THE HOUSING CRISIS IN A FREE ECONOMY

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"Crisis" is defined by one of the standard dictionaries as "a turning point in the progress of an affair or series of events." One may reasonably claim to be completely justified in considering the progress of housing to be both quite an "affair" and a real "series of events."

In this discussion, the writers are avoiding detailed analyses of such important subjects as housing needs, public housing, or the extent of submarginal housing. This study can therefore be confined to aspects of how the private economy operates in the housing field. We can watch how housing moves, from one turning point to the next, and possibly prescribe for the reduction of such turning points. The writers make no claim to the key to "solve" the housing problem.

The first thing anyone notices who looks at the data is the seriousness of the recurring crises in housing which seem to come as inevitably as taxes, death or winter. The fluctuations in the construction cycle are greater than those for the economy as a whole, or even for industrial production. The fluctuations are comparable to those in the production of capital goods, and are far greater than can be found for the production of any important non-durable commodity with a comparable wide market. (See Charts 1 and 2 and Tables 1 and 2 on next two pages.)

This is a qualitative rather than a quantitative statement, for we do not have good data on the volume of house building. Bureau of Labor Statistics data are based on building permits, which are largely an urban phenomenon, and do not necessarily reflect the volume of new units being provided outside city limits, or inside cities through conversion of existing facilities. Consequently, the Bureau's data may drop much more in poor years and rise more in active years than the volume of house building itself.

Some unpublished data from the War Production Board files may be used to illustrate this. It was necessary to know during the war how much material would actually disappear from the market, as contrasted with what should disappear if rules and official figures were completely followed. As an aid in estimating what would actually happen in contrast to what would be reported, a study was made of the number of units provided from 1930 to 1940, including units made available through alterations and through construction in rural non-farm areas. The data developed were compared with building permit data on the number of residential units added in the same period as officially reported by the Department of Labor,

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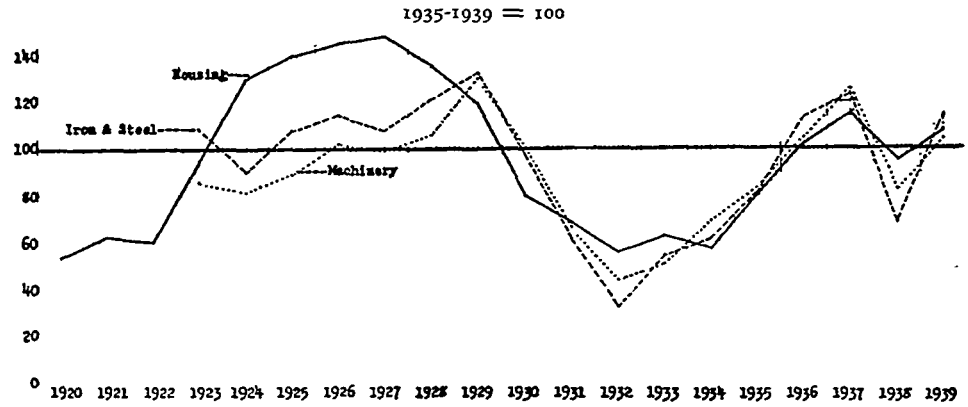
CHART 1. INDEXES OF NON-FARM HOUSING CONSTRUCTION AND PRODUCTION OF SELECTED DURABLE GOODS



Source: Housing Data, 1920-29 from Dept. of Commerce. 1930-39 from War Production Board (unofficial data).

Other Data, From Federal Reserve Board Indexes.

TABLE 1. INDEXES OF NON-FARM HOUSING CONSTRUCTION AND PRODUCTION OF SELECTED DURABLE GOODS.

1935-1939 = 100

Year	Housing*	Iron and Steel†	Machinery†
1920	53	...	..
1921	62	...	..
1922	60	...	..
1923	94	109	86
1924	130	90	81
1925	140	108	89
1926	145	115	102
1927	148	108	99
1928	136	121	106
1929	119	133	130
1930	80	97	100
1931	68	61	66
1932	55	32	43
1933	62	54	50
1934	57	61	69
1935	80	81	83
1936	102	114	105
1937	115	123	126
1938	95	68	82
1939	108	114	104

with the results shown in the following table (Table 3). Better data are available now than were available at the time the study was made, so the WPB estimates, if they were to be made now, would be somewhat different from the estimates made about five years ago. However, the difference probably would not be significant.

This table suggests that while the fluctuations in the number of units added may not be as great as appears from official statistics, they are still far greater than a free

CHART 2. INDEXES OF NON-FARM HOUSING CONSTRUCTION AND PRODUCTION OF SELECTED NON-DURABLE GOODS

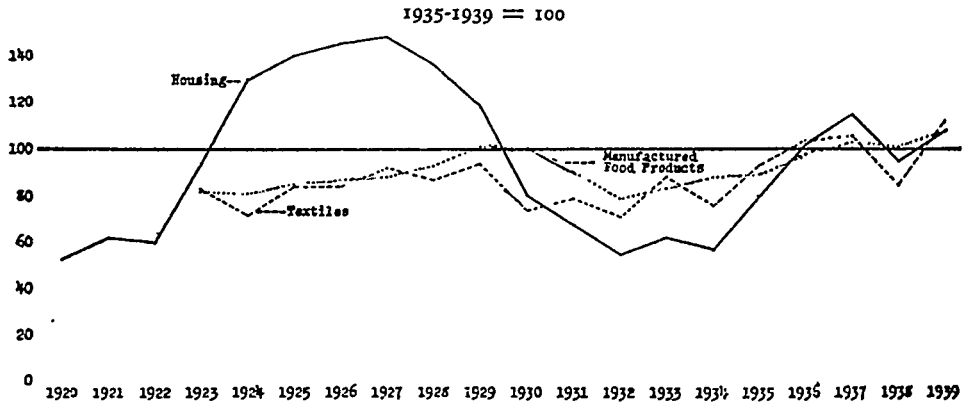


TABLE 2. INDEXES OF NON-FARM HOUSING CONSTRUCTION AND PRODUCTION OF SELECTED NON-DURABLE GOODS.

Year	Housing*	Textiles†	Manufactured Food Products†
1920	53	..	..
1921	62	..	..
1922	60	..	..
1923	94	83	82
1924	130	72	81
1925	140	84	85
1926	145	84	87
1927	148	92	88
1928	136	87	93
1929	119	94	101
1930	80	74	100
1931	68	79	90
1932	55	71	79
1933	62	88	83
1934	57	76	88
1935	80	93	89
1936	102	104	98
1937	115	106	103
1938	95	85	101
1939	108	112	108

* 1920-1929 data from Dept. of Commerce, 1930-1939 data from War Production Board.
† From Federal Reserve Board Indexes.

TABLE 3. NUMBER OF NON-FARM RESIDENTIAL UNITS ADDED BY YEARS.

	Official BLS Reports	Unofficial WPB Estimates		Official BLS Reports	Unofficial WPB Estimates
1930	330	464	1935	221	457
1931	254	391	1936	319	586
1932	134	314	1937	336	658
1933	93	354	1938	406	546
1934	126	325	1939	515	617

economy can stand with any comfort. The WPB figures suggest that the number of new housing units supplied at the depth of the depression was only about a third of the 937,000 estimated by the BLS, and of the 832,000 estimated by the Department of Commerce to have been supplied at the high point in the curve.

There are many factors entering into this feast and famine aspect of the house construction market. Some of these factors are common to the production of all durable goods or capital goods, though there are aspects of even these factors which are peculiar to the housing field. Other factors are unique to the housing field itself. A mental review of what happens during the housing cycle may suggest some of the factors that are inherent in the normal free market relationships in this field and suggest how difficult it has been to do more than talk about stabilizing the industry.

Suppose we start our review at the bottom of the construction cycle in a small community which begins to come out of a depression with a surplus of 100 houses in terms of its capacity to support housing, and with a growth of the number of families in the community which averages about 35 a year. Under such circumstances while there might be a housing shortage in terms of social need, there would be no shortage in terms of commercial markets for more than three years, because it would take longer than that for the normal rate of growth in the number of families to be reached. There would be building of course, even at the bottom of the depression, for even then some families would want a particular type of house in a certain block and be able to pay for what they want. But there would be no sizable volume of building. However, as the community got on its feet family formation would increase and soon there would be undoubling of existing families. Undoubling for a time might add 15 a year to the effective demand for housing. Within a few years the industry would wake up to the fact that there were few vacancies and that there was a potential increase in the number of families of 50 a year, or 35 through normal growth, plus 15 through undoubling. Industry might build five houses, or even 10, the first year, maybe 20 the second year after the bottom of the depression, 35 the third year, and 50 the fourth year without increasing vacancies. It could continue to build at the rate of 50 a year for another two or three years without increasing the number of vacancies. But after undoubling began to decline and new family formation dropped to 35, vacancies would begin to appear if the industry were to continue at the rate of 50 houses a year.

A small vacancy, possibly one of 5 per cent, would be desirable and would not cause any worry. A slight increase in the number of vacancies and increasing difficulty in disposing of houses might result in a slight decrease in the number of houses built and better value for those buying them, but sooner or later industry would have to drop to an average of 35. But it would not do this in time.

Vacancies do not appear until after houses have been built and until the industry has been geared to a rate greater than the market can absorb at the prices charged.

Prices do not fall rapidly enough to maintain the demand, and owners of existing properties may begin to offer concessions in price before the construction industry cuts its prices. This encourages the use of existing properties rather than new ones, or it will at least tend to discourage new construction. If a general decline in income or employment occurs at this time, doubling-up begins again. The volume of new family formation might drop to 20, in place of the previous figure of 50. For a short time family formation might drop even below this, and if the industry continued to produce even at a rate of 20 or 30 houses a year surpluses could increase and construction might almost stop. The cycle would then start over again and it might be several years after general business picked up before the volume of housing construction would again equal the average increase in the number of families.

To state it more briefly, industry adjusts itself to a volume which will take care of a shortage plus normal growth, keeps on building at this rate after the shortage disappears, finds a surplus on its hands, shuts down until another shortage develops, and then starts the next turn on the merry-go-round.

This sharp fluctuation could be reduced if the industry could adjust its prices to changes in family income. If, as family incomes drop the price of new housing could also drop, sales would not vary as they do. There are many reasons why this has not happened. One of the reasons that the construction industry finds it hard to adjust its prices to changes in demand is the handicraft nature of its site assembly methods. As production increases on a belt line operation, unit costs tend to drop. As production increases in a handicraft operation of a conventional nature, unit costs do not necessarily tend to drop. After a time less skilled workers must be employed, or overtime resorted to. Manhours per unit of output will then tend to go up. Because sizable commitments for building materials usually are not made for a long period in advance in the housing field, as is the case in more important manufacturing industries, prices for material and equipment also may go up as volume increases. So we have the phenomenon of an industry pricing itself out of a market as sales increase.

On the other hand, when the market is obviously shrinking, and unemployment in the house building industry becomes serious, costs do not drop rapidly. The prices of some building materials actually were higher in 1933 than in 1929. This failure of the price of building materials to follow changes in the size of the market is due in part to the fact that the price of no one material has much effect on the price of a finished house. If the producers of one material reduce prices, producers of other materials, and labor, will get more benefit from the reduction in price than will the companies reducing their prices.

Labor, too, can resist price reductions in a declining market for a while. It may be easier to slow down on a handicraft operation than it is in a manufacturing operation in which speed is controlled by the machine or the belt. It is a natural trait hallowed by long practice to spread the work as employment opportunities de-

crease, and so some costs rise as volume decreases—just as others rose as volume increased.

Nor is there a strong immediate incentive to reduce prices due to competition with the existing supply of housing, such as there may be in the field of manufactured consumer goods when production exceeds sales. The more durable and less affected by style changes a given commodity may be, the greater is the temptation to hold prices up in the hopes of selling it at the price originally planned. If goods are likely to spoil or lose their style value there may be more incentive to reducing prices of existing stocks, thereby forcing those that are manufacturing new stocks to reduce prices to compete. The construction industry is not subject to this type of rapid pressure and may not be compelled to reduce its prices or costs to any major degree till long after a decline sets in. By the time it has gotten around to reducing prices, its home building volume will have been seriously reduced.

This historical tendency to shift from overproduction to underproduction is reinforced by the fact that industry has tended to concentrate on the upper income group. There are not as many families in the upper income groups as in the middle and lower income groups, so the oversupply of houses (in terms of capacity to pay, not in terms of need) must be absorbed by families whose income is lower than the income of the families for whom houses were designed. This means a sizable depreciation in value must take place. That does not happen rapidly so the industry must mark time while the oversupply of housing for the upper income brackets finds it way down to the mass markets. The famine period for the industry, which would be long enough if it had overbuilt in each income range, is extended because it has concentrated its overbuilding in the upper income ranges. The dull period for the industry may therefore be a long one.

These factors which tend to make for violent fluctuations have their influence reinforced by the long life of the average house. There are, roughly, 32 million non-farm housing units in the country. If we add 1,200,000 a year to that number, we are adding almost 4 per cent, because very few of the 32 million will disappear from the market in a given year. If the average life were 20 or 25 years, almost 4 per cent of the houses might disappear in a given year so that 1,200,000 new houses would be needed just to maintain the supply. Fluctuations in the rate of family formation would then affect demand over and above this replacement market. Effective demand therefore might vary from 1.2 million per year to 2 million per year, rather than from 300,000 to possibly 1,200,000 per year.

Other influences strengthening these tendencies are discussed elsewhere in this symposium, so the point will not be elaborated further here.

The same factors which have made for great variations in the demand for new housing in the past may continue to do so in the immediate future. For instance, the Census estimates that the increase in the number of families during each half of 1947 will be about 525,000, but that in the last six months of 1949, only two years later, the increase will be only about 175,000. That is a drop of two thirds. A slight

recession in income, or changes in other factors could cause very appreciable changes from the Census figures and therefore could accentuate the tendency for the private house building industry to continue to fluctuate wildly in the future. Unless there is a significant change in the policies of the private house building industry, activity may continue to move from one turning point in an affair to another, from one crisis to the next.

Despite the almost fatalistic appearance of the forces causing the sharp cycles in the industry, and the holding down of housing standards for the lower rent families, there appears to be good reason to believe that the construction industry can change its policies. Not all the influences causing trouble are entirely beyond the control of the industry. Decisions to build at price levels which match incomes, and to reduce costs, particularly as volume rises, for instance, are decisions which would affect the volume and stability of house building and which within limits are subject to conscious control by the industry itself. If these and other difficulties are vigorously attacked, housing markets could be very decidedly increased, housing standards raised and fluctuations in construction reduced toward the order of magnitude of those in the consumer goods market.

While the first things that attract attention when one looks at the data on the private house building industry are the extreme fluctuation in its rate of activity and the fact that it always misjudges its effective market both in volume and in price range, it should be pointed out in fairness to the industry that we have a higher standard of housing than almost any other country, and that we have steadily improved our standards. Even today, following the nearest approach to an all-out war that this country has experienced, we have a higher standard of housing than we had in 1940.

Much of our housing is poor, not in relation to what we have had in the past, and not in relation to what most countries have, but in relation to the technical capacity of the country to provide shelter. However, if the industry could operate at capacity and produce the housing it knows how to produce, at a profit for each income level, our housing standards would be further improved. Private industry has shown a technical capacity to improve housing standards. Better management and planning can result in private industry raising our housing standards nearer to what its technical resources would permit. To the extent that the housing industry fails to utilize its managerial abilities in this direction other approaches will be needed.

The following table (Table 4) illustrates how our housing standards have been raised even during the five years of war and preparation for war.

This table shows that even during the war we were able to provide better heating, plumbing, and other facilities for our families than we had provided before. There is therefore good reason to believe that private industry can do much in a free economy to improve both housing standards, and the stability of the industry.

We were able to do this during the war in large part because of a sharp increase

TABLE 4. OCCUPIED DWELLING UNITS, BY STATE OF REPAIR AND PLUMBING EQUIPMENT, FOR THE UNITED STATES, URBAN AND RURAL NON-FARM: 1945 AND 1940.*
(In thousands of units)

State of Repair and Plumbing Equipment	Estimated Number		Increase 1940 to 1945†		Per cent	
	1945	1940	Number	Per cent	1945	1940
Total Occupied Dwelling Units	*31,281*	*27,748*	*3,533*	*12.7*	*100.0*	*100.0*
With private bath and private flush toilet	23,378	18,653	4,725	25.3	74.7	67.2
With private flush toilet, no private bath	1,474	1,450	24	1.7	4.7	5.2
With running water, no private flush toilet	2,917	3,134	— 217	— 6.9	9.4	11.3
No running water in dwelling unit	3,512	4,511	— 999	—22.1	11.2	16.3
Dwelling units not needing major repairs	*28,318*	*23,830*	*4,488*	*18.8*	*90.5*	*85.9*
With private bath and private flush toilet	22,464	17,340	5,124	29.6	71.8	62.5
With private flush toilet, no private bath	1,163	1,120	43	3.8	3.7	4.0
With running water, no private flush toilet	2,337	2,435	— 98	— 4.0	7.5	8.8
No running water in dwelling unit	2,354	2,935	— 581	—19.8	7.5	10.6
Dwelling units needing major repairs	*2,963*	*3,918*	*— 955*	*—24.4*	*9.5*	*14.1*
With private bath and private flush toilet	914	1,313	— 399	—30.4	2.9	4.7
With private flush toilet, no private bath	311	330	— 19	— 5.8	1.0	1.2
With running water, no private flush toilet	580	699	— 119	—17.0	1.9	2.5
No running water in dwelling unit	1,158	1,576	— 418	—26.5	3.7	5.7

*Source: Bureau of the Census, Series H-46, No. 1.
† A minus sign (—) denotes decrease.

in family incomes in relation to housing costs. Families could afford better housing in 1945 than they could afford in 1940. The current housing shortage is caused principally by an increase in income and not by a failure in the supply of housing to keep pace with the normal increase in the number of families. It is caused by an increase in demand in excess of the normal growth in the number of families.

The Census study from which the table above is extracted indicates that there was an increase of 2,745,000 by November, 1945, over the figure for April, 1940, in the total number of occupied units, and an increase of 3,533,000 in occupied non-farm units for the same period. The latter figure represents an annual growth of about 650,000 in the number of families. The average annual increase in the number of non-farm families is not expected to be much over 650,000 in the 40's, or much over 400,000 in the 50's. The country therefore provided as much housing as it needs on an average to take care of the increase in the number of families; moreover, housing of higher standards was occupied at the end of the war than at the beginning. (This is not to imply that more and better housing was not needed during the war.) From the standpoint of long time average effective demand, the industry did all that was required, and about all the WPB controls would permit. But the industry did not provide housing to meet the effective demand caused by the change in family income.

This wartime experience is a clue to one of the reasons why private industry can go still farther toward raising housing standards, increasing volume and reducing fluctuations. During the war national income rose, but controls on industry and on

CHART 3. 1945 TO 1960 CONSTRUCTION REQUIREMENTS FOR NON-FARM DWELLING UNITS AT 1960 PRICES BY RENT CLASSES UNDER ASSUMPTIONS OF THIS STUDY

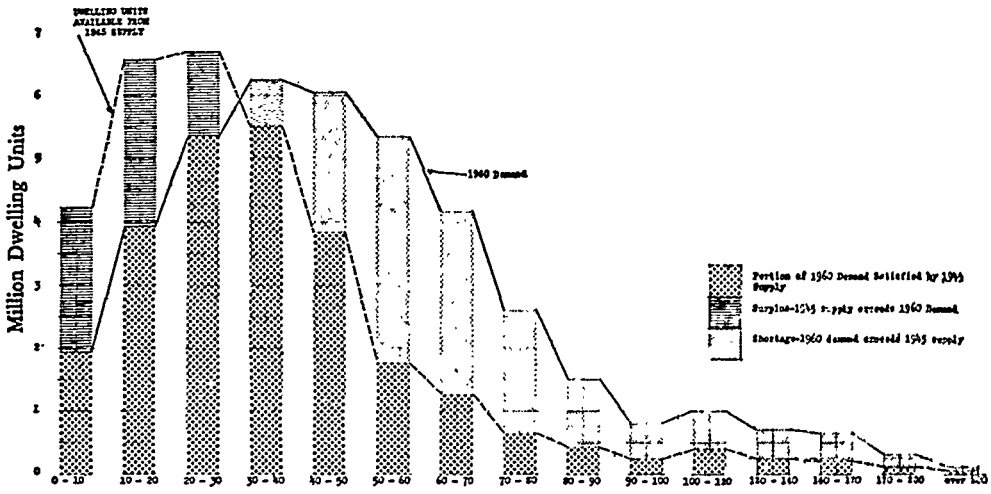


TABLE 5. DEMAND FOR NON-FARM DWELLING UNITS BY 1960 AT 1960 PRICES.
(All estimates in thousands)

Rent Class $ Per Month	Number of 1945 Dwelling Units Available in 1960	Estimated Demand for Dwelling Units 1960	Portion of 1960 Demand Satisfied by 1945 Supply	Shortages	Surplus
0 - 10	4,228	1,931	1,931	.....	2,297
10 - 20	6,559	3,926	3,926	.....	2,633
20 - 30	6,707	5,367	5,367	.....	1,340
30 - 40	5,515	6,245	5,515	730	.....
40 - 50	3,852	6,045	3,852	2,193	.....
50 - 60	1,772	5,355	1,772	3,583	.....
60 - 70	1,261	4,183	1,261	2,922	.....
70 - 80	646	2,620	646	1,974	.....
80 - 90	441	1,511	441	1,070	.....
90 - 100....	239	805	239	566	.....
100 - 120....	406	1,025	406	619	.....
120 - 140....	240	712	240	472	.....
140 - 170....	215	663	215	448	.....
170 - 200....	108	300	108	192	.....
Over 200....	65	128	65	63	.....
TOTALS.....	32,254	40,816	25,984	14,832	6,270

prices kept construction costs down. Consequently, the purchasing power for housing was increased. If in the post-war period industry can itself hold prices down, this improved relationship of income to housing costs can be maintained. To the extent that this improved relationship is maintained, housing markets will go up.

A quick look at the figures in Table 5 (accompanying Chart 3) relating to the number of housing units demanded in each rental range will indicate why the market will

be so much bigger if there is only a slight improvement in the relation of construction costs to income. There are far more people who can afford to pay $60 a month for their housing than can pay $70, and more who can afford to pay $50 than $60, and so on down the line. If construction costs stay down, so that in terms of constant prices families who previously could pay only $50 can now afford to pay the equivalent of $65, these families will not find enough $65 houses. Consequently, even if every existing $65 house were vacated, and families living in $50 units were to move to these houses, there would still be a demand for new $65 houses. That in brief is why it is so important for the construction industry to hold its costs to an increase roughly 40 per cent over the 1940 levels in order that a margin may be kept between the new construction costs and the new incomes. It enables the industry to find a market in rehousing existing families in addition to the market created by the increase in the total number of families.

If the industry will hold its increase in prices and costs to a level sizably below the increase in family incomes, for the first time in history it will be going after a replacement market as well as the market created by the increase in the number of families. If, in addition, it distributes its new housing in price ranges commensurate with the demand instead of building for the upper income families, it will increase its replacement market immediately and sharply. Instead of having to adjust itself to a fluctuating increase in the number of families which in the near future may level off at about 400,000 a year, it may be able to adjust itself to a market averaging around a million a year. The steps necessary for this readjustment and shift to a more profitable basis are steps which the industry can take. They do not present insurmountable obstacles.

The major step that must be taken to achieve this objective of stability, increased markets and higher housing standards, is that of holding down construction costs. If they can be held within 140 per cent of the 1940 levels and family incomes maintained at the 1945 levels, the market will be approximately double what it would be if construction costs rise as much as income. Costs now are much higher than 140 per cent of 1940 because production of materials is much below capacity, and prewar efficiency and post-war possibilities have not been achieved in the manufacturing of building materials. Construction costs are high also because of uncertain deliveries, uncertain prices and temporarily lower labor efficiency at the site, which makes it impossible to build at costs which should be reached in the near future. It is encouraging that men with competence in the field believe that construction costs can be held to levels not far from 40 per cent above those prevailing in 1940.

The second step that must be taken is to build to the market, that is to the income distribution of the families able to rent or buy housing units. If the industry continues to build for the upper income group, it will have to wait long periods for property to depreciate, between spells of activity. If it will build directly for the huge market created by the increase in family incomes, it will not have to wait for property to depreciate and will not have to limit itself to the increase in the number

of families. There are many other minor and some relatively important steps which should be taken, but these two are essential. If these are taken, many other steps will follow more or less automatically.

The problems of holding down building costs are somewhat the same the country over. The problems of calculating the market to which to build will differ from city to city. We may illustrate the demand that will be created by these two steps by making some rough calculations for the country as a whole rather than for any one city. This will illustrate how the market, housing standards and stability could be increased in any area in which the industry were to build to the demand in each group.

The basic data needed for the house building industry to develop a program for volume and pricing which would make a huge market profitable and relative stability possible are available to the industry. We know a great deal about the family formation. We know an increasing amount about the income and rental distribution which controls the housing market. By projecting these facts we can determine within relative workable margins of error the markets for housing. The following tables indicate two sets of premises which may be used by the industry in calculating its markets. Our first assumption in the first set of premises (designated herein in text, charts and tables as the Basic Assumption or Assumption A) is that construction, rents and values will level off about 40 per cent above the 1940 base. This may be too high or too low, but for our purpose it appears to be a satisfactory figure. We assumed that the Census estimates for the number of families in 1960 are approximately correct, that approximately 6,000,000 of the families in 1960 will be farm families, so that the total number of non-farm families (to which this discussion is limited) will be about 38,775,000. We used depreciation rates for the housing existing in 1945 that depended on the 1945 values. The rates we used are shown in the following table (Table 6). Next we assume that the per capita family income after taxes in 1960 will be approximately equivalent to that in 1945. This may mean a slight reduction in real income after taxes because the cost of living may be higher in 1960 than it was in 1945. There are reasons why this assumption may be too optimistic and why it may be too pessimistic. For instance, the income of individuals is already higher than it was in 1945. Members of the armed forces should be getting more in 1960 as civilian workers than they were getting in 1945 working for the Army or the Navy. On the other hand, unemployment may be lower now than we may expect for the long pull. And there may be fewer women, old, and very young workers employed per family by 1960 than there were in 1945. But if any allowance is to be made for increased productivity during the next 15 years, it would seem that the family incomes of 1960 might at least approximate the levels of 1945.

It was assumed finally, in the first set of premises, that the proportion of non-farm disposable income available for rent or rental equivalent will be about 15.3 per cent as compared with 15.8 per cent in 1939, and 17.8 per cent in 1929. This is based

TABLE 6. 1945 NON-FARM HOUSEHOLDS.
(1940 and 1960 prices)

Rent Class $ Per Mo.	1945 Homes 1940 Prices (000)	Depreciation (Per cent per year)	Total Depreciation (Per cent)	Net Price Change* (Per cent)	1945 Homes 1960 Prices (000)	Fire and Demolition Losses 1945 - 1960 (000)	1945 Homes Available in 1960 - 1960 Prices (000)
0 - 10	4,372	2.66	40.0	0.	4,372	144	4,228
10 - 20	7,326	2.33	35.0	5.0	6,649	90	6,559
20 - 30	7,863	2.10	31.5	8.5	6,770	63	6,707
30 - 40	6,211	1.80	27.0	13.0	5,560	45	5,515
40 - 50	3,029	1.80	27.0	13.0	3,892	40	3,852
50 - 60	1,510	1.60	24.0	16.0	1,799	27	1,772
60 - 70	817	1.60	24.0	16.0	1,275	14	1,261
70 - 80	468	1.50	22.5	17.5	654	8	646
80 - 90	298	1.33	20.0	20.0	445	4	441
90 - 100	202	1.33	20.0	20.0	242	3	239
100 - 110	166	1.20	18.0	22.0	229	3	226
110 - 120	124	1.20	18.0	22.0	183	3	180
120 - 130	96	1.15	17.3	22.7	131	2	129
130 - 140	62	1.15	17.3	22.7	113	2	111
140 - 150	46	1.15	17.3	22.7	99	1	98
150 - 160	37	1.10	16.5	23.5	65	1	64
160 - 170	28	1.10	16.5	23.5	53	†	53
170 - 180	20	1.00	15.0	25.0	41	†	41
180 - 190	14	1.00	15.0	25.0	38	†	38
190 - 200	8	1.00	15.0	25.0	29	†	29
200 & over	7	1.00	15.0	25.0	65	†	65
TOTALS...	32,704	....	....	....	32,704	450	32,254

* A 40% increase in the price level from 1940 to 1960 was assumed (the Basic Assumption in text above).
† Less than ½ thousand.

on the belief that there will be a long-time downward trend in the ratio of the housing expenditures to income, but that the decline from 1929 to 1939 was much greater than the long-time average. The depression of the 30's reduced expenditures for housing, and incomes started to rise toward the end of the period. A smaller proportion of the disposable income therefore went for rent or rental equivalent in 1939 than would have been required had there been 10 prosperous years during the 30's. The use of the 15.3 per cent figure is about the equivalent of suggesting a decline of one third in the proportion of the income going to rent over a period of a century. The following charts and accompanying tables show the operation of this Basic Assumption.

As can be seen from these charts and accompanying tables, variations from these assumptions were also developed. One of these was that there would be an increase in construction costs and rent and rental equivalent of 50 per cent above the 1940 base. Another one was an increase of 30 per cent in these three items. Still another change in the assumptions was for a variation of 5 per cent in the proportion of income going to rent above and below the 15.3 per cent used.

A somewhat different assumption was set forth by Mr. Wyatt (referred to in the charts and tables as Assumption B) in his testimony before the House Banking and Currency Committee. The data presented in this testimony suggest Mr. Wyatt

CHART 4. EFFECT OF VARYING THE ESTIMATED PROPORTION OF NON-FARM DISPOSABLE INCOME GOING TO RENT IN 1960

(Other Basic Assumptions Remaining Unchanged)

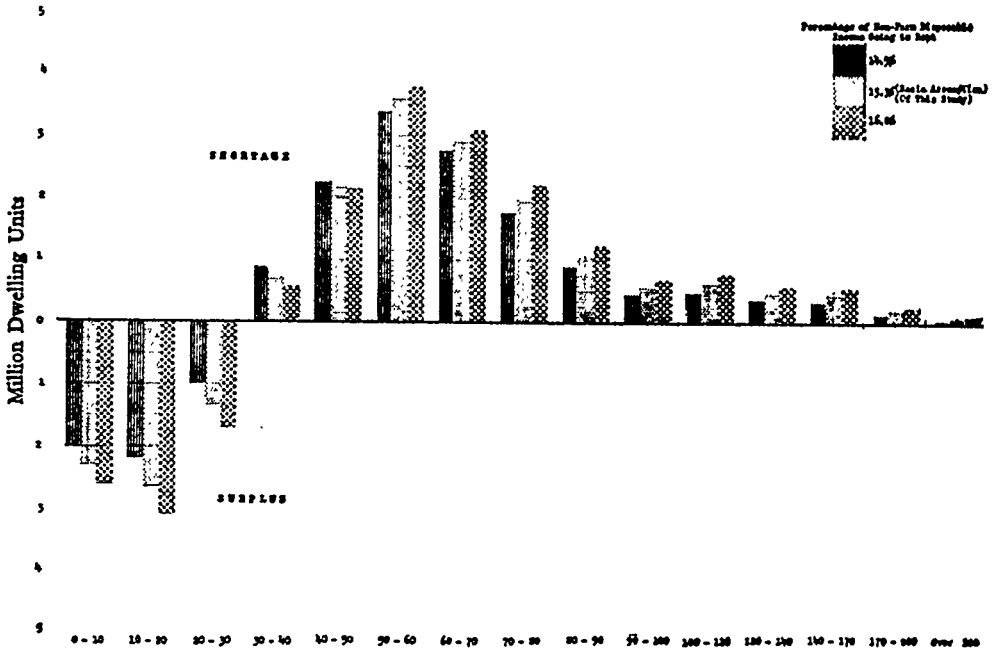
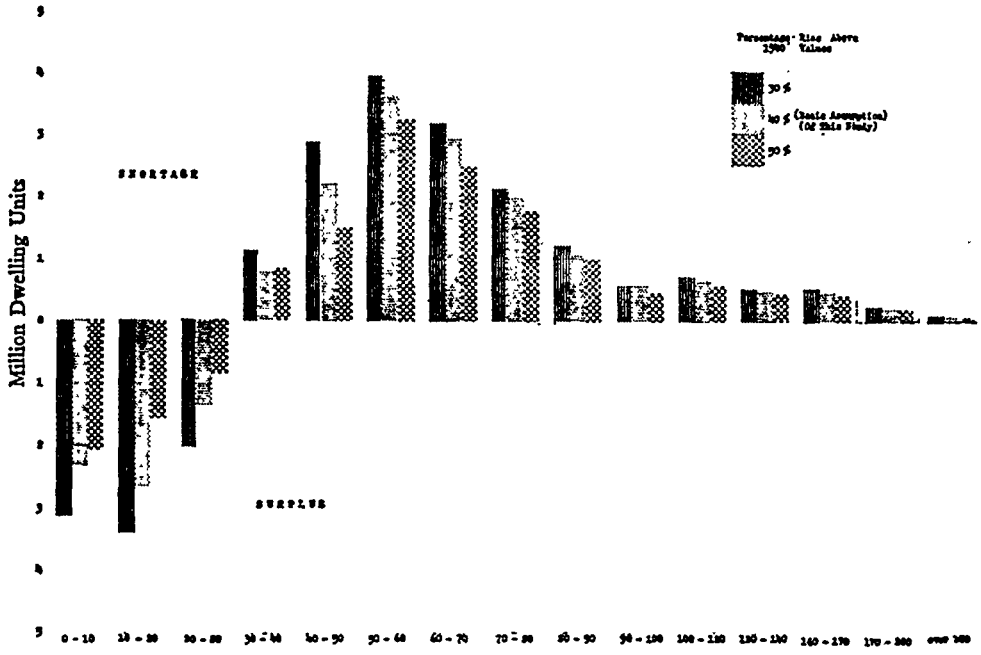


TABLE 7. EFFECT OF A 5% VARIATION ABOUT THE BASIC ASSUMPTION THAT RENT EQUALS 15.3% OF NON-FARM DISPOSABLE INCOME IN 1960.
(Other Basic Assumptions Remaining Unchanged)
(Thousands)

Rent Class	Per cent of Income Going to Rent					
	14.5%		15.3% (Basic Assumption)		16.0%	
	Shortage	Surplus	Shortage	Surplus	Shortage	Surplus
0 - 10	.....	1,992	.....	2,297	.....	2,596
10 - 20	.....	2,176	.....	2,633	.....	3,078
20 - 30	.....	984	.....	1,340	.....	1,689
30 - 40	893	.....	730	.....	566	.....
40 - 50	2,244	.....	2,193	.....	2,144	.....
50 - 60	3,383	.....	3,583	.....	3,783	.....
60 - 70	2,755	.....	2,922	.....	3,090	.....
70 - 80	1,750	.....	1,974	.....	2,199	.....
80 - 90	898	.....	1,070	.....	1,239	.....
90 - 100	450	.....	566	.....	679	.....
100 - 120	483	.....	619	.....	761	.....
120 - 140	364	.....	472	.....	576	.....
140 - 170	339	.....	448	.....	557	.....
170 - 200	132	.....	192	.....	237	.....
Over 200	23	.....	63	.....	94	.....
TOTAL	13,714	5,152	14,832	6,270	15,925	7,363

CHART 5. EFFECT OF A 10 PER CENT VARIATION ABOUT THE BASIC ASSUMPTION THAT IN 1960 HOUSING VALUES AND CONSTRUCTION COSTS WILL BE 40 PER CENT ABOVE 1940 LEVELS

(Other Basic Assumptions Remaining Unchanged)



Rent—Dollars Per Month

TABLE 8. EFFECT OF A 10% VARIATION ABOUT THE BASIC ASSUMPTION THAT IN 1960 HOUSING VALUES AND CONSTRUCTION COSTS WILL BE 40% ABOVE 1940 LEVELS.
(Other Basic Assumptions Remaining Unchanged)
(Thousands)

Rent Class	1940 - 1960 Estimated Price Rise					
	30%		40% (Basic Assumption)		50%	
	Shortage	Surplus	Shortage	Surplus	Shortage	Surplus
0 - 10	.....	3,125	.....	2,297	.....	2,045
10 - 20	.....	3,377	.....	2,633	.....	1,544
20 - 30	.....	1,994	.....	1,340	.....	833
30 - 40	1,123	.....	730	.....	780	.....
40 - 50	2,880	.....	2,193	.....	1,490	.....
50 - 60	3,943	.....	3,583	.....	3,224	.....
60 - 70	3,183	.....	2,922	.....	2,725	.....
70 - 80	2,121	.....	1,974	.....	1,761	.....
80 - 90	1,221	.....	1,070	.....	992	.....
90 - 100	563	.....	566	.....	448	.....
100 - 120	697	.....	619	.....	550	.....
120 - 140	508	.....	472	.....	431	.....
140 - 170	507	.....	448	.....	399	.....
170 - 200	224	.....	192	.....	179	.....
Over 200	88	.....	63	.....	5	.....
TOTAL	17,058	8,496	14,832	6,270	12,984	4,422

CHART 6. ESTIMATED PERCENTAGE DISTRIBUTION OF OCCUPIED NON-FARM DWELLING UNITS UNDER ASSUMPTIONS. "A"—BASIC ASSUMPTIONS OF THIS STUDY—AND "B"—AVERAGE FAMILY INCOME 20 PER CENT BELOW 1945

(Price level 40 per cent above 1940)

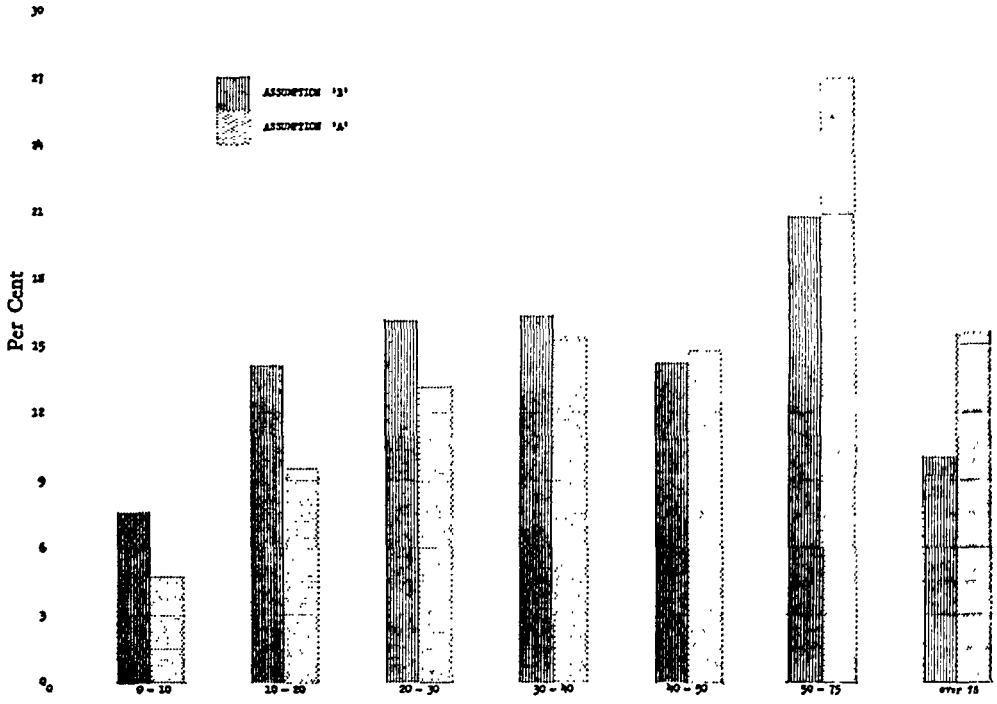


TABLE 9. ESTIMATED PERCENTAGE DISTRIBUTION OF OCCUPIED NON-FARM DWELLING UNITS UNDER ASSUMPTIONS "A"—BASIC ASSUMPTIONS OF THIS STUDY—AND "B"—AVERAGE FAMILY INCOME 20% BELOW 1945.
(Price Level 40% Above 1940)

Rent Class	Assumption A	Assumption B
$ Per Month	*Per cent*	*Per cent*
0 - 10	4.7	7.6
10 - 20	9.6	14.1
20 - 30	13.2	16.1
30 - 40	15.3	16.3
40 - 50	14.8	14.2
50 - 75	26.9	20.7
Over 75	15.5	11.0
	100.0	100.0
Average Rent Per Month.....	50.19	42.60
Median Rent Per Month.....	44.89	37.65

CHART 7. PERCENTAGE DISTRIBUTION OF OCCUPIED NON-FARM DWELLING UNITS FOR SELECTED PERIODS AT 1940 PRICE LEVEL

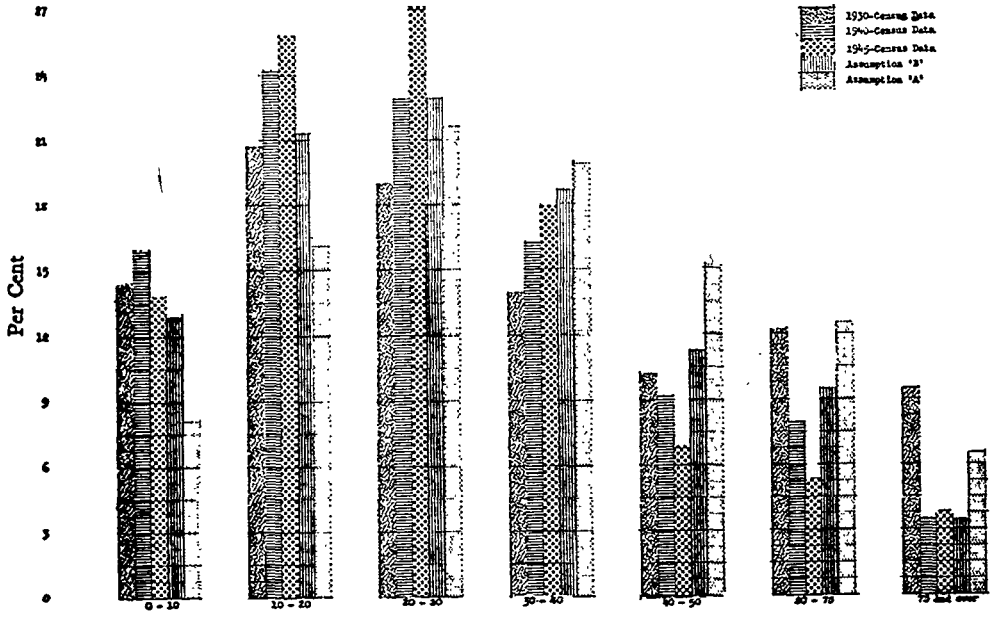


TABLE 10. COMPARISON OF THE PERCENTAGE DISTRIBUTION OF OCCUPIED DWELLING UNITS UNDER ASSUMPTIONS "A" AND "B" WITH THE DISTRIBUTION REPORTED BY THE CENSUS IN SELECTED YEARS.
(All at 1940 Prices)

Rent Class	Census Years			Assumption	
	1930	1940	1945	B	A
$ Per Month	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
0 - 10	14.50	15.97	13.85	12.88	8.10
10 - 20	20.70	24.23	25.85	21.30	16.10
20 - 30	19.00	22.87	27.10	22.95	21.60
30 - 40	13.95	16.29	17.95	18.66	20.00
40 - 50	10.20	9.24	6.85	11.27	15.20
50 - 75	12.19	7.97	4.60	9.52	12.50
Over 75	9.46	3.43	3.80	3.42	6.50
	100.0	100.0	100.0	100.0	100.0

assumed a decline of about 20 per cent in the money income of families below the 1945 levels. For the purposes of this study we used this as the basis for the second set of calculations on the probable housing market, but kept the other assumptions constant. Chart 6 (and accompanying Table 9) compares the possible market on the basis of the assumption used by Mr. Wyatt and the basic assumption used in this

study, including the effect of these two assumptions on median rents, and on the distribution of the rents by price classes.

Chart 7 (and accompanying Table 10) compares the distribution of occupied dwellings according to monthly rent or rental equivalent which prevailed in 1930, 1940, and 1945, according to Census reports, and the distribution which would prevail in 1960 under each of the two assumptions. The 1940 price level has been used as a common denominator, and each of the other distributions has been adjusted to this basis. It will be noted that, compared with the 1930 distribution, Assumption A presumes a decided shift from the lowest rent groups toward the medium rents as well as a sizable decrease in the percentage paying over 75 dollars a month. Assumption B allows for a small percentage reduction in the lowest rent class only, a small increase in the houses renting for 10 to 30 dollars, and a very considerable reduction in those costing over 75 dollars a month.

The following table (Table 11) gives the picture in more detail showing the possible demand for housing by 1960 on the basis of the two sets of assumptions. If the first premise is correct, and income stays up and costs are held down, there will be a commercially effective demand for nearly 15 million units between now and 1960. Over half of these will be in the price class of $40 to $70, or in terms of 1940 prices a $30 to $50 range. If Mr. Wyatt's assumption as to income is correct, with other things remaining unchanged, there will be an effective commercial demand for about 11 million units. Under the assumptions used, each increase or decrease of 5 per cent in the family income, cost of construction or rent or rental equivalent has the effect of reducing the potential market by about 1,000,000 units. Consequently, a 20 per cent cut in income premised by Mr. Wyatt reduces the market very decidedly, as shown in the preceding table.

TABLE 11. POSSIBLE DEMAND FOR HOUSING BY 1960 UNDER ASSUMPTION "A" AND "B." (Thousands)

Rent Class	ASSUMPTION A		ASSUMPTION B	
	Shortage	Surplus	Shortage	Surplus
0 - 10	.....	2,297	.....	1,126
10 - 20	.....	2,633	.....	804
20 - 30	.....	1,340	.....	136
30 - 40	730	.....	1,138	.....
40 - 50	2,193	.....	1,944	.....
50 - 75	7,679	.....	5,041	.....
Over 75	4,230	.....	2,505	.....
TOTALS	14,832	6,270	10,628	2,066

The figure of the potential market of approximately 15,000,000 for the next 15 years on the basis of our first assumption should be contrasted with the expected increase in the number of families, which is estimated by the Census to be roughly 7,500,000; that is, if the historical methods of operation in the construction industry

were to be followed in the next 15 years we would have a commercial market for about 7,500,000 families.

About half of the 15,000,000 market is independent of the increase in the number of families. By holding down costs and building to the income distribution therefore, fluctuations should be sharply reduced. Even if the marriage rate falls the rehousing market would still be with us. By developing two markets instead of relying on one, we would be increasing the volume and the stability of the industry.

Under the second assumption, which would appear to be the most pessimistic one we would care to make—a decline of 20 per cent in the national family income—we would still have a rehousing market of nearly 3 million houses during this 15-year period if the industry will hold down costs and build to the market. This would be in addition to the demand caused by the increase in the number of families. Historically the industry has not developed any replacement demand but has assumed that little could be done but build houses to last 80 years or more. So that even this very conservatively estimated 3 million market would be a net gain of 3 million for the industry.

In the consumer goods industries there is always a market from existing consumers because of the short life of most consumers goods. There is usually in addition a market caused by an increase in the number of consumers. In durable goods industries other than housing there is a market caused by replacement of existing goods as more efficient producer goods are developed, or as existing producer goods wear out. If the housing industry will build to the market it too can secure some of this type of business.

The present flash commercial market for housing in some respects makes it easier to start developing a rehousing market. It will demonstrate to the industry that there is a mass market for low-priced housing, and it is this low-priced housing in which it will be easiest to use the new techniques which have been becoming available to the industry. During the war it was necessary to build a thousand-house development at a clip, and there was a considerable advance in construction methods. These advances have indicated that it is technically and administratively possible to reduce construction costs as the material and labor supply becomes adequate. For instance, the belt line process in the factories has been adapted to building of houses. Even before the war this had been done by some firms who learned to have highly specialized workers move past the site in a regular sequence, instead of having the article being produced moving past the specialized worker, as occurs in most belt line manufacturing processes carried on under a roof. Other firms reduced costs by more conventional methods of assembling parts of houses under roofs and then completing the assembly on the site.

The growth of large building organizations has brought an increase in the managerial abilities of the field and this competition has resulted in increasing the skills of smaller builders. The pressure for reducing cost is being aided too by new industrial capacity, developed during the war, which is being utilized in the building

products field. This means that improved building materials are now in prospect, which can be used in the low cost mass market. Acceptance on the part of builders of these newer techniques and managerial abilities for the purpose of building at competitive prices in the mass market could result in production of houses at a profit and in a volume large enough to rehouse the next 10 years from 3 million families (if Mr. Wyatt's estimates are correct) to 7 million, if the estimates used in this analysis are correct.

The acceptance of these new methods also would help the industry to cut costs as general price levels drop and thereby would further stabilize the industry. The rehousing market could proceed in times of reduced national income because reduction in handicraft operations at the site would reduce the resistance to lower costs with the general decline in the wholesale index. And with large firms interested in the completed house as distinguished from only small parts of a house, there will be increased interest in the reduction of the prices of materials going into the house, which will cause increased competition for conventional building materials. It would appear possible therefore for private industry to sharply reduce fluctuations in the house building field if enough builders decide it is worth the attempt.

There are other aspects of the industry, aside from its fluctuations and its failure to build to the market. Many of these are covered in other articles in this symposium, and need only to be mentioned here. For instance, there has been a decline in the tendency to build for rent. Newly formed families can rarely afford to buy housing, and even if they could, their housing needs at the time the family is formed are often quite different from what they will be after a few years. The housing needs of a family with children are quite different from the housing needs of most families without children. Consequently, there is a need for the continued production of rental housing. Industry has this problem, and others to master, if we are not to have a different type of housing crisis in the future.

It may appear at first sight that the difference between the estimated commercial market based on Mr. Wyatt's assumption and the estimated market based on the assumption that 1945 incomes are maintained, is so great as to give the industry a strong feeling of uncertainty as to what the market really is. If we assume a 500,000 market for the expansion of population over the long run, and if there is demand for about 200,000 for the rehousing market (under Mr. Wyatt's premise), we have a total demand for approximately 700,000 a year. If we have a demand for 500,000 for rehousing purposes (under the other premise) there is a total commercial demand of a million new houses a year. The difference between 700,000 and a million is nearly 50 per cent. But this is not the dilemma it appears. In the first place, under almost any assumption, there is a current market today for about a million houses a year. Should national income drop and unemployment increase to serious proportions, and should the country resign itself to this situation, the construction industry could read the signs as well as the rest of us and adapt itself to a 700,000 annual market. Should the national income tend to stay up, the con-

struction industry could adapt itself to a million house market. In general, a variation of 5 per cent in the national income, proportionate income going to rent, or in the cost of housing, will affect total demand by about 7 per cent and rehousing demand by about 15 per cent. Industry therefore can watch these figures and can forecast demand within these limits with considerable confidence.

The technique outlined in this study can be used with adjustments, such as allowances for migration, for small market areas, etc. In fact, it cannot be used otherwise. An increase in income which is concentrated in the Far West, for instance, would add little to the market for housing in the Northeast. It might even reduce the demand for housing in the Northeast. Other things being equal, the demand for rehousing will be increased only as the incomes available for housing in a particular area are affected.

If the industry insists in remaining in the handicraft era, we shall continue to have a boom-and-bust psychology, a boom-and-bust industry, and increased government intervention. We cannot remain half employed and half unemployed. If other industries learn to stabilize, or at least to reduce fluctuations, the construction industry will have to learn it too, or accept controls. Examination of the industry and of the environment in which it operates, and acquaintanceship with leaders in the field, leaves me with the conclusion that the industry can change its old habits. Ten years from now a symposium on the subject should not have to include a discussion of the housing crisis in a free economy. Or at least if such a subject is included, the term "crisis" should not bear the connotation it does today. The problem is basically less a problem for economists and government officials than a problem for labor and for businessmen. We believe they can solve it. It is hoped that "government" does not have to.