THE SHORTENING OF THE WORK WEEK AS A COMPONENT OF ECONOMIC GROWTH

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INTRODUCTION

Labor's demand for shorter working hours is not, as some suppose, a result of the long drawn-out depression. Labor has always been contending for two basic things: higher pay and shorter hours. The depression and its huge unemployment problem, however, did serve to bring the question into view. It has even been contended that a drastic shortening of hours of labor would solve the unemployment problem. The argument has been plausibly presented, and the problem sounds simple: cut the hours of labor by one-fourth, and jobs are automatically created for one-fourth more workers. However, the reader will find that the problem is not really as simple as that.

The Problem

The modern problem of shorter hours has its roots in the Industrial Revolution. The owners of factories and machines recognized that when they increased their capital investments, the longer the number of hours which they operated their plants per day, the lower

would be their capital charges and cost per unit of product. Consequently, hours up to 15 and 16 per day were not unusual. Even children as young as five years of age worked these hours alongside adults. The miserable condition of these pauper children and a severe epidemic of disease among them, led to an investigation of the problem. Today the question of shorter hours is less a physical problem and more of an economic problem. Little is heard now of the harmful effects of hours on health and the lack of leisure.

The question of hours is one which concerns not only the individual employer and his workers, but all of society at large. Material has been presented to determine in what manner a reduction in hours would affect the interest of the employer and the welfare of the worker. What is the effect on production, costs, employment, morale of the workers, and similar factors? These problems have been studied and are presented in this thesis in order to determine the advisability of uniformly adopting shorter hours. It is possible for employers to obtain more or less accurate information on these topics to serve them as guides in determining policy.

As to the effect of shorter hours on society at large, however, the answer cannot be found so easily. Will society be provided with a general standard of living that is at least not lower? Will the prevailing rate of advancement continue into the future? An answer to these key questions must be found before we undertake to shorten hours on a national scale. These answers, however, are much more difficult to obtain than the question of whether or not it pays the individual business man to reduce hours in his own particular plant.

The problem of shorter hours has many ramifications. The author found it necessary to discuss the theoretical aspects in analyzing the economics of the hours problem in order to give the reader a complete understanding of the relationship between hours and output, hours and wage rates, and hours and unemployment. Besides these economic implications, consideration is given to historical and social aspects of the hours question. The thesis contains a survey of past experience with changes in working hours as well as a discussion of the present trend toward shorter hours in this country.

This thesis, as its title indicates, deals primarily with the economic aspects of shorter hours. The emphasis throughout the thesis is upon economic principles combined with explanatory factual material. With labor issues on the front pages of newspapers, the reader may acquire many miscellaneous scraps of information about labor, but he generally lacks an understanding of the underlying forces that explain the surface facts. If, however, a firm theoretical foundation is developed to which various factual material may be attached in a meaningful manner, not only is the reader less likely to forget the facts but he has a basis for interpreting new data and current affairs. He then is in a position to relate new facts to old ones and to evaluate existing labor policies.

Chapter I

HISTORY OF THE SHORTER HOURS MOVEMENT

In the Middle Ages, the workday was limited primarily by the duration of natural light. A royal statute under Henry VII in 1495 set the working day during the summer from five a. m. to seven or eight p. m. with two hours of rest. Queen Elizabeth I, a century later, decreed a similar workday with two and one-half hours respite. By the end of the 17th century, the predominant workday in England was 12 hours with a two-hour break.

One of the major aims of the working class in this country, from the earliest times up to the present day, has also been the gradual shortening of the hours of labor. In the early period of American industrial development the working day lasted from sunrise to sunset. The workingmen early objected to these long hours. The agitation for a shorter working day in this country is as old as the organized labor movement.

The Shorter-hours Movement Prior to 1890.

As early as 1791 the journeymen carpenters of Philadelphia adopted a resolution declaring that a day's work should begin at six o'clock in the morning and end at six o'clock in the evening. However, the old custom that hours of labor should range from "sunrise to sunset" still prevailed. The public, influenced by the idea that idleness is a vice, generally favored the longer working day. In 1822 the journeymen millwrights and machinists of Philadelphia "met at a tavern and passed a resolution that 10 hours of labor were enough for one day, and that work ought to begin at six a. m. and end at six p. m., with an hour for breakfast and one for dinner"(1). Three years later the Boston House Carpenters, not being satisfied with merely adopting resolutions, decided to force the issue which precipitated the first great strike in which the 10-hour day was the paramount issue. Approximately 600 journeymen carpenters were involved

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(1) McMaster, J. B., History of the People in the U. S. (Appleton and Co., N. Y., 1914, Vol. V, p. 84).

in this struggle[2]. As a result of the strike we have a presentation of the arguments for and against a 10-hour day that became quite common in the 10-hour movement of the following period.

In 1835 the carpenters, masons, and stonecutters of Boston joined in a strike for a 10-hour day which won sympathy among workers throughout the country[3]. In general, however, the movement in Boston was not very successful, but it did accomplish its objective in many other cities, the greatest victory being won in Philadelphia. In Philadelphia the 10-hour movement took on the aspect of a crusade. Not only the building trades, as in Boston, but most of the mechanical branches were involved. Street parades and mass meetings were held, and the whole movement ended in a complete victory for the workingmen. These demonstrations definitely turned the tide in favor of shorter hours. Several cities established the 10-hour day for public servants and a great many

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(2) Henry Gavens, Shorter Hours - How? When? (Ransdell Inc., N. Y., 1938, p. 8).

(3) John R. Commons, and Assoc., History of Labor in the U. S. (MacMillan Co., N. Y., 1918, Vol. I, p. 389).

private employers were forced to follow. By the close of the year 1835, 10 hours had become the standard day's work in most cities for mechanics who worked by the day. It must be remembered, however, that with the exception of these skilled trades, the 12-hour day continued to be the rule in industry until the Civil War.

The period following the Civil War was marked by special interest in shortening the hours of work. The eight-hour movement followed the 10-hour movement but did not actually start until the 1870's. The shorter hour movement received a strong impetus in 1886 from the sponsorship of the Knights of Labor, which at the peak of its power succeeded in obtaining the eight-hour day for more than 150,000 men(4). Most of these workers later lost the concessions they had gained, except for certain strategically situated skilled groups which were able to use their bargaining power to retain shorter hours. Skilled workers, especially when organized, ordinarily had a considerably shorter

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(4) E. E. Cummins, The Labor Problem in the U. S. (D. Van Nostrand Co., Inc., N. Y., 1932, p. 67).

workday than the unskilled and unorganized. This situation held true in the railroad and building industry and in iron and steel manufactures. By 1890 the membership of the Knights of Labor had dwindled to less than 100,000. A conflict was lost with another labor body, the American Federation of Labor, which advocated pure and simple craft unionism, and the Knights' remaining prestige soon vanished.

The Trend of Hours, 1890 to 1920.

Before World War I, when the movement for shorter hours received greater impetus than ever before, the reductions in working time throughout industry as a whole were moderate. The eight-hour agitation became increasingly vigorous between 1890 and 1914, building-trades workers and a few other fortunately situated and well-organized groups attained the 44-hour week in various parts of the country. It is estimated that between 1890 and 1914, there was a reduction of 4.9 hours in the work week of all groups of workers averaged together(5). In the iron and steel industry

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(5) Joseph M. Viau, Hours and Wages in American Organized Labor (G. P. Putnam's Sons, N. Y., 1939, p. 55).

the 12-hour day and seven-day week became more, rather than less, common during the years immediately following 1892. Beginning in 1914 and 1915, however, the eight-hour movement seemed literally to sweep the country. President Wilson's statement in favor of the eight-hour day rapidly crystallized public sentiment for it. The war created an unprecedented demand for labor, and the workers found themselves in an advantageous position to organize and press their demands. Encouragement was given by the favorable attitude of the national administration. The "Big Four" Railway Brotherhoods were strong enough to obtain legislative approval of a "basic" eight-hour day for themselves, by threatening a nation-wide strike and transportation tie-up in 1916. They forced Congress to pass the Adamson Act. The qualification, "basic" implied that pay was to be figured on the standard of eight hours; therefore, the law tended more to raise wages than shorten hours.

Before the entry of this country into the war, the anthracite coal miners and the railroad employees had obtained a straight basic eight-hour day, and during the war such important industries as

slaughtering and meat packing, boot and shoe manufacture, the lumber industry, and the garment trades adopted the eight-hour standard. The struggle between employers for labor supply, the high labor turnover, and the chaotic wage situation forced the intervention of the government. In the interests of the nation's war-time economic program, the National War Labor Board was organized in 1918 for the purpose of coordinating the labor policies of the various governmental departments and to settle any controversies in industrial labor relations which might influence the winning of the war. In most cases concerning hours which came before it, the Board awarded the basic eight-hour day. The Board functioned for 16 months and then disbanded when its services were no longer required.

The statistical story of the progress toward the shorter working week from 1890 to 1920 is shown in the following table.

Table 1. Average Standard Hours Per Week, 1890-1920

Year	Organized Manufacturing Industries	Nonorganized Manufacturing Industries	Building Trades	Coal Miners	All Industry
	hours	hours	hours	hours	hours
1890	54.4	62.2	51.3	60.0	58.4
1895	53.5	62.3	50.3	60.0	58.1
1900	53.0	62.1	48.3	55.0	57.3
1905	51.1	61.1	46.1	52.2	55.7
1910	50.1	59.8	45.2	52.2	53.6
1915	48.6	58.2	44.8	52.2	53.5
1920	45.7	53.5	43.8	48.2	50.4

Source: This table has been complied from the data presented by Paul H. Douglas on pp. 112, 114, 136, 163, and 208 of Real Wages in the U. S. (Houghton Mifflin Co., Boston, 1930).

The "organized manufacturing industries" include organized segments of the metal trades, granite and stone, book and job printing, newspaper printing, planing mills, and bakeries. The "nonorganized manufacturing industries" include cotton textiles, boots and shoes, clothing, hosiery and knit goods, woolens, sawmills,

iron and steel, and slaughtering and meat packing. The "all industries" includes the hours of transportation workers, unskilled labor, and government employees in addition to those of manufacturing wage earners, building-trades workers, and coal miners, as set forth in the table. Several significant trends are revealed by the table. In the first place, the general reduction in hours is apparent. For all groups of workers, according to these estimates, weekly hours declined from 58.4 to 50.4, or almost 13 per cent, during these three decades.

During the 1890's comparatively little progress was made, but about the turn of the century reductions became more frequent and of greater magnitude, and they proceeded most rapidly during the five-year period 1915 to 1920. Building-trades workers and coal miners are shown to have made somewhat greater progress, relative to their 1890 position, than did the other groups, and the relative gains of building-trades workers between 1915 and 1920 were less than those of labor in general. The building-trades workers started the period in a favorable position, relative to other groups. They were strongly enough organized

during the 1890's and shortly after the turn of the century to press for still shorter hours. Their relative gains between 1915 and 1920 were less than those of factory workers and coal miners because by the former year hours were already stabilized in the larger cities on the basis of the 44-hour week. The miners made greater relative gains than did the other groups, but they started the period with a longer working day. It should be noted that in 1915 coal miners still worked 3.6 hours more a week than did unionized factory workers, and in 1920 their working week was 2.5 hours longer. The differential advantage that unionized workers have enjoyed with respect to hours is clearly shown in the table.

In 1890 workers in unionized manufacturing industries had, on the average, a standard week of 54.4 hours, and those in nonunionized manufacturing industries a standard working week of 62.2 -- a difference of 7.8 hours. In 1920 the standard week of unionized factory workers was 45.7 hours and that of nonunionized factory hands 53.5 -- again a difference of exactly 7.8 hours. While exactly the same difference in hours worked was obtained between unionized

and nonunionized factory wage earners in both 1890 and 1920, a comparison of average standard hours of all the groups shows that hours had continued downward during the three decades.

On the whole, however, the period 1890 to 1920 saw a shift from a typical 10-hour day in manufactures to a typical eight-to-nine-hour day. The fact that the proportion of employees working both less than 44 and more than 60 hours was smaller in 1920 than in 1890 also pointed to a very substantial reduction of working hours.

Hours During the 1920's.

The trend toward shorter hours during the five or six years preceding 1920 was, as the preceding pages have pointed out, one of the most marked industrial developments of that period. More than half of the factory workers in 1921, as compared with only about one-ninth in 1914, were employed in establishments where the full-time working week was 48 hours or less. These gains should not, however, be permitted to obscure the fact that thousands of workers, both in

manufacturing and elsewhere, were still employed by firms whose working periods public opinion had come to designate as "long hours."

A report of the Federated Engineering Societies in 1922 estimated the total number of wage earners still working on the 12-hour shift basis in the United States at 300,000 of whom about half were employed in the iron and steel industry(6). The Census of Manufactures of 1923 listed 21 manufacturing industries in which 5,000 or more employees were employed in establishments where prevailing hours of work per week were 60 or more. Some of these industries were foundry and machine products, car construction and repairs, flour mills and grain products, iron and steel, and sugar manufacturing and refining.

While the majority of employers held firmly to their belief that the 50- and 54-hour week represented the shortest practicable work schedule, a few employers began to adopt the five-day week during the 1920's. The five-day week began in several small

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(6) Committee on Work Periods in Continuous Industry, Federated American Engineering Societies, "The 12 Hour Shift in Industries," p. 12, 1930.

establishments and more than half were unionized clothing shops. It was quite a different matter to have the five-day week introduced into a mass-production industry, and there was a great deal of disagreement among employers when Henry Ford adopted it in 1926. His reason for instituting the shorter week was to provide workers with more leisure time so that they would be better consumers.

William Green, President of the American Federation of Labor, declared vigorously for a five-day week, and "that the hours of labor should be so reduced as to square fairly with the increasing power of the individual's efficiency and productivity. If a man can do the same work now in four days that he did two decades ago in six, then why should he be required to work the same number of days, only to stagnate the economic situation and to create further chaos?"(7)

The trend toward shorter hours in manufactures did not continue through the 'twenties. There were decreases in some trades and industries, but there

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(7) Conference of Progressives, Proceedings (Wash., Mar. 11 and 12, 1931, p. 105).

were also increases in important industries. There was a considerable shifting back from the 48 to the 51 or 54-hour week. This decrease in percentage of workers enjoying the eight-hour day reflected the increased domination of manufactures by the employer group as against the organized-labor group. Companies which had continued to 1920 to operate 57 or 60 hours a week, in many cases, reduced hours to 54 or 51. The most important change in manufacturing in general during the 1920's was the shift from the 48-hour week to one not longer than 54 hours. The minor changes in the situation as a whole during this decade stand out in sharp contrast to rapid and very great changes of the preceding six years, when the proportion of factory workers having a standard week of 48 hours or less quadrupled(8).

Such reductions in hours as occurred during the 1920's came about in two ways; by reductions of a half hour or an hour a day, and by the granting of the Saturday half holiday. Although the shift from the

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(8) D. Lescohair, History of Labor in the U. S. (MacMillan Co., N. Y., 1935, p. 110).

48-hour standard to one slightly longer and of the failure of hours to decline appreciably, there was a definite spread of the five-and-one-half-day week. Toward the end of the decade, the five-day week became somewhat more common. It began first in the building trades and then, to a lesser extent, in manufacturing. A survey by the United States Bureau of Labor Statistics in 1930 showed that 55.5 per cent of the building-trades workers had basic schedules of five days a week(9). In manufacturing, also, there was a considerable adoption of the five-day week. According to National Industrial Conference Board, this standard was operative in 1928 in 270 manufacturing establishments employing 418,700 workers(10).

Probably the most important single event of the 1920's, so far as hours of labor were concerned, was the practical abolition, in 1923, of the 12-hour day and of the "seven-day week" or the "13-out-of-14 days" system in the steel industry. The six-hour

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(9) Monthly Labor Review, "Extent of the Five-Day Week," Vol. 33, Sept. 1931, p. 1.

(10) Five-Day Week in Manufacturing Industries, Nat. Ind. Conf. Board, pp. 18-19, 1929.

day, which was to become a major labor objective during the depression years of the 1930's, had been introduced by only a few firms at the end of the decade.

Hours of Work Since 1930.

The years of the great depression brought, as is commonly known, a drastic curtailment of hours actually worked. A "staggering" or "share-the-work" movement of unprecedented proportions was attempted. As a total result, there was a reduction of about 20 per cent which was considerably greater than the reduction between the 1890's and 1930 in average standard working time. The agitation for the shorter week became less exclusively working-class in origin. A considerable number of legislators and even a certain segment of employers became convinced that a five-day week, a 36-hour week, or a 30-hour week was necessary not only as a relief expedient but also as a causal factor in recovery.

First, the trend of hours during the period prior to the advent of the National Industrial Recovery Administration in 1933 should be considered. There

are two tendencies of the 1930 to 1933 period which stand out clearly. First, the acceptance by a large part of business enterprise of the principle that the limited amount of work currently available ought to be divided among as many workers as possible, without endorsement of shorter hours as a permanent policy. Second, the introduction in certain segments of industry of the five-day week or the 36-hour week of six days without definite recognition that the policy was to be permanent.

The work-sharing movement apparently attained most momentum between 1930 and 1932. During the first half of 1933 there was a distinct tendency to increase man-hours by lengthening of the work week instead of by employing more men. The basic notion of the work-sharing movement as it manifested itself during the first three years of the depression consisted of sharing both jobs and payrolls. Actually, the share-the-work movement in itself involved no necessary increase in total payroll except with larger firms. The larger industrialists found that the staggering program did have the effect of making payrolls larger

than they otherwise would have been. In this respect they found themselves at a disadvantage in competition with smaller producers who did not cooperate in the share-the-work movement. The larger firms shortened the working week per worker greatly when business fell off, in order to give employment to as many men as possible. They found, however, that they could not reduce hourly money earnings to any appreciable extent since standards of living would, in view of relatively few hours worked per wage earners, have fallen to an unthinkable level.

Smaller competitors, on the other hand, frequently reduced wages, laid men off, but worked those retained more nearly the old standard working week. Consequently, the daily earnings of those employed by the smaller firms were as great, or greater than, daily earnings of employees of larger firms, which were trying to a greater extent to spread work. The larger industrialists therefore sought, in their support of the shorter work week, to force smaller competitors into the share-the-work movement.

The shortening of hours actually worked was not, however, entirely a consequence of the temporary

introduction of shorter working periods by firms not ready to endorse shorter hours as a permanent policy. Even before the recovery legislation placed national emphasis upon the shorter working week, the five-day standard had been accepted by a number of the larger firms. It had become the model working week in the building trades industry.

By 1933, actual working hours had been reduced, primarily in consequence of the spreading of work or the temporary institution of a shorter working week and, secondly, by adoption in some cases of the five-day week or the six-hour day as a permanent policy. As a relief expedient, the work-sharing movement had much to commend it. It should be pointed out that the reduction in average hours worked during the depression did not constitute a "gain" in the sense of progress toward the shorter working week until there had been some acceptance of the principle that these shorter actual hours should be adopted as the new standard for the normal working week.

In a message to Congress in May, 1933, President Roosevelt urged the enactment of the National Industrial Recovery Act so that a cooperative movement might

be launched throughout industry to obtain wide re-employment, to shorten the workday, to pay a decent wage for a shorter week, and to prevent unfair competition and disastrous overproduction. One of the objectives sought by the Act was to increase employment by shortening the hours of work per week. The 40-hour week was adopted as basic, and each industry adopted a code of hours and business practices by which it was to govern itself.

In 1935, following the invalidation of the National Recovery Act codes, there was a tendency to lengthen the work week. Before it was well under way, the greatly increased strength of labor unions and the influence of the Fair Labor Standards Act initiated a new trend toward a shorter work week. In 1938, the Fair Labor Standards Act was passed, the effect of which was to make the 40-hour week standard by October 1940 for most workers engaged in inter-state commerce(11). Hours worked beyond 40 per week were required to be at time and a half.

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(11) Philip Taft, Economics and Problems of Labor (Stackpole Sons, Harrisburg, Pa., 1942, p. 348).

In direct contrast to the trend in weekly hours during the First World War, the Second World War witnessed the sharpest rise in weekly hours on record. In spite of this rise, however, the average work week during the peak of World War II was at least six hours less than during World War I. During World War I the drop was from a pre-war average of more than 51 hours per week, whereas during World War II the rise was from an average of around 38 hours per week. In 1944, the peak production year of the war period, the actual hours worked by all manufacturing employees averaged slightly more than 45 hours per week. Immediately following the close of the war, the actual time worked by manufacturing employees declined four hours a week on the average. According to union agreements in effect in 1946, most of the organized glass, rubber tire, and men's clothing workers were on a 36-hour week, and the 35-hour week prevailed in the women's clothing, fur, and hat industries. Average weekly hours of work in total manufacturing were 40.5 in 1956.

Working time has dropped more than 40 per cent, from 70 hours a week to 40 hours a week, since the middle of the 19th century. In view of the increasing strength of organized labor in this country, it appears likely that within the next 10 years the average work week in American industry will drop to 35 hours with a 30-hour week prevailing in those areas in which declining consumer demand and rapid mechanization have particularly reduced the demand for labor. If rapid advance is made in the application of the atomic principle to power production, an even larger reduction in hours may be called for.

Chapter II

HOURS LEGISLATION

The regulation of hours on legislative and judicial action during the past hundred years reveals the same gradual shift in position that has taken place with respect to other phases of labor conditions. During the early years of the movement it was a question of legislative acceptance of a responsibility to shorten the hours of work of wage earners. Later the issue hinged more upon judicial application of hour legislation to the principle of freedom of contract and police powers of the state. As early as the middle of the 19th century legislators in various states began to respond to public opinion and pressure by enacting laws to regulate the hours for particular groups of workers whose situation seemed to warrant such protection from their government.

The Principle of Freedom of Contract.

The principle of freedom of contract used by the courts to invalidate hour and other labor

legislation was based on the Fourteenth Amendment of the Federal Constitution. This amendment enacted shortly after the Civil War was to accomplish a very different purpose; it states, "No state shall deprive any person of life, liberty, or property without due process of law." The courts held that labor is property and that therefore a laborer has a right to sell his labor and to contract with his employer like any other property owner. Therefore, any laws to regulate labor interfere with the individual's property rights or "freedom of contract." However, arguments which finally became decisive held that labor is not property, and that the individual worker actually has little choice of freedom in his employment contract but "obeys the compulsion of circumstances." The police power of the state with regard to protection of health, safety, and welfare is important to an individual's freedom of contract.

In 1847 New Hampshire passed a general 10-hour law and during the following decade six other states passed similar legislations. After the Civil War, as a result of vigorous campaigns by labor and reform leaders, a number of states passed general eight-hour

laws. By the end of the century hour legislation had been enacted in 17 states, most of which established the eight hour standard. These early hour laws were based on the principle that labor legislation should not curtail individual liberty to contract, and their constitutionality was never questioned. However, the tide turned when Nebraska in 1871 passed a law which provided extra compensation for work beyond eight hours a day for all classes of laborers except farm and domestic workers. The State Supreme Court held it unconstitutional on two grounds. First, it made an unjustifiable distinction between classes of labor by exempting farm and domestic workers. Second, it infringed upon freedom of contract.

The tendency of courts to cling to the principle of freedom of contract has inevitably restricted the attempts to limit the hours of work. It is to this tendency, more than to anything else, that insufficient legislation applicable to private employment has been due. Nevertheless, 38 of the states have now limited hours of adult males in one or more branches of private employment. Government employees and workers in industries or occupations upon which

the public safety and welfare depends have been protected by law for many years against an unduly long work day.

General Hour Laws and Hazardous Work.

State courts which had held general hour laws for adult men to be an infringement upon freedom of contract were inclined to be more favorable to laws covering particular occupations which involved hazards either to the public safety or to the men employed in them. When the states began to enact laws limiting the hours of work of city streetcar operators and railroad workers, the state courts usually found them constitutional. Likewise, federal legislation regulating the hours for railroad workers was upheld by the Supreme Court of the United States as a safety measure, "to reduce the dangers incident to the strain of excessive hours of duty"(1).

Hour regulation on hazardous work first came to the court's attention as an issue involving the health

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(1) Baltimore & Ohio Railroad Co. vs. ICC, 221 U. S. 612.

and safety of the men employed in occupations, rather than the danger to public safety. In 1898 the Supreme Court of the United States sustained a decision of Utah's highest court on the validity of an eight-hour law for miners and smelters. This decision greatly extended the police power of the state when it held that the right of contract is subject to certain limitations which the state may lawfully impose in the exercise of the police power. This court held, "while the general experience of mankind may justify us in believing that men may engage in ordinary employments more than eight hours per day without injury to their health, it does not follow that labor for the same length of time is not harmful when carried on beneath the surface of the earth"(2).

This decision was specific in its reference to the hazards of mine employment and settled the question of the legality of hour legislation for occupations in which the hazards to health are obviously greater than in the general run of occupations. The

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(2) Holden vs. Hardy, 169 U. S. 366 (1898).

decision also gave impetus to the movement toward more general regulation of hours of men in private employment. Almost any occupation involves danger to physical well-being when engaged in regularly for an excessive number of hours per day, and since the Court held that special dangers constitute reasonable grounds for state interference, it was generally believed that the Holden vs. Hardy decision had paved the way for a greater amount of legislation establishing maximum hours. Seven years after the Holden vs. Hardy decision, the Supreme Court held invalid a New York 10-hour law for bakers on the ground that baking was not dangerous enough to be regulated, in spite of the evidence cited as to the heat and dust-laden atmosphere connected with it. The court held: "We think that there can be no fair doubt that the trade of a baker, in of itself, is not an unhealthy one to that degree which would authorize the legislature to interfere with the right to labor, and with the right of free contract on the part of the individual, either as an employer or employee . . . Statutues of the nature of that under review, limiting the hours in grown and intelligent men may labor to earn their

living, are mere meddlesome interferences with the rights of the individual"(3).

In spite of this decision, there was a gradual tendency to broaden the coverage of hour laws and to base their legality upon general health grounds rather than specific hazards. The Supreme Court, to the surprise of many in view of the Lochner reasoning, sustained an Oregon statute limiting the hours of labor of any person, man or woman, working in any mill, factory, or manufacturing establishment to 10 hours a day, with a provision as to overtime pay in the case of work in excess of 10 hours(4). The Court held that this law was not an unreasonable or arbitrary regulation, and made no reference to the Lochner case in which it had arrived at the opposite conclusion. Where the courts were convinced of the deleterious effects of long hours and of the general public benefit to be obtained by their limitation, statutes were upheld. The Holden vs. Hardy decision established that the courts are willing that

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(3) Lochner vs. New York, 198 U. S. 45 (1905).

(4) Bunting vs. Oregon, 243 U. S. 246 (1917).

protection be extended to men working in hazardous occupations. The Lochner case was decided chiefly, it will be remembered, on the ground that convincing proof had not been submitted of the harmful effects of long hours upon men working in baking establishments, and the Bunting decision indicated that the Supreme Court at that time was not adverse to 10-hour limitations for men in manufacturing establishments generally. The Bunting case, without much doubt, today expresses established constitutional law so far as the power of the states to limit the hours of work of adult males is concerned.

Federal Hour Laws Provisions.

It is evident that the federal and state hour laws now on the statute books did not spring up quickly but rather were the result of decades of agitation and an outgrowth of numerous legislative and judicial decisions. Let us turn first to the regulation of the working hours of public servants and men employed on public works, and then to the laws which regulate transportation workers, with final consideration being given to the Fair Labor Standards Act.

Public Works.

Working hours of public servants have been limited to a greater or less extent since the 1840's. An executive order of the President of the United States in 1840, stipulating a 10-hour day in government navy yards, marked the beginning of federal regulation of the hours of men employed in manual work. In 1869 Congress enacted a law providing that eight hours should constitute a day's work for all persons employed by or on behalf of the government of the United States. This measure was never seriously enforced owing to the fact that the law did not prohibit agreements to work overtime. In 1892 a second law was passed. Like the former one, it applied to contractors and subcontractors doing government work. Finally, in 1912, Congress enacted a law requiring that an eight-hour provision be inserted in all government contracts involving the employment of laborers or mechanics. Congress empowered the president to suspend the eight-hour law during World War I in cases of emergency, with time and a half pay for all work in excess of eight hours per day. The eight-hour day for persons working

directly or indirectly for the federal government was generally effective after 1912. Hours of labor of post office employees were regulated long before the limitations imposed for the benefit of federal laborers and mechanics became effective. During the depression of the 1930's, when a shortening of the working day became an important part of government relief and recovery policy, the federal government enacted measures reducing still further the working week of those employed directly or indirectly by the government. The so-called Walsh-Healy Public Contracts Act of 1936 provides for a basic eight-hour day and 40-hour week on all contracts entered into by the United States government for the manufacture or furnishing of materials in excess of $10,000. Overtime is permitted, provided that time-and-one-half regular rates are paid for daily or weekly overtime, whichever results are the greater compensation. This Act also prohibits the employment of boys under 16 and girls under 18 years of age, and specifies that the goods purchased by the government shall not be manufactured under conditions that are

dangerous or unsanitary to the health and safety of the workers.

Transportation Workers.

There are a number of laws which regulate the hours of workers engaged in interstate and foreign transportation, including railroad, maritime, motor vehicle, and air. In some cases the allowable hours are specific by statute, but in other cases the statutes empower regulatory agencies to establish hours standards. Federal regulation of hours of railroad employees on interstate lines extends back to 1907(5), when Congress enacted a law establishing for those engaged in the operation of trains 16 hours as the maximum period of service, with certain rest periods, and for those connected with the movement of trains nine hours in places where work was continuous and 13 hours in places where work was performed only during the daytime. This measure was partly superseded by the Adamson Act of 1916, which provided the basic eight-hour day for employees on interstate lines.

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(5) Philip Taft, Economics & Problems of Labor, (Stackpole Sons, Harrisburg, Pa., 1942, p. 345).

The hours of employees "where activities affect the safety of the operation of motor vehicles" engaged in interstate transportation are controlled by the Interstate Commerce Commission. According to its regulations, no driver is permitted to drive more than 10 hours in the aggregate without having at least eight hours off duty. The the event of adverse weather, road, or traffic conditions, driving is permitted up to 12 hours a day. These regulations are the maximum allowable hours established for purposes of safety. The agreements negotiated by employers and unions generally provide for a 40- or 48-hour basic week, with overtime rates in excess of these hours.

According to legislation enacted in 1936 and 1938, licensed officers and sailors on oceangoing and Great Lakes merchant vessels are on a three-watch basis when at sea, and on an eight-hour day when in safe harbor. Under its power to make safety regulations, the Civil Aeronautics Board has prescribed a maximum eight-hour day, 30-hour week for first pilots on commercial planes. If a flight exceeds eight hours,

a rest period is required of at least eight hours, or twice the number of hours flown since the last rest period.

Regulation of the hours of transportation workers has been sustained by the courts on the grounds that the safety and health of the general public is a proper exercise of the police power of the states and of Congress' power to regulate interstate commerce.

Fair Labor Standards Act.

The most far-reaching legislation in the United States regulating the hours of work in private employment is the Fair Labor Standards Act(6) of 1938, sometimes called the Wages and Hour Law. It was enacted subsequent to the invalidation of the National Industrial Recovery Act, and was designed to continue and extend the hour provisions.

The hour clause of the Fair Labor Standards Act establishes a maximum work week, but not a daily maximum, for employees engaged in interstate commerce. The law provides for the payment of time-and-a-half rates

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(6) Bloom & Northrup, Economics of Labor & Industrial Relations (Blakiston Co., Philadelphia, Pa., 1950, p. 513).

for all hours worked in excess of the maximum specified, but does not limit the number of hours any individual may actually work or the hours a plant may remain open. It provided for a three-fold revision of hours: a maximum of 44 hours a week during the first year, 42 hours during the second year, and 40 hours beginning October, 1940.

Among the several exemptions are employees of retail and service establishments if more than 50 per cent of their annual dollar volume of sales is local. Also exempt are farm laborers and employees engaged in the first processing of milk, cotton, and certain other agricultural products. For other agricultural processing industries, such as canning, a 12-hour day, 56-hour week is allowed during a total of 14 work weeks in any one year. Another exception is employees in manufacturing or any industry working under collective agreements which provide an absolute maximum of 1040 hours work in 26 weeks, or a guarantee of any number of hours from 1840 to 2080 hours' employment during any 52-week period. Under such contracts employees may work up to 12 hours a day or 56 hours

a week before payment of overtime begins. This clause was inserted in the act to encourage guaranteed employment contracts.

State Hour Legislation.

Almost all of the state hour laws now in effect cover specific occupations or are limited to women and minors. While the passage of the federal Fair Labor Standards Act has removed some of the incentive for the enactment of state legislation, it must be kept in mind that state legislation covering particular groups of employers usually establishes maximum allowable work time, in contrast to the federal law which permits an unlimited number of hours provided overtime rates are paid after 40 hours' work a week. State laws may also cover some of the exempt occupations under the Fair Labor Standards Act such as retail and service establishments.

Limitations on Hours for Men.

State laws regarding the working hours of men apply only to those engaged on public works, or in the transportation industry where public safety is

directly affected, or in those employments considered particularly dangerous or unhealthy to the workers. More than one-half of the states have enacted laws limiting the hours of labor on public works. All of these laws provide for an eight-hour day and most of them cover all contracts financed by the state or its political subdivisions, although a few limit the coverage to public contracts of the larger cities in the respective states. Approximately two-thirds of the states have adopted hour laws covering employees engaged in city and other intra-state transportation. Most of the states have fixed a maximum of 10 or 12 hours of continuous work and require a period of rest before resumption of duty.

In private employment where public safety is not directly concerned, hour laws for men are limited primarily to workers in mines, smelters, and related industries. Over a dozen states have laws regulating the hours of labor of some or all classes of work in these industries, a majority limiting the hours to eight a day. Several states have laws regulating the hours of labor of employees working under compressed air. These laws provide a schedule showing

the pressure, shifts, and intervals of rest between shifts, and intervals of rest between shifts for each 24-hour period, thereby prohibiting any overtime work.

Men are also included in the coverage of a few state laws which were primarily directed to the protection of women, in addition to the laws enacted especially for persons engaged in hazardous work. For example, men are included in the Arizona law covering laundries, the Montana eight-hour law for retail stores and restaurants, and the Maryland, South Carolina, and Georgia laws placing a 10-hour limit in cotton and woolen manufacturing establishments.

Limitations on Hours for Women.

In contrast to legislation limiting the hours of adult males in private employments, all but five of the states place some legal limit upon the daily or weekly hours, or both, of women in certain occupations or industries. These laws represent a legislative development extending over almost a century.

Laws limiting in one way or another the number of hours women might work during a day or a week were enacted by the legislatures of a few of the states as

early as the 1840's. However, these early laws were ineffective in that they permitted workers to be employed longer than the specified maximum hours under express contracts with their employers. Legislation limiting the hours of women workers was definitely assured in 1908, when the Supreme Court of the United States upheld an Oregon law establishing a maximum of 10 hours for women in mechanical establishments, factories, and laundries(7). The Muller vs. Oregon decision is significant because of the type of argument that was made before the Supreme Court. Advocates of shorter hours for women became aware that the Lochner and other cases had been decided adversely because the courts had not been convinced of the deleterious effects of long hours; and in the Oregon case an exhaustive study was submitted showing the actual effects of excessive hours of work upon the health of women and their offspring. In 1915 the Supreme Court of the United States upheld a California law fixing an eight-hour maximum for women workers and

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(7) Muller vs. Oregon, 208 U. S. 412, 1908.

insured that the reasoning of the Muller vs. Oregon decision applies to eight-hour laws(8).

Since the passage of the Fair Labor Standards Act, state legislation covering the hours of work for women is especially pertinent with respect to intra-state occupations, such as retail trade, laundries, restaurants, hotels, and other commercial service industries. In 1946 only six states were without laws regulating the number of hours of work for women in one or all of these occupations. Over half of the state laws establish eight hours a day, or 48 hours a week or less, as the maximum time a women may be employed in one or more industries.

Most hour laws for women include other provisions in addition to prescribing the maximum number of daily or weekly hours. About half provide for one day rest in seven in some or all industries, and several require rest periods of 10 minutes after a work period of four consecutive hours. Fifteen state laws prohibit night work for women in certain industries or occupations.

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(8) Miller vs. Wilson, 236 U. S. 373, 1915.

Child Labor Regulation.

Every state at the present time has a child labor law regulating the conditions under which employers may hire children and young people. However, child labor laws vary considerably as to both the occupations to which they apply and the standards they set up for the employment of minors. Some laws apply to gainful occupations, others exempt agriculture or domestic service, and still others apply only to specified industries, such as factories or stores.

Practically three-fourths of the states now have an eight-hour standard for children under 16 years of age, and a majority of these set a maximum of 48 hours, thus prohibiting overtime work. In about 20 of the states the eight-hour standard applies to all occupations except agriculture without exemption.

In conclusion we can say that, in the aggregate, legislation regulating the hours of work constitutes an important segment of federal and state intervention in the employment relations of modern economic life.

Chapter III

THE ECONOMIC IMPLICATIONS OF THE SHORTER WORK WEEK

The question of shorter working hours clearly has its economic aspects. Workers want both shorter hours and higher wages. The usual economic analysis of the shorter work week explains that it will increase unit costs of production because higher hourly wages increase labor costs and because the greater idleness of capital equipment increases capital costs. Higher total costs per unit of output, it is claimed, will lead to higher prices, which will reduce the demand for the product and lead to less employment. However, a shorter work week may not lead to higher unit costs, and higher costs per unit of output, under certain circumstances, may not lead to higher prices. A price rise confined to one firm or one industry would, of course, tend to reduce the volume of sales and employment in that firm or industry. If, however, the workday was reduced by national legislation and all industries were confronted with increased costs and prices,

there is no assurance that the higher prices would reduce the total volume of sales and total employment.

The most probable effect on the economy of a reduction of standard working hours is that in a period of rapid technological change and rising productivity, it would minimize the likelihood of large-scale displacement of workers.

There are those who predict a decline in total output, or a substantial decline in the rate of increasing national production through reducing hours of work. A reduction in working hours may increase the requirement for workers. Some critics say, therefore, that the reduction of working hours will create labor shortages which could be disastrous. In the next few years, labor-force growth will accelerate as the effects of the rising birthrate since 1939 will bring an increasing number of young people into the labor markets. With reduced hours of work, it is likely that there will be a growing participation of women in the labor force.

It is necessary to examine the theoretical aspects or underlying principles of the hours problem in order to gain an understanding of the relationship

between hours and output, hours and wage rates, hours and unemployment, and a number of other economic implications of shorter hours. Therefore, each of these aspects are separately considered in this chapter.

Unemployment.

The idea that shortening the working time would relieve unemployment is based, generally, on the assumption that a man would produce less in the shorter than in the longer day or week. If, it is argued, each worker does less, it will take more workers to do the necessary work. For example, if 80 per cent of our workers working full time can produce enough for all of us, then 100 per cent working 80 per cent of the time can produce enough for all of us. This seems to lead to the conclusion that shortening the working time by 20 per cent would cure unemployment. However, this is not necessarily true. For instance, if everybody's working time is reduced and the effective demand for goods is also reduced, it might be just as difficult to employ all

workers working 80 per cent of the time as it is to employ them on the 100 per cent basis.

The distribution of available work among all workers, which was attempted in the "stagger" system during the depression did not cut down the total amount of unemployment; "it only smeared it more evenly"(1). For example, 30 dollars of wages will bring more utility if distributed equally between two workers, A and B, than if A has full time work, receives full wages ($30.00) and B lives on charity. Moreover, if A and B divide the work and the wages, each receiving 15 dollars, there will probably be a larger demand for the necessities of life, such as food and clothing, than if A had full time work and B lived on charity. This idea tended to spread work as well as lessen the inequalities of income among workers. However, with this system, instead of some men working full time and others not at all, all employees worked part of the time. It might have been a good thing to do, but it

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(1) T. N. Carver, American Economic Review Supplement (March, 1932, p. 8).

did not increase the sum total of employment nor decrease the sum total of unemployment(2).

More workers did keep their jobs during the depression because of the "stagger" system, but the daily and weekly wage of each was very low. The depression of the thirties stirred a great deal of feeling and thinking about new drives for the shorter work week. The idea existed that there was a mathematical relationship between hours of work and employment. The argument made may be presented simply thus: Assume that there are 400 hours to be worked at 40 hours per week. Under this condition there will be work for ten men for a week. Now, if hours were to be reduced to 30 per week there would be work for some 13 men. The number of jobs would be increased one-third. The simplicity of the idea made it attractive in 1930. There were many people who argued that the way to take care of the unemployed was simply to reduce hours.

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(2) T. N. Carver, American Economic Review Supplement (March, 1932, p. 8).

The fallacy in the argument is revealed, however, by the simple question: What will happen to weekly earnings as the hours of work are reduced? If the wage-earners' pay were reduced proportionately, then wage earners would, in reality, be supporting the unemployed by a disguised system of taxation, which would take away a considerable part of their weekly income and give it to others. If, on the other hand, weekly earnings were not reduced, but equal pay given for shorter hours, costs of production and prices would tend to rise unless production increased. Employers could not pay the same daily wages to each man as they had to those formerly employed on the longer day and still make the margin of profits to which they were accustomed. Thus, the problem is not so simple as "simple arithmetic" assumes.

It seems likely that the reduction in hours must be substantially greater than the percentage increase in hourly wage rates if the immediate effect of the shorter working week is not to increase the volume of unemployment. The effect of shorter hours of work upon the number of workers employers will hire seems to depend upon the percentage decrease in hours, on

the one hand, and the percentage increase in hourly rates times the elasticity of demand for labor. Thus, if the elasticity of demand for labor were equal to minus two (the volume of employment diminishes two per cent with each increase of one per cent in wage rates), and if the increase in hourly rates were five per cent, then the percentage reduction in hours would have to be more than 10 per cent if more workers are to be hired(3). The elasticity of the demand for labor may be defined as "the percentage change in quantity of labor hired divided by the corresponding percentage change in wage rates"(4). If the percentage change in the amount of labor hired by a firm is smaller than the percentage change in wages, the ratio between the two is less than one. The demand for labor is then termed inelastic. An inelastic demand implies that in a given demand situation a wage increase will be accompanied by only a small

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(3) G. F. Bloom and H. R. Northrup, Economics of Labor and Industrial Relations (The Blakiston Company, Philadelphia, 1950, p. 525).

(4) P. Davis and G. J. Matchett, Modern Labor Economics (The Ronald Press Company, N. Y., 1954, p. 553).

reduction in the amount of labor hired by an employer and that the total wage bill will be larger.

If the percentage change in the amount of labor hired by a firm is larger than the percentage change in wages, the ratio is greater than one. The demand in this situation is termed elastic. In such cases, a wage increase will be accompanied by a larger reduction in the number employed and by a smaller total wage bill.

When the percentage changes are equal, the ratio is one. This is termed unitary elasticity. An increase in wages will be accompanied by a reduction in the number employed, but in this case the total wage bill will remain unchanged. For each of these three kinds of elasticity, a decrease in wages, of course, will be accompanied by the opposite effects.

As long as private employers remain in the control, ownership, and management of production, they will try to avoid any tendency toward higher labor costs which might result from higher hourly wages, and they will do this by substituting machinery for labor.

Prices.

Shorter hours affect two varieties of costs. They are labor costs and capital costs. The amount of the rise in price depends upon the percentage which labor costs and capital costs are of the total costs of the product. For example, if labor costs are 10 per cent of the value of the product, an increase of 10 per cent in the labor costs of an individual producer would call for an increase of one per cent in price. Normally, the producer would attempt to economize on his other costs or reduce profits before risking the loss of his markets through an increase in price. The higher labor costs per unit of product will result in higher prices, and this will diminish sales which will curtail production and lay off workers. Likewise, capital costs per unit of production will rise as a result of the greater idleness of capital with the same effect upon prices. Prices can be maintained at an existing level if wages decline in proportion to reduced hours of work, and if machines are run faster and operated on more than one shift. Prices cannot be raised to cover

increased costs even if the producer enjoys a monopoly, for the monopolist has already persumably fixed the price yielding the highest net income; any higher price will lessen net income and drive consumers to substitutes. In a competitive industry the higher costs cannot be absorbed in higher prices except in the case where shorter hours confront all producers, and even then demand will fall when prices advance.

When producers in a competitive situation introduce labor-saving devices, which lower the cost of production of a commodity, they are forced to pass these gains on to consumers in the form of lower prices. It pays enterprisers to use a larger proportion of capital and a smaller proportion of labor or they have to pay the same price per labor unit when new machines are introduced. Whether a great deal of immediate displacement actually occurs when labor-saving machines become available seems to depend upon whether the general price level is rising, remaining stationary, or falling. If the price level is rising, technical change will render labor too expensive to use as a factor of production, but this will be offset by the tendency of wages to

lag behind the rise in prices. If the price level is falling, technical improvements will render wage rates too high to maintain the volume of employment, since wage rates fall and rise less rapidly than do prices in general. This tendency for falling prices and technical progress to leave wages too high would stimulate employers to search for other ways of economizing labor.

It is true that in this country prices tend to be more, rather than less, rigid, and if flexibility cannot be obtained in prices it can possibly be obtained in hours of work.

Production and Machine Costs.

There is a belief among employers that excessive hours of work will ultimately lessen production. The efficiency of the workers is so reduced, with excessive hours of labor, that output diminishes both in quantity and quality. Many employers are also convinced that a substantial reduction in hours of work can be effected with little or no reduction in output. The idea that longer hours necessarily result in

larger output is being replaced by evidence that extremely long working days are not as productive as shorter ones.

There is supporting evidence to indicate that a shorter working period is often more productive than a longer one. In 1922, the Federated Engineering Societies stated that general experience with the eight-hour day was better than that with the 12-hour day. The workers in some plants registered individual efficiency gains of 25 per cent or more when the eight-hour work period was substituted for the 12-hour day(4). The National Industrial Conference Board in 1929 published the results of a study of weekly production among 94 plants operating on a five-day week which were formerly operating five and a half or six days. Each of these plants reduced the number of hours as well as the days per week. Forty-six plants said there had been on change in output, and 18 companies reported an increase. This means

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(4) National Industrial Conference Board, The Five-Day Week in Manufacturing Industries (N. Y., 1929, pp. 41-42).

that almost 70 per cent of the firms experienced no reduction in output and as a result were getting more done per man-hour(5). More recent studies of the effects of shorter hours on the volume of production are not available.

The studies and experiences just cited, however, should not lead to the conclusion that shorter work periods are always followed by increased production. The ability of workers to increase their hourly efficiency to compensate for the reduction of hours, seems to be determined by the amount of handwork as distinguished from automatic machine work. If men are working with automatic machinery, the speed of which is relatively constant, the output per day is fixed within very narrow limits(6).

It is evident that there is a point at which a further reduction of hours will fail to increase or maintain output per worker. Employees working only a few hours a day are likely to be so little fatigued

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(5) National Industrial Conference Board, The Five-Day Week in Manufacturing Industries (N. Y., 1929, pp. 44-49).

(6) H. Taylor, Labor Problems and Labor Law (Prentice-Hall, N. Y., 1950, p. 223).

that shortening the day still further will have little effect on their efficiency and output. On the other hand, machinery might be so automatic that further improvement might be attained only at greater expense.

Employers feel certain that a reduction in hours would be followed not only by changes in the volume of production, but that machine costs would also fluctuate. They claim that an additional increase in costs would result from the fact that machinery would be used fewer hours during the day. A machine is capital and its cost represents the price of time, which is interest. A machine, in order to be profitable, must yield more than the interest charged for the machine time. The less time a machine is productively turning out goods, the higher are the costs of its idleness. Shorter hours for workers may mean shorter hours for machine operation. In this case, interest and depreciation charges would have to be spread over fewer units of output. In other words, a reduction in hours would produce unemployment for machinery.

There are ways to reduce the burden of machine costs, however. The machine may be run faster and longer. Faster operation and longer use will result in additional output, which will tend to reduce the machine costs. Consider, for example, a machine whose cost for interest is 40 cents per day and whose cost for depreciation is five cents for every hour of use. If this machine were used eight hours per day the cost would be 80 cents per day or 10 cents per hour. If the machine were used for 12 hours (two shifts of six hours each) the cost would be $1.00 per day or eight and one-third cents per hour. If the use of the machine was worth nine cents per hour it would be unprofitable to use it when the factory ran for eight hours per day. However, it could be used with advantage when it ran 12 hours per day. If the laborers have more efficient machines to operate, their productivity is thereby increased. Not only would the cost of the use of machinery per hour be lowered with double shifts but the cost of other overhead expenses per hour would also be reduced. It is possible that the gains made would extend the volume of production

and at the same time lower the selling price to consumers.

The objective here has been to discuss briefly the effects of a shorter working period upon costs and productivity. A more detailed analysis will be found in the following chapter.

Wage Adjustments.

The workers' demand for a shorter workday and week is almost always accompanied by a demand for the same daily wage. This is not difficult to understand, for wage-earners, like all humans, resist anything that might lower their standard of living.

When the work period is shortened the hourly wage rate may (1) remain unchanged so that labor cost per unit remains unchanged; (2) increase to enable workers to earn as much in the shorter working day as they formerly earned in the longer period; (3) increase partly to make up a portion of the losses in earnings due to shorter hours. In the second and third instances costs would be increased, for both labor and capital costs are affected when

the work period is shortened and compensating increases in hourly rates are given to the wage earners. In the first case, if hourly rates main the same, labor costs per unit of product are not immediately affected. Labor costs will be greater, however, if less efficient workers have to be hired to do part of the work formerly done by a more selected group, since average efficiency will be less. On the other hand, if the workers prove more productive labor costs per unit of product would be lower. Capital costs are also greater, unless the number of shifts is increased, because the capital is less fully used. More capital is needed when capital works shorter hours to produce a given quantity of product(7).

When wages are reduced with the adoption of the double shift a decrease in capital cost with no increase in labor cost would result. Therefore, there would be a reduction in the price of the product which would increase purchasing and the volume of production.

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(7) T. N. Carver, American Economic Review (Vol. 26, 1936, p. 459).

In the second case, if wages are increased so that weekly earnings remain the same, labor costs per unit of product would increase unless productivity is increased with the reduction in hours. For example, if wages are increased 25 per cent when weekly hours are reduced from 40 to 30 and if productivity increases 25 per cent with the same reduction in hours, labor costs per unit of product would be nearly the same. If, however, the productivity of the workers is assumed to have increased only 12.5 per cent and hourly rates are increased 25 per cent when hours are reduced from 40 to 30, labor costs per unit of product would be greater. Assume still another case. If the productivity of the workers increases considerably more than 25 per cent and hourly rates are still increased 25 per cent with the same reduction in hours, labor costs per unit would be less than they were before. Total output would be greater than before, and each unit could therefore be sold at a somewhat lower price. The elasticity of demand will determine, of course, how much lower the price will be.

In the third case, where hourly wages are partly increased to offset losses due to shorter hours, the result rendered would nearly be the same as that found in the second case. In other words, if wages are increased to any degree, when hours are reduced, without a corresponding increase in productivity, an increase in costs is likely to result. However, where all demand higher wages, the demand usually cannot be resisted. Resistance would end in a strike by the employers themselves against the powerful influence of the habits, customs, and opinions of the masses. This change in customs, habits, and opinions would be the moving force compelling employers to pay higher wages.

Leisure Time.

The reduction of working hours, along with mechanization of industry, presents the problem of how more leisure may be enjoyed by workers and at the same time be accompanied by social gains.

We know better today the power of the machine to provide this leisure time than did John Stuart Mill, who in the middle of the 19th century doubted

whether 80 years of machine processes in England had reduced in the slightest the burden of toil. The problem of leisure has steadily developed as the work-day has moved from 14 hours to 12, from 12 to ten, from ten to eight, and now to hours less than eight. An increasing number of workers are gifted with leisure time. How will the working people of this country react to this new gain in leisure time? It is quite possible that the increased leisure would be spent in the cultivation of the arts and graces of leisure, in visiting museums, libraries, and art galleries. More leisure may result in such productive avocations as gardening, more work about the home in making or repairing furniture, or even in painting and repairing the house. Many need guidance in learning to make effective use of added leisure, if it is to be made a constructive and not a destructive factor in the life of the individual, the community, and the nation.

It seems that men who work shorter hours generally spend more money than men who work longer hours. This may mean simply that rich men working shorter hours spend more money than poor men who work longer hours.

Workers begin to prefer shorter hours when their incomes increase. They do not, however, spend more money because they have more leisure; they spend more money because they have it to spend. Goods are bought not because men have leisure, but because they have purchasing power. There seems to be no valid reason to assume that extra leisure provided by shorter working time would cause people to buy more goods. Even if leisure should increase the demand for goods, that demand is not an effective demand unless it is coupled by the ability to purchase. If a man's income is so small that even 10 hours of labor will barely buy the necessities of life, a reduction of his hours to nine or eight would deprive him of goods of high marginal utility. He might prefer the goods which the tenth hour would earn to extra hours of leisure. However, when his income is so large that the tenth hour would earn only unnecessaries, he might prefer the extra hours of leisure to the unnecessaries it would earn.

It is probable that increased leisure would shift the demand from one class of goods to another. It is unlikely that it would increase the total

demand for goods. Those classes of goods, such as sporting goods and those associated with recreational travel, which definitely require leisure for their full enjoyment, would probably be bought in greater quantities. Unless workers find new purchasing power, the increased purchasing of these goods would have to be accompanied by decreased purchasing of other goods. There would be a decrease in the effective demand for all goods if the shortened working day resulted in decreased purchasing power. Consumption, along with additional leisure, will increase if the workers' incomes are increased so that their total purchasing power is greater.

Technical Progress.

Technical improvements have been advancing since the beginning of the industrial revolution, when textile workers in England rioted and smashed the new machinery which was throwing them out of work. The public held the view that technical improvements were one of the chief causes of unemployment.

Much has been written on the effect of the machine and technological improvement, or the

so-called problem of technological unemployment. Most economists agree that changes in technology or techniques of production cause immediate dislocations in employment. Local unemployment resulting from the use of machines instead of physical labor is not a theory but a fact. The concensus among economists today is that the effects of the machine and technology on employment have both a short-term and a long-term aspect. In the short run there is no doubt that the introduction of a new machine or of new processes in a plant may cause a dislocation of employees in that particular plant and as a consequence may cause temporary and local unemployment. However, these dislocated employees can be expected ultimately to find jobs elsewhere and this brings us to the long-term aspect of the problem.

The substitution of the automobile for the horse-drawn vehicle, of the dial telephone for the operator type, of the electric motor for steam energy, all led to technological displacement of labor. The debate begins when an attempt is made to assess the long-term effects of technical change. The question is, in the long run does technical change cause total

employment in the country to decrease, increase, or remain unchanged?

In the long run improvements in mechanization and in technology create more jobs than they displace(8). Such improvements result in shorter hours of work, higher productivity, reduced prices, higher sales, greater consumption, and finally more jobs. The outstanding example of an expansion of employment resulting from the machine is that of the automobile industry. Far from reducing jobs by replacing the horse-drawn vehicle, the invention of the automobile was responsible for the creation or the expansion of a host of industries and activities such as the manufacturing of the automobile and its parts, auto servicing, oil refining and sales, road construction and the maintenance of parking lots, and traffic control. One result of improved technology deserves special comment. It is its connection with working hours. In the long run unless improved technology is accompanied by a shortening of working hours

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(8) P. H. Casselman, Economics of Employment and Unemployment (Public Affairs Press, Washington, D. C., 1955, p. 33).

unemployment is bound to result. Certainly it is true that shorter hours will, for some time at least, assist in making easier the readjustment occasioned by displacement and technological unemployment. The effects of technological change still remains today as one of the most controversial issues on the economics of employment.

The Number of Shifts.

The shortened working day may result in double shifts where single shifts had prevailed, or in triple shifts where double shifts had prevailed. If this should be the result, several interesting possibilities would follow. To begin with, it should decrease the amount of capital required to maintain a given volume of production.

First, assume that a change from an eight-hour to a six-hour day results in double shifts where single shifts had prevailed. It would take more labor to maintain a given volume of production, assuming that each worker will do less in six than in eight hours. However, it would take less capital to maintain the same volume of production, since

capital would begin to work 12 hours instead of eight. There would be no increase in the total cost per unit of the product if the decrease in capital costs exactly compensated for the increase in labor cost. As a result, there would be no necessary increase in price or decrease in the volume of sales. If output per worker declined without a reduction in wages and there is no increase in the number of shifts, there would be an increase in capital cost as well as an increase in labor cost. Capital as well as labor will work shorter hours. The increased capital cost, added to increased labor cost, would necessitate a rise in prices to correspond to the increased cost.

Next, consider the case of a shorter work period with a reduction in output accompanied by a reduction of wages. First, it is assumed that there is to be no increase in the number of shifts. To begin with, there would be no increase in the labor cost per unit of product, but there would be an increase in the capital cost. It would take more capital working shorter hours to produce a given product. This higher cost can be covered by an increase in the price of the products, or by taking it out of the

incomes of employees. In this case, it is unlikely that the working men would accept a substantial reduction of wages with a reduction of their working time.

Finally, it is assumed that wages are reduced and that double shifts are adopted. There is no need to increase labor cost in this case, and there would be a decrease in capital cost. This would result in a reduction of price which should stimulate purchasing power and a larger volume of production.

The ability to introduce additional shifts will vary considerably from industry to industry. Some plants will be forced out of business, while other plants will enjoy increased profits from the change-over to additional shifts because their labor costs are relatively low. In other plants, where equipment is old, working additional shifts may mean frequent breakdowns without adequate time for repairs. Those industries which do not operate continuously are limited to the amount they can employ by a shortening of hours since employment will depend upon the availability of unused equipment and machinery. The less efficient equipment brought into use results in increased pressure upon costs. Labor cost and

overhead costs will tend to determine which plants will be forced out of business and which plants will increase their profits by the changeover to additional shifts.

Morale.

The level of morale is one of the most essential features in the production process. It is argued that shorter hours would result in greater physical and mental well-being so that production would be maintained or even increased. There would be greater efficiency, less absenteeism, and fewer accidents which add indirectly to labor costs.

Management is concerned with morale since it is related to the efficiency of operations and to the level of labor costs(9). Numerous investigations on the question of morale have shown that productive efficiency fluctuates with changes in interest and mental condition. Employees do more work and do it better when they are enthusiastic about their jobs.

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(9) D. Yoder, Personnel Management and Industrial Relations (Prentice-Hall Book Company, N. Y., 1942, p. 440).

Moreover, they do less and their output shows poorer quality when interest lags and morale is low. Under these conditions, labor costs are obviously increased.

The shorter working day tends to increase the efficiency on the part of employers as well as on the part of workers. This efficiency springs from improved physical health together with a change of attitude toward work and employer. There is greater promptness in starting in the morning and at noon, with more interest and application on the part of the workers. The elimination of a certain amount of absenteeism and tardiness will contribute to increased output under shorter hours.

Fatigue and monotony are two factors which greatly influence the level of morale. The most obvious cause of harmful fatigue is an excess of work arising from long hours and intense physical or mental exertion. There are, however, many other factors which operate to increase or decrease the amount of fatigue. Some of these factors are impure air, poor lighting, extreme temperature, vibration and noise, and work that is dangerous and unsuitable to the individual. Where management is unsuccessful

in cutting down excessive fatigue the remedy may have to be sought in a reduction of hours. Output is generally at a peak in the middle of the morning and in the middle of the afternoon. It drops off just before noon, and falls sharply just before closing. When the working period is shortened the most fatiguing hours to the worker and the least productive to the employer are diminished.

Monotony is a condition in which the subject becomes listless and bored. Health is injured by the extreme monotony of many branches of industry. Specialization has been carried so far that change and variety of work have been reduced to a minimum. Division of labor results in the constant repetition of similar motions and processes by the same worker. This favors the onset of fatigue and monotony which requires the establishment of a shorter workday for relief.

High morale is an essential feature of efficient cooperation between labor and management. None of the other physical factors such as light, heat, and ventilation appear to be so important in effecting output as is the level of morale.

The discussion set forth in this chapter has served to give the reader an analysis of the economics of shorter hours. The reasoning of each of the various economic aspects presented here provides a basis for interpreting and evaluating certain data found in later chapters.

Chapter IV

SHORTER HOURS RELATIVE TO LABOR COST AND PRODUCTIVITY

Whether or not shorter hours cause an increase in labor costs depends upon the amounts produced. Labor may produce as much, more, or less than they did in the longer working period. If labor produces more or as much in shorter hours as they did formerly, then there would be no increase in labor costs per unit of output. However, there would be an increase in capital costs because the machines run for less time. Moreover, if the output is less than before, both labor and machine costs would rise.

The constant pressure to reduce hours is exercised because of the more or less unconscious reluctance of employees to work longer than they regard as necessary. There is a tendency for each employee to regard each additional hour given to an employer as worth more than those already given. Employees naturally want to work what they consider a reasonable number of hours per day or per week. The reductions in hours per day or week may lower unit costs in some cases while raising them in others.

No general conclusion can be supported on the effects of changes in working hours covering different times, places, and industries. Attention is given first to production and hours of work.

Production and Hours of Work.

The presistent decline in working hours over the past several decades has become possible due to steady gains in productivity and a rising standard of living. Gains in productivity provide the means for lowering the costs of production which in turn, can bring business expansion, lower prices, and increased profits. Productivity is affected not only by the levels of employment and personal consumption, but by the rate of application of new technology, improvements in plant layout, and other applications of management techniques.

We have been able as a nation to consume an even larger volume of goods and services with increased output per worker and per man-hour, while producing and distributing them with less effort. According to a recent study by the Department of Labor's Bureau

of Labor Statistics, productivity in manufacturing is continuing to rise[1]. In order to measure the relative influence of working hours upon productivity, the following table has been prepared to give an

Table 2. Average Weekly Hours and Indexes of Physical Output Per Man-Hour in Manufacturing, Durable, and Nondurable Goods Industries, 1939 and Selected Years, 1947-1953

(1947 = 100)

Period	All Manufacturing		Durable		Nondurable	
	AWH	OPM	AWH	OPM	AWH	OPM
1939	37.7	96.0	38.0	92.9	37.4	98.8
1947	40.4	100.0	40.6	100.0	40.1	100.0
1949	39.2	108.6	39.5	111.0	38.8	105.9
1950	40.5	117.7	41.2	122.0	39.7	112.5
1951	40.7	117.5	41.6	119.6	39.5	114.7
1952	40.7	119.1	41.5	120.6	39.6	116.9
1953	40.5	122.7	41.3	124.5	39.5	120.1

"AWH" signifies average weekly hours and "OPM" output per man-hour.

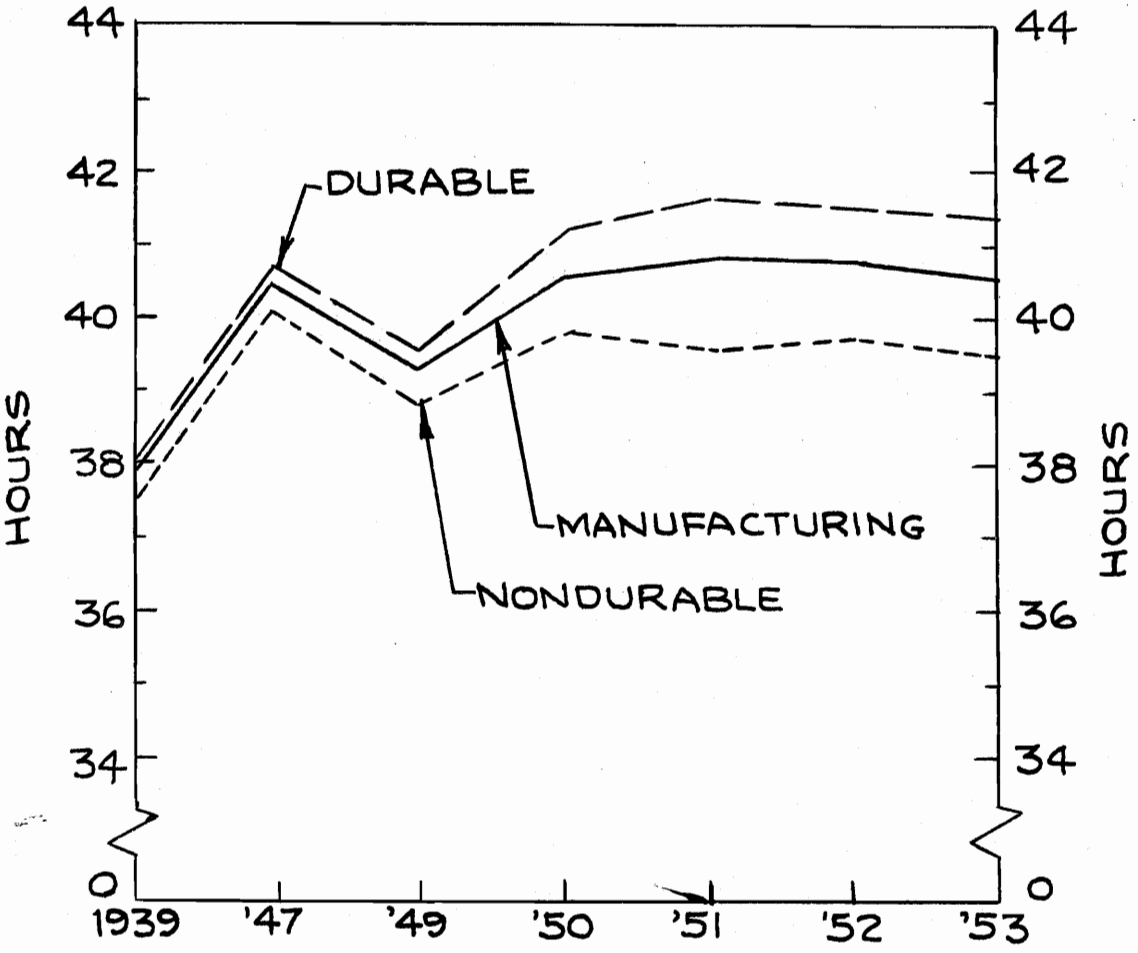
Source: Derived from Fact Book on Manpower, Sept., 1954, p. 40, Bureau of Labor Statistics, Monthly Labor Review, Jan., 1956, p. 4.

(1) Monthly Labor Review, Jan., 1956, Vol. 79, p. 1.

analysis and examination of indexes of physical output per man-hour as compared with average weekly hours of production in durable and nondurable manufacturing industries covering the period 1947 to 1953 and the year 1939.

Examination of the annual trends in output per man-hour and average weekly hours indicate some variation in the year-to-year periods. (See Table 2.) The change in output per man-hour and weekly hours for manufacturing is an average of many component industries and does not necessarily represent the trend for any single industry. Production in the durable-goods industries was greater than that for nondurables. This may be due to the fact that average weekly hours were greater in the durable-goods industries than in nondurable-goods industries from year to year. However, there was a steady rise in output per man-hour from 1947 to 1953 in all manufacturing, except for the year 1951, even though average weekly hours fluctuated during the period. The nondurable-goods industries worked the least hours in any one year but maintained a steady increase in production during the period. (See Table 2 and Charts 1 and 2.)

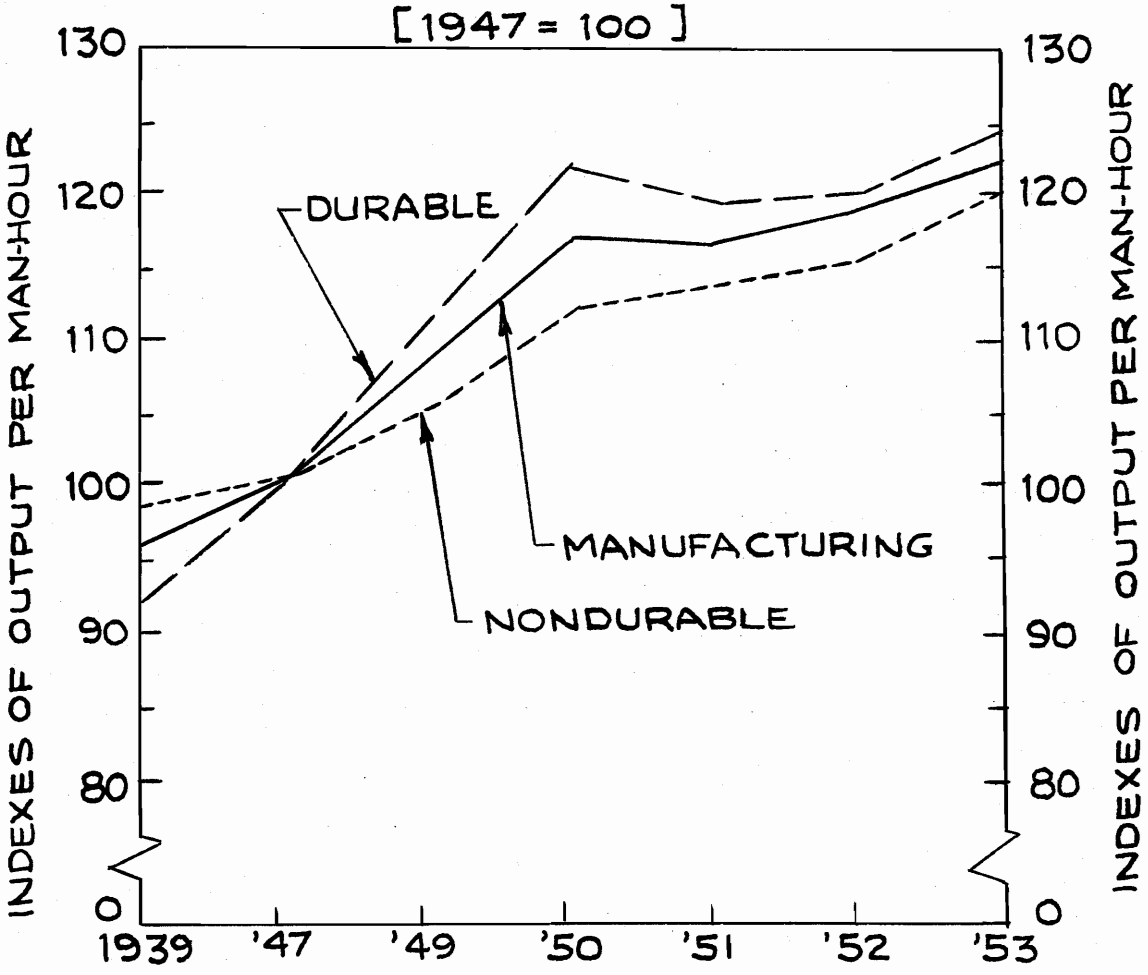
CHART 1. AVERAGE WEEKLY HOURS, 1939 AND SELECTED YEARS, 1947-'53



SOURCE: TABLE 2

CHART 2. INDEXES OF PHYSICAL OUTPUT PER MAN-HOUR, 1939 AND SELECTED YEARS, 1947-'53

[1947 = 100]



SOURCE: TABLE 2

Productivity indexes constitute a "yardstick" of the long-run progress made by industry in reducing the amount of human effort needed to produce the various goods and services in our society(2). The growth of the American standard of living through greater output, higher wages, and increasing leisure is ultimately dependent upon increases in output per man-hour. Productivity, or output per man-hour, is the measure of the relationship between output in physical units and labor time. It is not a measure, however, of the specific contribution of labor or capital or of any other one factor of production. Changes in the ratio between output and man-hours of work show the effect of a large number of interrelated influences such as technological improvements, rate of operation, the availability of supplies, the skill and effort of the work force, and the efficiency of management. Ideally, it would be desirable to have estimates of output per man-hour and average weekly hours for each sector of the economy. Other industries such as mining, transportation and public utilities, trade division and the

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(2) "Productivity Trends in Selected Industries-Indexes Through 1950," Bulletin No. 1046, Bureau of Labor Statistics, Washington, D. C., 1950, p. 2).

service division, have been excluded. Manufacturing was chosen on the basis that about 35 per cent of all nonagricultural workers are employed in manufacturing(3). The most intensive applications of technology have occurred in the past in this sector. Generally, more information is available for the manufacturing sector than for many others.

Contrary to much popular opinion, there is no simple rule as to the effect of changes in hours on efficiency(4). A reduction of hours does not necessarily result in a decrease in production. Wherever workers set the pace that determines output, a reduction of hours is more likely to follow. The reason for this result is the tendency for all workers to gauge their speed by the distance they have to go. For example, a two-miler cannot run at the pace of a dash man, so also a worker who has eight or more hours of work cannot force himself to maintain his best possible speed. He eases his pace so as to endure.

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(3) Monthly Labor Review, "Output Per Man-Hour in Manufacturing, 1939-53," Jan., 1956, Vol. 79, p. 1.

(4) D. Yoder, Personnel Management and Industrial Relations (Prentice-Hall Book Co., N. Y., 1948, p. 308).

Moreover, the pace is set by the average man and not by the strongest and fastest. If hours are reduced, every worker can stand a higher average pace so that as much or more is produced as under the longer hours.

Labor Cost and Compensatory Wage Adjustments.

The program of shorter hours is unacceptable to labor unless it is accompanied by compensatory wage adjustments so that labor income is maintained. For example, a reduction from eight to six hours per day would mean a 25 per cent decrease in weekly wages. To illustrate this assume that a man works eight hours a day at $1.50 per hour five days a week. His weekly wages would total $60.00. However, if he worked six hours per day the same number of days and at the same hourly rate, his weekly wages would total $45.00 or 25 per cent less than what he had formerly earned working eight hours a day. Workers, when they seek shorter hours, are not content with a reduction in weekly earnings. Wage-earners naturally desire increases in hourly rates of pay as hours are reduced. Wages could be increased to permit workers to earn as much per week

under the shorter schedule as had been earned under the longer schedule, which would unquestionably be satisfactory to workers but would substantially increase labor costs of production. Consider again the previous example of a reduction from eight hours to six hours a day with a five-day week and $1.50 hourly wage rate. The hourly wage rate would have to be increased to $2.00 in order for the worker to earn as much per week under the shorter work period as he had earned under the longer work schedule. This would be an increase of 50 cents or 33-1/3 per cent in the hourly wage rate. Wage rates could be increased to compensate in part, but not in full, for the working time lost under the shortened schedule. For example, continuing with the above illustration, the hourly wage rate might increase 16-2/3 per cent when hours are reduced from eight to six per day. In this case the hourly wage rate would be $1.75 as compared to the $2.00 rate when the hourly rate was increased 33-1/3 per cent. In this last arrangement, where wage rates are partly increased, both management and employees would be making concessions. This wage adjustment

appears to offer a basis on which a fairly satisfactory agreement might be reached(5).

When the work period is shortened and compensating increases in hourly rates are given to the wage-earners, labor costs are affected as are capital costs. On the side of capital are the effects which were discussed earlier in the preceding chapter, when it was assumed that hours were reduced. Since capital, like labor, works shorter hours a larger amount will be necessary to maintain a given volume of production. With regard to labor, the increase in cost is, of course, the advance in hourly rates and any additional labor costs that might result. In competitive industries the effect of the increase in costs, both labor and capital, will be a rise in prices and a diminution in purchases. As a matter of historical record, hours have been shortened while weekly and yearly incomes have increased. The benefits of increased output per man-hour can be taken in the form of higher weekly and yearly incomes to the workers. The important fact to remember is

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(5) National Industrial Conference Board, Shorter Work Periods in Industry (N. Y., 1932, p. 8).

that the increase in productivity has made possible shorter hours without reduced weekly incomes.

In consideration of the question of wage changes under the shorter work week, a distinction should be made between wage rates per unit of time and wage rates per unit of output. The earnings of the hourly-rate worker are absolutely determined by the number of hours in his work week. On the other hand, the piece-worker is able to increase his earnings through the application of greater effort and skill. More intense application may be justified under a shorter work week without harmful physical effects. It is possible, therefore, for the piece-worker to make up for some of the lost time even without a change in wage rates, but this would not be possible for the hourly-rate workers. It was mentioned previously that the effect of the introduction of the shorter work week upon increased labor costs and wage adjustments seems to revolve around changes in productivity. If wages are increased with a reduction in hours, so that weekly earnings per worker remain the same and increased productivity is equal to the reduction in hours, labor costs per unit of product would not be increased.

Labor costs would be greater, however, if productivity declined or increased only partly with a reduction of hours and increase in hourly rates. Unless, therefore, production per worker is increased porportionately to the increase in hourly wages, labor costs will rise.

Labor Cost As Related to Employment.

It is usually argued that the shorter work week will increase unit costs of production since higher hourly wages increase labor costs. Higher total costs per unit of output, it is said, will lead to higher prices, which will reduce the demand for the product and lead to less employment. The number of workers employers could afford to employ would diminish, it would seem, if the advances in hourly wages were not accompanied by increases in the demand for goods. Labor costs per unit of product would remain the same, however, if the advances in wages were equalized by advances in productivity. There would be no incentive, in this case, for employers to increase the volume of employment, nor would the higher hourly rates cause employers to reduce the number of employees on the

payroll. This is, of course, assuming that the demand for the product remains unchanged. There would be some tendency toward the diminution of the volume of employment when increases in hourly rates are not accompanied by increases in productivity, since labor costs per unit of product would be greater. When the productivity of the workers increases considerably more than increases in hourly wages, labor costs per unit will be less and employers would be encouraged to hire additional workers. Since the total output would be greater each unit could therefore be sold at a somewhat lower price. The elasticity of demand for the product would determine the decline in price. When the demand is highly elastic, the number of units of the commodity taken from the market will increase substantially which in turn will bring about a corresponding expansion of production. In addition to increased consumer demand, there will be an increased demand for raw materials and an indirect expansion by employment in industries producing them. If the demand is inelastic, consumers will spend only a smaller amount on the commodity even at the lower price(6).

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(6) H. Millis and R. Montgomery, Labor Risks and Social Science (McGraw-Hill Book Co., N. Y., 1938, p. 30).

When labor costs are increased as a result of higher wages or by reduced hourly efficiency, the increased costs may be passed on to consumers in the form of higher prices. Consumers do not buy without reference to price, and price increases or decreases have definite effects upon the quantities of goods that are consumed. A rise in price means less consumption usually. As consumption is reduced, the reduction is inevitably reflected in employment. Any attempt to increase employment by this means may be unsuccessful. The extent to which employment and consumption will be affected in each industry depends upon the elasticity of demand for its products and upon the significance of labor costs in the industry(7).

If the demand for the products of the industry is fairly inelastic, purchases of it would not diminish greatly as a result of any assumed increase in costs or price.

Labor costs per unit of product may be affected even though hourly rates remain the same. When it is

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(7) D. Yoder, Personnel Management and Industrial Relations (Prentice-Hall Book Co., N. Y., 1948, p. 313).

necessary to hire less efficient workers, the average efficiency would be less and labor costs per unit of product would be greater. It is possible, however, for the workers to prove more productive, which would result in lowering labor costs per unit of product.

Labor Cost and Capital Cost.

When the work period is shortened and each worker produces less but gets the same wages, labor cost per unit of product is increased. Capital cost is also increased unless the number of shifts is increased. On the side of capital, consideration is given to the number of shifts. If the shorter workday results in double shifts where single shifts formerly prevailed, the effect should be a decrease in the amount of capital required to maintain a given volume of production. If less capital is required this should normally be followed by a lower rate of interest. A lower rate of interest on smaller quantities of capital should lower the capital cost(8). When a larger quantity of

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(8) T. N. Carver, American Economic Review, Vol. 26, 1936, p. 454.

capital is required and demanded, the normal effect to be anticipated would be an increase in the interest rate. Therefore, capital costs per unit of product would be increased. It would be necessary to increase the amount of capital to maintain a given volume of production, and enterprisers would have to pay an increased price for each unit of capital. It is possible, however, that there may be a considerable amount of idle equipment when the shorter work week is introduced, so that it will not be necessary to bring forth more capital and increase the interest rate(9).

If it is assumed that the workday is changed from eight hours to six hours a day, with double shifts replacing single shifts, capital would begin to work 12 hours (two shifts of six hours each), instead of eight hours. The substitution of two six-hour shifts for a previous eight-hour day will tend to reduce capital costs per unit. Depreciation costs may increase, however, when capital works longer hours.

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(9) H. Millis and R. Montgomery, Labor's Progress and Problems (McGraw-Hill Book Company, N. Y., 1938, p. 506).

In addition to capital costs there would be effects upon labor cost per unit of product. When output per worker is reduced and there is no reduction of wages, labor costs will be increased. If there is no increase in the number of shifts when hours are reduced, capital cost will increase as a result of working shorter hours. The increase in cost of both labor and capital would either reduce the profits of employers or require higher prices to correspond to the increased cost. If prices are all raised to the full extent of these costs, consumers may purchase correspondingly less.

The change from the single to the double shift will decrease the capital cost per unit of product which might offset the increase in labor cost resulting from higher wages and reduced product per worker. In this case, there would be no increase in the price of the product. With the same wages, and no increase in the price of the products, each person could purchase as much as before.

The reduction of hourly wages and the adoption of the double shift would tend to decrease both labor and

capital cost. This reduction in cost would, therefore, reduce the price of the product.

In conclusion we can say that if the shorter work week for both labor and capital is accompanied by increased output per worker to correspond to higher wages, and by increased output per unit of capital to correspond to the increased rate of interest, there will be no increase in either labor cost per unit of product or in capital cost per unit of capital.

Offsetting Cost Factors.

It is important to consider the readjustments that will lower costs when a shorter working period is adopted. The stage of the business cycle is always an important determining influence. When prices are rising and sales are expanding, it becomes easier for shorter hours to be introduced. During such times wages generally lag behind the rise in other prices and the increased labor cost of a shorter work week is offset by expanding margins of profits.

In some cases, it is possible for profits to remain unchanged even though daily output were to

decline[10]. Where a partial monopoly exists and the demand for the product is inelastic, a higher price would not result in an appreciable decline in sales. The higher selling price would compensate for increases in labor cost and profits would practically be the same.

Some of the more important conditioning industrial factors are the degree of mechanization existing in plants, the efficiency of management, and competition. Where competition is cut-throat, employers are hardly able to go through the waiting period that always follows the introduction of new methods. If plants are already highly mechanized and well managed it might be difficult to institute any more economies to compensate for shorter hours. It is often argued that reduction in the hours of work would produce such an increase in man-hour output that the rise in costs incurred by maintaining earnings for the shorter work schedule would be offset[11]. This is, of course,

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(10) C. R. Daugherty, Labor Problems in American Industry (Houghton-Mifflin Co., N. Y., 1938, p. 252).

(11) G. F. Bloom, Economics of Labor and Industrial Relations (Blakiston Co., Philadelphia, 1950, p. 519).

assuming that the efficiency per worker would be much greater under the shorter work week.

The importance of the proportions of capital costs and labor costs may again be mentioned, for these proportions determine largely the extent to which capital savings can offset increased labor costs. It will be recalled that when there is a change from the single to the double shift, capital will work longer than before which will decrease the capital cost per unit of product. This decrease in capital cost might offset the increase in labor cost and as a result there would be no increase in the price of the product. The double shift plan would also lead to the retirement of less efficient machinery and would cause the remaining machinery to wear out more rapidly, since it would be working longer hours than before. Moreover, the more intensive use of machines made possible by the double shift operation would make machine operation more economical in relation to hand methods. In addition, the double shift operation would allow a concentration of production in the plants with the

most modern equipment, where labor would be most productive[12].

Technical advances, or labor-saving devices, lower the cost of production of a commodity, and in a competitive industry the producers are forced to pass these gains on to the consumers in the form of lower prices. The reduction of hours over long periods of time has been possible because of increased productivity. Gains in productivity provide the means for lowering costs of production which may bring about business expansion, lower prices, higher wages, and increased profits. The achievement of these gains depends upon high levels of employment and continued economic growth.

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(12) H. Millis and R. Montgomery, Labor's Progress and Problems (McGraw-Hill Book Company, N. Y., 1938, p. 514).

Chapter V

MECHANIZATION OF INDUSTRY AS A BASIS FOR SHORTER WORKING TIME

Shorter hours and higher pay in American industry have resulted from the application of labor-saving machinery and improved production methods which have enabled the American worker to produce greater quantities of goods in less time than workers in any other country of the world. Scientific developments have been applied to industrial processes, sometimes rapidly and sometimes slowly, resulting in new products and new techniques. The increased use of labor-saving devices has revolutionized the hours of labor. Whereas a 60-hour working week was once the norm, the 30-hour week is gradually being adopted today. At the same time, output per worker has been increasing between two and three per cent per year[1]. Science and saving are the two factors which have set the technological basis for shorter hours in industry.

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(1) S. H. Slicter, The Challenge of Industrial Relations (Cornell Press, N. Y., 1947, p. 77).

Productivity and Efficiency.

The real foundation of greater productivity is in the steady accumulation of technical knowledge. Only within the past hundred years has extensive use been made of mechanical energy. In earlier times, manufactured goods were normally produced by hand and the energy used in production was supplied by human beings. Today most of the energy requirements for production are supplied from mechanical sources. The worker today is much less a source of energy and much more a director of the use of mechanical energy.

It is apparent that progress in mechanization is an imperative of the present industrial order. This is illustrated by the continually increasing productivity which appears bound to remain. A broad view of the situation may be gained from the following tables and charts. With 1939 as the base year, indexes of output per man-hour are given for all manufacturing, durable, and nondurable industries. Indexes of production, employment, and output per worker in agriculture are given in selected years, 1939 to 1950. While the increased productivity has undoubtedly been due to

Table 3. Indexes of Physical Output Per Man-Hour, Manufacturing, Durable, and Nondurable Goods Industries, 1939-1953
(1939 = 100)

Period	All Manufacturing	Durable	Nondurable
1939	100.0	100.0	100.0
1947	104.2	107.6	101.2
1949	113.2	119.4	107.2
1950	122.6	131.3	113.8
1951	122.4	128.7	116.1
1952	124.1	129.8	118.3
1953	127.8	133.9	124.2

Source: Monthly Labor Review, January, 1956, Vol. 79, p. 4 (Based on current year weights, 1939-53) Converted to 1939 = 100, from Bureau of Labor Statistics Published Indexes, 1947 = 100.

numerous factors operating within the economic order, the adoption of new machines and of improved mechanical devices has without question played a leading role in this process. Many of the technological developments of World War II proved beneficial in the years after 1947(2). The production process found greater

(2) Monthly Labor Review, January, 1956, Vol. 79, p. 5.

use for highly specialized machines in particular operations. Technological change, to a great extent, during the period from 1947 to 1953 involved development and improvement of existing technology. For example, greater speed and increased capacity of machinery, mechanized material handling, and improved materials and product design. Advances in output per man-hour for all manufacturing between the years 1939 and 1953 increased approximately 28 per cent. At the same time, the increase in production in the durable goods industries was much greater than that for nondurables. The durable goods industries experienced a 33 per cent increase above the 1939 level as compared to the 24 per cent increase in the nondurables relative to the same base year. (See Table 3.)

It is true that the annual rate of increase in production in agriculture has been less than in manufacturing and other heavily mechanized industries. Yet tremendous progress has been made in the decade from 1940 to 1950. In 1949, output per farm worker was nearly 32 per cent greater than in 1940. Apparently, increases in total production and output per worker do not bring with it proportionate increases

Table 4. Indexes of Production, Employment, and Output Per Worker in Agriculture, Selected Years, 1939-1950

(1939 = 100)

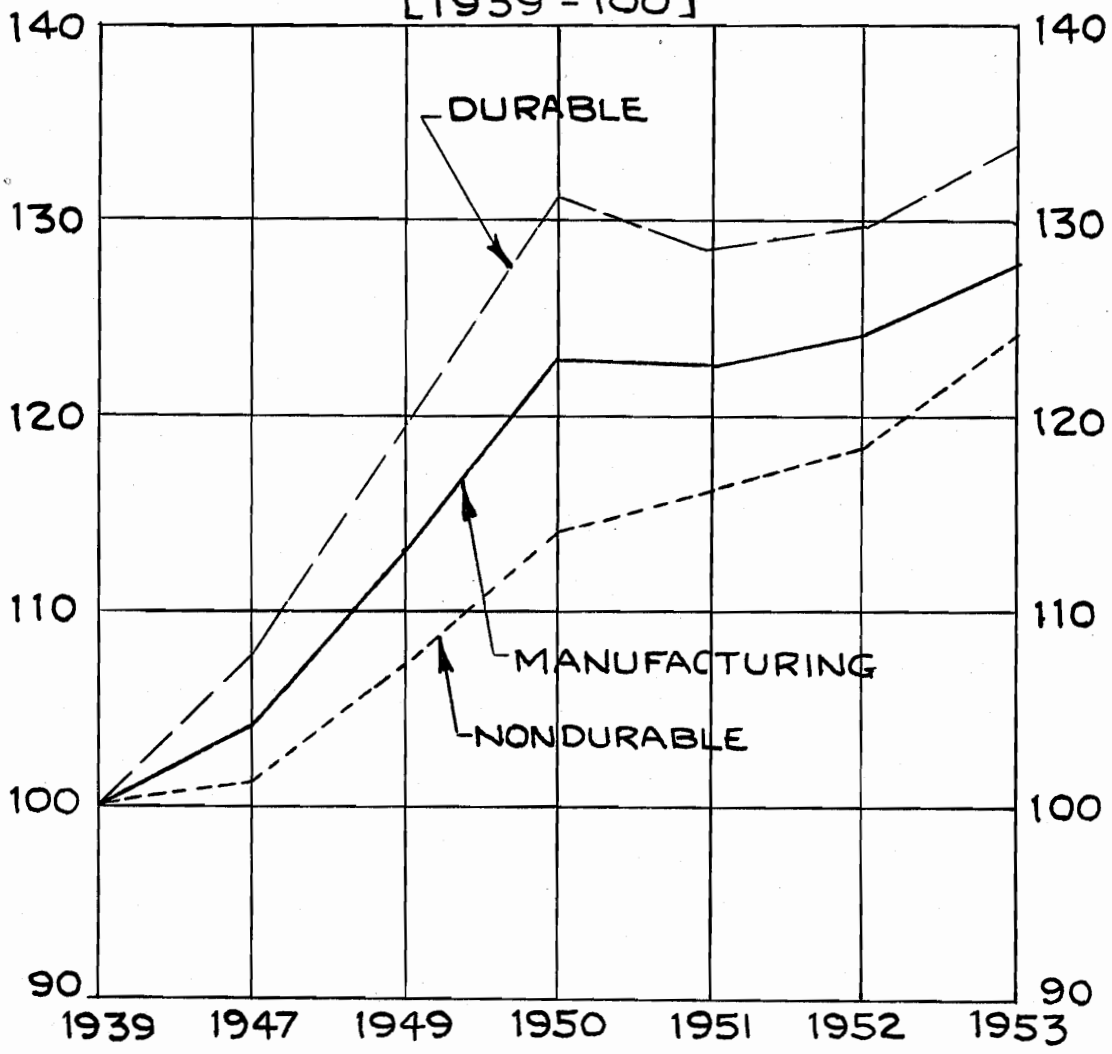
Year	Production	Employment	Output Per Worker
1939	100.0	100.0	100.0
1940	102.1	99.6	102.5
1941	103.7	97.4	106.5
1942	115.1	97.7	117.8
1943	111.6	96.6	115.5
1944	115.6	94.3	122.6
1945	110.7	92.2	120.1
1946	113.7	94.6	120.2
1947	110.3	95.2	115.9
1948	122.9	94.5	130.1
1949	122.9	91.8	133.9
1950	115.7	88.3	131.0

Source: Productivity Trends in Selected Industries (Indexes through 1950) Bureau of Labor Statistics, Bulletin 1046, p. 37.

in employment. (See Table 4 and Chart 4.) Employment decreased approximately 12 per cent during the period 1939 through 1950.

CHART 3. OUTPUT PER MAN-HOUR IN MANUFACTURING, DURABLE & NONDURABLE GOODS INDUSTRIES, 1939-1953

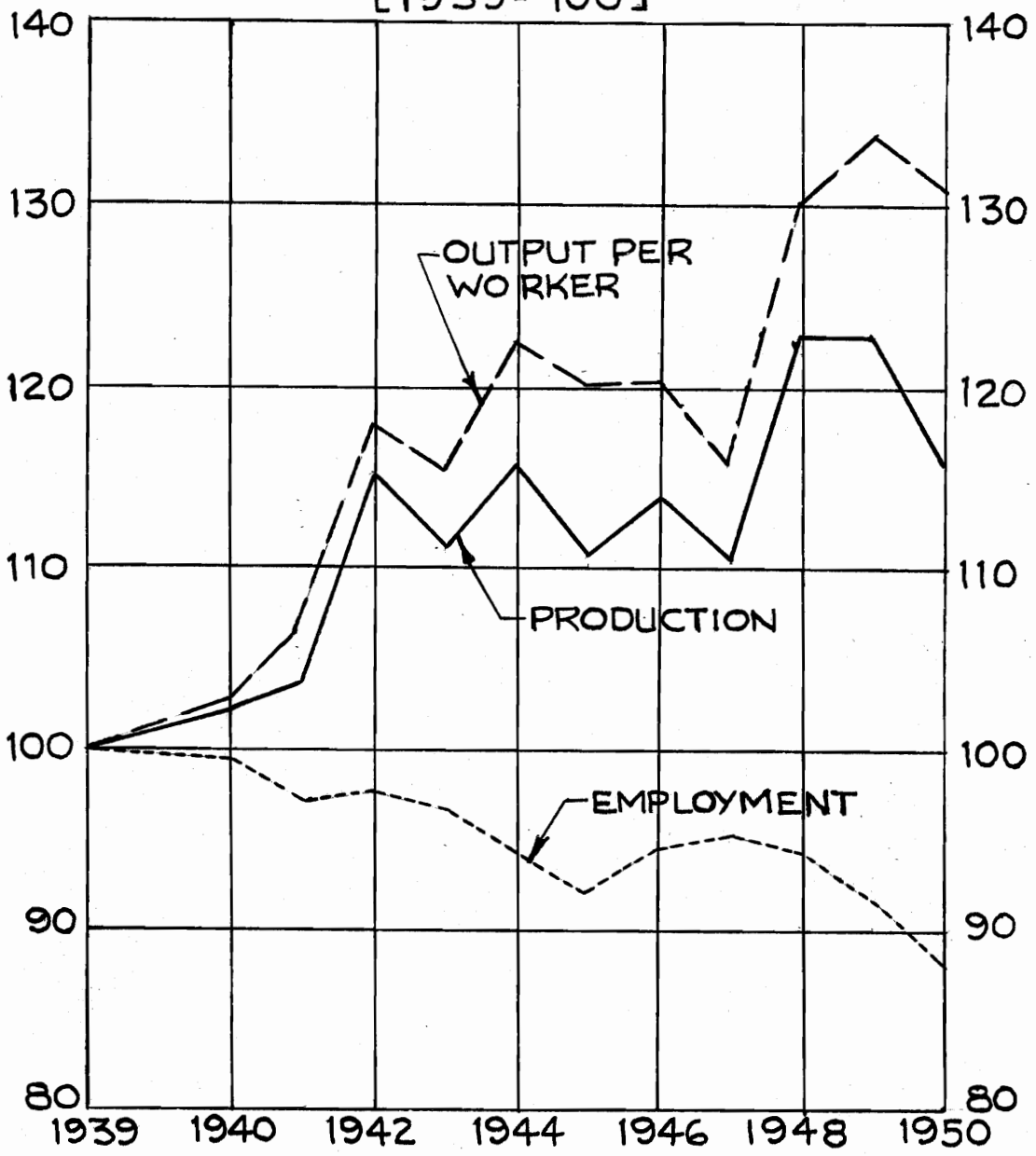
[1939 = 100]



SOURCE: TABLE 3

CHART 4. INDEXES OF PRODUCTION, EMPLOYMENT AND OUTPUT PER WORKER IN AGRICULTURE.

[1939 = 100]



SOURCE: TABLE 4

Increasing industrial productivity has certainly made possible a reduction of the hours of work. Workers now have from 15 to 20 hours more free time each week than their fathers and grandfathers had early in the century. While most of the workers then had a six-day week, the five-day week is now the rule. Household workers have more leisure now because of smaller families, the transfer of much of the earlier household work to factories and services establishments, and the mechanization of many household tasks.

The skillful blending of human resources in a free economy has contributed to technological advance. The efficient adjustment of the labor force to industrial processes has led to a high rate of productivity increase. This has been one of the most important factors in American economic growth, and the foundation for its high standard of living.

Technology and Unemployment.

Changes in technology, in the methods of production, often occasion widespread and far-reaching adjustments in employment. Technological advances

in industry appear to have three distinct effects upon the employment of labor.

The first effect upon the employment of labor is the displacement of individual workers, often skilled craftsmen, when a machine or process is invented to do the work formerly done by human labor. The second effect is the displacement of workers as a result of increasing managerial skill and better overall organization of plant and industry. The third effect is the roundabout effect of technological change upon the general level of employment.

An example of craft displacement are the glass-blowers, a famous old skilled trade, whose work was replaced in a short time by a machine which rendered skilled work unnecessary. In considering the effect of mechanization on craft displacement, it should be mentioned that not all craft displacement is due to machines. Some skilled workers may be left without jobs, as in the railroads, or in the mines, because of financial or managerial difficulties, with mechanization not involved as a primary cause. A good example of the relation of mechanization to the total supply of employments is the automobile industry.

Far from reducing jobs, the invention of the automobile was responsible for the creation or expansion of employment. A number of industries and activities came into existence, such as the actual manufacturing of the automobile and its parts, automobile servicing, oil refining and sales, road construction and the maintenance of parking lots, and traffic control.

The rapid introduction of new machinery does not mean that employment must fall and that workers will soon be on the bread lines(3). The normal tendency of technological change is to increase the openings for new employment. The development of new machinery may lower the selling prices of goods to such an extent that larger quantities of goods are sold, thus maintaining employment despite mechanization.

Mechanization of agriculture has meant that employment opportunities have shifted from the agricultural process to basic industrial process and to services connected with the use of power-driven farm vehicles. The total number of employed persons has

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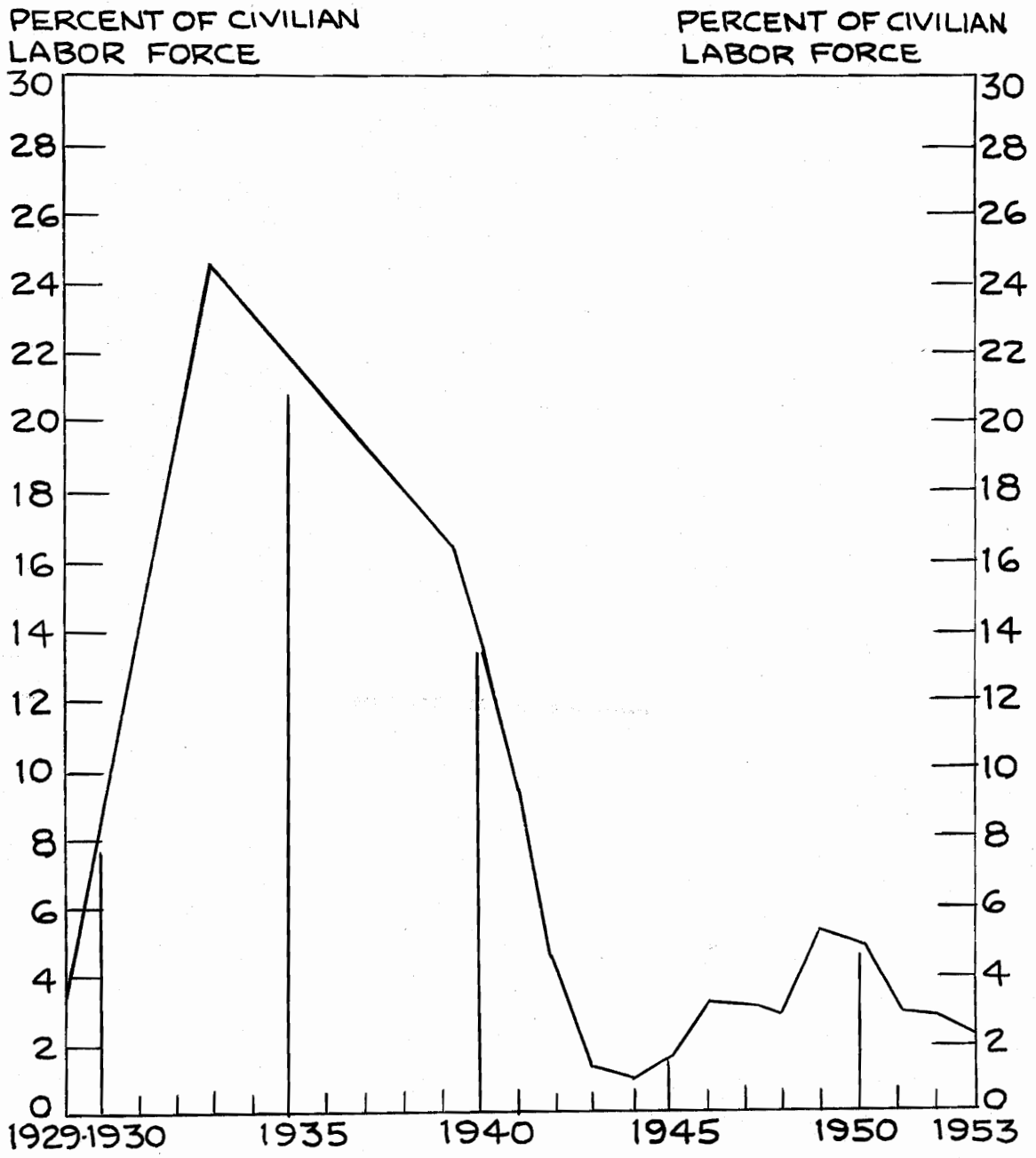
(3) American Economic Review, "Technological Conditions and Employment of Labor," Vol. 29, 1939, p. 250.

not been reduced, because new jobs have been opened up at the same time that old jobs have been closed down.

From the standpoint of current manpower resources, the most important over-all measure is the size of the labor force. The Bureau of the Census officially defines the labor force as including those persons aged 14 years and over who have a job or who are looking for work at the time census surveys are made.

The proportion of the civilian labor force that is unemployed serves as an over-all measure of the extent to which available manpower is being utilized. Table 5 and Chart 5 present the total labor force and the per cent of the civilian labor force that is unemployed in selected years. The proportion of the unemployed civilian labor force has fluctuated widely during the past two decades. It dropped to the low point of 1.2 per cent in 1944, at the peak of the World War II mobilization effort. (See Chart 5.) In the years between the end of World War II and the onset of the Korean emergency, the unemployment rate ranged between 3.5 and 5.5 per cent of the labor force. A steady downtrend in unemployment was maintained

CHART 5. CIVILIAN LABOR FORCE UNEMPLOYMENT RATE, 1929-1953



SOURCE: TABLE 5 AND THE ECONOMICAL ALMANAC, 1953-54, p. 426-427, BUREAU OF LABOR STATISTICS, BULLETIN 1171, p.11, SEPT. 1954.

Table 5. Total Labor Force for the United States, Selected Years, 1929-1953

Period	Total Labor Force[1]	Civilian Labor Force			
		Total	Employed	Unemployed	
				Number	Per Cent of Civilian Labor Force
	(Thousands)				
Annual Average:					
1929	49,440	49,180	47,630	1,550	3.2
1933	51,840	51,590	38,760	12,830	24.9
1939	55,600	55,230	45,750	9,480	17.2
1940	56,180	55,640	47,520	8,120	14.6
1941	57,530	55,910	50,350	5,560	9.9
1942	60,380	56,410	53,750	2,660	4.7
1943	64,560	55,540	54,470	1,070	1.9
1944	66,040	54,630	53,960	670	1.2
1945	65,290	53,860	52,820	1,040	1.9
1946	60,970	57,520	55,250	2,270	3.9
1947	61,758	60,168	58,027	2,142	3.6
1948	62,898	61,442	59,378	2,064	3.4
1949	63,721	62,105	58,710	3,395	5.5
1950	64,739	63,099	59,957	3,142	5.0
1951	65,984	62,884	61,005	1,873	3.0
1952	66,576	62,966	61,293	1,673	2.7
1953	66,965	63,417	61,894	1,523	2.4

Source: U. S. Bureau of Census, Current Population Reports, No. 2, pp. 11-17, Bureau of Labor Statistics, Bulletin No. 1171, p. 11, Sept., 1954, The Economic Almanac, 1953-54, pp. 426-27.

[1] Total labor force includes civilian labor force and the Armed Forces.

until 1953. This reflected not only the buildup of the Armed Forces and the expansion of defense production, but also continued growth of the civilian economy. As a result, unemployment for the year 1953 averaged lower than in any year since the end of World War II. In 1953, the labor force (including the Armed Forces) totaled about 67 million, of whom nearly 63-1/2 million were in the civilian labor force. Of the latter group, almost 62 million were employed and 1-1/2 million were unemployed. (See Table 5 and Chart 5.)

Machines do undoubtedly displace men; but new inventions also create jobs. With continually increasing productivity and a decline in the unemployment rate, it appears as though new inventions and new industries will absorb the unemployed. Only in recent decades have developments in television, plastics, prefabricated houses, air conditioning, and synthetics opened the way for new employment opportunities.

The opinion among economists today is that the effects of the machine and technology have both a short-term and a long-term aspect(4). There is no

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(4) P. H. Casselman, Economics of Employment and Unemployment (Public Affairs Press, Washington, D. C., 1955, p. 33).

doubt that the introduction of new machines in the short run may cause a displacement of employees in the particular plant and as a consequence may cause temporary unemployment. However, these dislocated employees can be expected ultimately to find jobs elsewhere which brings us to the long-term aspect of the problem.

The consensus of opinion among economists is that in the long run, technical improvements create more jobs than they displace. The outstanding example, of course, is that of the automobile industry. One result of the long-run effect of improved technology on working hours appears certain to follow. In the long run unemployment is bound to result unless improved technology is accompanied by a shortening of working hours.

Wages and Costs.

Mechanization serves labor by helping the worker to produce more which makes it possible for him to earn higher wages. In 1914 the average factory wage in 25 major manufacturing industries, according to

the National Industrial Conference Board, was about 25 cents per hour. By 1936 the average hourly wage had risen to 62 cents. Working hours declined from 51.5 per week in 1914 to about 39 in 1936, so that weekly earnings were $12.68 in the first case and about $25.00 in the second(5). Wage rates have continued to rise over the past half century. Production workers in manufacturing in 1954 grossed $70.00 a week for 40 hours of work. That figure may be compared with $10.00 for 50 hours before World War I, $25.00 for 44 hours in 1929, and $24.00 for 38 hours in 1939(6).

The decline in working hours has prevented weekly earnings from rising in proportion to the increase in hourly earnings. The following table reveals the long upward surge in wages over the past half century, accompanied by a reduction of 10 hours or more in the work week. Average weekly earnings increased from $9.84 in 1909 to $71.86 in 1954, an increase of

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(5) National Industrial Conference Board, "Wages, Hours, and Employment in the U. S., 1914-1936," (Table 2, p. 44, 1938).

(6) National Industrial Conference Board, "Prices, Costs, and Wages" (May, 1954, p. 24).

Table 6. Hours and Earnings of Production and Related Workers in All Manufacturing Industries, 1909-1954

Year	Average Hourly Earnings	Average Weekly Earnings	Average Weekly Hours
1909	$0.193	$ 9.84	51.0
1914	0.223	11.01	49.4
1919	0.477	22.08	46.3
1924	0.547	23.93	43.7
1929	0.566	25.03	44.2
1934	0.633	23.86	37.7
1939	1.019	46.08	45.2
1949	1.401	54.92	39.2
1954	1.810	71.86	39.7

Source: The Handbook of Basic Economic Statistics, Washington, D. C., January, 1956, pp. 24-25.

$62.02 over the 45-year period. At the same time, average hourly earnings had risen from 19 cents in 1909 to $1.81 in 1954. Weekly hours declined from 51 hours in 1909 to 39.7 hours in 1954. This is a reduction of 11.3 hours over the period. (See Table 6.) Had it not been for increased production

made possible by technological advance, the reduction in the work week would have greatly lowered the American standard of living.

Statistics are not available to make a similar comparison of wages to productive power of workers in other occupations. However, science and technology have affected the productivity of workers in many occupations besides manufacturing, and it seems reasonable to believe that wages bear the same close relationship to productivity in other lines as in manufacturing. Technology makes itself felt more readily in manufacturing than in agriculture because the market for manufactured products is more elastic. An important factor in the shift of population from farms to industrial centers during the past generation was the higher wages paid in the manufacturing industries. Agriculture has not offered the opportunity for expansion of production and employment in the past which the manufacturing industries have enjoyed.

Labor costs are a dominant factor in total manufacturing costs, and also in the prices at which manufacturers' output can be sold. Unit labor cost is the ratio of payrolls to production. Payrolls,

however, are the product of total man-hours times average hourly earnings. Production is the product of total man-hours times output per man-hour. It follows that the trend in unit labor cost is determined by the relative movements of average hourly earnings and output per man-hour.

Productivity has supported rising standards of living even while hours of work were being reduced. Gains in productivity have been most striking in the manufacturing industries. Over the last half century, output per man-hour has increased at an average annual rate of 2.5 per cent to 3.0 per cent, although there have been ups and downs from year to year. Hourly earnings continued to move upward in the period following World War I, and earnings were more than offset by improvements in output per man-hour, so that unit labor cost declined.

Great advances are being made not only in mechanization of production, but in the design and cost of machines themselves. An example recently given by the Automobile Manufacturers Association illustrates the point. In 1912 it took 162 machines to finish the four flat surfaces of 108 cylinder heads an hour.

By 1946, the same result was achieved from six machines. In 1953 these six machines were replaced by one huge horizontal machine. From 1912 to 1953 total investment in needed machines dropped from $243,000 to $230,000.

The advance of technical improvements has given us new commodities and services; it has increased wages; it has practically eliminated the need for child labor; it has increased employment opportunities; and it has reduced the work week.

Technology and the Standard of Living.

Production no longer depends upon the spontaneous effort of the individual worker. Personal human effort and individual initiative have, to a great extent, given way to technological science of the present day. As a result, man's relation to the means of production has been fundamentally altered.

Shorter hours and higher pay in American industry have resulted from the application of labor-saving machinery and improved production methods. The American worker, as a result of this advancement, has been

able to produce greater quantities of goods in less time than workers of any other country.

The standard of living is determined by the regularity of employment and by the wage or salary received, relative to prices charged for the necessities of life(7). Of course, the number of hours a worker is required to spend at his job is also a factor in the standard of living. The basic material elements in standards of living continue to be food, shelter, clothing, and fuel. The cultural elements are related to schools, churches, libraries, museums, and theaters.

Through increased productivity, higher wages and better goods at lower prices, the demands of food and other subsistence items upon the pay envelope have been greatly reduced. Within less than the average life span of an individual, there has been a threefold increase in the percentage of the wage-earner's budget that is available for travel, education, better

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(7) M. L. Fledderus, Technology and Livelihood (Russell Sage Foundation, N. Y., 1944, p. 221).

medical care, consumers goods, amusements, and other optional expenditures(8).

Nearly half of the people today are members of families with incomes of $5,000 or more a year, despite high taxes and high prices(9). Millions of people enjoy incomes far above what they expected a few years ago. Today, for example, 23 million families are receiving an income of $5,000 or more a year in contrast to 15 years ago when only 2.1 million families were in that group(10). There has been a sharp upgrading of income levels even though prices and taxes are higher. The income of the average family in the United States has climbed from $2,210 a year to $5,520 a year, more than double since 1941. The standard of living has increased 25 per cent.

The average factory worker today earns $2.00 an hour and makes $81.00 a week. Fifteen years ago,

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(8) National Industrial Conference Board, "Productivity" (N. Y., May, 1946, p. 26).

(9) Economic Report of the President, January, 1957 (Table D-7, p. 106).

(10) Department of Labor, As Reported in U. S. News and World Report (October, 1956, p. 27).

average hourly earnings were 72.9 cents an hour and weekly pay only $29.58. Today, 29.3 million American families own their homes as compared with 21.3 million in 1947. The American home is equipped with all kinds of mechanical devices that make for easier living. Tasks of housekeeping are eased by automatic furnaces, automatic refrigerators, electric dishwashers, and air conditioners.

High and rising incomes give people the money they need to support the expanding market for goods. Most American families can enjoy the good things of life. Federal and state income taxes have tended to level down the incomes of the wealthy. At the same time, widening employment and higher wages and salaries have brought higher levels of living to the bulk of American families.

With the use of science and technology the variety, quantity, and quality of goods have been vastly increased, and there is no evidence that there is an end to the road of progress. The American standard of living depends on technological advance.

Chapter VI

THE EMPLOYER'S POSITION RELATIVE TO A SHORTER WORK PERIOD

Generally speaking, employers of labor are far from being convinced of the social and economic advantages of the shorter workday or work week. Some employers have recognized the advantages of reduced hours of labor and have voluntarily introduced the shorter working day and the shorter working week. However, in most cases some kind of influence has been necessary. Those who oppose a shorter work period do so for a number of different reasons. Many insist that such a step would mean a decrease in the productive capacity of their establishments. This would normally result in an increase in labor costs and general production costs, which would be reflected in higher prices to the consumer.

Some employers state that an increase in leisure time resulting from the shorter workday would mean an increase in idleness and intemperance. They contend that there is no assurance that the wage-earner would make proper use of the opportunities for greater social, cultural, and spiritual development. Employers

in many cases point out the effect of the shorter work-day upon the problem of unemployment. They argue that a reduction of hours of labor would not provide more work but simply cause a wider distribution of the amount of work already available. It should be mentioned, however, that the profit margin is of prime importance to the employer.

The Margin of Profits.

Employers are enterprisers who use machine-hours and man-hours to process raw materials and create a product which they hope to sell at a profit. They try to sell at volumes and prices which will give them what they believe to be at least "fair" margins. In order for the employers to preserve their profits they must reduce costs; this is done either by lowering wages and other costs, or by increasing labor or machine productivity. It should be mentioned that in this analysis there is a lack of comprehensive factual material, so that any conclusions must be tentative and more or less theoretical.

The introduction of shorter hours for any occupational group in any section of the country would at

first affect only the members of that group, until the result of greater leisure caused other occupational areas to demand shorter hours also. Assume that the number of hours a given group is willing to work to be six per man per day and that a national law had been passed so that each man is able to work only that length of time. The total number of man-hours available to employers would undoubtedly be less than under an eight-hour day. The supply of labor would be reduced 25 per cent. The employers demand for labor must be considered at this point. The total amount of their demand for man-hours needed depends on the estimated purchasing power of the market, and the efficiency of labor relative to machinery. Back of the whole plan lies their notion as to how high profits should be. They must keep labor and other costs at a level which will permit them to realize adequate profits.

If a national law forced employers to reduce working hours from eight to six, they could do a number of things to preserve profits. They might maintain daily wages in some industries and operate their machines more rapidly, so that with 25 per cent fewer man-hours and machine-hours the same daily output would be

maintained. It would not be necessary to employ additional workers in this case, since unit labor and machine costs would be the same unless the machinery depreciated faster.

Employers might reduce wages 25 per cent, if they were not able to operate machinery more rapidly than before. This would make unit labor costs the same even though daily output were less by 25 per cent. Machine costs would be higher in this case, but the decline in output would permit higher selling prices. If workers would produce as much in six as in eight hours by increasing their own efforts, the selling prices of commodities could be reduced without endangering profits. Employers might decide to use more automatic machinery and fewer man-hours whenever it appeared that the saving in labor costs was more than the increase in machine costs. Employers cannot pay the same daily wages to each worker during the shorter day as they did to those working the longer day, and still make the same margin of profits.

A reduction in hours definitely affects employers unfavorably when costs are raised and no offsetting advantages result. However, it is usually found that

offsetting advantages do occur. It has been pointed out that a decrease in hours does not necessarily decrease production. In fact, in most cases production has increased. It has been distinctly shown that total productivity has continued to increase even though hours have been reduced. Of course, there are instances where industries experienced a temporary decline in output. If there is no gain in productivity per man, higher prices will result and cause sales to fall off. This will lessen profits and lead employers to curtail production and lay off men. Certainly, any reduction in hours will not be accompanied by a proportionate decline in production, since the least efficient hours will be the first to be reduced.

It is entirely possible that in some cases profits would not be reduced even though daily output were to fall and labor costs rise. Where there is a partial monopoly and the demand for the product is inelastic, a higher selling price would not necessarily cause an appreciable decline in sales. The higher selling price would compensate for higher labor cost and profits would be practically unchanged.

It would appear that profit margins depend more on the rise in unit labor costs and increases in prices than upon changes in working hours. In some industries the 1956 rise in prices matched or more than matched advancing costs; but in others costs rose relative to prices, and profit margins fell. The reduction of profit margins in 1956 was especially noticeable in the motor vehicle, lumber, stone, clay, glass, and electrical machinery industries(1). This cost-price relationship seems to be the most important determinant of profit margins.

Productivity and Its Reflection Upon Prices and Costs.

Employers insist that unless wages are reduced proportionately with hours, the result is certain to be an increase in production costs and higher prices for the consumer. Increased labor cost may either be reflected in the price field, or employers may substitute machinery for labor to a much greater degree than before.

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(1) Economic Report of the President (U. S. Government Printing Office, Washington, D. C., January, 1957, p. 35).

With regard to labor costs they argue that the worker always wants the same daily wage for a shorter workday. As a result, the prices of goods to consumer would have to be higher which would tend to reduce sales and lessen profits.

Whether labor costs increase when hours are shortened depends upon the amount produced. Workers may produce as much, more, or less than they did in the longer working period. If workers turn out more or as much in shorter hours as formerly, then there is no increase in labor costs per unit of output. There would be, however, an increase in machine costs since machines would be operating for less time. When output is less in the shorter work period than before, labor and machine costs may both rise. The effect, therefore, would be a lessening of profits unless higher prices were charged. It has been pointed out that prices could not be raised in a competitive industry except in the case where all producers are confronted with shorter hours. Prices could not be very well raised where shorter hours prevailed in only one community.

The effect of shorter work periods on the volume of production depends largely upon whether or not additional workers are employed to increase the rate of production per hour enough to obtain nearly the same output in the shorter work period as in the longer work period. The plant may be kept in operation as long per week as before by increasing the number of shifts. If hours of a plant operation are reduced from an average of about 40 to 36 or 30, the volume of output may decline somewhat although it does not necessarily follow. Production may continue to increase in some cases even though there is a substantial reduction in hours.

When the volume of production is curtailed, however, costs will tend to increase. Any effect on costs resulting from the introduction of shorter work periods would naturally be reflected in prices. When costs are increased appreciably, prices will tend to increase also. A rise in price tends to limit the market for a commodity. With any given price there is likely to be a group of buyers that are just able to afford to purchase the commodity. If the price increases, this group will withdraw from the market.

Increased productivity has marked America's material progress for the past century. We have foregone a part of the potential increase in total output that steadily increasing productivity has made possible in order to enjoy a shorter workday. Shorter hours are the result of increased labor productivity. Experience during the war showed that the tempo of work in today's industry would probably not permit anything like a 50-hour week. In order to benefit from the increased output per man-hour we have accepted part of the gains in the form of shorter working hours and more leisure. There is every reason to believe that, with further advances in productivity, this trend will continue toward more leisure as well as more goods.

Apart from cyclical variations, the long-run tendency has been toward a steady decline in the length of the work week. This is due partly to the shift of workers from agriculture, with its longer working day, to industrial and commercial pursuits. This persistent decline in working hours over the past several decades became possible through steady gains in production.

As was indicated earlier, reductions in the length of the working day may increase the hourly output of workers and may, depending on the circumstances, cause no decline in total daily output. If the workers' output increases in proportion to the decrease in hours, total costs per unit of output are not increased by shorter hours accompanied by the same daily wage. The workers' daily output and daily wage remain the same. With the same daily wage and daily output per worker, shorter hours would presumably have no effect upon the firm's payroll, profits, or selling prices. If output per hour failed to increase in proportion to the decline in hours, it is still possible that labor costs per unit of output would not increase, for the decline in daily output per worker might be balanced by a reduction in breakage, sickness, and accidents due to shorter hours. If output expanded more than in proportion to the decrease in hours, a greater quantity would be produced each day by the same labor force and total costs per unit of output would be decreased.

It is unlikely that a shorter workday of week would lead to the substitution of machinery for labor, the displacement of men by machines in the firm or

industry[2]. Shorter hours tend to increase capital costs per unit of output with a single shift, because equipment is less fully used during a year when it is operated fewer hours each day. A firm would require more machines to produce the same volume of output in a year, under these circumstances. This may explain why labor unions are especially interested in gaining increased wages through reduced hours. They tend to reduce the possibility of displacement of men by machines in the industry, for capital costs per unit of output may be increased along with labor costs.

The shorter workday may cause a change from a single to double shift in the industry, so that the equipment is operated more hours a day. Capital costs per unit of output may decrease and offset the increased labor costs, when daily wages per worker remain the same while daily output per worker is reduced. In that event, total costs per unit of output would remain the same as before and so, presumably, would the price of the product.

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(2) Richard A. Lester, Economics of Labor (The Macmillan Company, N. Y., 1951, p. 358).

Labor costs are a dominant factor in considering the costs to the employer in reducing standard working hours. The costs to the employer will differ from one type of employment to another, depending on such factors as the average hourly wage, fringe benefits based on the number of hours worked, and whether or not there are shifts. For example, if hours were reduced to 38 in a firm where the average hourly wage is $2.00 and the average work week is 40 hours, it would take an 11-cent-an-hour wage increase to maintain weekly earnings of $80.00. If hours were reduced to 35, it would take a 29-cent-an-hour-wage increase to maintaining earnings of $80.00 per week. In the same firm, if hours were reduced to 30, a 67-cent-an-hour wage increase would be necessary to maintain weekly earnings of $80.00.

Other increases in costs may be involved in changes in premium pay, fringe benefit payments, and in shift arrangements. Some of these increases in production costs to the employer would probably be offset by a reduction in overhead costs.

The increase in wage costs due to a reduction of working hours tends to be offset by rising output per

man-hour of work. There is no reason to believe, as some employers claim, that reduced working hours will halt the rise in man-hour output or slow down its increase(3). The constant pressure by unions for wage increases and reduced working hours are forcing management to keep unit production cost from increasing.

Wages and Employment.

The question of whether or not a reduction in hours increases employment has come most sharply into conflict between capital and labor. The precise relationship by which a reduction in hours would increase employment has assumed varying forms in labor's argument over the years. That it would decrease unemployment has remained the contention of labor philosophy. Employers are naturally concerned over whether or not they will have to pay higher wages when hours are reduced, and of the effects of shorter hours on employment.

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(3) Monthly Labor Review (Volume 79, November, 1956, p. 1275).

There are two viewpoints which should be examined with regard to a reduction in hours of work per day or per week as a remedy for unemployment. First is the effect of a reduction in hours without a change in the basic wage rate, so that workers previously employed now receive fewer hours of work and correspondingly reduced earnings. It is obvious that jobs can be provided for the unemployed if employed workers are willing to reduce their hours and sacrifice their pay. Such a plan would involve a general reduction in the standard of living for all employer workers. Nevertheless, the basic idea of decreasing hours far enough to provide work for all is an important element in union thinking regarding technological change.

The fact that basic wage rates remain unchanged does not indicate that unit labor costs will likewise remain unchanged. Employers will have to add new workers who will require training and who may be less skilled than those already employed, in the efficiency of labor. Even if labor costs do not change, capital costs per unit of output will be increased in those plants which operate fewer hours per week after the shorter hours program is inaugurated. When there are

no compensatory wage adjustments, the earnings of those formerly employed full time will be reduced.

The second viewpoint is the effect of reducing hours with compensatory increases in basic rates so that earnings for reduced working time remain undiminished. The program of shorter hours is unacceptable to labor unless it is accompanied by compensating wage increases so that labor income is maintained. It seems likely that the reduction in hours must be substantially greater than the percentage increase in hourly wage rates, if the immediate effect of decreasing hours is not to increase the volume of unemployment.

As explained earlier, the effect of shorter hours on employment depends upon the percentage reduction in hours and the percentage increase in wages times the elasticity of demand for labor. The elasticity of demand for labor has been defined as "the percentage change in quantity of labor hired divided by the corresponding percentage change in wage rates." The following figures give an explanation of the elasticity of demand for labor.

Hours of Labor		Wages Per hour		Total
50	x	$1.00	=	$50.00
100	x	0.50	=	50.00
200	x	0.25	=	50.00

The above figures show that a reduction of wages from $1.00 per hour to 50 cents per hour to 25 cents per hour produces no change in total wages. This is termed unitary elasticity. In every case the total wage bill remains unchanged. A decrease in wages will be accompanied by an increase in the number employed. However, if decreasing wages from $1.00 to 50 cents per hour causes the demand for labor to increase beyond 100 hours of labor, demand is said to be elastic. The percentage change in the amount of labor hired is larger than the percentage change in wages. If a decrease in wages from $1.00 per hour to 50 cents per hour causes the demand for labor to be less than 100 hours, the demand is said to be inelastic.

Some discussion was made earlier in Chapter III with regard to wage adjustments. The reasoning set forth in that chapter applies with equal force here. When wages are increased so that weekly earnings remain

the same under a shorter work week, labor costs per unit of product would increase unless productivity is increased in proportion to the reduction in hours. For example, if wages are increased 25 per cent when weekly hours are reduced from 40 to 30 and if productivity increases 25 per cent with this reduction in hours, labor costs per unit of product would be nearly the same. In this case, wages and productivity are just proportional to the reduction in hours. If, however, productivity is assumed to have increased only 12.5 per cent and hourly rates are increased 25 per cent when hours are reduced from 40 to 30, labor costs per unit of product would be greater.

Productivity may increase considerably more than 25 per cent when hourly rates are increased 25 per cent with the same reduction in hours. In this case, labor costs per unit would be less than they were before. If hours were reduced to 30 in a firm where the average hourly wage is $2.00 and the average work week is 40 hours, it would take a 67-cent-an-hour wage increase to maintain weekly earnings of $80.00. The costs to employers may be viewed as similar to the costs involved in wage increases. The rise in wage

costs, however, due to a reduction of working hours tends to be offset by rising output per man-hour of work.

The effects of wages on the level of employment is still a lively controversial issue(4). Workers will naturally move into areas in which wages are higher, assuming the other job factors are equal. The length of the standard work week will affect the extent of employment and unemployment either on a short-run or long-run basis. If hours are reduced and no corresponding change in productivity takes place, it is assumed that more people will be holding jobs than if longer hours were maintained. The share-the-work campaign was based on this assumption. In the long run reduced working hours are a natural result of increased productivity and of an improved standard of living.

Employer action is one of the most important single factors determining employment, since it is employers who operate the plants and other

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(4) Paul H. Casselman, Economics of Employment and Unemployment (Public Affairs Press, Washington, D. C., 1955, p. 32).

establishments which give employment. In order to compete with other firms an employer may be compelled to introduce a new process or a new machine which may throw a considerable number of employees out of work. Therefore, under normal circumstances employers can do little to relieve the immediate effects of technological changes on employment.

It would be foolish to pretend that there will not be many jobs which technology will abolish. Whether or not it creates, directly or indirectly, as many jobs as it wipes out no one can know. Social shock absorbers, such as severance pay, the guaranteed annual wage, unemployment pay, and careful timing of labor-saving innovations are likely to receive increased attention as technology spreads. It is important to recognize clearly at least two types of cost incurred by the displaced worker(5):

(1) loss of income while looking for a new job; and

(2) loss of equities built up on the old job in the form of seniority, pension rights, vacation rights,

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(5) Monthly Labor Review (Vol. 28, February, 1955, p. 165).

and so on. Unemployment benefits of one kind or another are clearly a way of approaching the first type of loss. One important feature of new machinery is that it takes time to install. Equipment must be designed and manufactured, and men must be hired or trained for new occupations. All of this takes time, not days or weeks, but months and years. Time, of course, presents a major opportunity which management and labor can use to good advantage in solving their problems of displacement and unemployment.

In considering the problem of the displaced and unemployed worker, it is not so important to ask why he lost his old job as it is to ask how much trouble he has in getting a new one, and what kind of new one he gets.

The answer to technological change appears to be in smoothing its transitions and cushioning the shocks that attend it. This means the establishment of severance pay, retraining of skills, and reorganization of work schedules. These are the social costs that industry will have to bear in order to avoid the wasting of human resources.

The Adverse Effects of Leisure.

Is it possible to have too much leisure, and is such an excess harmful? Employers of labor in general are inclined to believe that it is bad for their workmen to have too much leisure. The arguments which they present in support of their postition are developed along the following lines.

In the first place, it is stated that the hours of work today are not long enough to cause excessive fatigue. That is a statement employers as a group have been making ever since the controversy over shorter hours originated. Even in days when men worked 12 hours per day it was maintained that the pace was leisurely, and that it did not cause excessive fatigue(6). There were many investigators, however, who held that such was not the case, and as a result of their efforts hours were gradually reduced.

Today labor still claims, but less strenuously, that their work is fatiguing. Even though men spend

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(6) Henry Gavens, Shorter Hours - How? When? (Ransdell Inc., N. Y., 1938, p. 93).

less time at their places of employment, labor argues that they have to work more rapidly. They claim also that their tasks are more monotonous which causes as much fatigue as they formerly experienced under longer hours.

Another reason employers oppose increased leisure is that their employees do not know how to use their leisure time wisely. Employers claim that laborers spend their idle time in drinking and other dissipating activities. On the other hand, there are people who maintain that the very reason why laborers spend so much of their time in drinking is because the fatiguing or tiring hours which they work leave them unfit for anything else. They have little time or energy left to cultivate any interest in their communities.

The chief objection to the amount of leisure which people may have is their desire for goods and services. If leisure is increased, the amount of goods which can be turned out is generally reduced. Usually, at any given time, there may be an increase of leisure or an increase of goods, but not both unless production increases when hours are reduced.

When leisure is increased, however, demand for goods which are used in leisure time activities may also be increased. This may result in individual inclination to go back to work again in order to provide these goods. Thus, somewhat of a check arises on the desire for leisure. What is the use of having free time, asks the individual, if he has no money to spend? When a person devotes an increased amount of time to leisure he has less time available for the production of goods. This means that usually in the short run an increase in leisure involves a sacrifice in material things.

Workers must decide the question of whether or not they will have more goods or more leisure. At any given time they usually cannot have both. One is a limitation on the other. Leisure is required not only to provide for recuperation from work, but also to allow time for self-improvement, and the enjoyment of luxuries which improved technologies of production have made possible. These luxuries may consist of idle hours as well as material goods.

Chapter VII

THE ROLE OF ORGANIZED LABOR AND ITS DEMAND FOR SHORTER HOURS

One of the most important factors which has acted to bring about a reduction in hours has been the organization of labor into unions powerful enough to support such demands. They deserve much credit for the more humane hours which have prevailed. A victory by one union in one locality makes it that much easier for another elsewhere to win its demands. The labor movement has been one of the powerful forces striving for shorter working hours, higher wages, full employment measures, all of which are separately considered in this chapter.

The man who works long hours is more susceptible to fatigue and has little time for self-improvement. However, the individual who works shorter hours does not exhaust his energy. He has time to enjoy books, movies, and other forms of entertainment. In short, he becomes a human being with intellectual desires and cravings. This change makes him a more valuable worker. Since his standard of living has changed, he demands higher wages. Men and women will not continue

indefinitely to work for wages that force them to live below their concepts of what constitutes adequate standards of living.

This is why the shorter work week is one of the primary and fundamental demands of organized labor. The discussion that follows is devoted to an analysis of the arguments which have been advanced by organized labor in support of shorter hours.

Citizenship and Cultural Arguments.

The first argument of American labor unions for shorter hours was that workers must be competent citizens. The "sun-to-sun" working day was incompatible with competent citizenship, since workers were precluded from the leisure necessary for consideration of public affairs. Only by an increase in leisure could a higher social, cultural, and moral plane of living be attained.

The "cultural-and-citizenship" argument has been overshadowed to some extent by arguments pertaining to the relationship of hours to productivity, wages, and the volume of employment. However, it has never

been disregarded by organized labor, and it will no doubt continue to play an important part in labor's consideration of the length of the work week. Underlying the labor philosophy is a basic fact that has become increasingly true as our society has become more industrialized. The fact is that the time a man or woman is able to live in the broader sense of the word live is the time spent away from his or her place of gainful employment. Standardization of processes, subdivision of labor, and routine operations cause the individual worker, in many cases, to appear to be relatively unimportant in a highly complex organization. As a result, workers have continued to express the feeling that their opportunities for social, cultural, family, and religious life can be protected only by limitation upon hours of work.

If hours of work are shortened, employees will have more time to read and to inform themselves as to national and world events. Labor contends that shorter hours would create a greater spirit in the workingman as well as making him a better citizen. Workers will have more time for family, for town, for church or self-schooling, and for many other

activities which are essential to good citizenship. Long hours are incompatible with the development of competent citizenship and cultural advancement. Workers are already enjoying social and cultural advantages as a result of shorter hours. For example, mechanized homes, precooked and frozen foods, nursery schools, along with shorter working hours have made it easier for the active mother to hold a job.

Public libraries are crowded. In 1950 more dollars were spent for books than in 1940[1]. Americans pay more in a year for admissions to symphony concerts than for admissions to ball games. Attendance at symphony concerts increased 60 per cent between 1941 and 1951. The number of cities providing regular classical concerts increased from 1000 to 2100 between 1940 and 1951, while in the same period the number of symphony orchestras in the United States grew from 111 to 200. Also, 85 per cent more was spent on the commercial types of theater, opera, and dance in 1950 than in 1940.

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(1) George Soule, Time for Living (Viking Press, N. Y., 1955, p. 134).

The young people today, whether by choice or not, spend more time in school or college which years ago they would have spent on paid jobs. Accounting for both public and private institutions, the Census Bureau estimates that in 1954 there were 1.5 million in kindergarten, 24.4 million in elementary school, 7.7 million in high school, and 2.4 million in college. One-fifth of those who finish high school go on to some form of higher education.

Aside from those in educational institutions at full time, three million persons took adult education courses in 6000 public schools throughout the country, and many more in addition were enrolled in extension or general education courses provided by colleges and universities. According to indications of a sample study presented to the Adult Education Association in 1954, the most common motive of these adult students was to improve professional skills. The next most important reason was cultural advancement. The fact at this point is that education is a major occupation for a great part of the population in the United States. The 36 million counted by the Census Bureau constitute a number larger than half the approximate

70 million total labor force[2] -- all those engaged in work, whether as employees, self-employed, or employers.

An eight-hour day and a 40-hour week would seem to leave sufficient time for study and self-development for most workers. However, in industries requiring strenuous physical exertion or sustained concentration, it is possible that a reduction in hours would produce greater interest in education and self-improvement. The desire for leisure is strong, particularly where work is disagreeable and monotonous. It should be mentioned, however, that whether or not the worker uses his time to good advantage is often more closely related to individual inclination and initiative than to the length of the work week. Labor, on the contrary, has found that added leisure is beneficial from a social point of view, not only because of its effects on physical well-being, but because it has led to cultural advancement and better citizenship.

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(2) Economic Indicators, U. S. Government Printing Office, Washington, D. C., October, 1956.

Fuller Employment and Higher Wages Argument.

The idea that shorter hours are an important factor in increasing labor incomes and reducing the number of the unemployed appeared years ago in the "lump of work" idea. This concept held that there is a certain amount of work to be done, regardless of the costs of production, and that, therefore, more persons can be employed and total labor income increased if each worker puts in fewer hours. As early as 1852 the call for a Massachusetts Ten-hour convention declared that if hours were shortened, more jobs would be available, and that those employed would also be paid higher wages(3). From that time on, the idea has continued to play a dominant part in the thinking of the American labor movement.

The International Labor Office, in its study entitled, Public Investment and Full Employment, gives the following definition of full employment: "Full employment exists when every adult who wants employment can obtain it at current wage rates and working hours: when working hours are no shorter than the

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(3) John R. Commons, History of Labor in the U. S. (The Macmillan Company, N. Y., Vol. 1, 1918, p. 546, and Vol. 3, 1918, p. 98).

workers themselves (collectively) prefer at current wage rates: when wage rates are not so low as to constitute exploitation of workers; and when a worker who loses his job through contraction of his employer's scale of operations could find new employment (subject to the above conditions) within a short period not exceeding (say) three months. Because of frictions, these definitions would be compatible with actual unemployment of three to four per cent of the labor force"(4).

The term "full employment," therefore, does not mean literally no unemployment. That is to say, it does not mean that every man and woman in the country who is fit and free for work is employed productively on every day of his or her working life. Full employment simply means that unemployment is reduced to short intervals of standing by, with the certainty that very soon one will be wanted in one's old job again or will be wanted in a new job that is within one's ability.

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(4) International Labor Office, Public Investment and Full Employment (Montreal, 1946, p. 346).

The length of the standard work week will affect the extent of employment and unemployment either on a short-run or long-run basis. If hours are reduced and no corresponding change in productivity takes place, it is assumed that more people will be holding jobs than if longer hours were maintained. The share-the-work campaign which was prevalent during the depression of the 1930's was based on this assumption. In the long run reduced working hours have resulted from increased productivity.

Average hourly earnings of production workers in all manufacturing establishments have reached the two dollar mark for the first time(5). Earnings crossed the one dollar line in January, 1944. Thus, factory workers' hourly earnings have doubled in a little more than 12 years. Previously, and in a large part because of the depression of the 1930's, it took 24 years (1920 to 1944) to double from 50 cents to a dollar an hour. The rapid advance to the two dollar level is more startling when today's work week is compared with 1944. At that time, the average work week during

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(5) Employment and Earnings (U. S. Department of Labor, Vol. 3, October, 1956, p. 3).

the year was five hours longer -- 45 hours compared with 40 currently -- and more hours were worked at overtime rates.

Of the nearly 13 million production workers in manufacturing throughout the country, about seven million are in industries where gross average hourly earnings are currently two dollars or more. Within each of three industry groups, petroleum, ordnance, and primary metals, all major component industries which form the group have average hourly earnings of two dollars or more at the present time. Moreover, in six industry groups, primary metals, machinery, transportation equipment, printing, ordnance, and petroleum, comprising more than four and one-quarter million production workers, nine out of 10 workers are employed in industries here averages are currently two dollars or more. On the other hand, four industry groups, tobacco, textiles, lumber, and leather with more than two million production workers, have no sizable component industries in which the earnings have reached the two dollar mark. Before 1952, only a minor part of factory employment was in industries where hourly earnings averaged two dollars,

Table 7. Gross Average Hourly Earnings of Production Workers in Manufacturing, 1909-1956

Year	Gross Average Hourly Earnings	Year and Month	Gross Average Hourly Earnings
1909	$0.19	1943	$0.96
1914	0.22	1944	1.02
1919	0.48	1945	1.02
1920	0.56	1946	1.09
1921	0.52	1947	1.24
1922	0.49	1948	1.35
1923	0.52	1949	1.40
1924	0.55	1950	1.47
1925	0.55	1951	1.59
1926	0.55	1952	1.67
1927	0.55	1953	1.77
1928	0.56	1954	1.81
1929	0.57	1955	1.88
1930	0.55		
1931	0.52	Monthly	
1932	0.45	Data:	
1933	0.44	Jan.	1.93
1934	0.53	Feb.	1.93
1935	0.55	Mar.	1.95
1936	0.56	Apr.	1.96
1937	0.62	May	1.97
1938	0.63	June	1.97
1939	0.63	July	1.97
1940	0.66	Aug.	1.98
1941	0.73	Sept.	2.00
1942	0.85		

Source: Employment and Earnings (U. S. Department of Labor, Vol. 3, October, 1956, p. 3).

but within that year about one in 10 were in industries averaging that amount or more annually. By 1955, four out of every 10 factory workers were in industries where the average earnings had passed the two dollar mark. By the month of September, 1956, the rate had increased to slightly more than one out of two (52 per cent)[6]. Earnings in industry groups other than manufacturing reached the two dollar average earlier. Most workers in contract construction earned an annual average of more than two dollars an hour as early as 1951.

Standard working hours in the national economy have been reduced over a period of time, usually through the accumulated effects of reductions in an establishment, a company, an area-segment of an industry, or sometimes a national industry. Except for changes obtained through legislation, reductions in working hours have not been made even for major segments of the economy. Several areas of the economy where union attempts have been made to

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(6) Employment and Earnings (U. S. Department of Labor, October, 1956, p. 5).

stabilize employment opportunities can be seen by examining postwar employment trends. Most of these areas, at present, are in manufacturing, mining, and railroading, where technological changes have been rapid in recent years.

The failure of manufacturing employment, as a whole, to grow in recent years indicates the existence of employment difficulties in a number of industries. However, the reduction of working hours is not a cure-all solution for the difficulties faced by workers and unions in declining industries whose employees are being displaced by new production processes. Reduced working hours would tend to minimize these difficulties. Of course, the profit position of the companies in some industries would probably make it more difficult to obtain a reduction in working hours, than in industries whose employment difficulties are largely due to technological changes.

The textile industry is an example of an industry group in which technology has contributed to declining employment. In 1948, there were 1,280,000 production and maintenance workers employed in

textile-mill products plants. In 1953, employment was down to 1,090,000 and in 1955, to 982,000(7). Many other industries, such as men's and boys' clothing, women's apparel, and millinery indicated similar trends. In 1948, there were 147,000 production and maintenance workers in petroleum refining, 142,400 in 1953, and 132,000 in 1955. Production and maintenance employment rose substantially between 1948 and 1953, in the auto industry and even though there was a rise in output between 1953 and 1955, employment dropped in those years from 767,000 to 761,200.

It can be safely said that a further reduction of standard working hours will not take place necessarily in industries whose employment difficulties are greatest. It will depend, as well, on the policy decisions of each union, the collective bargaining strength, and the financial ability of the companies. Labor's demand for higher wages and more employment have been realized to a great extent in manufacturing

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(7) Monthly Labor Review (U. S. Department of Labor, November, 1956, p. 1274).

industries, at least. A further examination of facts dealing with employment trends and earnings will serve to illustrate this. For example, nonfarm employment rose to an all-time high of 52.1 million jobs in September, 1956, exceeding by 135,000 the previous record established in December, 1955. Factory employment, at 17.1 million, was 142,000 higher than a year before (September, 1955).

While employment was rising, the average work week of manufacturing production workers declined, and earnings of factory production workers reached all-time record levels. The factory work week in September, 1956, was 0.4 hour below the level of 1944, with most industries reporting declines over the year. Average hourly earnings for factory production workers reached the two dollar level for the first time, and average weekly earnings rose to a record $81.00, the first time weekly earnings passed the $80.00 mark. The average factory worker's pay in September, 1956, was $3.29 higher than a year ago, with every major industry group reporting a gain.

Labor and Productivity.

Labor productivity is closely related to productivity in general. Therefore, it is important to inquire what has been happening to total productivity in the United States. Since 1850, output per man-hour, measured in constant prices, has increased at the rate of about 18.2 per cent per decade(8). The 1850 worker, putting in nearly 70 hours a week, turned out in each hour of work less than 34 cents worth of goods -- in terms of what money would buy in 1950.

By 1900, productivity had more than doubled, rising to 75.5 cents per man-hour, while the next 50 years saw an even larger increase to an average of $1.94 per man-hour. Today's worker can enjoy a 40-hour week, and his family a high standard of living, because with modern power-driven equipment he can produce almost as much in 10 minutes as the 1850 worker could produce in an hour.

It was this great gain in productivity that enabled us in 1950 to turn out 25 times the volume

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(8) P. Davis and G. Matchett, Modern Labor Economics (Ronald Press Company, N. Y., 1954, p. 568).

of goods and services produced a century before. At the same time, the total input of labor, as measured by the aggregate of man-hours worked, was less than five times as large -- 127 billion man-hours compared with 27 billion man-hours(9). The work week during this period declined more than 40 per cent -- from 70 hours a week to 40 hours a week. The fact that less than five times as much effort can produce 25 times the volume of goods and services means that output per man-hour in 1950 was almost six times what it was in 1850.

An increase in output does not by itself bring a reduction in hours, but it does tend to make such a reduction possible without causing a decline in the standard of living. An increase in output makes it much more difficult for employers to oppose a shorter hour movement. The technological unemployment which tends to arise, at least for a temporary period, also stimulates the demand for a reduction in hours.

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(9) J. Frederic Dewhurst and Associates, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 902).

The output of the national economy in any year is obviously determined by the "work input," or total man-hours worked, and the productivity of labor, or average output per man-hour. Total man-hours worked during the year in turn depend upon the size of the labor force and the number actually at work, and average hours of work.

Output per man-hour refers to production per man-hour of work. It is a measure of the relationship between the volume of goods produced and one factor of input-labor time(10). It must be added, however, that it does not measure the specific contribution of labor, or of capital, or of any other factor of production. Changes in the ratio between output and man-hours of work does show the influence of many inter-related factors such as technical improvements, the skill and effort of the work force, the rate of operations, and the efficiency of management. A recent report made by the Bureau of Labor Statistics showed trends in output per man-hour for selected

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(10) Trends in Output Per Man-Hour, 1935-1955, Bureau of Labor Statistics, U. S. Department of Labor, Report No. 105, June, 1956, p. 2.

nonmanufacturing industries in the period 1947 through 1953. According to the report, physical output per man-hour in six of eight nonmanufacturing industries increased by amounts ranging from 0.4 per cent in anthracite mining to 29.0 per cent in bituminous-coal mining during this six-year period. In the remaining two industries, output declined 3.9 per cent per man-hour in the telephone industry and 4.4 per cent per employee in the telegraph industry. At the same time, output per man-hour in manufacturing as a whole increased 22.7 per cent(11). The year 1954 continued the general upward trend. In four of the eight industries* (anthracite and bituminous-coal mining, railroads, telephone), output per man-hour stood at the highest levels in history. Nonmanufacturing industries accounted for 32.3 million, or 67 per cent, of the 48.3 nonagricultural workers in 1954.

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(11) See Trends in Output Per Man-Hour and Man Hours Per Unit of Output-Manufacturing, 1939-1953, Bureau of Labor Statistics Report 100, and Monthly Labor Review, January, 1956, pp. 1 and 63.

* The other four industries are: copper, iron, lead and zinc ores mining, and telegraph industries.

No attempt is made here to analyze the causes and factors that have led to productivity change. The objective here is to present various data which show the great productive gains that have occurred over the past century, as well as in more recent years. Of more importance is the fact that labor's demand for reduced working hours has been, to a considerable degree, offset by increased productivity.

Further analysis of productive activity and output indicates the upward trend in production. The accompanying tables show indexes of production for the period 1939 through 1956. Indexes of production of selected manufactures are shown in Table 8. In September, 1956, most manufactures equaled or exceeded their August output. Primary metals production rose sharply above the August level. Output in September only equaled the August output in the lumber products, paper and printing, and the foods, beverages, and tobacco manufactures. All other manufactures exceeded their August output, as shown in Tables 8 and 9. In Table 10, the index of total industrial production is estimated at 144 in September, somewhat above the September index of 1955. Output in the durable

manufactures was greater than in the nondurable manufactures. The total index of durable and nondurable

Table 8. Indexes of Production of Selected Durable Manufactures, 1939-1956

(1947-1949 = 100)

Period	Primary Metals	Fabricated Metal	Machinery	Lumber and Products
1939	54	52	38	80
1947	103	103	103	101
1948	107	104	106	106
1949	90	93	93	93
1950	115	115	114	113
1951	126	122	130	113
1952	116	121	147	111
1953	132	136	160	118
1954	108	123	142	115
1955	140	134	155	127
1956: Jan.	148	136	164	128
Feb.	148	134	162	124
Mar.	145	132	162	121
Apr.	145	135	171	122
May	141	130	168	121
June	139	132	168	123
July	68	129	172	125
Aug.	124	133	175	128
Sept.	151	136	176	128

Source: Economic Indicators, Council of Economic Advisers, U. S. Government Printing Office, Washington, D. C., 1956, p. 17.

manufactures in September exceeded the total industrial production for that month.

It appears reasonable, however, to rely on overall measures of productivity in projecting trends rather

Table 9. Indexes of Production of Selected Nondurable Manufactures, 1939-1956
(1947-1949 = 100)

Period	Textiles and Apparel	Paper and Printing	Chemical and Petroleum	Foods, Beverages, and Tobacco
1939	80	66	49	65
1947	99	96	97	101
1948	103	103	103	100
1949	97	101	100	100
1950	110	114	118	103
1951	106	118	132	105
1952	105	118	133	106
1953	107	125	142	107
1954	100	125	142	106
1955	109	137	159	109
1956: Jan.	111	141	165	111
Feb.	112	140	166	112
Mar.	107	140	166	110
Apr.	108	143	167	112
May	107	142	169	110
June	106	143	168	111
July	106	144	167	110
Aug.	107	145	166	109
Sept.	108	145	167	109

Source: Economic Indicators, Council of Economic Advisers, U. S. Government Printing Office, Washington, D. C., 1956, p. 17.

than on indexes of productivity in specific industries or occupations, none of which can be considered

representative of the entire economy. It was shown earlier in this discussion that output per man-hour

Table 10. Indexes of Industrial Production, 1939-1956

(1947-1949 = 100)

Period	Total Industrial Production	Manufactures			Mineral
		Total	Durable	Non-durable	
1939	58	57	49	66	68
1947	100	100	101	99	100
1948	104	103	104	102	106
1949	97	97	95	99	94
1950	112	113	116	111	105
1951	120	121	128	114	115
1952	124	125	136	114	114
1953	134	136	153	118	116
1954	125	127	137	116	111
1955	139	141	155	126	122
1956: Jan.	143	145	160	129	131
Feb.	143	144	158	130	131
Mar.	141	142	156	127	130
Apr.	143	144	159	129	130
May	141	143	157	128	129
June	141	143	157	128	130
July	136	137	147	127	122
Aug.	142	143	159	128	128
Sept.	144	146	163	129	129

Source: Economic Indicators, Council of Economic Advisers, U. S. Government Printing Office, Washington, D. C., 1956, p. 16.

increased from 34 cents in 1850 to $1.94 in 1950. Thus, the productivity of labor was multiplied nearly six

times during the century. Projection of past trends of participation in the labor force by sex and age groups indicates an average total labor force of 72.5 million for 1960(12). Until the census of 1960 has been taken, of course, this estimate is wholly uncertain. Such an assumption about the future can never be more than a guess -- which the dictionary defines as "an opinion formed from evidence admittedly uncertain" -- even if it turns out to be correct. In the light of past experience, it is further assumed that unemployment will probably amount to nearly five per cent of the labor force. Average unemployment of close to five per cent would mean about 3.5 million unemployed out of the 72.5 million labor force in 1960. At a high level of activity in 1960, therefore, about 69 million would be employed. The average work week for the entire private* labor force

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(12) J. Frederic Dewhurst and Associates, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 37).

* The term "private" as used here denotes exclusion of government workers, who numbered 7.5 million, including the Armed Forces, in 1950.

is estimated to be roughly 37.5 hours in 1960. This decline is somewhat less than the average drop per decade since 1900. Since 1900 the average decline per decade has been about four hours. The steady decline of working time over the past several decades makes it reasonable to assume that the average work week will fall below 40 hours by 1960. A decline from 40 hours in 1950 to 37.5 hours in 1960 would represent a drop of 2.5 hours during the present decade. This estimate of average working time is for the "year as a whole." In other words, it takes into account the working time lost because of holidays, temporary plant shutdowns, part-time operation, and occasional days off. These losses make the actual work week shorter than the standard work week -- often by two or three hours, or more.

Another factor that tends to reduce the average number of hours worked per week for the year as a whole is the growing practice of including paid vacations in labor contracts. A two-week vacation with a standard 40-hour week means a loss of 80 work hours during the year -- an average of about 1.6 hours a week, or about four per cent of the standard 40-hour work week.

In 1950 there were 54 million persons working an average of 40 hours a week in private employment. This resulted in 112.3 billion man-hours of labor input in that year. Since national income produced by the private sector of the economy in 1950 amounted to $217.3 billion, net output per man-hour came to about $1.94.* How much productivity will increase during the 1950's is unknown. However, percentage increases from decade to decade suggests that it would be reasonable to expect an increase of about 25 per cent during the present decade, or approximately 2.3 per cent a year(13). On the basis of this assumption, the private national income that would be produced in 1960 can now be determined by simple arithmetic.

If net output (national income) per man-hour increases at the average rate of 2.3 per cent a year, it will rise by about 47 cents between 1950 and 1960 --

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(13) J. F. Dewhurst and Associates, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 42).

* No attempt is made to estimate productivity of government workers, who numbered 7.5 million, including the Armed Forces, in 1950.

from $1.93 to $2.40. The 1950 working force of 54 million, working 40 hours a week, actually produced a private national income of $217.3 billion. If the 1950 working force had put in 55 hours a week, total labor input would have amounted to 155 billion man-hours and private national income -- at the 1950 level of productivity -- to $299 billion, instead of $217 billion.

The difference of $82 billion between "potential" and actual national income might be regarded as the value of goods and services not consumed in 1950 in order to enjoy the shorter work week in that year. In other words, we have foregone a part of the potential increase in total output, that steadily increasing productivity has made possible, in order to enjoy a shorter work week.

More Leisure and the Demand for Goods.

A frequent union argument is that increased leisure, resulting from a reduction in working hours, would stimulate the demand for the products of industry. A laborer who is employed 12 hours a day would

not be a very good consumer for modern industry according to union thinking.

They argue that a longer working day or week means the worker will have less time to devote to his family, recreation, and other pursuits. It is understandable, therefore, why the average employee will work additional hours only if he is paid at a higher rate. On the other hand, a higher wage may make employees less willing to work additional hours. A higher wage rate may actually induce workers to curtail the amount of time they are willing to spend on the job. For example, suppose Mr. X has been working 40 hours a week as a carpenter at a wage rate of $1.50 an hour. Now, his union succeeds in obtaining successive wage increases which brings his wage up to $2.00 an hour or $80.00 for a 40-hour week. At this higher income, Mr. X may now find that he can afford to buy a new automobile or a set of golf clubs. Once he makes such purchases, he will want time to use them. Leisure time now becomes of increasing importance to him. As a result, he may seek union pressure to gain a reduction in hours of work. In other words, in the case of Mr. X, when wages have reached a certain level,

further increases in wages above that level will be accompanied by a reduction in the number of hours of work offered. Generally, whether workers will be willing to work longer hours at a higher rate of pay will depend upon the choice which each worker makes between leisure and income. Workers naturally strive to divide their time between wage earning and leisure in such a way as to earn more money but to work fewer hours.

It has been pointed out that over the past century workers have enjoyed a decline in working hours with more leisure and higher wages. Working time dropped more than 40 per cent -- from 70 hours a week to 40. At the same time, average hourly earnings of production workers were steadily increasing until they reached the two dollar mark for the first time in September, 1956.

Today's worker can enjoy a 40-hour week and a high standard of living because productivity has continued to increase along with higher wages over the years. Shorter hours have resulted from increased labor productivity. The tempo of work today is too rapid to permit us to work the 55-hour work week that

prevailed in 1910. Also, the leisure time left over after working nine hours a day six days a week would not permit the worker to enjoy the added goods and services he could afford to buy. In order to benefit from the increased output per man-hour we have accepted part of the gain in the form of shorter working hours and more leisure time. If a reduction in hours leads to decreased production, then unions in forming their demands must weigh the merits of leisure time against those of additional goods and services. However, there is every reason to expect that further advances in productivity will continue, which will mean also a continuance of the trend toward more leisure as well as more goods.

Chapter VIII

THE SOCIAL ASPECTS OF SHORTER HOURS OF WORK

Whether modern society will prefer shorter hours of work to additional income seems to depend upon the decision which is made between the relative worth of leisure to income. Progressive gains in productivity and levels of living appear to make this choice easier in favor of more leisure time. However, it is difficult to predict what work week industrial and other workers will choose in the future. A further reduction in working hours appears inevitable with continued gains being made by technology. Certainly, it is true that shorter hours will, for some time at least, facilitate the readjustment occasioned by displacement and technological unemployment.

Since 1900 the decrease in working time has been represented by a substitution of leisure for additional goods and services. This increased leisure accompanying the general reduction of the work week ranks high as a component of the level of living which has been achieved through economic progress in the last half century in this country. Leisure is a

characteristic feature of the economic growth that the nation has achieved.

As the title indicates, this chapter deals mainly with the social questions involved in shorter hours of work. What has happened to the social status of the American people while hours of work have been declining, and what is the outlook for the future? The discussion in this chapter centers around these and many other questions in considering the social implications of shorter hours.

Standards and Levels of Living.

Although hours of work have been reduced, the American worker has enjoyed higher standards and levels of living. The rise in the level of living of the wage-earning group as a whole has been sufficient to provide greater comfort, better health, and more participation in community life. Changes in standards of living within the past two decades have affected all groups of workers in the United States, but this discussion is limited to wage and clerical workers and their families, insofar as there are separate data for this group.

There has been a marked rise in the incomes of city workers in the United States since the late 1930's. Until recently, however, there has been no way to measure the change in their buying patterns. A special tabulation of the outlays of large-city wage earners and clerical workers in 1950 now makes it possible to compare their money disbursements in that year with those of employed workers studied in large cities in 1934 to 1936. Also, an evaluation can be made of this comparison in terms of changes in standards of living,* incomes, and employment patterns.

On the average, wage and clerical workers in urban and nonfarm areas in 1954 had total incomes with a buying power almost twice that of their corresponding numbers in 1939(1). Wage and clerical workers as a group, therefore, have been able to make

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(1) Monthly Labor Review, U. S. Department of Labor, Vol. 79, September, 1956, p. 1015.

* The distinction between standards and levels of living used here was first made by the Bureau of Labor Statistics. "Standards of living" was defined as "The ideas of the workers as to how they ought to live," and "Levels of living" as the actual conditions of living. See Monthly Labor Review, July, 1954, p. 796.

fundamental improvements in their levels of living. In addition, employed urban workers have gained more leisure by working fewer hours. Most of them now work only a five-day week and most of them receive at least one week's vacation with pay, with many receiving two or more weeks.

The increase in the incomes of wage and clerical workers since the late 1930's has resulted from strong interacting factors. On the average, 17 per cent of the labor force was unemployed or working on government relief projects in 1939. In the 1950's, unemployment has never exceeded an annual average of five per cent of the labor force and there have been no government relief projects. Also, the proportion of the population in the labor force was somewhat higher in the 1950's than in the 1930's. The demand for workers (either full or part-time) has encouraged a higher proportion of young people under 19 and of women over 35 to enter the labor force. Moreover, changes in demands for goods and technological progress have resulted in an industrial redistribution of nonagricultural workers, with a larger proportion of them now in the higher-paying industries. If

the industrial distribution of employment in manufacturing in 1954 had been the same as in 1939 average annual earnings in 1954 would have been about five per cent lower than they actually were(2). Meanwhile, average hourly earnings have risen much more than prices paid by workers. The rise in the buying power of weekly take-home pay (net spendable earnings) of workers with three dependents was 55 per cent in manufacturing between 1939 and 1955, after making allowance for changes in consumer prices and in Federal income and social security taxes. At the same time, average weekly hours declined about 11 per cent during this period.

Behind the rise in buying power lie the marked increases in the productivity of the economy. The Bureau of Labor Statistics has found that technological developments were a major factor in raising output per man-hour in manufacturing about 30 per

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(2) Based on Survey of Current Business, National Income, July, 1955, p. 18, and National Income Supplement, U. S. Department of Commerce, 1954, p. 197.

cent between 1939 and 1953[3]; it was estimated that during 1954 and 1955 productivity rose further by approximately 10 per cent. The prospect is, barring another major war, that increases in output per man-hour will continue, if not at the 1954 to 1955 rate, at least at a rate above the 1939 to 1953 average.

The rise in standards of living in the United States since 1939 has grown out of many changes. The rapid pace of technological development has not only produced new types of consumer goods, but it has brought goods heretofore available only to the upper income groups within the reach of wage earners and clerical workers. The rise in average incomes of families dependent on wages and salaries in most of the communities in the country has contributed to raising their ideas of what is a fitting and proper consumption level[4]. The relationship between higher average incomes and higher standards of living as they affect the income at which families begin

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(3) See Output Per Man-hour in Manufacturing, 1939-47, and Monthly Labor Review, January, 1956, p. 1.

(4) Dorothy S. Brady, Family Savings in Relation to Changes in the Level and Distribution of Income, (National Bureau of Economic Research, Inc., N. Y., Vol. 15, 1952, pp. 103-130).

saving is shown in a recent analysis of savings in the United States from 1897 to 1952. From the study of this 55-year period during which disposable personal income per capita, in dollars of constant purchasing power almost tripled, it was concluded that the average household must have an ever-increasing disposable income per head before it does any saving. Or, to express it differently, an increasing level of consumption has been necessary to obtain the same proportion of savings(5).

No information is available as to changes since 1950 in the over-all spending pattern of the wage earner and clerical worker group as distinct from the rest of the population. Consumer prices in 1955 were 11 per cent higher, on the average, than in 1950, but average hourly earnings in manufacturing were 28 per cent higher, and nonagricultural employment was 12 per cent higher. The proportion of the labor force unemployed in 1955 averaged four per cent compared with five per cent in 1950. In 1955, the

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(5) Raymond W. Goldsmith, "Family Saving, 1888-1950," in Study of Saving in the U. S. (Princeton Press, N. J., Vol. III, 1956, pp. 139-273).

compensation of all wage and salaried workers was 45 per cent higher than in 1950, even though the average number of such employees had increased by only 13 per cent(6). The Survey of Consumer Finances shows that the percentage of all nonfarm families headed by wage and clerical workers owning their homes rose from 48 per cent in February, 1950, to 52 per cent in February, 1955(7). In 1955, per capita personal consumption expenditures were about eight per cent above the 1950 level (in 1955 prices), partly because of the unprecedented buying of automobiles.

With the likelihood that technological improvements in production will continue, we may look forward to the continuation of the rise in the disposable income of wage and clerical workers. On the basis of the evidence of the past 15 years, standards of living will continue to outgrow the rise in

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(6) Economic Report of the President, Tables D-22, D-17, and D-11; and Economic Indicators, Government Printing Office, Washington, D. C., July, 1956.

(7) Federal Reserve Bulletin, Board of Governors of the Federal Reserve System, July, 1951, p. 772, and August, 1955, p. 864.

incomes and levels of living. The question arises as to whether the anticipated increases in productivity will result primarily in more leisure time for the working population, or be reflected in the purchase of more goods and services. The evidence available from the Bureau of Labor Statistics on changes in consumer purchases indicates that in the first half of the 1950's, wage earners and clerical workers spent at least as large a proportion of their incomes on goods and services as they did in the 1930's, although their incomes were much higher.

One of organized labor's top officials has stated that labor expects to work only 30 hours a week by 1980(8). Developments in collective bargaining have pointed to workers' demands for more frequent and larger vacations with pay, which result in lowering the average number of hours worked per week per year. The rise in the standards of living in the United States has been accompanied by a general decline in working hours over the past half a century.

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(8) George Meany, "What Labor Means by More," Fortune, N. Y., March, 1955, p. 172.

Employment and the Labor Force.

The most probable effect on the economy of a reduction in standard working hours is that in a period of rapid technological change and rising productivity, it would minimize the likelihood of large-scale displacement of workers. A reduction in working hours may increase the requirement for workers. Some argue that shorter hours, therefore, will create labor shortages and could be disastrous.

In the next few years, however, labor-force growth will accelerate as the effects of the rising birthrates since 1939 make themselves felt by bringing an increasing number of young people into the labor markets. With reduced hours of work, it is likely that there will be a growing participation of women in the labor force. Older people, too, would probably tend to remain at work, with reduced working hours and more leisure time. In addition, some workers would undoubtedly attempt to obtain a second job if such jobs were available.

At the time of the last decennial census in 1950, 63.5 million persons were members of the labor

force[9]. This was the total number of persons who were at work for pay, or working without pay in a family enterprise, or with a job but temporarily absent from work, or unemployed and seeking work. The 1950 labor force was equal to 42.0 per cent of the total population and 52.1 per cent of the population 10 years of age and over.

It has been assumed (as explained in Chapter VII), that the average total labor force would amount to 72.5 million for 1960. This figure was obtained by projecting past trends of participation in the labor force by sex and age groups.

In 1940, and again in 1950, about 42 per cent of the population was in the labor force. A labor force of 72.5 million would mean again that about 42 per cent of the 1960 population would be in the labor market. This estimate of the size of the 1960 labor force is, of course, speculative but there are fewer uncertainties in projecting the population of working

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(9) J. F. Dewhurst, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, Table 306, p. 725).

age than in estimating total population(10), for all of the adults who will constitute the 1960 labor force of 72.5 million were already living in 1950. What we can produce with a labor force of 72.5 million in 1960 will depend on the extent to which the labor force is utilized. The number of persons actually at work, the average length of the work week, and the amount produced per man-hour will determine the total output of goods and services.

Full employment of the labor force, in the sense that every member is at work at the same time, has, of course, never been achieved. Past experience shows that even in periods of prosperity, such as the 1920's, an average of close to five per cent of the labor force was out of work(11). On this basis an assumption that future average unemployment would amount to nearly five per cent of the labor force appears to be reasonable.

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(11) The estimate of the 1960 population is 177 million. U. S. Bureau of the Census, Current Population Reports; Population estimates, Series P-25, No. 78, August, 1953, pp. 5-6.

(12) J. F. Dewhurst, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 922).

It is assumed that a high level of activity for the future would be comparable to what was actually maintained during the prosperous last half of the 1920's. With average unemployment amounting to five per cent, approximately 3.5 million of the 1960 labor force of 72.5 million would be unemployed, and 69 million would be at work. The average work week for the entire private* labor force has been estimated (Chapter VII) to be roughly 37.5 hours long in 1960, compared with 40 hours in 1950. This would represent a decline of 2.5 hours during the present decade. This drop in hours is compared with a decline of four hours in the 1940's and an average decline of four hours per decade since 1900. Although the average work week is expected to be 2.5 hours less in 1960, the private labor force is estimated to increase from 54.1 million in 1950 to 58.5 million in 1960. The 58.5 million private labor force is obtained by subtracting the estimated 10.5 million government

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* Government employees including members of the Armed Forces, are expected to number 10.5 million in 1960. They are excluded from the private labor force.

workers for 1960, from the expected 69 million at work in 1960.

A great change in the labor force has occurred within the past 10 years. In 1946, there were 57.5 million people in the civilian labor force. Today, there are 67.5 million people in the civilian labor force(12). This is an increase of 17 per cent over the 10-year period. The total number of people actually working in 1946 was 55.2 million as compared with 65.0 million today. This is an increase of 18 per cent. These figures indicate that there are more people in the civilian labor force and more people working today than there were 10 years ago.

Since the beginning of the century in the United States great gains have been made in time. That is, the time not required to be spent at occupations commonly called "work." The average work week has been reduced from 60 hours to 40 hours or less since 1900. Paid vacations have become the rule rather than the exception. Many may, if they wish,

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(12) Economic Report of the President, Government Printing Office, Washington, D. C., Table E-17, January, 1957, p. 141.

retire with an assured income at the age of 65 or thereabouts. The gain in human time which these developments represent can be illustrated mathematically. The present labor force in the United States approximates 65 million persons. Assume that on the average in a year of relatively full employment, these persons could in a year work 48 weeks of 40 hours each. Multiply that by 65 million, and you get 124.8 billion hours a year on the job for the entire working force. Now assume that shorter hours had not been achieved, and this same force worked half again as long as it did (60 is 150 per cent of 40). In other words, it has gained, in leisure time, 62.4 billion hours a year. Add 120 hours a year per person to account for paid vacations (two weeks at 60 hours), and you get an additional time-saving of 7.8 billion hours.

If the labor force had not taken this spare time from the ability to produce more per hour, they would be producing every year at least half again as much as they do now. Workers have preferred to take a large part of the gain from rising productivity in shorter hours for all who work,

rather than in a more rapid rise of material welfare than has occurred. This tendency, too, is likely to continue. As long as the labor supply is adequate, employers have become perfectly willing to insure long enough operation of expensive capital equipment by utilizing three shifts instead of two, and occasionally four shifts instead of three.

Workers who can earn enough in shorter periods are likely to want to continue their gains of leisure. One almost certain outcome of the accelerated substitution of machines for human labor will be shorter hours, longer vacations, more years spent in education, and perhaps even earlier retirement.

The Benefits of Increased Leisure to Society.

The American people have accepted part of the gains of increased labor productivity in the form of shorter working hours and leisure time. It was just shown that the decrease in working time represents a substitution of leisure for additional goods and services. There is every reason to expect that further advances in productivity will mean a continuance of this trend toward more leisure as well as more goods.

One method by which the people have gained more leisure time has been through longer vacations. Workers have continually shown a keen interest in obtaining longer vacations. Longer vacations have provided a real stimulus to travel and resort aspects of the American economy. A possibility, of course, is for the longer vacation to be taken at two periods of time. A winter vacation might provide a real uplift to family life and if taken around Christmas, could include school-age children.

It is possible to visualize a combination of longer vacations and a year's paid leave of absence. Under this arrangement, workers might be entitled to six weeks of vacation, but could accumulate credits for weeks not taken, in order to take a six-month or one-year absence with pay at some later time. This growing practice of granting longer vacations with pay has resulted in lowering the average number of hours worked per week per year. A two-week vacation with a standard 40-hour week means a loss of 80 working hours during the year. This is an average of about 1.6 hours a week, or about four per cent of the standard 40-hour work week. The drive for longer

vacations obviously reflects a desire on the part of most people for a new kind of leisure.

A remarkable development has taken place recently with regard to gains in new leisure and its uses. It has been found that the American people are shifting from an audience society to a participating society(13). For example, photography intrigues 35 million amateurs and 55 thousand professionals, who own over 60 million cameras. In the last two decades amateur photographers nearly tripled in number, and cameras quadrupled. Photography is a billion-dollar industry.

Indoor games of skill use up much of our time and dollars. Billiards, pool, and bowling cost about 60 million dollars in 1929. In 1954 it came to 130 million. Tennis claims seven million adherents and professional gardeners 18 million. It is estimated that over 200,000 people are building their own boats at the present time. One of the most striking items is the registration at public libraries for a 12-week

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(13) Morris L. Ernst, Utopia 1976 (Rhinehart and Co., Inc., N. Y., 1955, p. 19).

college course on the uses of leisure. The do-it-yourself market brought three and one-half billion consumer dollars in the year 1954. Thirty-five million people spent 45 million dollars for classical-music concerts while 37 million attended major and minor-league baseball games, paying 40 million dollars for tickets. The classical-record business totals more than 24 per cent of all record sales, and amounts to more than 60 million dollars. At the present time there are more than 20 million music students and nearly a thousand symphony orchestras.

Probably no people in the world spend more time in active sports than the American people. Some sports are competitive, some are not, but most involve skill, planning, training, and the use of the body along with the mind. Generations ago such sports used to be confined mainly to the young; now they involve almost all ages and almost all income levels. Golf clubs and country clubs, which began to appeal to the upper income classes in the early years of the century, have spread into suburban regions. Today more people visit national parks than they did 10 years ago. In 1946 an estimated

21.8 million people visited national parks as compared with 54.9 million people in 1946. This is an increase of 52 per cent over the 10-year period. At the same time, more weeks of vacation were taken in 1956 than in 1946. The number of weeks of vacation taken increased 103 per cent from 34.4 million weeks in 1946 to 70 million weeks in 1956.

American society, with the advance of technology, has begun to prove itself capable of providing good use for the gain in leisure time. Most people seem to find enough to do so that they are seldom idle. Actually, no census has ever classified how the population of the United States occupies its leisure time, and no attempt has been made here to enumerate or discuss all of the many uses for leisure time. The objective here has been to discuss briefly some of the more important uses for leisure time which the American people have found to be beneficial. The American population, it appears, has found no difficulty in utilizing free time. The worker no longer has to spend most of his time working.

Shorter working hours have made it easier for the worker to enjoy the new gains in leisure time. A

further reduction in hours of work appears inevitable in the future with rapid technological change and rising productivity. Thus, it would seem that leisure time will be of even greater significance in the years to come.

The Social and Economic Position of the American Consumer.

The discussion which follows is drawn largely from a collection of tables that make up the last half of the Economic Report of the President, recently presented to Congress. They carry the title of "Statistical Tables Relating to the Diffusion of Well-Being, 1946-1956"(14). An attempt is made here to discuss and illustrate briefly, the tremendous growth that has taken place in this country in the past 10 years and to show the vastly improved social and economic status of the American people.

Today, there are more Americans earning more, producing more, and living better than ever. People

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(14) Economic Report of the President, Government Printing Office, Washington, D. C., January, 1957, p. 99.

today enjoy more of almost everything than they did 10 years ago. Incomes have risen rapidly. Growth has come not only in dollars but in actual buying power.

Table 11. Production and Population Growth, 1946-1956

Number of People	1946	1956	Percentage Change
More babies born	3,411,000	4,207,000	+23%
Fewer babies dying at birth	34/1000	26/1000	-23%
Fewer mothers dying in childbirth	1.57/1000	0.40/1000	-75%
Lower death rate	9.1/1000	7.7/1000	-15%
Result: Larger population	141,389,000	168,091,000	+19%
Production			
Rising total output*	$290.6 bil.	$412.4 bil.	+42%
Rising individual output*	$2,055	$2,453	+19%

Source: Economic Report of the President, Government Printing Office, Washington, D. C., 1957, pp. 103-104.

* Based on Gross National Product, stated in terms of 1956 prices.

People now can buy many more things with their earnings than was possible in 1946. In many countries, history shows, a larger population often means a lower standard of living. In other words, production of foods fails to keep pace with the increase in population. In America, however, the Government's statistics show that production of goods has increased even faster than the population. The preceding table illustrates this relationship. Population in the United States, since 1946, has increased 19 per cent. However, the nation's total production, even when computed in constant terms of 1956 prices to eliminate the effect of price increases, has grown by 42 per cent. This means that there are more goods and services available for each individual than there were 10 years ago.

As the productivity of American workers increased, pay scales also increased. The average pay for a production worker in the manufacturing industry in 1946, for example, was $1.09 an hour, $43.82 a week. Now that same worker earns $1.98 an hour, $80.13 a week. The annual income per capita, before taxes, in this country was $1,259 in 1946. Per capita income today

is $1,935 a year, before taxes. This means an average of almost $700 more income yearly for every person in the United States. For the average family, which had a yearly income of $3,940 in 1946, this

Table 12. A Decade of Growth in Wages, 1946-1956

People Earn More*	1946	1956	Percentage Change
Hourly wage (average in manufacturing industries	$ 1.09	$ 1.98	+82%
Weekly wage (average in manufacturing industries	$43.82	$80.13	+83%
Annual income per capita (before taxes)	$1,259	$1,935	+54%
Annual family income (before taxes)	$3,940	$5,520	+40%
Families with low incomes (less than $2,000 before taxes)	11.4 mil.	8.3 mil.	-27%
Families with high incomes (more than $5,000 before taxes)	9.1 mil.	23.0 mil.	+153%

Source: Economic Report of the President, Government Printing Office, Washington, D. C., 1957, pp. 106-107.

* No adjustment is made for price increases since 1946 in the above figures.

gain meant an annual income of $5,520 before taxes, in 1956. These figures are taken from the accompanying table. The rise in wages that took place during this decade affected many millions of families. Ten years ago, there were 11.4 million families with incomes under $2,000 a year and only 9.1 million with incomes over $5,000 a year. By 1955, the last year for which records are available, the situation had been reversed. There were only 8.3 million families with incomes under $2,000 and there were 23 million families with incomes over $5,000. This means that nearly half of the nation's families how have incomes that only 10 years ago would have been considered high.

In the meantime, prices have gone up considerably. A $5,000-a-year income no longer means what it meant in 1946. However, what the Government's record shows is this. Incomes, in the last 10 years, have gone up even faster than prices. The average family today can live better, can buy more things, than it could in 1946. This is demonstrated by computing 1946 incomes in terms of 1956 prices. The effect of price increases is eliminated in this way,

and you get a true comparison. When you do this you find that the average manufacturing worker's pay check in 1946, after taxes, was worth $60.17 in terms of what he could buy. Today, that same worker's pay

Table 13. The Distribution of Income and Growth in Purchasing Power, 1946-1956

People Can Buy More*	1946	1956	Percentage Change
Weekly earnings, after taxes (manufacturing worker, 3 dependents)	$60.17	$73.33	+22%
Annual family income (after taxes)	$4,520	$5,050	+12%
Annual income per capita (after taxes)	$1,568	$1,705	+ 9%
Now Incomes Are Shifting: Percentages of National Income:			
Labor	69.6%	75.8%	+
Business and professional people	11.8%	8.8%	-
Farmers	7.7%	3.5%	-
Investors	10.9%	11.8%	+

Source: Economic Report of the President, Government Printing Office, Washington, D. C., 1957, pp. 105-107.

* Incomes are computed in 1956 prices.

check is worth $73.33 -- an increase in value of 22 per cent. In the same way, the annual income per capita, worth $1,568 in 1946, is worth $1,705 today, and the spendable income of the average American family has gone up in value from $4,520 to $5,050. The result of these figures indicate an unprecedented prosperity. This is shown by examining the figures on things that American people now own, as compared with what they owned in 1946. It is found that almost everybody has more of almost everything.

One big change that shows up in the tables is the shift in distribution of the nation's income. Ten years ago labor received 69.6 per cent of the nation's personal income. Business and professional men get less than before. They now receive only 8.8 per cent of the total. Investment income has risen slightly, from 10.9 to 11.8 per cent of the total. In 1946, farmer's income was 7.7 per cent of the national income. Today, farmers get only 3.5 per cent of the nation's total income, as seen by the above table.

Home ownership is considered a measure of sound prosperity. In the United States, nearly a decade

ago, 55 per cent of all families owned their homes. Today, 60 per cent are home-owners.

America is the most completely motorized country in the world. As far back as 1948, about 54 per cent of all American families owned automobiles. Today, the ownership of automobiles has spread so widely that 73 per cent of all American families have cars.

When it comes to home appliances, it is even more amazing to consider the number of things Americans own. For example, today there are television sets in 38.4 million homes. Freezers are another recent development in electrical appliances. Today, 18 per cent of all houses with electricity have freezers. Air conditioners are among the most expensive of all electrical appliances, as well as being new. Today, there are 3.6 million homes with air conditioning. A great majority of the families have refrigerators and electric washers.

Although these figures indicate enormous spending, Americans are saving even more today than they did in 1946. Saving accounts have grown almost four times as fast as checking accounts. More people now have life insurance. The insurance protection

Table 14. Measures of American Prosperity, 1946-1956

Homes	1946	1956	Percentage Change
More families own homes	21.3 mil.	29.3 mil.	+38%
Cars			
More families own cars	23.0 mil.	37.0 mil.	+61%
Appliances			
Television sets	--	38.4 mil.	--
Refrigerators	21.4 mil.	45.5 mil.	+113%
Freezers	--	8.6 mil.	--
Vacuum cleaners	15.1 mil.	31.6 mil.	+109%
Electric washers	18.8 mil.	41.2 mil.	+119%
Air-conditioners	100,000	3.6 mil.	+3500%
Security			
Checking accounts	44.8 bil.	51.0 bil.	+14%
Saving accounts	49.6 bil.	74.7 bil.	+51%
Life insurance per family	$3,600	$7,500	+108%
Workers old age insurance	33.3 mil.	54.0 mil.	+62%
Unemployment insurance	30.2 mil.	41.0 mil.	+36%
Medical insurance	6.4 mil.	63.0 mil.	+884%

Source: Economic Report of the President, Government Printing Office, Washington, D. C., 1957, pp. 110-112.

enjoyed by the average family has grown from $3,600 to $7,500. Security against old age has grown and spread to millions of people who used to be unprotected. Sixty-three million people now have medical insurance.

Another great change is the increase in the amount of schooling that Americans are getting. There are not

Table 15. The Growth in Education, 1948-1956

Schools and Colleges (age 5 to 34)	1948	1956	Percentage Change
Kindergarten	1,086,000	1,758,000	+62%
Grade school	19,778,000	26,169,000	+32%
High school	6,334,000	8,543,000	+35%
College	2,278,000	2,883,000	+27%
Total Number	29,476,000	39,353,000	+34%
Degrees Conferred			
Bachelor's degrees	271,000	325,000	+20%
Master's degrees	42,400	57,400	+35%
Ph. D.degrees	4,188	8,270	+97%
Expenditure per pupil in public school	$203	$280	+38%

Source: Economic Report of the President, Government Printing Office, Washington, D. C., 1957, pp. 113-114.

only more people in school today; they are going to school longer and getting more college degrees. This trend is depicted in the table. The prospect as seen by economists is that American methods will improve in efficiency and there will be more and more goods to make life better as the American people get more education and acquire more skills. Average weekly hours have declined 2.6 hours since 1946. The figures and information found in the tables show what an amazing change has taken place in this country just within the last 10 years. The question now is: How much will this nation grow in the next 10 years?

In conclusion we can say that standards and levels of living have not declined as a result of shorter hours. There are more people in the civilian labor force and more people working than there were 10 years ago. People are discovering more and more uses for their leisure time. Today, the American worker is working shorter hours than he did 10 years ago and at the same time is earning more, producing more, and living better than ever. This trend appears likely to continue in the future.

Chapter IX

THE PRESENT TREND TOWARD SHORTER HOURS

There has not been any great surge to work weeks shorter than 40 hours in the last few years. There has been, however, recent progress toward shorter hours in some industries. Work schedules which are shorter than 40 hours per week are somewhat more common in nonmanufacturing than manufacturing. This can be explained by the fact that some nonmanufacturing industries, such as finance, real estate, and insurance have largely a white-collar working force. It has been found that the less than 40-hour work schedules are most common among the office and clerical workers. Most industries have taken shorter work weeks in stride. The nature of operations in industries experiencing a reduction in hours have been such that employees generally have produced at least as much in the shorter workday as in the longer one.

The task of negotiating work weeks shorter than 40 hours should become increasingly easier for at least two reasons. First, the precedents are multiplying. Second, more local unions have been bringing

the shorter hours issue into focus in order to lay the groundwork. This chapter is concerned largely with a discussion of the more recent progress toward shorter working time and with the underlying factors which are making this reduction in hours possible.

Technology and Production as a Basis for Shorter Hours.

The worker today can enjoy a 40-hour week and a high standard of living, because modern machinery has made it possible for him to produce almost as much in 10 minutes as a worker in 1850 could produce in an hour. Technological change has been taking place at an accelerating rate, and productivity has been making parallel gains over the past century. The great advances made in technology have been reflected by an increasing level of productivity accompanied by a steady decline in working hours.

In 1950, we are able to produce 25 times the volume of goods and services produced a century before[1]. Private national income increased from

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(1) J. F. Dewhurst and Associates, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 902).

$8.8 billion in 1850 to $217.3 billion in 1950 (25-fold increase in net output). At the same time, the total "input of labor," as measured by the total number of man-hours worked, was less than five times as large -- 127 billion man-hours in 1950 compared with 27 billion in 1850. While productivity was increasing during this period, working hours declined more than 40 per cent -- from 70 hours a week to 40.

It is important to note that with less than five times as much effort (127 billion man-hours compared with 27 billion man-hours), we were able to produce 25 times the volume of goods and services. This means that output per man-hour in 1950 was almost six times what it was in 1850, increasing from 34 cents per man-hour to $1.94 per man-hour. In other words, the worker in 1850 could only turn out in each hour of work less than 34 cents worth of goods in terms of what money would buy in 1950. Past trends of working hours and productivity provide some basis for estimating what future working hours and productivity will be. For that reason, some attention now will be given to past trends in an attempt to estimate what the future will hold.

Hours of work have been dropping steadily for many decades, even more rapidly since the turn of the century. The work week by 1900 was 60 hours. Since 1900 the average decline per decade has been about four hours. The work week dropped from 60 hours in 1900 to 44 hours by 1940, and to 40 hours in 1950. Average weekly hours increased slightly in 1951 and 1952, but by early 1954 the average work week had dropped below 40 hours. There is certainly no reason to believe that the long downtrend in working time will not continue with further gains in productivity. The steady decline of working time over the past several decades makes it seem reasonable to assume the work week for the entire private labor force (excluding average working hours of government employees, for which no estimates are made) to be roughly 37.5 hours long in 1960, compared with 40 hours in 1950. This would mean a drop of 2.5 hours during the present decade, compared with a decline of four hours in the 1940's and an average decline of four hours per decade since 1900.

It is expected that workers will continue to shift from agriculture, where the work week is

relatively long, to the nonagricultural field, where it is much shorter. It has already been shown that output per man-hour increased from 34 cents in 1850 to $1.94 in 1950. Thus, the productivity of labor increased nearly six times during the century.

As mentioned earlier, the percentage increase in productivity has been showing a tendency to rise slightly from decade to decade. As a result, it would be reasonable to expect an increase of about 25 per cent during the present decade, or about 2.3 per cent a year(2). If net output increases 2.3 per cent a year, it will rise by about 47 cents between 1950 and 1960. This 47-cent increase would raise output per man-hour from $1.93 to $2.40 in 1960.

These great advances in labor productivity and shorter hours have been achieved largely by technology, for it determines the productivity of our resources as well as the efficiency with which they are used in creating useful goods and services. Nearly all of the back-breaking tasks of industry have been taken

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(2) The estimated output and assumptions made about the future are the result of a recent survey by J. F. Dewhurst and T. C. Fichandler, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, pp. 36-48).

by mechanical power. Mass production has become increasingly automatic, since any repetitive operation can be done better by machines than by men. Electronic controls are now opening a new era of "automation," which has already brought the automatic factory in such processing industries as petroleum refining. These new electronic labor-savers relieve the worker of routine mental tasks just as power-driven machinery has taken over physical tasks.

Technology has also made great contributions to the productivity of agricultural land and equipment. The advent of harvesting machines, specialized planting, improved fertilizers, and other chemical aids to production have developed new varieties of improved and high-yielding crops. As a result of these technological gains, the farm worker today produces twice as much as the farmer of 1900. Technology is contributing to the supply of raw materials through better techniques of prospecting and discovery along with improved methods of mining and extraction. For example, we now get more than six times as much delivered energy by burning a ton of coal than we

did in 1900[3]. Although it is uncertain what directions technological change will take, it appears reasonable to expect that progress in the future will be rapid, perhaps more rapid than in the past.

With further gains in productivity there is certainly every reason to believe that the long downward trend in working hours will continue in the future. In the past we have foregone a part of the potential increase in productivity in order to enjoy a shorter work week. This can be illustrated by making a rough comparison of 1910 output with potential 1950 output. Approximately 32 million persons in private industry worked an average of 55 hours a week in 1910. Output per man-hour amounted to 89.6 cents with a total labor input of 92 billion man-hours and a national income of $82 billion. By 1950, output per man-hour had increased to $1.93. The 1950 working force of 54 million, working 40 hours a week, actually produced a private national income of $217.3 billion. If, however, the 1950 working force had worked 55

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(3) J. F. Dewhurst and Associates, America's Needs and Resources (The Twentieth Century Fund, N. Y., 1955, p. 943).

hours a week, total labor input would have been 155 billion man-hours and private national income (at the 1950 level of productivity) would have amounted to $299 billion, instead of $217 billion.

In other words, about 63 per cent of the potential increase in private national income over this 40-year period (the difference between $82 billion produced in 1910 and the $299 billion that might have been produced in 1950) was represented by additional goods and services actually produced, and about 38 per cent by shorter working hours and more leisure time.

Shorter hours are the result of increased labor productivity. Unless there is a marked change in defense effort, it now seems reasonable to expect the long downtrend in hours to continue, at least over the next decade or so. There is every reason to believe that we shall want to continue accepting the fruits of rising productivity, made possible by advancing technology, in the form of more goods and services, and partly in the form of more leisure.

Workers' Attitudes Toward Shorter Working Time.

When World War II ended, a number of plants went back to the six-hour, six-day schedule. A lot of workers were afraid of severe cutbacks under peace-time conditions. The depressed conditions of the late thirties was still vivid. Many years of weeks of six and seven days, eight or more hours per day, had given thousands of workers more than enough hours of work. The opportunity to go back to a shorter schedule of six hours was welcomed. However, this reversion brought new problems in the postwar period. Many felt the standards of living possible under 48 hours of earnings could not be maintained under a 36-hour schedule, and they turned to a second job for supplementary income. Exact figures on the number of such workers are lacking.

Discussions of shorter hours have traditionally included reference to the rubber industry(4), which for many years had had an important segment of the labor force on a six-hour workday. After the period

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(4) Monthly Labor Review, U. S. Department of Labor, (November, 1956, p. 1268).

of World War II, when all plants were on an eight-hour basis, the six-hour day was reestablished in the Akron, Detroit, and Los Angeles areas. In other plants, which prior to the war were on a six-hour schedule, workers voted to stay on an eight-hour basis.

Since 1946, the number of rubber workers who have remained on a six-hour schedule has been declining and new pressures have been built up for an eight-hour daily schedule. On the other hand, thousands of workers still have adhered strongly to the view that six hours daily and a six-day week should be extended to other plants throughout the industry. An analysis and examination of the different groupings on the question of whether there should be a six or eight-hour day reveals substantial differences in thinking, even among workers of the same age and sex groups. A large group of supporters for the shorter workday of six hours can be found among the older employees. Many of these older workers, by virtue of their skill and experience have advanced to higher paying jobs. A great many long-service employees consider that six hours of work is enough at the accelerated pace set by the introduction of new machines and improved methods.

Another group in favor of the six-hour schedule is composed of persons who feel that shorter hours should be a primary goal of labor. Although they recognize the problems connected with the six-hour workday, they feel that a six-hour day is a step in the right direction.

Of course, strong support for the six-hour day will be found among a number of women workers. Women find that working a six-hour shift enables them to hold a job and maintain a household at the same time. Since a great many of these women are married, the income they earn provides a second income for the family. They usually consider their six-hour job as part-time work providing supplementary income.

At the present time, there are substantial numbers holding second jobs of all types. For these workers, the income from their regular six-hour job plus their secondary job, has enabled them to achieve a standard of living which they now wish to maintain. The job security provided by the union contract and the fringe benefits make the six-hour job their primary work. The starting time of the first six-hour shift is usually six a. m. The second shift begins at 12 noon,

the third shift at six p. m., and the fourth and final shift at 12 midnight. The more common eight-hour scheduling of work would mean that shifts would cut across both afternoon and evening, or late evening and night. For example, eight-hour shifts from two p. m. to 10 p. m. and from 10 p. m. to six a. m., would interfere with both afternoon and night. Obviously, all of those who are now either on the first shift (six a. m. to 12 noon) or second shift (12 noon to six p. m.) could not possibly get on the most desirable eight-hour shift from six a. m. to two p. m.

There is a feeling among the low seniority workers that the six-hour day provides greater job opportunities for them. They fear a longer daily schedule would mean cutbacks for them. The belief that a six-hour day means more jobs has deep roots. The worksharing theme so prevalent during the depression of the thirties still exists. Workers in the six-hour plants know that in many departments four persons are required to operate the machines for the four shifts of six hours each. If an eight-hour day were adopted, the workers claim that only three men would be needed.

Technological advance has pushed productivity to a high level, and workers are keenly aware of the possibility of further cuts in employment. Also, automation, with all the word implies, has appeared as a further threat to employment security. As a result, a great deal of the sentiment in favor of the shorter workday has the common theme running through it of shorter hours helping to maintain employment.

A questionnaire survey covering a good cross section of employees in one of the Akron plants showed that 30 per cent of those in favor of the six-hour day expressed strong feelings that a longer workday would mean sharp cuts in employment. It should be mentioned, however, that the groups of workers described as favoring shorter hours are not clear and distinct groupings. For example, the older employees who are approaching retirement age feel that a longer than six-hour day is desirable to accumulate some savings to supplement their pensions and social security benefits. Younger employees starting families and buying homes likewise are often eager for longer hours of work. In fact, the pressure exerted

for higher income affects some members of every one of the groups generally in favor of shorter hours.

Shorter hours definitely created some problems. Some workers will accept a low-paying job for their second source of income, while enjoying a relatively high hourly rate in the rubber plants. This second source of income for workers has also affected their attitudes toward their union. There have been cases of lack of support in pressing for wage-rate adjustments which can be attributed to the fact that the worker earns income elsewhere. It is also worth noting that when a large percentage of the labor force holds two jobs at one time, there is an over-all reduction in employment opportunities. Even though these jobs might be part-time, there are less jobs available for new entrants into the labor force or for those who may be unemployed.

It should be remembered that the rubber workers' experience with shorter hours has concentrated on the six-hour day, six-day week. Current thinking on shorter hours is in terms of workdays of seven or seven and one-half hours on a five-day basis or working eight hours on a four or four and one-half day

week. For this reason, experience in the rubber industry is not considered here to be completely applicable to other industries. Nevertheless, the attitude of workers toward the holding of two jobs, choosing between leisure and overtime work and some of the other problems of shorter hours incurred here provide valuable guides for other industries planning a shorter hours program. On the other side, there is no evidence in recent experience that workers necessarily want shorter daily or weekly hours in some industries, aside from their paid holidays and paid vacations.

It has been found that evidence is all on the other side. Hundreds of local and international union officials have testified that the most numerous and persistent grievances are disputes over the sharing of overtime work. The issue here is not that someone has been deprived of a chance to work, but that he has been refused a chance to earn overtime pay. This attitude toward shorter hours should not be considered representative of the national economy. Generally speaking, most workers are eager to increase their incomes while working fewer hours.

Union Efforts to Reduce Working Hours.

The depression of the thirties aroused a great deal of feeling and thinking about new drives for the shorter work week. Most well-organized trades already had a 44 or 40-hour week, but employment was often below this level, and what work-sharing occurred resulted in lower earnings.

A number of unions adopted resolutions for a 30-hour week, and attempts were even made in Congress to legislate a 30-hour standard to reduce unemployment. The idea existed that there was a mathematical relationship between hours of work and employment. For example, if there are 400 hours to be worked at 40 hours per week, this would allow enough work for 10 men for a week. However, if hours were to be reduced to 30 per week there would be work for some 13 men. The number of jobs would be increased nearly one-third. There were many people at this time who argued that the way to take care of the unemployed was simply to reduce hours. The simplicity of the idea made it attractive in 1930, and it has been carried forward to the present day.

The threat of unemployment, and the possibility of minimizing it through the adoption of shorter working hours, has apparently been the most significant single factor until in generating union efforts to reduce the eight-hour day and 40-hour week. Generally, it has been a more persuasive factor in forming union attitudes than the appeal of additional leisure or the need for easing work fatigue.

Union bargaining attention has been directed almost entirely to obtaining wage increases and benefit improvements where an industry or company with a 40-hour week has provided year-around full employment (and some overtime work), not to reductions in hours schedules. Many unions, however, have rapidly and more recently considered the possibility of shorter hours of work as a means of stabilizing employment where technological and economic developments have threatened the displacement of workers.

Another method of unions to shorten hours has been through holidays and vacations. Beginning in 1940, the practice appeared of granting paid holidays and paid vacations and certain other provisions for time off without loss of pay. At first, these

provisions were rather moderate, but their popularity and general acceptance resulted in their gaining momentum. Now, they have improved greatly and are characteristic of all industry. Each year, unions negotiate new benefits of this kind, increasing the number of paid holidays, increasing the vacation period for long service workers, and granting at least one or two-week vacations to relatively new employees. It appears as though there will be even better developments and benefits in the future.

The success of this drive apparently reflects a deep-seated desire on the part of most workers for a new kind of leisure. In this sense, the movement is close to the thinking of the 1830's when leisure was an objective of the shorter hours movement.

A two-week vacation with a standard 40-hour week means a loss of 80 work-hours during the year. This is an average of about 1.6 hours a week, or about four per cent of the standard 40-hour work week. It is difficult to place a numerical value upon the holidays and vacations together, but they probably represent a shortening of the work-year of about

seven per cent in organized mass production industries[5].

Within the past three years, the International Ladies Garment Workers' Union has succeeded in negotiating reductions in the work week from 40 to 35 hours for more than 200,000 workers. Over all, approximately 97 per cent of the union's membership of almost 450,000 are now covered by agreements providing for a 35-hour week (either at the present or at some time before the expiration dates).

The prevailing 35-hour week in this industry (five days of seven hours each) dates back to the worksharing experience of the depression in the thirties. In the New York area, the union retained the 35-hour standard after the depression, but the 40-hour week was the rule elsewhere. Since then, the union has been able to extend the 35-hour week to all but a few of its members. This was accomplished in almost all instances without any necessity for strike action. The reduction from 40 to 35 hours was

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(5) Monthly Labor Review, U. S. Department of Labor, (November, 1956, p. 1273).

accompanied in every case by adjustments in weekly wages at least sufficient to maintain the same weekly pay. In some areas the reduction was first made to 37-1/2 hours and then later to 35 hours. Usually, overtime rates were made applicable to all work beyond the new schedule. In some cases, however, the provision for a reduction to 35 hours allowed tolerance on overtime rates to ease the transition to a shorter work week.

Experience in the printing industry serves as another example of the recent progress made by unions to achieve the shorter work week. The printing unions have reduced the work week in most cases by two and one-half or three and three-quarter hours to weekly schedules of 37-1/2 or 36 and one-quarter hours. The eight-hour workday has been reduced by 30 or 45 minutes to seven and one-half or seven and one-quarter hours. Here again, the hours reduction was accompanied by increases in hourly rates to maintain take-home pay. It was found that the union drive for a shorter work week in this industry was also motivated largely by the fear of unemployment. There was concern that the number of returning

veterans from World War II, plus the workers drawn into the industry during the war period would mean a manpower surplus. Also, there was concern that employment might be further threatened by technological advances in printing processes. Nevertheless, the industry appears to have taken shorter work weeks in stride. It was found that employees generally produced at least as much in the shorter workday as in the longer workday.

Unions have achieved hours reductions in other industries, also. These industries on work schedules of less than 40 hours indicate further the recent gains made by unions in negotiating shorter hours. The prevalence of these less than 40-hour schedules will be discussed briefly.

In the building construction industry almost 12 per cent of union building tradesmen have a standard workday of seven hours. This fact is revealed by a Bureau of Labor Statistics survey, as of July, 1955, covering more than 845,000 building trades workers in 52 major cities with populations of 100,000 or more.

In the brewing industry almost all of the workers in major brewing centers are now on work weeks shorter

than 40 hours. Over-all, there are an estimated 30,000 or more brewing plant workers (close to 50 per cent of all in the industry) on schedules of 37-1/2 hours a week. The major concern of these workers has been the increasing mechanization of brewing operations and the accompanying displacement of workers.

The bakery and confectionery workers in a number of major cities have negotiated work weeks of fewer than 40 hours. Well over 12,000 of its workers are on such schedules. The union here has also reduced hours primarily as a means of easing the employment impact of new mechanical equipment.

More than one-third of the American Newspaper Guilds' membership of 28,000 is covered by 35-hour week contracts. A total of 97 of the 198 contracts held by the union have a work week of less than 40 hours.

A large proportion of office and clerical employees, especially in the large metropolitan areas, are on schedules shorter than 40 hours a week. About a third of the American cities with populations over 10,000 observe a work schedule of less than 40 hours a week for their clerical

employees. Other industries in which schedules of less than 40 hours are in effect for relatively large groups of workers are coal mining, retailing, longshoring, jewelry, millinery, fur, motion pictures, and lumber.

The task of achieving work weeks shorter than 40 hours should become easier since more local unions have been bringing the shorter hours issue into negotiations. Progress towards shorter hours will probably be obtained most readily in industries where technological advances threaten a decline in employment.

Recent Proposals for Reducing the Work Week.

In order to advance any proposals for reducing the work week, a general acceptance should be made of an idea expressed earlier in this chapter. This idea is that at least some of the future benefits of increased productivity will be taken in the form of shorter hours and greater leisure. Assuming the acceptance of this idea the question arises: In what form should this increased leisure be taken?

An attempt is made here to discuss the advantages and disadvantages of various proposals for reducing the working hours of a group of workers, it is assumed, who are currently working a five-day, 40-hour week, with about eight paid holidays, and a vacation schedule ranging up to three weeks for workers of 10 or more years seniority.

Four specific proposals are advanced for obtaining greater leisure* for the above group of workers: (1) reduction in standard hours worked per day; (2) reduction in standard days worked per week; (3) development of a program for occasional three-day week-ends (this can be considered a modification of number two since it provides a four-day week on an occasional basis); (4) increase in the length of paid vacations.

The choice between these various proposals is one which workers and their unions will have to make in the process of formulating collective bargaining demands. First, let us consider the proposal for a

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* We are considering here only the methods for obtaining greater leisure during the years when the individual worker is a regular member of the labor force.

reduction in hours worked per day. It has already been shown that a standard work week below 40 hours has become common for the printing industry and for the garment trades.

It should be recalled that these industries experienced a gradual reduction in hours. In fact, in almost every case of a standard work week below 40 hours, the decline has been achieved by reducing each day's workday by a half-hour or an hour. There has been no departure from the five-day work week.

This method of obtaining increased leisure would create little hardship on most employers except those in continuous process operations. The advantages of this method in terms of the leisure acquired are very real. It is especially appealing to women workers who see the need for the extra time to prepare the evening meal. A shorter workday means more time in the evening for family life, social affairs, and household projects. It provides additional time for civic duties and adult education.

The shorter workday would bring special benefits in terms of the American pattern of living. If we assume a half-hour for lunch, plants on a seven-hour

day could begin any time between eight and 10 a. m. and end the day shift from 3:30 to 5:30 p. m. The peak of commuting traffic could be cut and spread over a longer period of time.

Of course, shorter hours of work each day might lead to an increase in the number of workers holding two jobs. Experience with shorter workdays seems to indicate that this problem of holding two jobs would not arise as frequently with a seven-hour day as with a six-hour day.

The second proposal advanced for obtaining greater leisure is by reducing the days worked per week. Shortening the work week to four working days per week raises problems of a somewhat different nature. The possibility of three-day week-ends would be very appealing to most of us. However, it is important to recognize the major obstacle confronted in attaining this goal. Since the change from a five-day to a four-day work week involves such a sharp reduction in hours worked, it would require a 25 per cent increase in hourly wage rates to maintain take-home pay under the shorter work week. The question arises whether employers and workers could possibly

move more gradually to a four-day week by first adopting a four and one-half day week. This is what actually happened when many industries moved from a six to a five-day week. The change from a 40-hour, five-day week to a 35-hour, four and one-half day week would require only an 11.1 per cent increase in hourly rates to maintain take-home pay.

Other difficulties arise, however, from the fact that the half day of work often proves unsatisfactory both to the worker and to the employer. For the worker, it may mean that he will be spending a larger part of his time traveling to and from work for what is essentially a short period of work activity. For the employer, it may mean a less productive workday. Still, another possibility might be a four-day work week with nine hours per day. The nine-hour day does raise the question of additional fatigue, however, and brings the worker home to his family quite late in the evening. The four-day week does raise some special questions. For example, what about the worker whose wife and school-age children are accustomed to the five-day pattern? How do his activities on his extra day off fit in with the

family schedule? Obviously, there are no definitive answers available for these questions.

A third proposal for acquiring more leisure time is the development of a program for occasional three-day week-ends. This program would make the three-day week-end a special event rather than a routine part of daily living. The problems raised in the previous discussion about a four-day week as a regular matter would become less pressing. A system of occasional three-day week-ends could be considered a method of obtaining additional holidays with pay. The time for these long week-ends need not be fixed permanently. They could be determined once a year in collective bargaining sessions after a careful study of the approaching calendar year. Collective bargaining has already been moving in this direction. In a number of cases, the concept of holidays has been expanded to include the day after Thanksgiving.

A final method of obtaining greater leisure is by increasing the length of paid vacations. Workers have continued to show a keen interest in winning longer vacations. Vacation schedules of three and

four weeks have provided a real stimulus to travel and resort aspects of the American economy.

One variation of the longer vacation theme is a system of periodic extended leaves of absence with pay. This might be considered and extension of the system now enjoyed by college professors who work under a system of sabbatical leave (usually one year in seven off with pay). A development of this type of system is in agreement with the ideas of many sociologists who have found that workers look forward to retirement most enthusiastically during the prime of their working years, particularly in their 40's and early 50's. However, as they approach retirement age, workers feel more strongly the satisfaction that comes with steady work and pay. As a result, they look forward with less enthusiasm to life on a pension after 65.

A year's paid leave of absence would be the equivalent of just under an hour's reduction in the work week spread over a worker's entire working life. This is based upon the calculations estimating the average worker's expectancy as a member of the

labor force[6]. The cost to industry would not be extensive and might be more than repaid in terms of increased job satisfaction.

The four specific proposals for obtaining greater leisure which have just been discussed, are of course based on the idea that a part of the increased productivity in the future will be taken in the form of more leisure.

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(6) Seymour Wolfbein, The Changing Length of Working Life, Industrial Relations Research Association (Papers, December, 1954, p. 248).

Chapter X

SUMMARY AND CONCLUSION

In conclusion we can say that three classes of factors have influenced the movement toward shorter hours of work in American industry. The first may be called "social," including the impact of habit and custom. The view so prevalent during the early years of the struggle for shorter hours was that work was a blessing and that long factory hours were a virtue rather than a vice. The mixing in the labor market of immigrants with habits of work inherited from industrially backward nations rendered large masses of the working population relatively indifferent to the shorter hour movement.

The second factor has been the influence of governmental legislation, both state and federal. Legislative regulation of hours has been of some importance, more particularly in recent years. In the early phase of the shorter hours movement its influence was negligible, since most well-intended legislative attempts to regulate hours were declared unconstitutional. The Supreme Court of the United States at first took a very narrow

view of the scope of the police power as it applied to regulation of hours of work. If long hours had a very direct relation to public health, the regulation would be upheld. For industry in general, it was thought that hours regulation was an unconstitutional invasion of the right of employer and employee to contract freely.

The third type of factor which has affected the shorter hour movement is the economic factor, which may be classified further into four components: (a) the bargaining strength of labor; (b) the bargaining strength of employers; (c) the type of employment; and (d) the general level of economic activity. We have seen that labor in the skilled building trades, by virtue of its strategic bargaining power, has constantly been able to win shorter hours well in advance of the national trend. On the other hand, where labor has been relatively unskilled and unorganized hours have remained behind the general trend.

The most common economic analysis of the shorter work week explains that it will increase unit costs of production because the higher hourly wages increase

labor costs and because the greater idleness of capital equipment increases capital costs. The higher total costs per unit of output, it is claimed, will lead to higher prices which will reduce the demand for the product and lead to less employment. We have seen, however, that shortening the work week may not lead to higher unit costs, and higher costs per unit of output may not lead to higher prices, under certain circumstances. A price rise restricted to one firm or one industry would, of course, tend to reduce the volume of sales and employment in that firm or industry. If, however, the workday was reduced by national legislation where all industries were confronted with increased costs and prices, there is no assurance that the higher prices would reduce the total volume of sales and total employment.

In a period of rapid technological change and rising productivity, the most probable effect on the economy of a reduction of standard working hours is that it would minimize the likelihood of large-scale displacement of workers. In the next few years, labor-force growth will accelerate as the effects of the rising birth rate since 1939 will bring an increasing

number of young people into the labor markets. With reduced hours of work, it is likely that there will be growing participation of women in the labor force. In addition, some workers would undoubtedly attempt to obtain a second job if such jobs were available. Local unemployment resulting from the use of machines instead of physical labor is not a theory but a fact. Practically all economists agree that changes in technology or techniques of production cause immediate dislocations in employment. The effects of the machine on employment have both a short-term and a long-term aspect. There is no doubt that in the short run the introduction of a new machine or of new processes in a plant may cause temporary unemployment. These displaced workers, however, can eventually be expected to find jobs elsewhere. The question is, in the long run does technical change cause total employment in the country to decrease, increase, or remain unchanged? The consensus of opinion among economists is that in the long run, technical improvements create more jobs than they displace. Unless improved technology is accompanied by a shortening of working hours in the long run, however, a certain amount of unemployment is bound to result.

The threat of unemployment, and the possibility of minimizing it through adoption of shorter work weeks, has apparently been the most significant single factor until now in generating union efforts to reduce the eight-hour day and 40-hour week. Where an industry or company with a 40-hour week has provided year-around full employment, union bargaining attention has been directed almost entirely to gaining wage increases and benefit improvements, not to reduction in hours schedules. However, where technological and economic developments have threatened displacement of workers, many unions quickly have turned to consider the possibility of shorter hours of work as a means of stabilizing employment.

The decrease in working time represents a substitution of leisure for additional goods and services. The increased leisure accompanying the general reduction of the work week ranks high as a component of the level of living which has been achieved through economic progress in the last half century in this country. Leisure is a characteristic feature of the economic growth that the nation has achieved. What pattern may emerge in the future depends largely on

the importance people attach to additional goods and services compared to more leisure. Whether workers prefer shorter hours to additional income depends upon their judgment as to the relative worth of leisure and income. Gains in productivity and levels of living, make this choice easier to make in favor of leisure, but the outcome is hardly predictable. It is difficult to predict what work week industrial and other workers will choose in the future. Some further reduction in hours of work would appear inevitable. The requirements of economical use of costly productive facilities will no doubt lead to much experimentation and variety in the work schedule.

Standard working hours in the national economy have been reduced over a period of time, usually through the accumulated effects of reductions in an establishment, a company, or sometimes a national industry. There has not been any great movement to work weeks shorter than 40 hours in the last few years. Remarkable progress has been made in some industries, however. The ladies' garment industry, printing industry, construction, brewing, baking, rubber, mining, retailing, longshoring, and newspaper

publishing industries all provide work week schedules of less than 40 hours for relatively large groups of their workers. A large proportion of office and clerical employees are on schedules shorter than 40 hours a week, particularly in the large metropolitan areas. George Meany, AFL-CIO president, has stated that labor expects to work only 30 hours a week by 1980.

Although it is difficult to predict what work week industrial and other workers will choose in the future, a number of conclusions can be drawn from both past and recent experience with the shorter work week. The following general lessons appear to be indicated for the future:

1. Progress to work weeks shorter than 40 hours will probably be achieved most rapidly in industries with substantial technological innovations and generally prosperous business conditions, and also where there is an actual or threatened decline in employment. The desire for increased leisure and efforts to match short work weeks achieved elsewhere, may be factors carrying great weight in other industries.

2. Progress to a shorter work week may proceed at a relatively more rapid pace in industries with a

larger proportion of women. Most working women still retain at least some domestic responsibilities. They tend more strongly than most men to prefer a shorter workday so that they may have more time to manage such household duties.

3. Reductions in hours probably will continue to be negotiated most commonly in small, gradual stages, two and one-half hours or less at one time, rather than in a single reduction of five or eight to reach the goal of 35 or 30 hours a week.

4. A few unions may find it necessary in reducing the work week to compromise initially on overtime pay practices. For a transitional or temporary period, work may be permitted beyond the new reduced schedule and up to 40 hours at straight-time pay without a requirement of overtime penalty rates.

5. The task of negotiating work weeks shorter than 40 hours should become increasingly easier from at least two standpoints. First, the precedents are multiplying. Second, more local unions have been bringing the shorter week issue into negotiations to lay the groundwork.

The reduction of working hours, in the past, has been accompanied by continued economic growth. There is no reason to believe that economic growth will stop, or that it will slow down, with a further reduction of working hours.

BIBLIOGRAPHY

Barkin, Solomon: Advanced Management, Vol. 7, pp. 32-37, January - March, 1942.

Best, Ethel L.: A Study of a Change From Eight to Six Hours of Work, Government Printing Office, Washington, D. C., 1933.

Bloom, G. F.: Economics of Labor and Industrial Relations, The Blakiston Co., Philadelphia, pp. 507-530, 1950.

Brams, S. H.: "Department of Labor Study Seeking to Find the Most Efficient Workweek," Iron Age, Vol. 156, p. 78, September, 1946.

Carver, Thomas N.: "The Theory of the Shortened Working Week, American Economic Review, pp. 451-462, September, 1936. "Shorter Working Time and Unemployment," American Economic Review, p. 8, March, 1932.

Casselman, P. H.: Economics of Employment and Unemployment, Public Affairs Press, Washington, D. C., p. 32, 1955.

Commons, John R.: History of Labor in the U. S., Macmillan Co., N. Y., Vol. I, p. 389, 1918.

Cummins, E. E.: The Labor Problem in the U. S., D. Van Nostrand Co., Inc., N. Y., p. 67, 1932.

Current Population Reports, U. S. Breau of the Census, Series P-25, No. 78, pp. 5-6, August, 1953.

Dewhurst, J. F. and Associates: America's Needs and Resources, Twentieth Century Fund, N. Y., pp. 38, 923, 1955.

Economic Indicators, Government Printing Office, Washington, D. C., pp. 11-17, October, 1956.

Economic Report of the President, Government Printing Office, Washington, D. C., pp. 103-117, January, 1957.

Employment and Earnings, U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C., pp. 1-10, October, 1956.

Ernst, Morris L.: Utopia 1976, Rhinehart and Co., Inc., N. Y., p. 10, 1955.

Federal Reserve Bulletin, Board of Governors of the Federal Reserve System, p. 772, July, 1951, and p. 864, August, 1955.

Frankfurter, F. and Goldmark, J.: The Case for the Shorter Workday, National Consumers League, N. Y., 1916.

Gavens, Henry: Shorter Hours - How? When? Ransdell Inc., N. Y., 1938.

Graham, Benjamin: "The Hours of Work and Full Employment," American Economic Review, pp. 432-35, June, 1945.

Hopkins, W. S.: Labor in the American Economy, McGraw-Hill Book Co., Inc., N. Y., 1948.

International Labor Office, Public Investment and Full Employment, Montreal, p. 346, 1946.

Lescohier, D.: History of Labor in the U. S., 1896-1932, The Macmillan Co., N. Y., p. 112, 1935.

Lester, Richard A.: Economics of Labor, The Macmillan Co., p. 358, 1951.

McMaster, J. B.: History of the People in the U. S., Appleton and Co., N. Y., p. 84, Vol. V, 1914.

Millis, H. and Montgomery, R.: Labor Risks and Social Science, McGraw-Hill Book Co., Inc., N. Y., p. 30, 1938.

Monthly Labor Review, U. S. Department of Labor, Washington, D. C., Vol. 79, p. 157, February, 1956.

Moulton, H. and Leven, M.: The Thirty Hour Week, Brookings Institute, Washington, D. C., 1935.

National Industrial Conference Board, "Wages, Hours, and Employment in the U. S., 1914-1936," p. 44, 1938.

Proceedings of the Academy of Political Science, "Implications of the Shorter Hour Movement," Vol. 15, pp. 431-445, 1934.

Productivity Trends in Selected Industries, Indexes Through 1950, Bureau of Labor Statistics, Washington, D. C., Bulletin No. 1046, p. 2, 1950.

Slicter, S. H.: The Challenge of Industrial Relations, Cornell Press, N. Y., p. 77, 1947.

Survey of Current Business, U. S. Department of Commerce, National Income, p. 18, July, 1955.

Taft, Philip: Economics and Problems of Labor, Stackpole Sons, Harrisburg, Pa., p. 348, 1942.

The Labor Market and Employment Security, U. S. Department of Labor, Bureau of Employment Security, Washington, D. C., pp. 30-33, September, 1956.

Trends in Output Per Man-Hour, 1935-55, U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C., June, 1956.

Vernon, H. M.: The Shorter Working Week, E. P. Dutton and Co., N. Y., 1934.

Viau, Joseph M.: Hours and Wages in American Organized Labor, G. P. Putnam's Sons, N. Y., p. 55, 1939.

Wolfbein, Seymour: The Changing Length of Working Life, Industrial Relations Research Association, Papers, p. 248, December, 1954.

Yoder, D.: Personnel Management and Industrial Relations, Prentice-Hall Book Co., N. Y., p. 308, 1948.

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