

Research Article

The Analysis of Feasibility of Sale of Public Sports Center in Korea

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Received 28 April 2022; Accepted 5 July 2022; Published 8 September 2022

Academic Editor: Luigi Aldieri

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The purpose of this study is to analyze the feasibility of selling the public sports center and to verify the feasibility of selling the public sports center. We analyze the feasibility of the wholesale including management rights and the feasibility of the stake sale method to maintain management rights. Based on the financial data collected through the National Sports Promotion Corporation, we estimated the average cash flows of the Bundang and Ilsan Public Sports Centers by the year 2020 and the past five years (2016–2020). The present value is calculated through the cash flow, and the NPV (net present value) is used as the method. In conclusion, firstly, the wholesale (bidding) method is expected to lose some of the national treasury costs due to the difference between the appraisal value and the sale price. Although the public sports center has set options for sustainable operation, it is difficult to guarantee continued operation, and the program can be expected to be changed and increased. Because of this, it is difficult to maintain its function as a public sports center, and the loss of the national treasury is expected. As a result, the private sale (bidding) method is unlikely and is considered inappropriate. Secondly, in the case of stake disposal, it is unlikely that private investors will be able to sell their stakes considering the profitability and cash flow of the two centers, as stable profitability and dividend payout is an important criterion for private investors. Therefore, it is more realistic to sell to a structure that can fully reflect private business techniques through in-kind investment, and it is desirable to pursue a share transfer or additional stake disposal after securing a certain portion of profitability through the issuance of convertible bonds.

1. Introduction

One of the characteristics that appear in modern society is that welfare is recognized as an important factor in life. In particular, the concept of welfare is not simply a matter of food, clothing, and shelter but is being interpreted by expanding it to a part that quality of life. As a result, welfare through sports has entered a new phase, and the role and value of public sports centers to realize this are continuously increasing.

As part of the national policy, the Korean government continues to expand public sports facilities in accordance with the five-year Korea sports promotion plan [1], and 220 national sports centers are operating nationwide with the aim of one per city, county, and district. With such efforts, the participation rate of national sports for all is about 60.1% as of 2020 [2]. However, despite the continuous supply of public sports facilities, the area of sports facilities (3.89 m^2)

per capita is currently only 66.3% of the appropriate supply level (5.73 m^2), and public sports facilities for sports welfare are still insufficient.

In response, the Korea Sports Promotion Foundation established public sports centers in Bundang, Ilsan, Pyeongchon, Dunchon, and public athletes' villages from the late 1980s to the early 1990s to improve the quality of life and expand the base of daily sports. Through this, the public sports center faithfully played a role in realizing welfare through sports for residents of the metropolitan area and nearby Gyeonggi Province as a public sports facility. However, since 2000, controversy over the sale of the public sports center has begun as the Korea Sports Promotion Foundation's "Operational feasibility by direct management" has been raised with the aim of resolving inefficiencies and introducing advanced management techniques.

In addition, the Korea Sports Promotion Foundation was established as a public institution for sports promotion

in April 1989 in accordance with Article 24 of the Korea Sports Promotion Act after the Seoul Olympics. Since then, projects for the creation, management, and sports promotion of the Korea Sports Promotion Foundation have been the main tasks over the past 20 years [3]. However, it was pointed out that the operation of the public sports center contradicts the role of fundraising and fund management, the main task and purpose of the Korea Sports Promotion Foundation. In addition, as negative opinions have been raised on the necessity of direct implementation of the sports promotion project, controversy continues over the sale of the center. As a result, the Public Sports Center was sold in May 2009, starting with the sale of the Public Sports Center in Dunchon and Pyeongchon in 2003. Since then, the sale of Bundang and Ilsan Public Sports Centers has continued.

However, looking at the previously promoted sale cases, Pyeongchon and Dunchon Public Sports Centers were changed to wedding halls and hospitals after the sale in 2003. In the case of the Dunchon Public Sports Center, it avoids facility investment and rents and operates the sports center space. In addition, it was auctioned off several times during the sale process and sold for the final KRW 10.5 billion, but the current development was expected to accommodate KRW 35 billion, resulting in a loss of about KRW 25 billion [4]. In general, facilities of government public institutions that were sold by bidding after the participatory government in Korea averaged 103.7% compared to the appraised price. Compared to +3.7% of profits, it can be seen how much damage they took to sell the Public Sports Center. The private sale of public institutions is ultimately carried out to increase government operational efficiency and compensate for the deficit through the sale [5]. In the above case, the sale of the Public Sports Center not only failed to reduce the economic burden but also raised the question of whether it was reasonable to judge the evaluation of the Public Sports Center based on economic returns.

Therefore, it is judged that it is very important to analyze the feasibility of the sale and establish an implementation strategy. The debate is similar in that Bundang and Ilsan Public Sports Centers, which are currently under discussion on the sale, have already been auctioned off several times during the sale process, and no bidders have appeared, but the government's plan for the sale has changed easily. Therefore, in order not to repeat the existing problem, an empirical analysis of the validity of the sale is required, and research on how much value should be recognized if sold.

Looking at previous studies related to this, studies on service quality and satisfaction with the use of public sports centers [6, 7], customer trust and loyalty [8, 9], and related workers' job satisfaction and organizational culture [10, 11]. In addition, studies on the sale of public institutions include a study on the sale of existing real estate following the relocation of public institutions to provincial areas [12], a study on improving the management of state-owned property [13], and a study on the sale system of state-owned [14]. However, there is no research on the sale plan or value analysis for the sale to resolve the controversy over the sale of the Bundang and Ilsan Public Sports Centers. Therefore, in order to decide on the controversy over the sale of the Public

Sports Centers in Bundang and Ilsan, an empirical analysis of the feasibility of the sale of the Public Sports Center should be prioritized, and a study on rational measures for the sale is needed.

Therefore, this study aims to analyze the feasibility of the sale of the Public Sports Center by dividing the sale of the entire sale, including management rights, and the sale of shares to maintain management rights in two ways. Through this, it is intended to prevent the harmful effects of the lowest bidding method in the existing sale case and ultimately verify the validity of the controversy over the sale of the Public Sports Center.

2. Research Method

Based on the financial data collected through the Korea Sports Promotion Foundation, the average cash flow by year for the 2020 and past five years (2016–2020) of the Bundang and Ilsan Public Sports Centers was estimated. In addition, the present value was calculated assuming that the center building was sold after operating the center for the next 10 years. The current value calculation method used the net present value among various ideal investment plan determination techniques. The net present value method measures the investment plan from the present value of discounting future cash inflows from investments at appropriate capital costs to the amount deducted from cash outflows from the current investment [15], and if the net present value is greater than 0, the investment can be determined. In addition, the advantage of the net present value method is that the temporal value of money can be considered, and investment proposals can be evaluated according to the future cash flow predicted through investment and the opportunity cost of capital. Since the investment plan focuses on cash generated rather than accounting profits, the decision maker's voluntariness or accounting randomness can be excluded from the valuation of the investment plan, and the principle of value acidity is applied, making it a suitable technique to choose an investment plan to maximize financial value.

The method of net present value is one of the main criteria for determining the validity of public projects in cost-benefit analysis. Net present value is a method of evaluating the validity of a public project based on net benefits converted into the net present. In other words, the net present value is the difference between the present value of the benefit and the present value of the cost, and if the net present value is greater than zero ($NPV > 0$), the project is considered to have economic feasibility.

The costs and benefits of public works do not occur at once but over the years. However, since the feasibility of public projects must be evaluated at the present time, it is necessary to compare both costs and benefits incurred in the future by converting them into present values. In this way, converting all future costs and benefits to present value means discounting to present value, and the interest rate applied at this time is called the discount rate. In other words, the discount rate is the interest rate that reflects the

preference for time, which should be chosen to match the opportunity cost of the resources used.

The net present value method is evaluated as the most superior among the capital budget techniques, including reflecting the time value of cash flows, establishing the value-added principle, and the existence of a unique solution. In other words, the net present value reflects the time value of money by discounting all cash flows at different times to the present value, and the establishment of the value-adding principle enables the evaluation of the value of individual investments. Finally, the net presentation method is unique, that is, because it has a single outcome value, it can consistently determine whether to invest, unlike other evaluation techniques with multiple outcome values, preventing confusion in investment decisions.

The formula for the net present value method is as follows:

$$NPV = PV(ci) - PV(co) = \sum \left\{ \frac{CF_t}{(1+R)^t} \right\} I_0, \quad (1)$$

where $PV(ci)$: present value of cash inflow, $PV(co)$: present value of cash outflow, CF_t : cash inflow from period t , I_0 : investment amount, and R : discount rate.

In addition, the main assumptions used in the simulation of the net present value method are as follows:

Discount rate: 5%

Cash flow by year: assume that the average cash flow in 2020 and the past five years (2016–2020) occurs as it is due to past cash flow performance

Inflation rate: not reflected in both profits and expenses

Reinvestment such as maintenance and renovation: assume that the past level remains the same and that there is no additional investment

Operating period: 10 years

The sale value of the building after 10 years: considered to be the same as the current appraisal value (optimistic assumption)

The work of evaluating and prioritizing public works through the method of net present value depends greatly on what discount rate is applied. If the discount rate is set too high, the net present value decreases, so socially necessary projects can be rejected, and if the discount rate is set too low, unnecessary projects can be evaluated as valid projects, so determining the appropriate discount rate is a very important task. In general, the high discount rate is advantageous for the evaluation of short-term public projects where benefits occur intensively over a short period of time, and the low discount rate is advantageous for the evaluation of long-term public projects where benefits occur over a long period of time.

The depreciation cost is a “noncash cost” and is a re-investment for permanent business operation, and although the actual cost of remodeling and facility maintenance has already been paid, it is used as a conservative method to add cash to the balance [3].

Based on this research method, the validity of the sale of Bundang and Ilsan Public Sports Centers was analyzed. The

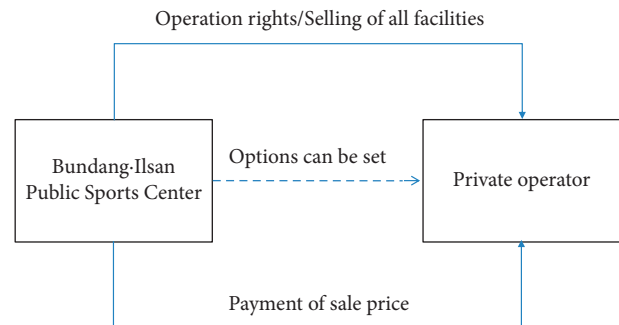


FIGURE 1: The overall sale structure of the Bundang-Ilsan Public Sports Center.

validity of the sale was analyzed by dividing it into the entire sale (bidding) and the sale of shares.

3. Research Results

3.1. Results of the Feasibility Analysis of the Entire Sale (Bidding). The overall sale (bidding) method sells all facilities and operating rights of the Public Sports Center to private companies, showing differences in the possibility of sale depending on the business feasibility of Bundang and Ilsan Public Sports Centers and the level of the sale price. In addition, there is a condition that the Korea Sports Promotion Foundation, the owner of the Public Sports Center, has to pay taxes on transfer gains incurred when selling. The overall sale structure of the Bundang-Ilsan Public Sports Center is shown in Figure 1.

3.1.1. Results of Cash Flow Analysis. Based on the financial statements of the Korea Sports Promotion Foundation, the cash flows of Bundang and Ilsan Public Sports Centers were analyzed. In the case of Bundang, the cash flow in 2020 was KRW 153 million, and the average cash flow over the past five years was KRW 82 million. And, in the case of Ilsan, the cash flow in 2020 was KRW 197 million, and the average cash flow over the past five years was KRW 273 million. The derived cash flow analysis results are as follows. The cash flow performance of the Public Sports Centers in Bundang and Ilsan is shown in Table 1.

3.1.2. Estimation of Cash Flow by Year. Based on the cash flow in 2020, the annual cash flow of Bundang and Ilsan Public Sports Centers was estimated. The appraised value of the sale in 10 years was set by the Ministry of Economy and Finance as setting the appraised value, which is 35.2 billion won per minute and 62.4 billion won in Ilsan [3]. Estimate cash flow by year of the Public Sports Centers in Bundang and Ilsan is shown in Table 2.

3.1.3. Estimating the Present Value of the Public Sports Centers in Bundang and Ilsan. Based on the 2020 cash flow of the Public Sports Centers in Bundang and Ilsan, the present value at the time of sale after the next 10 years of operation was derived. It was calculated as KRW 35.353

TABLE 1: Cash flow performance of public sports center in Bundang and Ilsan (unit: KRW 1 million).

Bundang	2016	2017	2018	2019	2020	Average of 5 years
Profit	5,685	5,813	5,989	6,198	6,342	6,005
Cost	6,340	6,507	6,762	7,015	7,206	6,766
Profit and loss	-654	-695	-773	-817	-863	-761
Cash flow (profits and losses + depreciation cost)	10	74	89	85	153	82
Ilsan	2016	2017	2018	2019	2020	Average of 5 years
Profit	6,603	6,573	6,609	6,571	6,538	6,579
Cost	7,184	7,075	6,968	6,928	6,994	7,030
Profit and loss	-581	-501	-358	-357	-456	-451
Cash flow (profits and losses + depreciation cost)	241	275	358	296	197	273

TABLE 2: Estimate cash flow by year of the public sports centers in Bundang and Ilsan (as of 2020; unit: KRW 1 million).

Bundang	1	2	3	4	5	6	7	8	9	10
Operating cash flow	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
Value of sale after 10 years (estimated value)	—	—	—	—	—	—	—	—	—	352
Total	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	353.53
Ilsan	1	2	3	4	5	6	7	8	9	10
Operating cash flow	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97
Value of sale after 10 years (estimated value)	—	—	—	—	—	—	—	—	—	624
Total	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	625.97

billion and KRW 62.597 billion, respectively, in Bundang and Ilsan. Estimation of the present value of the Public Sports Centers in Bundang and Ilsan is shown in Table 3.

In the same way, the present values of the two centers were estimated based on the average cash flow over the past 5 years. Assuming that the sale value after 10 years is the same as the current appraisal value, the current sale value was calculated at KRW 22.242 billion per minute and KRW 40.418 billion in Ilsan. A summary simulation of the sale price of the Public Sports Centers in Bundang and Ilsan is shown in Table 4.

3.1.4. Reviewing the Level of the Sale Amount. The current value of the two centers was estimated through the current value method, and the level of the sale amount was reviewed.

Considering the appraised value set by the Ministry of Economy and Finance, Bundang and Ilsan are KRW 28.16 billion and KRW 49.92 billion (80% of the appraised value), respectively, which is somewhat different from the current selling value calculated by the two centers.

In addition, investors (buying intention) are more likely to make investment decisions in anticipation of generating profits through the operation of the center rather than increasing the value of the real estate itself. However, in a situation where the degree of cash flow generation of the two centers is very low, presenting 80% of the current appraised value as the sale price presupposes that the same appraised value will be maintained even after the next 10 years, so it can be considered unrealistic. Comparison of the current appraised value and the simulation result of the sale price is shown in Table 5.

3.1.5. Consideration of Options for Sale. As a result of analyzing the validity of the entire sale (bidding) through the analysis of cash flows, there is a difference of billions in the

simulation results of the current appraisal value and sale value of the two centers.

However, despite these conditions, if the Korea Sports Promotion Foundation shows its willingness to sell the two centers, it is necessary to review the following options:

- (1) Penalty if you give up the right to operate. Since each center has the characteristic of being a convenience facility for local residents, it is necessary to prevent private businesses from arbitrarily giving up their operational rights and impose penalties for giving up their operational rights to cover costs for temporary operations. Usually, new businesses often give up their businesses in the early stages, but since each center has already been operating for a considerable period of time, it is desirable to set a mandatory operation period of around five years, and it is considered effective to combine it with the minimum return guarantee (MRG) option.
- (2) Minimum revenue guarantee (MRG). Currently, neither center has high business feasibility, and in particular, the Bundang Public Sports Center has demonstrated a (-) return over the past five years, so the possibility of a sale is not high. Assuming that the right to operate is sold to a private business operator, it is possible to create conditions for private business operators to operate stably by guaranteeing minimum operating income during the adjustment period for the operating method or business concept at the beginning of the operation. The financial resources can be used as part of the sale price, and the guarantee period is judged to be appropriate for 3 to 5 years, which is the period for maintaining and stabilizing the operating environment.

TABLE 3: Estimation of the present value of the public sports centers in Bundang and Ilsan (unit: KRW 100 million).

Sortation	Bundang annual cash flow	Ilsan annual cash flow	The present coefficient of value	Bundang current value by year by year ((1) ÷ (3))	Ilsan current value by year by year ((2) ÷ (3))
1	1.53	1.97	(1.05) ¹	1.45	1.88
2	1.53	1.97	(1.05) ²	1.39	1.79
3	1.53	1.97	(1.05) ³	1.32	1.7
4	1.53	1.97	(1.05) ⁴	1.26	1.62
5	1.53	1.97	(1.05) ⁵	1.20	1.54
6	1.53	1.97	(1.05) ⁶	1.14	1.47
7	1.53	1.97	(1.05) ⁷	1.09	1.4
8	1.53	1.97	(1.05) ⁸	1.04	1.33
9	1.53	1.97	(1.05) ⁹	0.99	1.27
10	353.53	625.97	(1.05) ¹⁰	217.04	384.29
Total present value				227.92	398.29

TABLE 4: Summary simulation of the sale price of the public sports centers in Bundang and Ilsan (unit: KRW 100 million).

Sortation	The present value	1	2	9	10	Selling value
Bundang	The year of 2020	227.92	1.53	1.53	1.53	353.53
	Five years average	222.42	0.82	0.82	~ 0.82	352.82
Ilsan	The year of 2020	398.29	1.97	1.97	1.97	625.97
	Five years average	404.18	2.73	2.73	2.73	626.73

TABLE 5: Comparison of the current appraised value and the simulation result of the sale price (unit: KRW 100 million).

Sortation	The present appraisal value	Simulation		Range of differences
		Cash flow as of 2020	Average cash flow over the past five years	
Bundang Public Sports Center	281.6 (80% of the appraised value)	227.92	222.42	53.68~59.18
Ilsan Public Sports Center	499.2 (80% of the appraised value)	398.29	404.18	95.02~100.91

- (3) Employment succession. If operated by a private business operator, there is a high possibility of restructuring manpower. This is because the current level of sales per won of labor costs at the Public Sports Center is lower than that of similar private companies [16]. Therefore, since employees of Korea Sports Industry Development, which is currently under consignment operation, are subject to restructuring, it is necessary to minimize the impact of manpower reduction due to the sale by setting options to guarantee employment succession. Personnel subject to employment succession will be determined through mutual consultation, but at least 50% of employment succession should be promoted to a stable operation right transition according to the change of the operating entity.
- (4) Maintenance of a particular subject or business department. If the overall operation is left to the autonomy of private business operators, it is highly likely that subjects or sectors that are popular in terms of residents' welfare but are not profitable will be restructured. Therefore, it is necessary to prepare provisions that can be maintained for a certain

period of time for these subjects, and in the case of such nonprofit subjects, it is considered effective to set options in parallel with the minimum operating income guarantee option.

- (5) Goodwill premium. Each center has a symbolic meaning in the region and has served as a community in the region, so it can be seen that it has stable business rights. Therefore, if business feasibility is high, additional premiums in the name of goodwill can be received in addition to the actual sale value, but there is a burden of operating some nonprofit courses for residents' welfare.

3.2. Results of the Feasibility Analysis of the Sale of Shares. Second, in the case of the sale of shares, some of the shares of each center are sold to private companies, and private companies and others pay investment funds through equity participation and recover investment funds through dividend income in the future. In this regard, the possibility of sale may vary depending on the share ratio subject to sale and the value of the sale of the stake. Bundang-Ilsan Public Sports Center share sale structure is shown in Figure 2.

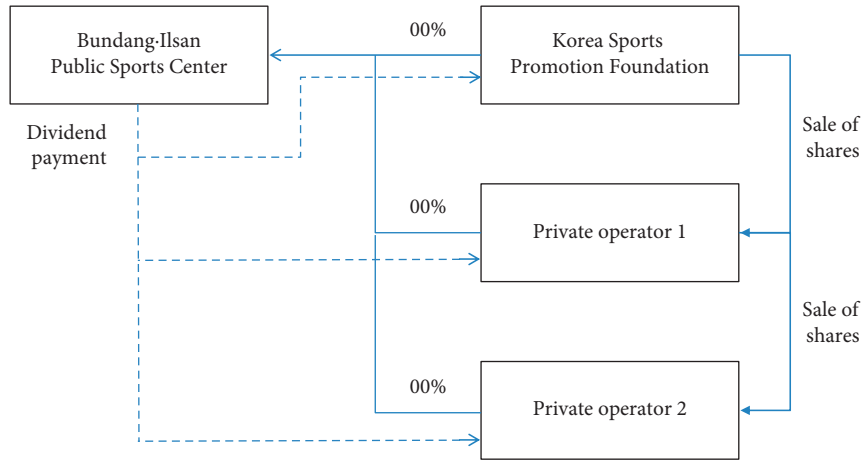


FIGURE 2: Bundang-Ilsan Public Sports Center share sale structure.

TABLE 6: 49% Estimated value of equity (unit: KRW 100 million).

Sortation	Total equity value		49% equity value	
	Cash flow as of 2020	Average cash flow over the past five years	Cash flow as of 2020	Average cash flow over the past five years
Bundang Public Sports Center	227.92	222.42	111.68	108.99
Ilsan Public Sports Center	398.29	404.18	195.16	198.05

3.2.1. *Result of the Equity Value Analysis.* The calculation of the equity value is made in a similar manner to the calculation of the sale value, which is calculated in consideration of the cash flow as of 2014 and the future sale value. For example, assuming that a 49% stake is sold to private companies, the value of the stake is KRW 10.899 billion and KRW 198.05 billion, respectively, based on the average cash flow over the past five years. In addition, based on cash flow in 2020, it is KRW 11.68 billion and KRW 19.516 billion, respectively.

In some cases, the evaluation may be made based on the valuation amount and asset value under the Inheritance and Gift Act, and the condition arises that the Korea Sports Promotion Foundation, which is a major shareholder, must pay taxes on the sale of shares. Forty-nine percent estimated value of equity is shown in Table 6.

3.2.2. *Reviewing the Structure of the Sale of Shares*

- (1) Need to sell less than 50% of the shares. In the case of the sale of shares, it is not fundamentally the sale of operating rights or facilities, but the voting rights to participate in management decisions are protected by commercial law, so there is not much room to impose various options compared to the total sale. Therefore, when selling more than 50% of the stake, it is highly likely that the operation of the center will flow according to the will of private businesses, and in this case, it is likely to deviate from the existing purpose of resident welfare and become a profitability-oriented operation. When

selling shares, such management rights need to be defended, that is, less than 50%, and if more than 50%, it is necessary to have a mechanism to defend management rights by issuing shares without voting rights (e.g., dividend preferred shares). The structure of the sale of shares exceeding 50% (proposal) is shown in Table 7.

- (2) Investment in kind. Private businesses' participation in equity also means raising investment, but the purpose is more important to improve current management performance by incorporating the business know-how of private businesses. Therefore, when determining the operation method or program, private business operators should participate as members of the board of directors to collect and reflect various ideas, and it is necessary to consider the sale of shares in kind. For example, when trying to open a new course or program called profitable A, it is judged that it is realistic to receive in-kind investment from related facilities, manpower, and content while participating as shareholders and distribute operating profits. In this case, the valuation of in-kind (facilities, manpower, content, etc.) invested by the relevant private business operator shall be separately evaluated, and inspection of in-kind investment goods appointed by the court under the Commercial Act shall be conducted.
- (3) Issuance of convertible bonds. The problems facing each center are the deterioration of profitability and management expertise. Therefore, in order to

TABLE 7: Structure of the sale of shares exceeding 50% (proposal; unit: KRW 100 million).

Sortation	Common stock (%)	Preferred stock (profit dividend, etc.; %)
At the time of sale of 60%	49	11

TABLE 8: Full sale (bidding) scenario.

Sortation	Scenario
Selling price	Presentation of the interim value of the actual sale price evaluation results with the Korea Sports Promotion Foundation
Option 1	Among nonprofit courses, courses preferred by residents are maintained, but minimum operating income is guaranteed for the next five years
Option 2	Less than 50% of the courses to be maintained are set, and other courses can be autonomously adjusted by private businesses Set a mandatory operating period for the next five years and impose penalties for giving up the right to operate The penalty amount is 30% of the expected operating cost from the time of the abandonment to the end of the mandatory operating period (example)

TABLE 9: Scenario for the sale of shares.

Sortation	Scenario
Selling price	Presentation of the interim value of the actual equity valuation results with the Korea Sports Promotion Foundation
29% (Example)	A private business operator with high profitability in operating programs is selected, and facilities, manpower, and contents are invested in the kind
20% (Convertible bonds, etc.)	The option of repayment or conversion after the next five years is granted, and the issuance value of bonds is determined according to the results of the equity valuation and interest rate

overcome these problems, it is necessary to find various profit models and recruit professionals. However, it is impossible for the government to secure additional budgets at a time when it is moving to sell each center due to continuous deficit, so it is necessary to establish a foundation for promoting new business areas by attracting private funds through the issuance of convertible bonds. However, legal review is needed as to whether the Korea Sports Promotion Foundation can issue convertible bonds, and convertible bonds are given options to convert into shares, so the same should be considered for defending management rights as the sale of shares.

4. Conclusions

4.1. Validity of the Entire Sale (Bidding) Business

- (1) Full sale (bidding) scenario and target. The most important thing for the success of the entire sale (bidding) is the level of the sale price. Therefore, it is desirable to present the initial proposed value as an intermediate value between the expected level of the National Sports Promotion Foundation and the actual evaluation amount, and the final goal is to receive more than the actual evaluation amount through adjustment. In this case, the more options there are, the lower the possibility of success of the sale, so it is desirable to limit it to the conditions for maintaining the preferred nonprofit course and the

conditions for setting the mandatory operation period considering the characteristics of residents' convenience facilities. The full sale (bidding) scenario is shown in Table 8.

The entire sale (bidding) should be targeted at businesses specializing in actual sports facilities, and businesses that carry out projects in specific fields such as fitness clubs and have financial power but are having difficulty finding new areas will be appropriate. In addition, since the business of each center is not a promising business or a business with high business feasibility in the future, it will be difficult to sell it to strategic investors.

- (2) Possibility of sale. In the case of private businesses, the top criterion for judgment is profitable, so the possibility of a sale is not high considering the returns of the two centers, and if the sale is made, the sale price is likely to be determined based on the future sale value of assets such as buildings. However, since there is a large difference between the expected level of the Korea Sports Promotion Foundation and the current appraisal amount for the sale value of assets, a large adjustment is needed. In particular, if the operating conditions of sports facilities are specified, the sale price is expected to be lower, and the gap with the expected level is expected to widen. From the perspective of private businesses, each center has a symbolic meaning in the region and has served as a local community, but at the same

time, the fact that each center cannot pursue unconditional profitability is a major factor that makes them hesitate to purchase operating rights. In order to succeed in selling to private businesses, it is essential to adjust discounts on the sale price and provide conditions for private businesses to freely pursue profitability, and these matters need to be stipulated as options when signing a sale contract. In conclusion, the overall sale (bidding) method is expected to lose some of the treasury when the sale is enforced due to the difference between the appraisal and the sale price, and options for the continued operation of the Public Sports Center are set. As a result, it is difficult to maintain its function as a public sports center and national treasury losses are expected, so the private sale (bidding) method is unlikely and judged to be inappropriate.

4.2. Validity of the Sale of Shares

- (1) Share sale scenario and target. Based on the 49% stake sale, the scenario of the stake sale is to promote the issuance of in-kind investments and convertible bonds, and the equity value is to be presented at an intermediate level between the current expected level and the actual valuation, and the final goal is to receive more than the actual valuation through adjustment. In addition, in the case of convertible bonds, sufficient stabilization periods such as newly introduced programs shall be secured by setting them as convertible or repayment after 3 or 5 years. In the case of the sale of management rights exceeding 50%, the effect is similar to that of the entire sale, and considering the business feasibility and specificity of the center, the possibility of the sale of management rights itself is unlikely. Of course, there may be variables according to the sale price, but the same issues as the entire sale are expected to play an important role in the sale. The scenario for the sale of shares is shown in Table 9.

In the case of the sale of shares, investment in kind may be selected for business operators specializing in the operation of actual sports facilities. In addition, in the case of convertible bonds, private strategic investors such as private equity funds and venture capital or strategic investors of the government side such as the National Pension Service may also be eligible.

- (2) Possibility of sale. In the case of private businesses, stable profitability when investing in equity and recovery of investments through dividend payment are important criteria, so the possibility of a sale is not high considering the profitability or cash flow of the two centers. Therefore, the sale of private business techniques through in-kind investment is more realistic, and it is desirable to secure a certain portion of profitability through the issuance of convertible bonds and then push for investment conversion or

additional stake sale. Of course, the adjustment of the difference between the expected level of the National Sports Promotion Foundation and the actual value of each center should be preceded in relation to the sale value according to the equity value evaluation.

4.3. Implication. We analyzed and verified the feasibility of selling the public sports center. We analyzed the feasibility of the wholesale including management rights and the feasibility of the stake sale method to maintain management rights. Based on the financial data collected through the National Sports Promotion Corporation, we estimated the average cash flows of the Bundang and Ilsan Public Sports Centers by the year 2020 and the past five years (2016–2020). The NPV (net present value) is used as the method. As a result, we conclude that the private sale (bidding) method is unlikely and is considered inappropriate. Furthermore, in the case of stake disposal, we assert that it is unlikely that private investors will be able to sell their stakes considering the profitability and cash flow of the two centers, as stable profitability and dividend payout is an important criterion for private investors. In conclusion, we consider realistic to sell to a structure that can fully reflect private business techniques through in-kind investment, and we consider it desirable to pursue a share transfer or additional stake disposal after securing a certain portion of profitability through the issuance of convertible bonds.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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