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Estimating the Costs and Benefits of Local Government Reorganisation: A Case of Korea

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Estimating the Costs and Benefits of Local Government Reorganisation: A case of Korea

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Abstract

This paper intends to bridge the gap between current levels of analysis and what is required for an accurate appraisal to be made of local government reorganisation. In it, we introduce the result of a research project conducted in relation to a local authority reorganisation plan implemented in Korea. The initiative seeks to create a unitary local authority replacing one first-tier and four second-tier local authorities within the first tier, in the hope of reducing the cost of providing services and also of making local authorities more competitive. First, we outline the local government reorganisation process in Jeju Province in Korea. Second, we describe the research strategy employed to estimate the costs and benefits associated with local government reorganisation, and then we introduce the results of the analysis. The research process described here gives us information about what should be included in the categories of costs and benefits, and what methodologies can be applied in estimating these. The analysis shows that the benefits resulting from reorganisation are much greater than the costs in the longer term. It also emphasises that the methodologies by which non-market goods, such as satisfaction with area-wide problem solution and loss of regional identity, can be valued should also be employed to estimate non-market benefits and costs arising from local government reorganisation.

I Introduction

Local government reorganisation is not solely a phenomenon of the West, or of contemporary Korea. In Korea, it has periodically been proposed by politicians or academics as a means whereby local authorities can cope with administrative inefficiency, regional conflicts between the neighbouring local authorities, area-wide problems and administrative duplication. In Korea, in recent times in particular there have been two significant periods in which local government reorganisation has been attempted. The first was 1995–2000, when the 90 neighbouring city and rural local authorities were merged into 40 local authorities. The second major merger is occurring now, in a province called Jeju Province. The aim is to convert one first-tier provincial authority (similar to county government in the UK) and four second-tier local authorities (similar to district government in the UK) within provincial government into one unitary local authority.¹ The difference between the two attempts is that the first represents the consolidation of two or three neighbouring city or rural local authorities without any change in the tier system, while the second entails the creation of a unitary local authority in which the one first-tier local authority and the four second-tier local authorities within it can be converted to a single unitary local authority. If it is created, there will be only one level of municipal

¹ The Korean Government has stated that it intends to convert the existing 250 local authorities into 80 or 90 unitary local authorities in 2010, eliminating one tier between central and local government. Ruling and opposition parties in Korea all agree about this, because they believe that the existing local government tier and boundary system has caused inefficient public service delivery and, more importantly, election-related regional conflict.

government across the entire geographical area, and all municipal services become the responsibility of this newly created authority. In addition, there will be only one political body responsible for making decisions. In this respect, the recent attempt at local government reorganisation is more influential in terms of ripple effect, and more politically and socially controversial in terms of local autonomy discourse.

Since the local government reorganisation process necessitates conflict among the interested parties, it is important to estimate objectively and scientifically the costs and benefits incurred in making the changes, to let ordinary citizens know these, and to let them on this basis decide whether they are in favour of the existing system or of a newly designed unitary local authority. Up until now, there have been very few significant studies of these issues.

The purpose of this paper is not to give a detailed description of the steps involved in estimating the costs and savings arising from the local government restructuring, but to introduce the results of the empirical analysis regarding the potential creation of a unitary authority in Jeju Province in Korea. The methodological process is depicted in a simple way, based on a research project conducted by a team commissioned by the provincial government, that is, Jeju Government in Korea.

Having these backgrounds in mind, this paper (i) presents the methods employed in the analysis of the costs and benefits involved in the restructuring process in Jeju Province in Korea, (ii) demonstrates the results of an analysis of the costs and benefits associated with the potential reorganisation of the one provincial authority and the four second-tier local authorities under the province, and (iii) puts forward some policy implications for other countries engaged in the restructuring of local authorities.

II Overview of the local government reorganisation process

Local government reorganisation is by definition a process by which
Although Sancton (2003) points out that local government reorganisation is the exception rather than the contemporary trend, noting that since 1990, it has occurred only in some countries like the UK, New Zealand and Canada. However, even though it is not prevailing trend worldwide as Sancton indicated, in reality it has happened in other countries like the US and Germany as well, in the name of city-county consolidation and unitary authority or so.

Local government reorganisation including consolidation of the neighbouring local authorities has been periodically proposed as a means for local governments to cope with declining revenues or poor service delivery. The crucial benefit of local government reorganisation is typically argued to be gains from scale economies

At present, there are in Korea 16 first-tier local authorities² (7 metropolitan authorities and 9 provincial authorities), and 234 city and rural local authorities (75 city authorities, 90 rural local authorities, and 69 metropolitan borough authorities within the 7 metropolitan authorities) which are second-tier. This is the result of the city–rural district consolidation scheme, which had lasted from 1995 to 2000. According to *The Special Act on City–Rural District Consolidation*, the neighbouring city and rural districts can be merged into one bigger local authority following a referendum of the voters within the two areas; and as a result, as was mentioned earlier, the 40 consolidated local authorities were created, with financial incentives from central government. Up until now, however, there has been no case, in Korea, of the creation of a unitary local authority, partly because the two-tier, province–district system has been embedded in Korean administrative culture for more than 500 years, and partly because politicians and officials, even in central government, had not attempted local government reorganisation accompanying tier-change, since they know that tier-change reform provokes powerful and indeed uncountable resistance from local politicians, and local government employees in particular. The present government, which came to office in 2003, also knows that local government reorganisation incurring tier-change would be politically burdensome and administratively difficult to implement. However, the Government, which has been focusing on decentralisation and government innovation since it came to power, has decided to support Jeju Province in its move to become a unitary local authority with more autonomous power and special status, in the hope that if such an authority is created, it will become more competitive, both economically and socially. Table 1 shows the main characteristics of Jeju Province.

Because the current *Act on Local Autonomy* stipulates that a local government tier and its jurisdiction can be merged, reorganised or altered by a referendum of the electorates within their boundaries, and also that the provincial authority can take upon itself the whole process, the Jeju provincial authority has been in the process of restructuring one province and four local authorities into one unitary authority since 2003.

Table 1 General description of Jeju Province (budget unit: one hundred million won in Korean currency)

	Area (km ²)	Population	Number of local government employees	Budget
Jeju Province	1,848	553,864	1,398	11,287
Jeju City	256	292,908	980	5,266
Seogwipo City	255	83,525	568	2,850
Bukjeju gun	722	102,189	639	3,618
Namjeju gun	615	75,242	562	3,209
Total	1,848	553,864	4,147	26,233

² In Korea, provincial governments basically serve as an intermediary between the central and city governments. Thus, their administrative systems are smaller versions of the central government's system. City and rural governments deliver services to the residents through an administrative system. Provincial governors and mayors of district (city and rural) authorities are elected every four years, directly by constituents. Each city and rural government has several administrative units which serve as field offices for handling the needs of their constituents.

Source: Jeju Statistics 2004.

Note 1. Gun means rural district.

Note 2. The exchange rate of Korean currency to English sterling is approximately 2000: 1 as of 5 July 2005.

As Table 1 shows, the whole population of the provincial area is around five hundred and fifty thousand. The total number of local government employees is about forty-one thousand, and of these, 1,398 persons belong to the provincial government while around 2,700 work for four district governments. Regarding the budget, about 40 per cent of the total budget is spent by the provincial government and 60 per cent is spent by the four district governments. What should be noted here is that because its area (containing as few as 550,000 residents) has one provincial and four district governments in a two-tier government, the number of local government employees and the size of budget contrasts significantly with those of other local authorities whose legal status is district, not provincial, and which at the same time have more residents than does the whole of Jeju Province. This is because in Korea, once a local entity has gained the legal status of a local government, it is legally entitled to have an internal administrative and political system to provide local public services. Table 2 shows how the area of Jeju Province contrasts with that of a typical city in terms of budget size and number of employees.

Table 2 Comparative characteristics of Jeju provincial area and other cities (as of the end of 2004)

	Population	Budget	Employees	Councillors
Jeju provincial area	553,864	26,233	4,147	57
City A(Cheongju)	626,000	6,293	1,660	25
City B(Suweon)	1,023,000	12,265,000	2,412	40

Note: Figures for the Jeju Province area are the aggregate of the figures of the one provincial and four district governments.

As we see in Table 2, the area of Jeju Province has a much greater budget, and many more employees and councillors, than two district cities, even though its population is less. The reason is that it consists of a two-tier system, and therefore it has one provincial and four district authorities, each having their own councils and employees. This indicates that, from an economic point of view, Jeju Province has legally spent much more of its budget and employed many more employees than other districts. It also signifies that, from an administrative point of view, much of the work carried out in the Jeju Province area has been carried out in duplicate form. For these reasons, many experts have argued that the two-tier system should be replaced by a one-tier unitary authority system, and in this respect Jeju Province can be seen as a pilot.

Since the initiative to reorganise the Jeju provincial and district authorities into one unitary authority was made public, Jeju provincial authority has commissioned a team of professional scholars and experts to conduct a research project aimed at identifying

the potential costs and benefits associated with the restructuring of the one province and four districts into one unitary local authority. The project was completed in September 2004. After workshops, followed by the publication of the project report in 2004 and the subsequent public hearings, the provincial authority decided, on 27 July 2005, to hold a referendum to determine the future of the unitary local authority. The referendum held on that day revealed that 57.03% (82,919) of voters were in favour of the creation of the new unitary authority and 42.97% (62,469) opposed to it. Since the referendum was in favour of reorganisation, central government and Jeju provincial government have since undertaken administrative and legal work prior to the launching of a new unitary authority on 1 January 2007.

III Research strategy

Is there such a thing as economy of scale? What costs and benefits may result from local government reorganisation, and how can they be measured? To answer these questions, we need above all to examine the taken arguments relating to local government reorganisation such as consolidation (here involving consolidation and annexation). Many theoretical studies have been conducted regarding the merits and demerits of consolidation and local government reorganisation.

According to some experts (Carey *et al.*, 1996; Hirsch, 1970; Bunch and Strauss, 1992; Sancton, 2003; Municipal Research & Service Centre of Washington, 2005), local government reorganisation gives rise to cost savings from scale economics, simplification of government bureaucracies and services, elimination of duplication of functions and services, fast processing of administrative matters referred between local and central government, sharing of facilities such as sports stadia and cemeteries, and savings in personnel expenses. These experts argue that small size generally means that individual jurisdictions cannot benefit from possible economies of scale in the provision of various public services, though it can also mean that service provision, though more expensive, is more responsive to residents' needs. Furthermore, recent studies in Korea suggest that consolidation also benefits local economic development and the comprehensive planning of land use.

By contrast, others (Hong, 1997; Park, 1999; Rausch, 2005) argue that local government reorganisation causes loss of regional identity, weakening of regional representation, and the relocation in rural districts of unwelcome and disliked facilities such as the sewerage system and crematorium facilities. The Municipal Research & Services Center of Washington (2005) indicates that one of the problems local government reorganisation causes is loss of the community's 'rural character', and this may cause opposition, from local politicians in particular. The UK experiences with reorganisation also point out that the issue of community identity figured prominently in the early stages of the Local Government Review (Cope *et al.*, 1997).

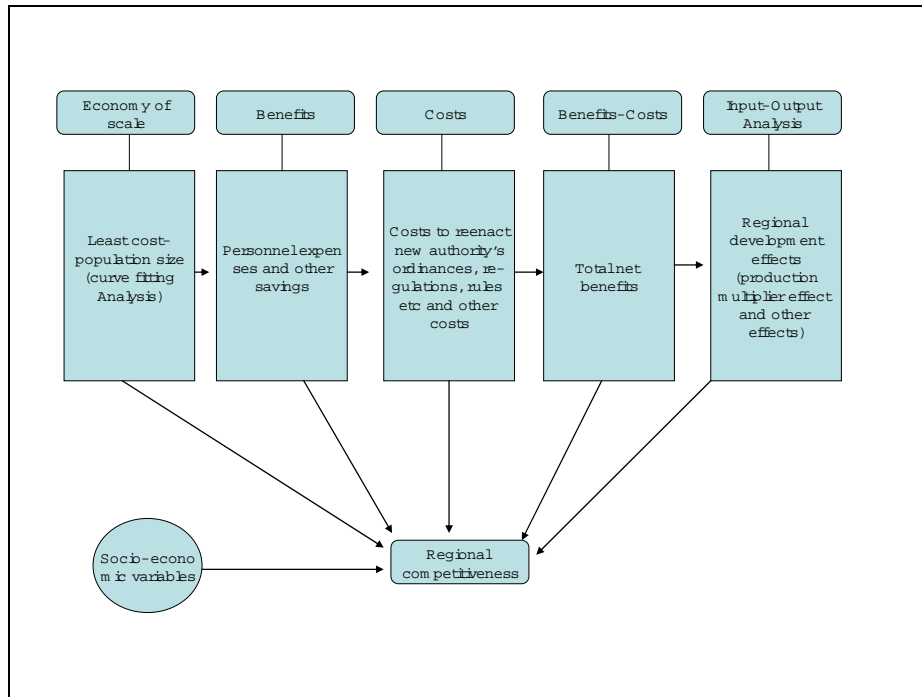
There are, then, pros and cons to local government reorganisation. In the light of this, what is crucial is to conceptualise and then quantify the potential benefits and costs which local government reorganisation can produce.

Most research conducted in the UK on the benefits and costs associated with local government reorganisation has focused primarily on costs rather than on savings or benefits. For example, Chisholm (2000, 2002, 2004) emphasises the fact that transition costs involved in changing the structure of local government in the 1990s have been seriously underestimated, and that the claimed savings prove hard or even impossible to identify. However, his research does not deal with the potential savings involved in reorganisation, only the potential costs. In addition, in the UK, the financial model produced by PriceWaterhouseCoopers, to which the government guidance refers, develops the concept of the 'cost of being in business' and subdivides the cost into 'corporate and democratic costs' and 'service strategy costs' (www.boundarycommittee.org.uk/ourwork/LocalGovReviews.cfm).

The Government's model is too crude, and does not cover the total costs and benefits of reorganisation. It should be able to quantify the expected costs and benefits as well as the transition costs and ongoing costs. As Chisholm (2004: 119) has pointed out, in using the PWC model, and by referring to the future impact of policy decisions on new unitary local councils, the Boundary Committee for England has implicitly turned its back on any estimation of transition costs and has accepted an inadequate basis for comparing ongoing costs. It is regrettable that Chisholm does not mention the importance of the estimation of the savings or benefits arising from the reorganisation.

On the other hand, it appears that the UK Government has emphasised that recurrent savings may accrue when the costs of creating a new unitary authority are compared with the pre-existing costs (Chisholm, 2004: 18). No methodologies exist that are sophisticated enough to measure them. It appears that, in the UK, no significant documents have been provided in which the costs and benefits involved in local government reorganisation are estimated systematically, implying that the electorates living in the areas in question have not been able to ascertain what exactly reorganisation will bring to them. As a result, they may have been influenced by the biased information given out by the interested parties.

In this context, it is essential that we attempt to identify the costs and benefits associated with the reorganisation and quantify them. Table 3 and Figure 1 explain the benefits and costs to be analysed in this study.



<Figure 1> Analytical framework

<Table 3> Methodologies to be employed for the study

	Research focus	Methods employed	Remarks
Economy of scale	Least-cost population size	Curve-fitting analysis	Benefit-Cost analysis
Benefits	Personnel expenses	Multiple regression analysis	
	Running costs	Multiple regression analysis	
	Election costs	Multiple regression analysis	
	Prevention of duplicate investment	Documentary analysis and multiple regression analysis	
	Prevention of overlapped projects	Documentary analysis and regression analysis	
	Reduction of processing time	Documentary analysis, interview, regression analysis	
Costs	Costs to re-enact regulations	Documentary analysis	
	Costs of rearranging documents	Documentary analysis and regression analysis	
	Costs of restructuring organisational structure	Documentary analysis and interview	
	Costs of publicising new authority	interview	
	Costs of replacing road signposts	Documentary analysis	
	Costs of loss of community identity	Choice Experiments	

Benefits-Costs	Total net benefits		
Regional Development Effects	Production multiplier effect	Input-Output Analysis	
	Employment multiplier effect		
	Income multiplier effect		

The potential costs and benefits resulting from reorganisation, and the methodologies employed to measure them, can be summarised under a number of headings, as follows.

1 *Economy of scale?*

Does economy of scale exist in local government service provision in Korea? If so, which population size in local government involves the lowest cost? Curve fitting, known as regression analysis, was employed to identify whether economy of scale existed in each service area and, if so, to find out which population size involved the lowest cost. By means of this analysis, we can determine the ‘best fit’ line or curve for the average cost per person of local government service provision.

2 *Benefits*

Benefits can be derived from the following six kinds of savings.

□ Savings of personnel expenses

Each local authority has its own personnel expenses for local government employees, and these expenses normally depend on the area size and population size of each local authority, the degree of its financial autonomy, and other factors. Using regression analysis of data for a total of 234 district authorities in Korea, regression equations can be derived, via which the personnel expenses of the potential unitary local authority under observation can be estimated. For example, if we assume that the degree of personnel expense increases by area size, population size and degree of financial autonomy, we can determine the regression equation and line which can tell us which variable best predicts the size of personnel; we can then also predict the personnel expenses of any local authority provided that we know the area size, population size and degree of financial autonomy of the authority in question. In this paper, we will adopt multiple regression analysis for estimating the savings in personnel expenses.

□ Savings of running costs

Similarly, multiple regression analysis will be employed to measure the savings of running costs arising from the restructuring.

□ Savings of election costs

The number of electoral wards to be reduced, the legal expenses for the election of each candidate, the potential number of candidates in each ward, and number of

elections projected during the next ten years will be estimated. Multiple regression analysis will also be employed.

- Savings from prevention of duplicate investment in public facilities (e.g. crematoria, sports stadia)

Information about the type of public facilities (e.g. crematoria, sports stadia) which ordinary local authorities can share with each other, the number and capacity of the public facilities the five local authorities have, the optimum capacity of the public facilities which the ordinary local authorities have, and other related information, will be included in the estimation of savings.

- Savings from prevention of duplicated projects

The type, size and nature of the projects implemented by the five local authorities during the previous year will be analysed.

- Effect of reduction of time spent in processing customer services

A comparative analysis will be made of the time spent in processing customer services through a two-tier system and the time spent in a single-tier system.

3 *Costs*

Costs can also be derived from the following kinds of potential losses.

- Costs to re-enact a new unitary authority's ordinances, regulations, rules, etc.

The estimated total number of the ordinances, regulations and rules which a potentially created unitary local authority might entail, the average time spent in enacting a given regulation, and the average unit cost will be considered in the estimation of costs.

- Costs of rearranging official documents and archives

The estimated time spent in rearranging the official documents and archives, and the unit cost spent in rearranging a document, will be considered.

- Costs of restructuring new unitary authority organisational structure

The costs involved in diagnosing the potential unitary authority will be considered.

- Costs of publicising new unitary authority to residents

The costs of publicising the creation of the unitary authority in local daily newspapers and television broadcasts will be included in the analysis.

- Costs of replacing road signposts with newly named ones

The costs of replacing existing road signs will also be included.

□ Costs of loss of community identity

The costs of the loss of community identity which residents within the area might experience will be examined. For this analysis, *choice experiments* (CE) will be employed. In a CE, individuals are given a hypothetical setting and asked to make a choice among several alternatives in a choice set, and they are usually asked to perform a sequence of such choices (Alpizar *et al.*, 2001: 84). Hence, CEs can be useful tools for valuing non-market goods in the areas of local government reorganisation (Willis, 2002). Valuation of non-market goods has been neglected in the estimation of the benefits and costs connected with reorganisation. The research project conducted for Jeju Province applied the CE method to assess qualitatively related non-market goods, including satisfaction with area-wide problem solutions, satisfaction with the faster processing of customer services such as licence and planning permission, and loss of local identity and political representation (see Jeju Development Institute, 2004).

4 Regional development effects

The regional Input–Output table plays a crucial role in predicting the effect of investment by an industrial sector on the other sectors. If benefits exceed costs, we can assume that the difference can be reinvested within the newly created unitary authority. Supposing it is invested in the construction area among other areas, the regional development effects equal the three effects (production multiplier effect, employment multiplier effect, and income multiplier effect) which can arise from the investment of the exceeded benefits in construction. In this research, we estimate the effects of the local government restructuring on regional development, on the assumption that the savings arising from it are invested in the construction area within the region. Since the regional development effects can be classed as three – production, employment and income – the effects will also be presented respectively by regional Input–Output analysis:

□ Production multiplier effect

The effects on regional production of the savings arising from the reorganisation.

□ Employment multiplier effect

The effects on regional employment of the savings arising from the reorganisation.

□ Income multiplier effect

The effects on regional income of the savings arising from the reorganisation.

Benefits and costs stretch out over time. In this estimation, the time period for measurement is assumed to be ten years (2007–16). Since individuals tend to prefer the present to the future, and since human preferences are paramount, this ‘present orientation’ can be accounted for. Future benefits and costs are therefore discounted,

at a particular ‘discount rate’ (Pearce, 1998: 87). In this research, however, we do not discount the discount rate in considering the annual rate of the price increase.

IV Analysis and discussion

1 Data

Socio-economic data for all the local authorities in Korea are from the *Local Government Finance Yearbook 2004* published by the Ministry of Government Administration and Home Affairs, and the official documents and data which were used to estimate the costs and savings in areas such as duplicated projects were derived from the Jeju provincial authority and the four district authorities. Data for CE were collected from 810 local residents living in Jeju Province by the Stated Preference questionnaire method. Data for the regional Input–Output analysis were derived from *Regional Input–Output Statistics 2004*, published by Korea Bank.

2 Empirical results and discussion

(1) Economy of scale

Here, we are concerned with how costs vary according to local government population. In order to identify whether an economy of scale exists in local government service provision in Korea, and if so which population size involves the lowest cost, curve-fitting analysis was applied.

Those who are against the creation of a large single-tier governing structure argue that the least costly and most efficient size of government may differ for different services; that is, efficiency and cost savings may be different for transport than for social services. In other words, some services may benefit from economies of scale (lower cost per unit) if assigned to larger units of government, while other services may suffer from diseconomies of scale (higher cost per unit). Therefore, statistics detailing the average cost per person for 21 subdivided budget items in 234 district local authorities were utilised as a dependent variable for curve fitting, and the population size of local government was taken as the independent variable.

Figure 2 shows that a dependent variable (p_{total}), which is the average total budget per person in local authorities, varies according to variation in an independent variable ($popula$). Total budget per person in local authorities (p_{total}) is high when the population size of local authorities ($popula$) is small (below 200,000), is lowest when population size is around 600,000, and increases again as population size increases above 600,000. Thus we can say that economy of scale does exist in service provision in Korean local government. Equally, Figure 2 shows that the budget per person for special projects in local authorities also varies as the population size of local government varies. Likewise, a further 19 budget items were also analysed and the results are presented in Table 4.

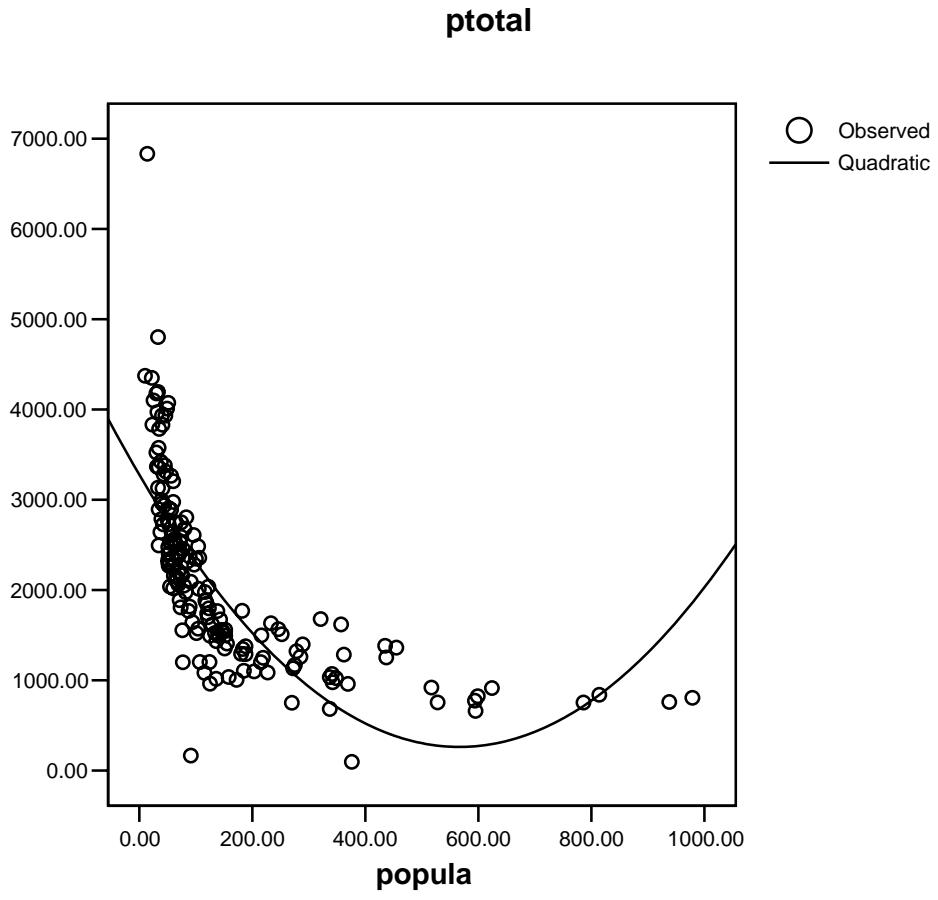


Figure 2 Curve-fitting analysis result graph (ptotal) (population unit: one thousand)

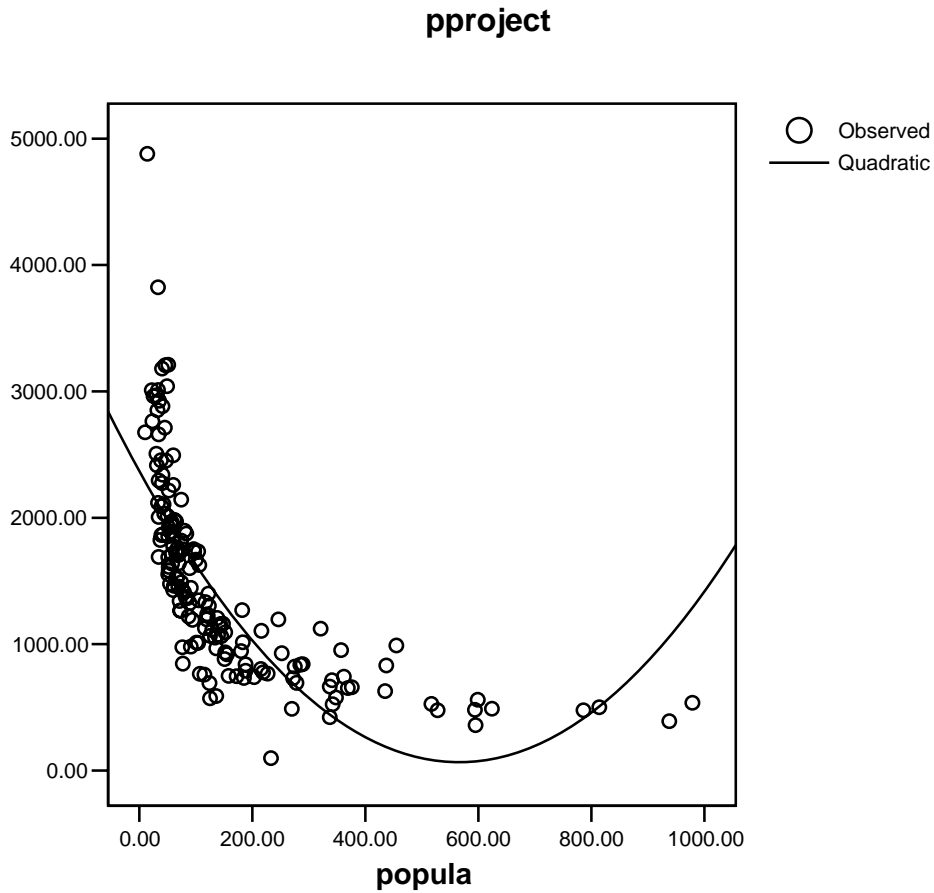


Figure 3 Curve-fitting analysis result (pproject) (population unit: one thousand)

Table 4 Least-cost population size and regression coefficients

Budget item	Estimated regression coefficients					R ²	Least-cost population size
	F.	Sig.	B0	B1	B2		
1	87.66	0.000	748.391	-2.4817	0.0022	0.52	580,000
2	97.64	0.000	361.667	-1.2749	0.0011	0.55	550,000
3	68.95	0.000	382.530	-1.1887	0.0013	0.46	550,000
4	111.74	0.000	2370.62	-8.1799	0.0072	0.58	600,000
5	113.55	0.000	1693.31	-6.2188	0.0054	0.59	600,000
6	40.50	0.000	672.076	-1.8456	0.0017	0.34	580,000
7	108.29	0.000	685.106	-2.4797	0.0022	0.58	580,000
8	105.30	0.000	658.072	-2.3791	0.0021	0.57	580,000
9	73.00	0.000	23.2871	-0.0855	0.006	0.48	600,000
10	101.34	0.000	1122.87	-3.6205	0.0032	0.56	580,000
11	18.19	0.000	132.999	-0.3688	0.0003	0.59	580,000
12	50.08	0.000	340.646	-1.0320	0.0009	0.49	580,000
13	87.53	0.000	269.719	-0.7513	0.0006	0.52	600,000
14	37.78	0.000	378.249	-1.4698	0.0013	0.32	550,000
15	81.06	0.000	1240.69	-4.8172	0.0043	0.50	550,000

16	40.05	0.000	498.196	-1.9236	0.0016	0.34	600,000
17	7.62	0.000	103.283	-0.4276	0.0004	0.39	550,000
18	41.12	0.000	605.779	-2.2647	0.0021	0.34	580,000
19	12.00	0.0138	123.8982	-1.1311	0.0001	0.23	500,000
20	14.04	0.019	28.0105	-2.2268	0.0065	0.25	600,000
21	11.15	0.0319	52.156	-3.123	0.0065	0.21	600,000

Source: Jeju Development Institute (2004: 144).

Note: 1. Total budget per person, 2. Personnel expense per person, 3. Ongoing cost per person, 4. Special project cost per person, 5. Auxiliary project cost per person, 6. Self-auspice project cost per person, 7. Total administrative cost per person, 8. Regulation-making and election cost per person, 9. General management expenditure per person, 10. Social development cost per person, 11. Education and culture cost per person, 12. Health and environment improvement cost per person, 13. Social security cost per person, 14. Housing and regional development cost per person, 15. Economic development cost per person, 16. Agricultural development cost per person, 17. Regional economy cost per person, 18. Resources preservation cost per person, 19. Transport management cost per person, 20. Civil defence cost per person, 21. Civil defence management cost per person.

The 21 average cost curves all are ‘U’ shaped, and so the optimal (least-cost) population corresponding to the lowest point of the ‘U’ curve ranges from 550,000 to 600,000 (except 500,000 in the case of transport management cost). In other words, we can assume that the services in local authorities can be provided at the lowest cost where the population of each local authority ranges from 550,000 to 600,000. All variables, other than local government population, which may affect the local government cost can be assumed to be already evaluated and treated as constants in this function.

(2) Benefits and costs

Table 3 shows how many savings the potential unitary authority can produce. This analysis is based on the assumption that the unitary authority will have been created by mid 2006 and will be operating in 2007. As Table 3 indicates, the benefits being produced in 2007 are estimated at approximately 1,374.4 hundred million won, and account for around 25 per cent of the total running costs of the five local authorities to be reorganised, and around 5 per cent of their total budgets.

Table 3 Estimated costs and benefits associated with the restructuring by year (unit: one hundred million in Korean currency)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
B1	36	72	108	144	180	216	252	288	324	360
B2	710	710	710	710	710	710	710	710	710	710
B3	9.4				9.4				9.4	
B4	526.2	526.2	526.2	526.2	526.2					
B5	141.8	141.8	141.8	141.8	141.8	141.8	141.8	141.8	141.8	141.8
B6	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5
B Total	1,499.9	1,506.5	1,542.5	1,578.5	1,623.9	1,124.3	1,160.3	1,196.3	1,241.7	1,268.3
C1	1.65									

C2	82.5									
C3	5									
C4	10.8									
C5	10									
C6	15.6	15.6	15.6	15.6	15.6					
C	115.55	15.6	15.6	15.6	15.6					
Total										
B-C	1,374.45	1,480.9	1,536.9	1,562.9	1,618.3	1,124.3	1,603	1,196.3	1,241.7	1,286.3

Source: Jeju Development Institute (2004: 158).

Note 1. B1: savings of personnel expenses, B2: savings of running costs, B3: savings of election costs, B4: savings of overlapped facilities, B5: savings of overlapped projects, B6: effect of reduction in processing time of customer services, B TOTAL: benefit total, C1: costs to re-enact ordinances, C2: costs to rearrange official documents, C3: costs to publicise, C4: costs to replace the road signposts, C5: costs to diagnose organisation, C6: costs of loss of community identity, C TOTAL: cost total, B-C: benefits-costs.

(3) Regional development effects

Table 4 shows how many regional development effects can be produced by the savings from reorganisation. As was indicated earlier, we assume that the savings will be invested in the construction industry within the newly created unitary authority area. As Table 4 shows, the production multiplier effect is estimated at 1,115.5 hundred million won in 2007 and will increase as time goes on. Employment and income multiplier effect will also increase year by year, and the three effects account for approximately 20 per cent of the total budgets of the five local authorities in 2007 only.

Table 4 Regional development effects (unit: one hundred million in Korean currency; employees)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
P.M	1,155.6	1,311.6	1,359.6	1,407.9	1,468.6	1,504.5	1,552.4	1,600.6	1,661.3	1,696.9
E.M	1,744.5	1,979.9	2,052.6	2,125.3	2,217.0	2,271.1	2,343.4	2,416.2	2,507.8	2,561.6
I.M	1,402.9	1,592.2	1,650.7	1,709.2	1,782.9	1,826.5	1,884.6	1,943.1	2,016.8	2,060.0
Total	4,303	4,883.7	5,062.9	5,242.4	5,468.5	5,602.1	5,780.4	5,959.9	6,185.9	6,318.5

Source: Jeju Development Institute (2004: 156).

Note: P.M.: production multiplier effect, E.M.: employment multiplier effect, I.M.: income multiplier effect.

V Policy implications and conclusions

Changing the structure of existing local government would inevitably entail costs and produce benefits. In Korea, for instance, it appears that few empirical studies have been conducted examining the benefits, whereas most studies on reorganisation (except reports from government) emphasise the huge transition costs. This trend also applies to the UK. In order to understand what reorganisation can bring to the

ordinary citizen, however, not only costs but also benefits should be estimated objectively.

In this paper we have presented a framework for estimating the costs and benefits associated with local government reorganisation and applied it to Jeju Province in Korea. The policy implications from this analysis can be summarised as follows.

One. It appears that, up until now, the benefits arising from local government reorganisation have been underestimated, for two possible reasons. The first is the belief that they cannot be ascertained without the structure of the newly created unitary authority being known. The second is that estimating them precisely is assumed to be too difficult. This tendency appears to apply to the UK as well. However, analysis of the Jeju Province case shows that the benefits can be quantified, despite the limitations.

Two. Economy of scale does exist in public service provision in local government. The average cost curve is 'U'-shaped, and the population corresponding to the lowest point of the 'U' curve ranges from 550,000 to 600,000. The fact that this minimum occurs at a population of between 550,000 and 600,00 indicates that, in the case of Jeju Province, we are examining a reorganised unitary authority consisting of that population that yields an 'optimal' (least-cost) public service to ordinary citizens. It also implies that the current 234 district authorities in Korea could be consolidated into around forty local authorities.

Three. It is predicted that in the case of Jeju Province, at least 25 per cent of the total running costs of the five local authorities (one provincial and four district authorities) in question can be saved. This represents a contrast with UK studies. As was mentioned earlier, many studies (e.g. Chisholm, 2004; Leach, 1998) conducted in the UK emphasise that the higher ongoing costs and transition costs would never be paid. Even though this reorganisation plan for Jeju Province has not yet been put into practice, the research result was accepted by the workshops and seminars which were conducted after the research project was reported. The difference between the Jeju case study and the UK studies may arise partly because in the UK the potential savings have rarely been estimated in a quantified way in academia and government, and partly because sophisticated methodologies have not been applied to quantify costs and benefits in relation to restructuring.

Four. It is essential that appropriate methods of valuation of non-market goods such as the solution of area-wide regional problems, and the loss of regional identity and representation arising from reorganisation, should be used to calculate change in the level of non-market goods. For this, *choice experiments* are recommended. The research project conducted for Jeju Province applied the CE method to assess qualitatively related non-market goods, including satisfaction with area-wide problem solutions, satisfaction with the faster processing of customer services such as licence and planning permission, and loss of local identity and political representation. The costs arising from loss of local identity on the part of residents within the area was estimated at 7.8 billion won in Korean currency (approximately £3.9 million) for the five years from 2007.

Five. The analysis of the costs and benefits involved in local government reorganisation should cover regional development effects by regional Input–Output analysis so that the production multiplier, income multiplier and employment multiplier effects can be derived. These effects are very important tools whereby interested local people can quantify and so easily understand what advantages the reorganisation scheme would bring to them. Since the reorganisation process inevitably entails tension and conflict between the local interests of communities and wider interests (Chisholm, 2004: 114), clear and tangible evidence should be presented to make interested local people aware of the benefits and costs arising from the reorganisation scheme. In the case of Jeju Province, the Input–Output analysis result effectively served to convert opponents into supporters.

In conclusion, what is important in the field of local government reorganisation is that further studies should be provided in which the benefits are also estimated and included in the analysis table. It appears that, up until now, more documents have been provided emphasising the associated costs than documents that objectively weigh costs and benefits. For this, a combination of quantitative and qualitative analysis is required.

References

Alpizar, F., Carlsson, F. and Martinsson, P. (2001) Using choice experiments for non-market valuation. *Economic Issues*, Vol. 8, Part I, pp. 83–107.

Bunch, B. S. and Strauss, R. P. (1992) Municipal consolidation: an analysis of the financial benefits for fiscally distressed small municipalities, *Urban Affairs Quarters*, Vol. 27, No. 4, pp. 615–29.

Carey, M., Sprinvasan, A. and Strauss, R. (1996) Optimal consolidation of municipalities: an analysis of alternative designs, *Socio-Economic Planning Science*, Vol. 30, No. 2, pp. 103–19.

Chisholm, M. (2000) *Structural Reforms of British Local Government: Rhetoric and Reality* (Manchester: Manchester University Press).

Chisholm, M. (2002) The cost of local government structural reorganisation in Great Britain during the 1990s: Environment and Planning C, *Government and Policy*, 20, pp. 251–61.

Chisholm, M. (2004) Reorganising two-tier local government for regional assemblies, *Public Money and Management*, April, CIPFA, pp. 113–20.

Cope, S., Bailey, M. and Atkinson, R. (1997) Restructuring local governments in Hampshire: a case of mistaken community identity, *Public Administration*, Vol. 75, pp. 49–65.

Hirsch, W. Z. (1970) *The Economics of State and Local Authorities* (New York: McGraw-Hill).

Hong, J. H. (1997) *Analysis of Impacts of City–District Consolidation*. KIPA Research Report (Seoul: KIPA).

Jeju Development Institute. (2004). *Report on Creation of Jeju Special Unitary Authorities*. Jeju: Jeju Development Institute.

Leach, S. (1998) *Local Government Reorganisation: The Review and Its Aftermath* (London: Frank Cass).

Municipal Research & Service Centre of Washington (2005) *Annexation Handbook*. Accessed 20 April 2005 at www.Mrsc.org/publications/textah.aspx

Park, J. K. (1999) A Study of Municipal Consolidation. Ph.D. thesis, Seoul National University.

Pearce, D. (1998) Cost–benefit analysis and environmental policy, *Oxford Review of Economic Policy*, Vol. 14, No. 4. pp. 84–100.

PriceWaterhouseCoopers (2003) *Research on Modelling the Costs of Local Government Reorganisation* (London).

Rausch, A. (2005) Municipal mergers in rural Japan. Discussion paper 2005, *Electronic Journal of Contemporary Studies*.

Sancton, A. (2003) Why municipal amalgamations? Presentation at Municipal–Provincial–Federal Relations in Canada Conference, May 2003. Accessed 15 February 2004 at www.iigr.ca/conferences/090503/pdfs-09050/sancton.pdf. <http://www.boundarycommittee.org.uk/our-work/LocalGovReviews.cfm>

Tomaney, J. and Mawson, J. (2002) *The State of the Regions* (Bristol: The Policy Press).

Willis, K. (2002) Stated preference and the estimation of environmental values, *International Journal of Environmental Studies*, Vol. 59, pp. 635–46.

