at market exchange rates rank them the world’s 9th-, 14th-, and 17th-largest economies. And even after accounting for expected changes in real exchange rates, Tokyo is on course to remain the world’s largest city by GDP in 2025, followed by New York in second place, Los Angeles fourth, and London sixth. Shanghai and Beijing are set to be the only two emerging cities among the top six in GDP. In fact, one of every five City 600 cities is in North America or Western Europe, and we expect them to account for about 14 percent of global growth to 2025.

### Cities will be home to 1 billion new consumers

Urbanization and industrialization have hauled millions of people out of rural poverty, but the world still faces a challenge to ensure that urbanites do not now fall into the poverty trap.<sup>18</sup> The urban shift has been the decisive force behind a global rise in the consuming classes—segments of the population with enough income to buy not only basic necessities but also

discretionary goods and services—that will be a significant new force in the world economy (box 2).

The size of the world’s consuming class is on course to more than triple between 1990 and 2025—to more than 4 billion people. Nearly 2 billion of the new consumers will be in emerging market cities, and 1 billion of these urban consumers will enter the ranks of the consuming classes between now and 2025. More than 600 million of the new consumers will live in Emerging 440 cities. In 2010, nearly 55 percent of the Emerging 440 population had incomes high enough to make discretionary purchases; by 2025, we expect that share to be 80 percent.

**Box 2. The rising consumer class**

We define the consuming class as individuals with disposable income of more than \$10 a day—or \$3,600 a year—using constant 2005 purchasing power parity (PPP) dollars. Our purpose is to focus on the population segment with enough income for discretionary spending on a range of consumer products. The threshold of \$10 a day corresponds to the income at which the consumption of many consumer goods begins to grow rapidly.

This definition is consistent with work by others, including Surjit Bhalla and Homi Kharas.<sup>19</sup> Others have proposed different definitions for measuring the rise of living standards in emerging markets, commonly characterized as the growing “middle class.” There are many ways to define the boundaries of the middle class. Martin Ravallion of the World Bank defines it as individuals earning between \$2 and \$13 a day at 2005 PPP, highlighting the changing share of the segment of the population just above the poverty line. The Asian Development Bank uses consumption of PPP \$2 to \$20 a day.<sup>1</sup> Others, including William Easterly of New York University, define the middle class as the population between the first and fifth income quintiles in a country. This approach defines the middle class relative to each nation’s income distribution rather than using an absolute level of income or consumption.

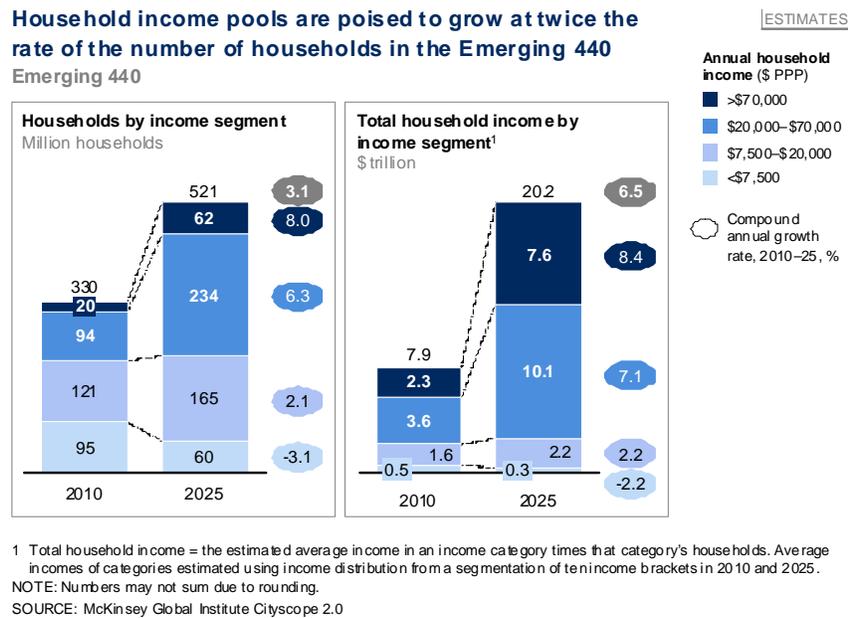
The right solution depends on the purpose of the analysis. Our method reflects a focus on understanding rising consumer markets in emerging economies.

Note:

1. Asian Development Bank 2010.

In emerging cities, incomes are rising faster than ever—and at twice the rate of growth in the number of households and individuals in consuming classes (figure 5). We estimate that incomes will grow especially fast in households with disposable incomes of \$20,000 or more in purchasing power parity (PPP) terms. Such households within the Emerging 440 could see their incomes rise at a compound annual rate of 7.6 percent a year, and by 2025 they are likely to account for more than 55 percent of all households in this income bracket, up from 35 percent today. There also will be more high-income consumers in the cities of emerging markets, likely to be home to 60 percent of all urban households with an income of more than PPP \$70,000. Today, the Emerging 440 is home to just under 20 million such households, a tally likely to triple by 2025. China could account for one in five new high-income households, but other economies will have their share of the new prosperous—India with 6 percent, Brazil with 4 percent, and Mexico with 3 percent. These four economies alone will be home to an additional 30 million high-income households.

**Figure 5. Household income pools are poised to grow at twice the rate of the number of households in the Emerging 440**



Source: McKinsey Global Institute Cityscope 2.0.

Note: Numbers may not sum due to rounding.

a. Total household income is the estimated average income in an income category multiplied by that category's households. Average incomes of categories are estimated using an income distribution from a segment of 10 income brackets in 2010 and 2025.

These new consuming classes will fuel rapid growth in demand for a range of products and services. We expect that urban households could be responsible for around \$20 trillion of additional spending in the period to 2025, more than \$14 trillion of it in the large cities of developing economies. In the cities of the Emerging 440 alone, the rise in consumption is poised at about \$10 trillion.<sup>20</sup>

In fact, growth in demand for many products will be even faster than the expansion of the consuming class—for two reasons. The first is the one we have mentioned—that incomes are rising faster than the number of consuming individuals and households, a testament to the economic power that living in a city confers. Second, so many people in the cities of emerging economies—particularly in China and India—are moving into the income brackets where spending on many goods and services tends to take off.<sup>21</sup> In India, discretionary spending—say, on packaged food and drinks, durable goods such as televisions or refrigerators, or dining out in restaurants—rose from 35 percent of average household spending in 1985 to 52 percent in 2005 and is expected to jump to about 70 percent by 2025.<sup>22</sup>

The economic shift is not happening at a consistent speed or with an identical pattern across regions because not all products see spending accelerate at the same level of income. The first types of products that tend to take off at fairly modest incomes are snack foods and bottled soft drinks—items that have low unit costs. Beauty products are slightly more expensive, and their consumption starts to speed up at higher incomes. Then, for luxury products such as fine

wine or up-market fashion, the income threshold has to be higher still. Demand for deposit services tends to take off at higher incomes than many consumer goods—they start to rise at around PPP \$18,000 per capita income and continue to be concentrated in the leading cities of each nation.<sup>23</sup>

But spending patterns are about more than just income. Consumer tastes vary from region to region—or from city to city—in the same country. Cultural and religious preferences also play a part in what products grow fastest, and where. Obvious examples include the fact that alcohol sales are low in countries with a high share of Muslims, and meat consumption in India, where many people are vegetarian, is low by global standards. Demographic trends can also make a big difference. One-third of the population of Nigerian cities is below age 16, and sales of baby food are currently more than double the global average (at similar incomes).

### *Growing cities in emerging markets need investment, capital, and resources*

Rising prosperity and integration into global markets means that cities will need more connections to other urban centers. As rising prosperity translates into greater demand for many products, demand for transportation services that get products to consumers rises rapidly. Most consumer goods will be shipped in containers, and supply-chain logistics are creating further demand for container capacity. We estimate that by 2025 the urban world will need two-and-a-half times today's container capacity in ports. Substantial investment is needed for the required expansion in capacity—likely more than a cumulative \$200 billion by 2025 according to our rough estimates.<sup>24</sup>

Many emerging cities, as they seek to absorb and serve their expanding and ever more prosperous citizens, have already enjoyed a boom in residential and commercial building and infrastructure. To get a broad sense of the scale of the investment challenge, we estimate that, to cater to future demand, cities might need to more than double their physical capital investment—from nearly \$10 trillion a year today to more than \$20 trillion a year by 2025.<sup>25</sup>

Demand for housing and offices is soaring, and we estimate that cities will need to construct new floor space equal to around 85 percent of today's stock of residential and commercial buildings (including stock needed to replace aging buildings) to keep up—that's more than 80,000 square kilometers, or about the size of Austria. China is likely to account for almost 40 percent of these new buildings. For commercial buildings, North American cities will be important sources of growth. The United States and China are likely to contribute 60 percent of global construction of commercial floor space. Globally, this urban building boom is likely to require cumulative investment, including in replacement buildings, of close to \$80 trillion to 2025.<sup>26</sup>

By 2025, urban residential demand for municipal water will be an estimated 40 percent higher than it is today—an increase of nearly 80 billion cubic meters, or more than 20 times the consumption of New York City.<sup>27</sup> China will likely account for one-quarter of growth in demand for municipal water. Africa and the Middle East will be responsible for almost 14 percent of the global rise in municipal water demand in large cities. Meeting demand not only

for water but also for the treatment of wastewater could require cumulative investment in the range of \$480 billion by 2025.

This rising urban demand is already straining the world's available natural resources—energy, water, and metals such as steel included—and available capital. The global investment rate jumped from 20.8 percent of world GDP in 2002 to 23.7 percent in 2008 (before falling back somewhat during the global recession of 2009).<sup>28</sup> On the resource front, prices of energy, land, food, and water have soared as strong demand—notably from developing countries—coincided with a period in which many resources became more expensive and less accessible. Indeed, due to waves of technological innovation that made using these resources more efficient, the price rises over 2000–10 wiped out the price declines over the previous 100 years.<sup>29</sup>

With their dense populations, cities tend to use their resources more productively than do sparsely populated areas. McKinsey Global Institute research on China's urbanization found that a concentrated pattern of urbanization could have almost 10 percent higher energy efficiency than a more dispersed pattern.<sup>30</sup> The reason is that the industries in large cities, including services and electronics, tend to use less energy. Moreover, people tend to live and work in smaller spaces, so there is less need for heating and lighting. Insulation, too, is easier and less costly to install in larger buildings. And mass public transportation—planned well—is more cost effective in large cities than across a number of smaller urban centers. The higher the residential density of a city, the more the driving declines, cutting petrol use.<sup>31</sup>

How cities try to accommodate their rising populations is not just relevant in the near term—cities need to plan and develop local economies that can produce sustained productivity gains long after exhausting the—arguably easy—gains of rural-to-urban migration. For cities investing in new capacity, there is a golden opportunity to lock in higher energy and resource efficiency for decades to come, setting the groundwork for sustainable economic vigor beyond their demographic growth spurt.

### **The shifting economic balance poses a range of challenges for cities**

Cities now underpin the world economy, and how they manage their affairs will have a profound impact on the lives of more than half the world's people. How cities handle themselves could not be more vital. As the world's economic center of gravity shifts at speed from the advanced economies of North America and Europe toward the developing economies of the South and East, their challenges will differ sharply.

For leaders of cities in mature economies that have already reaped most of the economic benefits of their urbanization, the challenge is to sustain growth and manage shifting demands on city services in a tighter fiscal environment. In the near term, U.S. and Western European cities are struggling to emerge from recession and overcome the dampening impact on growth of high unemployment and deleveraging.<sup>32</sup> Looking further ahead, most of them will face the pressures of slower population growth, including aging, and of intensifying global competition.

Some cities will see the impact sooner. In Italy, the city of Trieste will in 2025 need to grapple with the strain of having more than 30 percent of its population ages 65 or older, while in Naples the same share is expected to be below 20 percent. A city's first step toward setting priorities for the years ahead is to understand its main economic strengths and challenges and how demographic and other trends are likely to shape its economy. Chicago, on course to become a megacity but grappling with slowing growth in recent years, has compiled a fact base as the platform for a new growth strategy. If cities in mature economies are to sustain and improve their service delivery, they will need to bake into their planning the principle of "doing more with less." Productivity and smart planning will be the name of the game.

The task for many city leaders in the developing world is just the opposite: how to keep up with the needs of an influx of 4 million people each month in search of work and higher standards of living. To both manage periods of rapid expansion and establish a solid base for sustained growth in the longer term, these cities must execute a complex managerial task of planning for housing, infrastructure, and transportation systems—ensuring that the city has the finance to meet operational and capital spending needs, to build capabilities to manage effectively the broad range of public services and city operations, and, through smart regulation, to create a favorable environment for businesses.<sup>33</sup> The many facets of urban management are explored in the rest of this book.<sup>34</sup> Yet the patterns of the changing urban world suggest that cities, wherever they are, also have much in common—and share similar imperatives.

### *Govern smartly*

Cities are becoming more important to the economic fates of their nations, placing more responsibility on those who govern them. Getting governance right is not easy, and no single model works in all contexts. Many of the world's leading cities, in both the developed and developing worlds, have chosen to put a powerful, politically appointed mayor in charge—China's major cities and New York are examples—often supported by corporatized agencies that specialize in managing the myriad services that cities are obliged to deliver and reviewed rigorously against the results they achieve. In the city of Wuhan in China, the party secretary sets targets for economic growth and evaluates all city departments against them. South Africa consolidated the previously independent municipalities of Johannesburg into a single metropolitan government under a mayor supported by a nonpolitical, professional city manager. Rio de Janeiro has a "delivery unit"—a small team that has developed and coached a group of cross-functional staff charged with delivering on the city's goals. A focused mandate and strong political backing are helping the unit break through the silos that prevent government departments from collaborating.

Many other cities have a fragmented governance structure that splits responsibilities among city, county, state, and federal governments and among siloed authorities in charge of such services as housing and transportation. In the Los Angeles metropolitan area, about 40 agencies oversee transport decisions and operations. And the San Francisco Bay Area consists of nine counties and more than 100 cities, making regional planning and coordination challenging. Consolidating and sharing services among cities and between cities

and counties can free up funds, while a lack of coordination can be a recipe for inefficiency and wasted resources.<sup>35</sup>

New technologies can ease the urban managerial task. City managers can, for instance, encourage the installation of broadband in new housing developments, which costs much less than retrofitting existing housing. The increasing use of sensors and digital devices in physical objects and machinery is enabling the birth of “smart” urban infrastructure.<sup>36</sup> For example, smart grids and sensors in water and sewage systems can help avoid system breakdowns, halving the number of leaks. Smart transport systems can use sensors to monitor transportation flows to avoid congestion and traffic delays. In Mumbai, traffic control that adapts to traffic conditions has cut average travel time 12 percent. London’s congestion pricing scheme has reduced bus delays 50 percent and increased the average speed of all traffic 31 percent.

### *Nurture the middleweights*

The middleweights’ increasing prominence, a pattern of the evolving world, has already proven to be the cornerstone of U.S. economic power and is now palpably changing the emerging urban landscapes from China to Latin America.<sup>37</sup> These up-and-coming medium-size cities are likely to be home to the lion’s share of economic growth—not only globally but in most large countries.

Countries can foster an environment for the middleweights to learn from experience and preempt the strains that have slowed the growth of many of their very large urban cousins. There is no single blueprint for cities to follow—indeed, it is precisely their diversity that makes middleweight cities powerful.

In Latin America, successful middleweight cities range broadly—from entrepreneurial metropolises such as Monterrey in Northern Mexico, home to a technology cluster around the *Tecnológico de Monterrey* system that has stored a deeply rooted entrepreneurial culture—to Belo Horizonte in Brazil, a center of information technology and biotechnology—to Medellín, with the first Colombian business cluster, PPPs fostering growth in electricity generation, textiles, fashion design, construction, and tourism—to resource-rich cities such as oil-producing Campeche and Villahermosa in Mexico or agroindustrial Rosario in Argentina—to manufacturing centers such as Puebla, home to the Volkswagen and Hylsa plants in Central Mexico—and to the cluster of machinery and equipment companies in the Santa Catalina region of southeastern Brazil.

In India, between 70 and 100 medium-size “specialist” cities have grown on the back of an anchor sector—such as manufacturing, resources, transportation, and tourism—or as destinations for pilgrims, creating many more jobs and attracting more private investment than other cities of similar size. Examples include Agra, a magnet for tourism, and Bhilai, with its world-class steel facilities.<sup>38</sup>

Some middleweight cities will fare better than others—history shows that the growth of individual cities varies widely. Yet we expect half of global GDP growth to come from

emerging market middleweights, making their success critical for sustaining the growth of the global economy.

### *Compete for people and investment*

Cities already compete for people and investment on a local and global stage. This competition is likely to intensify as more middleweight cities are integrated into the global economy. The capacity to attract people has determined the growth of cities in the past and will continue to do so in the future—and not only in rapidly urbanizing developing regions. Among U.S. cities, differences in population growth explain most of the differences in GDP growth. Fast-growing cities—those with GDP growth at least 25 percent higher than the national average over 1978–2010—saw their populations grow two and a half times the national average despite having nearly identical per capita GDP growth.<sup>39</sup> The same holds true in Western Europe. Most cities that outperform their national peers do so because of faster growth in population, not in per capita GDP.<sup>40</sup>

Aging will only intensify the race for attracting migrants, particularly the young and educated. China has committed to gradually extending social services to migrants to attract the labor its cities need. Pittsburgh in the United States, in its postindustrial phase, diversified its economic base and attracted new, more educated migrants, reinforcing its rebirth.

Most leaders of large cities already are acutely aware of the competition for hosting growing businesses. Attracting investment has been a central plank of government policy in Singapore and Ireland. Both have dedicated agencies—the Singapore Economic Development Board and the Irish Industrial Development Agency—that have built high-performing sales forces with skilled staff equipped with best practices from the private sector. And both identify prospective investors, tailor offerings to the specific needs of not only each industry but also individual companies, and have the power “to make things happen for multinational corporations,” as the Economic Development Board’s motto proclaims.<sup>41</sup>

### *Seize the power of networks*

Clusters of cities with close economic and business relationships—and transportation links—enjoy powerful network effects. Instead of competing with each other, individual cities in a cluster can forge relationships to create an economy greater than the sum of its parts. But cities need to network on a global scale, too. Industry value chains, increasingly complex and global, require business and logistic connections between suppliers and customers in many countries or cities. For cities in developed economies whose population and GDP growth might be slowing, one route to revival is to build connections with the fast-growing cities of emerging markets, whether through air and port links or through business and personal relationships.

For most nations, another area for change is foreign service. Many countries are seeing commercial diplomacy and trade missions as increasing priorities for their foreign-service corps, yet their personnel allocation across the globe has largely failed to catch up with the growing importance of medium-size cities in emerging economies. For instance, Wuhan, China, is likely to deliver more than 10 times the GDP growth of Auckland, New Zealand,

over the next 15 years—yet most countries will post many more diplomats to Auckland than to Wuhan, if they have any diplomatic presence at all. India’s Hyderabad will likely post five times the GDP growth of Krakow in Poland, but the United States has about the same number of foreign-service staff in each. In short, commercial diplomacy designed in the late 20th century now needs to take full note of the cities shaping the 21st.

Being connected also enables cities to learn from each other. Cities the world over are experimenting with innovations in policy and operations—rethinking the way they work. In transportation, for instance, Curitiba in Brazil has introduced pioneering innovations in its public transport system, including a network of bus-only lanes. Colombia’s Bogotá now boasts its extensive TransMilenio bus rapid transit system. And Mexico City has its Metrobus system. Also in Colombia, Medellín has a gondola cable transportation system that connects some of the lowest income neighborhoods in the hills on the city’s outskirts with the metro network, a solution since adopted in nearby Manizales and in Caracas, Rio de Janeiro, and other cities.

Food security is another area for new approaches. In the early 1990s, Belo Horizonte made the right to food a policy priority and created an agency that has subsidized food distribution through popular restaurants and food baskets, through farmers markets and direct supply links to rural producers, and through nutrition assistance to schools and food banks. These measures have had a significant impact not only on urban nutrition but also on rural agriculture—with each spending less than 2 percent of the city budget.<sup>42</sup>

Local government can make an enormous difference by adopting smart regulation. Lima in Peru suffered from a paralyzing amount of red tape. A decade ago, it took more than 100 days to register a property. Today, the wait is just a week, the shortest of any capital city in Latin America. This illustrates how dramatic change can occur through clever policies. Lima deliberately removed unnecessary officialdom (such as by reducing the number of certified copies of required documents) and sped up processes by allowing electronic cross-checking of information across agencies. Instead of making 10 visits to municipal offices, applicants could obtain a license in just 2. In 2006, the first lean process year, more than twice as many operating licenses were issued than in the four previous years combined.<sup>43</sup>

Compiling a detailed fact base on cities, the economic environment in which they operate, and the lessons of success and failure in their management are all vital if local policy makers are to meet the urbanization challenge. And they can benefit from learning from each other about both what works and what does not.

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The world’s cities already boast inspirational examples of how to overcome challenges that may seem insurmountable—and how to head off the problems that some of the globe’s largest metropolises struggle with today. How cities, the center of gravity of the world economy, cope with their expansion will shape the world for decades to come. So, rethinking cities is a vital task for our age.

## Notes

<sup>1</sup> The McKinsey Global Institute, McKinsey & Company's business and economics research arm, has published extensively on urbanization. See Woetzel and others (2009); Sankhe and others (2010); Dobbs, Smit, and others (2011); Cadena and others (2011); Manyika, Remes, and others (2012); and Dobbs, Remes, and others (2012). All McKinsey Global Institute reports can be downloaded at [www.mckinsey.com/mgi](http://www.mckinsey.com/mgi). Unless otherwise noted, the findings in this paper are based on McKinsey Global Institute research.

<sup>2</sup> There is a large body of literature assessing the nature and size of urban economies of scale. See, for example, Glaeser and Gottlieb (2009); World Bank (2009); and Gill and Goh (2010).

<sup>3</sup> World Federation of Exchanges n.d.

<sup>4</sup> Woetzel and others 2009.

<sup>5</sup> Atsmon, Kertesz, and Vittal 2011.

<sup>6</sup> See, for example, Morris (2010); Maddison (1995); and Scheidel and Friesen (2009).

<sup>7</sup> Cadena, Dobbs, and Remes 2012.

<sup>8</sup> The 259 large U.S. metropolitan areas include the two megacities of Los Angeles and New York, each with 10 million or more people, and 257 middleweight cities, each with between 150,000 and 10 million. See Manyika, Remes, and others (2012).

<sup>9</sup> See Molloy, Smith, and Wozniak (2011). The authors find that U.S. mobility is about twice as large as mobility in most European countries outside of Northern Europe, based on a 2005 Eurobarometer survey that allows for comparisons with U.S. data (European Commission 2005). Data from the European Union Labor Force Survey generally confirm lower mobility rates in Europe than in the United States. Note that it is difficult to compare mobility rates across countries because of conceptual difficulties in forming a common definition of internal mobility.

<sup>10</sup> For more on the link between Latin American industrial policies and the emergence of megacities, see Elizondo and Krugman (1992) and Cadena and others (2011).

<sup>11</sup> UNDESA 2012.

<sup>12</sup> China's *hukou* household registration system identifies a person as a resident of a particular area. Before 1980, this system was strictly enforced—people were required to stay in the neighborhood where they were born, and though they could travel the system did not permit them to move to seek employment, education opportunities, or better public services. After 1980, however, when China embarked on economic reform, *hukou* restrictions were relaxed.

<sup>13</sup> Sankhe and others 2010.

<sup>14</sup> See Roxburgh and others (2010) and Fine and others (2012).

<sup>15</sup> The McKinsey Global Institute's center of gravity analysis is based on country-level historical estimates from Maddison (2008) and country-level growth rates from Cityscope 2.0 until 2025. We allocated each country's GDP to its approximate center of landmass. The same center of each country was used throughout the entire timeframe. To calculate the global center of gravity, landmass radian coordinates were transformed into Cartesian coordinates with a tool from the UK Ordnance Survey that uses ED50/UTM data and projection (see [www.ordnancesurvey.co.uk/oswebsite/gps](http://www.ordnancesurvey.co.uk/oswebsite/gps)). We then transformed these coordinates into momentums and averaged them to a true economic center of gravity for each year, located within the sphere of the Earth. Last, we drew a line from the center of the Earth through this center of gravity to the surface; see Maddison (1995). Previous approaches to assessing the world's shifting economic center of gravity include Grether and Mathys (2010); Kharas (2010); and Quah (2011).

<sup>16</sup> The GDP growth projections are based on the McKinsey Global Institute Cityscope 2.0 assumption that global GDP to 2025 will expand at an average compound annual rate of 4 percent. While projections for individual cities are subject to uncertainty, the broad patterns across types of cities or regions are directionally robust across a reasonable range of key assumptions. For more detail on the assumptions behind our forecasts and their sensitivity to changes in assumptions, see the methodology appendix of Dobbs, Remes, and others (2012).

<sup>17</sup> The 20 megacities in the Emerging 440 are, from highest to lowest population, Shanghai, Mexico City, São Paulo, Beijing, Mumbai, Delhi, Chongqing, Dhaka, Kolkata, Karachi, Buenos Aires, Manila, Rio de Janeiro, Moscow, Tianjin, Guangzhou, Cairo, Istanbul, Lagos, and Shenzhen.

<sup>18</sup> There is broad recognition that, despite rising poverty in many urban areas, urbanization has helped reduce the world's absolute number of poor people, defined as people living on \$1 or less a day. According to the World Bank, the number of poor in the world fell 100 million over 1993–2002. But while the number of rural inhabitants below the poverty line fell 150 million, the number of urban poor rose 50 million (Ravallion, Chen, and Sangraula 2007). So, despite lower absolute poverty numbers, there is much to do. The United Nations' Millennium Declaration recognized that addressing the needs of the rising numbers of urban poor would be necessary to halve the proportion of people living in extreme poverty by 2015 (UNFPA 2007).

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<sup>19</sup> Surjit Bhalla defined the threshold for entering the middle class as income of \$10 per day, as cited in *The Economist* (2009). The \$10 per day consumption figure was also used as the lower bound of middle class in Kharas (2010).

<sup>20</sup> We estimate total household consumption across cities by applying the private consumption share of GDP per country, using the GDP composition in 2010, to our GDP estimates for 2010 and 2025. Our approach implicitly assumes that the private consumption share of GDP will remain constant through 2025. Given past evidence from developed economies, the share of private consumption may increase with income, leading to higher projected growth in consumption.

<sup>21</sup> Severin and others 2011.

<sup>22</sup> Ablett and others 2007.

<sup>23</sup> Our estimates of the concentration of deposits in 2007 draw from a large number of fragmented national and international statistical sources and use predicted values for deposits in cities with missing data. The McKinsey Global Institute relied on data on total national deposits from the International Monetary Fund, McKinsey's Capital Markets database, and McKinsey's Global Banking Pools database. We collected city-level data on deposits for 771 cities worldwide using publications from national central banks. To estimate missing data, we used a regression model on the pooled city-level data with four components, each with functional form and coefficients estimated using pooled city-level data: population and GDP by city from Cityscope 2.0; a fixed factor indicating the largest city in each country; a fixed factor for cities with absolute per capita GDP above PPP \$18,000; and a factor for adjusting the national deposit to reflect regulation and consumption preferences at the country level. For full details of our methodology on deposits, containers, residential and commercial buildings, and municipal water, see the appendix of Dobbs, Remes, and others (2012).

<sup>24</sup> For our estimates on container shipping, we used data from the Containerization International database, Drewry Shipping Consultants, Global Insight, and Cityscope 2.0. To estimate the regional investment required to meet expected demand growth, we first accounted for the use of current container capacity to ascertain how much more traffic could be absorbed by increasing efficiency (without building new capacity). We applied a global benchmark cost per twenty-foot-equivalent unit—the size of a standard container—of around \$290 to the additional capacity required to meet demand by 2025. We did not make an assumption on the specific characteristics of newly built capacity (for example, greenfield or brownfield) or recognize that the actual cost may vary substantially across individual projects, driven by factors beyond the scope of our models.

<sup>25</sup> This rough estimate of investment need applies the fixed capital investment share of GDP per country in 2010 to our city GDP estimates for 2010 and 2025 (see chapter 6).

<sup>26</sup> No global benchmark data are available for residential and commercial floor space. We therefore relied on a variety of sources, including the International Energy Agency, Global Insight, the Lawrence Berkeley National Laboratory, SEMPLA-DIPRO, Embraesp, Seade, the Brazilian Institute of Geography and Statistics, the United Nations Human Settlements Programme, and the Economist Intelligence Unit, to produce a region-specific floor-space consumption demand as a function of per capita GDP for residential buildings and of service industry value added per capita GDP for commercial buildings. We then estimated the growth rate of per capita floor-space demand to 2025, using fitted 2010 values and expected per capita GDP and per capita services GDP in 2025. Finally, we estimated an aggregate range of investment needs across regions using data from Turner & Townsend and Riders Digest.

<sup>27</sup> To estimate future municipal demand by city, we used available city-level per capita municipal water consumption for 595 cities with data—from national statistical offices, McKinsey's China Urban Sustainability Index, the World Bank's International Benchmarking Network of Water and Sanitation Utilities database, the Growing Blue database, and Eurostat. For cities with no available data on per capita water consumption, we used two approaches: For the 1,260 cities for which we had partial city coverage within the same nation, we estimated their water consumption based on data for similar cities in the country; for the 802 cities with no data available, we predicted their per capita consumption using a regression model with per capita GDP as the independent variable. To project water demand in 2025, we predicted the rise in per capita consumption based on the functional form identified for missing city data.

<sup>28</sup> Dobbs and others 2010.

<sup>29</sup> Dobbs, Oppenheim, and others 2011; McKinsey & Company's Sustainability and Resource Productivity Practice.

<sup>30</sup> Woetzel and others 2009.

<sup>31</sup> Farrell, Remes, and Charles 2008.

<sup>32</sup> Manyika, Remes, and others 2012; Manyika, Lund, and others 2012; Dobbs, Madgavkar, and others 2012.

<sup>33</sup> McKinsey developed the Urban Performance Index, a benchmarking tool designed to provide a fact-based look at a city's performance against its international counterparts on four critical criteria: economic performance, social conditions, sustainable resource use, and finance and governance. For the results of the Urban Performance Index benchmarking of Latin American cities, see Cadena and others (2011).

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<sup>34</sup> See also World Bank (2012).

<sup>35</sup> In the San Francisco Bay Area, the Bay Area Council Economic Institute estimates that most shared services result in average savings of 5–10 percent. If finance and government and public safety and justice functions could be shared, as much as \$600 million could be saved on a budget of \$6.3 billion. See Bay Area Council Economic Institute (2012). Also see Cadena and others (2011).

<sup>36</sup> Chui, Löffler, and Roberts 2010.

<sup>37</sup> Manyika, Remes, and others 2012.

<sup>38</sup> Sankhe and others 2010.

<sup>39</sup> Manyika, Remes, and others 2012.

<sup>40</sup> The McKinsey Global Institute will detail its analysis on large European cities in a forthcoming report.

<sup>41</sup> Alfaro, McIntyre, and Dev 2005.

<sup>42</sup> Belo Horizonte's food security program has been recognized by the World Future Council's Future Policy Award. See Göpel (2009).

<sup>43</sup> Sisen and others 2007.

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