

THE CHANGING PATTERN OF AMERICAN INDUSTRY

7 March 1956

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

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COLONEL WALKER: Gentlemen: For realistic planning it is always desirable and, of course, very important that we know something about the trends occurring in our complex industrial system.

As this is the last in the series of lectures by the Production Branch, I think it is appropriate that the title of this lecture is "The Changing Pattern of American Industry."

For our lecturer we turned to the McGraw-Hill Publishing Company of New York, for they are known to be a headquarters for business information. As you know, they edit and publish Business Week, as well as many other business and technical publications.

Dr. Dexter M. Keezer, our speaker this morning, is Vice President of the McGraw-Hill Publishing Company and, as Director of the Economics Department, he is in a position to observe the many changes occurring in industry, and all the trends, as well as the many factors in our economy which affect and influence these trends.

Dr. Keezer, it is indeed a pleasure to welcome you to the Industrial College of the Armed Forces.

Dr. Keezer,

DR. KEEZER: General Hollis, Colonel Walker, Gentlemen: I think it might seem that we are not in for a very congenial morning. I think it is true, by and large, that economists have a limited view of military men. They think they tend to be narrow in their perceptions and excessively preoccupied with relatively unimportant technicalities. I think it would be true, in my limited observation, that, on the whole, military men think very ill of economists. They think they are full of wind and sound and fury. Military men believe that many things are a lot less significant than the economists think they are.

I would just like to explain at the outset that I don't belong in this normal pattern. I have very profound respect for you. I esteem it a great honor to have a chance to talk with you. I think it is primarily

from a selfish point of view. I think that on your competence depends, in considerable chance, my chances for survival. So I want you to be very bright, very alert, and very well informed. If I can contribute anything to that end this morning, I will count this morning very well spent indeed.

My subject is "The Changing Pattern of American Industry." The statement of scope which I read indicated that I would tackle, among others, the question: Will the industrial pattern of the United States in 1976 be far different than it is today?

Now, I propose to amend that just slightly. I propose to take a look at 1970, rather than 1976. That is not because I shrink at all from 1976, but simply that I had the figures worked out that way. In fact, it may seem to you rather brave to make even a forecast of what is going to happen in 1970. I can assure you that it is not. I will let you in on a trade secret. Just as soon as you have got things set up, it is just as easy to make a forecast for 1970, 1980, 1990, or 2000, if you will. I have done that recently and, I am sure, with great success.

Of course the virtue is that it is a very safe operation. In 1970 I think there is a reasonable chance that I shall have departed this world altogether. At any rate, I will be some distance from the Industrial College of the Armed Forces, and you will never have an opportunity to check up on me.

Now, what I intend to do is have 1970 as the forecasting point, and I can illustrate to you and tell you something of the nature of the forecasting job involved. What it is, of course, is essentially an estimate of potentialities. It is a sort of an account of what can happen. I don't pretend to know with any precision what is going to happen next year, next week, or, for that matter, before this meeting is over. My forecast glamour is considerably dulled, in that I was one of those who thought President Eisenhower would not stay in for a second term.

What I can and shall do is block out the potentialities of our economy, as I see it, for this period. I think that is one thing that provides some of the essential framework for military planning.

This long-range forecast is based on a number of assumptions. The first assumption is that we won't blow up the world with hydrogen bombs. I defer to you about that likelihood. I prayerfully hope that we won't. I am not an expert. I can simply hope.

The other assumption I am making is that there won't be any crippling shortage of basic resources. I think that is perhaps a debatable assumption, but I think it is a reasonable assumption.

The third assumption is that the competitive business system will not be hamstrung by political intervention. That is a brave assumption, I think, perhaps a little less brave than it was a week ago, but it may not be too brave.

Before we came in here a number of us were talking--a couple of us veterans of the NRA. I think you might say that, considering what the business system stood, and survived, in the decades between the thirties and the fifties, indications are that it is not a fragile plant.

The fourth assumption is that there won't be any change in the weather--literally--I mean the physical weather. I spend a good deal of time reading reports of people, with credentials as experts, trying to find out if something is basically happening to the weather; because, if it is, it is something else again. I wonder if indeed we are undergoing some basic change in the weather. I don't share the superstition that it is probably due to the atomic bomb tests. If it were, what I have to say would not necessarily take a different form.

Those are the assumptions. I recently paid a visit to the jet-engine laboratory at MIT. A professor in charge, looking at one of these engines, said, "If our assumptions about how this thing works were right, it probably would not work at all." He said, "A jet engine somehow seems to override the assumptions that you make in setting it up." I think my assumptions are perhaps a slight bit better than that. At any rate, I have to make them.

I brought along a series of charts which show these things. They block out the broad dimensions of our economy right now, that is, in 1955, and we forecast what the broad dimensions will be in 1970. They explain the basis of the forecast, and they point to some of the dominant characteristics that our economy is likely to have 15 years hence.

As charts go, I think you will find these are very pretty charts, but, compared with the dramatic sort of looks we are having into the future these days, they constitute a pretty drab show. I simply claim

one special virtue, the fact that, if you want, they will teach you how to make your long-range forecast. I don't know in what strange places you people are apt to end up in the next decade. You may find yourselves under the necessity of making a long-range economic forecast. If you do, this is how you do it.

Chart 1, page 5. --That is the chart for 1955. We are so little into 1956 that we haven't tried to use 1956. That is the chart showing our gross national product for the year 1955, how it was put together, and where it goes. We had on the job 63 million workers. The output per man hour, shown in dollars, was \$2.87. They worked an average of 41 hours per week. They did not work 52 weeks a year; most of them had at least 2 weeks off. We simply took the national totals and assumed, since the year had 52 weeks, we would put it that way. By a matter of simple arithmetic that becomes the gross national product for 1955. I think the final figure, as a matter of fact, is going to be 387 billion, depending on how government officials finally adjust it. They can adjust this thing in and out of season.

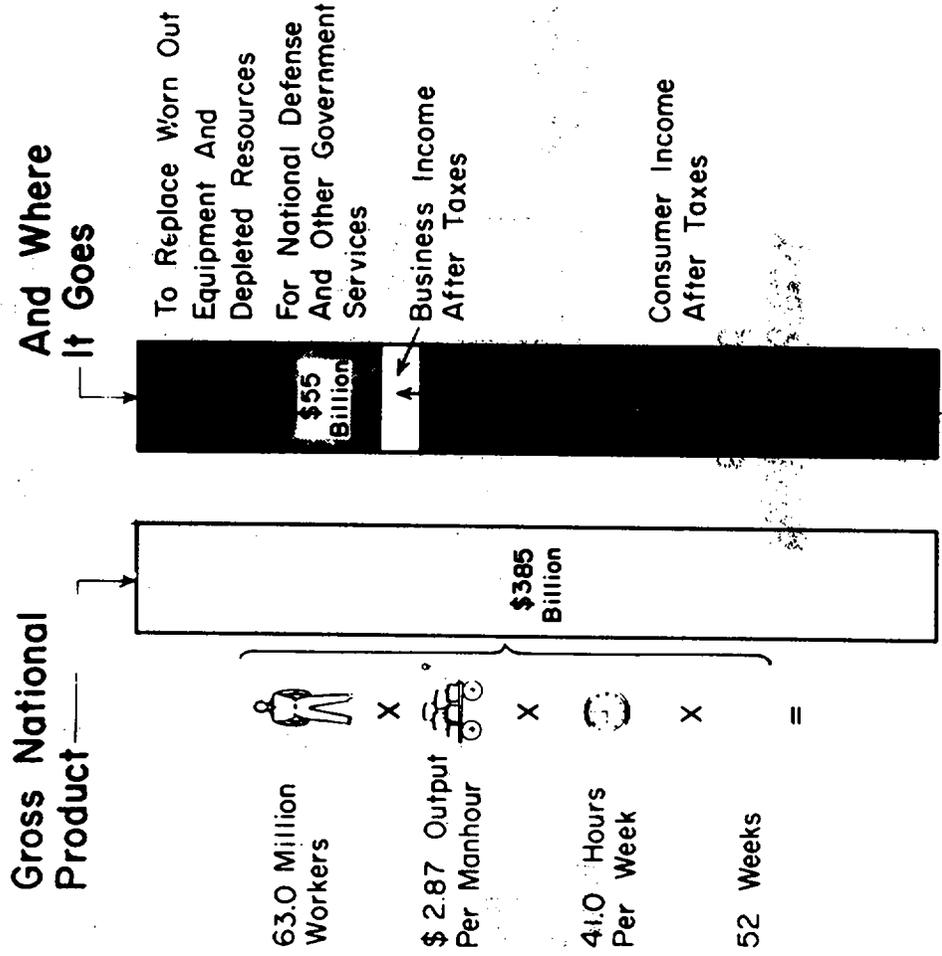
There it is. Where did it go? Sixty-four billion went to replace worn out equipment and depleted resources; 55 billion went for national defense and other government services, state and local; 21 billion was business income; and a whopping big 245 billion was consumer income after taxes.

Chart 2, page 6. --That shows what is expected to happen to the population by 1970. It shows, the total number of people, the number of people in the working-age group, that is, 15 to 65, the number likely to be actually employed and the unemployed, and you see--I will leave it to you whether it is the right assumption, that we have the same number in the Armed Forces in 1970 as in 1955.

For the total population we took the middle estimate of the Census Bureau. I suspect we should have taken the higher one. One reason was that Census has been chronically late in estimating the growth of population, and my own personal observation is that we are doing a really prodigious job of producing in our time. At any rate, we are going to end up with 39 million more people, and 26-1/2 million more people in the working-age group.

In this analysis, from here out, we assume all the time that an increase in population is a boon. There will be, of course, a time when it is not. I never can let my mind escape from the last sentence

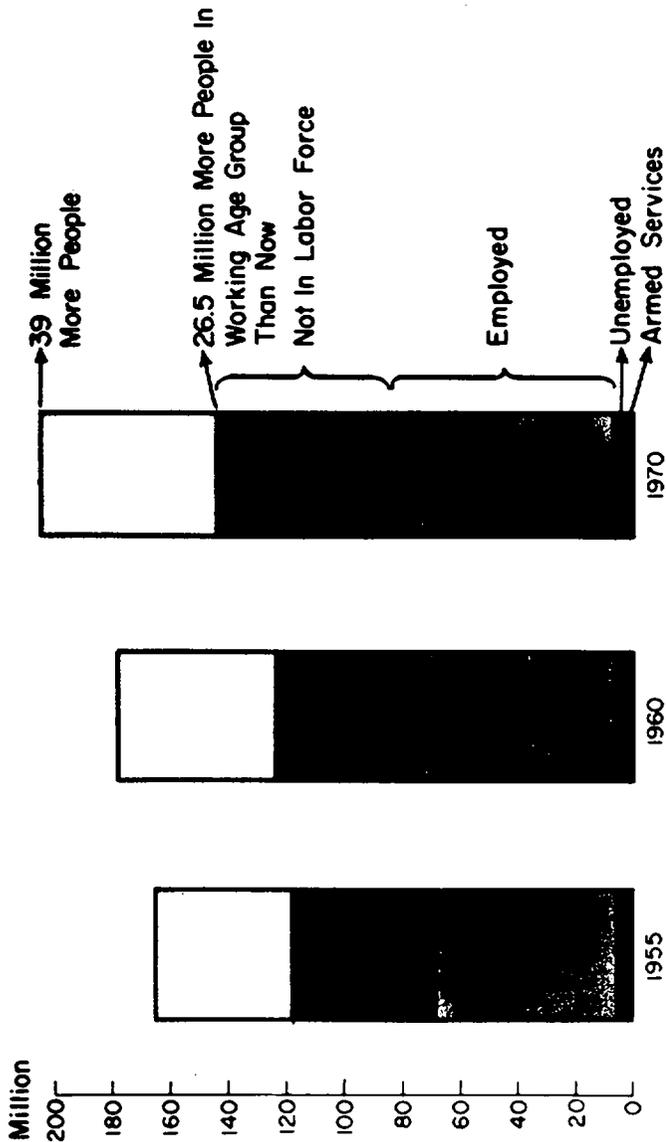
CHART 1
1955



Source: U.S. Dept. of Commerce, McGraw-Hill Department of Economics

CHART 2

Population Growth
By 1970



of a letter written by an East Indian civil servant to a friend in England on the occasion of the birth of the 19th child. The letter ended up with, "When will this mischief cease?" We are treating it as a constructive element. It will be over the time with which we are concerned.

Now, what will these people produce, the 78.6 million employed, in the way of GNP? It is going to depend on how many hours they worked, how many weeks a year they worked, how much they produced, and our expectations in that line are blocked out in Chart 3 and Chart 4, pages 8 and 9.

Chart 3, page 8. --Here, in 1970, in the right-hand bar, you have the work week down to 35 hours. We have productivity going up, in the manner indicated; from 1930 to 1950 it increased at the rate of about 2 percent. Since 1950 the increase in productivity, that is, output per man hour, has been higher. So we expect that from here out, with improved technology, productivity is going to increase about 2-1/2 percent a year. So you get that kind of a pattern. There you have, gentlemen, the portrait of a superlatively successful economy, the output per man hour, the blue line, going up, up, up; the average work week--these figures in the forefront are historical; they are not anticipations--going down. If you may need, as I think some of you do, a portrait of a successful economy, there it is.

That will bring us to what we are going to get in the way of a gross national product in 1970, and that is Chart 4.

Chart 4, page 9. --That simply summarizes what the other charts have said; a gross national product of 595 billion dollars. These are in constant 1955 dollars. In other words, we have not built into that chart the inflation we are probably going to have.

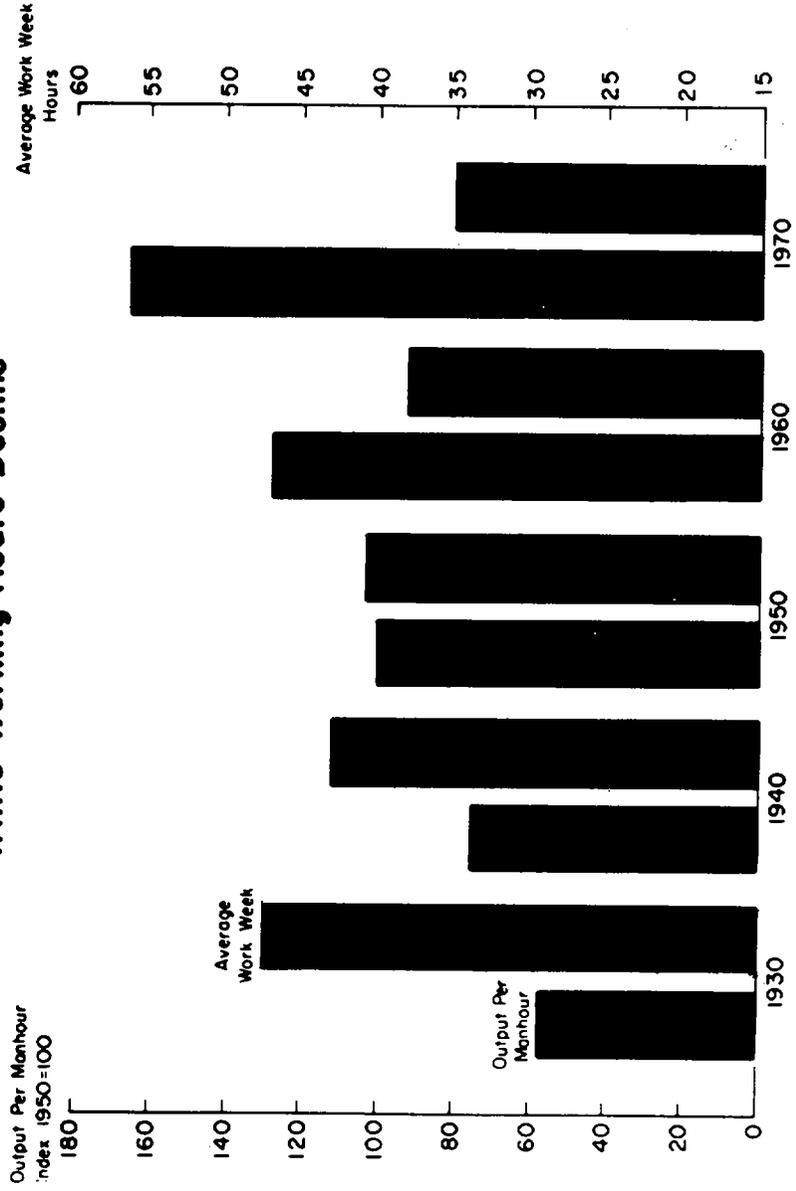
Again, where does it go? I won't detain you. You can read it as well as I can. You will see that the biggest and the most dramatic increase lies in the field of consumer income after taxes, where you have 445 billion, or an 80 percent increase above 1955.

Now, with those charts I have blocked out the broad dimensions that we expect the economy to have in 1970. I am going to add a few more charts, designed to throw light on the character of the economic development ahead, rather than its dimensions.

Chart 5, page 10. --That shows the increase in expenditures for research and development since 1941, and the projection of what we are

CHART 3

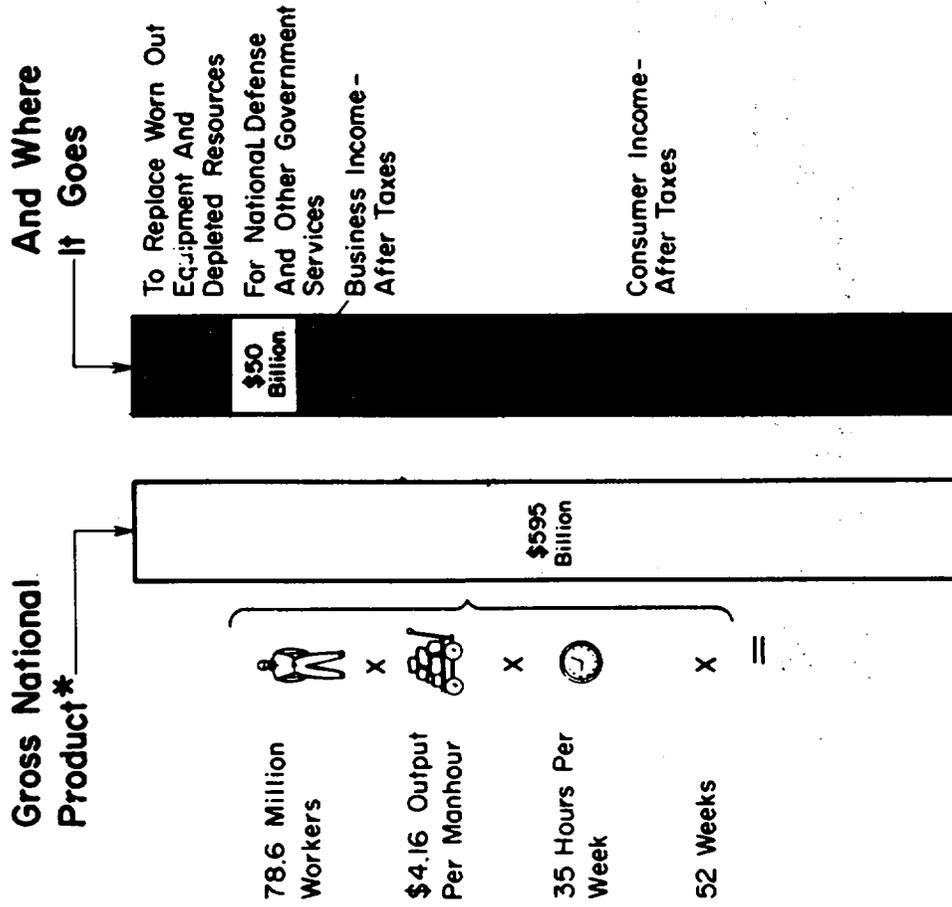
Output Per Manhour Increases While Working Hours Decline



Source: Bureau of Labor Statistics, McGraw-Hill Dept of Economics

CHART 4

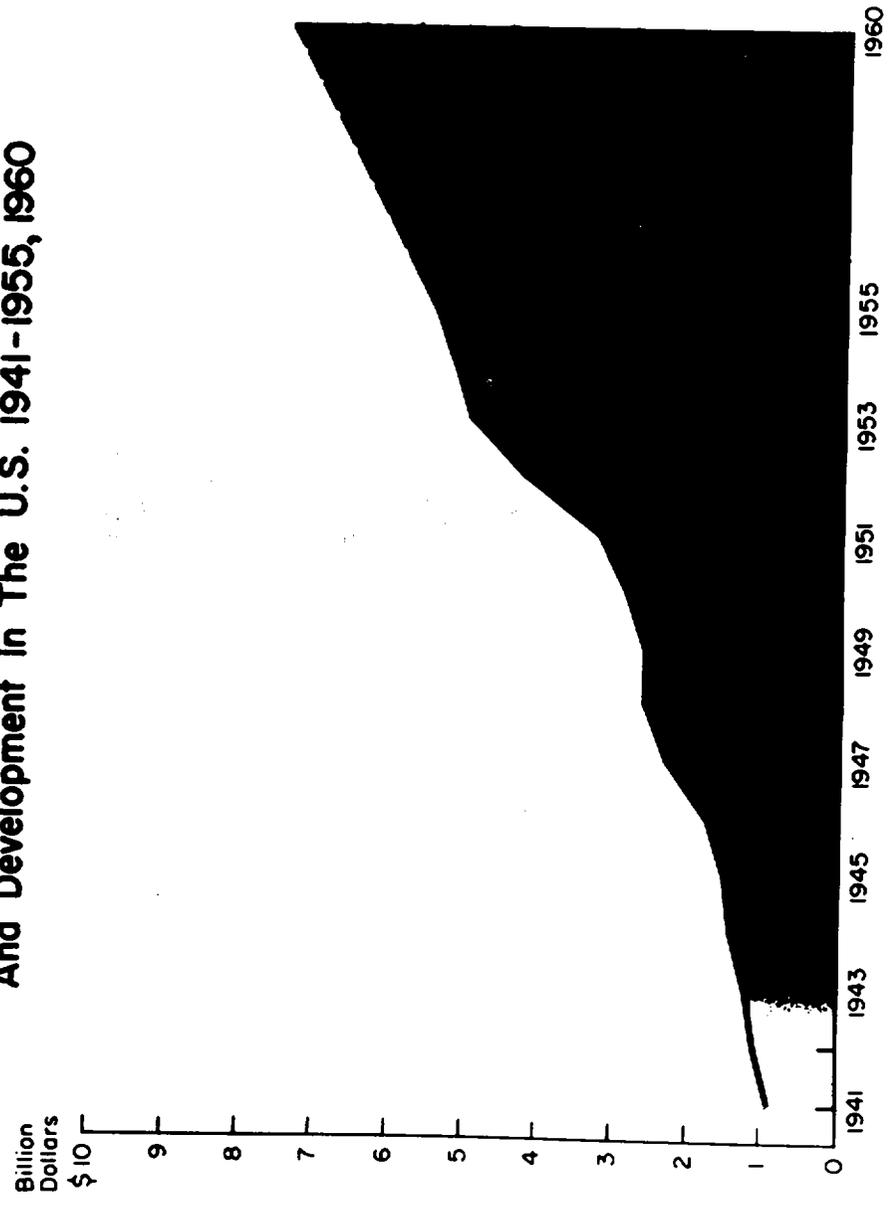
1970



Source McGraw-Hill Department of Economics

All Data in Constant 1955 Dollars

CHART 5
**The Growth Of Scientific Research
And Development In The U.S. 1941-1955, 1960**



Source U.S. Department of Defense, McGraw-Hill Department of Economics

likely to have in the years ahead. We are now spending for research and development in the United States about 5 billion dollars a year. That is somewhere in the neighborhood of 30 times as much as we were spending in the thirties. I did not dare carry this chart up to 1970, because it would look so strangely out of proportion. I carried it only to 1960, as you see there. You get up in the neighborhood of 8 billion dollars being spent for research and development. The upshot of this is, you have the prospect of the economy turning on new designs, new products, new processes. To my mind, what is happening in the field of research and development is the most dramatic phase of the economy today. I also think it has immediate implications for the direction of the economy.

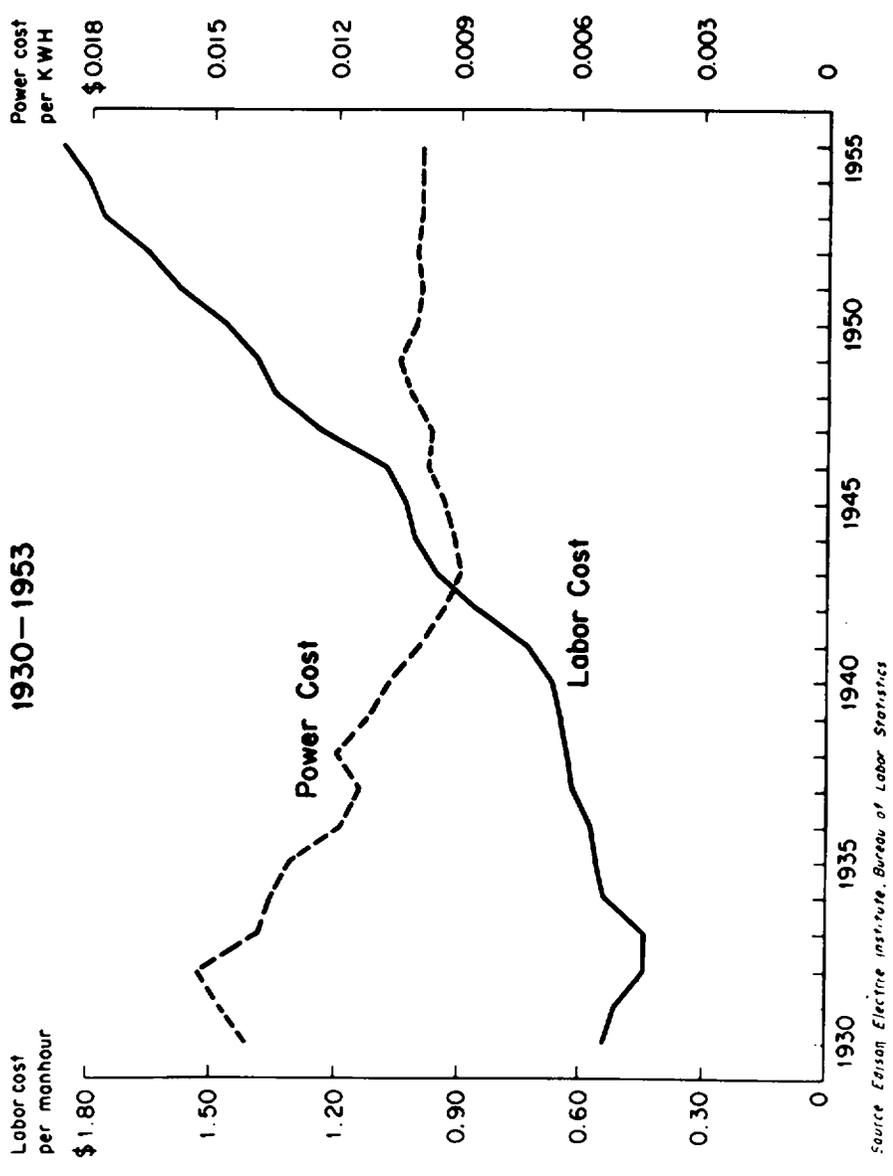
This research and development work is done principally by large companies. I don't know whether your studies have brought you in touch with that report by the Bureau of Labor Statistics on research and development done for the National Research Council. If you have not read it, be sure to take a look at it. It is one of the most striking documents I have seen in a long time. In that report it is noted that 375 large companies, companies with 5,000 and more employees, did 71 percent of all the research and development in 1953. In other words, 2 percent of the companies did 71 percent of the research and development.

That is probably more or less inevitable. It takes a sizable company to develop an effective research establishment, so that in this development you have this relationship between the large company and research and development.

Now, there is another phase to this that is of very considerable importance. That is that research and development is proving singularly effective in producing profits. I don't know if you have seen it, but Dr. Lionel Edie has been doing some work on the relationship between research and development and the profits of companies, and his facts are fairly evident that industries with the highest ratio of research to sales also have the highest profits. There is no definite causal relationship there, but it is certainly suggestive. The upshot of it is, I think you could call it a research revolution. It puts big companies, the large companies, in a peculiarly strong position. It does not suggest to me that they are likely to be wasting away any time soon. Now, Chart 6.

Chart 6, page 12. --That is a chart showing what has been happening to the cost of labor, and what has been happening to the cost of electric power. What it is, of course, is a picture of the continuing pressure to save labor with power-driven machinery.

CHART 6
Labor Cost Up - Power Cost Down
1930 - 1953



Source: Edison Electric Institute, Bureau of Labor Statistics

It is, I think, a fairly adequate thumbnail sketch of why we are having so much interest in automation. We have labor cost going up, up, up, and certainly no end is in sight, and power cost, while it is leveling out, is not taking the same course.

Now, the two forces are portrayed in Charts 5 and 6; Chart 5 page 10, points up research, and the new ideas, new ways of doing things mechanically, and Chart 6, page 12, the pressure of labor cost, obviously points up the need for capital investment. Chart 7 blocks out our expectations in that line.

Chart 7, page 14. --We are spending now roughly 28 billion dollars on new plants and equipment--nearly 30 billion. Now, by 1970 our estimate is that we will be spending 45 billion. That is measured in present prices. That is an increase of 60 percent. And our industrial capacity will be increased 75 percent.

Again to call your attention to a new publication, perhaps you have seen the study of the prospective needs for capital investment in the oil industry, done by Joseph Pogue of Pogue and Hill. I think copies are distributed by the Chase Manhattan Bank. Their estimate is that over the next decade we shall have to invest 115 billion dollars in order to get the oil we need to have to keep the free world going. This is industrial investment. But there you have, I think, a logical outcome of the earlier charts.

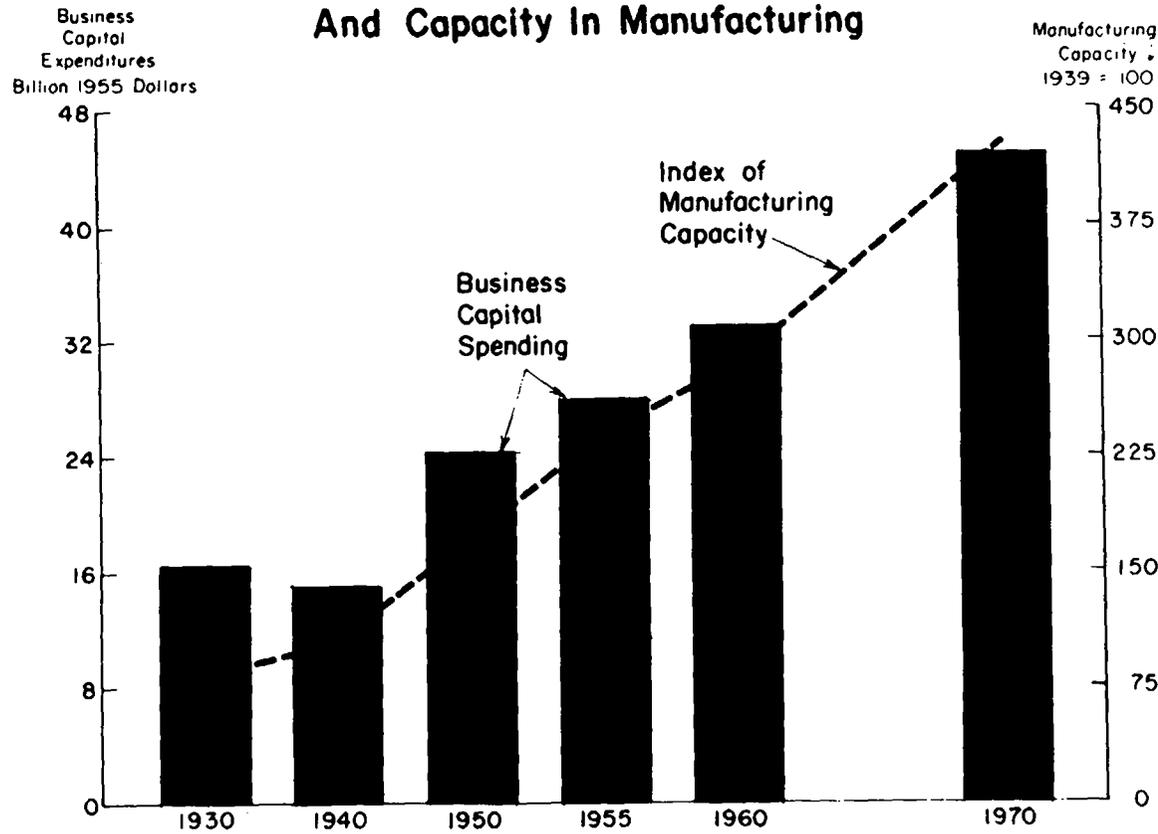
Chart 8, page 15. --I think I had better say very little about this subject. I understand Mr. Philip Sporn was here yesterday. If he gave any forecast, I would defer to him on that, and in fact on almost any other subject. It indicates that electric power sales double between 1950 and 1960, and double again by 1970.

The Atomic Energy Commission, according to the last estimate I have seen, indicated that, of that total in 1970, about 10 percent will be nuclear, and about 20 percent of the annual new installations will be of that character, again indicating the growth of power you have to have to carry out this program or this forecast.

Chart 9, page 16. --This is simply, in detail, an expectation of how production will grow by 1970 in selected industries. If you gentlemen were more adequately paid, I should give that a more glamorous title by saying this is a chart of the best bets for long-range investment. Steel will be up 30 percent; aluminum, 140 percent. You can

CHART 7

Business Capital Spending And Capacity In Manufacturing



Source: U.S. Dep't of Commerce, McGraw-Hill Dep't. of Economics

CHART 8
**Electric Power Sales
Double By 1960 ; Double Again By 1970**

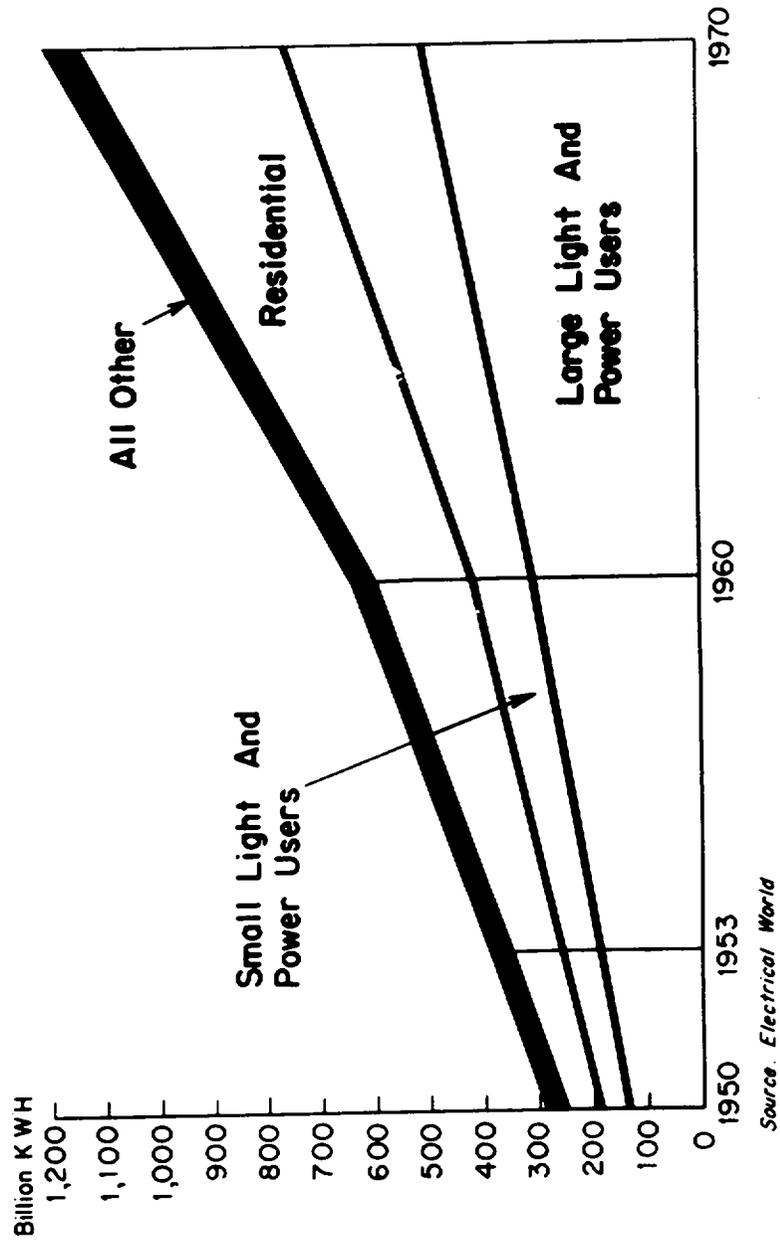
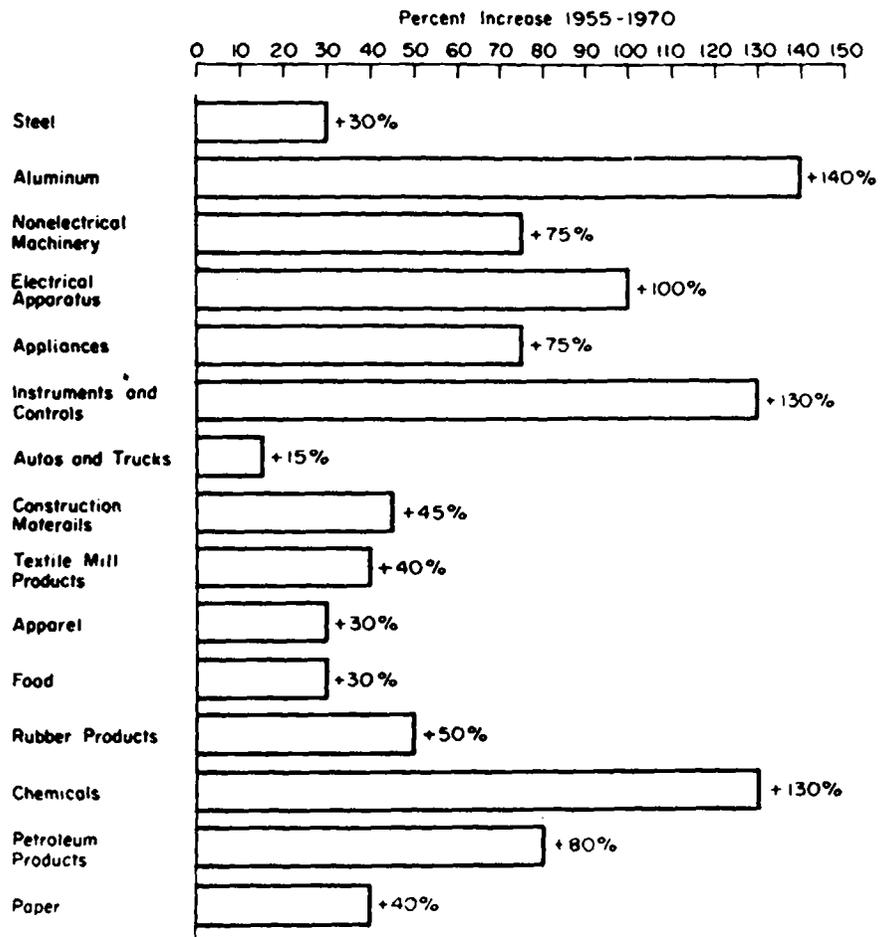


CHART 9

How Production Will Grow By 1970 In Selected Industries



Source McGraw-Hill Dept of Economics

read the figures as well as I can. I will linger on it a minute. It is worth looking at with some care. Instruments and controls are up 130 percent. Another very large one is chemicals.

Now, it is obvious that you can't simply expand those industries in a vacuum. It depends in the final analysis on the expansion of consumer markets. By 1970 our economy promises to have what it takes in that line.

Chart 10, page 18. --This shows what can reasonably be expected to happen in the way of increases in consumer income after taxes. Again, the prices are constant. That is all done on 1955 prices. There is an increase from 1,610 dollars in 1955 to 2,175 dollars in 1970. That is a 35 percent increase. The average in this case, I think, is of no greater significance than the fact that this income increase is very widely distributed, as a result of what I am sure has been correctly called a revolution in income distribution.

Chart 11, page 19. --This shows what is to be expected in the way of consumer expenditure. Here I think you can see that the increase is really eye-popping. It is 250 billion dollars this year; 300 billion in 1960; and 420 billion in 1970--two-thirds more than it is now.

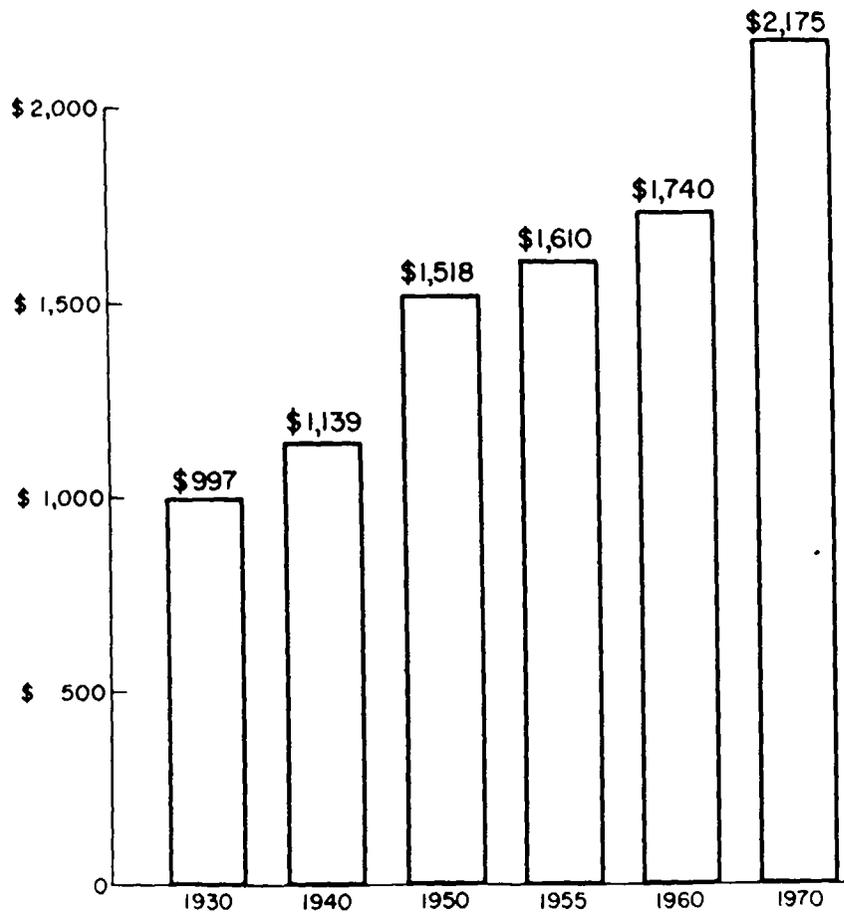
Of this increase we anticipate that the rate for nondurable goods would be about 55 percent--that is roughly the increase for the economy as a whole--durable goods about double; and services of all kinds up about 75 percent.

Now, I think this is perhaps the key point to be illustrated here. Along with a two-thirds increase in consumer expenditure by 1970, there is going to be approximately, we estimate, a 15 percent increase in leisure. So you have people with much more money to spend and much more time in which to spend it for various leisure activities. I think you will find that, in those two elements, the entire shape of the economy will be certainly vitally affected.

I don't propose to detain you with a detailed forecast of the character of consumer expenditure in 1970. It is an opportunity where you have ample scope to roll your own. The Chamber of Commerce has an excellent movie on the subject. NAM has what they call "Camera." It has been laid out in TV and shows that within this broad dimension there are plenty of chances to find out something of the character of the expenditures.

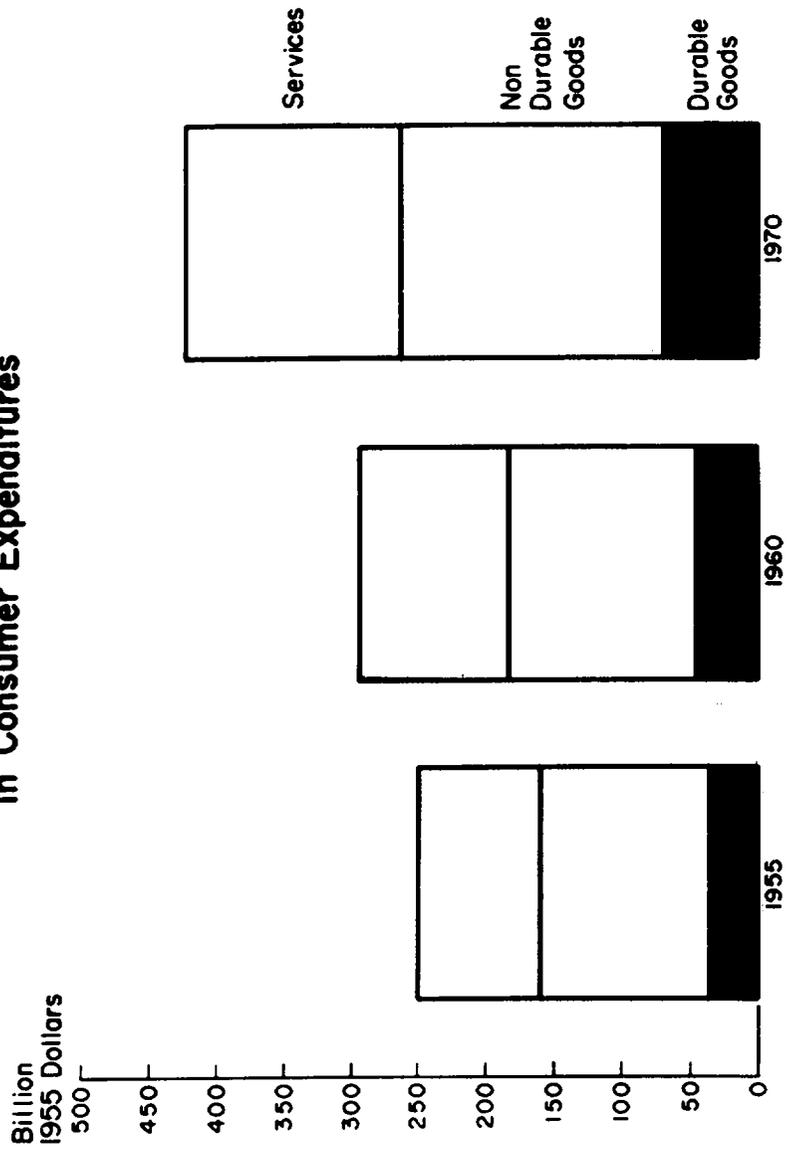
CHART 10

Income (After Taxes) Per Person
(In Constant 1955 Dollars)



Source U.S. Dep't of Commerce, McGraw-Hill Dep't of Economics

CHART 11
Spectacular Growth By 1970
In Consumer Expenditures



Source U.S. Dep't of Commerce, McGraw-Hill Dep't of Economics

I confess I find some of the prospects horrendous. I think you can see the specter of young idiots riding down the highway in 250 H. P. plastic sports cars, their attention distracted by portable TV's on the back seats. Perhaps we can get them into helicopters by that time. I am told it is five times as safe up there as it is on the highway. Perhaps we can develop an automatic antenna which will prevent these crashes.

I am afraid, I confess. I am frightened at some of the potentialities of the TV scanning devices, where you can keep track of the children in the other room, or see guests arriving in time to decide whether you will be in or pretend to be out. I often think of George Orwell's book "1984" and of the time when the TV scanning devices will permit us to look at things that are none of our business.

In general, it looks as if the most dramatic improvements in this area are going to be in housing and devices to make it more comfortable and more complicated, and in improvements in travel and recreational facilities.

We always say in my office that we make our mistakes very carefully. Here are some estimates we have made of the dimensions of the growth that you might find over this period.

Housing and house furnishing will increase 150 percent; travel and recreation, 200 percent; gasoline and oil consumption, 125 percent; education--I pray that this is true--200 percent; medical care will be up 100 percent.

Now I am through with the charts. I hope that I have made it clear that the operation I have just concluded is not designed as a blueprint of what lies ahead. As I have said earlier, and can't repeat too often, it is essentially a glimpse at some of our potential. What all this means in terms of human beings' improved chances of getting into Heaven I propose to leave to the philosophers.

One of my young associates who works on the prospects for agriculture handed me this note the other day. It is a quotation from "Future Demands on Land Productivity"--Special Report No. 7 of the President's Materials Policy as below shown:

"With artificial insemination it is possible to get up to 1,000 calves per year per bull, where normally there were 25 to 50

calves per year per bull. This expansion, of course releases the number of bulls used for breeding, and releases the use of their pasture for direct meat production."

My young friend wrote on the bottom of this: "This sums up pretty well the possibilities in agricultural output." I offer that it also offers a good deal of philosophical contemplation.

I have been told that there are 2,000 psychiatrists on the Island of Manhattan alone, and that their number is growing considerably faster than the gross national product. If that is true, it remains within the realm of possibility that one of the major consumer items in 1970 is going to be a portable psychiatrist's couch.

Some years ago, Professor Nathaniel Pepper of Columbia University remarked, "In the life of a Chinese peasant there is a greater content of happiness than in that of the American worker." I have often wondered how he found that out. I have the greatest difficulty finding out how much sadder or happier I am than my neighbors. He found it out. I said it. It may be true.

I don't know, as we get richer, whether we are getting happier, or more righteous, or tougher, in terms of successful survival. About that I simply don't pretend to know. In my reading of history I have been impressed by what seems to me to be the tendency of peoples to get softer as they get richer. I was only recently reading the Lewis and Clark Journal, which I find one of the most thrilling books I have read. I hope most of you can spell better than--was it Captain?--Clark, but if any of you can write as well, you are geniuses.

As they went across the country, the really stalwart people they found were the Blackfeet, out on the rough, rugged, tough terrain in the Dakotas. When they got into the really lush country, as they went over into the Columbia Basin, there were antelopes up to their bellies in fine grass, and they found there the most worthless Indians.

What that proves, I don't know, but it suggests to me that to you military men this problem of increasing riches may be a very real problem. Only the night before last I heard Dr. Paul Dudley White talk about the increasing coronary troubles, on which he is our leading expert. He said he was inclined to attribute it to the extent that people don't walk any more. Perhaps we can get into a world where soldiers don't have to walk. Based on my experience, it will be a happy world. I walked the greatest distance with the most possible discomfort.

I have lingered too long on this point. The point is simply this: I think very likely what I have been sketching here is not Paradise for you at all. It may give you a very real problem. If it does, I have no remedies to offer at all. The only thing I can hope here is that, in giving you this preview, I have been of some help. I think I should say in closing that, if you happen to be here in 1970, you will find that it is absolutely correct in every detail.

I hope I have said something that is useful to you in your work as military men and military planners, because nobody could wish you to do better than I do.

Thank you.

CAPTAIN WRIGHT: Gentlemen, Dr. Keezer is ready for your questions.

QUESTION: Dr. Keezer, I believe that on one of your charts you showed the 1955 GNP. You indicated that the percent that went into Government spending, including military, was 55 billion dollars. I mean the dollar value. In your 1970 chart you showed that amount had decreased to probably 50 billion dollars. Would you comment on that decrease, sir?

DR. KEEZER: General Hollis was catechizing me before we came in on that point. These are constant prices. You might say, to put it very bluntly, that we will be either blown up in 1970 or we won't be spending so much on the military. I will be very glad to send you the detailed calculations, which might be relevant. Incidentally, if any of you expect to be in a similar spot to mine, in having to do one of these things, I have a series of charts printed and I will be very glad to send them to you. No telling when you will be asked to do this.

We assume there will be an increase in governmental types of services--highways and schools--but it will be more than offset by a decline in the military. Now, if this is an unrealistic assumption from your point of view, that was the best of the thinking over this period. We took off from a high point of Government expenditure in 1955. I think that you said this expenditure was in dollars. You are right. It covers actual military spending in 1955 as well as other Government expenditures. Military expenditures have gone up in recent years. This is the 1955 figure. That is the basis of it.

When I send these charts to you, if any of you have any comments or criticisms, we will be delighted to have them.

QUESTION: Sir, on your chart you did not have listed the aircraft industry with a percentage increase. After the aluminum industry you showed a marked increase. I wonder if you care to comment on the development in that particular field.

DR. KEEZER: I will be very glad to comment on it. That is a thing we have studied with some care in my shop. I don't know anything more frustrating to study. I believe it is true that about 90 percent of the aircraft industry, as such, is military. What you have in that field is essentially a military forecast, and I think I would again defer to you over the short run. We have made 10-year studies for our own internal management purposes. We have not seen any very substantial growth in the aircraft industry overall. What you get at as you study this industry is that your conclusion depends on what your military conclusion is. Even with the very imposing growth of civil aviation airports, we all know it is a very minor share, and promises to be, over this period.

I don't have an aircraft figure on the chart. I will correct that, if it should be corrected, in the next chart. We may be too optimistic about the world situation, but, in our studies, assuming no greater depreciation of the world situation, we think the aircraft industry as a whole does not have very potential growth over the next decade. If it does, it will be military.

We, as economists, do not know how to forecast military developments. We are that modest.

QUESTION: Dr. Keezer, you indicated that you felt we were moving toward a continued era of inflation. Would you amplify a little bit on your reason for that statement?

DR. KEEZER: Yes, I will be delighted. I think I probably said that too fast and too formally. My own guess is that, over the period with which I am going to be greatly concerned, we are not going to have a violent runaway inflation--we have too much production capacity in this country for that. We have so much capacity to produce everything that I think you have a constant damper on runaway inflation. But we have a built-in inflationary factor in this economy in which I don't see any immediate change. That is the continuing round of wage increases. We have what is sometimes called a cost-push type of inflation.

A few days ago we were talking in our office with some of the people in the steel industry. I think it would be safe to say that that industry now in its operations is being dominated, and, in a sense the economy as a whole, by the expectation of the opening of the wage contracts in steel, and one of two things happening--either having a strike, or a very sizable increase in wages. The people with whom we were talking were not lightheaded, and said that, if they were making book on it, it would be 3 to 1 that sooner or later you will get a very substantial wage increase in steel. That will be floated off almost immediately in price increases. That is one element in the cost-push view.

I hope nothing I say here has any moral overtones. It is in that area, I think, that you have a built-in situation, where you are going to get a push on prices, a push on cost, a push on prices, which will be floated off in increased prices. That is a more or less continuing process in the immediate future. That is the essential element of the thing.

QUESTION: Sir, I was somewhat surprised to see the relatively modest figures in steel. As I remember, it was something like 30 percent on your chart. We have been led to believe that steel makes the wheels turn. Would you comment a little bit on why the increase is no greater?

DR. KEEZER: Well, I don't know that I can say anything that will be particularly illuminating, beyond the fact that we have a very large capacity at the present time, and the percentage increase of that amount would be somewhere in the magnitude of 35 million ingot tons of steel, according to our calculations--I should say approximately. We expect all kinds of other new metals to be used. This is not primarily a substitution process. It is our calculation that an increase of that much would take care of the requirements.

QUESTION: Dr. Keezer, we might be beating that topic to death. I wonder if we can go back to that same chart. The auto and truck industry showed a relatively low expansion, yet the petroleum industry went up about 80 or 90 percent. There seems to be a discrepancy in that figure.

DR. KEEZER: I don't think there is necessarily a discrepancy. You get replacement of automobiles. You get greater industrial use. It doesn't seem to me that you have to multiply the capacity of the

automobile-producing industry one for one for petroleum to get a comparable use. We contemplate further use, more industrial use. I think that is the explanation. That is the essence of it. I don't think the automotive industry is in line to be one of the great growth industries.

Where I live I spend my weekends in a traffic jam. Something has got to be done, which we will have to expect, naturally. We have no place to put these things.

QUESTION: Doctor, in your former remarks you pretty well developed this creeping moral and physical degeneration of the American public. When this work week comes down to 30 or 25 hours, I think there are still going to be many millions of Americans with enough get-up-and-go to get out and hold down, not 1 or 2 jobs, but maybe 3 jobs. What is this going to do with the scheme of things in 1970 if I am right?

DR. KEEZER: I confess that when I talked about this thing, I think I overdid it. You just think of the potentialities, having as many people as we have with vacant heads having more vacant hours, and you have something to conjure with. I don't know where you live. I live in New York City. I withdraw that remark.

I was reading only last night the number of families we have with two workers in the family, and it is an imposing number. You take me too far into the realm of moral philosophy. I think I will get out of there.

I was simply indicating that you, as military people, can tell me. I can't tell you. Do these people come in good and rugged, and have they had the kind of backgrounds you expected? Have they ridden everywhere? Don't you first have to convert them into fairly vigorous human beings? I don't know. I am asking you.

As I say, I think I will pass that one. I am sure I would say something, and just as quick as I said it I would say, "I wish I didn't say it."

QUESTION: I am referring to your chart that showed the decreasing power cost per unit and the increasing labor cost. As I understood you, you inferred from this chart that this was a trend toward automation, caused by a high cost of living.

Would this not indicate that you would get some considerable resistance on the part of organized labor to this increased trend toward automation? Would this increase the output?

DR. KEEZER: You get a certain amount. As I study the situation, the attitudes of labor unions and the attitudes of labor leaders vary somewhat. I think you would get a certain amount of variation. It is to the great glory of the whole idea of American labor that they have not resisted, except in a very limited way, the changes in technique. I think you get demands for higher wages to offset this, rather than resistance to having it done. You will have some of both. I think you have had both.

QUESTION: I hesitate to sound a pessimistic note, a pessimistic warning, but I can't refrain from thinking of certain portions of your presentation which reminded me of some things I heard in my childhood in the twenties. I hesitate to ask, but can you tell us why we can be more optimistic that the future will be going up now than we could in the Coolidge and Hoover era?

DR. KEEZER: Well, if you will invite me back another time, that is a subject on which I can really go to town. It is a very substantial subject. Take just the question, if you will, of business management and capital investment. You have an infinitely more competent management today than you had 20 years ago. What used to knock this economy up and down far more than any other single thing were the fluctuations in business investment up and down.

Eight years ago in my office we started to make surveys of business plans for capital investment. One of the questions was: How many years ahead do you plan your investments? Eight years ago there weren't a handful of companies that had any plans beyond the present year. Most of them didn't have plans beyond the present month.

Last year 87 percent of the companies answered that particular question. There were many companies that could actually give us estimates of their plans for capital investment some years ahead. That is a major change. Another thing, what I call a direct research revolution, means the stuff is coming out so fast that business management can't sit back and rest.

Somebody said to me recently, "Doesn't it mean a lot of ups and downs?" I said, "If you are kicking somebody fast enough it looks as though you are shoving him."

It used to be the manager went ahead looking right ahead of him. Now he has at least one eye on the distant hills, because he is reasonably confident we are going to get over there. I have had any number of business executives say to me, "We are perfectly aware we are not going to be able to use all this capacity all the time over the next ten years, but in the future we are going to need it, and we are going to put it into place."

That is only in the field of business investment. I think the way income is distributed--I wish I had more and other people had less but it doesn't work out that way--you have a very broad basis. People keep saying to me, "Aren't people going to get surfeited? Aren't they going to get fed up, and say, 'Please, I don't want another automobile?'" The Survey Center at the University of Michigan, the only place I know of that studied this with some pretense to a scientific air, could find no evidence that the American family gets tired of having more. That is rather surprising, but that's the way it is.

You have a built-in scheme. We talked a little bit about a built-in scheme to increase money income. Last year the increase in this gross national product I was talking about was accounted for by wage and salary increases. It was about 14 billion dollars. As long as people want to spend that much, I think you can do one of two things--you can be rather sappy, it seems to me, or you can take account of the changes.

I think to compare the thirties--of course you were too young then to really understand what was going on--to the present day is a mistake. I think one danger is in business investment, which is, in a sense, a thing we follow most closely. But you have a new force here. I don't argue for a minute that we are going up to 1970 on a continuing beautiful upward turn. We are going to have ups and downs.

Two things I think most clearly are out of control. We don't know much of anything about what to do about control of business inventories. In this postwar period there have been two great producers of business fluctuations: First, defense expenditures; second, inventories. As far as I can figure out, nobody really wants to do anything about consumer credit. We had a great splurge last year in consumer credit. In the process of paying off, there will be some letups.

I am not envisaging a perfectly smooth ride into Heaven. There will be some bumps on the way. It is a different story than it was in the thirties.

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QUESTION: Dr. Keezer, I notice you predicted a 200 percent increase on expenditure for education. Is this based on eventual or belated action by the States themselves, or does it predicate some significant Federal loan or aid to education?

DR. KEEZER: It is based pretty largely on the fact that we are breeding at such a rate that, if we give these kids any education at all, we are going to get an enormous increase. It has not reached the degree of refinement as to whether we will have Federal aid. That would take us into an area where, if we talked about it, we would promptly have some controversy. It is that we will spend some more, and we are going to have an awful lot more people to spend it on. That is what it is based on, essentially.

QUESTION: One of your assumptions was that the competitive business system would not be hamstrung by political intervention. Will you give us some picture of the political intervention you are talking about?

DR. KEEZER: Yes. There were two years running around 1948 and 1949, or I think it was 1946 and 1947, when there was a bill introduced in Congress to have the Government build industrial plants for the purpose of stabilization. Then we had things go down a little in 1948 and 1949. So the same bill came back with a new preamble. This was to have the Government build industrial plants and sooner or later run them for the purpose of promoting business recovery. The bill didn't get passed before we had recovery. So the same bill came in again, as the trouble developed, to have the Government build plants for defense purposes.

You have a group that feels there should be much more direct Government operation in industry. You have the chronic view, which is rather weak, though it is firm, to make profits. That is a considerable source of funds to keep going.

To tell the story, it would be a long story. My own guess of what we are doing politically under the impact of this kind of development is that both parties tend to move toward the center. But I think to specify in some detail would be quite a job. It would be whether you could have it in the form of the view that is always extensive and powerful, that the wise thing is to break up the big business units. That idea is always with us. You can't say per se that it is a silly idea. You can envisage a situation where people say we are going to

break up these units. As I pointed out, it seems to me inevitable that these larger units are doing most of the research and development. Maybe you can do it with smaller units and get the same result. That might be the change I am talking about.

I don't know that that is much of an answer. A good one would take quite a long time, and might not be good at all.

CAPTAIN WRIGHT: In view of the fact that Dr. Keezer has to catch an early plane, we will stop the question period.

DR. KEEZER: May I say one more thing? If you are up in New York and any of you want to pursue this subject, particularly from the point of view of how it influences you and affects you in your military capacity, come on in and we will be delighted to see you.

CAPTAIN WRIGHT: On behalf of the College I want to thank you for a very interesting and informative period.

(4 Apr 1956--450)O/ljt