

## Hitachi Research Institute Report

## Urgent Task of Building a New Growth Model for the Mature Metropolitan City of Tokyo Looking Toward 2030

Koichi Seto, Chief Researcher, 3rd Research Department

Shingo Miyazaki, Assistant Senior Researcher, Technology Management Group

Masumi Sato, Assistant Senior Researcher, Living &amp; Society Research Group

Yoshihiro Kawamura, Researcher

Momoko Nakamura, Researcher

Numerous large scale projects are being pushed forward at high speed in Tokyo to take advantage of the Tokyo Olympic and Paralympic Games (hereinafter, Olympic Games) scheduled for 2020. While expectations are rising for an economic ripple effect, there is also concern about rebound following the Olympic Games causing an economic slowdown, due to a drop in investment and consumption. This report identifies challenges and changes that Tokyo may face following the Olympic Games and surveys important measures for sustainable growth.

## 1. Advancing Population and Infrastructure Aging

In post-Olympic Games Tokyo, it is almost unavoidable that the aging population and infrastructure will be factors that restrict growth.

An aging population means that the population will decrease while aging progresses. The population in Tokyo has continued to increase until now, but it will begin to decrease after peaking in 2015, with an expected decrease of approximately 400,000 people in 2030 compared to 2015. In addition, senior citizens aged 65 or over, who account for 23.1% of the population in 2015, will increase to 27.0% by 2030.

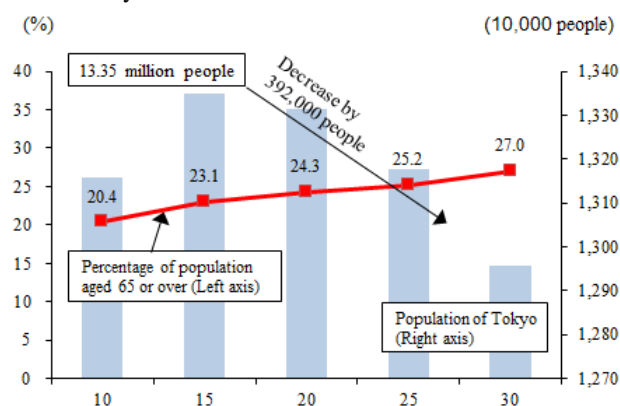


Figure 1 Total Population of Tokyo and Percentage of the Population 65 Years Old or More

Aging infrastructure refers to the aging of social infrastructure such as roads, the sewer system, and architectural structures. Most social infrastructure in Tokyo was built intensively from the 1960s to 1970s during the high-growth period in Japan. In light of the fact that the general lifespan of infrastructure is approximately 50 years, large scale measures will be necessary from 2020 to 2030. Aging is already widespread in the Metropolitan Expressway and sewer pipes, and the national government and Tokyo Metropolitan Government are examining future measures such as executing a program of inspections and surveys to gain a more thorough understanding of current conditions and introducing a new supplementary budget for updating existing infrastructure, etc.

Table 1 Current Situation of Aging Social Infrastructure in Tokyo

Social Infrastructure	Current Condition
Roads	• Of the total length of Metropolitan Expressway of 9,000 km, currently approximately 2,100 km are already damaged due to aging. Most roads require countermeasures in the future.
Sewer System	• Of the total length of sewage lines in Tokyo of approximately 16,000 km, currently approximately 1,500 km exceed the service life of 50 years. In the next 20 years, an additional approximately 6,500 km will exceed service life.
School Facilities	• Most school buildings are 25 years old or more and two-thirds are in need of repair.
Bridge	• Bridges in the metropolitan area were constructed from 1960 to 1970, and more than half of all bridges will need to be rebuilt.
Other Facilities	• Aging of the Okutama water purification plant and Shinagawa Thermal Power Plant, etc.

Prepared by Hitachi Research Institute based on data from various materials

## 2. Consumption Decrease and Financial Stress seem Unavoidable

Advancing population and infrastructure aging will greatly impact on the economy and finances of Tokyo.

Due to the aging population, the productive-age population will decrease and consumer spending will decline. As illustrated in Table 2, annual consumer spending per person of the productive-age population (the population aged 15 to 64) is currently approximately 1.37 million yen. Many corporate workers retire from employment upon reaching the age of 65 years old or older, and as a result, their income decreases. Therefore, consumer spending for the demographic aged 65 and above decreases by approximately 280,000 yen. However, according to a forecast by the National Institute of Population and Social Security Research, the productive-age population in Tokyo in 2030 will decrease by approximately 530,000 people compared to 2015, and furthermore, will decrease by 1.66 million in 2040 (Table 3). When the amount of decrease in consumer spending per person is multiplied by the amount of decrease in the productive-age population, total consumer spending in Tokyo in 2030 will decrease by approximately 147.6 billion yen and by approximately 464.5 billion yen in 2040 compared to 2015 (Table 4). Since annual sales of goods in the retail trade in Tokyo was 18.2 trillion yen in 2014, this will mean a 1% to 4% downward pressure on personal consumption.

Table 2 Consumption Decrease Due to the Decrease in Productive-age Population

	15 to 64 years old	65 years or older	Difference in Consumer Spending for 65 years or older
Annual Consumer Spending Per Person (1,000 yen)	1,369	1,088	-280

Table 3 Productive-age Population in Tokyo

Year	Productive-age Population (Thousand people)	Population Difference from 2015
2015	8,788	-
2030	8,261	-527
2040	7,129	-1,659

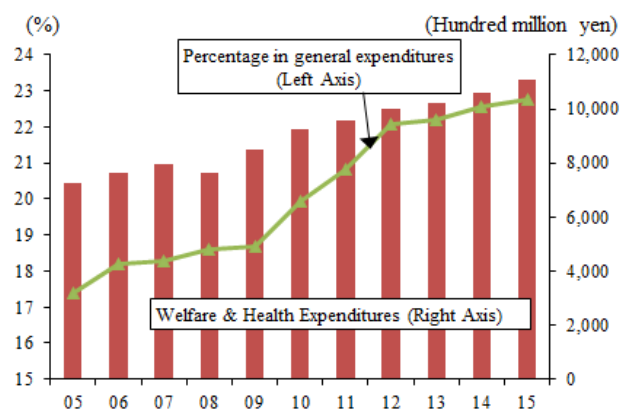
Table 4 Total Decrease in Total Consumer Spending in Tokyo

Year	Total Consumption Decrease due to Decrease in Productive-age Population (Compared to 2015) (Billion yen)
2030	-147.6
2040	-464.5

Note: Annual consumer spending per person uses the results value for 2014. Since an index by age according to prefecture has not been released in the Survey of Household Economy, the national value is applied and used.

Prepared by Hitachi Research Institute based on data from the Survey of Household Economy by Ministry of Internal Affairs and Communications and National Institute of Population and Social Security Research

As illustrated in Figure 2, the progression of the aging population will cause annual expenditure increases in the field of welfare and health, for countermeasures against the falling birthrate and measures for the aging population, etc. Tokyo's expenditures in the field of welfare and health have expanded by approximately 380 billion yen over the past ten years, and the percentage accounted for by welfare and health in general expenditures has also been expanding.

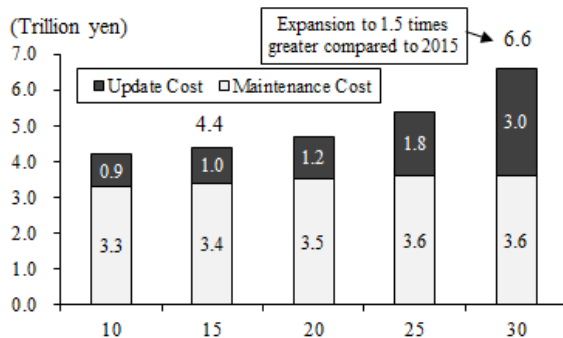


Prepared by Hitachi Research Institute based on data from budget materials of the Tokyo Metropolitan Government

Figure 2 Change in General Expenditures and Expenditures for Welfare and Health by the Tokyo Metropolitan Government

Aging infrastructure will also lead to expanding public burden due to the rise in the cost of updating infrastructure. According to the Ministry of Land, Infrastructure, Transport and Tourism, the cost of updating and maintaining public infrastructure due to aging has continued to expand throughout the country and will expand to 6.6 trillion yen (3 trillion yen update cost and 3.6 trillion yen maintenance cost) by 2030. This is equivalent

to approximately 1.5 times the 4.4 trillion yen (1 trillion yen update cost and 3.4 trillion yen maintenance cost) in 2015. Tokyo is expected to experience a similar expansion.



Prepared by Hitachi Research Institute based on data from a White Paper on Land, Infrastructure, Transport and Tourism in Japan, 2008

Figure 3 Forecast of Public Infrastructure-related Costs

### 3. Tokyo Requires a General Overhaul to Re-establish it as a Competitive Urban City

To realize continuous growth in a Tokyo that faces the serious issues of aging population and infrastructure, it will be essential to attract people and corporations from overseas and enhance economic activity. To this end, Tokyo must work on increasing its attractiveness to the world.

The Mori Memorial Foundation evaluates major cities around the world according to their comprehensive power by analyzing 6 items: economy, research and development, cultural interaction, livability, environment, and accessibility and releases the results annually as its “Global Power City Index YEARBOOK” (Table 5). According to the Global Power City Index YEARBOOK 2014, Tokyo ranked 4<sup>th</sup>, after London, New York, and Paris in the overall ranking. If we look at the results for each evaluation item, Tokyo is ranked top in “Economy” which greatly contributed to its 4th place position in the overall ranking.

Table 5 Power City Index of Tokyo in the World

Rank	1st	2nd	3rd	4th	5th
Overall	London	New York	Paris	Tokyo	Singapore
Economy	Tokyo	New York	Beijing	London	Hong Kong
Research & Development	New York	Tokyo	London	Los Angeles	Boston
Cultural Interaction	London	New York	Paris	Singapore	Berlin
Livability	Paris	Vancouver	Berlin	Vienna	Barcelona
Environment	Geneva	Stockholm	Zurich	Frankfurt	Singapore
Accessibility	London	Paris	Amsterdam	Frankfurt	Seoul

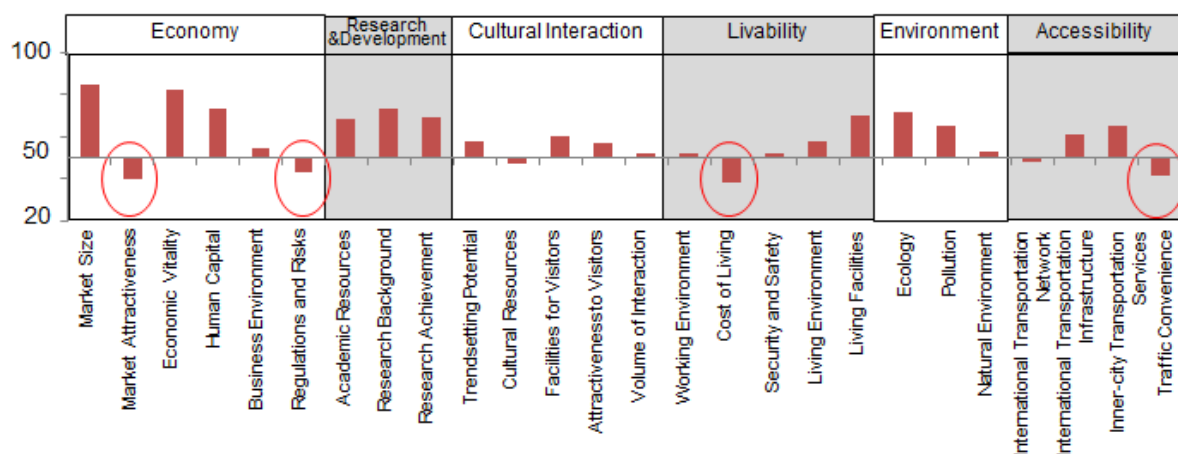
Prepared by Hitachi Research Institute based on data from the Global Power City Index of The Mori Memorial Foundation

Among elements that comprise “Economy”, Tokyo greatly exceeded 50 points which is the average of other cities in terms of market size, economic vitality and human capital (Fig. 4). On the other hand, Tokyo falls below in certain elements such as (1) market attractiveness, which scored low due to the recent economic slowdown (Economy); (2) regulations, which scored low due to the high corporate tax rate (Economy); (3) cost of living, which scored low due to rent and land cost that hover at a high prices (Livability); and (4) traffic convenience, which scored low due to crowded public transportation and high taxi fares (Accessibility).

Currently, Tokyo’s Global Power City Index score is supported significantly by the strength of its economy, despite the city’s issues in terms of livability and accessibility. But in the future, the aging society and infrastructure will place downward pressure on the economy. New efforts are essential to maintain and improve on Tokyo’s current Global Power City Index score.

### 4. Construction of Multiple Links Connecting Tokyo to the World

For Tokyo to maintain its economic vitality amid the near-unavoidable aging of its population and infrastructure, attracting manpower and goods from overseas, as well as increasing the city’s attractiveness for this purpose, are important strategic tasks.



Prepared by Hitachi Research Institute based on data from the Global Power City Index of The Mori Memorial Foundation

Figure 4 Power City Index B

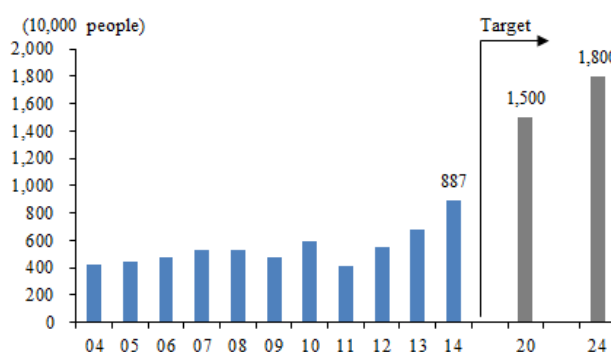
The increase in the number of foreign visitors to Tokyo, is already producing an increasing economic effect. According to the Tokyo Metropolitan Government, the economic ripple effect due to foreign visitors to Tokyo was 1 trillion 696.7 billion yen in 2014, which is an increase of approximately three times in the 5 years since 2009 (Table 6). The Tokyo Metropolitan Government has set high targets to increase foreign visitors to Tokyo from 8.87 million visitors in 2014 to 15 million visitors in 2020, aided by hosting the Olympic Games, and further to 18 million visitors in 2024, which is more than double the number of foreign visitors to Tokyo in 2014. Further expansion of the economic effect is also expected. (Fig.5).

Table 6 Transition in the Economic Ripple Effect by Foreign Visitors to Tokyo

Year	Total (Billion yen)	Foreign Visitors to Tokyo Out of Total Visitors	YoY (%)	Composition Ratio (%)
2009	8,675	618	-	7.1
2010	9,836	1,020	165	10.4
2011	8,631	673	66	7.8
2012	10,143	954	142	9.4
2013	11,333	1,256	132	11.1
2014	11,991	1,697	135	14.2

Note: 2014 figures are estimated using actual results of 2013 as reference, since figures for 2014 have not been released yet.

Prepared by Hitachi Research Institute based on data released by the Tokyo Metropolitan Government



Prepared by Hitachi Research Institute based on data released by the Tokyo Metropolitan Government

Figure 5 Change in Numbers of and Targets for Foreign Visitors to Tokyo

Efforts to attract corporations have already been launched. The Tokyo Metropolitan Government released its “Long-term Vision for Tokyo” in December 2014, with the aim of economic revitalization that also eyes the post-2020 Olympic and Paralympics Games period. As indicated in Table 7, its measures focus on the relaxation of regulations such as a one-stop procedure for business establishment, maintenance and enhancement of traffic functions, unified development of large scale facilities, medical-related exceptions, and preferential treatment in the taxation system. Importance is also placed on the improvement of regulations, the taxation system, and accessibility, which are considered to be Tokyo’s weaknesses. The establishment of Tokyo as a world business hub by proactive use of national strategic special zones is also planned toward making Tokyo a world-leading global business city.

Table 7 Development Status of Tokyo as a World Business Hub in Coordination with International Strategic Special Zones

Approval	Policy	Contents	Case Examples, etc.
Approved	Speedy approval and permission as Exceptions to the City Planning Act, etc.	• Development as a world business hub along with enhancement of functions as a transport hub (10 projects).	• Large size bus terminals (Toranomon, Yaesu)
		• Establishment of MICE function enhancement sites for attracting foreign corporations and business exchange (4 projects).	• New station in Toranomon and new stations between Tamachi to Shinagawa .
		• Establishment of diversified business exchange sites such as global financing, contents industry, etc. (8 projects)	• Area around Yurakucho station (Use of the former Tokyo Metropolitan Government building site), Otemachi, Roppongi 5-chome, Rinkai Fukutoshin Ariake.
	Exceptions to the Road Act related to area management	• Promotion of events to stimulate prosperity by utilizing road space, etc.	• “Initiatives for Tokyo Global Financial Center” relations (Tokiwabashi, Kabutocho)
	Exceptions for foreign doctors	• Permission to provide medical care not only to citizens of their own country but to non-Japanese people overall as well	• Contents industry (Mita, Takeshiba, Shibaura), venture companies and small business (Hibiya), area around Haneda Airport, Nishi Shinjuku, etc.
Under Application	Exceptions for the combined use of services covered and not covered by public health insurance; and Exceptions for hospital beds	• Reduction in the investigation period for advanced medical care and preparing hospital beds dedicated to advanced medical care	• Marunocui Naka-dori Street & Gyoko-dori Street, Shinjuku Fukutoshin, area around Osaki station, area around Kamata Station.
	Taxation system amendments	• Reduction in corporate tax	• St. Luke’s MediLocus & St. Luke’s International Hospital, Keio University Hospital, Juntendo University Hospital.
		• Preferential treatment such as tax deductions due to donations	• Application to 6 medical institutions in the Tokyo Metropolitan area.
	Simplification of the business establishment procedure	• One-stop procedure for establishing a business including government procedures	• Targeting Japanese companies newly established by multinational enterprises in special zones
	Exceptions to the Hotel Business Law	• Approval for staying at private residences temporarily related to historical architectural structures	• Positioning an area management entity as the main body of public activity

Prepared by Hitachi Research Institute based on data from Tokyo Metropolitan Government

In addition to the above series of measures, Hitachi Research Institute believes that building linkages (multiple links) to connect Tokyo and the world beyond Japan’s borders in the academic, corporate, and welfare fields would be effective. More specifically, this involves formation of a human capital base through building three linkages, namely, (1) academic links, to increase overseas researchers and students; (2) Argonaut links, to encourage highly-specialized human resources in international business fields to remain and reside in Japan long-term; and (3) welfare links to attract foreign visitors for the purpose of long-term stays, such as business travel and health tourism. This would lead to expansion of a new global network centered on Tokyo.

This would mean the provision of an academic environment for world class research personnel where research activity or corporate activity can be developed more freely and more flexibly. Highly-specialized human

resources (Argonaut personnel) would be able to look for opportunities to contribute to business in their respective fields regardless of the country. In addition, provision of a more comfortable living environment to these personnel is important.

From 2030, Tokyo will be confronted with serious aging population and infrastructure issues. Therefore, enhancing Tokyo’s attractiveness to bring in people and corporations from around the world is a race against time. To this end, the acceleration of an innovative urban development policy and public-private coordination are critical.

Table 8 Multiple Link Concept toward the Enhancement of Tokyo’s Competitiveness as an Urban City

Linkage	Aim	Measures (Ex.)
Academic Links	Global knowledge interaction and industry creation centered around overseas researchers with experience in business	<ul style="list-style-type: none"> <li>• Establishment of global knowledge link special zones with universities and research institutions at the core.</li> <li>• Creation of “Only one” international residential zones supported by IoT and town</li> </ul>

	establishment and foreign students	concierge functions. • Establishment of international joint feasibility study town zones in coordination with science technology and industry policy.
Argonauts Link	Expansion of residence of highly-specialized human resources in Tokyo and induction of positive growth cycles of business establishment and industry accumulation	• Establishment of international venture special zones to attract domestic and overseas corporations and researchers. • Management support to reduce the burden of companies that move to Tokyo by on-demand provision of equipment, assets, energy and resources.
Welfare Link	Accumulation of specialized human resources toward long-term stays by foreign visitors in Japan (MICE, health tourism, etc.).	• Dedicated support for long-term stays from prior to arrival in Japan to after leaving Japan beyond national borders. • Reflection of results and knowledge to accommodation facilities and support centers.

Note1: Argonauts refers to human resources from emerging countries who specialize in advanced technology with an abundance of business experience in developed countries.

Note 2: MICE: One type of business travel. MICE stands for Meeting, Incentive tour, Convention / Conference, Exhibition.

Prepared by Hitachi Research Institute