

WORK IN AMERICA: 1950 to 2019

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Abstract¹

This paper uses a consistent methodology to estimate average weekly hours of work in the United States in 1950 and 2019. It also reviews a number of studies that cover parts of the same period. Making adjustments where possible to reduce methodological differences, this review identifies three sub-periods: 1950 to 1980, when working hours declined; 1980 to 1990, when working hours rose; and 1990 to 2019, when working hours remained constant. It also briefly discusses the importance of a variety of factors affecting the different response by working hours to the growth of real GDP and labor productivity during the first and last sub-periods.

Introduction

The US has experienced major demographic, labor force, and macroeconomic changes over the past seven decades. One might expect that these changes would affect hours of work. In particular, economic growth and rising productivity might be expected to induce workers to acquire more leisure. This issue has been explored by a variety of researchers in a number of studies that cover parts of the period from 1950 to 2019. These studies, however, differ with respect to time frame, coverage, scope, and methodology. To gain a broader perspective on this issue, I developed estimates of average weekly hours of work for the civilian non-institutional population 15+ using a consistent methodology for 1950 and 2019. My research provides a framework for comparing a number of selected studies for the purpose of identifying changes in trends of hours of work from 1950 to 2019. My estimates indicate that average weekly hours of total work were identical in 1950 and 2019 and identify three separate sub-periods with different trends within this time span: 1950 to 1980, when working hours declined; 1980 to 1990, when working hours rose; and 1990 to 2019, when working hours remained constant. I then briefly evaluate the capacity of five demographic and economic factors with the potential to affect hours of work to address the question: why did the response of hours of work to the growth of real GDP and labor productivity differ between the 1950-80 and the 1990-2019 sub-periods? I conclude by suggesting that the

most significant determining factors were the shift in the relationship between productivity growth and labor compensation and the opposing trends in income inequality.

Concepts and Measurement

Concepts. My analysis of work and leisure is placed within the context of time allocation. As the constant element in all human activities, time has two fundamental properties: (1) it is fixed in supply (we cannot make a day longer or shorter than 24 hours, though we can perform more than one task at a time), and (2) it cannot be stored. Because time must necessarily be filled by what we do (including sleep), we can classify the use of time in terms of the activities we undertake. One way of organizing human activities is to separate them in accordance with the degree of freedom associated with our choices, as is done in Table 1 where time use is separated into two main categories: *necessary time* and *discretionary time*.

Necessary Time. The activities associated with *necessary time* offer the least amount of freedom of choice. The first set involves activities undertaken for the purpose of satisfying physical needs, namely sleeping, eating, and personal care. We could also add exercise to this list on the assumption that it helps promote overall health. If we take a holistic approach and include in the concept of health also intellectual, emotional, and spiritual wellbeing, then we need to add human activities directed at the satisfaction of intellectual, emotional, and spiritual needs.

Table 1. Elements of Time Allocation

Necessary Time	Discretionary Time	
Activities Aimed at the Satisfaction of Physical, Emotional, Intellectual, and Spiritual Needs	Production of Goods and services	Activities Aimed at the Satisfaction of Elective Human Wants
	<i>Work</i>	<i>Free Time (Leisure)</i>
	Market (Labor, Human Capital)	Creative Activity
	Non-Market (Home Production, Volunteerism)	Recreational Activity

Discretionary time can be divided into two major components depending on the degree of choice: work and free time.

Work. According to a variety of dictionaries, the definition of work contains three elements: (1) a physical or mental effort, (2) an activity in which the effort is exercised, and (3) a final outcome to which the activity is directed. Work can be paid or unpaid. In Table 1 unpaid work is called non-market work because it does not involve the offer of labor services for monetary remuneration and it includes two major activities: volunteerism and home production. The former is the activity with the greatest degree of choice. The latter is a combination of a high degree of choice (hobbies, care of pets) and little choice (cooking, cleaning, maintenance of building and grounds).

Paid work is the concept of labor used in economic analysis and includes both hired labor services and self-employment. Two additional sets of activities, directly or indirectly related to paid work, ought to be included in this concept: (1) commuting and coffee breaks, and (2) job search and work in the hidden economy. Commuting to work is time necessary for the performance of a job at the employment site. A coffee break is an optional interruption of work which is part of the formal or informal employment contract. Time spent on job search is a legitimate component of labor. Activities conducted in the hidden economy are consistent with the definition of work. Since they are performed for gain, they ought to be included in paid work.

Education and training undertaken for the purpose of receiving higher earnings in the future also fit the definition of work. Although these activities are unpaid, they represent an investment in future paid work and ought to be included in this concept. The combination of paid work and the acquisition of human capital is called market work.

Free time. Free time includes activities which afford the greatest degree of choice. It is commonly called leisure, and is measured as the difference between total available time and the combination of necessary time and work. When necessary time includes only physical needs, we have a measure of leisure broadly defined.

Including in necessary time activities directed at satisfying intellectual, emotional, and spiritual needs, yields a measure of leisure narrowly defined.

Human activities can also be categorized in terms of whether they are directed at the production of goods and services (for sale, own consumption, and free consumption by others) or consumption. In this classification, both non-market and paid work are inputs into the production of goods and services. Within non-market work, the time allocated to home production is associated with joint production/consumption as the goods and services produced are consumed by the producer. The acquisition of human capital involves the production of higher skills with both the providers of the educational services and the students as inputs. The time spent by educators is already included in paid work. The time spent by the other input, students and trainees, should be treated in the same manner.

While work is by definition directed at productive activities, necessary time involves only consumption activities (even when we sleep, we consume energy). Free time is a hybrid of the two. Free time used strictly for passive recreational activities is consumption. When it is used for creative activities, it involves production. When this creative time-use involves a formalized activity, it is called a hobby included in non-market work. When it is not formalized, it may be treated as creative free time. In this classification, the ultimate goal of human activity is the satisfaction of human needs and goals. Necessary time is directed at the satisfaction of human needs, leisure is aimed at satisfying elective human wants, and work produces the goods and services that can satisfy both.

Measurement. In my comparison of the allocation of time in the United States in 1950 and 2019, for the end year I relied on the detailed data from the American Time Use Survey (ATUS)². An additional source was needed only for the time spent in the hidden economy. For 2019 I used the estimate found in Enste (2019), i.e., 7.4 percent of GDP and of employment.

Work. Because no comprehensive source for the components of work was available for 1950, I combined the data found in a variety of sources. For average weekly hours of paid work per worker in 1950, I started with the data in McGrattan and Rogerson (2004) and calculated the average annual hours of work for each age/sex group and the weighted average for all groups. Then I calculated the ratio

of this value to that found in the OECD (2020) statistics on annual hours actually worked and adjusted the data in McGrattan and Rogerson (2004) by the proportional difference in the total. Finally, I derived average weekly hours of work per person by multiplying the estimated average weekly hours of work per worker by the employment rate (the ratio of employment to the civilian non-institutional population 15+). For 2019 I applied the same procedure to the data in the Bureau of Labor Statistics (2019a) for hours of work. For hours spent studying in 1950, I relied on Ramey and Francis (2009 table 3, p. 201), who show the average weekly hours per person devoted to school for a full calendar year separately for the age groups 14-17 and 18-24. For coffee breaks I included two 15-minute periods per worker per working day. Instead of detailed information on the time spent commuting to work by age and sex in 1950, I found partial information in studies covering later periods. I used the data from a report by the US Census Bureau (1995) which concluded that “The average US worker took 22.4 minutes to get from home to work in 1990. This was a 3-percent increase from the average of 21.7 minutes traveled in 1980.” I extrapolated back to 1950 by using the rate of change per decade from 1980 to 1990, and assumed that a one-way trip to work took 20 minutes. For the legal hidden economy, I relied on Barthelemy (1988) who discovered that estimates of its size vary widely depending on the analytical approach used. Combining a variety of approaches, Barthelemy estimated that in the United States the hidden economy accounted for 6.4 percent of GDP in 1960 and 8.3 percent in 1978. The change from 1960 to 1978 is equivalent to an increase of 1.06 percentage points for 10 years. I assumed the same rate of change between 1950 and 1960. Since there are no detailed estimates of time spent on job search in 1950, I extrapolated evidence from other periods found in Krueger and Mueller (2009, 2011), adjusting for differences in the unemployment rate. For home production in 1950 I relied on Ramey (2009) which contains detailed estimates for a variety of years. For time spent on volunteer activities I combined a variety of studies. Diez and Grimm (2016) show that in 1974 nearly one-quarter of Americans over the age of 16 engaged in formal volunteer activities. Robinson and Smith (2012) distinguish between formal and informal volunteering and suggest that in 2003 they amounted to one hour per week per person and two weekly hours per person, respectively. Hammermesh, Frazis and Stewart (2005) found that in 2003 there was no difference in the hours spent on formal volunteering by men and women. For 1950 I assumed an average

of three hours of volunteering per person (one hour for formal and two hours for informal volunteering), with no difference between men and women. For 2019 I used the ATUS data for formal volunteering and added twice that amount for informal volunteering to maintain consistency with the 1950 treatment.

Necessary Time. For necessary time I report only the estimates for physical needs because the inclusion of non-physical needs increases the total number of hours dedicated to necessary time, thus changing the time spent on leisure, but does not affect the conclusion about changes in the weekly hours spent on work from 1950 to 2019. For 2019 I used the data in ATUS. For 1950 I relied on the information contained in three studies. Ramey and Francis (2009) measured the average weekly hours spent on sleep, rest, eating, and personal activities excluding own health care by the population 14 years and older over the decades from 1900 to 2005. Aguiar and Erik Hurst (2006) estimated used diaries data to estimate the time spent by the population 21-65 over five decades from 1965 to 2003 on sleeping, eating and personal activities excluding own health care. Sebastian De Grazia (1962) used a survey by J. Ward Inc. for the early 1950s to estimate the time spent by men and women 20-59 on sleeping, eating, cooking, and shopping. In these studies, the average weekly number of hours dedicated to physical needs ranged from a high of 77 to a low of 71.6. For 1950 I used the value of 73.6 weekly hours, calculated as an average of the estimates in above three studies for the year closest to 1950. About eighty percent of this total was used for sleeping.

Leisure. Broadly-defined leisure was calculated as the difference between the total number of hours available in a week (168) and the sum of the hours spent working and satisfying physical needs.

It should be stressed that while the methodology is the same for both years, the data sources between the initial and final years of the comparison may not be totally consistent. Therefore, my results should not be treated as precise estimates of the change in the allocation time from 1950 to 2019, but as indicators of broad trends. For example, if the time allocated to work increased or decreased by less than two hours per week over a period of 69 years (less than 2 minutes a week per year), I would interpret that result as an indication of broad stability over the long-term.

Work and Leisure: 1950 and 2019

This section presents my estimates of the allocation of time in 1950 and 2019 separately for work, necessary time (physical needs), and leisure.

Work. I started with the estimates of the average weekly hours spent on paid work per worker (which exclude time spent on human capital acquisition, but include commuting time, coffee breaks, job search, and hidden economy activities). As shown in Table 2, in the case of men average weekly hours of paid work were slightly lower in 2019 than in 1950. For women, as they joined the labor force in increasing numbers and occupied a greater variety of jobs, their workweek declined by over 4 hours and contributed greatly to the decline of the average workweek for paid labor by over 3 hours from 1950 to 2019.

Table 2. Average Weekly Hours of Paid Work per Worker, 1950 and 2019

Year	Average Weekly Hours of Work per Worker		
	Male	Female	Total
1950	47.7	42.2	46.1
2019	46.9	38.0	42.8
Difference	- 0.8	- 4.2	- 3.3

Source: Ruggeri (2022), Table 3-2, p. 56

Estimates of average weekly hours of work per person were derived by adjusting for the relationship between employment and the civilian population 16+ by gender.

As shown in the third row of Table 3, the average number of weekly hours allocated per person to paid work remained virtually constant between 1950 and 2019 at about 26 hours per week. The fundamental change was a rearrangement by gender: the paid work time of males fell by nearly 8 hours per week and that of females increased by a similar amount. As a result, the male-female gap in weekly hours of paid work per person declined from nearly 26 hours in 1950 to about 10 hours in 2019. During the same period, the expanded enrollment in secondary and

post-secondary education led to a doubling in the average weekly hours per person dedicated to the acquisition of human capital, resulting in an increase of 2 hours per week in total market work.

Despite the technological advances in home equipment, the time allocated to non-market work, 92 percent of which is in the form of home production, declined only by 1.8 hours per week over a 69-year period. This stability of non-market work was associated with a major shift in gender roles. In 1950 women on average dedicated to non-market work 30 hours per week more than men. In 2019 this difference was reduced to about 11 hours per week. The decrease of nearly 12 hours per week of non-market work by women resulted largely from the greater sharing of household duties between partners, as both men and women were participating in the labor force. For men, the increase of 8 hours was due to their rising share of household duties and the high share of singles, who became fully responsible for their household requirements.

Table 3. Average Weekly Hours of Market and Non-Market Work per Person by Sex, 1950 and 2019

Category	1950			2019		
	M	F	T	M	F	T
Paid Work	39.1	13.4	25.8	31.2	21.1	26.0
Market Work	40.8	14.7	27.3	34.2	24.5	29.2
Home Production	8.9	39.4	24.4	18.2	28.3	23.5
Non-Market Work	11.9	42.4	27.4	19.9	30.8	25.6
Total Work	52.7	57.1	54.7	54.1	55.3	54.8

Note: Paid work includes commuting, coffee breaks, job search, and the hidden economy; the difference between market work and paid work is education; the difference between home production and non-market work is volunteerism.

Source: Ruggeri (2022), Table 3-3, p. 57

The small increase in average weekly hours dedicated to market work from 1950 to 2019 was offset by the decline in the time allocated to non-market work resulting in virtually equality in the average weekly hours of work for those two years. This remarkable stability of time allocation over such a long period of time holds also by gender.

Weekly hours of work per person increased by 1.4 hours over 69 years (about 12 minutes per week per decade) for males and declined by 1.8 hours (about 15 minutes per week per decade) for females. In 1950 the time women allocated to total work exceeded men's allocation by about 4 hours per week. By 2019 this difference was reduced to slightly more than 1 hour. This convergence resulted from developments in both market and non-market work.

As the time allocated by women to market work increased when they entered the labor force in increasing numbers, the time they spent on home production fell. This decline was counterbalanced by men who exchanged less time spent on market work with more time spent on non-market work. Thus, the only noticeable change in the time allocation to work from 1950 to 2019 was a re-alignment in the roles of men and women with respect to paid work in the labor market and unpaid time for home production.

Necessary Time. As mentioned earlier, the information on necessary time in 1950 is limited. De Grazia (1962) estimated a time close to 77 hours per week for men and women 20-59 on the assumption that the time from 11 p.m. to 6 a.m. the next morning is dedicated totally to sleep. Ramey and Francis (2009) assumed a time of 77 weekly hours. Aguiar and Hurst (2006) estimated a time of 71.6 hours. There is even more limited information on gender differences because Ramey and Francis used the number of hours for both males and females. In De Grazia (1962), in 1954 females 20-59 used 42 minutes per week more than men and in Aguiar and Hurst (2006) females 21-65 used two hours and 16 minutes more. According to Ruggeri (2020) in 2018 females 16+ allocated 3 hours more than men to necessary time. I used an average of the three studies for the year closest to 1950.

Leisure. In Table 4 leisure is calculated as a residual in the context of the allocation of total weekly hours. Since the time allocated to work and to satisfy physical needs changed little from 1950 to 2019, the weekly hours available as free time did not change much. A small decline in the hours of non-market work was more than offset by a small increase in hours of market work. Two extra hours used for the satisfaction of physical needs were gained at the expense of free time. At the aggregate level, all that happened with respect to the allocation of time between 1950 and 2019 was a small shift from non-market to market work and a similar small shift from free time to necessary time. In 2019 adult Americans spent 45

percent of the week sleeping, eating and drinking, and grooming, 32 percent working, and 23 percent doing whatever they like, a pattern similar to that in 1950.

Table 4. Allocation of Time by Major Activity in 1950 and 2019, Average Weekly Hours per Person

Major Activity	Average Weekly Hours per Person		
	1950	2019	Change
Physical Needs	73.6	75.6	2.0
Market Work	27.3	29.2	1.9
Non-Market Work	27.4	25.6	-1.8
Free Time	39.7	37.6	-2.1

Source: Ruggeri (2022), Table 9-1, p. 177

The small decline in the average weekly hours of leisure from 1950 to 2019 was associated with major shifts in the composition of leisure activities. De Grazia (1962) separated the activities of American males and females 20-59 in the Spring of 1954 into those performed at home and those away from home. The latter accounted for 25 percent of leisure time and included time spent visiting relatives and friends and on sports, church-going, pleasure rides, and going to dances, movies, and the theatre. Of the leisure time spent at home, twenty-seven percent was dedicated to reading books, newspapers, and magazines (19% of total leisure). A large portion of the remaining leisure time was assigned to watching TV. According to the data presented by De Grazia, 57 percent of the respondents watched TV (38% watched it with family or friends). If half of the leisure time at home was taken up watching TV, this activity would account for 37 percent of total leisure time. Under this assumption, 88 percent of leisure time at home was spent on the combination of reading and TV watching. According to the data in De Grazia (1962), in 1954 three-quarters of total leisure consisted of socializing (58%) and reading (19%). It seems that leisure time in 1954 was largely dedicated to fulfilling emotional and intellectual needs.

In 2019 the share of leisure time allocated to watching television was 16 percentage points higher than in 1954 (Table 5). At the same time, the share of leisure time dedicated to reading in 2019 (5.1%) was nearly 14 percentage lower than in 1954. Table 5 also shows that The overwhelming share of leisure time in 2019 was used for personal leisure activities. Social leisure accounts only for one-quarter of the total, less than half the share in 1954. The evolution of leisure time over the 65 years from 1954 to 2019 has led to a decline in activities directed at intellectual pursuits and socializing, the component of leisure aimed at satisfying emotional needs through interpersonal relationships. This decline is consistent with the trend towards the individualization of leisure. Because in the early 1950s a large share of leisure activities took place within a communal setting, leisure served also as a means of emotional bonding. As leisure became increasingly an individual pursuit through personal activities, its social context waned and the emotional bonds were weakened.

Table 5. Percentage Distribution of Various Components of Leisure in 2019

Item	Share of Leisure Time (%)
Watching Television	52.6
Computer Use for Leisure and Games	8.1
Reading for Personal Interest	5.1
Relaxing and Thinking	5.8
<i>Sum: Personal Leisure</i>	<i>71.6</i>
Socializing and Communicating	12.0
Religious and Spiritual Activities	3.0
Sports, Exercise, and Recreation	6.4
Arts and Entertainment (Except Sports)	1.5
<i>Sum: Social Leisure</i>	<i>25.9</i>
<i>Other^a</i>	<i>2.5</i>

^a Half of unclassified activities.

Source: US Bureau of Labor Statistics (2019), *ATUS 2019*, Table A-1.

The Evolution of Average Weekly Hours of Work

The virtual equality in the allocation of time in 1950 and 2019 does not imply stability throughout the entire period. Because a variety of studies have focused on different periods, it is possible to describe the evolution of time allocation within the timeframe of my study. Since leisure is calculated as a residual and the time allocated to physical needs changed little from 1950 to 2019, the pattern of leisure time will be the mirror image of that of work. Therefore, I will focus on changing trends in average weekly hours of work. I have divided the entire period into three sub-periods. The first sub-period covers the three decades from 1950 to 1980 and was selected because a variety of studies show a shift in the level of hours of work around 1980. The second sub-period includes the 23 years between 1980 and 2003. The end year was selected for two reasons: (1) three studies have end years in 2003 or close to it, and (2) 2003 is the first year for which published data from the ATUS Surveys are available. The final sub-period completes the entire time span of my study and allows a consistent comparison as the data for both initial and ending year originate from the ATUS Surveys.

Hours of Work: 1950 to 1980

Ramey and Francis (2009) developed estimates of the allocation of time by the US population 14+ over the period from 1900 to 2005 by decade. I focus on the 55 years beginning in 1950. They show time dedicated to schooling and time for commuting separately. I included both in the measurement of market work to make it consistent with my estimates for 1950 and 2019. In the first sub-period, the average weekly hours of work per person fell by 3.9 hours from 1950 to 1980. Both components of work fell: the time dedicated to market work declined by 0.5 hours, and that of non-market work fell by 3.4 hours.

McGrattan and Rogerson (2004) used decennial census data to estimate the average weekly hours of paid work for 98 categories by age, sex, and marital status from 1950 to 2000. Because their data include only paid work, I report their results without making adjustments for schooling and work-related activities or adding non-market work. Their estimates follow a pattern similar to that of Ramey and Francis (2009) for total work except that the decline in weekly hours ends in 1970 rather than 1980. According to McGrattan and Rogerson (2004), average weekly hours of paid work per worker fell by 3.6 hours from 1950 to 1970 (-3.4 from 1950 to 1980) and average weekly hours per person 15+ declined by 1.1 hours from 1950 to 1970. The fall in hours of paid work from 1950 to 1970 is

similar to that in Ramey and Francis (2009) for total work unadjusted for schooling (-1.8 hours).

Aguiar and Hurst (2006) provide estimates of time allocation by decade for the period from 1965 to 2003 based on data from time-use surveys. Their analysis is based on the “working-age adult population” 21-65. In their study, market work includes all components of paid labor plus commuting, meal breaks at work, job search, and applying for unemployment insurance, but excludes time spent on education and training. Because Ramey and Francis (2009) provide data on schooling time for those in the 18-24 age group, I was able to derive estimates consistent with the age groups in Aguiar and Hurst (2006) and added them to their measure of market work. Total work is the sum of market and non-market work. Their results for the sub-period from 1965 to 1980 (average of 1975 and 1985) are similar to those of Ramey and Francis (2009) for 1960-80. In their estimates, average weekly hours of work declined by 4.8 hours as market work fell by 1.8 hours and non-market work by 3 hours.

Schor (1991) covers a shorter time span as she focuses on 1969 and 1987, a time frame that straddles the two sub-periods in the previous two studies. Because her time frame includes most of the 1980 decade which registered the largest increase in hours of work, I summarize her results in the second sub-period.

The three studies with results for the 1950-1980 lead to common conclusions regarding the pattern of average weekly hours of work per person during periods of different lengths ending in 1980. Weekly working hours declined whether we use a narrow or a broad concept of work. Moreover, most of the decline was in non-market work. Paid work fell by only 1.1 hours per week over the thirty-year period from 1950 to 1980 and market work declined by 1.8 hours per week from 1965 to 1980 and by half an hour from 1950 to 1980.

Hours of Work: 1980-2003

According to Ramey and Francis (2009), in 1980 began a reversal of the declining trend in weekly working hours per person. For the combination of market and non-market work, weekly working hours rose by 4.4 hours to 2000 and then declined by 0.7 hours in the following five years for an overall increase of 3.7 hours. The time allocated to work increased for both its components: 2.3 additional hours for market work and additional 1.4 hours for non-market work.

According to MacGrattan and Rogerson (2004), the trend reversal started in 1970. The increase in weekly hours of work per person from 1970 to 2000 is similar: 2.8 hours for paid work in MacGrattan and Rogerson (2004) versus 3.0 hours of market work in Ramey and Francis (2009).

For Aguiar and Hurst (2006), the time dedicated to work continued to fall during the following 23 years, though at a slower rate, declining by 1.8 hours per week. A small increase in market work (0.7 hour) was more than offset by a decline of 2.5 hours in non-market work.

Schor's (1991) estimates cover individuals eighteen years and over and are based on the combination of the 1975-76 and 1980-81 Michigan Time Use Studies and the Bureau of Labor Statistics "Current Population Surveys." Market work includes all paid work plus paid holidays, but excludes education and training. I added this component to her estimates for the population 18+ to ensure consistency with the results in Ramey and Francis (2009). For non-market work Schor developed estimates from the data contained in time diaries. Her results are presented as total annual hours separately for two population groups: employed members of the labor force and the population 18+. I have transformed these estimates into weekly values by dividing the annual estimates by 52 weeks to make Schor's estimates consistent with those in the other selected studies. Schor estimated that from 1969 to 1987 the average weekly hours of work increased by 3.1 hours for those employed and by one-third of an hour for the population 18+. For the former group, the increase in hours of work was due entirely to market work. For the latter, an increase of 2.1 hours in market work was partly offset a decline of 1.7 hours in non-market work. Schor's estimates for the population 18+ for 1969 to 1987 are similar to those by Ramey and Francis (2009) for 1970 to 1990 (1 percentage point).

For the sub-period from 1980 to 2000/2005, two observations are warranted. First, the difference between the results in Aguiar and Hurst (2006) and those in the other studies is confined to the estimated hours of non-market work. Even in their study, average weekly hours of market work per person increased by two-thirds of an hour from 1980 (average of 1985 and 1993) to 2003. Second, most of the increase in hours of work occurred during the 1980-90 decade. In Ramey and Francis (2009) nearly 100 percent of the increase in hours of total work and 100 percent of the increase in hours of market work from 1980 to 2005 occurred in this decade. In MacGrattan and Rogerson (2004), the 1980-90 decade accounted for 96

percent of the change in weekly hours of paid work per person during the sub-period from 1980 to 2000. In Aguiar and Hurst (2006), the increase in weekly hours of market work during the 1980 decade exceeded the increase from 1980 to 2003. This means that the changes in average weeks of work (either total or market) from 1990 to the early 2000s were minimal.

Hours of Work: 2003-2019

The comparison between 2003 and 2019 is based on Ruggeri (2020) and Ruggeri (2022) whose estimates of the allocation of time in the United States are based on consistent summary data from the ATUS Surveys for the relevant years. Their results show that the average weekly hours of work were virtually equal in 2003 and 2019 (an increase of 12 minutes per week). This equality is noted for both components of work: the time allocated to market work increased by 5 minutes per week and that dedicated to non-market work rose by 7 minutes per week.

Summary

The above brief review of selected time allocation studies identified two separate periods during the 69-year span from 1950 and 2019. During the first period, which covers 1950 to 1990, average weekly hours of work per worker and per person followed a V-shape pattern, declining over the first three decades and reversing trend thereafter. In the following 29 years, weekly hours of work hardly changed between 1990 and 2003 (summary of selected studies that used different methods and data) and from 2003 to 2019 (studies using consistent data from ATUS Surveys). This stability of weekly working hours during a time of major demographic, labor market, and macroeconomic changes is puzzling, especially since it contrasts with the experience during the first three decades of the selected period. From 1950 to 1980, real GDP grew at an average annual rate of 3.7 percent, real GDP per employed person increased by 1.9 percent per year, and real GDP per person rose by 2.3 percent per year. This rapid rate of economic growth and rising living standards was associated with a decline in weekly hours of paid work per worker and per person, and hours of market and total work per person. Economic growth decelerated from 1990 to 2019 to an average of 2.5 percent per year, and real GDP per worker and per person rose at an annual rate of 1.5 percent. Despite this deceleration, the trends of these indicators of economic growth, labor productivity, and living standards were not so dissimilar from those during the earlier period of similar length to justify such a large difference in the pattern of weekly hours of work. A brief discussion of a variety of factors that may have

influenced the evolution of hours of work from 1990 to 2019 is presented in the next section.

Potential Determining Factors: 1990 to 2019

In this section I offer some general observations on the potential effect on weekly working hours of five demographic and economic factors: the age distribution of the civilian non-institutional population (CNIP), the employment rate, the growth of wages, human capital accumulation, and the income distribution.

Age Distribution. I have divided the CNIP into three age groups: the core age group (25-64), the youth (16-24), and the elderly (65+). Data from the selected studies show that the core age group has the highest number of average weekly hours of paid work, market work, and total work. They also show that the elderly group have a moderate lower number of weekly hours of total work than the youth group as a large shortfall in market work is partially offset by a large excess of non-market work. The effect of shifts in the age distribution of the CNIP depend on the type of shift. During the 29 years from 1990 to 2019, the share of the elderly increased by 5 percentage points at the expense of the youth (-3 percentage points) and the core age group (-2 percentage points). Because the hours of total work by the elderly are lower than those of the other two groups, this demographic shift would tend to lower the overall average weekly hours of work per person even if all other factors are kept constant.

Aguiar and Hurst (2006) present mean hours of total work per person conditional on age, having children, and education level and unconditional for the period from 1965 to 2003. Their analysis found small differences between the conditional and unconditional means, which means that the interaction among the above three factors led to a neutral effect on hours of work. Ruggeri (2020) compared average weekly hours of work per person for 2003 and 2018 under the actual age distribution and the counterfactual keeping the age distribution as it was in 2003. His calculations show that the change in the age distribution of the population had little effect on the difference in the hours of non-market work, but depressed the average weekly hours of market work by 1.5 hours.

Employment Rate. The civilian non-institutional population 16+ has two components: those who are employed and those who are not (they are not in the labor force or are unemployed). By definition, the two groups in the latter component have no hours of paid work or market work (except for students if we include education time as work). Therefore, even if they dedicate more hours on

non-market work, a shift in the relative employment rates of these CNIP components has the potential of affecting the overall average weekly hours of work. From 1990 to 2019 the employment rate (the proportion of the CNIP that is employed) decreased by 2 percentage points. The change, however, occurred in the two age groups with the lowest weekly hours of work: an increase of 8 percentage points for the elderly was more than offset by a decline of nearly 9 percentage points for the youth. The employment rate for the core age group remained roughly unchanged. One can conclude that changes in the employment rate had minimal effects of hours of work from 1990 to 2019.

Education. There was a major shift in the educational attainment of the labor force from 1990 to 2019 as the share of potential workers with more than a high school degree increased from about half to over three-quarters. In 2019 members of the labor force with a least a bachelor's degree accounted for 41 percent of the total. If hours of work differ significantly by education level, this shift would have a significant impact on overall hours of work. Aguiar and Hurst (2006) estimated that in 1985 workers with at least a high school degree worked on average about 2 extra hours per week compared to those without a high school degree. This difference was due to market work. By 2003 this difference more than doubled to 5 hours.

Data from ATUS Surveys for 2003 and 2019 tell a different story. In 2003, weekly hours of paid work per worker (based on those working on diary days) by those without a high school degree were only 40 minutes per five-day week higher than the hours of those with at least a bachelor's degree. By 2019 this difference had increased to 1.9 hours, due entirely to an increase in the working hours of those without a high school degree. It should be noted that, in the data by education level, Aguiar and Hurst (2006) cover the population 21-65 and exclude students while ATUs Surveys include the population 25+. Because the comparison between 2003 and 2019 is based on the same methodology and the two educational groups worked nearly equal hours in 2003 and the difference and hours of work increased by only one hour and 9 minutes per week from 2003 to 2019 (a span of 16 years), it may be reasonable to assume that, at least for the age group 25+, working hours between less and more educated workers were similar in 1990.

The foregoing discussion leads me to the conclusion that the three determining factors considered cannot explain the fundamental question: why did Americans respond to economic growth and productivity increases by reducing weekly hours

of work during the three decades from 1950 to 1980 but not during the 29 years from 1990 to 2019? To further explore this question, I now turn to the remaining two determining factors.

Wage Growth. The Economic Policy Institute (2021) has tracked the index of labor compensation (wages and benefits of production/non-supervisory workers in the private sector) and net productivity (output of goods and services less depreciation per hour worked) since 1948. The two indices had similar values in 1950 and nearly equal growth rates from 1950 to 1981. Starting in 1981, the two paths diverged. Net productivity followed a similar growth pattern as in the previous 31 years, but labor compensation increased at less than one-third the growth of net productivity. In the 1950-81 period, productivity growth was fully shared by labor, lifted many workers out of poverty, helped swell the ranks of the middle class, and allowed workers to acquire a bit more leisure. In the following 28 years, workers did not partake in the benefits of productivity growth. With stagnant real wages, workers had to maintain their hours of work just to afford paying the bills.

Income Inequality. The shift in the relationship between labor productivity and labor compensation at the beginning of the 1980s was paralleled by a shift in the trend in income inequality. According to estimates by Kuhn, Schularik, and Steins (2018), based on data from the Survey of Consumer Finances, from 1950 to 1977 the income share of the top 10 percent of households fell by nearly five percentage points from 34.5 percent to 29.7 percent, a decrease paralleled by the increase in the share of those in the 50-90 percent range, which rose from 43.9 percent to 48.8 percent. A large reversal occurred during the following twelve years as the share of the top 10 percent rose by 10.2 percentage points while that of the 50-90 percent fell by 5.0 percentage points. This trend continued over the next twenty-seven years with the share of the top 10 percent increasing by an additional 7.7 percentage points and that of the 50-90 percent declining by 5.9 percentage points. In 1950 the share of the 50-90 percent exceeded that of the top 10 percent by 9.4 percentage points. This gap expanded to 19.1 percentage points in 1977 but shrank to 3.9 percentage points in 1989. In the 1990s the share of the top 10 percent overtook that of the 50-90 percent and by 2016 the gap expanded to 9.7 percentage points. From 1977 to 2016, the share of the top 10 percent gained 17.9 percentage points at the expense of the 50-90 percent which lost 10.9 percentage points.

Similar conclusions were reached in a study by Horowitz, Igielnik, and Kochhar (2020), who used data from the Current Population Surveys and standardized

households to a size of 3. They divided the income distribution into three groups: upper income, middle income (about 44 percent of upper income), and low income (about 14 percent of upper income). Their estimates show that from 1970 to 2018 the income share of the upper-income group rose by 19 percentage points from 29 percent to 48 percent while the share of the middle-income group fell by the same number of percentage points declining from 62 percent to 43 percent.

During the first two/three decade after 1950, the full sharing of productivity gains by workers led to an expansion of the middle class and a decline in income inequality. Through the power of labor unions which covered the majority of private sector workers, it also led to improved working conditions and a decline in hours of work per worker and per person. During the past three decades, the decoupling of labor compensation from productivity gains and the associated decline in union membership, shrinking of the middle class, and rising income inequality has created three categories of workers, each one with pressures to maintain long working hours. At the lower end, an increasing share of the labor force has experienced stagnant real wages and often needs to engage in multiple jobs just to survive. At the upper end, a smaller but expanding group, which saw rapid real wage gains, has developed into a class of its own recognizable by the address and size of their homes and the private school attended by the children, needs to work long hours just to maintain its “membership” in this class. In the shrinking middle, one portion cannot afford more leisure for fear of sliding towards the dreaded lower income class and the other portion must keep working long hours to keep alive their American dream of joining the upper class. Thus, by need or by choice, none of the three classes pursue additional leisure. For those at the upper and lower end of the income distribution, the above suggestion about working motivation is supported by estimates from Mathisen (2022). Using data from the May 2022 *Current Population Survey*, he estimated that, among those working full time, workers in the top 10 percent worked 4.4 more hours than workers in the bottom ten percent.

Conclusions

Using a consistent methodology, I estimated that average weekly hours of work per person 16+ in the United States were identical in 1950 and 2019. An increase of 1.9 hours per week in market work (paid work plus related activities and time spent on education and training) was offset by a decline of 1.8 hours per week in non-market work. I then reviewed a number studies that measure hours of work for

different parts of the 1950-2019 period, making adjustment where possible to reduce methodological inconsistencies. This review led to the identification of three sub-periods: 1950-1980 when hours of work declined; 1980-1990 when hours of work rose; and 1990-2019 when hours of work remained stable. Focusing on the first and last sub-periods, I briefly discuss five factors that may explain why Americans 16+ responded to real GDP and labor productivity growth by reducing hours of work in the first period and not changing them in the last period. I suggest that among these factors (changes in the age distribution of the population, the employment rate, and the educational attainment of the labor force, shifts in the relationship between productivity and labor compensation, and reversing trends in income inequality. The last two are the most significant.

Notes

¹This paper relies heavily on Giuseppe Ruggeri (2022).

²US Bureau of Labor Statistics (2019)

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