

What is a house? A number of specialists have made studies on the various problems involved in the motivating factors behind the housing industry and urban planning from the micro- and macro-economic points of view.

For example, the definition of "health" given by the World Health Organization is: "health is the condition of perfect physical, mental, and social well-being, which does not merely mean a condition free from disease or impediment." In view of this definition, and the factors mentioned above in relation to the housing industry, the complexity of the question of "what a house is" becomes much clearer. The welfare and security of a citizen is guaranteed by Article 11 of the Consti-

But problems in the housing industry do not solely result from the simple lack of overall national plans or policies. To a great extent, they result from the industry's own refusal to consider itself as a modern industry. Upon even the briefest examination, the management and methodologies of the housing industry are seen to have many illogical and uneconomic characteristics for the modern age.

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Year	GNP (A)	Amount Invested in construction (B)	Ratio
1963	255,759	44,979	17.6 %
1964	295,305	54,750	18.5
1965	326,504	59,694	18.3
1966	381,179	67,820	17.8
1967	448,015	84,928	19.0
1968	527,882	101,916	19.3
1969	624,333	125,251	20.1
1970	727,177	150,664	20.7
1971	796,986	177,485	22.3
1972	817,347	187,381	22.9

Table 1 ratio of Construction Investments to GNP prepared by the Ministry of Construction (Unit: ¥hundred million; B/A %)

mic theory and principles with sociological and technological elements and, in doing so, have recognized the harmony between these elements. At the same time, many enterprises have failed for their lack of understanding these vital relationships. This lack of skill in adopting the complex problems and management concepts of the modern age will usually cause an enterprise to fail in the international economic market. In the case of the housing industry, the cause for its irrationality, besides its general backwardness, is that

some enterprises lack the prerequisites for systematizing themselves. However, the housing industry takes up a little more than 20% of Japan's GNP (on the basis of construction investments) and occupies a central position in the national economy. Therefore, systematization of the housing industry's economic activities is an inevitable task and is being developed as part of the government's policy towards the housing industry. This is a characteristic feature of Japan's economic structure. (Table 1)

## II. THE BACKGROUND HISTORY OF THE HOUSING INDUSTRY AS A SYSTEMS INDUSTRY

Man's economic activities have developed with his wisdom of living. Until recently economic activity was carried out on a barter system, and its aim was for greater efficiency through commerce with neighbors, other tribes and people of larger political units in the vicinity. It was Adam Smith, with his keen insight into systems, who first expounded on the theory that higher efficiency could be realized by specialization. He stated this systems theory in The Wealth of Nations, the book which made Adam Smith one of the fathers of modern economics. He discussed the theory in an attempt to draw out an economic policy of free competition. In it, man's egoism, a quality endowed by God, is highly valued. If specialization proves to be beneficial to everyone, then specialization will be developed by man's natural endowment, his selfishness, and it becomes important to transact ever-increasing volumes of merchandise. This proves the close mutual relationship between the distribution of merchandise and the status of specialization. In

Adam Smith's theory, when the issue of distribution of merchandise is examined from the viewpoint of value, the common measure for evaluation is the amount of labor involved in producing the merchandise. On the basis of the so-called "Labor Theory of Value", he seeks the source of wealth in labor. As for the distribution of wealth, he pursues the interrelationships between three categories: namely, rent, profit and wages, from his unique standpoint, and from these relationships, developed an economic systems theory.

On the other hand, Marxist theory emphasizes the sociological relationship between capital and labor, and claims that the profit share of labor - the source of wealth - is unreasonably small. The wealth bled out of labor is invested in innovatory technology in order to advance competition among capitalists to gain more profit. Thus capital continuously expands, and yields even more profit. Excess production capacity will lead to the fall of capitalism. Marxist theory asserts that this is because the capi-

Index Country	Investment in Home GNP x 100%	Houses Built (unit: 100,000)	No. of houses built per 1,000 people
Japan	7	150	14
U.S.A.	3 - 4	150 - 170	7
West Germany	5 - 6	60 - 70	10
England	3 - 4	30 - 40	7
France	6 - 7	50 - 60	8
Sweden	5 - 6	10 - 15	11

Table 2 Japan's Home Construction and its comparison with countries abroad

Note: 1. Sources - The U.N. Statistics Annual

2. Figures for Japan - the actual results of fiscal 1969. Figures for other countries - the actual results of the second half of 1960.

talist system itself contains two conflicting factors: capital and labor. Alfred Marshall, another father of modern economics, developed the concept of circulation of national income. In this concept, an increase of wages will gradually enrich the whole of society and help the national economy to grow organically. In short, it is a vision of a system of the growing distribution of wealth.

John M. Keynes, who examined this theory critically and further developed it, established the body of modern economic thought by establishing his new concept. He states that the size of the national income is controlled by the size of the effective demand, and that the cooperation between industry and government is an important factor to the national income on the grounds that effective demand is made up of consumption and investment. In other words, an industry's non-aggressive economic activity during a recession may be compensated for by government investment. With government investment, the national income will rise until the labor force reaches a status of complete employment. Keynes' merit lies in his defining and introducing the role of a government that functions by giving an impetus to a national economy when the expanding system of wealth does not work well.

Thus the importance of systems theory was brought up in Adam Smith's days. Observation of how the housing industry, as part of the national policy, is systema-

tized, reveals that the housing industry needs to be backed up by a stronger body of theory. Since the industry is presently so backward, it is urgent that it be set up as an industrialized system. It inevitably has to be, as classic and modern schools of economics have indicated, established as a systematized industry based on a firm understanding of economic mechanisms. Thus the establishment and development of the Misawa Total System must also be backed by a body of theories concerned with economic systems, in which the various elements and factors indicated by the great economists are combined with relevant social phenomena. Establishment of division of labour as advocated by Adam Smith; solution of conflicts caused by increasing production as the Marxists point out or, in other words, the feedback to the consumer of profits made by technical innovations; establishment of a system of increasing distribution of wealth as part of the government's housing policy as Marshall advocates; participation of an enterprise as a systems industry from the point of financial loans and investment; these are some of the things which the Misawa Total System attempts to resolve and embody.

To this end, production, marketing, construction, management and other related functions are now being developed and solidified with reference to the socio-economic approach being used at the Institute of Research and Development.

## III. HOUSING INDUSTRY SYSTEM AND ECONOMICS

The Engel coefficient, which is the ratio of income to food cost, indicates how advanced a nation's civilization is, i.e. the "civil minimum" of the nation. As shown in Table 3 the ratio of the amount invested in housing to GNP is

7.82% in fiscal 1972. This ratio is rather high when compared with other countries. (Table 2, Table 3) However, the important thing is to not make a criterion of the amount invested, but rather to supply housing of a high qual-



Year	(A) GNP (¥hundred million)	(B) Amount Invested in Housing (¥hundred million)			(B/A) Ratio %
		Public funds	Private funds	Total	
1963	255,759	2,214	11,239	13,453	5.26
1964	295,305	2,865	13,894	16,759	5.66
1965	326,504	4,060	16,322	20,382	6.24
1966	381,179	4,379	19,215	23,594	6.19
1967	448,015	5,412	24,456	29,868	6.67
1968	527,882	6,279	29,675	35,954	6.81
1969	624,333	7,477	37,251	44,728	7.16
1970	727,177	8,787	45,893	54,680	7.52
1971	796,986	10,855	55,073	65,928	8.27
1972	817,347	13,825	52,486	66,311	8.11

Table 3 Ratio of the Amount Invested in Housing to GNP

ity in an economically efficient manner. Referring to the 1968 edition of the United Nations' "World Statistic Annual" and the "Report on the Statistical Survey on Housing" published by the Japanese Prime Minister's Office (see Table 4), the ratio of investment in housing to GNP, or the "civil minimum" rate, can be computed. Leaving aside the question

of the secondary meaning of the Engel coefficient, what should be noted is that the ratio of food cost to total costs is high in comparison with the growth rate of the GNP or the per capita income. It may be partially due to the difficulty for the people in switching from quantity to quality, and their lack of nutritional knowledge. But another

Who purchased Whose funds	Household (own houses)	Private real estate dealers		General enterprise (company owned houses)	Public	Total
		Private	Enterprise			
Total (private)	32,110 (70.6)	3,830 (60.1)	-	-	20 (0.6)	35,960 (58.5)
Housing enterprise installment sales Dealers	710 (1.6)	240 (3.8)	280 (51.8)	-	-	1,230 (2.0)
Employee's cooperative associations	3,460 (7.6)	160 (2.5)	10 (1.8)	2,710 (49.6)	-	6,340 (10.3)
Finance institutions	7,240 (15.9)	2,000 (31.4)	210 (39.0)	2,010 (36.8)	750 (20.9)	12,210 (19.9)
Housing Loan Corporations and other public loan institutions	1,950 (4.3)	140 (2.2)	40 (7.4)	740 (13.6)	2,820 (70.5)	5,690 (9.3)
Total	45,470 (100.0)	6,370 (100.0)	540 (100.0)	5,460 (100.0)	3,590 (100.0)	61,430 (100.0)
Construction cost	31,900	5,490	420	4,150	2,770	44,730
Cost of land	13,570	880	120	1,310	820	16,700

Table 4 Funds to Purchase Newly Built Houses (Fiscal 1969) (Unit: ¥hundred million; %)

Notes: 1. Source: White Paper on National Economy, Fiscal 1971

2. In the Household column, the amount of the funds self-provided is calculated as a remainder.

3. Figures in parentheses are percentage ratios of procured funds to the total amounts.

4. In the Who Purchased column, included under "Public" are houses for rent by Housing Corporations, local housing corp., houses owned and rented by local government, houses for government employees.

5. Listed under "Public" in the Whose Funds column are Housing Corporations, local housing corporations, local government, Employment Promotion Project Corporation, etc.

	Year	1963	1965	1967	1968	1969	1970
		per 3.3 sq. m.	per 3.3 sq. m.	per 3.3 sq. m.	per 3.3 sq. m.	per 3.3 sq. m.	per 3.3 sq. m.
Conventional methods	total	180	216	258	324	387	444
	per 3.3 sq. m.	7.5	8.6	9.2	10.7	12.0	13.3
Prefabrication methods	total	225	258	276	321	360	400
	per 3.3 sq. m.	7.5	8.6	9.2	10.7	12.0	13.3

Table 5 Trends in Housing Prices (Unit: ¥ten thousand)

Note: 1. Prefabrication methods (steel frame, wood frame)

Standard type single detached house

• Total structure area 100 sq. m. including facilities and appliances

• Representative types of the major prefabricated house manufacturers

• Offers variety in style and models of appliances within an average cost bracket

2. Conventional methods

Size and appliances are the same as those from the

Prefabrication method. May include improvements in appliances

reason is that little thought has been given to systematization. In order to establish a supply structure which is sound in both quality and quantity, it is of prime importance to systematize the housing industry, that is to set up a systematic industrialized housing industry. There is no other way to accomplish the necessary modernization.

In view of the trends in the prices of houses using conventional construction methods, and of those using industrialized housing technology, as well as the popularity of industrialized houses, it is essential to develop the housing industry as a systematized industry.

(Tables 5 & 6)

Let us examine the housing industry as a systematized industry from another aspect - economics. Economics, it has been said, is a study of the distribution of resources. However, the material resources available to man, namely land, labor and capital, are not limitless. On the other hand, man's desire to consume is practi-

cally limitless. Here lies the central point of the efficiency of distribution, with which economics is concerned.

Distribution of capital usually occurs on several levels. The major distribution areas are embodied in the food industry, manufacture of general consumer goods, machinery manufacture, civil engineering, construction and others. The ratio of the resources for the food industry to the total may be adjusted by an increase or decrease of the economic growth of a nation. For example, in Europe after World War II, material resources were distributed as the reconstruction proceeded. This manifested the principles of efficient distribution which reflected the conditions of the time. A rise in the standard of living accelerates the introduction of a great deal of other material resources related to the housing industry.

The microeconomic and macroeconomic views of the workings of the housing industry are shown in Table 7. When examined from

Year	No. of houses constructed (A)	No. of houses by industrialized housing (B)	Ratio (B/A) %
	(Unit: 1,000)	(Unit: 1,000)	
1965	998	31.1	3.1
1966	1,092	35.5	3.3
1967	1,229	45.3	3.7
1968	1,299	65.3	5.0
1969	1,480	95.7	6.5
1970	1,620	138.0	7.7
1971	1,707	177.0	10.4
1972	1,797	258.0	14.4
1973	1,894	360.0	19.0
1974	1,998	475.0	24.0
1975	2,104	630.0	29.9

Table 6 Houses by Industrialized Housing Production



the macroeconomic viewpoint, all the economic values which constitute the housing industry's GNP are included. It also indicates the total production and value of the housing industry, as well as the housing industry's total demand.

(Table 7)

When examined from the microeconomic viewpoint, the balance between the total supply and the total demand of the housing industry is shown. This relationship is affected by style, taste, and all of the other factors related to consumption. Macroeconomics does not predict the overall performance of the housing industry, but microeconomics shows the supply-demand relationship, which is the basis of most factors of the consumer's activities relative to the housing industry.

As shown in Table 8, from the microeconomic viewpoint, the main factor is transactions in single-family houses. Usually these comprise the purchase of private houses or construction of houses for rental. From the microeconomic viewpoint, the housing sector is shown as a process in business or decision-making. Thus the actual mechanism of the housing industry has to be studied from both sides; micro- and macro-economics.

Economics deals with the question of decision making. That is, economists study the conditions in the choice between merchandise X or Y. In the analysis of the classical school of economics, an attempt was made to determine the relationship between the purchase of a certain quantity of merchandise and the price thereof. If the price of merchandise X is not quite par with the demand, or if it is not deemed to be worth it, the supply of the merchandise X naturally decreases.

Thus the analysis of the classical schools observes economic activities in terms of supply-demand relationships. The supply-demand relationships in the modern housing industry, however, can't be explained by simple formulæ like these. Of course, the supply-demand relationship for houses can be predicted by such classical school analysis, but the mutual relationships between population increase, increase in demand for houses, fluctuations in price and increase in supply is really as shown in Table 9.

However, we realize that this is the limit of analysis which is possible by classical school methods when we attempt to study the complex mechanism of the housing industry. As the problem is pursued further, characteristics peculiar to the housing industry come into play. As shown in Table

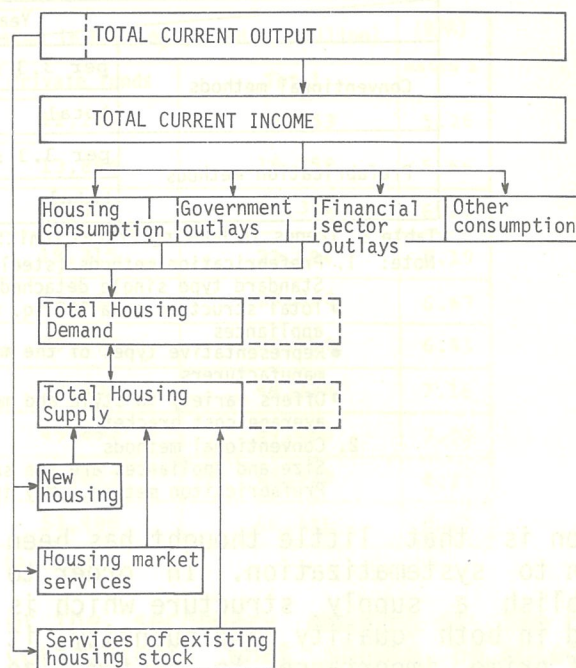


Table 7 The Housing Sector --- a Macroeconomic View  
SMITH, WALLACE, Housing: The Social and Economic Elements (University California Press, 1970)

9, the curve showing the supply-demand relationships indicates a quantitative relationship between price fluctuations and fluctuations in quantity. But these fluctuations are based on the assumption that the number of houses is constant. The shortcoming of this economic theory is obvious, because the mechanism of the housing industry is too complex. As for the nature of the quantities enumerated, it has to be determined whether they represent new constructions or existing housing stock. In studying changes in the supply-demand relationship caused by population increase, such factors as whether one is dealing in an urban or rural area also have to be taken into consideration.

It is not easy to comprehend the mechanism of the housing industry even from modern economic points of view. Development of the workings of the housing industry from classical theory involves many large problems, some of which are the unsystematic structure of the housing industry, the changes in quality of the housing industry due to economic and cultural changes and socio-economic factors. Thus the fluidity of the industry prevents economic theory from being affectively applied. Moreover, even in a fully systematized housing enterprise, it is difficult to apply a universal economic theory.

The Misawa Total System grasps the complex mechanism of the housing industry from socio-economic aspects and develops its

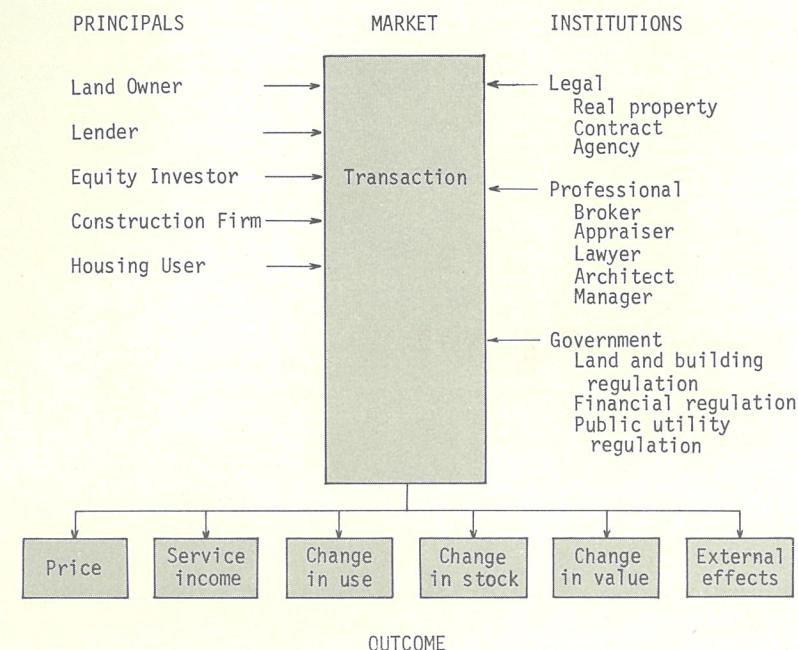


Table 8 The Housing Sector --- a Microeconomic View  
SMITH, WALLACE, Housing: The Social and Economic Elements (University California Press, 1970)

own economic theory. The Misawa Total System includes the merits of specialization advocated by Adam Smith, and of the theories of the different classical schools, develops a body of new theories, and puts them all into practice. There is no other way but total systematization to contribute to the nation's housing policy.

Today a nation's economy must be regarded on an international basis, and systematization of the housing industry is an inevitable task. Now, also, the need to improve the environment and welfare of mankind is being voiced aloud. Thus, we who are engaged in the housing industry, keenly feel the necessity of studying the socio-economic problems involved. The

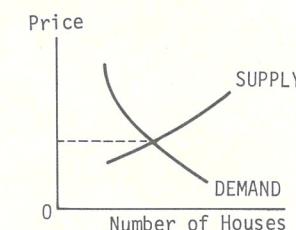


Table 9 Microeconomic Equilibrium --- a Traditional View  
SMITH, WALLACE, Housing: The Social and Economic Elements (University California Press, 1970)

concrete development and operation of the Misawa Total System is already being tackled at the Institute of Research and Development.

Detailed discussion of this socio-economic approach will be carried out later.