The Importance of Public Investment in Relation to the Asahikawa-Douhoku Region of Hokkaido[1]

By
Yoshihiko Kamehata*, Romit Dasgupta** and Hideaki Onodera***

Abstract

Following the collapse of the "bubble" economy, questions have been raised regarding the efficacy of the economic effects of public investment. However, public investment in regional cities provides opportunities for qualitative improvements in these cities. For example, the public investment project planned for Asahikawa in Hokkaido takes into consideration both the economic and the social welfare effects of investment. This plan shows ways to generate growth without causing problems of a "bubble" economy. The following is a discussion of this public investment.

1. Introduction

The development of a site of approximately 80 hectares in the area of Asahikawa Station aims to make Asahikawa a major hub city in Hokkaido by re-developing and improving the city's central area. In order for this to be realized, a variety of public works projects, such as elevation of the railway tracks, land re-adjustment, etc., need to be undertaken simultaneously.

The size of this project is on a scale comparable to the public investment undertaken by the national government at the time of the official establishment of Asahikawa village a century ago, and the construction in 1970 of the country's first Pedestrian Mall in Asahikawa named *Heiwa Dori Kaimono Kouen*.

Since the founding of the village was based on a plan to develop Asahikawa as a major food producing area and a vital military centre of Japan (this is overlooking the criticisms of the functions of a military city), the public investment undertaken at the time was not merely concerned with civil engineering and construction.

Thus the public works undertaken at the time of establishment played an important role in shaping and building the city and locating various industries, and helped create

Manuscript received March 8, 1996. Revised November 18,1996.

* Hokkaido University of Education, Japan

** Japanese Studies, School of Asian Studies, University of Western Australia, Australia

*** Asahikawa City Office, Japan

[1] The city of Asahikawa is located at 142° 22′ E longitude and 43° 46′ N latitude, making it slightly northwest of the centre of Hokkaido (=Douhoku). Douhoku means northern Hokkaido, and Asahikawa City is one of this region's main urban areas.

a conducive economic and living environment for the citizens.

The construction of the *Heiwa Dori Kaimono Kouen*, undertaken under the slogan of "A Human City" was the first example in Japan of the planning and creation of a city centre area opposite the railway station that centred around the needs of pedestrians. The creation of this Pedestrian Mall attracted observers from around the country, and was a successful example of a slogan being put into practice.

At the same time as acting as a catalyst for stimulating the city's economy through the ripple multiplier effects of each investment, these investments also had the longer-term objective of stimulating the continued development of Asahikawa and the surrounding agricultural areas, even after the initial ripple effect had subsided.

The present Asahikawa Station area development plan is similar to the large-scale development project at the time of Asahikawa's establishment.

The investment in construction from the public investments required to undertake the groundwork projects for the station area development project is approximately ¥100.4 billion; the economic ripple effects of this investment on Asahikawa and its surrounding areas is expected to be 1.7 times this.

Furthermore, even after the ripples from the multiplier effect of this public investment have converged, the aim is the creation of an infrastructure base that will allow for growth and prosperity into the 21st century.

Consequently, the present analysis does not restrict itself to only the short-term economic impact of the ripple effect arising from this ¥100.4 billion public investment, but takes into consideration the long-term implications for Asahikawa's development into the 21st century.

2. Asahikawa Station Area Development

The city of Asahikawa has outlined the following infrastructure developments and improvements through public investment:

1. Land re-adjustment in the station area and elevation of the rail track.
2. The creation of a "Civic Core" zone accessible to the general public, integrating government offices.
3. The construction of a multi-functional facility, integrating lifestyles, culture, and industry needs relevant to northern regions.
4. Creation of park area on the banks of the Chuubetsu River, and protection of green zones in the vicinity of rivers as a means towards preserving the natural environment.
5. Improvement to be carried out on the bridge over the Chuubetsu River, linking the Kagura area with the central city area.
6. The investment is for the period from 1996 to 2003.

As outlined above, the desired outcome of each of these projects varies in characteristics; thus, the public investments relating to the Asahikawa Station project extend beyond the mere construction and maintenance of bridges and roads.

Moreover, in relation to the analysis of the public investment, the question as to why such a large-scale public investment is necessary for Asahikawa needs to be

considered. Discussion of this point will be undertaken based on the material presented in the following section.

3. The Asahikawa Station Area and Public Investment

In general, the volume of consumption as a determinant of the volume of income is a major pulling force for an economy. For instance, even for a city where the volume of income is large, if consumption in a given period is low, this will adversely affect the income for the following period, and thus have an impact on the overall economic growth.

Also, for a city with a high level of private investment, purchases of (intermediate) producer goods by firms will be high.

This purchase of intermediate producer goods by firms as a result of public investment works towards supporting business activity. Moreover, through this process increases in employment are linked to the expansion of consumption.

In the same way that procurement of intermediate production goods and finished goods by the private sector is linked to increases in employment and the expansion of consumption, public investment also stimulates consumer demand for consumer and producer goods. However, once the ripples from the multiplier effect generated have converged, the economic impact becomes nil.

In light of the above, the necessity for public investment in Asahikawa will be discussed.

The economic impact of public investment for the Station area development project is particularly important for residents of the Douhoku (northern Hokkaido) region.

According to Takahata's "Degree of Induced Production through Final Demand" [1], the dependency of induced production on consumption is extremely high for the Douou (central Hokkaido) and Dounan (southern Hokkaido) regions. The Douou region in particular depends heavily on consumption.

Furthermore, of all the regions of Hokkaido, Douou's self sufficiency (self-supply) rate is the highest, with dependence on regions outside Hokkaido being the lowest of all regions. Added to this, although the Douou region's internal inducement effect is strong, its impact on other regions is minimal; thus, induced production from the Douou region cannot be expected to have a significant impact on the Douhoku region. In other words, the economy of the Douou region may be regarded as, to a large extent, autonomous.

Moreover, in Takahata's analysis, the Douhoku region is second only to the Doutou (eastern Hokkaido) region in its low rate of dependence on consumption, and of the four regions has the highest rate of dependence on public investment. This dependence on public investment, through the consumption (private consumption and procurement of interim producer goods, etc.) generated by the investment, has a major influence on the economy.

One of the attributes of public investment is that when the investment has been

Table 1: Construction Sector Investment (by type of Activity)

Unit: Million yen; %

No.	Type of construction activity	Investment amount	Percentage share
1	Wooden Dwelling	5,855	5.8
2	Ferro-Concrete Dwelling	1,169	1.2
3	Factories, etc.	137	0.1
4	Sewerage	878	0.9
5	Road Paving	6,416	6.4
6	Street Improvement	16,851	16.8
7	Street Bridge	12,500	12.4
8	Parks	1,297	1.3
9	Railway-Tracks	46,800	46.6
10	Electrical Facilities	265	0.3
11	Telecommunications Facilities	318	0.3
12	Water Supply	1,019	1.0
13	Land Reclamation	733	0.7
14	Other Civil Engineering	6,189	6.2
15	Total	100,427	100.0

(Asahikawa City :1995)

completed, the multiplier effects generated converge to zero; thus, any increase in production and increased employment generated in the period by the interaction with the investment and the multiplier effects would come to an end, with the possibility of contractions in employment and accumulation of production equipment.

One of the aims of the Asahikawa Station investment project is the creation of a comfortable and attractive urban environment in the central city area, which would facilitate Asahikawa's position as an attractive hub city in Hokkaido, and the inducement of services geared to the needs of residents.

Thus, the project needs to be one that is not merely concerned with simple public works like the provision of roads and sewerage, but a project that takes into consideration "soft" social aspects of the investment as well. It is this particular aspect of the project that has attracted the attention and interest of the citizens of Asahikawa.

Given this, there is little doubt that for a city with only a short history of a hundred years, the project is of prime importance.

4. Induced Import Demand

The classification of the construction sector is presented in Table 1.

1. The Input-Output Analysis uses 1985 (Showa 60) data.
2. The investment pattern is based on the Ministry of Construction's Classification of Construction.
3. The coefficient of consumption uses the 1993 (Heisei 5) Hokkaido average value of 0.76 for the Asahikawa figure.
4. The coefficient of employment is based on 1992 (Heisei 4) Survey of Industry

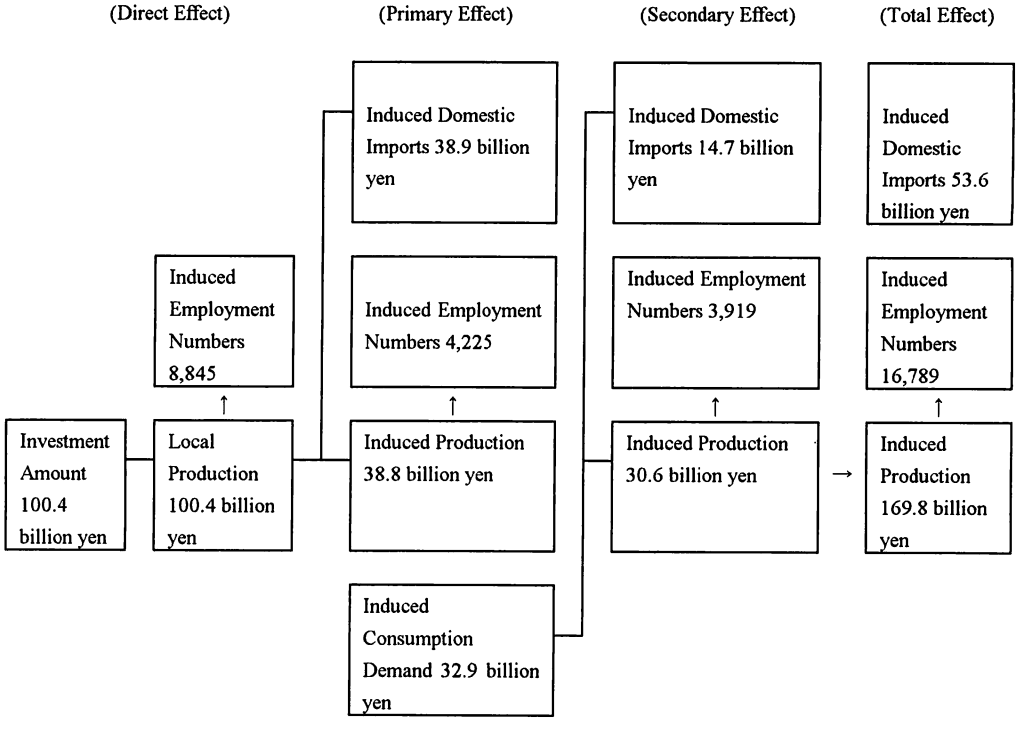

Figure 1: Flow Chart of Induced Domestic Import Effect and Employment Opportunity Creation Effect (Asahikawa City)

Statistics, Number of Persons Employed, and Shipment Volume of Manufactured Goods; also 1991 (Heisei 3) Survey of Workplace Statistics, Volume of Production, and Number of Persons Employed.

5. Due to availability conditions of materials, price evaluation uses 1985 (Showa 60) base-year prices.

The volume of induced import is depicted in Figure 1, "Flow chart of Induced Import Effect and Employment Opportunity Creation Effect" [2].

Table 1 is a flow chart showing the overall induced domestic import effect and employment opportunity creation; Figure 1 shows the employment opportunity.

As can be seen from the flow diagram, the total effect will be ¥53.6 billion. In other words, as a result of the ¥100.4 billion investment, roughly ¥53.6 billion worth of purchases will be made by Asahikawa from other parts of the Douhoku region, as well as other regions (including the regions necessary).

In this context, it is perhaps important to consider strategies to optimize the induced production effects generated by public investment in the Asahikawa Station area to stimulate businesses that would be strongly responsive, and to create a strong urban identity for the city (this degree of responsiveness — the degree of induced influence — will be expanded upon below).

Table 2: Ranked by Order of Industry

Rank	Industry	Production Million yen	Industry	Influencing Power Coefficient	Industry	Sensibility Coefficient
2	Civil Engineering	1,616	Furniture & Fixture	1.142	Transport	1.878
3	Construction	1,326	Construction	1.098	Private Service	1.469
4	Private Service	1,181	Mining	1.052	Finance & Insurance	1.322
5	Transportation	1,085	Ceramics, Stone & Clay	1.037	Electric & gas	1.202
6	Public Service	1,067	Water & Waste	1.035	Lumber & Wood	1.126
7	Real Estate	782	Pulp & Paper	1.034	Land & Buildings	1.073
8	Public Administration	721	Electric Machine	1.027	Agriculture	1.038
9	Pulp & Paper	705	Food	1.011	Construction	0.998
10	Food	570	Civil Engineering	0.994	Pulp & Paper	0.957

(Asahikawa City:1991)

Hence, the public investment project needs to be one where the impact spills over into various non-public arenas as well. The inclusion of plans for an integrated northern lifestyle / culture / industry facility, and the creation of a new commercial zone, would be part of such an aim.

In this way, the development of the Asahikawa Station area project, merely by creating a stable base for the longterm vitality of the private sector and the creation of a comfortable living environment, would be important in stemming the movement of imports always come from elsewhere into Asahikawa.

5. Influencing Power Coefficient & Sensibility Coefficient

The "Sensibility Coefficient" refers to when the growth of another industry has an influence on one's own industry, if 0, there is no influence, above 0, particularly if it crosses 1, there is a strong degree of sensibility.

According to Table 2 (ranked by order of industry), in the case of the Asahikawa Station area public investment project, the industries involved are construction, water, electrical machinery, lumber & wood products, furniture & fixtures, and ceramics, stone & clay products.

With the exception of civil engineering, all of these have an influencing power coefficient greater than one; hence, the demand for these industries generated by public investment would have an impact on other sectors. Of these industries, since lumber & wood products' sensibility coefficient is also high, it would be strongly influenced by the growth of other industries. Moreover, as lumber & wood products, furniture & fixtures, and construction represent some of the major local industries of the Douhoku region, the Asahikawa Station investment project would benefit local industry.

In addition, commercial business and transport & communications stand out as industries in Asahikawa whose sensibility coefficients are particularly high. It may be assumed, from this, that once the basis for the development of Asahikawa as a nucleus for Hokkaido has been completed through public investment in the Asahikawa Station

project, sectors with a high sensibility coefficient, such as business and transport & communications, will respond positively and be able to grow.

The business sector, in particular retail trade, with its high degree of sensibility and being a sector which is closely linked to the city's infrastructure and attractiveness, would automatically benefit from the improvements and re-vitalization of the station area carried out under the public investment project, even without intervention from public authorities.

Thus, the provision of a comfortable and attractive cultural, lifestyle and natural environment in the Asahikawa Station area would be linked through the prosperity of businesses to the overall prosperity and growth of the economy.

Furthermore, as can be seen from the ranking by industry of the influencing power coefficient, public investment and construction are important driving forces for the economy in Asahikawa. This, coupled with the fact (as pointed out earlier) that within Hokkaido, the power of consumption in Asahikawa's economy is weak, makes the importance of public investment significant for the region.

The mere fact that it is closely linked to urban renewal and prosperity of industry makes this public investment an especially important one.

6. Asahikawa in the Japanese Economy

In recent years, due to the recession resulting from the appreciation in the value of the yen, firms which in the past would consider re-locating to regional centres, are moving their production centres off-shore, largely to Asia, leading to the "hollowing out" of the Japanese economy.

Under such conditions, regional cities have been considering strategies to attract industry through the creation of industrial parks.

In this context, the creation of a new, higher-quality urban environment through improvements to infrastructure and development projects, such as the elevation of the rail tracks in the station vicinity, the creation of a "Civic Core", integrating government offices, and the construction of a northern lifestyle/culture/industry "theme zone" complex, would improve the quality of life and strengthen the provision of social welfare and government services. The successful creation of these projects through public investment at Asahikawa Station would provide a base for the development of industry. Thus, the improvement to social welfare, lifestyle, and culture would, by offering attractive conditions to industry, be linked to stable economic growth, and would work as a means of avoiding a further "hollowing out" of the economy.

In conclusion, if the investment project can improve the quality of life of citizens, create better medical and social welfare infrastructures, develop infrastructure to cope with the future aging of society, and stimulate industry, it would be a project that would contribute to the city's prosperity into the next century.

References

[1] Takahata, Y. (1992), "Interregional Input-Output Table of Hokkaido Prefecture" (in Japnese), *Innovation & I-O Technique,* Vol. 3 No.3, pp.24-29, Pan Pacific Association of Input-Output Studies, Tokyo.

[2] Report on the Economic Effect of the Asahikawa Station Area Public Works Project.