

# FINANCING OF HEALTH CARE IN JAPAN<sup>1</sup>

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## 1. Outline of Health Insurance in Japan

In Japan, the first law of health insurance for the general workers was promulgated in 1922 and the law of national insurance for the self-employed workers other than the general employees was established in 1938. However, these laws were expanded substantially after the end of the Second World War together with other kinds of social insurance schemes like pension, unemployment and workmen's compensation. Since the law of national health insurance was amended in 1959 and enforced under the slogan of "medical care for the whole nation", the whole population came to be covered by either one of these medical insurance schemes.

Table I shows the development of those schemes by number of insured persons and their ratio to the total population.

TABLE I. DEVELOPMENT OF COVERAGE IN MEDICAL CARE INSURANCE

Unit: 10,000

	Insurance for employees			National health insurance (b)	Total (a)+(b)=(c)	Total population (d)	(c) / (d)
	Insured	Family dependant	Total (a)				
1955	1,248	2,004	3,252	2,871	6,123	8,928	68.6
1960	1,841	2,509	4,351	4,617	8,968	9,342	96.0
1965	2,454	2,993	5,447	4,240	9,687	9,828	98.6
1970	2,814	3,241	6,028	4,336	10,364	10,372	99.9
1973	2,979	3,551	6,530	4,413	10,943	10,871	100.0

Source: *Statistical Yearbook of Social Security* (in Japanese)

Note: Figures of (c) are at the end of fiscal year and those of (d) are on Oct. 1st of every year.

As can be surmised in Table 1, the ratio of coverage in medical insurance reached 100 per cent in 1971 and we can find that 60 per cent of total population is covered by the insurance for employees and 40 per cent by NHI (Scheme for Self-employed National Health

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Insurance); 46 per cent of the former is for the insured and 54 per cent for family dependants as of 1973.

Insurance for employees in Japan is separately administered through eight schemes which were established under the different historical backgrounds. The whole structure of medical care insurance schemes in Japan is indicated in Table 2.

TABLE 2. MEDICAL CARE INSURANCE SCHEMES

	End of March 1974			
	Number of persons covered			
	Insured	Family dependant	Total coverage	Percentage ratio
A. Schemes for employee	29,793	35,509	63,302	59.7
a) Gov't managed health insurance (GHI)	13,490	13,921	27,411	25.0
b) Society managed health insurance (SHI)	10,857	13,783	24,640	22.5
c) Day-laborer's health insurance	528	317	845	0.8
d) Seamen's insurance	257	480	737	0.7
e) Mutual aid association	4,661	7,008	11,669	10.7
i) National public service	(1,158)	(1,846)	(3,004)	(2.7)
ii) Public enterprise corp.	( 785)	(1,381)	(2,166)	(2.0)
iii) Local public service	(2,496)	(3,594)	(6,090)	(5.6)
iv) Private school teachers employees	( 222)	( 187)	( 409)	(0.4)
B. Scheme for self-employed National health insurance (NHI)			44,125	40.3
A + B				100.00

The two largest shares of insurance for employees are GHI and SHI which cover 80 per cent of the total; by adding NHI to the two, the total of the three schemes covers 88 per cent of the whole population insured. In order, therefore, to understand the outlines of public financing for medical care in Japan, it is perhaps best to observe the development of these three largest insurance schemes.

Let us compare the characteristics of these three with respect to financial sources and sufficient rate to benefits required. In Table 3, financial sources consist of two parts: contribution and national subsidy. In the case of GHI, both insured person and the employer share equally 3.8 per cent as the rate of contribution while in case of SHI the contribution rate of the employer is more than that of the insured. The insured persons in GHI are mainly workers in medium-small enterprises while those in SHI are in large corporations. Therefore the ability to make contributions on the part of employers in GHI is relatively weak compared to that in SHI. This is the important reason that the central government provides 10 per cent of the total amount of medical care benefits and other allowances. In the case of NHI, the government liability is 40 per cent of medical care cost because the contribution ability of insured persons are considered as very limited with no employer's share. A comparison of financial sources among the three schemes indicates that NHI imposes the heaviest burden on public finances, followed by GHI. In spite of a considerable amount of national subsidy, the financial conditions of both NHI and GHI are quite tight and not necessarily adequate to meet medical care benefits required.

TABLE 3. FINANCIAL SOURCES AND BENEFITS IN GHI, SHI AND NHI

	Schemes for employee		NHI
	GHI	SHI	
Executive subject	Central gov't	Health insurance societies (1,554 units)	Municipalities and NHI societies (3,478 units)
Financial sources			
Rate of contribution	7.6%	6.995%	72.2 dollars
Insured	3.8	2.962	per household
Employer	3.8	4.033	per year
National subsidy	management expenses 10% of medical care benefits, sickness, injury and maternity allowances	management expenses 1,276 thous. dollars for aid to medical care benefits	management expenses 40% of medical care cost and 5% as adjustment grants and other
Rate of benefits to the cost required <sup>a)</sup>			
Insured	100%	100%	
Dependants <sup>b)</sup>	70	700	70%

Note: a) Benefits consist of medical care, sickness and injury allowance, maternity allowance, delivery expenses, nursing allowance and funeral expenses.

b) The partial liability of medical care fee of family dependants has been decreased from 50 per cent to 30 per cent as of October 1973. At the same time, a reimbursement system was adopted. When the partial liability of medical care fees of dependants exceeds 30,000 yen per one disease during a month, the difference between 30,000 yen and the partial liability required shall be reimbursed to the dependant afterwards.

## 2. Comparison of the Two Big Schemes of Medical Insurance for Employees

Within the framework of medical insurance for employees, let us compare the changes of financial condition of GHI and SHI for the past twenty years. To compare clearly the financial conditions of these two insurance schemes, let us give attention to the movements of the rate of surplus (or deficit) and draw the relations in Figure 1. The characteristics of both series are clear even at a glance. The movement of SHI accompanies some moderate fluctuations, but it keeps the balance in the black at around 10 per cent. On the other hand, GHI was in the black for 1955-61, but it has fallen into the red from 1962 to the present. In addition, the amplitude from the surplus peak to the deficit depth is very wide and suggests the instability of that insurance financing. Comparing the pattern of fluctuation in the rate of surplus, there can be seen some similarity in the direction of movement between both series. In other words, we can find that the rate of surplus in SHI becomes higher in boom periods and the rate of deficit in GHI gets narrower in the same phases while they are reversed in the deflationary periods. In this regard, we can point out evidence that the rate of deficit of GHI conspicuously dropped in the deflationary years of 1964-65. As the needs to medical care services are not very flexible according to business fluctuations, the phenomena that the pattern of the rate of

TABLE 4. CHANGES IN FINANCIAL CONDITIONS OF GHI AND SHI, 1955-1973

Unit: hundred mil. yen

	GHI			SHI		
	Revenue	Expenditure	Rate of surplus (deficit)	Revenue	Expenditure	Rate of surplus
1955	527	522	0.9%	492	439	10.8%
1956	629	581	7.6	535	474	11.4
1957	732	574	21.6	627	549	12.4
1958	765	643	15.9	695	600	13.7
1959	837	754	9.9	783	697	11.0
1960	963	907	5.8	920	797	13.4
1961	1,180	1,147	2.8	1,124	988	12.1
1962	1,410	1,426	△ 1.1	1,314	1,163	11.5
1963	1,655	1,786	△ 7.9	1,537	1,418	7.7
1964	1,929	2,292	△18.8	1,828	1,699	7.1
1965	2,242	2,740	△22.2	2,103	1,975	6.1
1966	2,887	3,153	△ 9.2	2,482	2,242	9.7
1967	3,526	3,584	△ 1.6	2,930	2,597	11.4
1968	4,141	4,165	△ 0.6	3,480	3,101	10.9
1969	4,749	4,805	△ 1.2	4,132	3,709	10.2
1970	5,471	5,854	△ 7.0	5,117	4,645	9.2
1971	6,145	6,224	△ 1.3	5,982	5,146	14.0
1972	6,892	7,492	△ 8.7	7,020	6,302	10.2
1973	8,763	8,827	△ 0.7	8,538	7,609	10.9

Source: GHI, The Ministry of Public Finance, *Nihon-no-Zaisei (Public Finance in Japan)* 1955-1974 eds. SHI, *op. cit.*

Note: mark of △ is deficit.

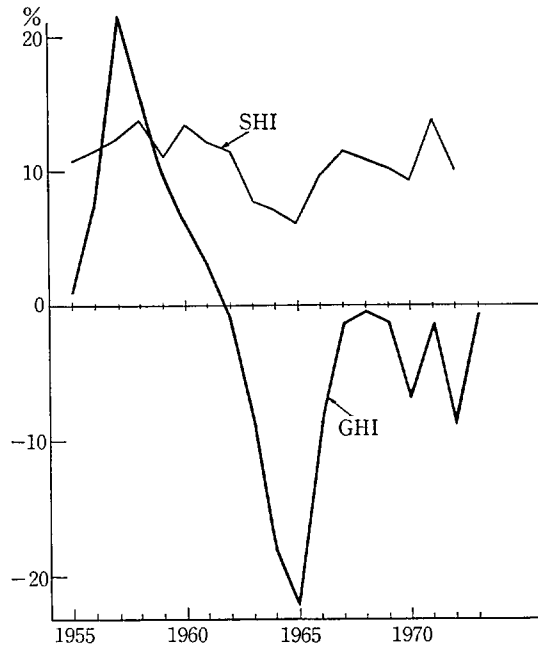
surplus moves in parallel with that of business fluctuation suggest that the influential factor to the moving pattern itself is mainly the revenue of contribution, not expenditures for medical care.

Needless to say, the surplus is obtained as revenue minus expenditure. The central component of revenue is contribution and the largest portion of expenditure is medical care benefits. Therefore, the absolute level of surplus depends on the relation between the levels of contribution and benefits needed per person. As the contribution is a function of income, we can guess that the growth rate of income in the large corporation associated with SHI is higher than that in small-medium enterprises of GHI. On the other hand, benefits are needed by the rate of morbidity. It is fundamentally influenced by demographic factors, namely age distribution of insured persons and family dependants. If the rate of morbidity becomes high in the older age group, the medical care benefits are needed more in the insurance society in which the ratio of the old to the total insured persons is relatively high.

Now let's compare the changes of each item in the settled account of GHI and SHI between the initial and the terminal year of the period observed here. Glancing at the two tables, we can find some characteristics of the financial situation in both schemes.

(1) In GHI, the ratio of contribution shows remarkably downward and that of national subsidies reversely increases its share. It is noteworthy that the share of borrowings

FIG. 1. RATE OF SURPLUS (DEFICIT) IN GHI AND SHI, 1955-1973



to supplement income has jumped to 25.7 per cent. This is the important reason that the share of contribution was relatively pressed to be lower.

- (2) Turning attention to the expenditure side, the share of insurance benefits became lower and it is due to the heavy ratio of redemption for borrowings. Combining both revenue and expenditure side, the financial situation of GHI has rather worsed over the observing periods when the Japanese economy has conspicuously grown. This is indicated either by the decrease of reserve fund or by the relatively lower multiple of the balance.
- (3) The situation is reversely appeared in SHI. Namely, both the ratio of contribution and benefits increase together and financial situation becomes better over the same periods. The multiple of the balance between the two years is high and it is found that the reserve fund was rapidly accumulated.

The question is why the situation is so different between those two schemes. To clarify this point, we must analyze the structural characteristics of each insurance scheme which exists back of the respective contribution and benefits. As the contribution is fundamentally the function of income, let's compare the monthly income of the insured person averaged by the standardized income class. The average income per month for GHI is 78,886 yen and that for SHI is 101,173 yen. Therefore, the index of the latter is 128 on the basis of the former as 100. As suggested in the comparison of distribution of the insured person by sex and by industry, the ratio of females is relatively greater and wholesale & retail are greatest out of industries in GHI. The average income of females is lower than that of

TABLE 5-a. SETTLED ACCOUNT OF GHI

Unit: hundred mil. yen

	1960	1973	$\frac{1973}{1960}$
Revenue	968 (100.0)	12,021 (100.0)	12.5
Contribution	931 ( 96.6)	8,121 ( 67.6)	8.7
National subsidy	20 ( 2.1)	805 ( 6.7)	40.3
Borrowings and others	13 ( 1.3)	3,095 (25.7)	238.1
Expenditure	907 (100.0)	11,881 (100.0)	13.1
Insurance benefit	870 ( 95.9)	8,765 ( 73.8)	10.1
Management expense	22 ( 2.4)	140 ( 1.2)	6.4
Redemption for borrowings	— ( — )	2,928 (24.6)	—
Facility	14 ( 1.6)	47 ( 0.4)	3.4
Balance	56	140	2.5
Reserve fund	206	154	0.7

TABLE 5-b. SETTLED ACCOUNT OF SHI

Unit: hundred mil. yen

	1960	1973	$\frac{1973}{1960}$
Revenue	920 (100.0)	8,538 (100.0)	9.3
Contribution	799 ( 86.8)	7,750 ( 90.8)	9.7
National subsidy	6 ( 0.6)	24 ( 0.3)	4.0
Balance brought forward	33 ( 3.6)	253 ( 3.0)	7.7
Transfer from the reserve fund	29 ( 3.2)	127 ( 1.5)	4.4
Miscellaneous	53 ( 5.8)	384 ( 4.5)	7.2
Expenditure	797 (100.0)	7,609 (100.0)	9.5
Insurance benefit	593 ( 74.4)	6,380 ( 83.8)	10.8
Management expense	34 ( 4.3)	267 ( 3.5)	7.9
Facility	85 (10.7)	530 ( 7.0)	6.2
Miscellaneous	63 ( 7.9)	432 ( 5.7)	6.9
Balance	86	929	10.8
Reserve fund	318	2,273	7.1

Source: *op. cit.*

TABLE 6. NUMBER OF THE INSURED PERSON AND AVERAGE INCOME, OCTOBER 1, 1973

Unit: hundred mil. yen

	Number of the insured			Average income per month		
	Total	Male	Female	Average	Male	Female
<b>GHI</b>						
Total	13,491	8,520	4,971	78,886	95,605	50,228
Wholesale & retail	2,898	1,801	1,097	78,733	95,060	51,922
Machinery & tools	1,444	977	467	81,788	97,708	48,430
Banking & insurance	220	134	86	82,588	98,457	57,695
<b>SHI</b>						
Total	10,857	7,860	826	101,173	114,515	62,810

Wholesale & retail	658	393	265	95,360	115,232	62,302
Machinery & tools	2,267	2,113	554	101,422	111,171	60,672
Banking & insurance	1,038	479	559	101,323	127,616	65,080

Source: *op. cit.*

males and wholesale & retail business is mostly distributed among the small-sized ones whose income is relatively low. On the other hand, in the case of SHI the ratio of females is only below 10 per cent of the total and the average income of SHI is higher than that of GHI as typically seen in the case of machinery & tools. From these facts, the average income in GHI as a whole is lower than that in SHI.

### 3: Differences of Benefits and Age Distribution

Needless to say, the financial situation is affected by not only the growth of contribution in revenue side, but also that of benefits on the expenditure side and the changing balance mostly results in the difference of growth rates in of contribution assessed and benefits needed.

Broadly speaking, the total amount of benefits ( $B$ ) are divided into the following components.

$$B = \text{Average medical cost per case } (m) \times \text{Frequency rate received the medical treatment per person } (r) \times \text{Number of insured person } (N)$$

Therefore the rate of increase of  $B$  approximately is:

$$\dot{B} = \dot{m} + \dot{r} + \dot{N}$$

(Sign of dot means the yearly average rate of increase)

Let us compute these components in the biggest three insurance schemes for 1960-1973.

TABLE 7. ANNUAL RATE OF INCREASE OF BENEFITS AND IT'S COMPONENTS

	$\dot{B}$	$\dot{m}$	$\dot{r}$	$\dot{N}$
GHI	19.29 %	11.72 %	2.46 %	3.88 %
SHI	19.68	12.02	0.15	6.53
NHI	24.07	13.65	6.26	0.61

Note: Since  $B$  includes benefits other services than medical care, the summation of  $m$ ,  $r$  and  $N$  is a little bit less than  $B$  which is independently computed.

In any scheme, it is found that the most important factor in raising the rate of  $\dot{B}$  is  $\dot{m}$ . However, the order of  $\dot{r}$  and  $\dot{N}$  is respectively different by scheme. For  $\dot{r}$ , the NHI figure is largest and that of GHI exceeds SHI. On the other hand,  $\dot{N}$  is largest in SHI with GHI next and NHI last.

First, the reason why  $\dot{N}$  is high in SHI is that the large corporations associated with SHI has absorbed a number of new labor force over these high growth periods of the Japanese economy. The smallest figure in NHI comes from the fact that the scheme covers the self-employed and regional residents other than the employees. Secondly,  $\dot{r}$  is affected by the pattern of diseases among the insured group. If the rate of disease is a function of

age, we can infer that the higher the ratio of old age group to the total number, the higher  $\dot{r}$ . To clarify this point, let us look at the change of frequency rate by age group.

FIG. 2. FREQUENCY RATE OF MEDICAL CARE RECEIVED BY AGE GROUP

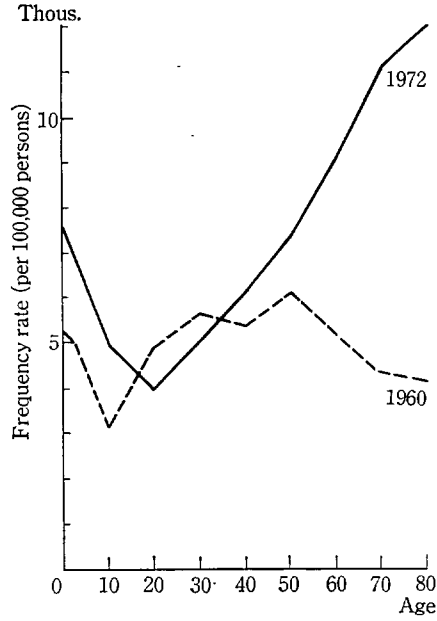
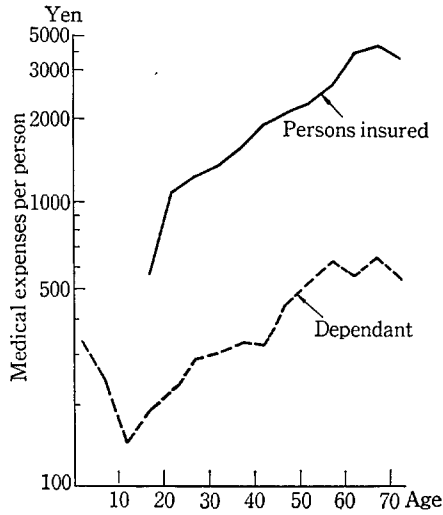


FIG. 3. MEDICAL EXPENSES PER PERSON BY AGE, GHI, OCT. 1966





In Figure 2, frequency rate in 1972 indicates a sharp rise from the 15-24 age group to older groups. In addition, it is noteworthy that the rate of the older age group above 45-54 in 1972 rose dramatically to a higher level compared to that in 1960.

Here, we must further point out the fact that the medical cost per person becomes higher by increments in age. This is proved in Figure 3. With exception of infant ages, it is found that the medical expenses per person is broadly a function of the patients's age. This fact is closely related to rises in the component of  $m$  as seen in Table 7.

Judging from many findings mentioned above, we can understand the difference in the financial situation among the three insurance schemes. This understanding will be further supported by Table 8 in which the age distribution of persons insured into three classes is indicated. Table 8 suggests that the financial difficulties will be greatest for NHI out of the three schemes with GHI next. Seeing that both  $m$  and  $r$  of NHI is largest, the figures multiplying these two factors together will be increased even more.

TABLE 8. AGE DISTRIBUTION BY THE MEDICAL INSURANCE SCHEME

Age class	Total population	NHI	GHI	SHI	Other schemes
All ages	100.00	100.00	100.00	100.00	100.00
0-14	23.83	23.26	21.97	24.64	28.02
15-59	65.07	60.15	70.10	69.59	63.62
60-	11.10	16.59	7.93	5.77	8.36

Source: *Indicators of Welfare Administration—Tendency of Insurance and Pension* (in Japanese), 1974.

#### 4. *The Present Financial Situation of NHI*

In recent years, the financial crisis of NHI has been stressed. The main reason has already been explained, but here further explanations are in order. In Table 9, the changes of ratio of each item is clearly observed. Summarizing in brief, the share of contribution and transfers from the municipal account decreased while that of national and prefectural subsidies was raised. On the other hand, the share of benefits to the total expenditure remarkably increased from 80 per cent to 92 per cent. In other words, the contrast between the slowdown of contribution and the rapid increase of benefits has required adjustment of the deficits by the national and prefectural finances. This situation was accelerated by the amendment of the law in 1973 in which the partial liability of 30 per cent of the cost of medical care was free for insured person of 70 and over. This liability is respectively assumed by the following: two-thirds by the national, one-sixth by the prefectural and the municipal governments respectively. This amendment has encouraged latent demands of old persons for medical care. As a result, the total expenditure of the insurance program, which looks after the 70 per cent of the cost of medical care, will undoubtedly increase.

In the management of NHI, we must give attention further to big regional differentials in the ability of financing by municipal unit as the insurer. Generally speaking, the financial situation of NHI associations is more tight in the west rural areas of Japan. As the

TABLE 9. SETTLED ACCOUNT OF NHI

Unit: hundred mil. yen

	1960	1973	$\frac{1973}{1960}$
Revenue	815 (100.0)	10,800 (100.0)	13.3
Contribution	396 ( 48.6)	3,586 ( 33.2)	9.1
National subsidy	324 ( 39.8)	6,220 ( 57.6)	19.2
Prefectural subsidy	14 ( 1.7)	201 ( 1.9)	14.4
Transfer from municipal account	36 ( 4.4)	311 ( 2.9)	8.6
Transfer from the fund	1 ( 0.1)	26 ( 0.2)	26.0
Balance brought forward	31 ( 3.8)	359 ( 3.3)	11.6
Miscellaneous	11 ( 1.3)	97 ( 0.9)	8.8
Expenditure	774 (100.0)	10,396 (100.0)	13.4
Management expense	81 ( 10.5)	569 ( 5.5)	7.0
Insurance benefit	620 ( 80.1)	9,533 ( 91.7)	15.4
Facility	22 ( 2.8)	136 ( 1.3)	6.2
Miscellaneous	51 ( 6.6)	158 ( 1.5)	3.1
Balance	41	404	9.9
Societies in red	△ 14	△ 91	
Societies in black	55	495	

Source: *Statistical Yearbook of Social Security*, 1962, 1975 eds. (in Japanese)

major industries in those areas are agriculture and fisheries, the growth rate of income was relatively low and population has continuously decreased since the young labor force migrated to urban industrialized cities. Therefore the ratio of old persons becomes higher in those areas and more medical benefits have been required more in comparison to urban districts.

### 5. Cost of Medical Care Observed from the Supply Side

Again let us turn our attention to the unit cost  $m$  of medical care and observe it from the supply side. Heretofore, factors influencing " $m$ " have been primarily observed from demand side, namely from persons insured requiring medical services. However, observing the unit cost of medical services ( $m$ ) from the supply side, it includes physician's fee, compensations for other medical personnel, drug cost, other expenses for medical supplies and other miscellaneous expenses. If medical equipment and drugs are newly developed, physicians would like to introduce such advancements and apply them to patients as soon as possible. At the same time, the development of medical sciences requires physicians and other personnel to become increasingly skilled. Therefore, these will be potential pressures to raise continuously unit costs of medical service.

Let us turn our attention to the national medical expenditure from a macroscopic point of view. The recent movement of that expenditure is shown in Table 9. Whether by total amount or per person, there is a distinct trend toward rapid increases for the periods observed. Here, it is noticed that the ratio of drug cost to the total medical expenditure is quite large judging from international comparisons. Needless to say, the cost of medical care roughly consists of compensation for personnel and the cost of supplies centering on

TABLE 10. CHANGE IN NATIONAL MEDICAL EXPENDITURE

Year	Medical expenditure (in 100 million yen)	Medical expenditure per person (yen)	Percentage of medical expenditure		Percentage of drug cost in medical expenditure
			<i>Versus</i> GNP (%)	<i>Versus</i> national income (%)	
1959	3,625	3,899	2.66	3.29	18.7
1960	4,095	4,384	2.53	3.09	21.1
1961	5,130	5,441	2.58	3.26	25.1
1962	6,132	6,443	2.83	3.46	29.4
1963	7,541	7,843	2.95	3.66	34.3
1964	9,389	9,661	3.17	4.01	36.7
1965	11,224	11,421	3.42	4.30	39.9
1966	13,002	13,126	3.38	4.26	38.9
1967	15,116	15,080	3.34	4.17	42.2
1968	18,016	17,766	3.38	4.20	39.6
1969	20,780	20,244	3.34	4.17	41.9
1970	24,962	24,032	3.42	4.22	43.2
1971	27,250	25,949	3.34	4.14	43.7
1972	33,994	31,672	3.59	4.45	40.8
1973	39,496	36,332	3.42	4.30	44.4

Source: *op. cit* for medical expenditure. Economic Planning Agency, *Statistical Yearbook of National Income*

medicine. Under the social insurance scheme, the pricing of both is controlled by government authorities. In the process of extending "medical care for the whole nation" it is important for the government to keep the unit price of medical service lower. If it is, physicians will be forced to compensate by increasing the numbers of treatment. However, this will possibly tend to increase the quantity of drugs used and it could raise the share of drug within the definite insurance budget. In addition, it has been said that there are some differences between the official standard price claimable and the actual purchasing price. It may be probably related to increases in the amount of drug prescribed.

To solve these problems, the government has planned to amend essentially the medical compensation system. The most important point is to enforce the specialization of dispensary and medical practice by raising the physician's fee. If it is realized, the relative share between personnel expenses and drug costs in national medical expenditures will approach that in western countries. However, to establish steadily the financing of social security including medical care, it should be fundamentally reexamined whether the relation between contribution and benefits is adequate to obtain higher welfare. This should be particularly stressed in present-day Japan who is rapidly approaching a society in which the ratio of old persons to the total population is becoming higher.