

# Effect of Redevelopment around the Station in Local Cities

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**ABSTRACT:** This aims pays attention the effect of the redevelopment around the station in local cities. Furthermore, the proposal for the case of the Kumamoto is done. For analysis, 3 stations are selected optionally with Kumamoto Station to compare prospective; “Project Schedule”, “Map”, and “Relative graph of the land price”. From this analysis of 3 stations, the considerations to schedule the redevelopment plan and the relationship between the peripheries of the stations and the central cities are arranged. As a conclusion, it is proposed the redevelopment plan around the Kumamoto Station.

**KEYWORDS:** management of large-scale redevelopment, influence on city from the redevelopment around the station, analysis of the land price

## 1. INTRODUCTION

### 1.1 Backgrounds and Objectives

Recently, the land readjustment projects (Land Readjustment) and the urban redevelopment projects (Urban Redevelopment) are developed around the stations where the railways are elevated (Elevated Railway). It is rare that the large-scale redevelopments in urban areas are advanced in the local cities. Therefore, the influence from the redevelopment plans around the stations (Redevelopment Plan) to the entire cities is highly expected in such cities. It is important to measure how much the influence those plans have and how this influence would change because the Redevelopment Plan affects more strongly to the central area in the local cities than the large cities (Figure1). However, the investigation of the change before and after the Redevelopment is insufficient because the Redevelopment Plan is composed of some projects and required long periods. In this paper, the projects and the schedule of the case with some Redevelopment Plans is focused. Moreover, the factor of the effect that is influenced to main

points in the cities under construction is clarified. As a result, it is proposed the Redevelopment Plan around the Kumamoto Station.

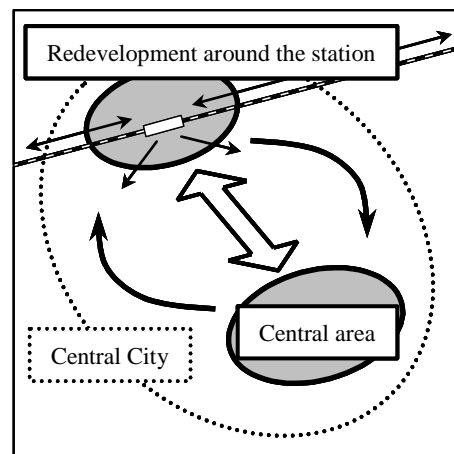


Figure1 Diagram of Redevelopment around the station in local cities

### 1.2 Orientation of this study

The aspect of analysis in this paper is how the Redevelopment Plan and each project of the Redevelopment influence on the local city. In past research of Moon et al., the development process of the Redevelopment in the Shincansen station plaza is analyzed. In the difference with the effect to not only the Station periphery but also the entire city is analyzed in this paper. There are a lot of researches, which pay attention to the Land Readjustment and

the analysis of the land prices. Although, the analysis related to the Redevelopment Plan is limited to the research of Tamura et al.

In this paper, the influence from various projects of the Redevelopment Plan is analyzed and the influence on the entire city is discussed.

## **2. RESERCH OBJECT**

The research objects to propose the Kumamoto Station are selected according to the following conditions;

It is a central station in the capital city of the prefecture.

The Elevated Railway is progressing in the vicinity of the station.

The Land Readjustment and the Urban Redevelopment are progressing around the station.

From these, 12 stations are selected as research objects; Asahikawa, Sapporo, Toyama, Kanazawa, Fukui, Gifu, Nara, Tottori, Kochi, Saga, Oita and Miyazaki.

## **3. RESERCH METHOD**

### **3.1 Range of analysis**

The range of the analysis is defined as the central city of the autonomy. Generally, the local city is formed with two nuclei, the original center of the city and the secondary center around the station. Therefore, it is effective to limit the range to the central city so that the condition can be steady though the population scale of research objects is different.

Incidentally, the central city is referred to the material published in homepage of Central City Activation Promotion Room.

### **3.2 Index of analysis**

#### **3.2.1 “Project schedule” of the Redevelopment around the station**

The schedule of projects is arranged about The Elevated Railway, Shinkansen development, The Land Readjustment, Urban Redevelopment, and other planar developments for the front area of the station and the back area separately. This index considers the characteristic of the following main project and analyzes the influence of the Redevelopment Plan under construction on the city. Incidentally, the project of the Redevelopment Plan is referred to the material published in the pamphlet and homepage of the autonomy.

- The Elevated Railway project: The division of the region by the railway would be dissolved when the construction is completed.
- Land Readjustment project: As the construction starts, the land substitution advances gradually.
- Urban Redevelopment project: The land can be used effectively after the construction is completed.

#### **3.2.2 “Map” of the Redevelopment around the station and the central city**

In this map, the districts of the Redevelopment Plan of the research objects are defined, as below; the central city, the center area of the city (Center), the front area of the station (Front), the back area of the station (Back), and the main district. This index analyzes how the Redevelopment influences on those districts. Moreover, the map clarifies the position of the various place district, and it is also used to analyze a surrounding geographical features and frame of the city.

Incidentally, the map of each city refers from homepage of the map inspection service of Geographical Survey Institute of Ministry of Land.

#### **3.2.3 “Relative graph of the land price”**

When the research analyzes the station and the

Table1 Classification by the influence of the project in fiscal 2006

	Large of the Change	Small of the Change	Others
All Projects Completion		Sapporo·Miyazaki	Tottori·Saga
Elevated Railway Completion	Kanazawa·Gifu	Fukui	
A Part of Projects Completion	Toyama		Nara
All Projects Progressing	Asahikawa·Kochi·Oita		

Redevelopment Plan, the number of the railway user and the commercial person at the station are indices frequently. However, These indices are unsuitable to the analysis to influence from the Redevelopment Plan on the city. The same things can be said to the influence in planar and dynamic extension in time. So, the index uses the land price is utilized as the index. This is because the investigation is done widely and thoroughly in the city, and the transition of the influence can be chased. Yamada's research is invoked for handling of the land price. In this paper, the highest land price excluding the district around the station is set as 100 (Center), and the relative value of this center is used. One of the reasons is that the comparison between annuals becomes difficult when the land price is used by the absolute value and a regional change is overlooked. Another reason is that in this analysis the Redevelopment Plan brings not the change of the land price but the influence on the city. Of course, it cannot be asserted that only Redevelopment is a factor for the land price changes in the entire city. However, the change shown by "Relative graph of the land price" can be paraphrased as the change in the position of the district around the station in the city. Therefore, it can be considered the Redevelopment Plan is one of the big factors for such a change. The 3 indices mentioned above are utilized for the analysis in this paper. Moreover, the above-mentioned 3 are the analysis indices of this paper.

Incidentally, the land price is referred to the material published in homepage of land synthesis information library of the Ministry of Land.

## 4. CASE ANALYSIS

### 4.1 Classification of case

About the Redevelopment of the research objects, 12 stations are classified from the analysis by "Relative graph of the land price" as shown in the table1. 3 cases with a large change are selected as the representative of the classification; Kanazawa, Toyama and Asahikawa. Each case is analyzed specifically.

## 4.2 Case analysis

### 4.2.1 Case of Kanazawa

At the time of fiscal 2006, in Kanazawa, The Elevated Railway was completed, and the planar development was almost completed around the station. In Kanazawa, The Elevated Railway constructed from 1978 to 1991, The Land Readjustment in 6 places was done around the station from 1970 to 2006, and the Urban Redevelopment in three places was advanced in front area of the station continuously in the same period. As for these projects, it would be almost completed in fiscal 2006, and the Shinkansen development will be advanced in the future (Figure2, Figure3).

In Figure4, the land price about 4 points was investigated; "Katamachi district (Center)", "Honmachi district (Front)", "Hirooka district (Back)", and "Musashimachi district (Middle district)", also the Redevelopment Plan influence on each district had been seen relatively. The value of "Front" and "Middle" had been approaching to "Center" every year gradually since 1990. Furthermore, it could be said that "Front" rose to the same level as "Middle" in 2004, and to the same as "Center" in 2007.

From this factor of the influence, "Project Schedule" of Figure4 was compared. Firstly, 3 different Urban

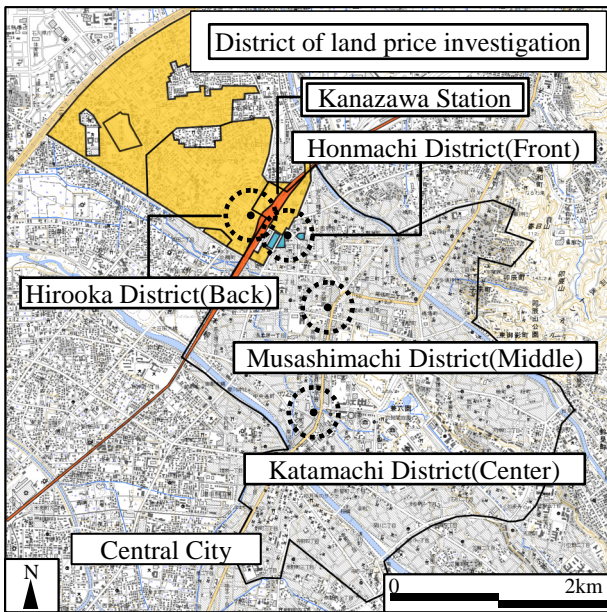


Figure2 The Redevelopment around the station and the Central City in Kanazawa

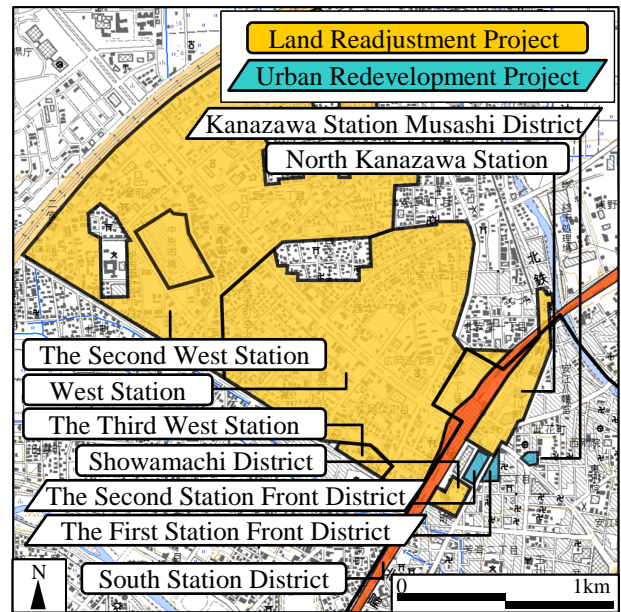


Figure3 The Project District of the Redevelopment around the station in Kanazawa

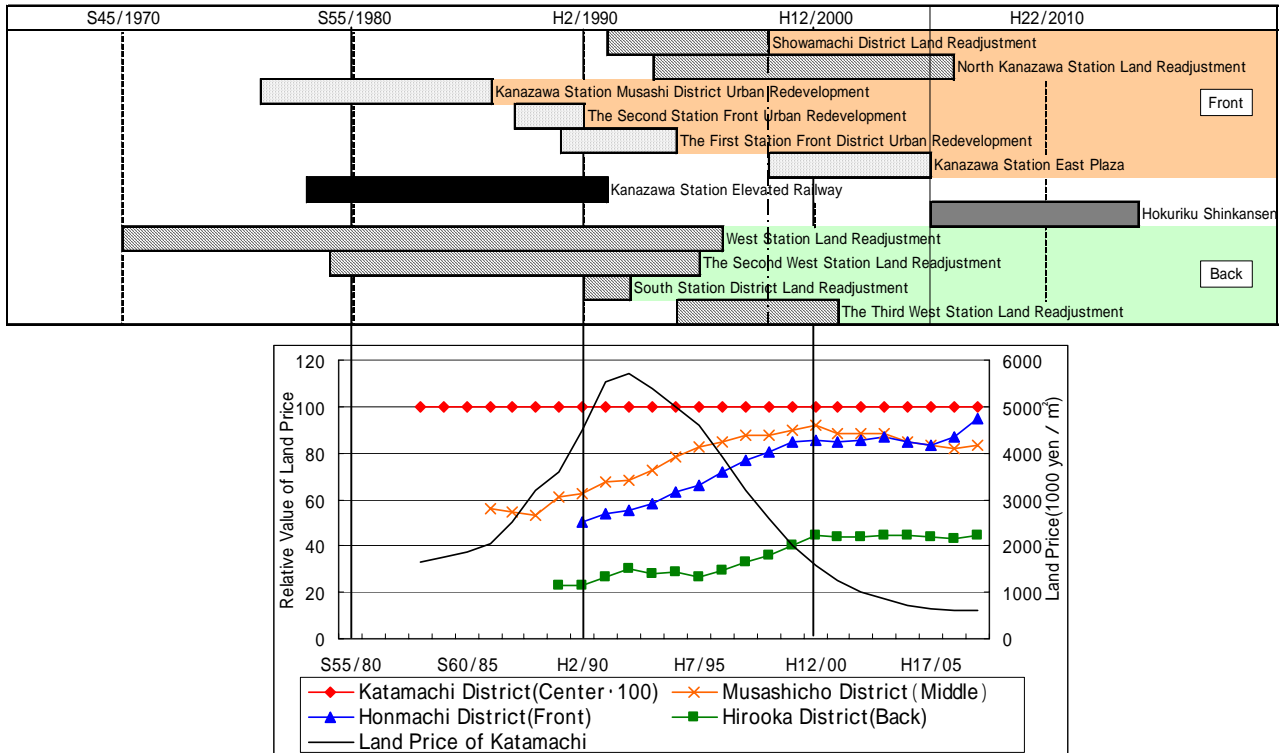


Figure4 “Project Schedule” and “Relative graph of the land price” in Kanazawa

Redevelopment could be completed in front area in 1986, 1990 and 1994. At these periods, “Front” and “Middle” had begun to show uptrend. Between 1990 and 2000 “Front” and “Middle” value kept rising and this rise is the beginning of Urban Redevelopment in front area. Moreover, the beginning was also a factor, which had advanced the Land Readjustment in back area continuously and completed the construction of

the Elevated Railway in 1991. Next, when paying attention to “Back”, it was since 1991 and 1996 that “Back” shows the rise. One of the factors was that the Elevated Railway completed in 1991. Another factor was that The Land Readjustment in 3 places had been completed in back area by 1996. For Kanazawa, it seemed important that the Urban Redevelopment completed in front area before

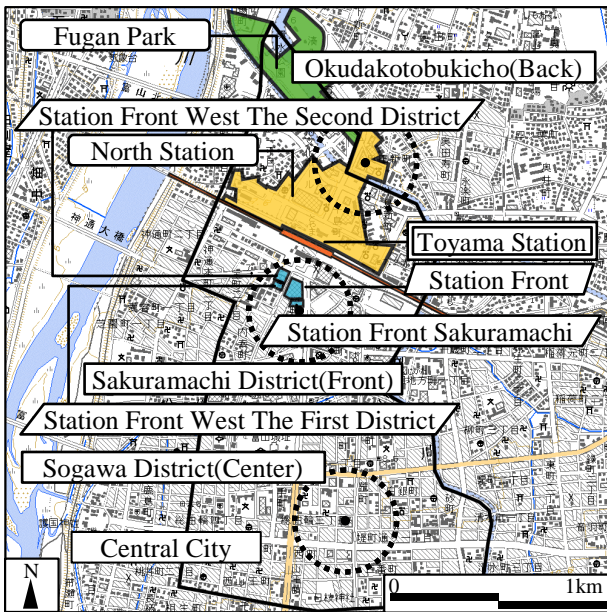


Figure5 Redevelopment around the station and the Central City in Toyama

influence on “Back” was still small. It should be paid to the change of each project by the Shinkansen development in the future.

#### 4.2.2 Case of Toyama

At the time of fiscal 2006, in Toyama, the Elevated Railway was planning, and a part of the planar development was completed around the station. In Toyama, the construction of the Elevated Railway was scheduled from 2005 to 2016, the Urban Redevelopment in four places was done in front area from 1984 to 1992, and the planar project of the Land Readjustment had been advanced in back area from 1988 to 2002. The planar project around the station would be almost completed in fiscal 2006,

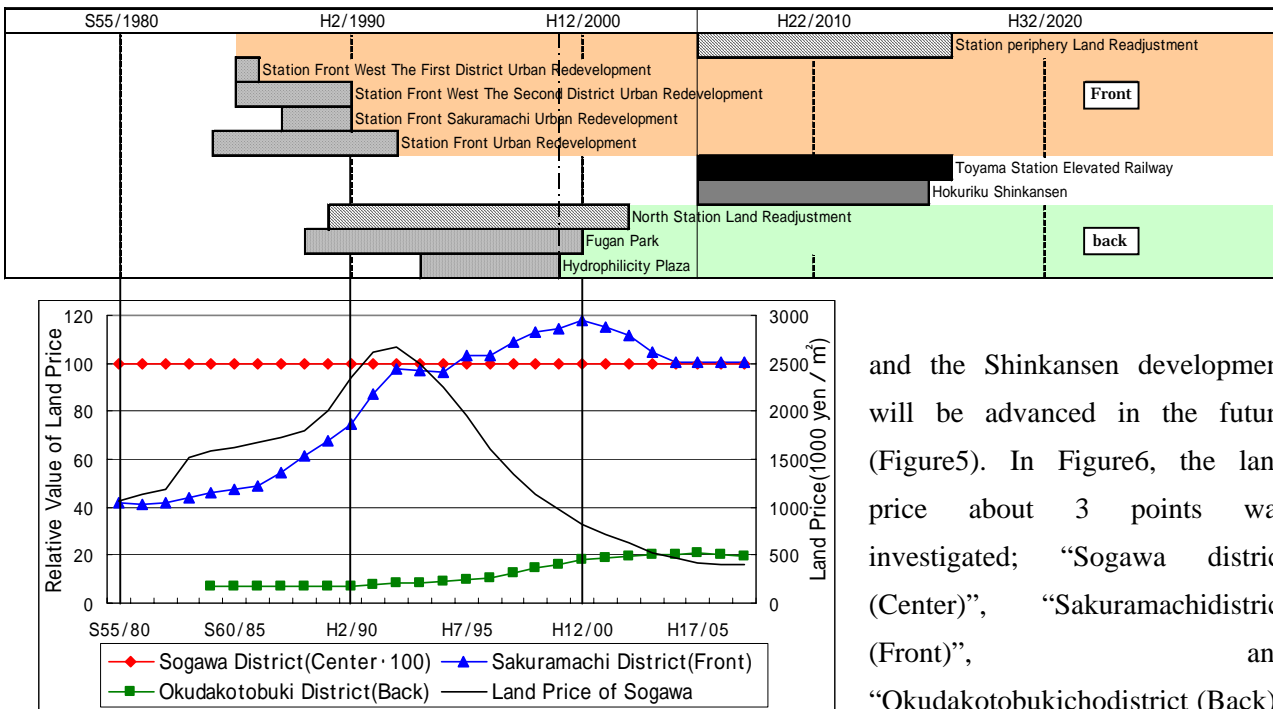


Figure6 “Project Schedule” and “Relative graph of the land price” in Toyama

and the Shinkansen development will be advanced in the future (Figure5). In Figure6, the land price about 3 points was investigated; “Sogawa district (Center)”, “Sakuramachidistrict (Front)”, and “Okudakotobukichodistrict (Back)”, also the Redevelopment influence on each district could be seen relatively. The value of “Front”

the Elevated Railway completed. Compared to other Redevelopment of the research objects, the most projects were developed with case of Kanazawa. Especially, the Land Readjustment in back area was a feature. At the present stage, it had been understood that the Redevelopment in front area influences “Front” and “Middle” though the

that had been rising rapidly in the 1980’s exceeds “Center” in 1995. Thereafter, it could be said that “Front” was the highest position. From this factor of the influence with “Project Schedule” of Figure-6 was compared. Firstly, the Urban Redevelopment began to construction in front area in around 1987. At this period, “Front” had begun to show up trend.

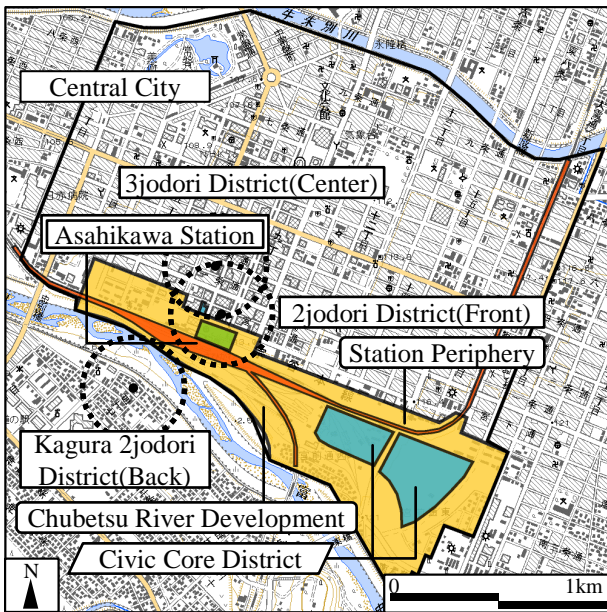


Figure7 Redevelopment around the station and the Central City in Asahikawa

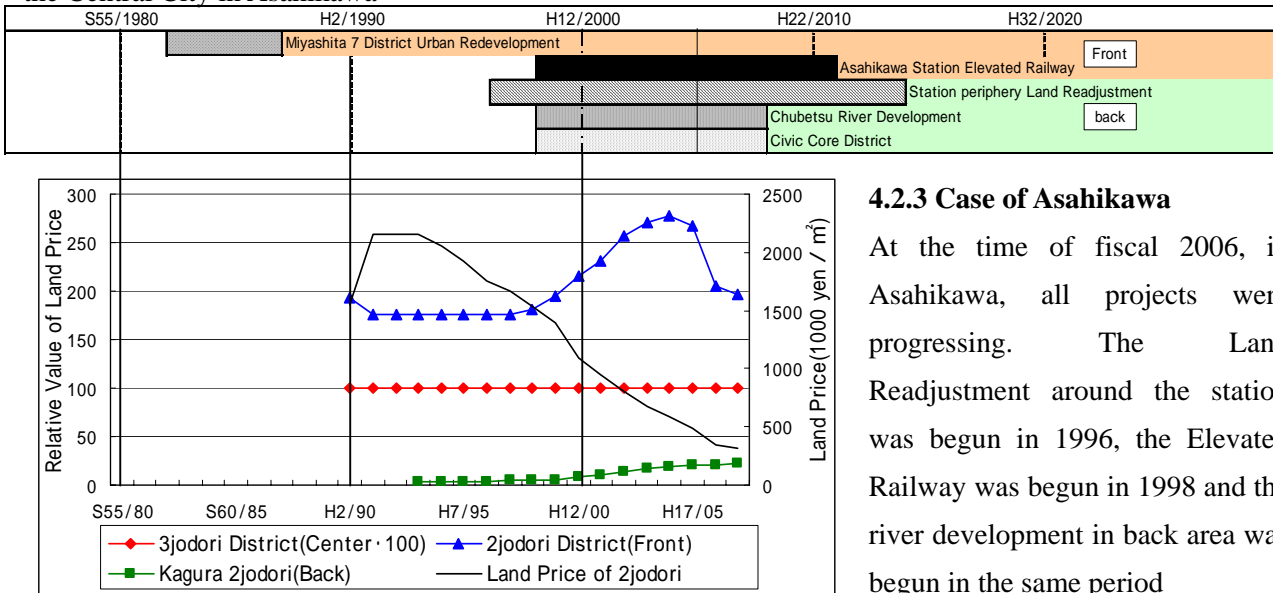


Figure8 “Project Schedule” and “Relative graph of the land price” in Asahikawa (Figure7).

#### 4.2.3 Case of Asahikawa

At the time of fiscal 2006, in Asahikawa, all projects were progressing. The Land Readjustment around the station was begun in 1996, the Elevated Railway was begun in 1998 and the river development in back area was begun in the same period

Furthermore, the Land Readjustment and the park development project began to construct in back area after the Urban Redevelopment completed. Moreover, “Front” was showed highest value in around 2001 when the projects in back area were completed. After 2004, “Front” was balanced with “Center”. Next, when paying attention to “Back”, the change like “Front” was not seen in “Back” because the Elevated Railway was incomplete. For Toyama, the Redevelopment Plan had been constructed earlier than the Elevated Railway. As

In Figure8, the land price about 3 points was investigated; “3jodori district (Center)”, “2jodori district (Front)”, and “Kagura2jodori district (Back)”, also the Redevelopment Plan influence on each district could be seen relatively. The Asahikawa’s tendency of “Relative graph of the land price” differed from others because the land price of “Front” was originally highest. “Front” had been shown up trend since around 1998. However, it had been shown down trend since 2005. From this factor of the influence, “Project Schedule” of Figure8 was

compared. Firstly, the Redevelopment Plan began to construct in 1998. At this period, “Front” had begun to show up trend. This point was differed from Kanazawa and Toyama was that the influence was appeared from the beginning the Redevelopment Plan in Asahikawa.

For Asahikawa, the plan “Kitasaito Asahikawa” was made for the Redevelopment Plan around the Asahikawa Station as well as Toyama. This plan had the policy “Station space that makes the best use of Chubetsu River”. Furthermore, the Redevelopment Plan positioned a new place in the city. At the present stage, the influence by the expectation for Redevelopment was seen in the change of “Front”. The attention in the future would be whether the spread of the Redevelopment would be seen by “Back” and “Center”.

#### **4.3 Summary of case analysis**

From the case analysis, 3 cases above were arranged by “Aspect of the Project Schedule of Redevelopment around the station” and “Aspect of the relation between Station periphery and central area”.

##### **4.3.1 Aspect of Project Schedule of the Redevelopment around the station**

The Project in front of the station receives attention for the district around the station

In Kanazawa and Toyama, the redevelopment project in front of the station was previously advanced. Therefore, the good influence appeared in the following project.

In a word, it could be said that the redevelopment in front of the station receives attention for the district around the station from both cases.

The concrete policy is shown about the Redevelopment Plan of the back area

In Toyama and Asahikawa, the policy of the Redevelopment of the back of the station was

concretely shown. Therefore, each project progressed forward even when the Elevated Railway did not complete. Moreover, the back area was shown as a new position of the city.

##### **4.3.2 Aspect of the relation between the Station periphery and the Central area**

The Station periphery invents the diversity of the city

In Toyama and Asahikawa, the Redevelopment Plan set up the policy different from the Central area. Furthermore, even if the urban structure polarized to the Station periphery and the Central area, proper development of the entire city was expected.

It develops from the Station periphery to the Central area

In Kanazawa and Toyama, the Redevelopment Plan had developed the Station periphery and the Central area equally. In Kanazawa, the development of “Middle” advanced the development of the entire city. In Toyama, the balance of the Station periphery and the Central area also encouraged the development on the entire city. In a word, it can be said that the Redevelopment Plan around the stations considered with the development of the entire city was advanced in three cases.

#### **5. One proposal to the Redevelopment Plan around the Kumamoto Station**

##### **5.1 Outline of the Redevelopment Plan around the Kumamoto Station**

At the time of fiscal 2006, in Kumamoto as well as Asahikawa, all projects were progressing. The construction of The Elevated Railway was scheduled from 2001 to 2016, the Urban Redevelopment in one place and new common building were scheduled in front area from 2005 to 2013, and the Land Readjustment has been advanced to 2018 in back area (Figure9, Figure10).

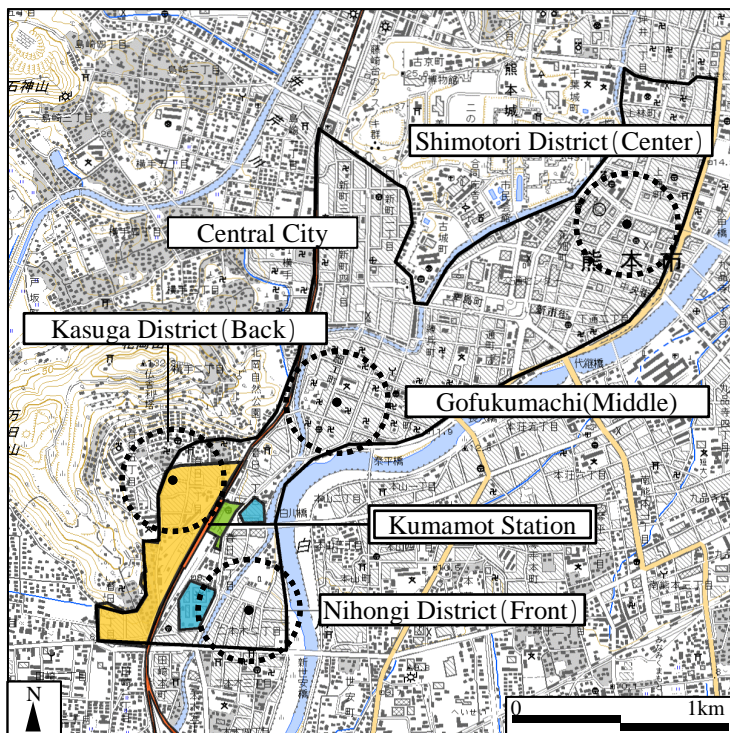


Figure9 The Redevelopment around the station and the Central City

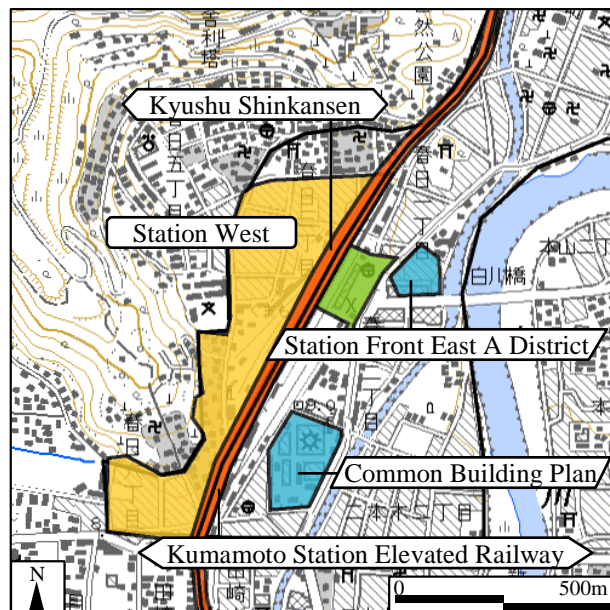


Figure10 The Project District of the Redevelopment around the station in Kumamoto

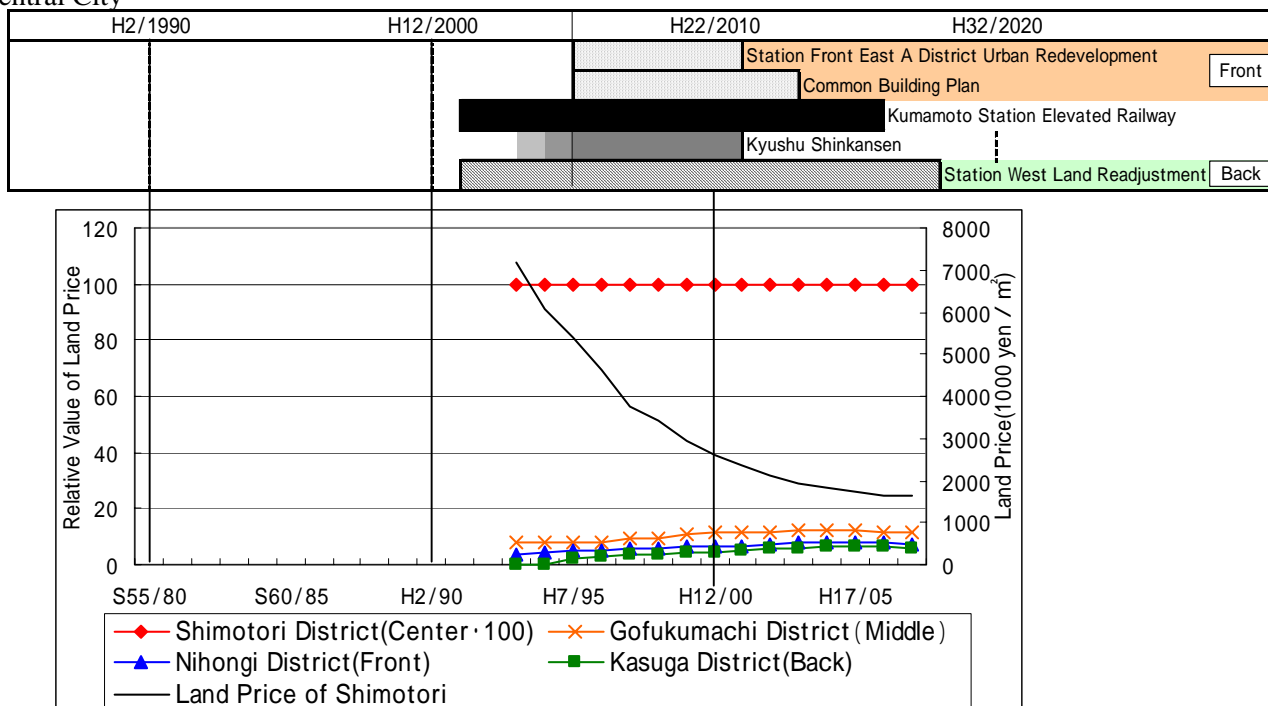


Figure11 “Project Schedule” and “Relative graph of the land price” in Kumamoto

## 5.2 One proposal to the Redevelopment Plan around the Kumamoto Station

### 5.2.1 Aspect of the Project Schedule of the Redevelopment Plan around the station

In Kumamoto, the Urban Redevelopment that would be scheduled completion that would be earlier than other projects in front area in 2010 is important. This

project should receive attention for the district around the station. Moreover, the Land Readjustment in back area should clarify the policy of the project (Figure-11).

### 5.2.2 Aspect of the relation between the Station periphery and the Central area



Kumamoto Station could not hope for the planar development into the surrounding because the mountain encloses in back area, and two rivers flow in front area. Furthermore, commercial use around the station is difficult because the station is away from the Central area at about 3km. Moreover, the prefecture hangs out the plan "Park station". This plan gives the feature like a park different from the Central area to the Station periphery. An important thing is that the feature is concrete.

From Figure-9, it could be said that the difference between "Shimotori district (Center)" and "Nihongi district (Front)", "Kasuga district (Back)" is greater than other cases. Furthermore, "Gofukumachi district (Middle)" is low the position as well as "Front" and "Back". Moreover, it is necessary to connect the Center area with the Station periphery by the development of "Middle" like Kanazawa.

In a word, the revitalization of "Middle" seems important with the Redevelopment Plan around the station in Kumamoto.

## 6. CONCLUSION

### 6.1 Summary

This paper pays attention to the importance of the Redevelopment Plan in the local city. Furthermore, it is analyzed about the Redevelopment influence on the city. It is defined that the influence from some features of Redevelopment to a city under construction is important. Moreover, the analysis indices assume "Project Schedule", "Map", and "Relative graph of the land price". Kanazawa, Toyama, and Asahikawa are selected as the research objects among cases with a large change by the influence of the Redevelopment Plan. The first considerations as for the aspect of the Project Schedule of the Redevelopment Plan are "The Project in front of the station receives attention for the district around the station" and "The concrete

policy is shown about the redevelopment plan of the back area". The second considerations as for the aspect of the relationship between the Station periphery and the Central area are "The Station periphery invents the diversity of the city" and "It develops from the Station periphery to the Central area". As a conclusion, the proposal to the Redevelopment Plan around the Kumamoto Station where four considerations is based is shown.

### 6.2 Aspect of research in the future

In this paper, the Project Schedule is focused and the Redevelopment Plan is evaluated. At the next stage, the focus is applied to the organizational structure of the Redevelopment Plan that decides the operation of the schedule and the policy of the project. The matter that should be clarified is how the organization thinks about the whole Redevelopment Plan.

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