A Profit Simulation of Long-term Care Businesses

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Introduction

Ahead of the public long-term care (LTC) insurance system's implementation next year, certification will begin this autumn for persons who need care. While the long-term care insurance system has attracted attention as a new form of welfare service, several major issues are still pending, including whether the supply of care services will be adequate, and at what level long-term care insurance premiums will be set.

Regulations have been eased to promote the entry of private companies and assure that the supply of care services is adequate. As a result, companies are entering not only from the medical and pharmaceutical businesses but from unrelated businesses as well. The long-term care business is expected to create new jobs amid the prolonged recession.

Despite widespread social interest and the mass media's focus on the LTC business as a potential source of new jobs, the response of large capital has been subdued. They have made some moves quietly, but appear on the whole to be waiting to see where the long-term care market is headed.

Given that the insurance system's implementation in April 2000 comes less than three years after its enactment in December 1997, this cautious stance by companies may be inevitable. The biggest problem is that too many pieces are missing from the puzzle to allow meaningful calculations of profitability. One of the most critical pieces, the publicly set prices for long-term care services, will not be decided until immediately before the system is launched. This forces private companies to postpone their evaluation of the long-term care business, thereby delaying their market entry.

In view of these reservations, this paper attempts to simulate the business results of private providers (including social welfare corporations) who would enter the long-term care business. We then examine a key issue of the public long-term care insurance system—whether an adequate supply of care services can be secured, based on the potential attractiveness the long-term care business—by simulating business results for home care and short-stay services. Unfortunately, the simulation is tentative at best because long-term care service prices have yet to be determined. The business simulation is based on two different surveys that

reach similar conclusions.

1. Calculation of Business Income from Home Care Services

Home care, which is widely identified with home helper services, can be divided into two broad categories: housework services such as meal preparation and clothes washing, and bodily care services such as assistance with bathing and excretion. In addition, services are performed in long visits lasting about one hour, or short visits lasting 20 to 30 minutes. For the short visit service, we performed a simulation with the following assumptions.

(1) Simulation Assumptions

Taking a private service provider who now performs home care services under the current system, we calculated revenue and expenses with the method used in the public long-term care insurance system in which revenue is determined by number of billable hours. In other words, we calculated whether revenue under the new insurance system would sufficiently cover present expenses. Since the publicly set prices under the new system have not been announced, we used current prices (Table 1). Our hypothetical average private provider has the following profile.

Table 1 Public Price List for Nurse Visits

	FY 98 (actual)	FY 99 (budget request)
Bodily care	¥2,890/hour	¥3,730/hour
Housework assistance	¥1,790/hour	¥1,460/hour
Short nurse visit (daytime)	¥1,450/visit (30 minutes)	¥1,870/visit (30 minutes)
Short nurse visit (early/late shift)	¥1,810/visit (30 minutes)	¥2,340/visit (30 minutes)
Short nurse visit (midnight shift)	¥2,890/visit (20 minutes)	¥3,730/visit (20 minutes)

Note: Fiscal 1999 prices are used for the business simulation.
Source: National Conference of Section Chiefs for LTC Insurance, October 29, 1998.

1. Location – City with population of 50,000, of which elderly comprise 15%, and incidence rate of elderly needing care is 6.7%.

2. Employee composition – 1 manager, 1 chief helper, 4 full-time helpers, and 9 part-time helpers.

3. Workload – The 14 helpers perform home care services for 79 elderly persons (16.3% share); 267 billable hours per month for assistance with bodily care; 532 hours for housework

assistance, and 24 hours for visit during the day.

Based on these assumptions, we simulated revenue and expenses over the next five years. We assume that the incidence rate of elderly needing care remains unchanged so that their number grows yearly in proportion to the elderly population growth, with the service provider retaining its current market share. In addition, the work hours of each helper is fixed, and that the provider accommodates the increase in elderly needing care by increasing the number of helpers.

Full-time helpers are paid a fixed salary and part-time helpers are paid hourly wages. Since the manager's responsibilities include other functions unrelated to home care, we assume that 20% of the manager's salary is attributed to the home care operation.

Salaries are assumed to be the same as under the present system (Table 2). Since 1999 prices are assumed to stay constant over the next five years, there are no price adjustments or sliding wage scales. Non-labor operating costs such as office rent, utilities, communications, car maintenance (1 vehicle), sanitation, training, advertising, and non-durables are assumed fixed at 460,000 yen based on current data.[1]

Table 2 Salary Structure

Position	Basic salary	Bonus	Employee welfare	Monthly income
Manager	¥300,000/month	¥75,000/month	¥56,250/month	¥431,250/month
Chief helper	¥250,000/month	¥62,500/month	¥46,875/month	¥359,375/month
Full-time helper	¥180,000/month	¥45,000/month	¥33,750/month	¥258,750/month
Part-time helper	¥1,550/hour	–	–	–

Note: Bonus is set at 3 months' salary. Employee welfare expense is set at 15% of annual pay.

(2) Simulation Results

The simulation results show consecutive losses over the five-year period from 2000 to 2004, with the ratio of labor cost to sales exceeding 100% each year (Table 3).

Table 3 Nurse Visit Service Simulation

		2000	2001	2002	2003	2004
Elderly needing care (persons)		515	533	548	567	585
Market share (%)		16.3	16.3	16.3	16.3	16.3
Expected elderly needing care (persons)		84	87	89	92	95
Bodily care service (hours/month)		252	261	267	276	285
Housework service (hours/month)		588	609	623	644	665
Short nurse visits (per month)		25	26	27	28	29
Helpers (persons)		15	15	16	16	17
	Full-time	5	5	6	6	6
	Part-time	10	10	10	10	11
Revenue	Bodily care	11.28	11.68	11.95	12.35	12.76
(¥mil.)	Housework assist.	10.3	10.67	10.91	11.28	11.65
	Daytime short nurse visit	44	45	47	49	50
	Total	22.02	22.8	23.34	24.12	24.91
Expenses	Full-time manager	1.05	1.05	1.05	1.05	1.05
(¥mil.)	Chief helper	4.03	4.03	4.03	4.03	4.03
	Full-time helper	12.66	12.66	15.83	15.83	15.83
	Part-time helper	6.53	6.75	6.92	7.16	7.38
	S&A cost	5.52	5.52	5.52	5.52	5.52
	Total	29.78	30.01	33.34	33.58	33.8
Operating income (¥mil.)		-7.77	-7.2	-10	-9.46	-8.89
Labor cost /sales ratio (%)		110.2	107.4	119.2	116.4	113.6

While the increase in elderly needing care generates revenue growth of 2.5% each year, the regulated salary structure keeps losses firmly entrenched. Under these circumstances, private providers cannot enter the home care business unless they receive public subsidies.

On the other hand, we might attribute the losses to inappropriate pricing for care services. At our assumed unit prices and a regimen of three visits per week to perform housework and bodily care services, the monthly care cost amounts to 62,280 yen. This corresponds to the present care allowance for the lowest level of care called assistance, which is still a substantial level. But since higher care service prices would lead to higher premiums, price increases are not a viable solution.

Our simulation suggests that providers will feel pressure to shift from salaried to part-time workers. However, cost cutting by simply reducing salaries could lead to other problems. According to a survey by the Elderly Service Providers Association, dissatisfaction with salaries and benefits is already reducing the work motivation of home helpers.[2] Quality of service will become a serious issue if job satisfaction suffers among home helpers, since they perform the actual care services.

While prices must be balanced with premiums, prices also need to be high enough to encourage companies to enter the business. Furthermore, service quality considerations preclude simple cost cutting measures such as salary cuts for home helpers. The long-term care business is thus trapped between trying to keep premiums low while having to raise prices to ensure the adequate supply of services. Herein lies the impediment to the expansion of the LTC business.

We next perform a business simulation for short-stay services, which are an institutional complement to home care, to examine the prospects for entry by private providers.

2. Short-Stay Business Simulation

The short-stay business is one of three pillars of home care. The simulation assumes a private provider who has started operation in an urban area, where the demand for short-stay services is expected to grow the most.

(1) Assumptions

The New Gold Plan establishes a growth target for short-stay facilities of 60,000 beds. To meet this goal, regulations that restricted the operation of short-stay facilities to local municipalities (including special administrative districts) were eased in 1998 to allow outsourcing to qualified private providers.

In addition, usage rules were relaxed to allow care givers access to short-stay facilities for personal reasons rather than just in cases of illness, accidents, and social obligations such as funerals and weddings. Thus the demand for short stays is expected to grow as care givers take vacations or recover from home-care fatigue. According to a survey of care service providers by the Elderly Service Providers Association, short-stay services primarily serve their local communities, and are relatively new operations.[3] Many began operation after 1975, and particularly after 1989. Approximately 40% generate less than 5 million yen in annual revenue.

If home care increases as a result of public LTC insurance, we should also see an increase in demand for short-stay services, which provide temporary care for bedridden and other elderly needing care when the family cannot. We calculated the operating revenue and expenses for a private provider who follows MHW guidelines for constructing a facility and providing short-stay services. The assumptions are as follows.

1. Facility – A short-stay facility with 50 beds, located in an urban area with population of 200,000. The facility has two floors, 900 sq. meters of floor space, and a lot size of 1,000 sq. meters.

2. Employee composition – The employee allocation follows MHW guidelines: 1 director, 1 office worker, 1 guidance advisor, 1 medical doctor, 5 nurses, 10 matrons, and 2 helpers. Compensation is based on the wage census (Table 4).

Table 4 Personnel Cost of Short-Stay Facility

Employee	Job status	Number	Annual wage
Director	Full-time	1	¥8.4 million
Office worker	Full-time	1	¥3.2 million
Social worker	Full-time	1	¥3.5 million
Medical doctor	Part-time	1	¥1.2 million
Nurse	Full-time	5	¥5.2 million
Home helper	Full-time	10	¥3.5 million
Assistant helper	Full-time	2	¥2.6 million

3. Capacity utilization rate – The facility's utilization rate starts at 90%, and increases 0.5% each year due to management efforts. The price of a stay is 9,550 yen per night (based on materials from the National Conference of Section Chiefs for LTC Insurance, October 29, 1998). There are no price differences based on degree of care.

4. Financing plan – Equity capital is 10 million yen. There are no construction or other subsidies from the local government. Additional financing for initial costs comes from a loan whose principal and interest are repaid evenly over 30 years, with a fixed interest rate of 5% based on the loan rate of local banks.

5. Initial cost – The cost of land is set at 500,000 yen per square meter, which is about 80% of the official land price posted for urban land in the Tokyo area. To this we added acquisition expenses of 5% of the land price. We also set taxes and other charges such as the real estate purchase tax and urban planning tax.

As described earlier, the building has a floor space of 900 square meters, of which common areas comprise 55%. Based on available data, we set the construction cost per tsubo (3.3 square meters) of floor space at 1 million yen for the common area, and 600,000 yen for private rooms. Other costs were for furniture and fixtures, planning and design of the building, taxes, gifts to the neighborhood, and reserves. In addition, we included running costs of 40 million yen for the first three months of operation.

6. Running costs – For the building, these include building maintenance, insurance on the building, and taxes and other charges; personnel costs are salaries and employee welfare expenses. Operating costs include meals, linen, facility maintenance, utilities, and sales expenses. The meals are outsourced at 1,000 yen per person per meal.

(2) Simulation Results

We simulated the facility's performance over a 30-year period in 5-year increments (Table 5). Because of the substantial costs of land purchase, fixed asset tax, and facility maintenance, the initial startup loan is large. Thus on a single year basis, the after-tax breakeven point is achieved in the 21st year.

Table 5 Short-Stay Business Simulation Results

(¥million)

Fiscal year	Start	1st	5th	10th	15th	20th	25th	30th
<Revenue>								
1 Operating revenue		172.54	183.17	197.37	212.68	229.17	243.43	255.85
2 Other revenue		0	0	0	0	0	0	0
3 Total revenue		172.54	183.17	197.37	212.68	229.17	243.43	255.85
<Expenses>								
4 Maintenance		1.12	1.21	1.34	1.48	1.63	1.8	1.99
5 P/C insurance		0.16	0.16	0.16	0.16	0.16	0.16	0.16
6 Land rent		0	0	0	0	0	0	0
7 Tax on land	41.95	6.55	7.2	8.71	9.58	11.59	14.03	15.43
8 Tax on structure		2.66	2.66	2.66	2.66	2.66	2.66	2.66
9 Business tax		0	18	18	18	18	83	178
10 Depreciation		13.29	13.29	5.29	5.29	5.29	5.29	5.29
11 Labor		97.82	101.79	106.98	112.44	118.18	124.2	130.54
12 Service related exp.		24.64	25.64	26.95	28.32	29.76	31.28	32.88
13 Other operating exp.	56.95	32	33.3	35	36.78	38.66	40.63	42.7
14 Interest (long term)		39.25	36.7	32.74	27.67	21.21	12.96	2.43
15 Interest (short term)								
16 Total expenses	98.9	217.48	222.13	220	224.56	229.32	233.84	235.86
<Profit>								
17 Pre-tax profit (3-16)	-98.9	-44.93	-38.96	-22.62	-11.88	-15	9.59	19.98
18 Income tax		0	0	0	0	0	2.99	7.2
19 Net profit (17-18)	-98.9	-44.93	-38.96	-22.62	-11.88	-0.15	6.6	12.79
20 Cumulative profit	-98.9	-44.93	-209.94	-339.51	-421.17	-447.17	-424.23	-373.16

However, on a cumulative basis, the facility fails to turn profitable during the 30-year period. This means that the invested capital cannot be recovered within three decades of operation. In addition, the net present value (NPV), a key indicator of business feasibility, is –498.060 million yen.[4] These results are not encouraging for private providers considering a standalone short stay business.

The primary cause of these chronic losses is the high cost of land, which weighs heavily on the business performance of new providers of labor-intensive services. For day service centers, a similar type of facility that supports home care, construction costs on expensive urban sites are less than for short stay centers, but it is questionable whether the market will grow enough to encourage aggressive entry by private providers.

Unlike hotels, short-stay and other welfare services do not have lucrative revenue sources such as banquet hall services to help recover initial costs. This makes initial costs a more serious drag on performance.

If we assume instead that the land purchase cost is subsidized by the government, then the business turns profitable in seven years, and reaches the cumulative breakeven point in 27 years. While the NPV is positive at 13.926 million yen, the cumulative figures indicate that private providers will not enter the business even with public subsidies for land purchase. Thus for a new short-stay business to succeed, it will have to operate not as a standalone facility but in combination with other revenue-generating services.

3. Ensuring an Adequate Supply of LTC Services

As the implementation date of public LTC insurance approaches, a critical issue that will influence how premiums are set is the adequacy of the supply of LTC services. Under the LTC insurance system, private providers must first satisfy a set of criteria to enter the previously restricted welfare services market. Moreover, in a shift of Copernican proportions, users will be able to choose for the first time which services they want instead of being assigned services. But in causing this structural transformation of the welfare system, the public LTC insurance system will not function properly unless an adequate supply of care services can be secured.

Japan's public LTC insurance system is characterized by a needs-oriented care management system for the supply of services. Care management refers to a process designed to arrange services according to the needs of individuals. Specifically, the aim of care management is to accurately identify the care needs of elderly persons, set up care targets in line with those needs, arrange for the appropriate care services, and empower people to choose the arrangement of services and their preferred service provider. However, without an adequate pool of service providers to choose from, users will have no more choice than under the present system of assigned services.

To ensure the adequate supply of care services necessary for public LTC insurance to function smoothly, the system relies heavily on private providers to play an active role in the care service market. While our simulations covered only two aspects of the care business – home-visit care services and short-stay services – the results clearly suggest that the business fundamentals are unattractive to private providers.
Securing an adequate quantity of care services is an urgent issue not only for municipalities, who are the insurers, but also for the central government. Our simulations suggest that care

service prices will need to be set in a way that encourages the entry of private providers. Specifically, prices will need to be sufficient to enable private providers to successfully develop diverse businesses on their own. Furthermore, to offset high initial costs such as those for the short-stay business, municipalities may resort to providing incentives in the form of construction subsidies and free land. While this raises the problem of dealing with laws against supporting private businesses with public funds, such bold measures may be warranted in view of how vital an adequate supply of care services is to the success of public LTC insurance.

Recently released LTC premium estimates have already stirred up some controversy in the national diet because the initially planned level of 2,500 yen is substantially exceeded in some municipalities. If these estimates are based on present care service prices, we can expect premiums to rise even higher. As our simulations showed, present prices offer no encouragement for private businesses to enter the market, and will have to be raised to do so. And if prices rise, so too will premiums.

While the concept behind public LTC insurance – the socialization of long-term care – is widely supported by the public, further research and debate are needed on ways to ensure the adequate supply of services, including the setting of prices to attract companies to the market.

Given the indications that premiums could increase above initial plans, there have been calls to delay the introduction of public LTC insurance. However, this is but one of numerous issues have surrounded the system's introduction ever since the law was enacted. Public LTC insurance and the socialization of long-term care and a new but crucial endeavor for the aging society. The real issue is not whether to implement the system, but how to ensure its success.

Notes

1. "How Will the Public Long-term Care Insurance System Change the Silver Business?" Tokyo Active Life Promotion Center (*Tokyo Iki-iki Raifu Suishin Senta*) of the Tokyo Metropolitan Community Welfare Foundation, 1997.

2. "Research Project on Customer Satisfaction Among Silver Service Users – Survey of Users and Employees of Private Home Helper Services," Elderly Service Providers Association, 1998.

3. "Survey of Silver Service Providers," Elderly Service Providers Association, 1993.

4. NPV is net present value, the present value of the future stream of income, minus the initial investment.