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(ORGANIZATION RESEARCH PROGRAM)

New Standards for the American Economy

W. H. Gruber

January 1964

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W. H. Gruber
December 24, 1963

New Standards for the American Economy

American business has been enjoying a glorious boom of rapidly rising sales and profits. Our country is now in the longest period of peace-time prosperity in this century. Productivity has been high; unit labor costs have been decreasing; prices have been relatively stable. Can this last? Is the boom dangerous? Will it collapse like a house of cards for lack of a sound foundation? Or is it possible that our present prosperity may be considered normal? We shall attempt to prove here that very optimistic answers to these questions are warranted. It can be demonstrated that the American postwar economy has been more efficient than the economy of any other period in the nation's history. During the postwar period a new set of publicly accepted standards for the economy has evolved, and these new standards indicate that growth will be encouraged even when the economy is operating substantially above its long-run trend line.

A thoughtful man has good cause to be thankful for this high level of economic development. It has enabled the United States to become the most powerful nation in the world. That the efficiency of the economy is enabling the country to surge ahead faster than it did in its past history of remarkable growth is all the more astonishing when one considers that we are making this great leap forward from the world's highest base. We follow no one as we pursue our course, because in most areas of technology and education we are already leading.

Economic forecasting tends to be a risky business. Yet it is necessary for businessmen to commit themselves to such forecasts as they make their plans.

Understanding the underlying trends in the economy is therefore critical for today's business leaders. The faster rate and greater magnitude of change place an extremely high premium on this skill. We hope to facilitate such understanding by comparing the record of growth in gross national product, man-hour productivity and economic stability of the postwar economy with the long-run record of the Twentieth Century. The future is more important than the past, however, and the principal value of this comparison lies in its usefulness for predicting the future.

Businessmen cannot be complacent about rosy predictions of prosperity. The economy is like a great toy with which we do not yet know fully how to play. At one time its inner workings were considered automatic, and the government was urged to take a laissez-faire attitude toward the economy. It is a fact that a great change has taken place in the United States. We have witnessed in the postwar economy an unprecedented involvement by the federal government during a non-crisis period. If the government is to pursue wise economic policies, it needs the support and advice of an enlightened business community, and the prosperity of business depends on sound government policy. Business leaders are going to be faced with the task of guiding their firms through a rapidly changing economic environment, while at the same time they must assume greater responsibility for government policy. The research results presented here provide a framework for understanding the new economy in which businessmen must operate and give an extraordinarily optimistic view of the possibilities for prosperity for the remainder of the 1960's.

A MORE EFFICIENT ECONOMY

All businessmen are aware of the recent concern about the economy as evidenced by the tax cut debate and the Manpower Retraining Act. One of the most salient facts about the furor which arose is that it came during a period when the economy was operating at a level substantially above its long-run growth trend. It came during one of the longest peace-time booms in recorded American history. This was no ordinary boom. The 1960-1961 recession out of which it grew was so mild that the economy actually improved by 2.6 per cent in 1960 and 1.7 per cent in 1961.* It is relatively easy to grow quickly in a recovery from a deep trough which lowered an economy far below its old levels of activity. It is much more difficult to grow quickly in a recovery which does not regain lost territory but which gains new ground. The postwar economy is a new economy. Let us take a closer look at its record.

Growth in Gross National Product

The most widely used indicator of economic performance is gross national product (GNP). Much of the discussion about this indicator involves the rate of change which takes place between different periods. In this study the year 1948 is used as the start of the postwar period, because it is more meaningful to compare peak with peak of the business cycle. Unemployment in 1948 was only 3.8 per cent** and it is considered a peak year by the cyclical experts of the National Bureau of Economic Research.

Between 1909 and 1963 the economy grew at an annual rate compounded of 2.9 per cent. From 1948 to 1963 it grew at 3.5 per cent or at a twenty per cent faster pace. (This performance was achieved despite relatively small labor inputs during the 1950's due to the low birth rates of the depression period.)

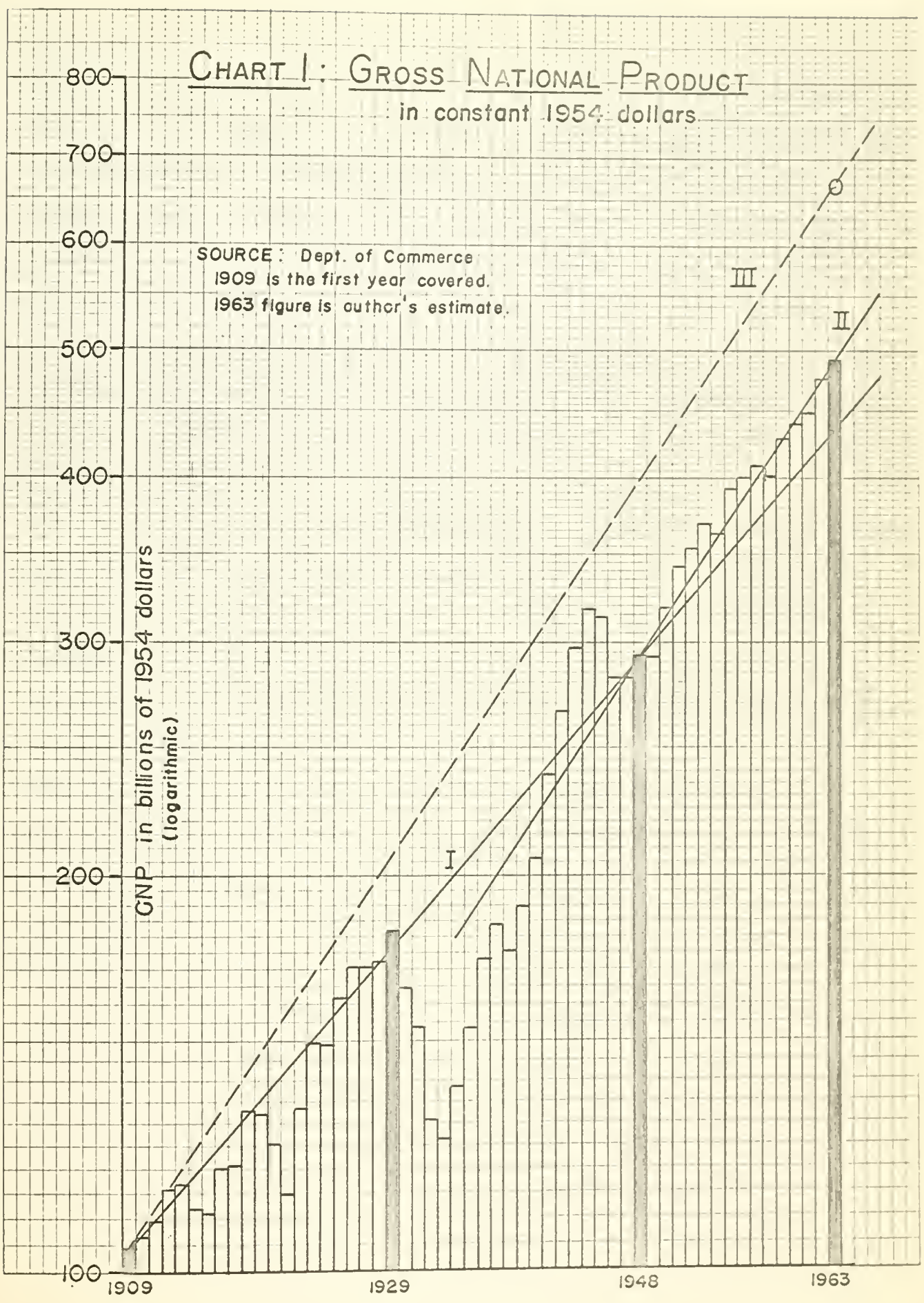
The historical record of GNP is shown in Chart I. One should keep in mind that

* All growth rates will be in real terms of 1954 dollars in order to eliminate the effect of price increases. Rates of growth will be compounded rates between terminal periods.

** U.S. Bureau of Labor Statistics, Employment and Earnings, January 1963, Table 1-1.

CHART I: GROSS NATIONAL PRODUCT in constant 1954 dollars.

SOURCE: Dept. of Commerce
1909 is the first year covered.
1963 figure is author's estimate.



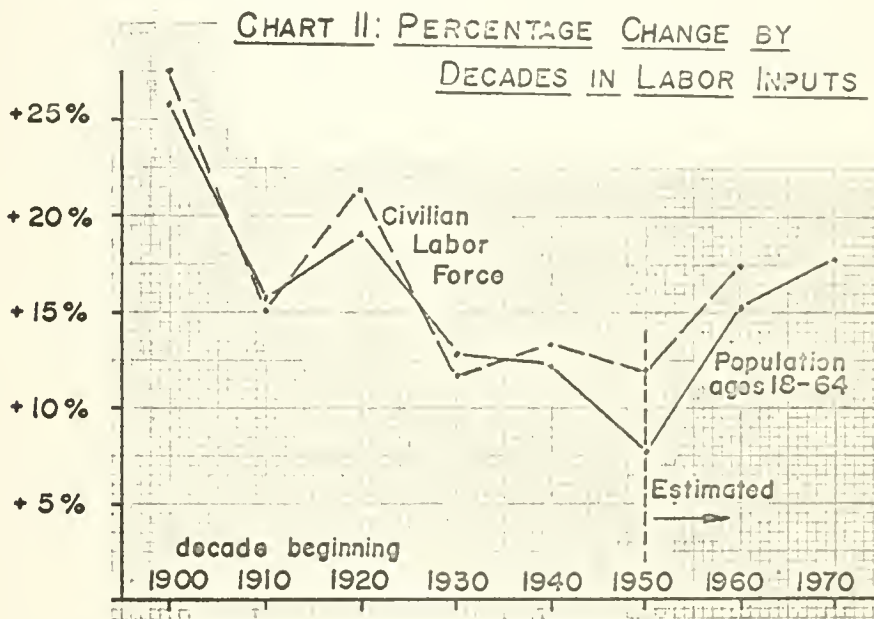
this chart is on a logarithmic or ratio scale which means that the verticle axis is measured by percentage increases in growth and not merely in billions of dollars of absolute change. The challenge that comes from using the relative scale can now readily be seen. To improve over a high level of GNP requires a far greater increase in absolute terms, even if the rate of improvement remains the same. An example from personal life may help to illustrate the point. If one man has a million dollars and another man has ten thousand dollars and they both get richer by three per cent a year, the millionaire must make thirty thousand dollars while the poorer man need only to make 300 dollars in order to get "rich" at the same rate of progress.

Three trend lines are shown in Chart I. The first is the 2.7 per cent rate of growth in GNP from 1909 to 1948. The second trend line is the 3.5 per cent rate from 1948 to the present. Often it is difficult to realize the enormous difference a seemingly small percentage change can make. The third trend line illustrates what the level that the American economy would now be, had the post-war rate of growth begun in 1909 and continued to the present. The difference between 3.5 per cent and 2.9 per cent would have resulted in a real GNP of 667 billion in 1963 or approximately 36 per cent more than the realized level of GNP that can be seen in Chart I. A small difference in compounded rates of growth is serious business as any investment banker will attest.

The Increase in Productivity

In the attempt to determine whether the more efficient postwar economy justifies the adoption of standards of performance higher than those of the past, productivity must be examined. The output of a country can be increased by rapid additions to the population, thus increasing the labor input. This was the case during much of the history of economic growth in the United States when both

immigration and large families were common. A better life for the people of a country is brought about by increase in output per man-hour. Because of the low birth rates of the depression period the population of working age grew during the postwar period at a rate less than 50% of the rate of the first three decades of this century, as shown in Chart II. The actual labor force grew somewhat faster than the population of working age because of the number of women, freed by modern technology from housework, who entered the labor force. Between 1947 and 1960 women constituted 64%^{*} of the increase in the civilian labor force, although they represented only 29% of the civilian labor force in 1947.



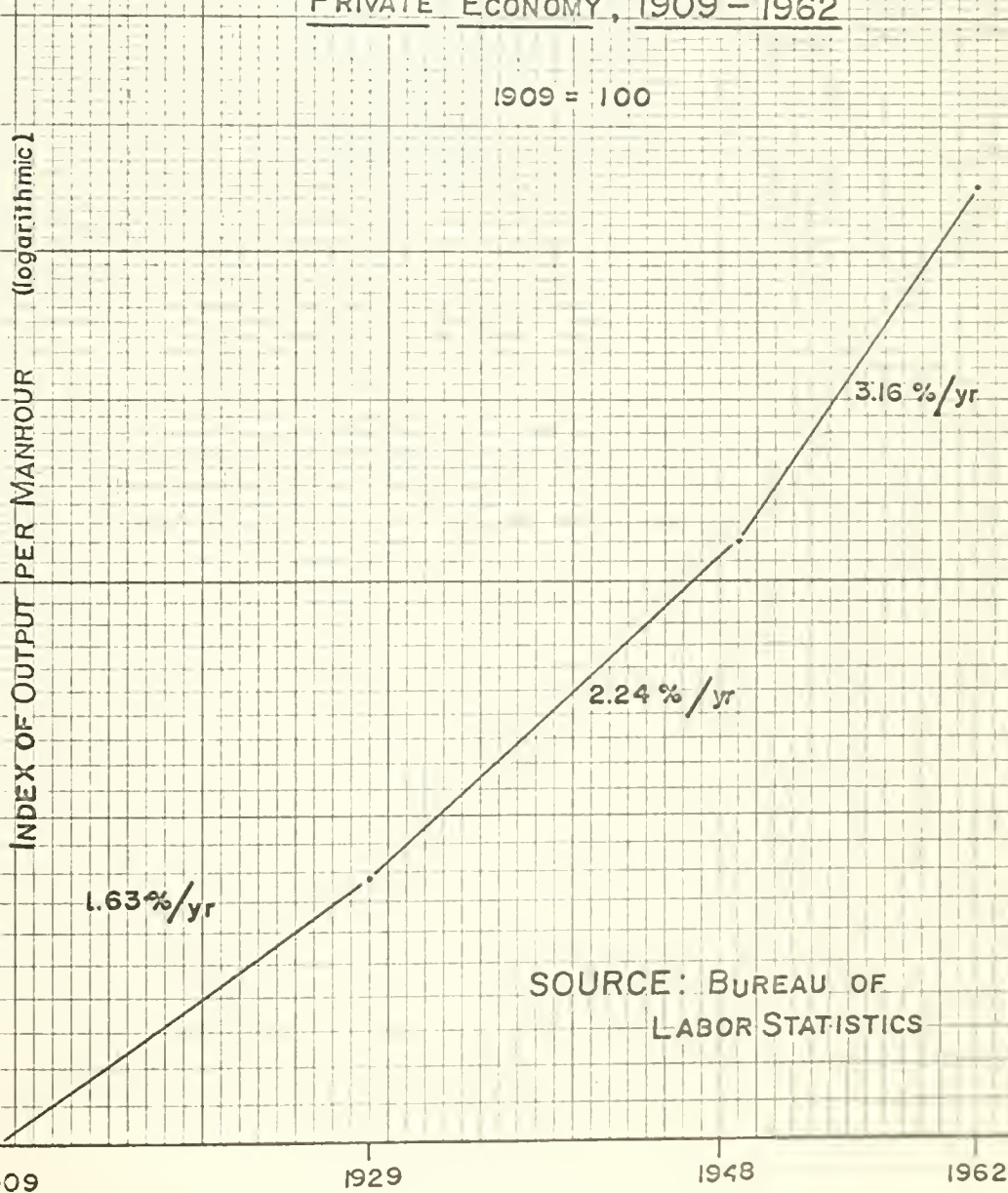
SOURCES: Dept. of Commerce and
Dept. of Health, Education and Welfare

Along with lower labor input during the postwar period comes higher output. The result is a growth in man-hour productivity that is substantially above the United States' long-run average productivity increase rate. Between 1948 and 1962 gross national product increased 62% while civilian employment increased by only 11.5%. Man-hour productivity, as indicated in Chart III,

^{*} U.S. Bureau of Labor Statistics, Employment and Earnings, Vol. 9, No. 11 May 1963, p. 2, Table A-2.

grew by 3.2% from 1948 to 1962, which compares extremely favorably with the historical average from 1909 to 1962 of 2.3%. It is even more meaningful to examine the period from 1909 to 1929 because the longer period from 1909 to 1962 has been improved by the record of the postwar period. The Bureau of Labor Statistics data for the 1909-1929 period show an annual increase in productivity of only 1.6%.

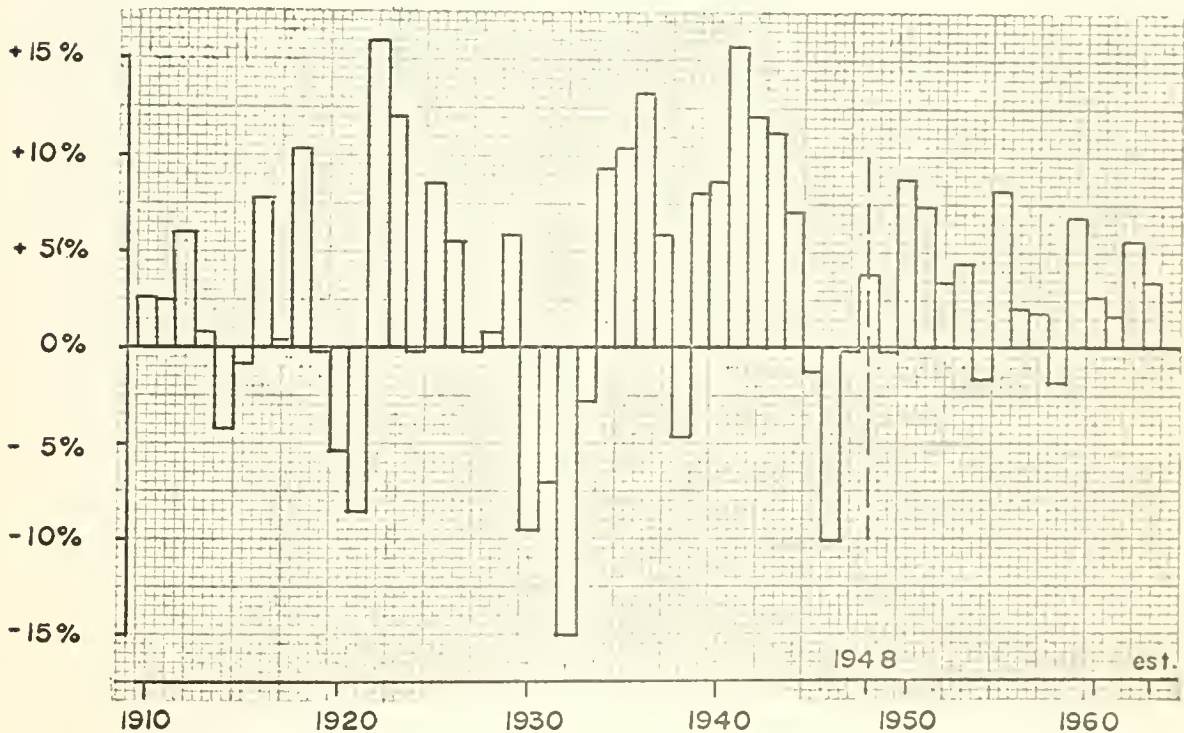
CHART III: COMPOUND RATES OF GROWTH
IN OUTPUT PER MANHOUR IN THE
PRIVATE ECONOMY, 1909 - 1962



Greater Economic Stability

The consideration of gross national product and productivity indicates that the postwar period has been a great boom period. People tend to think that booming times lead to crashes. It is possible, however, that in the postwar economy the traditional pattern of booms followed by busts is no longer a problem. The postwar years have been extraordinarily stable ones. Chart IV delineates the sharp improvement of this criterion of economic efficiency. Between 1909 and 1929 the economy suffered seven decreases in output, and three of those were decreases of more than 4%. Between 1918 and 1921 the economy slumped 14%. It fell 28% between 1929 and 1932. In marked contrast to this is the postwar period during which there were only three decreases in output from one year to another. Moreover, not one of these decreases attained a magnitude of even 2%.

CHART IV : ECONOMIC STABILITY MEASURED BY THE
% CHANGE IN GNP FROM THE PRECEDING YEAR,
1909-1963



Calculated from Dept. of Commerce Data

As one looks around the world, one grasps the importance of economic stability. The relative availability of capital in this country today is to a great degree a result of the confidence of American investors in the stability of their economy.

The postwar years are thus seen to be a period of unprecedented growth and stability, the results of investment in capital goods, education and R&D linked together by capable management. The statistics presented thus far should give pause to those who long for the good old times before the great depression and the increased government action which followed and changed the economic picture. The good old times were not so good when compared with the present. During the period from 1909 to 1929 the economy grew at only 2.9% as opposed to the 3.5% rate of the postwar period. From 1948 to 1962 output per man-hour increased at a rate 100% faster than that of the period from 1909 to 1929. Finally, the new economy is stable; the old economy was unstable and produced many depressions including the great depression. If today is better than yesterday, tomorrow may well be better than today. The postwar prosperity shows no signs of disappearing. It was achieved despite relatively low labor inputs and high taxes. Labor inputs will increase greatly during the decade of the 60's, and taxes will be lower. Although the performance of the postwar economy has been remarkable until now, its future performance may prove to be even more astonishing.

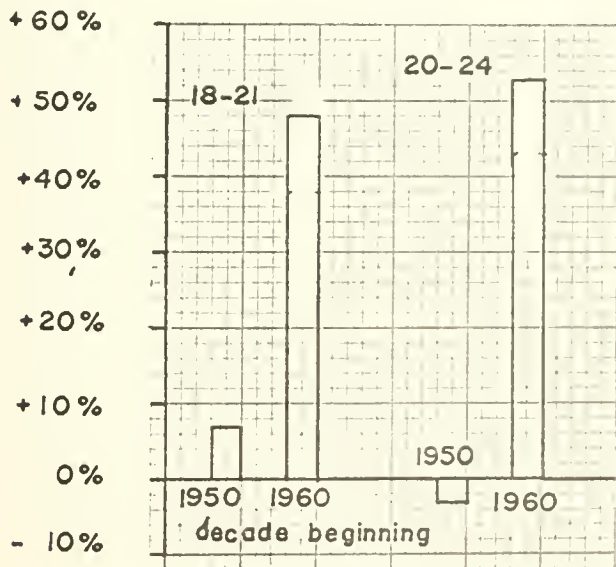
WHAT'S AHEAD FOR U.S. BUSINESSMEN?

The postwar period has been very kind to business and to the population in general. From 1948 to 1962 corporate sales increased twofold, corporate profits after taxes by 30%. The quality of profits improved as depreciation charges became more realistic. The stock market reflected these changes by rising 3.5 fold between 1950 and 1963.* Will these unprecedented good times continue? What do the trends of the postwar period portend for business? If the economy grows by 4% a year in real terms, output will increase by 50% in a decade. Is such growth possible? A look at population statistics and productivity increases provides an exciting view of what could happen.

The Labor Force

As seen in Chart V, the population aged 18-21 increased 7% in the 1950's, but it will increase 48% in the 1960's. During the 1950's there was a decrease of the population aged 21-24, whereas this age group will increase by 53% during the 1960's.

CHART V: POPULATION CHANGES, AGES 18-21 AND 20-24, FOR THE 1950'S AND 1960'S



Calculated from Dept. of Commerce Data

*Dow Jones Industrial Averages, Third Quarter 1963 over First Quarter 1950.

Thus the supply of labor will be increasing rapidly in the United States during the decade of the Sixties.

Productivity

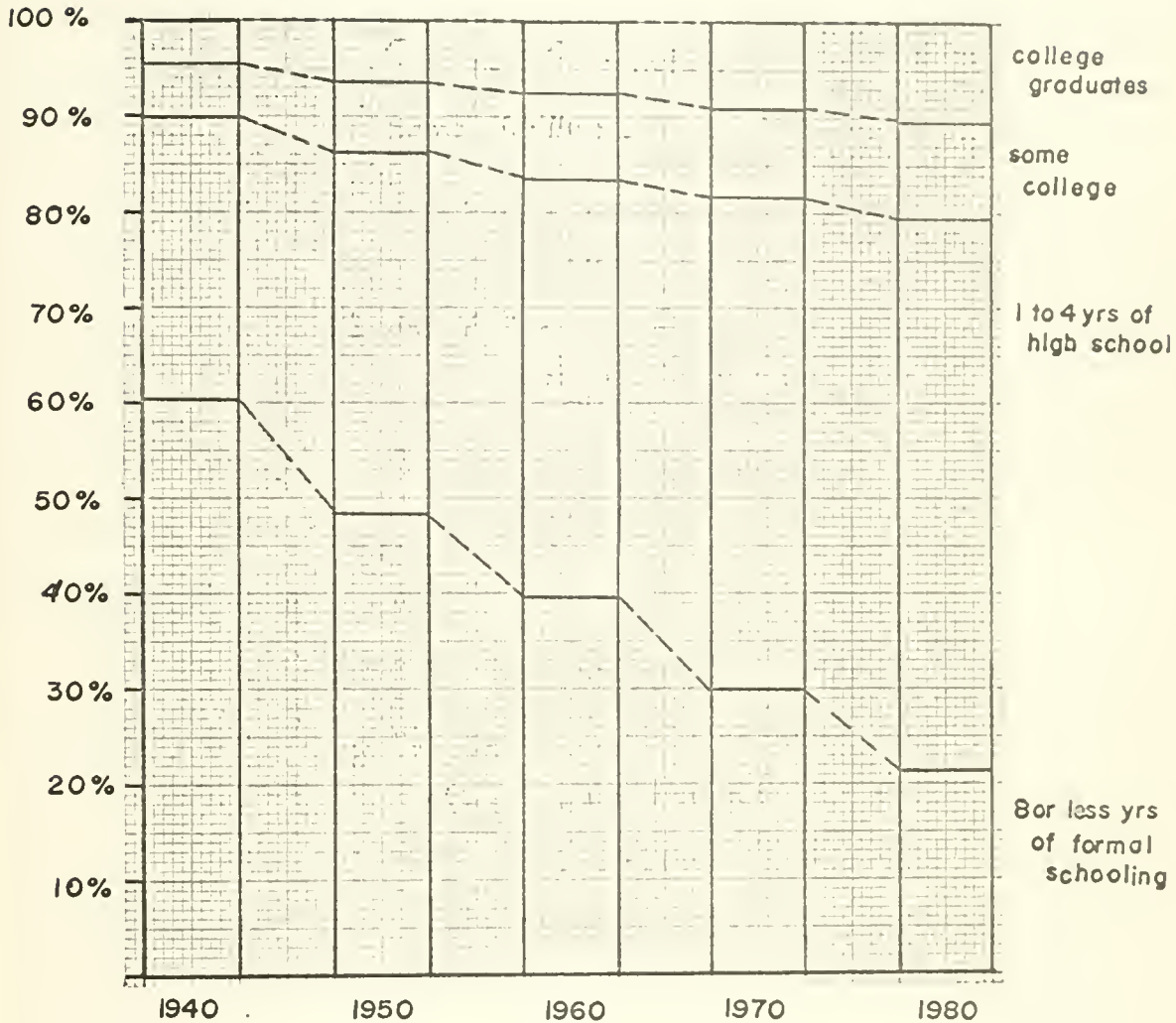
In addition to increases in the labor force approximately double the increase of the 1950's, the 1960's should also see rapid increases in productivity. Some factors affecting productivity are (1) rate of growth of the economy; (2) education of the labor force; (3) managerial skills; (4) capital investment; (5) investment in research and development. Each of these variables is moving favorably toward the fostering of productivity improvement.

The story of the rate of growth of the economy has already been told. Education is making great strides in the United States, and manpower is becoming better trained and better educated. The federal government through the expanded National Manpower Development and Training Act of 1963 will be hard at work upgrading skills in order to bring into employment those unskilled workers who are now unemployed. This retraining will increase employment and therefore the supply of labor, and it will also improve the productivity of the labor which is trained through it. Rapid technological innovation has rendered obsolete many scientists and engineers. This problem has been recognized and programs of scientific updating such as the one begun at M.I.T. in 1963 under the sponsorship of the Sloan Foundation will grow in importance. Businessmen are just beginning to fully appreciate the potential of computer technology,^{*} and schools of industrial management are now introducing the teaching of revolutionary new skills. National studies in various disciplines have improved the teaching of many subjects in the educational pipeline on elementary and secondary levels. An illustration of improvement is the fact that the 33% of the M.I.T. Freshman Class in 1963 had advanced placement in one or more subjects.^{**} The whole population is benefitting from an upward shift in educational attainment as can be seen in Chart VI.

* See John T. Garity, "Top Management and Computer Profits," Harvard Business Review, July-August, 1963.

** Memo: Office of Advanced Placement, M.I.T., 1963.

CHART VI: DISTRIBUTION OF EDUCATIONAL ATTAINMENT
AMONG PERSONS 25 YEARS OF AGE OR OVER



SOURCES: U.S. CENSUS OF POPULATION - 1960
SUMMARY OF GENERAL SOCIAL AND ECONOMIC
CHARACTERISTICS; HEALTH, EDUCATION AND
WELFARE TRENDS, 1962

In the decade of the Sixties both labor and management will be better educated and will possess new skills.

Capital investment in the United States should increase during the 1960's as a result of the Investment Credit Act of 1962, the liberalized depreciation rules, and surging profits. There is a natural time lag involved in the implementation of innovations coming out of research and development.

The Department of Commerce and NASA have begun to take action to shorten this lag. Improvement in education and business experience and the acceptance of a more rapidly changing world will also help to shorten the lag. Increases in capital investment will put technological innovation to work at a faster rate. The progress resulting from improved technology already manifest will thus continue in the 1960's as the implementation of R&D is facilitated by these supportive requirements.

The prospects for increased productivity thus appear very favorable, because all the required inputs - an increasingly educated working population, capital investment and innovation - should be available in abundance in the decade of the Sixties. This decade should also see increased competition, and this, too, will favorably affect productivity because competition forces business to accept innovation faster in order to survive.

More Competitive Pressure

Does it seem paradoxical that competitive pressure will become more severe during the prosperous times which are predicted? James Bright* has analyzed the impact of technological change, which he believes is growing even faster today than it did during the postwar period to date. He found that businessmen must increase their sensitivity to technological advances, because they will increase competition in the following ways: (1) Competition will spring up from unexpected and non-traditional fields; (2) The "competitive life span" of products will become shorter; (3) Productivity gains will put pressure on prices; (4) Geographical competition will increase. In addition, it is highly probable that foreign competition will become more serious. It is true that the United States has a substantial lead over other countries in levels of productivity, but the exports of the United States most in demand in developed countries are capital goods embodying American technology, American education, and American managerial talent which

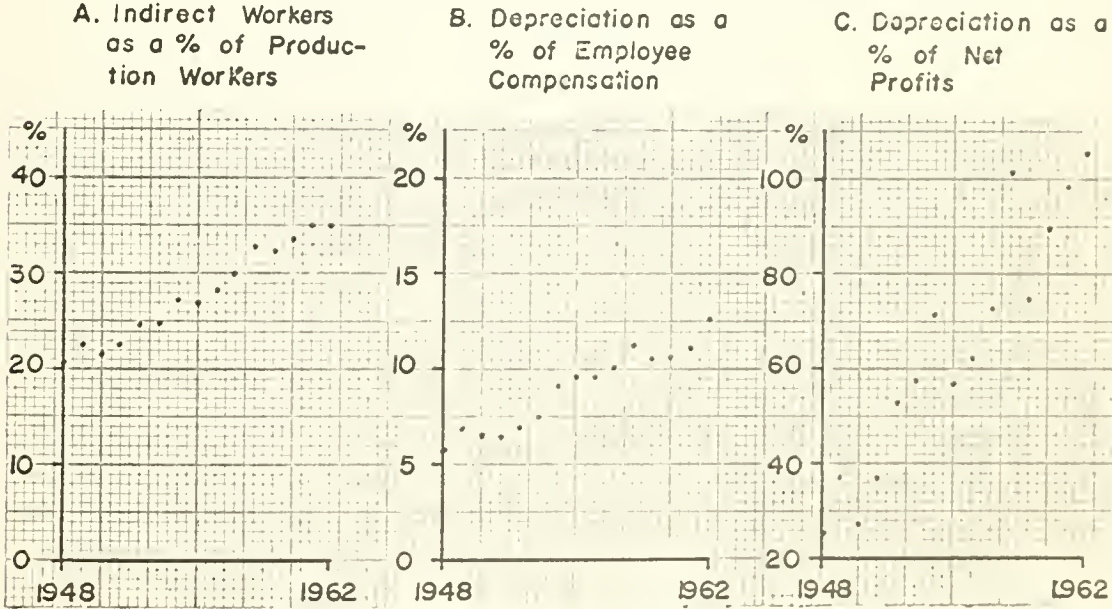
* "Opportunity and Threat in Technological Change," Harvard Business Review, November-December 1963.

follow investment in foreign subsidiaries. The United States is a leader in technological change, and those who follow reap many benefits from our advances as we export productivity. Businessmen can expect that the price of leadership will continue to grow. Competition is not, however, the only problem with which management will have to contend.

New Managerial Problems

The more efficient economy with which management now must deal is in many ways different from its predecessor. The nature of management has changed as costs have become increasingly fixed. The number of production workers who can easily be laid off has dwindled. In 1948 such workers represented 83% of those employed in manufacturing. By 1962 their ranks had thinned to 74%.^{*} Depreciation as a percentage of employee compensation in manufacturing has gone up from 5.3% to 13% between 1948 and 1962.^{**} Depreciation as a percentage of profits went from 25 % in 1948 to 107% in 1962. These trends can be seen in Charts VIIA, B and C.

CHART VII: CHANGES IN THE COST PATTERN OF MANUFACTURING

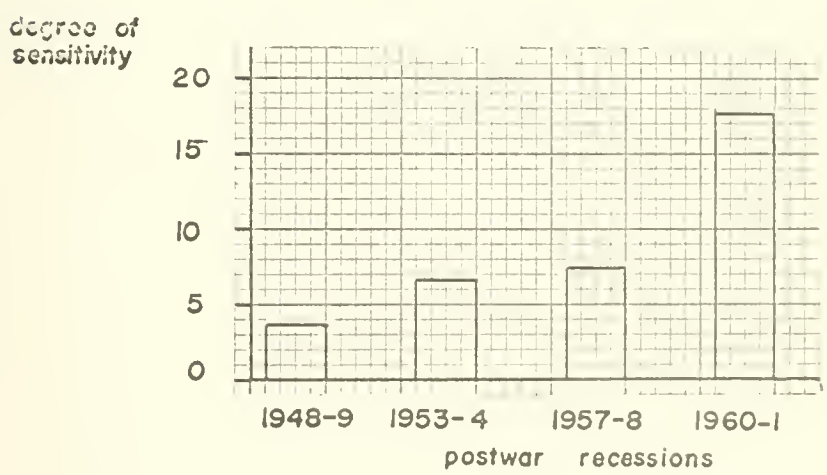


Source: Dept. of Commerce

* Mannpower Report of the President, pp. 163-164.
 ** U.S. Income and Output, 1963, pp. 216-217.

The growing fixity of costs presents very definite managerial problems. A larger percentage of the work force must have higher level skills. Management finds itself operating in new spheres of retraining and management development. Control is much more difficult with indirect workers, because their work is relatively unprogrammed. Pricing is less certain with a lower percentage of direct costs. Profits become much more sensitive to volume, and the rate of growth of the economy thus becomes extremely critical. A recent study* by Theodore Anderson has measured this increasing sensitivity by dividing the per cent decline in profits by the per cent decline in GNP from business cycle peak to bottom. His results are presented in Chart VIII.

CHART VIII: PROFIT SENSITIVITY: CHANGE IN PROFITS DIVIDED BY THE CHANGE IN GNP FOR ALL CORPORATIONS



If it is true that the rate of growth of the economy depends in large part on government action, then the relationship between business and government comes to be of great importance for today's business leaders.

* "Trends in Profit Sensitivity," Journal of Finance, December, 1963.

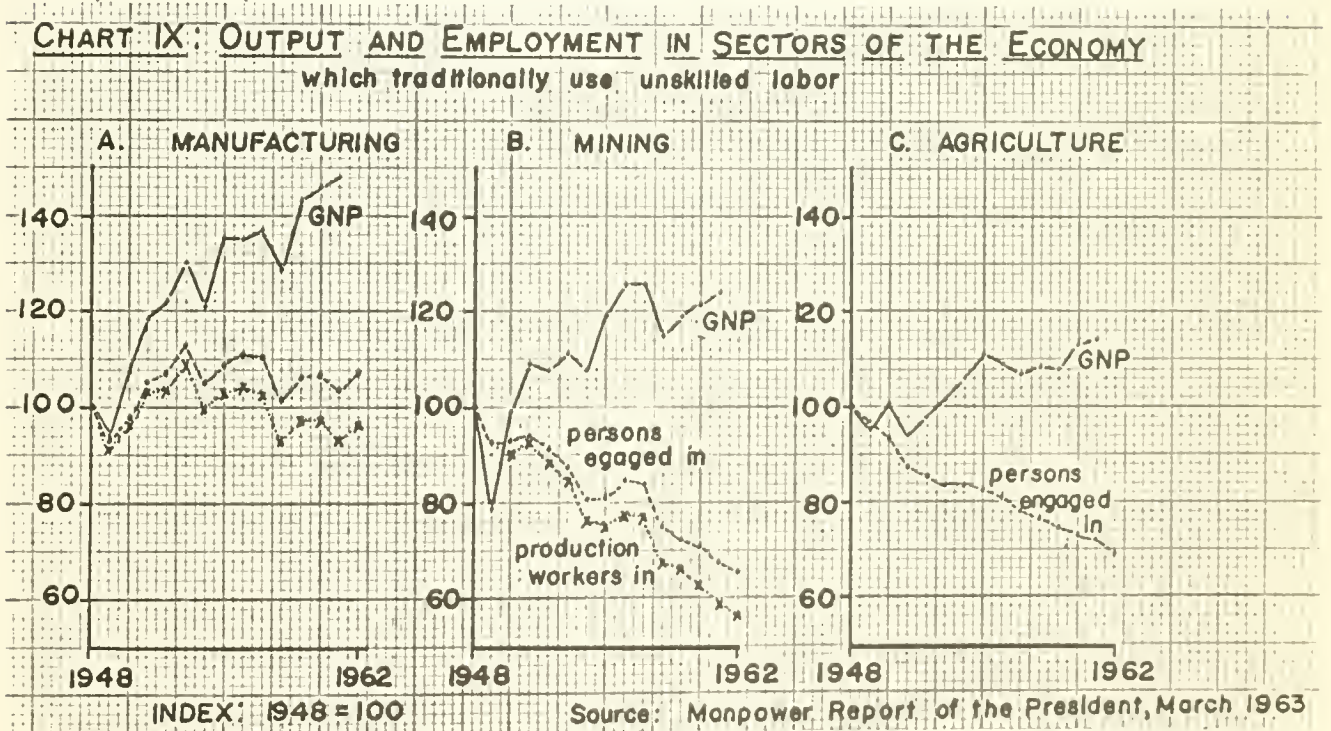
Business and Government

The comparison between the economy from 1909 to 1929, the last normal period before the federal government began to take a very active role, and the economy of the postwar period makes it difficult to argue that great harm has been caused by the federal government's new powers. In the major ways an economy can be tested, i.e., gross national product, productivity and stability, the postwar economy comes out of the comparison very well. If the success of business will increasingly depend upon an enlightened government, it is critical that a better appreciation of the role of government be developed. A clear view of the performance of the economy is necessary if businessmen are to become a more positive influence on the economic decisions of the government. Even as it is true that the economy has behaved more efficiently since the advent of increased government activities, it is also important to observe that the government can do considerable harm through policies that are promoted by special interests or which are very simply inept.

Businessmen should not concentrate on these negative aspects, but should work toward a constructive national economic program which is not merely anti-government. It is a widely held belief that businessmen do not fully appreciate the good effects that government actions have had on the economy. There is a prevailing idea that a businessman would reply to a question concerning what the government should do for the economy with a very loud "Less!" Many economists have wondered why the business community takes such a dim view of the role of government. For this reason, Robert Heilbroner and Peter Bernstein wrote A Primer on Government Spending* in order to give a better perspective on the role of government in modern economic society. President Kennedy felt it necessary to give several speeches on this subject just before his death.

* Vintage Books, New York, 1963.

We can expect that the government will become even more active during the remainder of the 1960's, because the labor force will be increasing rapidly at a time of accelerated productivity improvement. The federal government is committed to maintaining relatively full employment. Government action to increase demand and thus increase employment will help to achieve this goal, but government action to upgrade the labor force is also necessary because the more efficient economy has little need for unskilled workers. Despite the rapidly rising level of gross national product, employment in areas which utilize unskilled workers has gone down. The contrast between output and employment in these areas can be seen in Chart IXA, B, and C. With automation reducing so severely the demand for unskilled workers, it is small wonder that Secretary of Labor Wirtz called it "economic suicide" not to graduate from high school today.*



* NEW YORK TIMES, December 17, 1963.

The government has tried to solve the unemployment problem with measures to aid business such as the Investment Credit and liberalized depreciation, with the general stimulation that comes from a tax cut, and with the specific help of the Manpower Development and Training Act. It is not obvious at this time whether this combination of actions will suffice, as the problem will be compounded as the children of the postwar baby boom begin entering the labor force in great numbers. Business cooperation with government will have to continue if we are to solve our economic problems in a way which will lead to economic growth and prosperity. Economic change is taking place so rapidly that a large part of the population cannot be expected to be very well informed. It is the responsibility of business leaders to play an active role as they did during the tax cut debate. The Wall Street Journal^{*} attests to the contribution made by businessmen: "In addition to their respective duties as Chairman of Ford Motor Company and General Motors Corporation, Messrs. Ford and Donner are members of the Business Committee for Tax Reduction in 1963. This fast-growing group of corporate executives is beginning to generate some detectable tax-cutting pressure on a Congress that otherwise is feeling little heat from the folks back home.

Since 1961 business has enjoyed a very favorable economic environment. Corporate profits have increased 25%,^{**} and depreciation, which is a source of cash flow, has increased by six billion dollars or over 20%. The relative position of labor has been weakened, because there has been little employment increase for unskilled and production workers. This has kept unemployment between 5.5 and 6.5 per cent of the labor force and has undermined the bargaining power of unions.

* July 19, 1963.

** Survey of Current Business, December 1963, p. 20. Annualized Third Quarter 1963 over 1961.

The pressure is now on to give relief to labor. Edward Mason, in his presidential address before the 1962 meetings of the American Economic Association* discussed the question of whether the conflict between interest groups hinders economic growth. In a very perceptive and thoughtful analysis he pessimistically concluded that members of each special group are so involved with their own interests that they do not listen to other points of view or even see the same world that other groups see. There are many proposals from labor, as it seeks relief. A shorter work week with no decrease in pay is the goal which seems to be gaining in strength. There is no doubt that increased productivity improvement has had a severe impact on the power of labor. When profits fall, businessmen seek relief. It will not do now for businessmen to proclaim piously that "automation increases employment." It is clear to labor as it sees the trends shown in Chart IX (and it sees them very clearly) that there are no new jobs for those who traditionally join unions. The remainder of the 1960's will see an exacerbation of the labor dispute. To the extent that businessmen understand the economy and lend their support to government action such as the tax cut or the Manpower Development and Training Act, actions which will increase economic growth, they will improve their own operations even as they reduce the pressure for solutions to the labor problem which might slow economic growth.

CONCLUSION

It has been demonstrated by comparing the measures of gross national product, productivity and stability that the American economy in the postwar period has been operating far more efficiently than it has in the past. Its superior record was achieved with a labor increase far smaller than that expected in the decade of the Sixties. Every indication leads one to conclude

* "Interest, Ideologies, Stability, and Growth," American Economic Review, March 1963.

that the economic potential for the remainder of the decade is very great. Pride in the achievements of the postwar period and excitement and optimism with regard to the future are thus justified.

One of the values of the American economic ideology is relatively full employment, and the government is necessarily committed to this national goal. The more efficient economy requires very rapid growth if this goal is to be attained. Government commitment to full employment, as reflected in government economic policy, is a factor of increasing importance in business planning. Either the faster growth forecast in this paper will be attained, or there is likely to be restrictive legislation. The recent efforts of the federal government have been designed to speed economic growth, and this is surely the preferred way of achieving our national goals. Hopefully, given the potential of the economy and the higher standards for its operation, businessmen can expect a pace of economic progress even faster than the long-run rate which, in itself, was enough to make the United States a world leader.

Despite the favorable potential, however, the economic environment for the remainder of this decade may well prove more difficult for business in many ways. Competitive pressure will increase. New skills such as high sensitivity to technological innovation will be required. The government will continue to involve itself with economic growth and stability, and government action will affect business to an increasing extent. Change will occur so rapidly that a firm and realistic grasp of economic forces will be imperative. A framework and perspective for the understanding of the postwar economy are presented here, so that businessmen may look forward with confidence to the great challenges and the great opportunities offered by our new economy.

A NOTE ON THE CONTRIBUTION OF MILITARY
AND SPACE R&D TO THE ECONOMY

There has been much criticism of the contribution military and space research and development has made to economic growth. There is no question that government-sponsored research can make an even greater contribution to the economy than it has made in the past. NASA, the Department of Defense and the Department of Commerce have recently begun programs to speed spillover from military and space research and development into the civilian economy.

In analyzing the debate over the usefulness of military and space R&D to the economy, it is important to keep clearly in mind the context of economic facts. Productivity improvement is the best test of the efficacy of research and development, and R&D scores high with respect to this criterion. Faster economic growth, increased technological innovation, and increased demand for more highly skilled labor complete the picture of an economy whose performance has been substantially above its historical trend. It is difficult to understand how military and space R&D, contemporaneous with the more efficient postwar economy, has caused great damage.

An example of misguided criticism of the R&D effort can be seen in an article by Robert Solo in the November-December 1962 issue of The Harvard Business Review. He found that the rates of growth in gross national product and productivity improvement had not increased during the postwar period. Factually incorrect data led Solo astray. A check on Solo's sources shows that the figures of the Federal Reserve Board Index of Industrial Production were mistaken for Gross National Product. Solo said GNP (actually the FRB Index) was growing at the same old rate of 3.7 per cent. In fact, GNP, as shown in this paper, grew at a rate of 2.7 per cent between 1909 and 1948 and at a rate of 3.5 per cent or 30 per cent faster in the postwar period. Solo said that productivity per man hour had not increased during the postwar period. Yet his source for productivity, Kendrick's Productivity Trends in the United States, had a rate of increase in output per man hour in the private domestic economy of 2.3 per cent between 1890 and 1948, and of 3.4 per cent between 1948 and 1957 (the last date of this source), or 50 per cent faster than the long-run rate.

Space limits the refutation of Solo's article, but the reader can conclude that given the correct data, it would be extremely difficult to assert that military and space R&D have not made a significant contribution to the civilian economy.



