

Older workers
(1964 folder)

PRODUCTIVITY AND TECHNOLOGICAL DEVELOPMENTS
IN THE UNITED STATES

by
Leon Greenberg, Assistant Commissioner
Bureau of Labor Statistics, U.S. Department of Labor
[Address] before the
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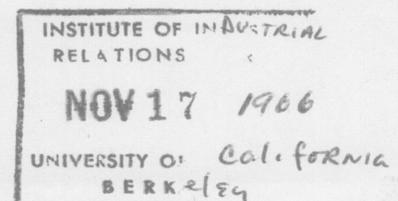
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The future of the older worker is only partly a function of his age. His future is also a function of his individual personal characteristics and abilities and of the general economic and technological environment. It is particularly the latter that I will discuss in this paper.

Many workers face each day's work with a growing fear that a heartless machine will soon take over their jobs and that the security of seniority and skill which they have built up over the years will vanish.

Others face the future of technology with serenity and even with excited anticipation. They believe that new machines and new products will provide more goods and more services and, therefore, more jobs. They see technology benefiting everyone, workers, investors, and the public at large.

Which of these two groups is correctly evaluating the future--the pessimist or the optimist? The answer, I believe, is that they are both right and they are both wrong.



[Washington, 1964?]

First, let us look at the optimist's side of the story. Technology is certainly not new. I was able to travel from Washington to Chicago in two hours as the result of the accumulation of technological knowledge developed over a span of decades.

Largely as a result of past technological improvements, productivity in this country has about tripled in the last 50 years; that is, for each man-hour of work performed today we turn out three times as much goods and services (or three times as much Gross National Product) as we did 50 years ago.

These gains in productivity were not always achieved by the use of highly complicated machines. For example, before the turn of the century, we made the rather simple transformation from hand to machine labor. In 1836 it took 48 hours to make a dozen pitchforks by hand. In 1896 it only took three hours to make the same dozen pitchforks using simple forging, casting, turning, and other machine processes.

Technology means not only improved methods but new products and new materials. Some of them are so commonplace that we tend to forget the great changes they wrought in the American economy. Automobiles did not just displace the horse and buggy. They also resulted in a vast highway network and in the growth of supporting industries such as service stations and the construction of motels and restaurants to take care of our traveling population.

What has been the result of this increased productivity? We have many more people employed today than 50 years ago. Wages have risen and average income is higher. And we don't have to go back as much as 50 years. Gross National Product per capita is 30 percent higher today than it was in 1947.

We have much more leisure time. In 1900 the average worker put in 60 hours of work a week. Today he works approximately 40 hours and in addition has paid vacations, sick leave, and holidays.

We live longer today and are in better health. This is not because our doctors are inherently more capable--they have been materially aided by scientific, technological developments in the field of health and medicine.

The housewife does not slave any more from dawn to dusk over cooking, washing, and cleaning. She has all kinds of electrical appliances which relieve her of much of the drudgery of housework. Of course the poor husband sometimes spends a good deal of his so-called leisure time in repairing these appliances and in other do-it-yourself projects around the house. Meanwhile, many housewives have sought employment outside the home--including some who fall into the older worker group.

Suppose our technology and productivity were to continue moving at the same high speed. Do we have the capacity to absorb such change? I think we do.

We still have many people in this country with less than an adequate standard of living. One out of every five Americans, that is, approximately 36 million Americans, are in families with an annual income of less than \$3,000. The real income level of these and other families can be raised by improving our productivity and by sharing the productivity gains.

Not only the poor but most of us are interested in improving our level of living. We can do this by sharing in productivity gains without infringing on anyone else's current income.

We face increasing competition from the rest of the world. Of course, we are happy to see countries in Europe, Africa, and Latin America grow and prosper--aside from altruistic reasons, prosperous countries are also good customers for our products. But in order to remain competitive in this world, we must continue to make the best use of improved technology.

Now let us look at the other side of the picture.

I said earlier that it took me about two hours to fly from Washington to Chicago. Twenty-five years ago it probably would have taken me five hours for the same flight. Fifty years ago I would have had to go by train and it would have taken me a little over 24 hours. One hundred fifty years ago I would have had to go by horseback and travel for 20 days to get to this meeting. In other words, speed of travel has been greatly accelerated in just a few years. Perhaps this example of man's

accelerated traveling speed is an exaggeration of man's total technological progress and outlook for the future, but it does indicate the kind of potential we face.

Looking at the productivity gain for the total private economy, we find that in the 40 years or so between 1909 and 1947 output per man-hour increased 2 percent a year. The rate for the postwar period has been 3 percent. This is a 50 percent improvement in our rate of productivity gain.

I cannot predict that this rate will be accelerated, but I do expect that if we have any reasonably good rate of growth in the economy, we will be able at least to maintain this 3 percent rate. There will also be new products and new materials, which will result in the decline of some industries and the growth of others, requiring workers in those industries to move to new jobs.

There are technological changes which we already know about which can have far-reaching implications for currently employed workers.

Twelve years ago there were fewer than 100 electronic computers in use in the United States. Today there are 10,000 or more. These computers--small or large--can do work at rates far surpassing those previously possible by humans or by standard tabulating machines.

We can control machine tools with a computer--control them in ways which permit the fabrication of forms and shapes almost impossible by hand, and with fewer skilled craftsmen.

Robot machines can pick up pieces, parts, and components, can move them, assemble them, fabricate them--doing a job which we once thought could be done only by human hands.

The chemical industry is introducing a new synthetic material for making the upper part of shoes. This material will look, feel, and breathe like leather. It can eventually reduce the manpower required in the making of shoes and can affect the leather tanning industry, the meatpacking industry and, perhaps, even the cattle raising industry.

What these and other illustrations suggest is that many changes will be occurring among the plants and industries of the economy. It is these differential changes among plants and industries, more than the overall change in productivity and output for the total economy, that cause dislocations of workers and the need to seek and obtain new jobs and to adjust to these new jobs. Of course, if the economy grows fast enough then job finding for all types of workers becomes easier. Nevertheless, there are many individuals who can suffer some very harsh consequences because the jobs for which they have a particular skill and aptitude disappear. The older worker is one who frequently falls into this category.

There is a difference between current technological change and the kind which occurred in previous decades. The great changes which took place in the early 1900's and the 1920's involved the transition to mass production and mass assembly

techniques. This technological change opened up thousands of semi-skilled jobs--jobs to which men and women with little or no education and with a minimum of training could move. In that environment, the transition from one kind of operative job to another was not very difficult.

In contrast, we know that today's technology and changing industrial structure is wiping out more and more of the semi-skilled jobs and that the new kinds of jobs are more and more in the white-collar field. The man who has worked in a factory does not easily become an office worker, a salesman, a travel agent, and certainly not a technician or a professional. This kind of re-employment is especially difficult for the older worker.

We have investigated the experience of about 1,800 workers who were laid off in five plants as a result of technological change. We found, as you might expect, that older workers and members of minority groups had the greatest difficulty in finding new jobs. As a matter of fact, many of the older workers withdrew from the labor market. Some of them, after many years of work, suddenly discovered that they had all kinds of aches and pains which made it difficult for them to work. This situation accounts in part for statistics which suggest a decline in the percentage of unemployed who are 45 years of age and over. The employment situation for the older worker hasn't necessarily improved. Greater numbers apparently are trying to live on their

retirement income and are not counted among the unemployed, since they are not actively seeking employment in the face of known age discrimination. Our study also suggests, very significantly, that the majority of older workers who do not seek re-employment after being displaced have not had a high school education.

In this same study, we found that nearly 75 percent of the workers who did find new jobs had to take a cut in hourly pay. In many cases the cut was 20 percent or more. Where the older workers obtained employment, they had to accept a much greater decline in hourly earnings than younger workers,

Thus, we see that improving technology and productivity can bring and has brought benefits to a very large part of our society. At the same time, a small but important part of our society has borne the cost of improvement for the many. This group is made up of the worker who becomes unemployed or loses his earning power because of technological and related changes. We do not think that the burden of technological change or any other kind of involuntary unemployment should be borne by these few individuals.

Can anything be done to alleviate this burden? Of course. I will refer to a few things that are closely related to our Department of Labor program.

The older worker who becomes displaced may decide that he would like to withdraw from the labor market. For those who wish to do so, there should be sufficient income protection in the way of public or private pension plans.

However, many workers would prefer to remain in the job market, but to do so they may require some retraining. The displaced worker can obtain retraining under the Federal Government's Manpower Development and Training Act. Admittedly, this may be a very difficult personal adjustment problem for those who have to shift into a completely new kind of work or for those who lack some basic educational skills. Available figures indicate that a relatively small percentage of MDTA trainees are in the age 45 and over category. From the beginning of the program and cumulative through October 1963, approximately 11 percent of some 33,300 trainees enrolled under the MDTA were 45 years of age and over. As one would expect, the great bulk of the trainees were in the age category 35 years and under. However, to look at the bright side of the picture, I think it is very significant that over 3,600 of the trainees were in the so-called "older worker" category and there is no reason why this ratio cannot be increased.

Unfortunately, one of the great barriers that older workers face in connection with technological change is the myth that they cannot be retrained successfully. This belief is part of the general prejudice that handicaps the older person in finding re-employment after displacement, or in seeking to enter the new fields that are created by automation.

The University of Michigan Survey Research Center undertook a pilot study for the BLS in an attempt to evaluate the effectiveness with which older workers on the job have been able

to adapt to retraining given in connection with technological change. The results of retraining programs for men and women at four different companies were studied--an aircraft company, a telephone company, an airline company, and an oil refinery.

The study went into comparisons of actual test results. They give no grounds for any simple, negative generalization about the adaptability of older workers to retraining. These results often show the younger group of workers doing better than the older group--the younger trainees were likely to respond more readily and to learn more quickly. But where training continued over longer periods, in a few groups, older workers often performed as well or better than the younger workers. Some proportion, sometimes as high as 40 percent, of older workers did better than some of the younger workers on all of the tests analyzed. This pilot study confirms some of our findings from other more extensive studies relating to on-the-job age and work performance.

We believe that these findings point up the need for further research on the potentials of the training of older workers in industry, but I am confident that the evidence from even these few studies will be repeated. Age, by itself, is far from a reliable or useful criterion for determining the suitability of workers for training. In short, we must re-affirm the importance of appraising a worker's adaptability to change on the basis of his individual capability rather than on his age.

Steps can also be taken within the individual firm to minimize the actual displacement of workers. Many firms have planned ahead, have informed and consulted with workers and the unions which represent them, have given them sufficient advance notice, so that they can train for or look for other jobs. Some firms have used normal attrition to reduce employment. Others have retrained their workers so that they can move into other jobs within the firm. The Internal Revenue Service, in preparation for the introduction of computer processing of tax returns, started its manpower planning as much as three years in advance of the actual changeover. Some firms have given their employees substantial separation pay benefits. In industries such as Kaiser Steel and the West Coast Longshore, elaborate plans have been worked out through collective bargaining for improving productivity, sharing the gains of productivity, and protecting the job security of workers affected by productivity improvement.

The community also has a responsibility and, in fact, the individual worker often cannot help himself unless he has the cooperation of the community. A worker who wants to be retrained or who wants to upgrade his general education must find the facilities and teachers to help him, obtain guidance and counseling from those who know what the job market is like, and receive some form of income maintenance while he prepares for the new job.

The steps that can be taken at these various levels can only be a partial solution. The economy as a whole must grow

enough to take care of the gains in productivity and the net new entrants to the labor force. The public sector must also continue to provide the facilities which the private sector needs in order to function efficiently.

We all know, either from general observation or personal experience, that social or economic imbalances or significant changes in this country often result in hardships, primarily for special groups such as the minority worker, the very young or the older worker. There was a time when these dislocations were taken as a matter of course and the individual was left pretty much to shift for himself. It has since become public policy that these individuals should not have to bear the burden of change. While we may not be agreed on the necessary and proper corrective measures, we are certainly agreed on the basic idea that it is to our overall interest to try to cushion the effects of individual hardships resulting from economic and social change.

The process of technology has brought great benefits to millions of American families and we must vigorously pursue our efforts to promote continued technological advancement and productivity growth. But we must also vigorously pursue policies and programs for economic growth and for an environment in which adjustments can be successfully accomplished. Thus, the benefits of progress will not only accrue to a privileged majority but will also avoid the growth of another minority who might be victims of technological discrimination.