

A Study on Regeneration of Urban Center to Improve National Welfare in the Capital City

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Abstract: *Developing old towns with a long history and active economic activity is not the same as rebuilding old aged housing regions because the regeneration of the former causes a problem of gentrification, in which not only the residents but also many people with economic and social activities lose their jobs. Therefore, the regeneration of the old Town should take into account public values that preserve and develop the economic, social and historical values. However, urban reconstruction is a very difficult task because people have different evaluation about the value of public interest and the interests are complex among residents, tenants, buildings and land owners, in the about 700-year-old capital, Seoul in Korea in particular. As a solution to this, this paper proposes a national welfare promotion model that includes not only the interests of stakeholders but also the public value of urban areas, and examines the possibility of various models including private voluntary efforts and public sector involvement such as social enterprises. The model that appropriately bears the cost of urban regeneration was also reviewed.*

Keywords: *regeneration of central town, national welfare, private and public value, freedom of choice*

1. NEEDS OF REGENERATING THE CENTRAL URBAN DISTRICTS OF THE CAPITAL CITY

The urban center of a country, for example, Seoul, has been a central area for long history, with many historical sites and traditions alive, as well as a major hub for the modern Korean economy. Even though the relative size becomes very small, it is still playing an important role as a symbolic city district representing Korea in major economic activities. However, its competitiveness has declined compared with major cities of developed countries and the facilities are deteriorated. And Seoul people living in the city and many people who visit it could see many slum areas that reduce the quality of their life.

In particular, the regeneration of the Seoul central area could be a policy alternative that will fundamentally solve the chronic Korean society's problems such as speculative housing demands and a surge in housing prices for decades. The provision of large-scale residential spaces and comfortable homes in the central area linking business will play a decisive role in stabilizing housing prices.

Despite this importance, researches on the regeneration of urban areas are not sufficient with

scarce effort of setting integrated and comprehensive goals and reflect local characteristics. In addition, integrated research has also focused on very vague, abstract and subjective ideologies such as community conservation, environmental protection, sustainable, inclusive and harmonized cities. The governments used to legislate laws and regulations to control the market activity to which urban regeneration projects were left chiefly.

Therefore, this study approaches to the city regeneration project in the respect of the dimension of national welfare, a concept that includes freedom of choice, market efficiency, and the importance of the socially disadvantaged and the social and public values, as well as the interests of current and future stakeholders. This is the logic of balancing economic and social supply and demand to maximize national welfare, including economic and social values.

2. CHARACTERISTICS AND PROBLEMS OF OLD CITY CENTER AND MAJOR CONSIDERATIONS IN REGENERATING IT

The first characteristic of the old city center is that the area is the city's core physical space in economic, social and political activities. People with specialized skills and technologies are working there for long time in interrelated and comprehensive connections among people and businesses. For example, Euljiro foundry district is a comprehensively and economically active area ranging from production of metal products, processing of hardware products, wholesale of related products, and restaurant and other services to support the industry.

Second, the urban center is the place holding the capacity to produce economic, cultural, social and political values and material and non-material values. Seoul has become the space for a large-scale population in which for a long time the population has gathered from the provinces because it was a center of political, economic and social activities and a place providing nationwide market services of food, clothes, housing and various living materials and services. Third, the city center is a historical space of cultural activity that has been conducted for decades or hundreds of years. Thus it is highly recognized as a core competence of the nation at home and abroad.

There are problems that urban regeneration is inevitable in old city center. First, buildings and social

infrastructure like roads in urban centers are old and deteriorated because suburban areas have a higher priority for intensive development in order to disperse population. Second, in urban central areas, unlike residential gentrification, gentrifications are appearing that repel existing commercial and other activities. Third, the rehabilitation of urban centers is chiefly entrusted to the private market, and the government regulates them through laws, due to high land prices and complex conflicts among interest groups. As the result, the social, historical, and cultural values of the central areas are adequately taken into account in the rehabilitation process.

The main points to be considered in urban regeneration are as follows: First, urban regeneration must maintain the economic and social activities of many people at present. Second, urban regeneration can increase national welfare by maintaining and developing mental and material values that have been formed for a long time, in addition to improving physically deteriorated structures. Third, the urban regeneration project is planned and pursued considering appropriately the interests of unspecified domestic and foreign visitors and consumers of the regenerated services of central districts both in present and future. It has to be designed in order to enhance national welfare even though satisfying the interests of landlords, tenants in the urban space, and the construction industry and political administrators who participate in the regeneration of the urban space is the most difficult.

3. URBAN REGENERATION MODEL TO PROMOTE NATIONAL WELFARE

1. Urban Regeneration Model

Urban regeneration to enhance national welfare is to maximize the total welfare of those affected by the project. (Equation 1) is a functional relationship that maximizes the welfare of current and future stakeholders. To increase national welfare, all stakeholders must freely express their interests and the state should represent social values for the current and future generations which are disregarded in this process. The planning and promotion of urban regeneration in unilateral ways by the government does not maximize the national welfare because of the disparities of the desires or gaps between interest groups and the people who would use them. Thus, a model is needed in which the interests of all stakeholders are reflected and adjusted by their own cost burdens and the state represents the interests of later and unspecified current generations that are excluded from this process. The following equation expresses such a relationship.

$$\text{Max NWk} = F1 (\sum IWki, PWk) \text{ s.t. TSCk} \dots \dots \text{ (Equation 1)}$$

In Equation 1, NW is national welfare, and IW_i represents the welfare of landlords, tenants, current

and future customers at home and abroad, and PW represents the public interests that are not reflected in the market. National welfare is the sum of the welfare of interest groups and the public welfare. All stakeholders will be more willing to spend on urban regeneration if they enjoy higher welfare level. The design (k) of generating maximum welfare under given conditions will be various. The extent to improve the level of urban regeneration compared to the current level should be determined. There is a level that can be improved from the minimum level similar to the current state to a maximum level.

2. Production method and cost of urban regeneration

In Equation 1, the various designs of maximum welfare (NW_k) will require the various costs (TSC_k) required for its promotion. The greater the ratio of houses to commercial buildings and the greater the number of parks, roads, the larger the cost because apartments in better conditions are more popular than commercial building in Seoul, And public cultural facilities compared to private facilities will increase more the cost of urban regeneration because it reduce the ratio of houses which are more lucrative. As the symbol of Seoul and Korea, renovating the city's downtown area to the level of the most ideal and luxurious will raise cost more. If the benefits of the future dozens generations from the urban regeneration should become more maximized, the role of the public is greater as well as the cost.

Production methods that will promote the selected design will vary. First, the urban regeneration needs capital (K), labor (L), and other input factors such as administrative expenses to promote it, as expressed in equation 2. Once the urban regeneration model (k) is determined, a production method with the least social cost (S_{Ck}) should be selected again as in Equation 2.

$$\text{Min S}_{Ck} = F2 (K, L, O) \dots \dots \dots \text{ (Equation 2)}$$

Second, even if the least cost method is determined, there are various ways to generate it. Even at the same cost, there will be a variety of urban regeneration methods, from capital-intensive to labor-intensive. Third, the choice should be made whether stressing private interests or public benefits. However, the central urban regeneration project is of a greater public character, so public value should be considered as important. Thus, the way of combining public intervention into privately-oriented projects should be determined. If the public role should be very large, the construction method can reduce the capital-intensive method of relying on the large scaled construction companies. In particular, labor-intensive methods may be preferred at the same cost in the periods of job shortages. In this way, various combinations of costs and production methods may be feasible in an urban regeneration design.

3. Ways of cost burden in the urban regeneration

Once the methods of a certain urban regeneration and the responding appropriate cost are determined, the costs of creating national welfare should be borne by those involved. The private sector would invest the resources necessary to maximize market value and the public to maximize social value.

The cost of urban regeneration is the amount that each stakeholder will invest expecting returns from it. In the case of unilateral projects by governments or corporations, they have to purchase the related assets from interested parties, and their expected benefits are equal to the expenses excluding normal profits of itself and construction companies.

The cost burden of stakeholders will be a certain ratio (ai) of the total costs to be paid by each. And the cost-sharing ratio will be the monetary value of the benefit each person receives from urban regeneration, as shown in Equation 5 below. Considering consumer surplus, the total surplus generated from the regeneration project will be the cumulative amount up to the marginal utility value of all the participants in the project at the equilibrium values. Thus, the percentage of consumer surplus that each participant will get among the total consumer surplus will be the ratio of the cost that each person bears.

$$SC = a_{i1} * SC + a_{i2} * SC + a_{i3} * SC + a_{i4} * SC + a_{i5} * SC + aP * SC \dots \dots \dots (\text{equation 3})$$

$$\sum a_i = 1 \dots \dots \dots (\text{equation 4})$$

where $a_i = (\partial NW / \partial SC)_i \dots \dots \dots (\text{equation 5})$

If the consumer surplus of each participant is known in the urban regeneration project, the maximum welfare of the project can be estimated. But it is difficult to investigate the individual's customer satisfaction in reality. The average relative satisfaction within a group is likely to be estimated more easily, because the satisfaction of the group can be compared and ordered being compared with other groups.

For example, after the ratios of total benefit between the public (P in Eq. 3) and private sectors are determined, and if the landlord and owners of buildings (ai1) gain the greatest benefit in the private sector, then its cost-sharing ratio could be assumed 0.4 of the total private benefit as in equation 4. For the other private beneficiaries, 0.3 for the consumers using the regenerated and extended services(ai2), 0.1 for tenant (ai3), present(ai4) and future users(ai5) might be determined respectively. The cost sharing ratio of the public may be closer to the private value in the city central area where the public value is important. The revenues(aP + ai5) of selling services created by public investment could be collected by imposing public service fees to business persons who trade them and the residents who benefit from them.

In summary, first, the investment magnitude to produce social value is determined in which market value and social value of the project are equal at the marginal level. And the public cost burden (aP) and private burden will also be determined there.

Second, the cost burdens of individual participants in the creation of the market value should be calculated. Landlords and tenants would gain additional benefits through urban regeneration, for instance, increased land prices(a1) due to regeneration, and larger welfare for tenants(a3) because of improved work conditions. The present customer of central city area will get benefit(a3) as the quality of goods and services improves. If new demand is created in the regeneration facility, the landlord and tenant will get more benefit.

Third, new users of residential and commercial space services expanded after regeneration projects, should also bear the cost of regeneration project(a2). The persons who purchase the new space pay the estate price and the service user pays the service fee.

Fourth, as public values are preserved and improved, landlords, tenants, and customers will also larger benefits. The increases in consumption value of residents of other regions and foreign customers both in the present and future should be counted. Their levels of burdens(a5) will be determined according to their increased values.

After excluding the normal profit for construction companies from the monetary value of total welfare produced by the regeneration project, the cost burdens for those interested parties will be determined. The benefits of current generations who will use the area after regeneration, such as residential tenants, new shoppers and users of the services, will be reflected in the market price.

However, even after the appropriate distribution methods of cost burden have been determined, there will be conflicts of interests within each participants group. For example, the expected levels of benefits among individual buildings and landowners will also be different because of the different appraisals on their building and land prices. Conflicts of interest will also arise from the differences of market values appraised by the public and the private. Constructors, tenants and landlords have different importance from the public on the values of preserving current major functions of central city and the improvement of living standards for future generations. There will be also a conflict of interests between the current customers and those who will be in the city center in the future.

The interests of future customers who come to the city center have to be included in public value. Preservation of mental values is also a public value, or social value, that cannot be reflected in current market values. In addition, the welfare of low-income people and domestic and foreign tourists visiting the region

should be included in the public values, even if there is no direct economic activity there. In order to overcome the gentrification phenomenon after the urban regeneration, the public value such as employment and retention of tenants must be borne by the state or society first.

4. RENEWAL DESIGN FOR SEOUL CENTRAL DISTRICTS OF ENHANCING NATIONAL WELFARE

1. The Effect and Direction of Regenerating Urban Center in Seoul

The landlords and building owners in the Seoul central area will expect the increase of their welfare because the increase of land prices and rents through regeneration. First, according to the long term experience of Seoul citizens, if various high-quality educational and cultural facilities are attracted to the city center and if comfortable apartments for ordinary people and the highest level of private housing are built in downtown area with incentive policies, the economic and social value of the city center could be maximized. On the other hand, they must bear the costs of urban regeneration projects as much as increased welfare.

Second, tenants could increase their well-being, if the regeneration project would be designed keeping continuously businesses and services of existing tenants and if the project would not increase current rent costs, or increase minimally.

Third, customers will benefit from the project if the current quality of goods and services is improved. As services are received in more comfortable facilities, there should be a corresponding increase in their cost burden.

Fourth, many outside customers using the urban central area will use the high quality city services newly renovated. They have to increase their cost burdens as their benefits increase.

Fifth, customers who use new residential and commercial service spaces expanded in urban regeneration are the main consumers of the regeneration project and are subject to cost burden.

Sixth, national welfare will be more maximized if we preserve the historical and cultural values of urban centers to meet the mental and cultural needs of current and future generations. In this case, the city center should be regenerated to satisfy the quality of life of its descendants for hundreds or thousands of years, unlike the city regeneration of remodeling it in the eyes of coming few decades.

In order to satisfy the purpose of maximizing national welfare, stakeholders should freely choose from various options in determining the final urban regeneration model. Then the optimal urban rehabilitation could be chosen that maximizes national

welfare by presenting the interests of each parties and negotiating various regeneration designs for increasing national welfare, a combination of various production methods, and various cost-sharing plans among stakeholders. For example, two sets of three basic designs are respectively presented below: one set for relying major role on private sectors and the other set for emphasizing the public's role of economic, social, cultural and historical values, housing and social integration policies.

First of all, three basic regenerations models initiated by the private are designed. First, private urban regeneration projects are promoted through various ways of cooperation between landlords and private companies as the present prevailing way of regeneration. There will be a combination of different alternatives among them. Major urban regenerations has been privately and initiatively promoted by stakeholders of land and building owners and construction companies, so that the preservation and maintenance of jobs and commercial activities in central areas and the preservation of historical and environmental values are not considered as much as their values in the regeneration process. This is only a shortsighted civil construction project without efforts to maximize national welfare, which ignores preservation and continuation of values accumulated over hundreds of years in the Seoul central area as well as preserving those values for generations to come. That is, they are the only projects improving the discomfort and disorders of old towns. Moreover, the city rehabilitation projects have failed to attract for long time the interest parties in inducing their voluntary involvement in the development plans initiated by the local government.

Second, in order to reduce the resistance of residents against the urban rehabilitation of the government and the sluggishness in the projects and to reduce the loss of social value, there is a way to induce social enterprises to participate in private regeneration projects pursuing the preservation of public value. This scheme has the advantage of actively reflecting social values by maintaining jobs and commercial activities in addition to producing economic values of urban regeneration produced by voluntary efforts of private sectors. On the other hand, if the damage of private interests is large due to the pursuit of social value, there will be a limit of social enterprises in persuading directly stakeholders. Government cooperation may be necessary to obtain the driving force of social enterprises, but it should be a project of being privately led. If the compensation of stakeholder's loss could be made possible by voluntary efforts of social enterprises, the project will be smooth.

Third, if there is a limit to the efforts of social enterprises, they can also induce long-term investment of large companies' surplus capital funds. The involvement of large corporations has the advantage of

eliminating political populism and bureaucratic harm caused by government dependence. This urban rehabilitation design is very creative as a private-led urban regeneration plan. It could lead to productive investment of capital remaining as a surplus capital because it could not find an investment opportunity, which also enables to raise economic growth potentiality and full employment with balanced development of economy and society. But the feasibility is relatively small. If this plan is constrained in the profit pursuits of some large corporations, the public value will be protected to a minimum and its appearance may be the worst option toward the typical gentrification. Thus, the initiative participation of large corporations may be the best option if our society is used well, but could be the worst way to entrust urban regeneration to the greed of capitalism.

Next models are three designs including direct involvement of the government. The government involvement must be carried out to reflect social values. First, national welfare is maximized by responding adequately to the characteristics of the Seoul central city. For example, an urban regeneration could include economic and social values maintained and created for dozens decades after unification of South and North Korea. And the regeneration design of providing permanent lease housing for low-income families, including homeless people, and small rental homes for young and old, as well as the best housing for the wealthy and foreigners can also increase the monetary value of the land of central region. In addition, the housing prices and life of Seoul residents can be stabilized by switching speculative housing demands from the southern region of Seoul to the central district, if existing jobs and commercial activities are maintained and developed to increase the economic value of northern central region, and if modern housing would be provided in the environment where the nature and cultural beauties are harmonized such as old palaces and various historical artifacts and the natural beauty of Namsan, Buaksan, Inwangsan, Naksan, Cheonggyecheon, and streams, The value of the city center created in this design could be the greatest, but it is the public project for decades which would have to require the highest cost. The beneficiaries of private residential services regenerated have to pay for the benefits. Landlords and residents in the region will have the greatest land productivity and will benefit the most from their contribution. It thus makes the adjustment of interest conflicts relatively easier. For the public value and for the benefit of future generations, the state could first pay the costs and then the service fee for beneficiaries or tax on unspecified services can be collected.

The second design of regeneration is an alternative that reduces the level of reflecting public values, since the public value of the Seoul central region is taken account only within 30-50 years, namely for generation

before reunification.

Third, the design is limited to the public value of maintaining minimum current jobs and the economic activity of small businesses..

Lastly, it is more desirable to have a private-led regeneration plan in which the individual creative decision-making capacity can play a major role in preventing government populism and corruption and expanding citizens' freedom of choice. However, since there is a limit to success in private voluntary efforts, various models that cooperate with the public to a certain extent will be possible. For example, if a large company that emphasizes social value can effectively share public investment, it can be the best way to maximize the value of urban regeneration and public value. In other words, it is possible to think of diverse combinations of the three measures presented above, which combines the role of the public with participation of large enterprises. There could be also many ways to combine social enterprises with the public in such a way.

If the government participates in fund raising of the project in the first place, the public funding will increase land productivity and the interests of landowners and private contractors, thus raising the feasibility of policy and the realization of projects. In this case, landlords will be able to get the rising relative levels of their land prices. However, if the role of the public grows, the costs of beneficiaries also must increase more. Thus, the increases of public's role may depend on the beneficiary's potential cost burden. Second, the government's adjustment of the ratio of building size to land will increase the productivity of the land without cost increase, thereby increasing the feasibility of the project by increasing land productivity.

2. Direction of cost burden of regenerating the central region of Seoul

First, the total production cost could be calculated if the urban regeneration model that maximizes national welfare and the production method are determined. The beneficiaries of urban rehabilitation should pay the cost according to the principle of equation (3). Among the created values, economic value is mainly attributed to landlords, building owners and developers, but social value is attributed to contributors of governments and social enterprises, and the cost burden of public investment is compensated by beneficiaries of social value over the long-term. After the burden of the government is determined first, the private burden is imposed on the related parties according to the levels of benefits, in the form (3) through (5). In other words, if the benefits of each party from regeneration project are estimated, they can be used as the price or costs to be borne by each party.

Second, the State can take administrative measures of preventing speculative transactions and to adjust the

ratio of the size of building area to the land size for effective promotion of the project.

Third, the governments could actively involve in the regeneration projects together with landlords, tenants, and developers to overcome financial constraints of government in accommodating lands and structures owned by the private. The governments could directly burden financial cost in addition to administrative measures

Fourth, in private development, the prices of housing and building services are too expensive for the tenants to pay. The prices cannot avoid increasing due to the multi-stage profit sharing by subcontracts from large scale company as a first contractor to managerial constructors, and then down to several more subcontractors. The prices have to be controlled to the levels which the tenants and consumers could be willing to pay. To this end, urban regeneration projects can be promoted openly by the consortium of tenants, landlords, construction companies (small and medium-sized enterprises), and large-scaled companies owning social enterprises.

3. The Neighboring model of matching identical preference

In order to improve the understanding of public values, stakeholders can choose the preferences for the model among a limited number of the various top options (for instance 10) of maximizing national welfare, and then pair the stakeholders with the same highest preference on some models. This is to increase more public welfare than enforcing unilaterally on single option. It is also a harmonization model to reduce the conflicts among social groups. To attain this goal, first, construction blocks are divided into blocks between existing roads in order to reduce conflicts more among stakeholders.

Second, the first step is to establish the alternative maximum national welfare models in the blocks. In the second stage, the degrees and ranks of the preferences of stakeholders including the general public are examined in terms of scale scores. The third step is to determine the block for this group after matching the same preference orderings. Fourth step, if land and building owners more than 70-80% of the selected block agree with the project, the others who are not satisfied with the proposed plan need to be excluded from the urban regeneration project. If they need to be absorbed into the project, those of interest parties who agree to it could purchase them under government warranty.

Third, a relative land price index has to be made to objectify the values of lands and structures in the regeneration area. The first step is to select a reference object of land and building in the block (for instance block i) to determine the relative index (RI_i) of all other objects in the block. The relative price index is

determined by the participation of stakeholders and the public. We could readjust the government's announced public prices to make a table of relative price indexes. In the second step, the total price of the buildings and the lands (PC_i) is determined using the price of the reference buildings and lands of block i and their indices. If the social cost of the regeneration project (SC_i), i.e., maximizing total welfare, is determined finally, then the total cost of city central regeneration of block i (TSC_i) is expressed as:

$$TSC_i = PC_i + SC_i \text{ where } PC_i = \sum RI_{ij} * LP_j$$

PC_i is the summed value of the relative index (RI_{ij}) of building and land i of block i multiplied by the reference building and land prices (LP_j) of block i .

The sum of the monetary values of the maximum welfare resulting from urban regeneration in i block is equal to the sum of the surplus of consumers and stakeholders, and it must be the same with their total project costs. that is, $NW_i = TSC_i$.

5. CONCLUSION

As long as the urbanization period is, there are many conflicts due to different interests in the old and historical city center. Therefore, in order to promote the urban regeneration projects efficiently, the legitimacy can be found in the goal of maximizing national welfare that preserves the economic, social and cultural values of the city in addition to the interests of stakeholders. And a strategy that maximizes their well-being by voluntary participation of stakeholders is more effective than the enforcement of unilateral policies by governments.

To this end, first, the blueprint for urban regeneration should be pursued with the consent of the residents on the basis of various alternatives and designs that maximize the national welfare, taking into account the needs and burdens of the people concerned. The model of matching homogeneous preferences can be a realistic alternative to minimizing social conflict and maximizing public welfare. In order to reflect the public importance of urban centers, it is necessary to reduce the damages caused by private development and to increase publicity by social enterprises. The government can wield the public instrument and support private activities to fully reflect publicity in increasing the importance of public value, such as the adjustment of building area ratio to the unit land, design inspection before government admission of construction, and the size of regeneration project.

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