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The Effects of Productivity on the American Economy

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ON THE AMERICAN ECONOMY

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"Productivity advance is at all times a major force in a dynamic economy such as ours, contributing to rising planes of living, changes in economic structure, and shifts in the fortunes of the compound business enterprises."[1]

We have all heard the word 'productivity' before and should know that productivity gains are good for the economy, but do we know what is meant by productivity or how productivity gains are made? First, a theoretical definition of productivity must be developed before a practical definition of productivity can be discussed.

One general definition of productivity cites the relationship of output to the associated productive inputs, such as labor, capital, and natural resources. In theory, when output is related to all possible inputs the term that should be applied is 'total factor productivity'. Total factor productivity provides the only true measurement of the net savings over time in real costs per unit of output. Unfortunately, practical application of this analysis breaks down when hours of labor and units of capital are combined into one input figure. Thus 'partial productivity' acts as the measure for the gains or losses in our efficiency. 'Partial productivity' merely relates the productive output to one input, which under most conditions constitutes a fairly accurate measurement. By far the most commonly used input for partial productivity is labor because of its ease of measurement and its reliability as a consistent measurement of productivity. Quite simply when labor is used as a unit of measurement for partial productivity it is called 'labor productivity'. The term, labor productivity, is misleading because it implies that labor is responsible for productivity growth instead of reflecting technical innovations, changes in capital stock and capacity utilization, scale of

production, materials flow, management skills, pressure of competition, and many other similar factors which serve as its true functions.

The great importance of productivity in our economy becomes evident when produtivity gains are viewed as a major force against inflation. The best way to reduce increasing unit costs is to be able to produce greater quanities in relation to time. Hence when unit costs are decreased, inflation is decreased. Chart I provides an explanation as to how inflation rises in years when higher labor costs are not offset by productivity gains.

YEAR	INCREASE IN WAGES/HR.*	INCREASE IN OUTPUT/HR.	INFLATION
1948	8.8%	4.3%	7.7%
1951	9.6%	3.0%	8.0%
1957	6.4%	3.0%	3.5%
1967	5.8%	2.1%	2.8%
1968	7.6%	2.9%	4.2%
1969	7.2%	0.7%	5.4%
1970	7.4%	0.7%	6.1%

Chart I. In most years when workers' pay rises much faster than output...prices tend to go up rather sharpley. (U.S. Department of Labor).
* Includes fringe benefits.

When dealing with the effect of an increase or decrease in productivity, it has been estimated by the Bureau of Labor Statistics that for every tenth of one percent variance in the annual productivity rate a corresponding increase or decrease in the gross-national-product will occur of about sixty billion dollars during the decade of the 1970's.[2]

The effect of an increase or decrease in productivity can also be viewed in everyday life. Many people will complain that inflation has

been eating away at their real income, but what they fail to realize is that not only does productivity growth offset inflation but also sets the upper limit for real earnings growth. In other words, real income can only grow as much as productivity grows. Ironically, the labor force-the working public-are the ones who determine productivity growth because income and product are in a direct relation and labor is by far the largest cost involved in the product.

Over the years the most influential factor in productivity growth in the short run has been the business cycle. When the business cycle goes into contraction, employers are hesitant to lay-off skilled workers even though production volume is falling off, which yields inefficient use of labor. Eventually employers are forced to lay-off the excess workers which causes productivity to rise. As expansion takes over, employers are reluctant to hire new workers because of the unstable situation which is still causing a rise in productivity. However, when business becomes prosperous again, management tends to ignore cost saving methods and productivity again begins to drop. (See chart II)

In the long run, the element most influential in keeping productivity on the rise is technological and organizational innovations. Without progress in these fields, our dynamic economy would become stagnant and inactive over the long run. How could the United States' economy have progressed without Henry Ford's assembly line and interchangeable parts or the modern computer with a brain capacity hundreds of times faster and more accurate than the human brain? Fortunately, the United States has had the advantage of numerous inventions and discoveries which have continually helped our economy progress through productivity advances.

Looking at productivity from an industrial point of view, increases in productivity becomes a major and primary goal. With this in mind,

YEAR	BUSINESS CYCLE	INCREASE IN OUTPUT/HR.
1949	Contraction	3.1%
1950	Expansion	8.2%
1954	Contraction	2.4%
1955	Expansion	4.4%
1957,58	Contraction	3.0%
1959	Expansion	3.6%
1960	Contraction	1.5%
1961	Expansion	3.4%
1967	Contraction	2.1%
1968	Expansion	2.9%

Chart II. In times of contraction, productivity tends to decrease. In times of expansion, productivity tends to increase. (U.S. Department of Labor)

Robert Sutermeister of the Graduate School of Business Administration of the University of Washington developed a bull's-eye style chart (See Chart III) in which productivity is the target and the factors affecting productivity all around the center. The following is an explanation of Mr. Sutermeister's chart:

1. The diagram consists of a series of concentric circles, each of which is divided into segments. No attempt has been made to have the size of each segment reflect its relative importance. The importance of each segment would probably be different for each organization studied, for each department in the organization, and even for each individual employee with his own distinct needs.

2. The factors in each segment of each circle are deemed to affect or determine the factors in the corresponding segment of the next smaller circle.

3. The factors in each segment of the circle frequently affect or are affected by factors in some of the other segments in the same circle.

4. The factors in each segment of each circle can also affect factors in segments elsewhere in the diagram.

5. All of the factors in the diagram are subject to change with time. The special importance of time in affecting Individual Needs and Formal Organization is indicated.[3]

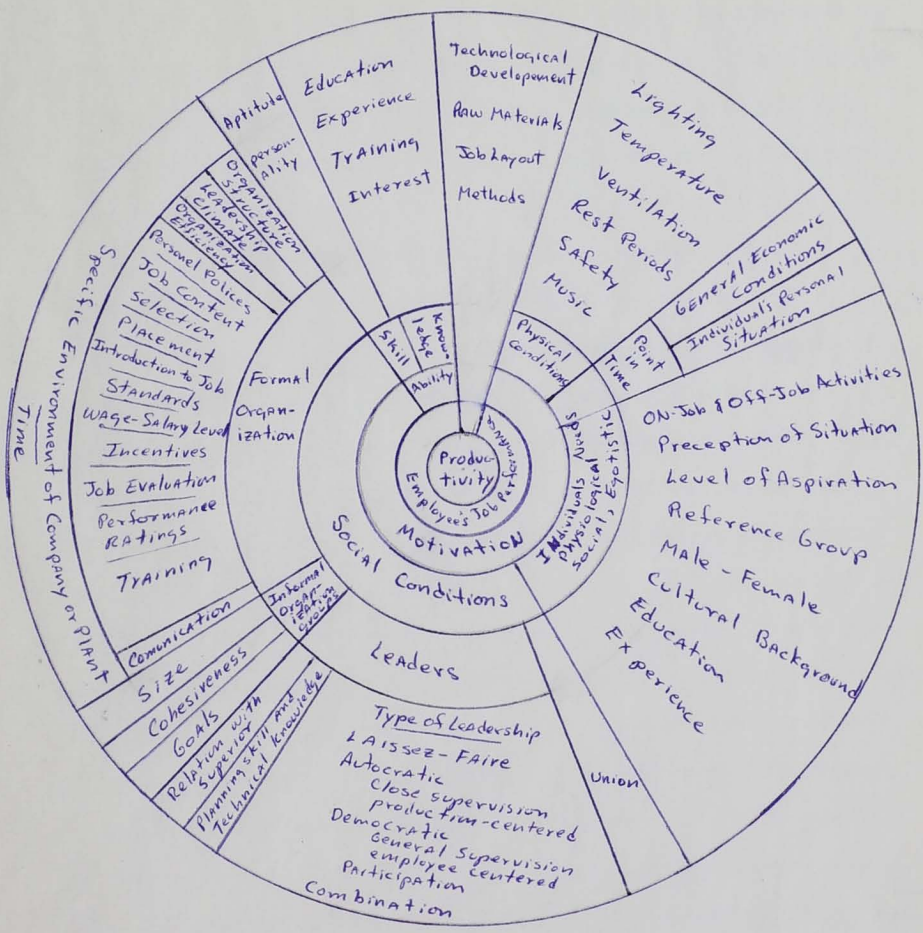

Chart III. Bull's-eye Chart showing productivity as the primary target of business. (Sutermeister, PEOPLE AND PRODUCTIVITY, 1969)

As can be seen in this chart, technical and human factors have the greatest effect on productivity. Now the question arises as to how these factors can be measured in order to determine increases or decreases in productivity. As previously stated, 'partial productivity' provides the only practical method of determining levels of productivity just as 'labor productivity' provides the most common measurement of determining productivity level.

Labor productivity is usually expressed in terms of output per man-hour and is commonly calculated by dividing the total number of man-hours over a period into the sales value or the number of units of all the product produced in that period. To demonstrate labor productivity in action, the case of the Gadget Company can be cited. The Gadget Company has five employees which consists of the owner-manager, a salesman, an accountant, and two laborers. In one week 400 gadgets are produced, therefore the productivity index for that week is 2 (400 gadgets,divided by 5 men times 40 hours or 200 man-hours). Now to proceed to how productivity gains can offset inflation. Suppose that gadgets sell for $4.00 apiece, and that wages for one week are $800.00. The Gadget Company has $1600.00 in sales which leaves $800.00 for expenses other than the wages which are always deducted from sales. Because inflationary forces induce a five percent across-the-board raise for all employees of the Gadget Company, the weekly wage expense of the Gadget Company is raised to $840.00. The owner-manager knows that the raise will cut into his profits, so he gives a pep-talk to his employees in hopes that the workers will produce 410 gadgets that week which will bring the productivity index up to 2.05 for a gain of 2.5%. When the accountant checks the figures, he sees that the sales value for that particular week is $1640.00 which still leaves $800.00 to defer expenses

after wages are deducted from sales. In this simplified case, one can see how productivity is measured and how productivity gains can offset rising costs due to inflation.

Previously, measuring productivity in a manufacturing concern was discussed. This is a very easy task considering all the needed information for the manufacturer is always recorded on a production record sheet. When productivity is considered in service industries, a slight amount of difficulty is encountered when measuring product so sales figures are often used as the output figure. The use of 'labor productivity' in in the service field is not satisfactory because sales are often based on labor hours and cost. When the statisticians deflate the sales for inflation and divide by labor hours, they consistently yield a productivity index of one or near one. This will occur whether the janitor washes one floor or five floors an hour because sales are based on labor hours. Accurate measurement in these areas can only be achieved when sales are based on the amount of work performed and not the number of hours worked.

Governmental measurement of productivity is useless because the productivity figures are a product of government agencies. A more appropriate question would be to determine whether productivity exists in government at all. The Bureau of Economic Analysis assumes that governmental output is constant, therefore, no gains or losses are registered.

In summation, one can deduce what determines productivity as well as considering productivity gains as good and essential for a progressive and dynamic economy. However, the ways in which the level of productivity in the United States is being affected and what must be accomplished to keep that productivity advancing are very important factors which should provoke much thought and suggestion. Some of the most important

problems in this area will now be discussed.

ABSENTEEISM. A trend which only began in the 1950's and still on the rise today is absenteeism. One of the companies which has been bothered with absenteeism is General Motors which experiences a 5% absentee rate daily. On some Mondays and Fridays the absentee rate has reached as much as 10%, hence most consumers hope their car is built during the middle of the week and not at the ends. James M. Roche, past chairman of General Motors, has been quoted as saying "tools and technology mean nothing if the worker is absent from his job"[4]. Absenteeism causes lower productivity rates for a number of reasons. First, an untrained person must be prepared to replace any absentee and secondly, one person may be forced to handle two jobs at one time because someone is missing. Both of these reasons cause a slowdown in production.

HARD-CORE WORKERS. In recent years the government has set up programs whereby companies hire 'hard-core workers' in order to help them out of the slums. Inefficiencies and low productivity rates result from the use of 'hard-core workers' because they are often poor workers , have a weak educational background, and have a bad effect on the morals of the regular work force. Also, when business is poor and layoffs are in order, the employer is reluctant to layoff the hard-core worker because of the possible repercussions of so-called 'discriminatory practices'.

INDUSTRY MOVEMENT TOWARDS SERVICE. Service industries include such activities as government operations, finance, health, education, real estate, communications, transportation, wholesale and retail trade, and personal services such as the television repairman and the barber, for example. Traditionally, the service industries have had low productivity gains, but recently there has been a shift of labor towards the service industries. At this time, nearly two-thirds of the U. S. work

force are employed in service industries, although these workers only account for 50% of our Gross National Product. Obviously service employees are not pulling their share of the productivity load, and according to a study by the Chase Manhatten Bank, productivity in this sector constitutes 30-50% less than output per man-hour in manufacturing and farming sectors. The whole problem of raising productivity in this sector of the economy has been summarized in this statement: "A fiddler can't raise his productivity by fiddling faster"[5]. Leon Greenberg, one-time director of the President's National Commission on Productivity, estimated that "labor shifts into low productivity industries will put a 0.2% drag on the average annual output during the 1970's"[6]. Just a general difficulty in raising productivity because of the type of work involved has a tendency to cause low productivity in service industries. Many of the companies in the service sector are small-scale operations causing under-capitalization and better qualified managers to move into larger firms in the manufacturing field. The outlook for the service sector is not all dismal, however, because studies have shown that the more capital-intensive industries in this sector such as communications, transportation, and wholesale and retail trade, have experienced productivity gains in the last decade of 5.1%, 4.2%, and 3.4%, respectively. From this knowledge, a general trend toward increased economy of scale in such areas as banking with their branching system, and in wholesale and retail trade with their chain operations has occurred. Also time and motion studies are being put to use along with specialization and standardization to raise productivity in service industries to a more appreciable amount in the future.

SLOWING OF FARM EXIT. In the past, the shift of farm labor to the manufacturing sector of the economy had the effect of increasing

the productivity rate by 0.5% annually because labor was moving from a relatively lower productivity area to a higher productivity sector. Now studies have shown that the labor shift from agriculture to manufacturing is no longer as great as had been predicted so that the expected boosts in productivity gains from this movement will no longer be as large as before.

LACK OF CAPITAL SPENDING. One of the ingredients necessary for productivity growth is efficient capital equipment, but United States companies are falling behind in making capital expenditures. John Connally, former Secretary of the Treasury, estimates that over 40% of American industries' equipment is over ten years old. The rate of reinvestment by U.S. companies is only 18-19% as opposed to Western European companies which reinvest 25-35% of their profits, and Japanese companies which reinvest as much as 40% of their profits. Take the steel industry, for instance. Recently the basic oxygen method of producing steel was developed. In Japan 85% of the steel comes from this process while in the U.S. only 50% is produced in this manner. Consequently, Japanese steel, being produced more efficiently and cheaply, is easily outselling American steel and leading the world market.

Besides the problem of American industries not making enough capital outlays, they are also faced with the prospect of making large expenditures for non-producing equipment such as environmental control apparatus. Many economists believe that the slowdown which occurred during the latter half of the 1960's was partially caused by a levelling off of expenditures on research and development. Therefore, capital expenditures compose a very necessary item for increased productivity even at the risk of adding to inflation by making the expenditures.

JOB MONOTONY. Today's more highly educated worker is rebelling a-

against the assembly line boredom. The United Auto Workers (UAW) is considering action to find alternatives to the assembly line. The constant boredom along the assembly line leads to low morale and lower productivity. Little pride in their work resulting in low quality items comprises the only products of these conditions. Western Europe has made several experiments with group assemly systems with limited success. Group assembly systems such as those instituted at Olivetti (Italy) and Volvo (Sweden), require teams of workers who know all the assembly steps for the given product. Consequently, these group assemblers are able to switch from one task along the route to another as well as being responsible for the whole assembly of the product, thereby boosting morale and the quality of their product. Out of all this came lower absenteeism which could possibly be a starting point and a very valid reason for the American manufacturers to follow in the European manufacturer's footsteps.

RESTRICTIVE WORK RULES. "Combined with the elaborate juisdictional rules of the craft unions, the work rules create a nightmare of downtime, duplicated jobs, and overstaffing."[7] Because of these reasons, work rules have caused a very negative impact on productivity. Hundreds of examples of work rule inefficiencies could be listed, but a few will be enough to point out the problems they can cause. In New York City, for instance, 13 craft unions were to install a bathroom in a building complex and a dispute arose as to whether the plumber or the carpenter should install clothing hooks on the bathroom door. In some areas, only an electrician and no other person, could install a light bulb or plug in the equipment. The construction industry is one of the hardest hit by these rules. An estimated 12-16 billion dollars is wasted annually on unperformed labor because of "long lunch hours and extended coffee breaks, guaranteed overtime, call-in pay for reporting to work in weather that obviously makes

work impossible, and paid travel allowances when little travel is necessary."[8] The American Federation of Labor and the Congress of Industrial Organizations (AFL-CIO) responded to managements' complaints about work rules with the statement: "I suppose it would be possible to increase productivity somewhat by changing work rules, but we could also increase productivity if we had slaves instead of freemen. The issue of freedom and democracy gets involved, and you have to ask when production takes priority over everything else."[9] With such an attitude held by the Unions no improvement in productivity can be expected, for without a change in working rules the constant waste of time and money will continue.

GOVERNMENT REGULATIONS. Recent laws passed by the federal government have also been factors in lowering productivity levels. One has been already mentioned, the Environmental Protection Act, which forces manufacturers to spend large sums of money on non-productive equipment. The experts agree that this spending will put an annual drag on productivity through 1980 of approximately 0.2%. Over the long-run, however, expect environmental spending to turn to an advantage because newer, cleaner, and more efficient facilities will replace older, less efficient plants. One illustration of this prediction has already come to light. International Paper Company replaced an old plant with a 76 million dollar facility and boosted productivity by more than 70%.

Another law which has affected productivity adversely is th Occupational Safety and Health Act. This act has meant an extra load of record-keeping and, in some cases, restructuring of plant facilities for safety reasons. Again, the industry hardest hit by this legislation was the construction industry. No figures are available as yet showing how much this act has affected productivity in construction, but experts have estimated that the added annual cost to construction will be 50 billion

dollars.

Several other laws also have caused a slowdown in productivity such as the Truth-In-Lending Act and the supplement recently passed by the state of Pennsylvania which requires more paperwork and thus, a loss in productivity.

CRIME. The recent rise in crime has caused industries to install various security systems such as fencing, outdoor night lighting, burglar alarm systems, and security guards, all of which have served to lower productivity gains.

POOR MANAGEMENT. Managers, in their eagerness to put down the Unions for causing poor productivity, tend to overlook themselves as possible weak points in the system. Richard C. Gerstenberg, chairman of General Motors, has stated, "I regard productivity as a measure of managements' efficiency, or lack of efficiency, in employing all the necessary resources-natural, human, and financial."[10] Thus he places responsibility for productivity squarely on the shoulders of management. Unfortunately, management has not always risen to the occasion. Take the case of the Steel industry, where the decision to stick with the blast furnace instead of switching to the basic oxygen production method keeps the productivity of that industry at very constant, low levels. Also, there has been recent evidence of a low sense of accomplishment among corporate managers, which is another way of saying low morale and hence, low productivity. Consequently, not all adverse effects on productivity can be traced to labor because management must either take the entire or partial blame for many cases of low productivity.

By now the question could be asked as to what offsets the negative factors affecting productivity to keep the U.S. economy advancing. According to Professor John Kendrick of the George Washington University,

productivity gains can be traced "to growth from economies of scale, improved allocation of resources, changes in the utilization of capacity, and intangible investments such as money spent on education, research and development, training, health, and worker mobility."[11] Of these reasons, research and development constitutes perhaps one of the most important elements because it can help improve productivity by providing better machinery, by providing better methods and process controls, by creating breakthroughs into wholly new ways of doing things, and by developing product designs that save labor and manufacturing unnecessary steps in processing their respective products. In theory, increased effort and spending on research and development should shift the Phillips Curve[12] to the left, which would mean a reduction of both inflation and unemployment.

Checking the statistical data on productivity, many factors can be cited to have affected its level in the U.S. In the 50 years prior to World War I, total factor productivity increased at a rate of little more than 1% per annum. During World War I, productivity gains spurted to 2% a year and have averaged a 2.3% annual gain since then.

World War I marked the beginning of rapid increases in expenditures for research and development, advances in the education of laborers, and the spread of scientific management. The years of the Great Depression (1929-1936) were lean (productivity was poor), so in order to consider the gains since World War II, an average annual increase in output per man-hour of 3.2% would be noted. Chart IV shows the per cent increases in output per man-hour from 1960-1973. The low rates which occurred in the late 1960's reflect the recession that the economy experienced at that time.

The relevance of Chart IV's figures might be more apparent if com-

YEAR	INCREASE IN PRODUCTIVITY	YEAR	INCREASE IN PRODUCTIVITY
1960	1.5%	1967	2.1%
1961	3.4%	1968	2.9%
1962	4.7%	1969	0.7%
1963	3.5%	1970	0.7%
1964	4.3%	1971	7.1%
1965	3.8%	1972	5.3%
1966	1.9%	1973	4.4%

Chart IV. Annual Increase in Productivity for the Years 1960-1973. (U.S. Department of Labor)

COUNTRY	1960-72	1960-65	1965-70	1970	1971	1972
United States	3.2%	4.3%	2.0%	0.7%	7.1%	5.3%
11 Foreign Countries	6.1%	5.5%	6.7%	5.2%	4.8%	7.6%
Canada	4.2%	4.4%	4.4%	1.6%	5.7%	4.4%
Japan	10.4%	8.5%	13.4%	12.7%	3.5%	10.1%
Belgium	6.5%	5.1%	7.7%	4.5%	4.6%	10.0%
Denmark	7.0%	4.9%	8.5%	5.9%	7.3%	11.0%
France	5.9%	4.9%	6.5%	5.0%	4.8%	7.2%
Germany	5.9%	6.4%	5.6%	2.5%	4.9%	7.0%
Italy	6.2%	6.8%	5.3%	5.0%	4.3%	6.9%
Netherlands	7.1%	5.2%	8.5%	8.2%	5.7%	7.2%
Sweden	7.3%	7.6%	7.5%	5.4%	2.7%	7.9%
Switzerland	5.1%	2.4%	6.7%	8.2%	5.3%	5.0%
United Kingdom	4.0%	4.1%	3.7%	0.6%	5.6%	5.6%

Chart V. Average Annual Per Cent Change in Output/Man-hour, 1960-1972. (U.S. Department of Labor)

pared with those of other industrial nations. As can be seen in Chart V, the rates for the 11 countries listed are considerably higher than those of the U.S. Actually, the higher rates only represent a catching-up process which was aided by our own multi-national corporations and our export

of technological expertise. Despite the seemingly high rates of the foreign countries, their overall rate of productivity for the last half-century does not reach to the 2.3% rate posted by the U.S. during the same period.

Unfortunately, the higher gains in productivity have been offset by higher increases in unit labor costs (See charts VI and VII). Chart VI is data based on national currencies, and Chart VII is based on U.S. dollars. "In terms of U.S. dollars, unit labor increased an additional three percentage points in 1971, and an additional nine percentage points in 1972 for the 11 foreign countries as a group, because of the December 1971 dollar devaluation and other 1971-72 currency realignments."[13] Those countries affected the most during the December devaluation were Japan and Germany whose currencies appreciated 18% and 14%, respectively. Canada and the United Kingdom allowed their currencies to float, hence an appreciation level of only 5%.

The February 1973 devaluation further improved the situation as far as the U.S. was concerned. The U.S. is now showing a positive balance of trade again after several years of having a deficit balance. The Wall Street Journal reported in January of this year (1974) that many European and Japanese companies are establishing or expanding operations in America because they have found that the dollar devaluations coupled with inflation overseas, have narrowed or eliminated the gap in labor costs between the U.S. and other countries. Six years ago only 385 manufacturing plants were operated by foreign companies, now 905 plants are operated by foreign companies which in turn, increases foreign business in the U.S.

The question should now be raised as to how the domestic firms are keeping their productivity rates up and still keeping a favorable com-

Country	1960-72	1960-65	1965-70	1970	1971	1972
United States	1.8%	-0.7%	4.0%	6.5%	-0.2%	1.0%
11 Foreign Countries	3.2%	3.1%	2.4%	9.2%	8.5%	5.1%
Canada	1.9%	-0.8%	3.1%	6.2%	2.2%	2.9%
Japan	3.3%	4.3%	1.6%	5.4%	11.7%	5.5%
Belgium	3.2%	3.5%	1.5%	8.7%	9.1%	2.7%
Denmark	3.8%	4.0%	3.0%	5.3%	5.4%	3.3%
France	3.5%	3.8%	3.2%	8.2%	7.2%	5.0%
Germany	3.3%	3.0%	2.6%	12.4%	9.0%	4.1%
Italy	4.7%	6.3%	3.9%	14.3%	13.4%	6.5%
Netherlands	4.7%	5.9%	3.1%	6.0%	8.4%	4.8%
Sweden	2.9%	2.6%	2.4%	4.9%	9.6%	4/6%
Switzerland	3.0%	6.3%	0.4%	2.7%	7.3%	6.5%
United Kingdom	3.8%	2.2%	3.6%	13.8%	6.8%	8.3%

Chart VI. Average Annual PerCent Change in Unit Labor Costs in National Currencies, 1960-1971. (U.S. Department of Labor)

Country	1960-72	1960-65	1965-70	1970	1971	1972
United States	1.8%	-0.7%	4.0%	6.5%	-0.2%	1.0%
11 Foreign Countries	3.3%	3.0%	1.8%	10.4%	11.6%	13.7%
Canada	1.9%	-2.9%	3.5%	9.6%	5.6%	4.9%
Japan	4.1%	4.2%	1.8%	5.4%	15.3%	20.9%
Belgium	3.7%	3.5%	1.4%	9.8%	11.5%	13.2%
Denmark	3.2%	4.0%	0.9%	5.5%	6.9%	10.0%
France	2.7%	3.8%	1.0%	1.3%	7.6%	14.7%
Germany	4.8%	3.7%	4.1%	20.9%	14.3%	13.5%
Italy	4.9%	6.2%	3.8%	14.3%	15.1%	12.8%
Netherlands	5.4%	6.7%	3.0%	6.2%	12.3%	14.0%
Sweden	3.2%	2.6%	2.3%	4.6%	11.3%	12.3%
Switzerland	3.6%	6.2%	0.5%	2.7%	12.4%	14.6%
United Kingdom	2.2%	2.1%	-0.4%	14.1%	9.0%	10.8%

Chart VII. Average Annual Per Cent Change in Unit Labor Cost in U.S. Dollars, 1960-1972. (U.S. Department of Labor)

parison between the U.S. and foreign countries. Numerous policies among manufacturing firms which are aimed at increasing productivity are worth

mentioning because of their uniqueness. For instance, Steel Case, an office furniture manufacturer, has created the 'Silent Hour' in their office between 7:30 a.m. and 8:30 a.m. No talking or outgoing calls are allowed and incoming calls are cut off so that employees can use the time to organize themselves and their work for the day. A company spokesman has reported that "the results are phenomenal--increased productivity, office efficiency, and improved morale."[14] A company which has extended itself to help its workers is National Cash Register (NCR). NCR began a policy of determining the reason for absences and offered help to all those employees with legitimate personal problems. In this way, NCR has held their absenteeism to less than 3%.

In an unusual community-wide effort, the people of Jamestown, New York, under the direction of their Mayor, Stanley Lundine, organized a labor-management committee which consisted of 15 union officials and 15 corporate leaders. The goals were to create production incentives, income guarantees for technological displacement, managerial responsibility for labor-saving devices, office efficiency, and a cooperative labor-management climate. So far, the results of this program has mainly been in terms of more positive attitudes. However, an even better example of a successful turnabout of productivity is illustrated in the case of Chautaugua Hardware Corporation, a manufacturer of 30,000 different metal widgets (furniture handles, hinges, etc.). Three years ago, Chautaugua Hardware was in Chapter XI bankruptcy with an obsolete plant, and workers sacrificing pay in order to preserve their jobs. Two top managers were imported from Eaton Corporation and International Telephone and Telegraph (ITT) who were able to reverse the company's skid by instituting new procedures and controls, systemization, new improved capital equipment, and a fired-up sales approach. When a new contract was introduced a year

and a half ago, a productivity clause was added which, in effect, created a bonus system based on increased productivity. It is hoped that this contract will set an example for other contracts, thus connecting rising unit labor costs to higher and offsetting productivity gains.

Generally, industry has been pushing productivity by the use of technological advances, education and training programs, and new processes and methods. Among the more interesting technological advances are such inventions as computerized machine tools which have posted 25-30% increases in productivity. A valid example of a profitable technological advance is North American Rockwell's Electro-Knit which produces 33% more fabric with the same number of employees needed to operate older equipment while it provides for a greater range in patterns and drastically reduces downtime for pattern changes.

An innovation at General Motors has saved them $60,000 a year at one plant. This innovation is an automatic material handling system which reduced the daily man-hours needed to handle materials from 48 man-hours to 14 man-hours.

A new process which has led to increased productivity and which has gained popularity in the fish industry is the hatching-farm concept. For this method of fish production, the fish are hatched in large drums and raised on special diets in silos. After a year the fish are ready for harvest. The results are startling. This method produces 10 oz. to 12 oz. pan-sized fish for about 1/3 the cost of the other current methods.

Despite many efforts to improve productivity, a dip in productivity increases occurred in the late 1960's due, for the most part, to a contraction in the business cycle. At that time, much concern was being generated over the importance of productivity prompting President Nixon

to create a National Commission on Productivity in June 1970. In President Nixon's speech initiating the new commission he stated that "in order to achieve price stability, healthy growth, and a rising standard of living, we must find ways of restoring growth to productivity. This Commission's task will be to point the way toward this growth in 1970 and in the years ahead. I shall direct the Commission to give first priority to the problems we face now; we must achieve a balance between costs and productivity that will lead to more stable prices."[15]

The first chairman of the National Productivity Commission was George Schultz who was also, at that time, Director of the Office of Management and Budget. The Commission consisted of 36 members from which 4 committees were formed representing the following sectors: labor, government, business, and the public. The Commission has not been a very effective tool in the past for several reasons. First, its budget for fiscal 1971 was zero dollars; for fiscal 1972-$800,000; and for fiscal 1973-2.5 million dollars (half of the amount requested). Secondly, in December 1971, 5 of the labor representatives walked off the Commission. This occurrence coincided with the time of labor's walk-out on the Pay Board. Despite these inconveniences, the Commission did manage to set a National Productivity Policy on December 22, 1971, which reads as follows:

> It is the policy of the United Sates to promote efficient production, marketing, distribution, and use of goods and services in the private sector, and improve the morale of the American worker, all of which are essential to a prosperous and secure free world, and to achieve the objectives of national economic policy.
>
> The Congress finds that the persistence of inflationary pressures, and of a high rate of unemployment, the underutilization and obsolescence of production facilities, and the inadequacy of productivity are damaging to the effort to stabilize the economy.

> The Congress, therefore, finds a national need to increase economic productivity which depends on the effectiveness of management, the investment of capital for research, development, and advanced technology and on the training and motivation of the American worker.
>
> The Congress further finds that at a time when economic stabilization programs require price-wage restraints, management and labor have a strong mutual interest in containing "cost-push" inflation and increasing output per man-hour so that real wages may increase without causing increased prices, and that, without in any way infringing on the rights of management or labor, machinery should be provided for translating this mutuality of interest into voluntary action.[16]

Also in December 1971, the objectives of the National Productivity Commission were established, and stated that the Commission was to foster and promote increased productivity on all levels--labor, management, State and local governments--by assisting in the organization of labor-management-public committees on a plant, community, regional, and industrial basis. To achieve these goals, the Commission was authorized to give aid in the form of money, for which 10 million dollars was appropriated by Congress. Although the program sounds very impressive in theory, it is not so in practice. When Jamestown, New York applied for funds to increase the capacity and strength of their productivity council, they were curtly refused. Despite the legislative procedure delegating the Commission more power and resources, no action of any significance has yet been undertaken.

A new director, Peter G. Peterson, took over the Commission in February 1972. The following month, the Commission became part of the control for the Economic Stabilization Act of 1970. The following September Peterson was replaced by John N. Stewart who still serves in the capacity of director of the Commission. As to what the Commission has accomplished, the answer most often given is 'nothing of significance'. Unfortunately, the National Productivity Commission has become just another cog in Washington's bureaucratic wheel.

Another governmental agency, however, has done some work of importance in the productivity field. The agency being the Price Commisssion which in early May of 1972 published detailed data on productivity growth rates in 433 industries. A sampling of this data appears in Chart VIII.

ANNUAL PERCENTAGE RATE OF PRODUCTIVITY CHANGE FOR SELECTED INDUSTRIES, IN TERMS OF OUTPUT PER MAN-HOUR, 1958-1969

Cathode ray picture tubes	11.6%
Petroleum pipelines	10.0%
Electronic computing equipment	8.6%
Typewriters	7.4%
Semiconductors	7.1%
Electric utilities	7.0%
Petroleum refining	6.6%
Railroad transportation	6.3%
Malt liquors	6.2%
Radio and television sets	6.2%
Women's hosiery (except socks)	6.1%
Home laundry equipment	5.9%
Flour and grain products	5.8%
Bituminous coal mining	5.6%
Fertilizers	5.2%
Meat packing plants	4.7%
Paper mills	4.5%
Aircraft	4.5%
Alkalines and chlorines	4.2%
Motor vehicles	4.1%
Iron ores	3.9%
Oil and gas extraction	3.8%
Canned fruits and vegetables	3.6%
Confectionery products	3.3%
Fluid mild	3.2%
Cotton weaving mills	3.1%
Metal cutting machine tools	3.0%
Glass containers	2.9%
Periodicals	2.9%
Processed meats	2.8%
Blast furnaces and steel mills	2.7%
Primary copper	2.3%
Trucking, except local	2.3%
Brooms and brushes	2.1%
Cigarettes	2.1%
Newspapers	2.1%
Metal forming machine tools	2.0%
Residential construction	2.0%
Metal cans	1.9%
Non-residential construction, except highways and sewers	1.5%
Upholstered furniture	1.5%
Shipbuilding	1.4%

ANNUAL PERCENTAGE RATE OF PRODUCTIVITY CHANGE FOR SELECTED INDUSTRIES, IN TERMS OF OUTPUT PER MAN-HOUR, 1958-1969 (Continued)

Men's and boy's suits and coats.....0.5%
Shoes, except rubber.....0.5%
Bolts, nuts, rivets, washers.....0.3%
Measuring and dispensing pumps.....0.0%

Chart VIII. Productivity Gains in Selected Industries. (Price Commission)

The Price Commission used these figures in their calculations for allowable price increases under Phase II regulations. Also, the Price Commission chairman, Jackson Grayson, Jr., published a suggested 8-step program which could lead to increased productivity. The 8 steps include such suggestions as improving productivity measurements with the resulting data used as a control, altering management attitudes which often resist change, discontinuing unnecessary union work practices, increasing reinvestment of profits in capital goods or training programs, creating worker incentive plans, organizing labor-management productivity councils, standardizing package sizes for similar items, and eliminating unnecessary open-ended decisions thereby promoting better personal management practices.

Irregardless of any action by the Productivity Commission or the Price Commission, the U.S. did experience better than average productivity increases in 1971, 1972, and 1973, which is indicative of years of prosperity. In the first quarter of 1974, the administration has continuously denied the predictions of recession by many economists. It now appears that the economists' predictions were correct because preliminary figures show that productivity has decreased at an annual rate of 5.5% for the first quarter which certainly indicates the economy has gone into a recession. Therefore, we can expect a concerted effort to increase productivity in order to stabilize the economy. Most prognosticators have

agreed, however, that productivity will rise at a slower pace than in the past, that is, at an approximate annual rate of 2.5% throughout the decade. No matter what the predictions are, it should be obvious that it will be absolutely necessary for productivity to register gains very soon in order to lift the economy out of its present recession; and to continue to register gains for the U.S. economy to progress. Economic progress is necessary for the U.S. to hold its esteemed world position, therefore productivity becomes an important factor in keeping the U.S. ahead of the rest of the world in order to retain its high position.

Now that the nation is facing a full-scale recession, it becomes imperative that the Productivity Commission swing into action and attempt to achieve its objectives. Wage and price controls are not the answer to recession. Unless the people of the U.S. are able to increase productivity in order to offset higher unit costs, the controls will have to be reinstituted by the Congress. Productivity provides the answer to many of the economic problems of the U.S., but until now has been thrust aside, or labeled unimportant. Its importance should not be underestimated.

Productivity has emerged as a major force in the U.S. economy of today and can, to some extent, be regulated by the government. But it must be the people of this country who decide whether the economy will prosper or fail, be progressive or stagnate, just by how much dedication, motivation, and interest they show in their respective occupations in order to register productivity gains. Not only must the economy work for the people, but the people, most definitely, must work jointly with all other concerned elements for their economy.

FOOTNOTES

[1]John W. Kendrick, "Recent Productivity Trends in the U.S.," Vital Speeches of the Day, July 1, 1973, p. 562.

[2]"Lower Productivity Threatens Growth," Business Week, January 1, 1972, p. 36.

[3]Robert A. Sutermeister, People and Productivity (New York: McGraw-Hill, 1969), p. 2.

[4]"Spotlight on Productivity: Why It is a Key to U.S. Problems," U.S. News and World Report, October 4, 1971, p. 26.

[5]"Productivity; Our Biggest Undeveloped Resource," Business Week, September 9, 1972, p. 84.

[6]"Lower Productivity...," p. 37.

[7]"Productivity; Our Biggest...," p. 100.

[8]Ibid., p. 100.

[9]"Golden Rule, Productivity," Newsweek, October 18, 1971, p. 32.

[10]"Productivity; Our Biggest...," p. 142.

[11]"Lower Productivity...," p. 37.

[12]This curve describes the stand-off between inflation and unemployment.

[13]Arthur Neef and Patricia Capdevielle, "Productivity and Unit Costs in Twelve Industrial Countries," Monthly Labor Review, November 1973, p. 15.

[14]"A Quiet Hour for Industry," Have a Good Day, April 1974, p. 2.

[15]Richard M. Nixon, "Address to the Nation on Economic Policy and Productivity," Public Papers of the Presidents, June 17, 1970, p. 505.

[16]"Economic Stabilization Act Amendments of 1971," Public Law 92-210, December 22, 1971, p. 753.

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