Ekibiru (Station Building) and its relation with surrounding land value

Thesis

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By

Shuran Chen

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Abstract

Japan's railroad stations, called Ekibiru 駅ビル(Station Building), are not only the place for commuters to take train and/or subway but also the destination for people to shop, dine and spend time with friend and family, offices for workers and hotels for travelers. In Tokyo Metropolitan Area, Majority of railroad companies, including former public-owned now privatized East Japan Railway Company, Tokyo Metro, Tokyu Dentetsu, are enjoying profits.[1] Study also shows that the latest Class A buildings have the tendency to be connected to railroad station and are mixed-use of office and commercial.[2] The study aims to gain a better understanding of whether or not Ekibiru (Station with mixed-use right on the top) has correlation with surrounding land value by using "before and after" land value data of 116 station areas and the ward that station located in. The result shows that while there are tendency that Ekibiru area has higher land value than Ward or City average compared with Station area without Ekibiru, there cannot be seen clear correlation between Ekibiru renovation and its effect on surrounding land value.

[1] Railroad Sector Ordinary Profit Ranking (Heisei 24 (2012) – Heisei 25 (2013)), 業界 search.com
[2] Real Estate Investment Report November 2012, Nissei Research

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Introduction

Definition

By Ekibiru (Station Building) culture, I indicate railroad companies develop railroad stations into the form – mixed-use building of retail, office and sometimes hospitality above and directly connected to transit - that people use station not simple as “transit station” but as a destination where they can shop, where they work, and hang out with friends.

By “successful Ekibiru”, I indicate the station has high ridership, railroad company enjoys profit, retails sales revenues are higher than those retails which are not in Ekibiru and office rent is higher.

The definition of Tokyo Metropolitan Area can vary from source to source, some sources use the word to describe the area that consist one Metropolis and seven Prefectures surrounding it: Ibaraki Prefecture, Tochigi Prefecture, Gunma Prefecture, Saitama Prefecture, Chiba Prefecture, Tokyo Metropolis, Kanagawa Prefecture, and Yamanashi Prefecture while other define it as one Metropolis and three prefectures surrounding it: Saitama Prefecture, Chiba Prefecture, Tokyo Metropolis, and Kanagawa Prefecture. In this thesis, following the definition set by Japanese Ministry of Land, Infrastructure and Transport[3], by “Tokyo Metropolitan Area”, I indicate the area of Tokyo Metropolis, Saitama Prefecture, Chiba Prefecture and Kanagawa Prefecture.

Background

Today, major stations in Japan (not only in metropolitan area but also in core cities) have shopping malls attached to them to create the station building structure, and in recent renovation

[3] Annual Report of Capital Region Improvement 2012, Japanese Ministry of Land, Infrastructure and Transport, 2012

of some stations, tendency is the expansion of the station buildings into even larger scale mixed-use buildings. Both Tokyo Station and Shibuya Station – two of the largest stations in Japan in terms of numbers of line and ridership – have renovated station buildings into a form of high-rise buildings (both are above 30 stories) with department store on lower levels and offices on upper levels.

Historically, in Japan, terminal stations used to be located out side of the city area, however since the establishment of Ekibiru structure in 1920s, and enhancement of commercial complex around these terminal stations, after the World War II, urban areas were developed around the station.[4] More specifically, Japan's Station Building culture started in 1929 when Hankyu Department Store built a world first terminal station department store at Osaka's Umeda station. After noticing that the accessibility and synergistic effect of railroad usage and department store's customer attraction, many private rail companies adapted this idea. Former government railway company (current privatized Japan Railway Company) built their first station building in 1950s after WWⅡ when the country was aiming to rebuilt stations after war damage and decided to set station as the symbol of city and restoration. Some stations was built partially using government subsidy and some were privately built. Considering this history, it is natural to think about Ekibiru's relation with surrounding area's activity. Ekibiru has relation to surrounding land use, employment, surrounding business, and land value. While Ekibiru accumulate the commercial activities and multi-family residential development to the station area, its effect on surrounding business is still controversial.

According to the research of Ekisumer, a subsidiary research facility of Japan Railway East whose primary purpose is to study "consumption at stations", within those 27,000,000

[4] Ryoko Takahashi, 駅施設における店舗立地が地域経済へ与える影響の分析、2015, p5

residents who live within 70km from Tokyo station, approximately 18,000,000, or 67% of all, use railroad at least once every week. 47% of the residents who live within 30km from Tokyo station whose age are between 18 and 49 years old use station related facilities (Station Building, commercial facilities within the station, other station facilities) at least once a week whether they use railroad or not. (Jeki website) Station has a potential to attract users. It is where numbers of railroad users gather everyday and of course provides great accessibility to public transportations. This is one of the aspects that demonstrate that station building and transit are able to enjoy positive correlation. Not only for developers and commercial organization but also for government who is working on the urban planning and railroad companies who is hoping for more users for railroad and profit other than railroad service, station building is the system that holds great possibilities for cities to enhance public transit ridership; railroad companies in terms of generating revenues; commercial facilities' growth and etc.

Hypothesis and Research Question

This thesis hypothesizes that Ekibiru (Station with mixed-use right on the top) has correlation with surrounding land value.

The study aims to gain a better understanding of whether or not Ekibiru (Station with mixed-use right on the top) has correlation with surrounding land's land value by using ridership and land value data of Tokyo Metropolitan Area's 116 stations' land value data of before and after the Ekibiru was built.

Methodology, process and Data

The methodology of research for this thesis includes several phases.

1. Gathering of secondary sources for a literature review in New York
2. Gathering additional source for research in Tokyo Metropolitan Area.
3. Prepare IRB
4. Data collection.
5. Analysis of collected data
6. Interpretation of data

1. Phase one includes gathering of related studies and books and reading them to gain understanding of the subject and background. Subject includes transportation oriented development around the world and in Japan, history of station building, structure of rail company in Japan.

2. Phase two includes indicating the data needed and searching if the Japanese data needed for the study was available online and/or offline. The data needed are: Travel mode, ridership, each station's history information such as the year when the station was built, Ekibiru was built, property value of each area. Within those, travel mode and ridership information could be found online through Japanese government website and railroad companies' websites. (Please see tables attached at the end of this paper for detail.)

3. Phase three is the step to finish the training online and fill out the forms for protocol.

4. Phase four consists of collecting data that cannot be found online. Statistics data such as property value data before and after the Ekibiru was built and TOD happened.

5. Phase five consists of analyzing the collected data and seeing the relation between station building and surrounding area's real estate trends.

6. Phase six consists of interpretation of whether or not the hypothesis is correct based on analysis.

Subject Stations Selection

To pick subject stations, I picked 6 lines that connect the four area of Tokyo Metropolitan Area from the top 15 lines of Japan Railway. These 6 lines are: Yamanote Line (Tokyo 23 Ward Area), Keihintohoku Line (Saitama, Tokyo, Kanagawa), Negishi Line (Kanagawa), Keiyo Line (Tokyo, Chiba), Sobuhonsen (Tokyo, Chiba), Yokosuka Line (Tokyo, Kanagawa). The following is the list of the subject stations.

Station Name	Location	Number of line	Station Name	Location	Number of line
Asahi	Chiba, Asahi City	1	Kurihama	Kanagawa, Yokosuka City	2
Higata	Chiba, Asahi City	1	Kinugasa	Kanagawa, Yokosuka City	1
Iioka	Chiba, Asahi City	1	Yokosuka	Kanagawa, Yokosuka City	1
Kurahashi	Chiba, Asahi City	1	Taura	Kanagawa, Yokosuka City	1
Chiba	Chiba, Chiba City, Chuo Ward	8	Zushi	Kanagawa, Zushi City	1
Soga	Chiba, Chiba City, Chuo Ward	3	Higashi Zushi	Kanagawa, Zushi City	1
Chiba Minato	Chiba, Chiba City, Chuo Ward	2	Kawaguchi	Saitama, Kawaguchi City	1
Higashi Chiba	Chiba, Chiba City, Chuo Ward	2	Nishikawaguchi	Saitama, Kawaguchi City	1
Kaihinmakuhari	Chiba, Chiba City, Mihama Ward	1	Minamiurawa	Saitama, Saitama City, Minami Ward	2
Inagekaigan	Chiba, Chiba City, Mihama Ward	1	Omiya	Saitama, Saitama City, Omiya Ward	12
Kemigawahama	Chiba, Chiba City, Mihama Ward	1	SaitamaShintoshin	Saitama, Saitama City, Omiya Ward	3
Tsuga	Chiba, Chiba City, Wakaba Ward	3	Urawa	Saitama, Saitama City, Urawa Ward	3
Choshi	Chiba, Choshi City	3	Kitaurawa	Saitama, Saitama City, Urawa Ward	1
Matsugishi	Chiba, Choshi City	2	Yono	Saitama, Saitama City, Urawa Ward	1
Saruda	Chiba, Choshi City	1	Warabi	Saitama, Warabi City	1
Funabashi	Chiba, Funabashi City	8	Akihabara	Tokyo, Chiyoda Ward	5
Minami Funabashi	Chiba, Funabashi City	2	Nishinippori	Tokyo, Arakawa Ward	3
Futamata Shinmachi	Chiba, Ichikawa City	1	Nippori	Tokyo, Arakawa Ward	6
Minamishisui	Chiba, Inba District	1	Tokyo	Tokyo, Chiyoda Ward	18
Tsudanuma	Chiba, Narashino City	7	Yurakucho	Tokyo, Chiyoda Ward	3
Sinarashino	Chiba, Narashino City	1	Kanda	Tokyo, Chiyoda Ward	4
Sakura	Chiba, Sakura City	2	Hacchobori	Tokyo, Chuo Ward	2
Narutou	Chiba, Sanmu City	2	Kasai Rinkai Koen	Tokyo, Edogawa Ward	1
Hyuga	Chiba, Sanmu City	1	Oji	Tokyo, Kita Ward	3
Matsuo	Chiba, Sanmu City	1	Akabane	Tokyo, Kita Ward	5
Yokoshiba	Chiba, Sanmu District	1	Tabata	Tokyo, Kita Ward	2
Youkaichiba	Chiba, Sosa City	1	Higashijujo	Tokyo, Kita Ward	1
Iigura	Chiba, Sosa City	1	Kaminakazato	Tokyo, Kita Ward	1
Maihama	Chiba, Urayasu City	2	Shinkiba	Tokyo, Koto Ward	3
Shinurayasu	Chiba, Urayasu City	1	Shiomi	Tokyo, Koto Ward	1
Yachimata	Chiba, Yachimata City	1	Ecchujima	Tokyo, Koto Ward	1
Enokido	Chiba, Yachimata City	1	Shinagawa	Tokyo, Minato Ward	6
Yotsukaido	Chiba, Yotsukaido City	2	Shinbashi	Tokyo, Minato Ward	7
Monoi	Chiba, Yotsukaido City	2	Hamamatsucho	Tokyo, Minato Ward	4
Ichikawa Shiohama	Ciba, Ichikawa City	1	Tamachi	Tokyo, Minato Ward	4
Ofuna	Kanagawa, Kamakura City	4	Kamata	Tokyo, Ota Ward	3
Kamakura	Kanagawa, Kamakura City	2	Omori	Tokyo, Ota Ward	1
Kitakamakura	Kanagawa, Kamakura City	1	Shibuya	Tokyo, Shibuya Ward	8
Kawasaki	Kanagawa, Kawasaki City, Kawasaki Ward	4	Ebisu	Tokyo, Shibuya Ward	3
Musashikosugi	Kanagawa, Kawasaki City, Nakahara Ward	4	Harajuku	Tokyo, Shibuya Ward	3
Shinkawasaki	Kanagawa, Kawasaki City, Saiwai Ward	1	Yoyogi	Tokyo, Shibuya Ward	3
Hodogaya	Kanagawa, Yokohama City, Hodogaya Ward	1	Meguro	Tokyo, Shinagawa Ward	4
Shinsugita	Kanagawa, Yokohama City, Isogo Ward	2	Oimachi	Tokyo, Shinagawa Ward	3
Yokodai	Kanagawa, Yokohama City, Isogo Ward	1	Gotanda	Tokyo, Shinagawa Ward	3
Negishi	Kanagawa, Yokohama City, Isogo Ward	1	Osaki	Tokyo, Shinagawa Ward	3
Isogo	Kanagawa, Yokohama City, Isogo Ward	1	Nishioi	Tokyo, Shinagawa Ward	1
Higashikanagawa	Kanagawa, Yokohama City, Kanagawa Ward	2	Shinjuku	Tokyo, Shinjuku Ward	9
Shinkoyasu	Kanagawa, Yokohama City, Kanagawa Ward	2	Takadanobaba	Tokyo, Shinjuku Ward	3
Konandai	Kanagawa, Yokohama City, Konan Ward	1	Shinokubo	Tokyo, Shinjuku Ward	1
Sakuragicho	Kanagawa, Yokohama City, Naka Ward	2	Kinshicho	Tokyo, Sumida Ward	7
Kannai	Kanagawa, Yokohama City, Naka Ward	2	Ueno	Tokyo, Taito Ward	14

Ishikawacho	Kanagawa, Yokohama City, Naka Ward	1	Okachimachi	Tokyo, Taito Ward	5
Yamate	Kanagawa, Yokohama City, Naka Ward	1	Uguisutani	Tokyo, Taito Ward	2
Yokohama	Kanagawa, Yokohama City, Nishi Ward	8	Ikebukuro	Tokyo, Toshima Ward	9
Hongodai	Kanagawa, Yokohama City, Sakae Ward	1	Sugamo	Tokyo, Toshima Ward	2
Totsuka	Kanagawa, Yokohama City, Totsuka Ward	3	Komagome	Tokyo, Toshima Ward	2
Higashitotsuka	Kanagawa, Yokohama City, Totsuka Ward	1	Otsuka	Tokyo, Toshima Ward	2
Tsurumi	Kanagawa, Yokohama City, Tsurumi Ward	3	Mejiro	Tokyo, Toshima Ward	1

Table 1: List of Subject Station

Descriptive Variables

Area	
Station Name	
Number of Lines	
Distance from Imperial Palace	
Ridership	
Year built (Station itself)	
Station Building	
Year built (station building)	
Latest Renovation	
Land value (station area) Yen/sm	
Land value (Ward) Yen/sm	

Table 2: Descriptive Variable (Appendix 2)

Ridership Calculation

Ridership were calculated by listing out all the lines stop at each station and searched each ridership and adding them up. (Appendix 1)

Distance from Imperial Palace

Originally, the idea was to set Tokyo station as the criterion to see each station's distance from it. However, considering the fact that historically, the city of Tokyo was developed radially with circular belt-lines running with Imperial Palace as its center, Imperial Palace can be seem as the center of the city. With this reason, I decided to see the distance of each station from the Imperial Palace.

Land Value

Official Land Price is the traditional land value information used by many researchers. It is based on the Land Prices Public Announcement Act (Act No.49 of 1969), and by having Ministry of Land, Infrastructure, Transport and Tourism's Land Appraisal Committee to assess and publish the "fair trade price" of the "sample slots" at time of every year's January 1st to provide an indicator for transaction price of properties.[5] According to Japan Association of Real Estate Appraisers, "sample slot" is chosen from a group of lands that (1) located in the area that are considered to have similar utility value, (2) the purpose of usage of the land is also homogeneous, (3) have the acreage and configuration that are considered as ordinal in that area, by taking into consideration of the following points:

1) The sample slot has representativeness

2) The sample slot remain moderateness

3) The sample slot has stability

4) The sample slot has definiteness

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[5] Taisei Kaizoji, Econophysical Research on Japan's Land Value Fluctuation, 2002 Land-Related Study Final Report, International Christian University, 2002, 平成14年度土地関係研究最終報告書 日本の地価変動メカニズムに関する経済物理学的研究

in the area.[6]

Official Land Price is also used as criterion when calculating the transaction price of lands that would be used for public works projects as well as the standard for calculating the transaction price in regulation of land transaction based on National Land Utilization Law.

Benchmark Land Value, on the other hand, is the land value investigated and published by each prefecture in September every year.   It is based on the land value of July 1st and used as the criterion for the land value of the property and is an important factor in understanding the trend of property value.[7]

Land value data was extracted from "Tochi (Land) Data" website in CSV form.

Ward Average: Average land value of all the "Sample Spots" within the ward.

Station Area Average: Average land value of all the "Sample Spots" within the "Walking Distance" or 1 kilometer (0.62 mile) radius.

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[6] Japan Association of Real Estate Appraisers, Information on Japan Association of Real Estate Appraisers: The Association and Guide System of Land Value, 日本不動産鑑定士協会連合会のご案内 当協会と地価公示制度

[7] NEXT Co., Ltd, HOME’S Real Estate Words, 不動産用語集

Data

Data	Format	Source
Travel Mode	Excel File	Statistics Bureau Statistics Japan 2010 Ministry of Internal Affairs and Communications
Tokyo Metropolitan Area Riderships	Numbers	East Japan Railway Company (JR East) Central Japan Railway Company (JR Central) Tokyo Metro Toei Subway TSUKUBA EXPRESS New Trasit Yurikamome Tokyo Waterfront Area Rapid Transit, Inc. Tokyu Corporation Railways Keio Corporation Railways Odakyu Electric Railway Co., Ltd. Seibu Railway Co., Ltd. Tobu Railway Keisei Electric Railway Keikyu Corporation Railway Transportation Bureau, City of Yokohama Saitama Rapid Railway Line Shonan Electric Rail (Shonan Denki Tetsudo) Enoshima Electric Railway Chiba Monorail Choshi Electric Railway Co., Ltd.
Land Value	Numbers, CSV	Ministry of Land, Infrastructure, Transport and Tourism Tokyo Metropolitan Government tochidai.info

Table 3: Data and Source

Literature Review

Definition of Successful Station Building

According to World Bank report, rail accounts for 41 percent of trips originating and terminating in Tokyo 23-ward area, this number is significantly higher than those for other transport modes including auto (15 percent), bus (3 percent), and motorcycle (17 percent), with the remainder on foot. The Tokyo Metropolitan Region (TMR)'s rail network totals 2,143 km in route length, by far the world's largest, including 876 km of the privatized East Japan Railway Company (JR East), 996 km of other private railways, and 271 km of publicly operated subways.[8] This success in the adaptation of railroad system in Japan has a lot to do with private railway companies who have been played major roles in it, especially in building and operating suburban lines and in making efforts to increase ridership through real estate development, retailing, and bus operations adjacent to the railroad station.

To define if the Station Building is successful, it is necessary to evaluate it from different aspects. As mentioned in abstract, Nissei Research's study conducted by Masumiya shows that the latest Class A buildings are tend to connect directly to railroad station and they are usually mixed-use of office and commercial.[9] This tendency is appeared to increase in the near future and it is because of Tokyo being rail-oriented city, many stations have high ability to attract customers and convenience.[9] Dunphy, Myerson and Pawlukiewicz proposed ten principles to successfully develop around transit and some of the principles are: build with a vision, importance of public private partnership, make retail development market driven.[10] These

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[8] The World Bank, Study on Urban Transport Development, PADECO 2000 (http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/ut_development_padeco.pdf)

[9] Mamoru Masumiya, Real Estate Investment Report: Tokyo Latest Class A Buildings Show High Tendency of Direct Connection to Station and Mixed-Use, Nissei Kiso Kenkyu (NLI Research Institute), November 2012

[10] Robert Dunphy, Deborah Myerson, Michael Pawlukiewicz, Ten Principles for Successful Development Around Transit, The Urban Land Institute, 2003

readings help to establish the measurement for evaluating successful station building system in Japan.

Public Private Partnership as a tool for TOD

Carey Curtis, John L. Renne, Luca Bertolini exhibited the strategies for developing Transit Oriented Development as part of urban development. Through case studies around the world, they showed how countries achieved Transit Oriented Development in different situations.

Dunphy, Myerson and Pawlukiewicz suggested "creating a development project around a planned or existing transit line is one of the best ways to increase ridership." It is often times a difficult start for railroad companies due to its requirement of high initial investment cost and also a difficult decision to make for politicians because the railroad development is a long-term development when politicians tend to focus more on short-term projects where residents can see result immediately. However, from different point of view, of both sectors work together, they can cover their weakness because the public private partnership provides opportunities to set mutual expectations and to share risks, costs, and rewards while provides a framework for conflict resolution.[10]

The World Bank report suggested that Tokyo's successful growth as a city, in terms of population and employment growth and economic activities, would not happen without the extensive rail network and it has substantial experience in public private partnership for the development of railways.[8] Even in Japan, railroad companies experienced financial difficulties due to large upfront capital requirements. In order to lighten the burden for these railway companies, national and local governments provided various forms of financial support and this support are in various forms from subsidy for construction costs or interest payments, loans with favorable terms and equity participation. Measures taken in Japan include: government subsidies and assistance; use of road-sector tax revenues in transit development; use of road space to minimize construction costs; value capture and role of government; and private sector participation.[8] Even though theses assistances are for the railroad service and not directly for the station building development, since the railroad companies are often times the one who develop the station building, these measures are helping the railroad and the station building system as a whole.

Japan's Station Building Development and Its Impact on Surrounding Area

Ekibiru development tend to affect surrounding land use both before and after the development is completed. Study that looked into Sapporo station (Sapporo City, Hokkaido), Nagoya Station (Nagoya City, Aichi Prefecture), and Hakata Station's (Fukuoka City, Fukuoka Prefecture) Ekibiru developments and their relation to surrounding land use showed that there are more buildings been built, especially commercial use buildings, in station area before and after the completion of Ekibiru. Both Sapporo station area and Hakata station area (Both 500 meters radius from the station) experienced more increase in total floor space compared to each city's commercial district even before the Ekibiru development was completed. This is because of the station area's redevelopment projects in expectation of the ripple effect of the Ekibiru development. After the Ekibiru was completed, both Sapporo station area and Nagoya Station area shoed increase in total floor area, especially for commercial use building, and number of total floor area in station area and in commercial district is revered, suggesting the office and commercial function shifted from commercial district to station area. However, the tendency is that these functions are concentrated specifically in Ekibiru rather than station area as a whole. In all three areas, after Ekibiru development, there were increase in residential use in both station area and perimeter of commercial district, while there is decrease in single family residential use but increase in multifamily residential use.[11]

Development of new Ekibiru has positive influence in employment of the area which leads to increase in the daytime population and thus potentially provide prosperity to the neighborhood.[12] Even though in Nagasaki City and Kagoshima City, Ekibiru resulted in the decrease in revenue for central shopping street, the research pointed out that in the city center, due to the intensified competition with suburban large commercial complex, relation between Ekibiru and central shopping street is shifting from rivalry to cooperation. With this tendency, however, there is still few examples shows the coexistence and co-prosperity of both Ekibiru and central shopping street. (Local Economy Research Institute, 2015) In fact, in his study, Uryu showed concern about his finding that since the money and human resource all flow into the station building, the station building can result in surrounding area's decline.[13] Tokyo Corporation's report also pointed out that due to its ability to provide convenience to people, Ekibiru development that railway companies are diligently working on, is likely to enlarge in the future, however the problem of decline of city due to less people shop at the business that is out side of station still remains.[14] He also suggested that Ekibiru development should not be designed to the form that is closed to the city, but rather, it should be designed as such that it is open to every direction of the city and thus create a line of flow between Ekibiru and shopping

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[11] Satoko Cho, Hirobumi Haga, Redevelopment of Large Scale Station Building and Change in Land Use, Urban Policy Study, 2012 JAPAN, p19

[12] Local Economy Research Institute, Kumamoto City Central Takes a New Turn –accelerating competition within the region and between the cities, 新たな展開をみせる熊本市の中心市街地 ~加速する地域内競争と都市間競争~, 2015, p8

[13] Hiroki Uryu, Large Scale Station Building Development's Impact on the City Center and Strategy for Urban Development, Kyushu University, 2011 JAPAN

[14] Eiichiro Yamamoto, "Co-creation of the city" by shopping center and shopping street for wayside that remains popular –urban planning that does not stop at Ekinaka, Ekibiru -, 選ばれる沿線であり続けるための SC と商店街による「街の共創」 ~駅ナカ・駅ビルで完結させせない街づくり~, Tokyo Corporation, 2011, p13-14

street.[15] On the other hand, On the other hand, Cho and Haga found due to the development of station building, instead of existing commercial clustered area, station surrounding area showed rapid increase in business.[16] Similarly, Takahashi's study showed that Ekibiru's revenue has positive correlation with Station area's shopping street's revenue when tested within 0.3 kilometers radius from the station but not statistically significant when the test area is bigger than 0.4 kilometers radius from the station.[17] She also suggested that even though the announcement of new Ekibiru and its relation with land value was not statistically significant, there was 3.7% increase within 0 to 0.5 kilometers radius, 8% within 0.5 – 1 kilometer radius and 3.9% within 1 to 1.5 kilometers radius due to the development of Ekibiru.[18]

Calimente created the term rail integrated community (RIC) besides TOD to describe Tokyo's railway station system – high density, safe, mixed-use, pedestrian-friendly development around railway stations that act as community hubs, served by frequent rail transit, accessed primarily on foot, by bicycle or public transit.[19] He demonstrated this with the example of Tokyu Corporation which has been a successful private railway and also department store. In his article, Jaffe argued that in Japan, "the railway itself was just a sideline attraction" and the department store and other retail attached to it are the main attraction.[20] In fact, many Japanese railroad companies, such as Japan Railway Company, Hankyu Corporation, Tokyu Corporation, not only operate the railroad but also own retail sector and residential development sector. It is

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[15] Eiichiro Yamamoto, "Co-creation of the city" by shopping center and shopping street for wayside that remains popular –urban planning that does not stop at Ekinaka, Ekibiru -, 選ばれる沿線であり続けるための SC と商店街による「街の共創」 ~駅ナカ・駅ビルで完結させない街づくり~, Tokyo Corporation, 2011, p15

[16] Satoko Cho, Hirobumi Haga, Redevelopment of Large Scale Station Building and Change in Land Use, Urban Policy Study, 2012 JAPAN

[17] Ryoko Takahashi, 駅施設における店舗立地が地域経済へ与える影響の分析、2015, p12

[18] Ryoko Takahashi, 駅施設における店舗立地が地域経済へ与える影響の分析、2015, p15

[19] Calimente, John, Rail Integrated Communities in Tokyo, Journal of Transport and Land Use, 2012 (https://www.jtlu.org/index.php/jtlu/article/view/280/201)

[20] Jaffe, Eric, The Secret to Tokyo's Rail Success, Citylab, May 18th, 2012 (http://www.citylab.com/commute/2012/05/secret-tokyos-rail-success/2044/)

safe to say that development and redevelopment activities around rail stations have been helping the improvement of rail system in Tokyo area.

Japan Railway Company also adopted the railroad card called “Suica” in early 2000s. Suica is the prepaid electronic money system and following Japan Railway’s Suica, Tokyo Metro adoped PASMO in 2007. Also in 2007, more than 100 of Tokyo Metropolitan Area’s railroad and public bus business joined the “Metropolitan Area IC Railroad Card Mutual Use Service” to enable both cards to be used in different railroad companies’ train, bus[21] and they are now usable for most of the convenience store and station buildings making the transportation system and station buildings more convenient and integrated.

[21] Akio Shiibashi, Suica Changes the World – Challenging to Create the New Social Infrastructure-, East Japan Railway Company, 2010

Results and Analysis

Findings and Analysis

Japan is known for its high percentage of public transportation usage, especially in metropolitan area. This seems true according to 2010 Census' result where it shows that in Tokyo Metropolitan Area, majority of Tokyo Metropolitan Area residents use railroad system as their travel tool to work and/or school. As shown in the table, this tendency is clearer in Tokyo Metropolis where railroad was chosen as their travel mode by an overwhelming majority – more than 3,000,000 people – followed by bicycle -1,161,728 people -, and less obvious in Chiba Prefecture and Saitama Prefecture where over 1,000,000 people in each prefecture chose private vehicle as their travel mode(s) while number of people who chose railroad remained around 1,240,000 and 1,410,000 people in each prefecture respectively. This tendency of preference in vehicle is more notable in workers while students are less likely to use private vehicle in all four areas.

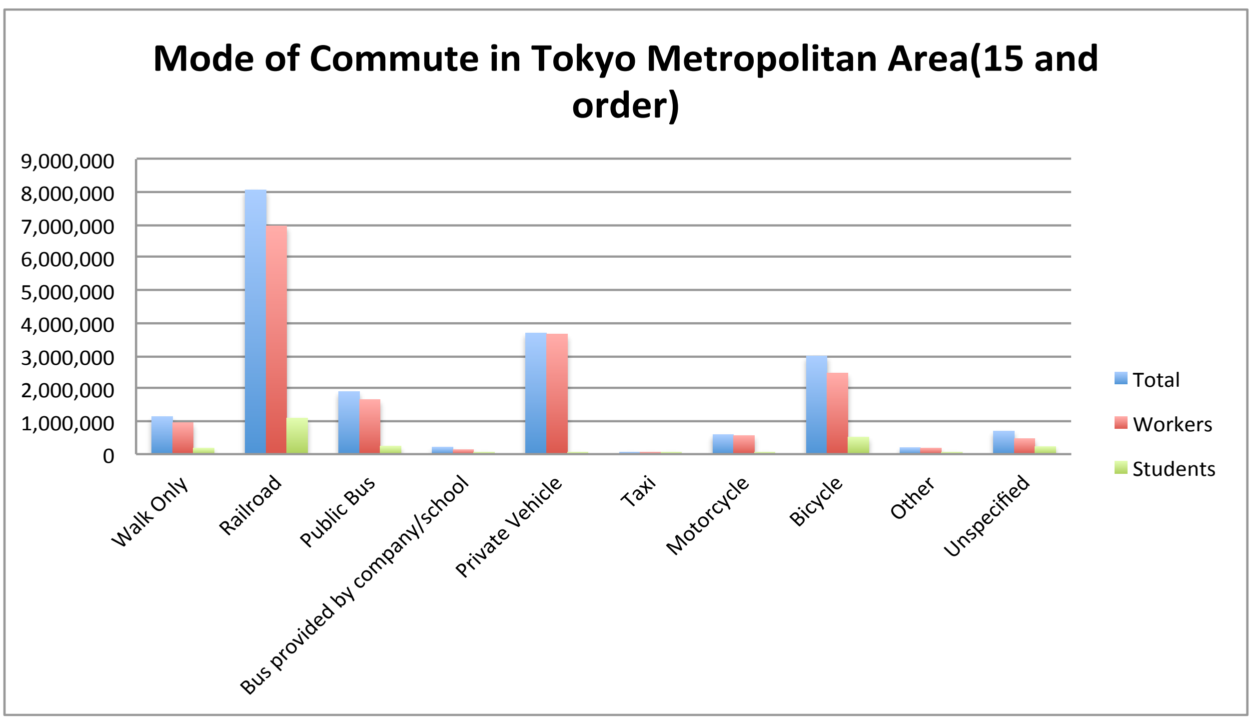

Figure 1: Mode of Commute in Tokyo Metropolitan Area (15 years and older) multiple answers allowed

	Tokyo	Kanagawa	Saitama	Chiba	Total
Total	5,655,675	4,316,963	3,482,958	2,905,529	16,361,125
Walk Only	459,632	346,212	182,338	150,962	1,139,144
Railroad	3,216,810	2,200,094	1,406,913	1,244,437	8,068,254
Public Bus	618,398	751,436	266,440	272,708	1,908,982
Bus provided by company/school	49,557	53,720	55,067	51,224	209,568
Private Vehicle	578,127	892,975	1,182,007	1,045,033	3,698,142
Taxi	27,516	10,703	3,786	4,500	46,505
Motorcycle	162,408	238,896	117,056	83,798	602,158
Bicycle	1,161,728	593,398	766,593	474,627	2,996,346
Other	62,332	51,079	44,284	38,017	195,712
Unspecified	329,506	149,336	126,731	99,617	705,190
Workers	4,949,978	3,847,317	3,085,966	2,590,652	14,473,913
Walk Only	395,803	291,467	148,046	121,730	957,046
Railroad	2,826,411	1,902,582	1,171,805	1,063,424	6,964,222
Public Bus	550,124	650,135	230,671	237,731	1,668,661
Bus provided by company/school	33,002	44,238	31,256	38,018	146,514
Private Vehicle	573,651	885,289	1,168,841	1,031,379	3,659,160
Taxi	27,325	10,600	3,744	4,448	46,117
Motorcycle	154,922	225,991	111,198	76,844	568,955
Bicycle	1,000,711	492,673	613,447	362,277	2,469,108
Other	59,965	49,398	42,629	36,150	188,142
Unspecified	186,329	114,496	93,379	74,605	468,809
Students	705,697	469,646	396,992	314,877	1,887,212
Walk Only	63,829	54,745	34,292	29,232	182,098
Railroad	390,399	297,512	235,108	181,013	1,104,032
Public Bus	68,274	101,301	35,769	34,977	240,321
Bus provided by company/school	16,555	9,482	23,811	13,206	63,054
Private Vehicle	4,476	7,686	13,166	13,654	38,982
Taxi	191	103	42	52	388
Motorcycle	7,486	12,905	5,858	6,954	33,203
Bicycle	161,017	100,725	153,146	112,350	527,238
Other	2,367	1,681	1,655	1,867	7,570
Unspecified	143,177	34,840	33,352	25,012	236,381

Table 3: Mode of Commute in Tokyo Metropolitan Area (15 years and older) Details

Among the 116 subject stations, 8 out of the top 10 ridership stations have Ekibiru structure while 31 stations with lowest riderships do not have Ekibiru. Moreover, the tendency is that station building with Ekibiru tends to have higher ridership.

Rank	Station Name	Ridership	Rank	Station Name	Ridership
1	Shinjuku	2,577,547	59	Tabata	45,116
2	Ikebukuro	2,035,386	60	SaitamaShintoshin	42,135
3	Shibuya	2,034,543	61	Shinokubo	39,629
4	Yokohama	1,630,616	62	Mejiro	37,932
5	Tokyo	764,122	63	Higashikanagawa	33,996
6	Takadanobaba	683,515	64	Ishikawacho	33,996
7	Shinagawa	630,441	65	Konandai	33,377
8	Shinbashi	580,198	66	Hodogaya	32,764
9	Meguro	498,387	67	Soga	31,931
10	Ueno	447,912	68	Tsuga	31,337
11	Omiya	427,894	69	Shinkoyasu	30,250
12	Akihabara	425,033	70	Zushi	29,424
13	Hamamatsucho	369,777	71	Chiba Minato	28,245
14	Funabashi	343,484	72	Shinkawasaki	25,392
15	Yurakucho	326,174	73	Yono	24,856
16	Musashikosugi	317,121	74	Uguisutani	24,481
17	Kawasaki	315,044	75	Yotsukaido	22,224
18	Oimachi	310,536	76	Higashijujo	22,140
19	Kamata	297,294	77	Inagekaigan	21,771
20	Gotanda	273,164	78	Yokodai	21,243
21	Nishinippori	270,620	79	Negishi	20,998
22	Osaki	254,729	80	Minami Funabashi	20,109
23	Tamachi	238,634	81	Hongodai	19,278
24	Ebisu	238,291	82	Isogo	18,703
25	Shinkiba	229,926	83	Yamate	17,390
26	Nippori	219,666	84	Nishioi	15,483
27	Totsuka	196,936	85	Kemigawahama	15,365
28	Kinshicho	196,180	86	Sinarashino	13,259
29	Okachimachi	158,763	87	Kasai Rinkai Koen	12,899
30	Harajuku	158,724	88	Shiomi	11,359
31	Chiba	153,169	89	Sakura	10,360
32	Kanda	150,201	90	Kinugasa	9,155
33	Tsudanuma	144,965	91	Kitakamakura	8,964
34	Hacchobori	134,586	92	Kaminakazato	7,094
35	Sugamo	123,330	93	Ichikawa Shiohama	7,079
36	Oji	118,226	94	Yachimata	6,287
37	Ofuna	110,317	95	Yokosuka	5,573

36	Oji	118,226	94	Yachimata	6,287
37	Ofuna	110,317	95	Yokosuka	5,573
38	Tsurumi	108,282	96	Higashi Zushi	5,250
39	Omori	92,962	97	Futamata Shinmachi	4,990
40	Akabane	89,742	98	Choshi	4,772
41	Yoyogi	87,396	99	Ecchujima	4,569
42	Urawa	84,230	100	Monoi	4,023
43	Komagome	84,197	101	Narutou	2,954
44	Sakuragicho	82,832	102	Taura	2,504
45	Kawaguchi	80,410	103	Enokido	2,442
46	Kannai	78,038	104	Higashi Chiba	2,186
47	Maihama	76,495	105	Youkaichiba	2,009
48	Kamakura	64,271	106	Asahi	1,910
49	Kaihinmakuhari	59,515	107	Yokoshiba	1,421
50	Minamiurawa	59,094	108	Hyuga	1,208
51	Warabi	58,789	109	Matsuo	1,060
52	Higashitotsuka	58,487	110	Higata	929
53	Shinurayasu	55,165	111	Iioka	776
54	Shinsugita	54,233	112	Matsugishi	470
55	Otsuka	53,142	113	Minamishisui	0
56	Nishikawaguchi	53,069	114	Iigura	0
57	Kurihama	53,069	115	Kurahashi	0
58	Kitaurawa	51,156	116	Saruda	0

Tokyo	Kanagawa	Saitama	Chiba

Table 4: Ridership Ranking by Station

The result shows that the Ekibiru area's land value tend to be higher than the ward or city as a whole - 23 Ekibiru areas showed higher land value while 11 Ekibiru areas showed land values that are lower than ward or city average. On the other hand, station areas of the station that does not have Ekibiru structure indicate the tendency of lower land value when compared with the ward or city of the station as a whole. Number shows that 13 station areas have property values that are higher than ward or city average, however 31 station areas showed land values that are lower than ward or city average. This tendency is stronger with higher ridership stations – when looking at the top twenty ridership stations, 12 out of 16 station with Ekibiru have higher property value than Ward/City average while one area with no data available.

	Ekibiru	Without Ekibiru	Total
Higher than Ward/City Average	23	13	36
Lower than Ward/City Average	11	31	42
Information not available	7	31	38
Total	41	75	116

Table 5: Land Value comparison (Ekibiru vs. non Ekibiru)

Next, I wanted to see if there is any correlation between Ekibiru renovation and/or development and surrounding area's land value, so I picked up Ekibirus that had been renovated since 1983 and there were 9 Ekibirus that were built before 1983 and went through renovation after that, two Ekibirus that are going through the renovation now and 14 Ekibiru were built after 1983, and then I looked at their land value shift around the time of the renovation or development. While land value in Ekibiru station area generally showed higher number compared with non-Ekibiru station area, it does not seem to have correlation with Ekibiru's renovation work. In other words, improvement of the existing Ekibiru does not necessary affect the land value of the surrounding area. Except Tokyo Station area, most of other Ekibiru area data showing the shift of land value from late 80s to current days in each Ekibiru area suggest that whether or not the Ekibiru is renovated throughout the time period or the addition of new Ekibiru, does not higher nor lower the surrounding property value. Meanwhile, property values are more likely to be affected by national and global economic trends. Throughout the data, all areas showed two group of property values increase from 1983 to 2014 – First one is the during the time of late 1980s and early 1990s where all area showed significant rise, and second one is around 2007 to 2008 where all of the area showed slight increase.

Japan experienced economic bubble in late 1980s, specifically the 51 months from December 1986 to February 1992.[22] Nikkei Stock Average rose from 12,000 yen (approximately 100 dollar in today's rate) in the beginning of 1985 to 38,915 yen (approximately 330 dollar) at the end of 1989, which was and still is the historical high of Japanese stock price.[23] During this period of time, Condo price in Tokyo Metropolitan Area reached as high as 8 times of household income of salaried worker.[22] However, after new year days of 1990, Nikkei Stock Price began to fall and property value followed, and this is the beginning of the burst of Japan's economic bubble which led to Japan's "Lost Decades".

Even though Nikkei Stock Price has been depressing since the burst of economic bubble, it increased since 2002 during the worldwide economic upturn before it collapsed in 2008 with 2008 financial crisis of United States. Following this crisis, Nikkei Stock Price also dropped.[24] Along with the global trend of real estate securitization in early 2000s, Japan's real estate securitization also advanced with the formation and rapid progress of real estate fund such as J-REIT and private equity funds. In fact, by 2008, the market of real estate fund expanded to 20 trillion yen[25], which led to the financial commodification of real estate, which means the stronger correlation between real estate market and financial market. This fact allowed me to

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[22] Omura Yosuke, Hirano Keisuke et al, Since 1945 Economic Bubble, Mainichi News, 2015

[23] Kageyama Katsuhide, 今知っておきたい、90 年代のバブル崩壊物語 3 分で学び直す日本経済史 本当はよくわかっていない人の２時間で読む教養入門 やりなおす経済史, 2014

[24] Tanaka Shiro, Financial Crisis in the United States, and Economy of Japan -2008 financial crisis and its aftermath-, 2010, Sendai Japan p61 「人文社会科学論叢」アメリカ発金融危機と日本経済 -2008 年危機とその後-

[25] Sato Takafumi, Financial Administration's Problems and Real Estate Market, Financial Services Agency, 2009 金融行政の諸課題と不動産市場

assume the slight increase of land value before the financial crisis of 2008 was affected by the economic expansion caused by financial market before it actually collapsed.

This fact can be seen in every land value shift data where values rose during the economic bubble and show decline after the burst of bubble, while most of the Ekibiru area showed no significant sign of effect caused by renovation.

According to Real Estate Appraisal Standard, there are three factors that form price of real estate: general factor, regional factor, and discrete factor.[26] Some of the sub factors for each of the factor are as followed:

1) General Factor: geological features, condition of weather, demographics, forms of city, condition of public facilities, condition of progress of computerization, condition of prices, wage and employment activity, condition of transport system, plans and regulation about land use, and etc.

2) Regional Factor: distance from city center as well as condition of transportation facility, level of noise, air and soil pollution, condition of infrastructures, preference in the mode of travel, and etc.

3) Discrete Factor: distance to transportation facilities and commercial facilities, closeness to main transportation facilities, condition of infrastructures, functionality of the design and facilities of the architecture, condition of earthquake-proof and fireproof, and etc. In all three factors, the distance and accessibility to transportation facilities were mentioned, and in some sector, distance to commercial facilities was also mentioned. This can partially explain the possible reasoning for why the property value tends to be higher around the Ekibiru area.

Then, I looked into if there were any correlation with Ekibiru and change in land value during the period of economic bubble and was able to find that stations with Ekibiru that showed

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[26] Ministry of Land, Infrastructure, Transport and Tourism, Real Estate Appraisal Standard, 2014

higher land value than ward or city average, also showed stronger upturn during the economic bubble, and this tendency is clearer with those stations with high ridership. The following graphs show the top 3 riderships stations' property value change from 1983 to 2014, and all of them showed this tendency.

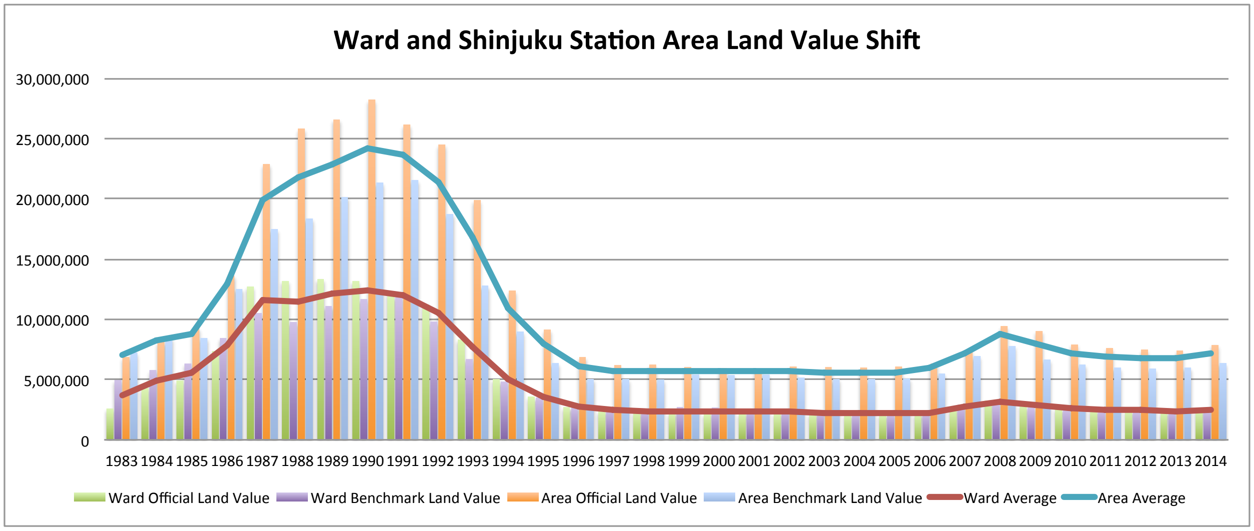

Figure 2: Land Value Shift Shinjuku Ward and Shinjuku Station Area

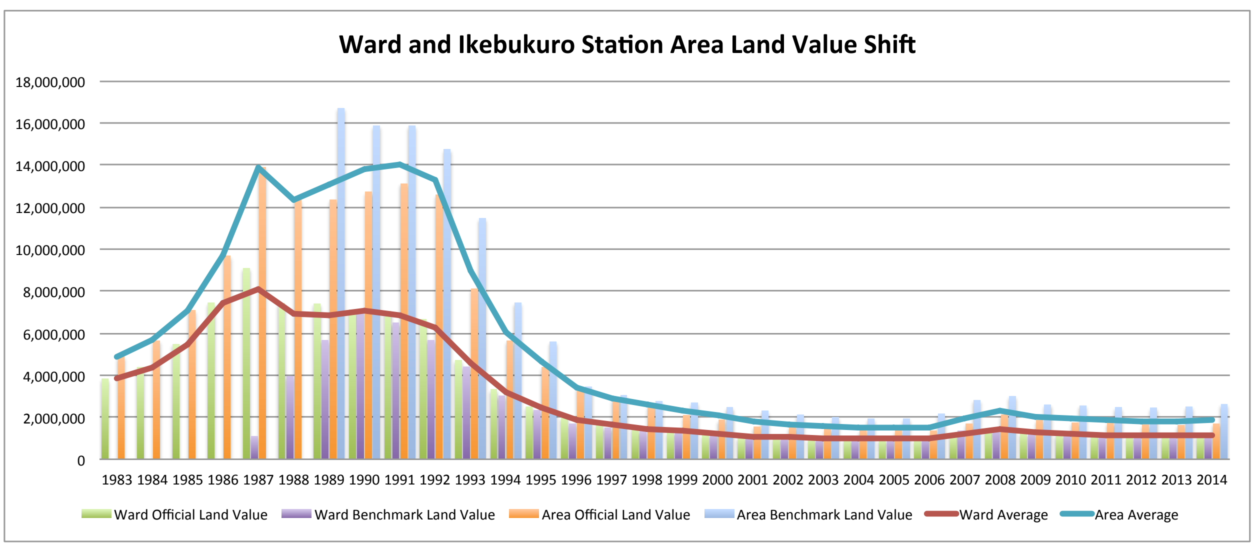

Figure 3: Land Value shift Toshima Ward and Ikebukuro Station Area

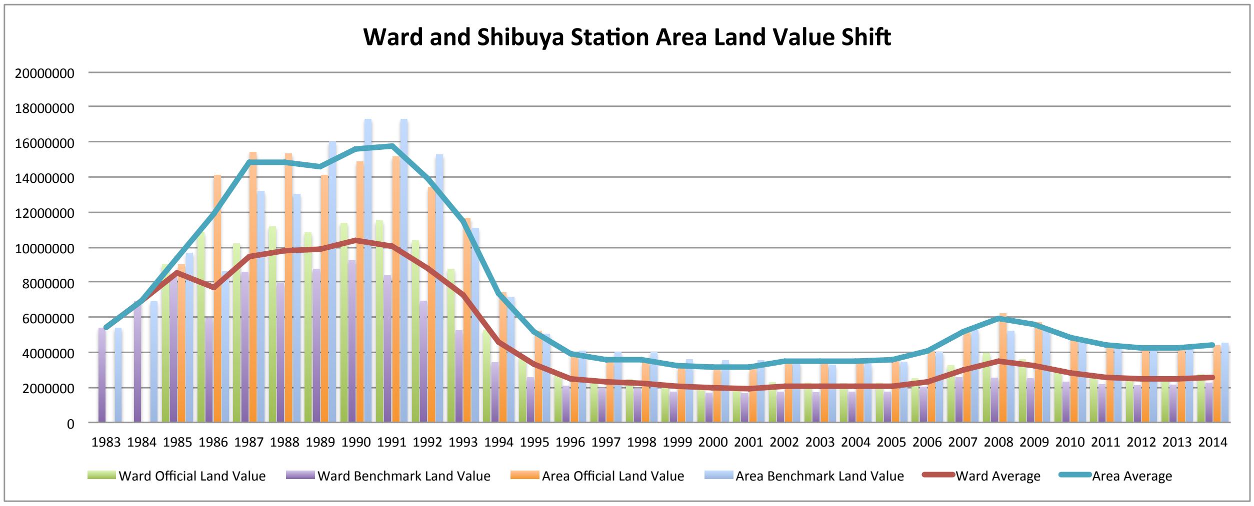

Figure 4: Land Value Shibuya Ward and Shibuya Station Area

Case Studies

Tokyo Station Area in Tokyo Chiyoda Ward

Ridership (2013)	Number of Lines	Station Built	Ekibiru Built	Renovation
1,630,616	18	1914	1915, 1954	2007, 2012, 2013

Table 6: Tokyo Station Information

Picture 1: Tokyo Station from Marunouchi side looking into Yaesu side[27]

Proudly being the "Face of Japan" since its opening, Tokyo Station celebrated its 100 years anniversary last year in 2014. To meet this memorable event, the station area has ben undergone major renovations – GranTokyo South Tower (located at Tokyo Station Yaesu South Exit) , GranTokyo North Tower (located at Tokyo Station Yaesu North Exit) first phase, and Sapia Tower (located at Tokyo Station Nihonbashi Exit) were completed in 2007, allowing the station to have three modern high-rise station buildings with department store, office and hotel in them; GranTokyo North Tower second phase, as well as Tokyo Station Gallery and Tokyo

[27] Photo source: Chiyoda Heritage, 2013 (http://chiyoda-tokyo.sakura.ne.jp/seisiga/kobetsu/tokyos-n.html)

Station Hotel, both located at Marunouchi side of the station, followed in 2012, and the Granroof Deck connecting GranTokyo South and North Tower were completed in 2013. [28]

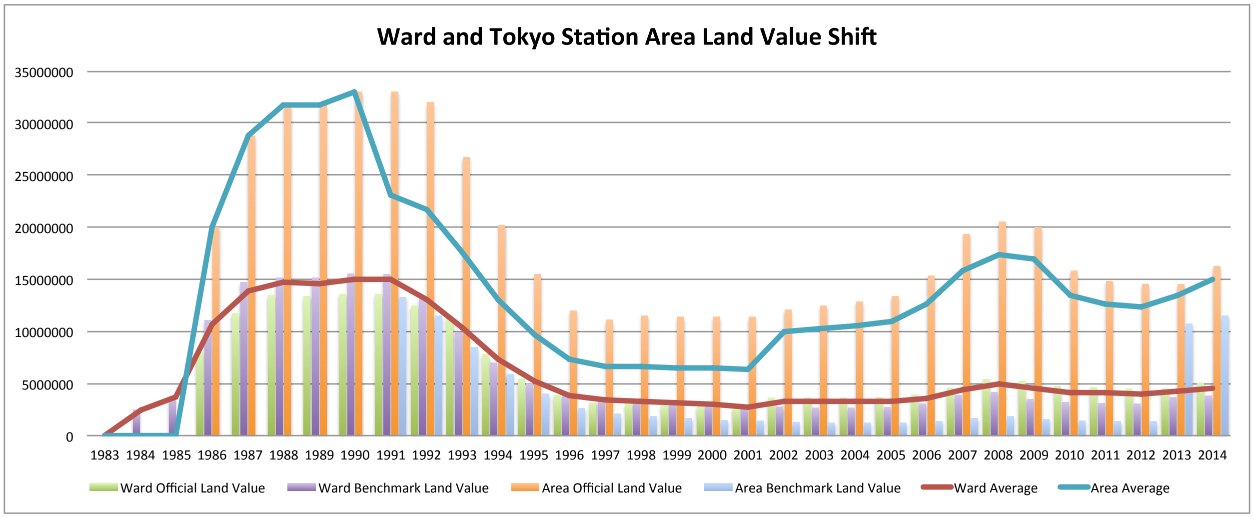

Figure 5: Land Value Shift Chiyoda Ward and Tokyo Station Area

The area is one of the rare exceptions of the tendency that the renovation of the Ekibiru seemed to have effect on surrounding land value to certain degree. From the graph, It can be seen that the land value of the Ekibiru Area rose significantly during the economic bubble, which matches the tendency explained previously. While it is difficult to tell if the land value rise in 2007 is caused by renovation or the small "bubble" before the financial crisis in 2008, it is able to see the land value in Ekibiru area kept rising in past three years after the drop possibly caused by the financial crisis while the Chiyoda Ward property value has been remaining stable since 2008. This rise in land value matches the redevelopment of the Ekibirus in the station. However, the fact that the redevelopment took place very recently, requires further observation in the future years.

[28] Tokyo Station City Management Council, A Station Designed to Transform a City: Tokyo Station City, a Totally New Form of Railway Station, 2014 駅から、街へ 鉄道駅の概念を塗り替える、東京ステーションシティ

Gotanda Station and Osaki Station in Tokyo Shinagawa Ward

	Ridership	Number of Lines	Station Built	Ekibiru/TOD Developed	Rennovation
Gotanda (Ekibiru)	273,164	3	1911	1980, 2008	2008
Osaki (TOD)	254,729	3	1901	1987 – 2007	-

Table 7: Stations information

Picture 2 (left): Gotanda Station Entrance located on 4th floor of the Ekibiru[29]
Picture 3 (right): Osaki Station and it's surrounding area with high rise office buildings and residential buildings[30]

The case study of Gotanda Station and Osaki Station was to see if two stations have similar characteristic but one has Ekibiru and one has Transit-Oriented Development, would it affect the land value of each area.

Statistically, Gotanda Station and Osaki Station share numbers of similarity from Ridership, year that each station was built, to Number of Lines that runs through each station. In my ridership calculation, Gotanda ranked 20th while Osaki ranked 22nd with about 20,000 ridership difference. The difference between these two stations is that Gotanda Station has Ekibiru while Osaki Station has Transit-Oriented Development without Ekibiru structure. Both structures were developed in similar time period – Gotanda Ekibiru been built in 1980 and went through renovation in 2008 while Osaki TOD was developed from 1987 to 2007.

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[29] Photo Source: http://blog.livedoor.jp/densuki7/tag/五反田駅
[30] Photo Source: http://building-pc.cocolog-nifty.com/helicopter/images/tokyoosaki1.jpg

Gotanda has two Ekibiru – Remy Gotanda (former Tokyu Gotanda Building) on Tokyu line side and Atré vie Gotanda on JR side, each built in 1980[31] and 2008[32] respectively. Used to be known as industrial area, Osaki Station area started its transformation after it was set as the destination of redevelopment by Shinagawa Ward Government in "1977 Shibagawa Ward Long Term Plan" followed by being designated as one of the subcenter of Tokyo in "Tokyo's Long Term Plan" published by Tokyo Metropolitan Government in 1982.[33] Now the area is enjoying its characteristics as "terminal station" with commercial facilities and middle to high rise residential buildings around the station.

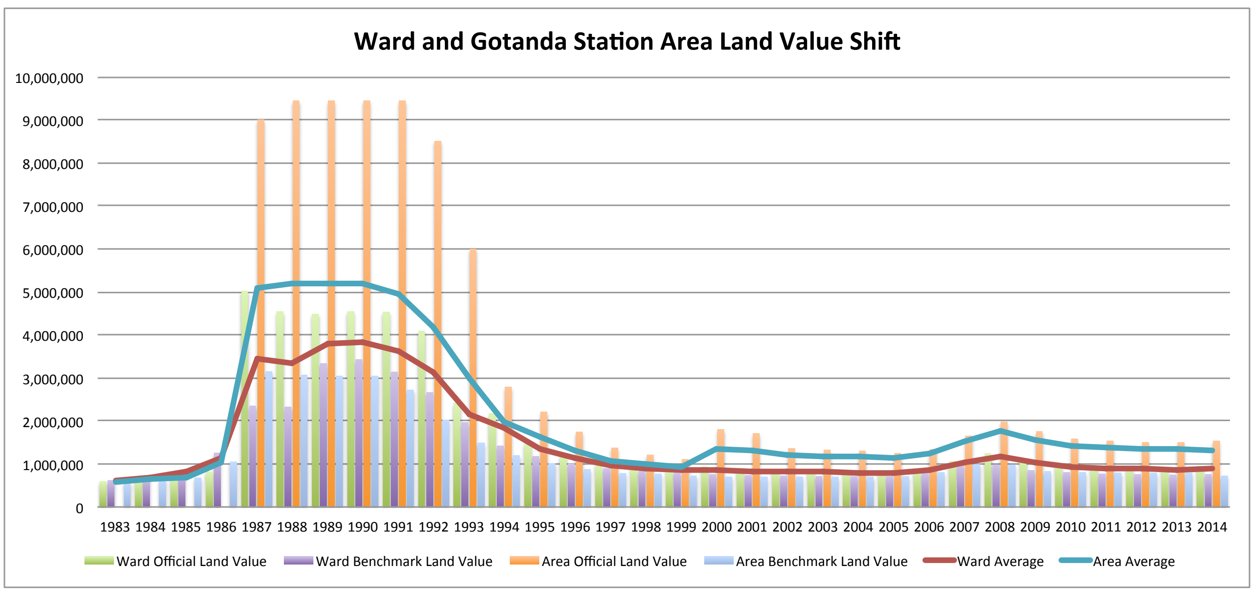

Figure 6: Land Value Shift Shinagawa Ward and Gotanda Station Area

[31] Tokyu Corporation, Notice of Renewal of Tokyu Gotanda Building, 2007 東急五反田ビルのリニューアルを実施

[32] Atre Co., Ltd., Store Information, 2014 店舗情報

[33] City of Shinagawa, Direction of Urban Planning Policy in Osaki Area, 2012, p177 大崎地区まちづくりの整備方針

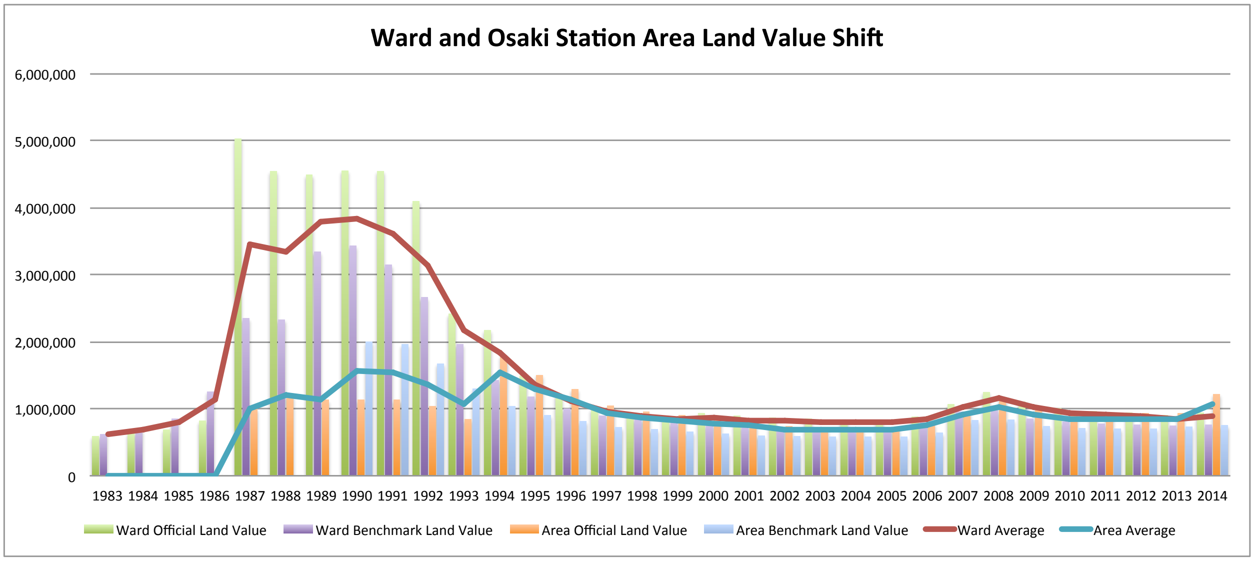

Figure 7: Land Value Shift Shinagawa Ward and Osaki Station Area

Two graphs shows the property value of Gotanda Station area and Osaki Station area compared with Shinagawa Ward's average showed that with similar statistical characteristics, station area with Ekibiru shows higher land value compared with station area with typical TOD. In fact, even though the land value of Osaki Station Area was not affected by the burst of economic bubble since it was still been developed during that period of time, neither did it show sign of land value increase after that, except for the time during 2007 and 2008, until 2014. This result is surprising considering the fact that Osaki Area is now considered as one of the business hub along Yamanote Line. Gotanda Ekibiru area on the other hand, remained higher land value compared to Shinagwa Ward average throughout the time period.

Kawasaki Station Area (Kanagawa, Kawasaki City, Saiwai Ward) and Musashi Kosugi Station (Kanagawa, Kawasaki City, Nakahara Ward)

	Ridership	Number of Lines	Station Built	Ekibiru/TOD Developed	Renovation
Kawasaki	315,044	4	1872	1958(Ekibiru), 2006 (TOD)	2012 (Ekibiru)
Musashi Kosugi	317,121	4	1927	2008 (TOD) – 2013 (Ekibiru)	-

Table 8: Stations information

Picture 4 (left): Shopping Mall Lazona Kawasaki adjacent to Kawasaki Station[34]
Picture 5 (right): Kawasaki Station Building Atre Kawasaki[35]

Picture 6 (left): Musashi Kosugi Station Area with numbers of high-rise residential buildings[36]
Picture 7 (right): New Musashi Kosugi Ekibiru completed in 2013[37]

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[34] Photo Source: http://prius.cc/d/20070205_nandemosorouyokohamanokawasaki.html
[35] Sumitomo Real Estate, Center Kawasaki Mark Residence
http://www.sumitomo-rd-mansionblog.jp/kawasaki_center/archive/38
[36] Photo Source: High rise Condos, and Buildings http://bluestyle.livedoor.biz/tag/パークシティ武蔵小杉

Both located in Kawasaki City and 7.2 km away from each other, Kawasaki Station and Musashi Kosugi Station have similar ridership – 315,044 and 317,121 respectively and ranked 16th and 17th in my ridership calculation and both stations have four lines stop by. Kawasaki's Ekibiru was first built in 1958 and has changed name and operators several times since. The West Exit of the station used to be the office of TOSHIBA since 1908 until 1999. In 2000, the City held a competition with the theme of "Facilities that fits the station area commerce" and "City planning in keeping with the history".[38] After 5 years of the design and planning by architects, Lazona Kawasaki Plaza, the 18 acres, 172,703m^2 of shopping and entertainment complex was completed in 2006. Along with he development of Lazona Kawasaki Plaza, there were many condominiums built around the shopping complex around the same period. While Kawasaki had Ekibiru first followed by TOD development in recent years which has been resulted in prosperity of the Saiwai Ward especially Kawasaki Station area, Musashi Kosugi went the other way around. Unlike other stations known for home to wealthy household along Tokyu Toyoko Line, Musashi Kosugi area used to be agricultural land until around 1945[39], then the area turned into industrial district until early 2000s when the factories started to close down. To take advantage of these lands, Kawasaki City and railroad companies started the plan of TOD, and within 10 years, there were at least 11 high rise condominium towers been completed. However, the TOD of the area has not been completed with more condominiums on their ways, and plan of a medical school campus in the area in early 2020s. With more people moving into the area, Tokyu Corporation built the Ekibiru with supermarket, deli, daycare, and library in it in 2013.

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[37] Photo Source: Building and Subculture In Tokyo http://urbanreallife.blog52.fc2.com/category79-1.html
[38] Yamashita Sekkei, Project No.8 Challenge the "City Planning" of New Kawasaki Lazona Kawasaki Plaza, 新たな川崎の"街づくり"に挑む ラゾーナ川崎プラザ
[39] Hara Toyotaka, No.027 Musashi Kosugi, Nikkei News 2013 この街に暮らしたい No.027 武蔵小杉 再開発で進化を続けるのどかな街

The land value graph of Kawasaki shows the typical Ekibiru area tendency where it shows higher value than Ward average and stronger increase during the economic bubble. It also showed slight increase around the time before the financial crisis and remained the same land value level ever since. This is possibly affected by the TOD development with the adjacent shopping mall and condominiums.

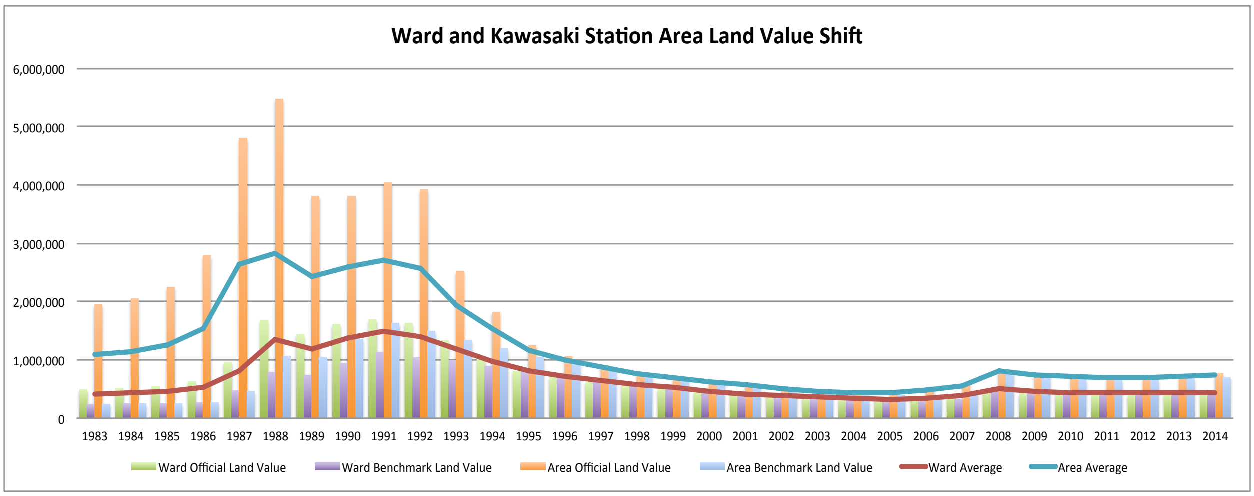

Figure 8: Land Value Shift Kawasaki City Saiwai Ward and Kawasaki Station Area

On the other hand, historically Musashi Kosugi Station area and Nakahara Ward have lower land value compare to Kawasaki Station area and Saiwai Ward, with the recent TOD and Ekibiru development, the station area alone is showing strong growth.

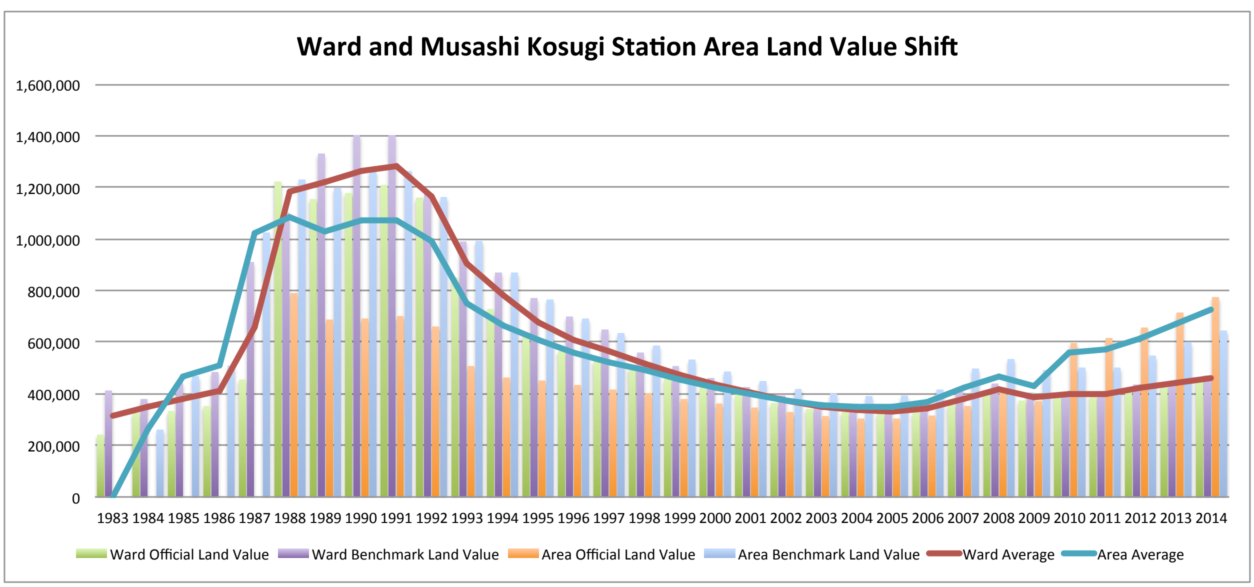

Figure 9: Land Value Shift Kawasaki City Nakahara Ward and Kawasaki Station Area

Conclusion

Stations with Ekibiru tend to allow surrounding area to have higher land value than the ward or city's average while stations without Ekibiru tend to have lower land value than the ward or city's average. However, there was not clear sign that the renovation of the Ekibiru would affect the surrounding land value. Station areas with Ekibiru have showed more increase in land value during the time of economic bubble which indicate the possibility that Ekibiru is more likely to be affected by economic situation. The possible reason that the land value around the Ekibiru area tend to be higher might be that the way the real estate appraisal standard were set. With these findings, however, the relation between Ekibiru and surrounding land value is rather complex with exceptions showed in case study section.

Ekibiru's relation with surrounding land value is only one of factors of Ekibiru and surrounding area's relation. While Ekibiru brings up the land value and accumulate the commercial activities and multi-family residential development to the station area, its effect on surrounding business is still controversial and requires further study since some study shows that the Ekibiru would decline the existing small businesses in the area, some study shows that Ekibiru bring more day-time people to the area hence thrive the area. However, as mentioned by Tokyu Corporation, perhaps the ideal way to enhance the whole community is to have Ekibiru and surrounding businesses corporate together rather than compete with each other.

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Appendix 1: Ridership Calculation

Number of Lines	Station Name	Japan Railway trains	High Speed Rail Shinkansen	Tokyo Metro	Toei Asakusa Line	Toei Mita Line	Toei Oedo Line	Toei Shinjuku Line	Toei Nippori	Yurikamome/ Tokyo Monorail	Rinkai Line	Tsukuba Express	Tokyu	Keio Line	Odakyu Line	Seibu Line	Tobu Line	Keisei Line	Keikyu	Yokohama City Metro/Yokohama New Metro	Sagami Line	Saitama	Shonan	Enoshima Line	Chiba Monorail	Choshi Line	Total
9	Shinjuku	751,018	0	227,366	0	0	64,701	134,185	0	0	0	0	0	730,849	494,184	175,244	0	0	0	0	0	0	0	0	0	0	2,577,547
9	Ikebukuro	550,350	0	523,834	0	0	0	0	0	0	0	0	0	0	0	484,446	476,756	0	0	0	0	0	0	0	0	0	2,035,386
8	Shibuya	378,539	0	212,136	0	0	0	0	0	0	0	0	1,106,911	336,957	0	0	0	0	0	0	0	0	0	0	0	0	2,034,543
8	Yokohama	406,594	0	0	0	0	0	0	0	0	0	0	351,652	0	0	0	0	0	313,608	134,131	424,631	0	0	0	0	0	1,630,616
18	Tokyo	415,908	167,006	181,208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	764,122
3	Takadanobaba	201,513	0	189,308	0	0	0	0	0	0	0	0	0	0	0	292,694	0	0	0	0	0	0	0	0	0	0	683,515
6	Shinagawa	335,661	33,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261,780	0	0	0	0	0	0	0	630,441
7	Shinbashi	254,945	0	228,743	42,661	0	0	0	0	53,849	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	580,198
4	Meguro	106,538	0	102,998	0	40,777	0	0	0	0	0	0	248,074	0	0	0	0	0	0	0	0	0	0	0	0	0	498,387
14	Ueno	181,880	10,917	211,539	0	0	0	0	0	0	0	0	0	0	0	0	0	43,576	0	0	0	0	0	0	0	0	447,912
12	Omiya	245,479	27,069	0	0	0	0	0	0	0	0	0	0	0	0	0	134,039	0	0	0	0	21,307	0	0	0	0	427,894
5	Akihabara	240,327	0	122,576	0	0	0	0	0	0	0	62,130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	425,033
4	Hamamatsucho	155,784	0	0	46,621	0	59,380	0	0	107,992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369,777
8	Funabashi	136,575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	113,653	93,256	0	0	0	0	0	0	0	0	343,484
3	Yurakucho	167,365	0	158,809	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	326,174
4	Musashikosugi	115,262	0	0	0	0	0	0	0	0	0	0	201,859	0	0	0	0	0	0	0	0	0	0	0	0	0	317,121
4	Kawasaki	197,010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118,034	0	0	0	0	0	0	0	315,044
3	Oimachi	100,403	0	0	0	0	0	0	0	0	73,108	0	137,025	0	0	0	0	0	0	0	0	0	0	0	0	0	310,536
3	Kamata	139,728	0	0	0	0	0	0	0	0	0	0	157,566	0	0	0	0	0	0	0	0	0	0	0	0	0	297,294
3	Gotanda	132,524	0	0	32,615	0	0	0	0	0	0	0	108,025	0	0	0	0	0	0	0	0	0	0	0	0	0	273,164
3	Nishinippori	97,268	0	162,852	0	0	0	0	10,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270,620
3	Osaki	143,397	0	0	0	0	0	0	0	0	111,332	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254,729
4	Tamachi	144,433	0	0	47,153	47,048	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238,634
3	Ebisu	133,553	0	104,738	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238,291
3	Shinkiba	70,831	0	101,043	0	0	0	0	0	0	58,052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229,926
6	Nippori	102,817	0	0	0	0	0	0	20,421	0	0	0	0	0	0	0	0	96,428	0	0	0	0	0	0	0	0	219,666
3	Totsuka	109,988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86,948	0	0	0	0	0	0	196,936
7	Kinshicho	103,522	0	92,658	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196,180
5	Okachimachi	67,593	0	64,514	0	0	26,656	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158,763
3	Harajuku	70,866	0	87,858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158,724
8	Chiba	105,812	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26,619	0	0	0	0	0	0	20,738	0	153,169
4	Kanda	97,589	0	52,612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150,201
7	Tsudanuma	104,082	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40,883	0	0	0	0	0	0	0	0	144,965
2	Hacchobori	30,884	0	103,702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134,586
2	Sugamo	77,089	0	0	0	46,241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123,330
3	Oji	61,067	0	57,159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118,226
4	Ofuna	97,118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,199	0	0	0	110,317
3	Tsurumi	78,272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30,010	0	0	0	0	0	0	0	108,282

Number of Lines	Station Name	Japan Railway trains	High Speed Rail Shinkansen	Tokyo Metro	Toei Asakusa Line	Toei Mita Line	Toei Oedo Line	Toei Shinjuku Line	Toei Nippori	Yurikamome/ Tokyo Monorail	Rinkai Line	Tsukuba Express	Tokyu	Keio Line	Odakyu Line	Seibu Line	Tobu Line	Keisei Line	Keikyu	Yokohama City Metro/Yokohama New Metro	Sagami Line	Saitama	Shonan	Enoshima Line	Chiba Monorail	Choshi Line	Total
1	Omori	92,962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92,962
5	Akabane	89,742	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89,742
3	Yoyogi	70,016	0	0	0	0	17,380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87,396
3	Urawa	84,230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84,230
2	Komagome	47,490	0	36,707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84,197
2	Sakuragicho	65,392	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17,440	0	0	0	0	0	0	82,832
1	Kawaguchi	80,410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80,410
2	Kannai	55,305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,733	0	0	0	0	0	0	78,038
1	Maihama	76,495	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76,495
2	Kamakura	42,841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21,430	0	0	64,271
1	Kaihinmakuhari	59,515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59,515
2	Minamiurawa	59,094	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59,094
1	Warabi	58,789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58,789
1	Higashitotsuka	58,487	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58,487
1	Shinurayasu	55,165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55,165
2	Shinsugita	37,569	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,664	0	0	0	0	0	0	54,233
2	Otsuka	53,142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53,142
1	Nishikawaguchi	53,069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53,069
2	Kurihama	7,127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44,029	0	0	0	0	0	0	0	51,156
1	Kitaurawa	50,727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50,727
2	Tabata	45,116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45,116
3	SaitamaShintoshin	42,135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42,135
1	Shinokubo	39,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39,629
1	Mejiro	37,932	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37,932
2	Higashikanagawa	33,996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33,996
1	Ishikawacho	33,996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33,996
1	Konandai	33,377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33,377
1	Hodogaya	32,764	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32,764
3	Soga	31,931	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31,931
3	Tsuga	20,683	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,654	0	31,337
2	Shinkoyasu	21,926	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,324	0	0	0	0	0	0	0	30,250
1	Zushi	29,424	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29,424
2	Chiba Minato	15,561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15,561
1	Shinkawasaki	25,392	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25,392
1	Yono	24,856	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24,856
2	Uguisutani	24,481	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24,481
2	Yotsukaido	22,224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,224
1	Higashijujo	22,140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,140

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1	Yokodai	21,243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21,243
1	Negishi	20,998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,998
2	Minami Funabashi	20,109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,109
1	Hongodai	19,278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,278
1	Isogo	18,703	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18,703
1	Yamate	17,390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17,390
1	Nishioi	15,483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15,483
1	Kemigawahama	15,365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15,365
1	Shinarashino	13,259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,259
1	Kasai Rinkai Koen	12,899	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,899
1	Shiomi	11,359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,359
2	Sakura	10,360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,360
1	Kinugasa	9,155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,155
1	Kitakamakura	8,964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,964
1	Kaminakazato	7,094	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,094
1	Ichikawa Shiohama	7,079	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,079
1	Yachimata	6,287	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,287
1	Yokosuka	5,573	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,573
1	Higashi Zushi	5,250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,250
1	Futamata Shinmachi	4,990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,990
3	Choshi	3,426	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,346	4,772
1	Ecchujima	4,569	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,569
2	Monoi	4,023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,023
2	Narutou	2,954	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,954
1	Taura	2,504	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,504
1	Enokido	2,442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,442
2	Higashi Chiba	2,186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,186
1	Youkaichiba	2,009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,009
1	Asahi	1,910	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,910
1	Yokoshiba	1,421	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,421
1	Hyuga	1,208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,208
1	Matsuo	1,060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,060
1	Higata	929	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	929
1	Iioka	776	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	776
2	Matsugishi	470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	470
1	Minamishisui	208 (2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Iigura	449 (2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Kurahashi	61 (2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Saruda	240 (2006)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2: Descriptive Variables

Station Name	Distance to Imperial Palace (Kilometer)	Number of line	Ridership	Year built (Station)	Station Building	Year Built	Latest renovation	Property value (Station Area) Yen/sm	Property Value (Ward) yen/sm	Difference
Shinjuku	3.9	9	2,577,547	1885	Y	1964, 1974	–	7,201,200	2,497,819	4,703,381
Ikebukuro	5.5	9	2,035,386	1903	Y	1935, 1962, 1992	1992	1,883,689	1,141,442	742,247
Shibuya	5	8	2,034,543	1885	Y	1933, 2012	2027	4,439,708	2,561,089	1,878,619
Yokohama	27	8	1,630,616	1915	Y	1961, 1980	2020	1,735,736	946,947	788,789
Tokyo	1.2	18	764,122	1914	Y	1915, 1954	2007, 2012, 2013	15,065,000	4,590,987	10,474,013
Takadanobaba	4.2	3	683,515	1910	N	NA	NA	1,342,625	2,497,819	−1,155,194
Shinagawa	6.7	6	630,441	1872	Y	2004	–	1,572,250	2,691,000	−1,118,750
Shinbashi	2.8	7	580,198	1909	N	NA	NA	4,275,533	2,691,000	1,584,533
Meguro	6.6	4	498,387	1885	Y	1967	2005	1,281,111	969,480	311,631
Ueno	4.2	14	447,912	1883	Y	2002	–	1,818,900	1,103,437	715,463
Omiya	26	12	427,894	1885	Y	1967	1982	510,837	510,837	0
Akihabara	3.3	5	425,033	1890	Y	2005, 2010	–	2,801,916	4,590,987	−1,789,071
Hamamatsucho	3.8	4	369,777	1909	N	NA	NA	1,997,500	2,691,000	−693,500
Funabashi	22	8	343,484	1894	Y	2003	2017	–	176,063	–
Yurakucho	2.3	3	326,174	1910	Y	1984	2011	17,675,000	4,590,987	13,084,013
Musashikosugi	14.5	4	317,121	1927	Y	2013	–	725,500	461,363	264,137
Kawasaki	18	4	315,044	1872	Y	1958	2012	740,250	414,888	325,362
Oimachi	9	3	310,536	1914	Y	1993	–	715,571	881,619	−166,048
Kamata	14	3	297,294	1904	Y	1962, 1970, 1968	2008, 2014	815,437	524,811	290,626
Gotanda	7	3	273,164	1911	Y	1980	2008	1,318,090	881,619	436,471
Nishinippori	6	3	270,620	1971	N	NA	NA	638,400	501,914	136,486
Osaki	7.5	3	254,729	1901	N	NA	NA	1,059,833	881,619	178,214
Tamachi	4.5	4	238,634	1909	N	NA	NA	1,934,000	2,691,000	−757,000
Ebisu	5.5	3	238,291	1906	Y	1997	–	1,912,500	2,561,089	−648,589
Shinkiba	9.1	3	229,926	1988	N	NA	NA	234,000	476,223	−242,223
Nippori	5.3	6	219,666	1905	N	NA	NA	636,166	501,914	134,252
Totsuka	37	3	196,936	1887	N	NA	NA	–	226,875	–
Kinshicho	7	7	196,180	1894	Y	1961, 1980	1997	730,400	491,743	238,657
Okachimachi	3.7	5	158,763	1925	N	NA	NA	1,452,363	1,103,437	348,926
Harajuku	4	3	158,724	1906	N	NA	NA	4,340,000	2,561,089	1,778,911
Chiba	35.1	8	153,169	1894	Y	1963	2018	404,568	200,328	204,240
Kanda	2.7	4	150,201	1919	N	NA	NA	2,563,161	4,590,987	−2,027,826
Tsudanuma	25.3	7	144,965	1895	Y	–	–	274,238	168,165	106,073
Hacchobori	3.6	2	134,586	1990	N	NA	NA	1,756,200	4,918,075	−3,161,875
Sugamo	5	2	123,330	1903	Y	2010	–	804,800	1,141,442	−336,642
Oji	7.3	3	118,226	1883	N	NA	NA	605,583	538,764	66,819
Ofuna	41.6	4	110,317	1888	Y	1992, 2007	–	264,250	240,865	23,385

Station Name	Distance to Imperial Palace (Kilometer)	Number of line	Ridership	Year built (Station)	Station Building	Year Built	Latest renovation	Property value (Station Area) Yen/sm	Property Value (Ward) yen/sm	Difference
Tsurumi	20.9	3	108,282	1872	Y	1965	2012	289,936	289,936	0
Omori	11	1	92,962	1876	Y	1984	2005	581,285	524,811	56,474
Akabane	10.4	5	89,742	1885	Y	2000, 2003	2011, 2014	869,333	538,764	330,569
Yoyogi	3.5	3	87,396	1906	N	NA	NA	1,890,222	2,561,089	-670,867
Urawa	20.33	3	84,230	1883	N	NA	NA	353,046	353,046	0
Komagome	5.2	2	84,197	1910	N	NA	NA	689,000	1,141,442	-452,442
Sakuragicho	28.3	2	82,832	1872	N	NA	NA	558,000	497,445	60,555
Kawaguchi	12.7	1	80,410	1910	N	NA	NA	236,165	236,165	0
Kannai	28.6	2	78,038	1964	N	NA	NA	651,916		651,916
Maihama	14.2	2	76,495	1988	N	NA	NA	252,500	292,777	-40,277
Kamakura	44.6	2	64,271	1889	Y	1959	2007	-	240,865	-
Kaihinmakuhari	27.6	1	59,515	1986	Y	2001	2013	224,200	156,607	67,593
Minamiurawa	18.9	2	59,094	1961	N	NA	NA	269,437	353,046	-83,609
Warabi	16.1	1	58,789	1893	N	NA	NA	269,545	269,545	0
Higashitotsuka	33	1	58,487	1980	N	NA	NA	266,105	226,875	39,230
Shinurayasu	16.1	1	55,165	1988	Y	1993	NA	273,285	292,777	-19,492
Shinsugita	35.3	2	54,233	1970	Y	1989	2007	207,714	207,325	389
Otsuka	4.9	2	53,142	1903	Y	2013	-	688,785	1,141,442	-452,657
Nishikawaguchi	14.5	1	53,069	1954	Y	2007	-	288,409	236,165	52,244
Kurihama	50.7	2	51,156	1944	N	NA	NA	148,790	151,234	-2,444
Kitaurawa	22.1	1	50,727	1936	N	NA	NA	278,619	353,046	-74,427
Tabata	5.7	2	45,116	1896	Y	2008	-	497,625	538,764	-41,139
SaitamaShintoshin	25.4	3	42,135	2000	Y	2000	-	272,000	272,000	0
Shinokubo	3.9	1	39,629	1914	N	NA	NA	1,116,000	2,497,819	-1,381,819
Mejiro	4.7	1	37,932	1885	N	NA	NA	800,000	1,141,442	-341,442
Higashikanagawa	25.3	2	33,996	1908	Y	2009	-	333,500	338,312	-4,812
Ishikawacho	29.1	1	33,996	1964	N	NA	NA	452,333	497,445	-45,112
Konandai	37.9	1	33,377	1973	Y	1974	2007	231,187	232,222	-1,035
Hodogaya	29.6	1	32,764	1887	Y	NA	NA	-	204,933	-
Soga	37.2	3	31,931	1896	Y	2004	NA	126,958	200,328	-73,370
Tsuga	37.4	3	31,337	1912	N	NA	NA	110,663	84,680	25,983
Shinkoyasu	23.7	2	30,250	1943	N	NA	NA	257,000	338,312	-81,312
Zushi	45.8	1	29,424	1889	N	NA	NA	-	210,846	-
Chiba Minato	34	2	15,561	1986	N	NA	NA	67,160	200,328	-133,168
Shinkawasaki	16.5	1	25,392	1980	N	NA	NA	273,625	414,888	-141,263
Yono	23.6	1	24,856	1912	N	NA	NA	268,777	353,046	-84,269
Uguisutani	5.1	2	24,481	1912	N	NA	NA	596,000	1,103,437	-507,437
Yotsukaido	38.5	2	22,224	1894	Y	2002	-	-	64,900	-
Higashijujo	8.4	1	22,140	1931	N	NA	NA	516,500	538,764	-22,264
Inagekaigan	30.876	1	21,771	1986	Y	-	2003	180,857	156,607	24,250

Station Name	Distance to Imperial Palace (Kilometer)	Number of line	Ridership	Year built (Station)	Station Building	Year Built	Latest renovation	Property value (Station Area) Yen/sm	Property Value (Ward) yen/sm	Difference
Yokodai	36.8	1	21,243	1970	N	NA	NA	202,461	207,325	-4,864
Negishi	31.7	1	20,998	1964	N	NA	NA	239,200	207,325	31,875
Minami Funabashi	23.1	2	20,109	1986	N	NA	NA	-	176,063	-
Hongodai	39.6	1	19,278	1973	N	NA	NA	196,411	181,545	14,866
Isogo	33.9	1	18,703	1964	N	NA	NA	207,325	207,325	0
Yamate	30.3	1	17,390	1964	N	NA	NA	303,450	497,445	-193,995
Nishioi	8	1	15,483	1986	N	NA	NA	499,333	881,619	-382,286
Kemigawahama	29.4	1	15,365	1986	Y	-	2011	177,500	156,607	20,893
Shinarashino	24.7	1	13,259	1988	N	NA	NA	154,500	168,165	-13,665
Kasai Rinkai Koen	12	1	12,899	1988	N	NA	NA	-	351,294	-
Shiomi	7.6	1	11,359	1990	N	NA	NA	-	476,223	-
Sakura	44.1	2	10,360	1894	N	NA	NA	-	69,975	-
Kinugasa	48.5	1	9,155	1944	N	NA	NA	147,550	151,234	-3,684
Kitakamakura	42.8	1	8,964	1927	N	NA	NA	163,333	240,865	-77,532
Kaminakazato	6.5	1	7,094	1933	N	NA	NA	396,000	538,764	-142,764
Ichikawa Shiohama	16.7	1	7,079	1988	N	NA	NA	-	260,176	-
Yachimata	52.3	1	6,287	1897	N	NA	NA	-	27,700	-
Yokosuka	45.6	1	5,573	1889	N	NA	NA	-	151,234	-
Higashi Zushi	45.1	1	5,250	1952	N	NA	NA	-	210,846	-
Futamata Shinmachi	19.8	1	4,990	1988	N	NA	NA	86,820	260,176	-173,356
Choshi	98.4	3	4,772	1897	N	NA	NA	-	40,489	-
Ecchujima	5.2	1	4,569	1991	N	NA	NA	467,000	476,223	-9,223
Monoi	41.6	2	4,023	1937	N	NA	NA	-	64,900	-
Narutou	61.3	2	2,954	1898	N	NA	NA	-	15,182	-
Taura	50	1	2,504	1904	N	NA	NA	112,785	151,234	-38,449
Enokido	49.5	1	2,442	1958	N	NA	NA	-	27,700	-
Higashi Chiba	35.5	2	2,186	1965	N	NA	NA	-	200,328	-
Youkaichiba	73.5	1	2,009	1897	N	NA	NA	-	23,333	-
Asahi	82.8	1	1,910	1897	N	NA	NA	-	23,978	-
Yokoshiba	68	1	1,421	1897	N	NA	NA	-	13,500	-
Hyuga	56.7	1	1,208	1899	N	NA	NA	-	15,182	-
Matsuo	65.2	1	1,060	1898	N	NA	NA	-	15,182	-
Higata	78.1	1	929	1898	N	NA	NA	-	23,978	-
Iioka	85.4	1	776	1897	N	NA	NA	-	23,978	-
Matsugishi	95.6	2	470	1897	N	NA	NA	-	40,489	-
Minamishisui	47.8	1	0	1914	N	NA	NA	-	42,125	-
Iigura	70.7	1	0	1964	N	NA	NA	-	23,333	-
Kurahashi	88.3	1	0	1960	N	NA	NA	-	23,978	-
Saruda	90.4	1	0	1898	N	NA	NA	-	40,489	-