

The Growth in Work Time and
the Implications for Macro Policy

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In May 1997, the official unemployment rate reported by the U.S. Bureau of Labor Statistics (BLS) was 4.8 percent, the lowest rate in twenty-four years. Not since the era of President Richard Nixon had the jobless rate been this low. The BLS also reported that unemployment had now remained below 6 percent for thirty-three months in a row. Not long ago most economists would have considered such an unemployment record impossible to achieve, or at least impossible without igniting an explosive cycle of wage-led inflation. Yet prices have remained under control. During the past two and half years, the consumer price index has risen only 2.8 percent a year -- well less than half the average annual inflation rate of the 1980's. Moreover, instead of accelerating as the jobless rate dropped, monthly price increases in early 1997 were smaller than in the preceding year. In the first quarter of 1997, when the economy was growing at a red-hot 5.9 percent annual rate, inflation was trending downward toward 1.8 percent.

Such a sanguine employment/inflation environment has forced economists back to the drawing boards to try to figure out why reality has seemingly so conspicuously trumped

economic theory. As Steven Pearlstein (1997) of the *Washington Post* reports, "A decade ago, if you'd predicted (this) kind of economic development, many economists and business leaders would have laughed." Federal Reserve Board chairman Alan Greenspan, in his biennial report to Congress in July 1997, proclaimed that the current state of the economy was superb. Further, despite the official low unemployment rate, he conceded that there were no immediate signs of inflation on the horizon.

Many business writers have been forced to abandon the old orthodoxy and talk of a new "paradigm" in which rising inflation is no longer set off by unemployment rates as low as five percent. Since this is uncharted territory, no one knows how low the unemployment rate can be and still not cause prices to rise. Is it 5 percent? Or 4.5 percent? Or perhaps even 4 percent? Some analysts have noted that some states and regional labor markets have maintained local unemployment rates of four percent without any signs of upward wage pressures. This situation can be viewed as evidence that we are not even close to excessively tight labor markets.

There is no end to speculation about the causes of this new benign economic climate. Improved productivity, particularly in manufacturing, is given credit for helping to keep a lid on prices. Output per hour in the goods-producing sector has been growing at nearly 3 percent a year since 1989 -- a level nearly half again as large as during the 1970's and equal to the rate during the "golden years" of the 1960's. This has helped contain costs in many industries. In some prices are even falling.¹ Declining transportation costs are another factor. While freight

¹ For example, in the year ending in May 1997, producer prices for heavy trucks were down 4.5 percent, glass container prices were off 2.9 percent, photographic equipment was down 2.3 percent, and major consumer goods from household appliances to toys and cosmetics saw consumer price declines ranging from 1 to 2.2 percent (Mandel, 1997a).

volume continues to grow, its cost as a percentage of GDP has fallen from about 7 percent in 1990 to under 6 percent today. This is due in part to the rapid diffusion of high-tech equipment throughout these industries including electronic scanners for tracking shipments and more fuel efficient trucks, locomotives, and aircraft (Matthews, 1997).

Most surprisingly, the service sector (over and above transportation) is doing its part too. Until recently, economists believed that service sector price increases were inevitable because of "Baumol's disease," a reference to the theoretical work of New York University economist William Baumol. In the 1960's, Baumol (1967) postulated that the rate of inflation would tend to increase over time as the economy moved into the post-industrial age and services became a larger part of national output. This would occur because services are essentially labor-intensive, unlike manufacturing, and presumably cannot count on automation to boost productivity. After all, how can anyone boost the efficiency with which the New York Philharmonic plays Beethoven's Ninth?

Now the "cost disease" in such sectors as health care, education, and even legal services is proving susceptible to treatment, if not cure, by new medical and educational technologies and by information technologies more generally. The inflation rate for housing, medical care, college tuition, and auto insurance are all on a downward path. Prices in the non-energy services sector as a whole rose by only 2.3 percent in 1996. By comparison, the lowest rate at any time during the 1980's was 4.7%. Michael Mandel of *BusinessWeek* reports that nearly 70 percent of the entire drop in inflation since 1986 has come from services, a rather startling finding given that manufacturing is normally credited with keeping inflation at bay (Mandel, 1997b).

The recent decline in service sector inflation, particularly in health care, has had an

ancillary beneficial impact on the cost of employee benefits throughout the economy. After rising by better than 2 percent per year earlier in the decade, benefit costs actually declined in 1995 and again in 1996, reigning in overall employment cost increases despite tighter labor markets (Bernstein, 1996).

All of these factors play a role in creating the present low-unemployment/low-inflation environment. But we believe there is something much deeper at work. This has to do with how the expansion of global markets, the deregulation of key industries, the weakening of labor unions, and corporate downsizing have fundamentally changed the structure of labor supply. All of these factors have generated a greater sense of job insecurity (and we might add stagnating or, in many cases, declining family income.) Beginning in 1996, Alan Greenspan began to suggest that prices have been held in check because workers have foregone wage hikes for job security (Greenspan, 1996). He noted that the past few years have been a period of extraordinary labor peace, with strike activity at its lowest point in the last half century and unions often pledging themselves to five and six year contracts in an attempt to lock in job security at the expense of higher wages. As such, despite low unemployment and a strong economy, there is little wage pressure and no tendency toward a wage-price spiral.

We think that the Federal Reserve Chairman is largely correct. Job insecurity is a critical factor, but we believe the mechanism that links job insecurity (and stagnating incomes) to price stability has less to do with union contracts and more to do with a fundamental shift in what we term the “labor supply regime.” In brief, this policy paper will present evidence that both increased job insecurity and stagnating incomes have kept inflation in check by encouraging increased labor supply *from incumbent workers* to meet increased labor demand as the economy

expands. The key point is that in this new regime, the venerable Say's Law has been turned on its head: increased demand creates its own supply. In the face of heightened job insecurity and declining wage rates, workers now toil as many hours as possible when jobs are plentiful in anticipation of future downsizing and job loss -- and they do this at existing wage rates. Moreover, declining hourly wage rates even in the absence of job insecurity have forced individuals and families to increase their hours of work simply to maintain their annual incomes. *This relieves what otherwise would be a significant labor supply constraint that normally accompanies low official unemployment rates.* Instead of having to raise wages to attract more workers, firms have increasingly been able to fill their additional need for labor by employing their own workers longer or by offering second jobs to workers who are employed elsewhere. This is far different from the labor supply "regime" of the 1970's when economic growth depended much more on coaxing additional workers into the labor force — a practice which history suggests required offering higher wages.

This new source of labor supply has essentially eliminated inflationary pressure in the overall economy despite low official jobless rates. Until workers realize significantly higher hourly pay rates and experience greater employment security, it is likely that the upward trend in weekly and annual work hours will continue. Unemployment rates below 5 percent -- perhaps even in the 4 percent range -- can thus be maintained without serious inflation. This shift toward a "high work time" regime suggests that the Federal Reserve Board should shy away from according much weight to the official unemployment statistics which by construction fail to detect such a shift in labor supply.

This paper will be organized in three parts. First, we will present the logic and original

evidence for Phillip's Curve and NAIRU. We will show that the sources of increased labor supply during the past two expansions have shifted significantly compared with the experience of the 1970's business cycle. The second part will review the debate over whether American workers are putting in more hours at work. We will develop our own measure of working time to look at male, female, and family working time since the late 1960's. In the third section, we rely on longitudinal data to show that individual workers are increasingly having more ups and downs in their employment histories over subsequent ten-year periods.

The Unemployment Rate, NAIRU, and Economic Policy

The importance of this new labor supply regime can best be understood in historical context. Until quite recently, economists' pessimism about the potential for simultaneous low unemployment and low inflation was based on a particular model of labor market behavior. At "low" official unemployment rates, unused capacity in the workforce was thought to be virtually exhausted. With fewer workers seeking jobs, employers in the market for additional staff would have to raise wages in order to coax workers to leave other firms to join theirs. With greater confidence in their ability to find more remunerative work, workers would pressure their own employers for higher pay. When sufficient workers do this and companies capitulate to their demands, firms are forced to raise their prices to cover their added costs -- or see their profits erode. With prices rising, workers are motivated to ask for additional wages to maintain their purchasing power. In many union contracts, "cost of living adjustments" (COLA's) automatically do this. Left unchecked, an overheated economy will generate sufficient upward price pressure to undermine profit rates and stock market prices. In turn, investment will begin

to shrink and the economy will head into a tailspin.

In this way, inflation leads ineluctably to its opposite — recession. The wage-price spiral begins with unemployment below its “natural rate.” Prices then rise at ever faster rates until stable corporate planning can no longer be maintained. As firms cut back and lay off personnel, unemployment grows and workers begin to experience job insecurity. Lower production and the growing inability of workers to win wage increases finally undermine inflationary pressures. The slowdown ultimately lays the seeds for a recovery, but not without large losses in output and income.

To forestall such an outcome, the Federal Reserve Board is supposed to resort to preemptive action, raising short term interest rates to slow the economy and nudge unemployment rates back up into a “safe” zone. *If* low unemployment rates are a good indicator of tight labor markets, then such Fed action can be justified as a deliberate deterrent to a roller-coaster cycle of inflation and recession. We may not relish the idea that a reserve army of 7 to 8 million unemployed workers is needed to tame the business cycle, but the presumed alternative of recurrent bouts of hyper-inflation and double-digit unemployment is viewed as even less palatable.

This concept of a “natural rate” of unemployment was first introduced by Milton Friedman (1968) and almost simultaneously by Edmund Phelps (1968). Its more formal name, the “non-accelerating-inflation rate of unemployment” or NAIRU, suggests that below some “natural unemployment rate” increases in aggregate demand will result not simply in price increases, but *accelerating* rates of inflation. Early estimates of the NAIRU, based on experience in the U.S. from 1960-1990 placed the natural rate in the neighborhood of 6 percent.

Ever since the concept of NAIRU was first propounded, there have been theoretical and statistical criticisms of the concept. In recent work, Robert Eisner (1996) has demonstrated a significant asymmetry in the NAIRU. He finds that while unemployment above the NAIRU may have historically lowered inflation in the U.S. as the theory suggests, rates below the NAIRU have had little or no lasting effect in increasing inflation. Hence, the natural rate hypothesis itself is open to dispute. Others, including Robert J. Gordon (1997) and Douglas Staiger, James Stock, and Mark Watson (1997) conclude that NAIRU exists, but it varies over time. In analyzing the period 1955-1996, Gordon concludes that the time-varying (TV) NAIRU has drifted downward from 6.2 percent in the late 1980's to 5.7 percent in the mid-1990's (measured on the GDP deflator). Staiger, Stock, and Watson also find a decline in the point estimates of NAIRU from 6.8 percent in 1984 to 5.9 percent in 1994 (measured on the CPI) as well as a large standard error around the estimated point estimates.

The key point, however, is that in all of these cases, the variable of note is the official unemployment rate and inflationary pressures are still thought to be forthcoming at unemployment rates well in excess of 5.0 percent. For its part, members of the Federal Reserve Board have indicated that they consider many factors in gauging potential inflationary pressure in the economy including the extent to which physical capital is being utilized and the degree to which the stock market may be overvalued. But for the Fed as well, the official unemployment rate is clearly the single indicator of unused capacity that receives the most attention.²

² Soon after the jobless rate first slipped below 6 percent in 1994, the Fed raised short-term interest rates a quarter point and followed this up with five more rate hikes in quick succession, deliberately trying to slow the economy. The Fed action "worked." Although inflation never did appear as a problem, the higher interest rates slowed the GDP growth rate

(continued...)

Fighting the Last War

What has motivated Fed policy during the past two decades is a steadfast vigilance against any possible recurrence of the violent business cycle that pummeled American families and businesses during the late 1970s and early 1980s. The annual rate of increase in the consumer price index rose from 5.8 percent in 1976 to an unprecedented 13.5 percent in 1980 as unemployment fell from 8.5 percent in 1975 to 5.8 percent in 1979. Back then, the Fed under newly-appointed chairman Paul Volcker raised interest rates deliberately to crush inflation, slowing the economy to the point where the national unemployment rate reached nearly 11 percent in December 1982. Since no one wants to live through those times again, the low unemployment rates we have experienced over the past two and half years are viewed with some concern. If the historical record is considered, it seems to provide a clear signal that we have crossed over into the danger zone where a tight labor market will lead to an explosive wage-price inflationary cycle.

But will it? If a 4.8 percent jobless rate connotes the same degree of labor market tightness as it did in the 1970's, then we are almost surely in for another bout of serious inflation

²(...continued)

from 3.5 percent in 1994 to just 2.0 percent in 1995. More recently, in March of 1997, the Board raised the federal funds rate -- the interest rate member banks charge for overnight loans -- soon after the BLS announced that the unemployment rate had fallen to 5.2 percent. And, again, only days after the Bureau of Labor Statistics announced that the unemployment rate had fallen under 5 percent in April 1997, Alan Greenspan was publicly warning of labor markets that seemed to have become too tight for the good of the economy. Speaking at New York University, he noted that "While there is scant evidence of any imminent resurgence of inflation at the moment, there also appears to be little slack in our capacity to produce." (Quoted in Schlesinger, 1997) That the Fed was considering raising interest rates again to purposefully slow the economy was clear from his remarks. Presumably, Greenspan was judging that at such low unemployment rates, feelings of job insecurity surely had to be evaporating.

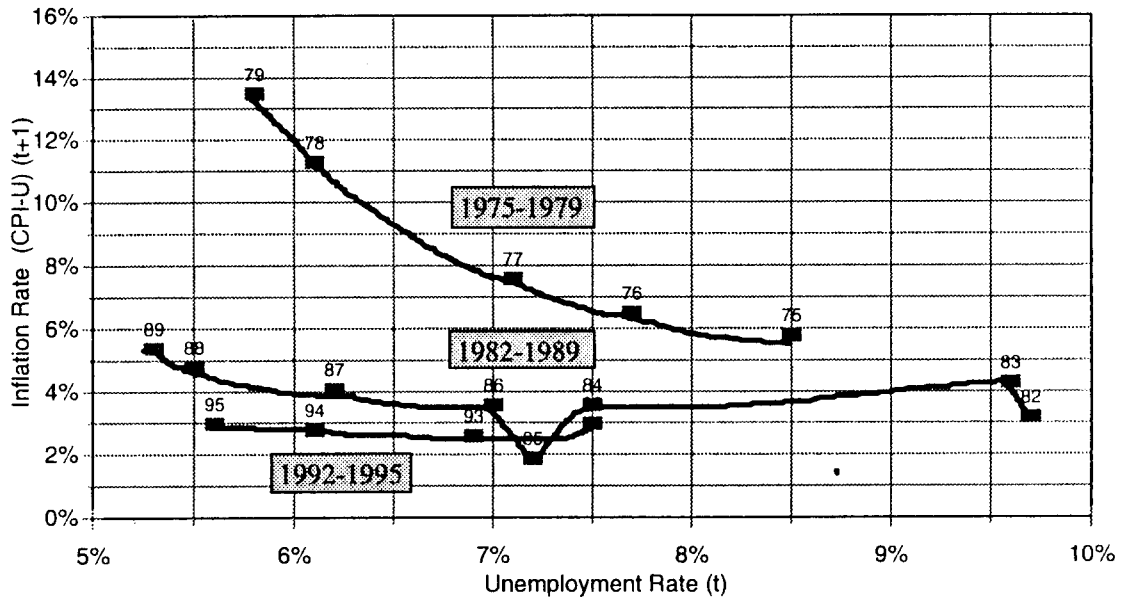
unless the Fed acts immediately by strongly applying the monetary brakes. On the other hand, if the unemployment rate is no longer a reliable measure of the remaining store of unutilized labor supply, then we may be able to safely ignore the unemployment rate and allow the economy to grow without attempting to moderate it. Military historians refer to “fighting the last war,” a reference to how veteran generals have pursued new wars using the outdated lessons from what went wrong in the last.

Data on the past three business cycle expansions suggest that such a regime shift has occurred. In Chart 1, we have plotted the inflation rate against the unemployment rate lagged one period. In each case, the data series begins in the year in which the unemployment rate reached a cyclical peak and is followed until the jobless rate bottoms out.

As the chart demonstrates, the trade-off between inflation and unemployment has improved markedly since the 1970's. Back then, inflation was running in excess of six percent a year even with 7.5 percent of the labor force unemployed. As the unemployment rate came down, the inflation rate rose sharply in a clear “Phillip’s Curve” pattern. Tightening labor markets on top of pent-up price pressures from the abolition of Nixon era wage and price controls plus the second oil shock of the decade drove inflation to record levels as the unemployment rate fell below 6.5 percent.

Chart 1

Unemployment Rate/Inflation Trade-Off Selected Economic Recovery Periods



The trade-off during the 1980's recovery was much more benign. During the entire expansionary portion of the cycle, inflation remained below the 1970 rates and the entire inflation-unemployment pattern was generally flat until unemployment fell below 6.5 percent. In the current recovery, there is hardly any hint of any trade-off. *Even at jobless rates below 6 percent, there does not appear to be a Phillip's Curve at all.* This is what has economists stumped. History does not appear to be repeating itself as the inflation-unemployment relationship seems to be fundamentally shifting. It is time-varying as Gordon suggests, but we are not finding much price pressure even at unemployment rates well below his estimated NAIRU of 5.7 percent.

Measuring Labor Market Supply

The problem, we believe, lies less in the theory underlying NAIRU and more in the data used to estimate it. Essentially, the Phillip's Curve -- the tradeoff between inflation and unemployment -- has been shifting downward and flattening out not because the Phillip's Curve has ceased to exist, but because the official unemployment rate is at best a proxy for labor supply conditions and increasingly a poor one. The same (low) unemployment rate in the 1990's does not signal the same degree of "tightness" in labor supply as it did in the 1970's. As such, the relationship between unused labor supply and inflation may still hold, but one can no longer rely on the official unemployment rate as a reliable measure of unused workforce capacity. Very tight labor markets may still lead to wage-price pressures, but even a 4.8 percent unemployment rate may no longer be an indication of such labor market conditions.

In its more technical work, hardly ever reported by the media, the BLS admits the official unemployment rate is only one of many measures of labor utilization. Indeed, each month the agency calculates a range of unemployment rates, each including one or more groups of individuals potentially available for work but who are not officially unemployed. These additional underutilized workers include those who are involuntarily part-time, those who are "discouraged" and therefore have given up looking for a job, and workers who were previously looking but gave up because of the press of family responsibilities or other reasons. Presumably many of these workers would be ready to go back to work if an appropriate job suddenly became available. Labor force participation is thus a function of job availability. In this case, the standard unemployment rate is an inaccurate measure of unused labor supply.

But there is an even more fundamental reason why relying on the standard jobless rate

can be misleading. Measuring the true supply of labor involves more than counting the number of people working or prepared to work as the official measure does. *Change: in the number of hours* incumbent workers put in on the job can be just as important as changes in the number of unemployed workers themselves. This is completely overlooked in the official statistics for the BLS counts anyone working one hour or more for pay as in the labor force and employed. If incumbent workers increase their hours of work, this is irrelevant to the unemployment rate -- but hardly irrelevant to the level of labor supply. A one percent increase in the number of hours worked per worker for a fixed supply of labor is mathematically equivalent in terms of labor supply to a one percent increase in the number of workers. Hence, from the perspective of "workforce capacity" the two are equivalent. Moreover, if incumbent workers have higher productivity than new workers who are brought in from the end of the hiring queue, then increased labor supply from existing employees raises potential economic growth more than the labor supplied by new labor force entrants.

If average work hours remained reasonably fixed over time, the unemployment rate would be a good proxy for overall labor supply. But this has not been the case, as we shall demonstrate. The nature of working time is changing in the economy. A larger and larger proportion of the workforce deviates from working a "standard work week" and "standard work year." One in six workers now report working part-time schedules with one-quarter of these doing so involuntarily -- a sign of "underemployment." At the same time, over six percent of workers now report working at two or more jobs, while many seek as much overtime as is offered them.

The growing importance of work hours as a factor in total labor supply is revealed in

Table 1. Here the total number of additional hours supplied the labor market during the past three expansionary cycles is decomposed into four factors: (1) the growth in the civilian population age 16 and above (2) changes in labor force participation (3) changes in the unemployment rate, and (4) changes in average weekly hours per worker.

According to this analysis, somewhere between two-fifths and half of the additional work hours worked during the past three expansionary periods were supplied as a result of simple population growth. This increase in supply is, of course, independent of the business cycle. The contributions of the other three elements, however, vary over the cycle and have varied rather dramatically in their relative importance from one period to the next. More than a fourth of the additional hours worked in the 1970's was attributed to increases in labor force participation. By the 1990's, this source accounted for less than 5 percent of the total additional hours. After decades of rising participation rates, particularly as a result of increased women's participation, the trajectory reached a plateau in the first years of the current recovery. It has only begun to grow again at a faster pace in 1996 and 1997.

In sharp contrast, the role of declining unemployment and even more importantly, average weekly hours, has increased substantially over time. In the late 1970's, less than one-fifth of additional work time was due to workers being called back to work from unemployment. By the 1990's, this single factor accounted for nearly a third of the total addition to work time. The increased contribution from longer work weeks was even more significant. In the 1970's growth cycle, practically none of the total increase in work time was due to existing workers putting in more hours. By the 1990's, fully one-sixth of the additional labor supply came from incumbent workers. *Together, the combined contribution of unemployed workers returning to work and*

incumbent workers putting in longer work weeks is accounting for nearly half of the increased labor supply that is sustaining non-inflationary economic growth in the early 1990's.

Back in the 1970's, these two factors accounted for only about one-fifth of the total -- the rest coming from new labor force participants. This is the essence of the labor supply regime shift. We are now obtaining much more labor supply from experienced workers rather than new labor force recruits and a good share of this added supply is forthcoming when the official unemployment rate signals little slack in the economy.

Table 1

The Sources of Additional Hours of Work ³

Total Added Hours of Work due to:

Period	Changes in Population	Changes in Labor Force Participation Rate	Changes in the Unemployment Rate	Changes in Average Hours Worked per Week	Change in Total Hours Worked
1975-79	51.0%	27.2%	19.7%	2.2%	100%
1982-89	41.4%	19.7%	24.6%	14.2%	100%
1992-95	46.7%	4.7%	32.0%	16.6%	100%

Source: Economic Report of the President (1987; 1997); Special tabulations on hours from *Current Population Survey* data.

³ This analysis was carried out by decomposing the changes in total hours of work according to the following formulas:

Added Hours due to Changes in Population Growth:

$$\Delta \text{Pop}_{(t-(t-1))} \times \text{LFPR}_t \times (1-\text{UR}_t) \times (\text{HRS/Worker})_t$$

Added Hours due to Changes in the Labor Force Participation Rate:

$$\Delta \text{LFPR}_{(t-(t-1))} \times \text{Pop}_t \times (1-\text{UR}_t) \times (\text{HRS/Worker})_t$$

Added Hours due to Changes in the Unemployment Rate:

$$\Delta (1-\text{UR})_{(t-(t-1))} \times \text{Pop}_t \times \text{LFPR}_t \times (\text{HRS/Worker})_t$$

Added Hours due to Changes in Hours Worked per Worker:

$$\Delta (\text{HRS/Worker})_{(t-(t-1))} \times \text{Pop}_t \times \text{LFPR}_t \times (1-\text{UR})_t$$

where: Pop = Civilian noninstitutional population
 LFPR = Labor Force Participation Rate
 UR = Unemployment Rate
 HRS/Worker = Average Annual Hours worked per worker

The Sources of Labor Supply and NAIRU

It is reasonable to ask why we are now seeing so much more labor effort forthcoming from incumbent workers. A combination of standard labor supply theory and the current environment of stagnating wage rates and job insecurity explains a large part of this behavior.

By tradition, normally we draw the supply curve for labor as upward sloping as we do the supply curves of traditional goods and services. But the labor supply curve is, in fact, fundamentally different and can actually bend backwards. The offer of higher wages can, under realistic conditions, reduce the supply of labor while lower wages can increase it. This is well known among labor economists and is due to the fact that supply is influenced by both income and substitution effects. Increases in income per se induce a worker to consume more leisure, thereby reducing the willingness to work. This is the income effect.⁴

Where an increase in income comes as a result of an increase in one's pay rate, there is both an income effect -- because the higher wage rate provides a higher income at the same hours of work -- and a substitution effect because an hour of leisure is now more expensive. An additional hour of leisure can only be purchased at a higher price -- the foregone income from the new higher wage rate. In this case, the income effect leads the worker to work less while the substitution effect leads the worker to want to work more. Depending on the relative strength of the two effects, an increase in the wage rate can increase labor supply, reduce it, or leave it unchanged.

Normally, we think of the substitution effect dominating the income effect. This is what

⁴ The textbook example is of the worker who wins a multimillion dollar prize in a state lottery. His wage remains unchanged, but his income rises significantly. Often, such prizewinners will choose to cut back on work hours, at least temporarily.

gives us the usual-shaped labor supply curve and the expectation that higher wages are needed to coax out more labor from “leisure” time activities. There are at least two cases, however, where it is possible to obtain increased labor supply without a concomitant increase in wage rates. The first involves “target income” or “target consumption” behavior. In cases where individuals work in order to meet a fixed income or consumption level, labor supply will be *inversely* related to the wage rate. Offered a higher wage rate, a worker will cut back his or her hours taking the gain in the form of leisure. In this case, there is a pure income effect. Similarly, if the wage rate falls, the worker will have to work more hours to compensate for the lower pay rate. Hence, stagnating or falling wages in the face of fixed mortgage payments, car payments, and outstanding credit card balances will force workers to put in more hours at work, not less.

The second case involves job insecurity or at least the expectation of job insecurity. Assuming that individuals have some long-run income objective, they will alter their hours of work to compensate for periods when they might face layoff or involuntary part-time hours. Hence, if workers fear a future layoff, they might attempt to increase their current work hours in order to set aside a cushion against future loss. Overtime work or “moonlighting” is therefore a form of income insurance for workers facing potentially unstable work futures. Such individuals may be willing to work all the hours they are offered at their current wage rate — or may take on second jobs at current or even lower wage rates — in order to accumulate income reserves. Precisely when jobs are plentiful, individuals will be there to supply the additional hours — even at existing pay rates.

We believe that it is precisely this type of labor force behavior that can help explain the change in labor supply regime we have identified. *The preconditions for a backward bending*

supply curve have been developing for the past quarter century and have continued right through much of the 1990's. Real hourly wages of production and nonsupervisory workers peaked in 1973. Since then, they have declined from \$8.55 (in 1982 dollars) to \$7.43 in 1996 (Council of Economic Advisers, 1997). Even with the recent recovery of the economy, wages have continued to stagnate. Between 1991 and February 1997, the real average wage rose a total of just 2¢ per hour. In such a long-term wage climate, target income behavior is likely.

Similarly, there is evidence that the fear of job insecurity is on the rise. Alan Greenspan cites, for example, a time-series survey of workers carried out at 444 large companies by the International Survey Research Company. In 1986, only 20 percent of respondents were “frequently concerned about being laid off.” The comparable ratio in 1996 was 46 percent. No more than 24 percent of those working for these companies were frequently worried about job loss even during the deep recessions of the 1980's.⁵ Faced with such insecurity, it is not unlikely that workers will feel greater pressure to take on added work when it is available — and will be willing to do so even at their current wage rate. Again, we have Say’s Law in reverse and the conditions for non-inflationary growth at low recorded unemployment rates.

But how much have the hours of work of incumbent workers actually increased and who is supplying them? Is there a sufficient change in supply to permit us to declare a shift in labor supply regime? We turn our attention to these questions in the remaining sections of this monograph.

⁵ Cited in the *New York Times*, February 27, 1997, p. B6

Changes in Working Time in the U.S.

In an earlier paper, we put forth the claim that Americans are both “overworked” and “underemployed” (Bluestone & Rose, 1997). Our research was motivated by the debate set off by Juliet Schor’s seminal book, *The Overworked American*. In it, she estimated that Americans worked an average of 163 more hours a year in 1990 than they had in 1970 — the equivalent of nearly an extra month of full-time equivalent work (Schor, 1991). Men were working two and a half more weeks per year; women an average of seven and half more weeks. This increase reversed over a century of declining working time. American workers were now putting in more work in on a yearly basis than workers in any other advanced economy.⁶

Many researchers criticized Schor’s view by citing other labor market indicators which seemed to be signaling that working time was really decreasing, and not necessarily voluntarily. For example, employer surveys — the very ones the Bureau of Labor Statistics use to measure weekly hours when it reports the monthly unemployment rate — show weekly hours in manufacturing and weekly hours in the rest of the economy going in opposite directions. It is clear that in much of manufacturing, the use of overtime is becoming the norm. For the first four out of five post-World War II business cycles, average weekly hours of work for production and nonsupervisory workers in manufacturing remained roughly constant, varying only slightly between 40.1 and 40.4 hours. However, during the current business cycle (1989-1996), the average workweek has jumped to 41.0 hours -- with average overtime reaching a post-World

⁶ According to a recent survey by the British news magazine, *The Economist*, Americans have now surpassed even the Japanese in annual work time and toil 15 percent longer than the typical German. See “Workaholics Anonymous: Why do Americans work so hard?” *The Economist*, October 22, 1994, p. 20.

War II peak of 4.7 hours per week in 1994 (Council of Economic Advisers, 1997).

Yet, manufacturing seems to be the odd man out. Across all industries, the number of weekly hours on the typical job has been shrinking steadily since World War II as Table 2 demonstrates. In the period 1947-1958 the average work week was nearly 40 hours, the “full-time” standard for much of this century. In the most recent business cycle, the average work week fell below 35 hours, the cutoff normally used to define a “part-time” job.

Table 2

**Average Weekly Hours
Total Private Sector Employment**

1947-1958	39.5
1959-1972	38.2
1973-1978	36.2
1979-1988	35.0
1989-1996	34.5

Source: Council of Economic Advisers, *Economic Report of the President, 1987*, Table B-41 and Council of Economic Advisers, *Economic Report of the President, 1996*, Table B-43.

Much of this is due to the growth in such sectors as retail trade where part-time hours are common. Added to this is the fact one of the very fastest growing sectors over the last 15 years has been employment in temporary help agencies. These jobs along with the increased use of “contract employees” and other forms of “contingent” work are responsible for the reported shortening of the work week (Belous 1989; Tilly 1997).

One estimate for 1988 places the number of contingent workers (part-time, temporary, and contract workers) at between 29.9 and 36.6 million or between 25 and 30 percent of the civilian labor force (Belous, 1989). In 1996, 22 million workers (18 percent of labor force) were part-timers, working 35 hours or less per week. Smaller in absolute numbers, but growing much faster, is the temporary workforce which between 1982 and 1996 more than quadrupled to two million workers. The number of contract and self-employed workers is also growing rapidly. In a report completed in 1991 on data for 1985 through 1988, the U.S. General Accounting Office reported that the number of individuals who were self-employed or working under personal contract was growing at over 13 percent a year (as measured by IRS 1099 Form submissions) (U.S. General Accounting Office 1991). In 1995, 14 million Americans worked for themselves either full-time or as a supplement to regular or part-time employment.

In addition to those with non-standard employment situations, counting the number of unemployed is not straightforward. Beginning in 1994, the Bureau of Labor Statistics (BLS) began compiling a new set of alternative measures of unemployment and underemployment — what the Labor Department calls “labor resource underutilization.” In addition to the official unemployment rate, the BLS adds three types of “underutilized” workers: (1) those who have stopped looking for work only because they have become discouraged by their apparent job prospects (2) those who are “marginally attached” to the civilian labor force, and (3) those who are working part-time only because they cannot find full-time jobs. The “marginally attached” include those who want and are available for a job and have recently searched for work, but have left the official labor force because of such constraints as child care or transportation problems (Bregger & Haugen, 1995).

The official unemployment rate in 1995 was 5.6 percent with an average of 7.4 million failing to find work each month. Adding discouraged workers to the total brings the “underemployment” rate up to 5.9 percent. Adding the “marginally attached” ups the rate to 6.8 percent. Finally, adding in the involuntarily part-time brings the rate to 10.1 percent. In what was a good year for the economy and employment growth, 1995, the total number of unemployed and underemployed workers reached nearly 13.5 million — one in ten of the total labor force (Mishel, Bernstein & Schmitt, 1996).

This number is based on a point-in-time snapshot approach and underestimates the number of people who experience labor market distress over the course of a single year. In 1995, when the official unemployment rate averaged 5.6 percent, the median length of unemployment was eight weeks. Different workers rotated through bouts of unemployment with 15 percent of the labor force experiencing at least some official unemployment. This means that over 25 percent of workers were underemployed during part of a year when joblessness was supposedly low.

When you move from *employer* surveys to *employee* surveys, very different numbers appear, as Schor discovered. Despite the boom in part-time, contingent, and “temp” work, average hours *per worker* appear to be rising because of increased “moonlighting,” increased overtime, and because more workers, particularly women, are moving from part-time to full-time work status. In 1979, 4.9 percent of U.S. workers reported working more than one job during the same work week. By 1995, the percentage was up to 6.4 percent. Virtually all of this increase has occurred among women who now represent nearly half of the 8 million multiple job holders (Mishel, Bernstein, & Schmitt, 1996).

Two Other Estimates of Working Time

As some Americans are apparently putting in very long hours while others are facing underemployment due to the increase in part-time and contingent employment, the trend in *average* work time could conceivably go in either direction. As such, our original research found that despite Juliet Schor's study, there remained a lively statistical debate over what was actually happening to working time in America.

Using data from the *Current Population Survey*, Larry Mishel and Jared Bernstein of the Economic Policy Institute, re-estimated annual work hours for various years. Their research appears to confirm the general proposition of increased *annual* working hours, but for a comparable period (1973-1992) their estimate was only three-fifths as large as Schor's (Mishel & Bernstein, 1994). They calculate that in 1973, the average workweek (for both employed and self-employed workers in the public as well as the private sector) was 38.4 hours. The average work year was 43.2 weeks, yielding an annual estimate of 1,659 hours of work. By 1992, the average work week had climbed by 0.6 hours while the average work year had increased to 45.2 weeks. Hence, annual average hours had risen to 1,759, an increase of 100 hours or 6 percent -- 63 hours less than Schor's estimate. *Three quarters* of the increase, they estimated, could be attributed to more weeks worked per year; one quarter to increased hours per week.

While Mishel and Bernstein's figures are more modest, the overworked American thesis faced stiffer criticism from other analysts. Note that the steady decline in the average workweek reported by employers as shown in Table 2 above suggests that there would have to be enormous increases in moonlighting for average hours *per job* to decline while average hours *per worker* increases. This seems implausible for even after the recent increase in moonlighting, only 8

million workers out of a workforce of more than 125 million report multiple job holding. What may be going on here, say critics, is that the survey data used by Schor and by Mishel and Bernstein are unreliable.

The estimates of hours worked in Schor and in Mishel and Bernstein are based on the *March Current Population Survey (CPS)* for each year. Among several dozen questions about labor market activity, the CPS asks respondents to report “hours worked last week” and “usual weekly hours of work last year.” Individuals have only a few seconds to answer these questions. In making what may be a wild guess, particularly for those whose hours vary substantially from week to week, critics believe that individuals guess high. And the more harried and rushed they feel, the higher they guess.

An alternative measure of working time is procured from special studies that ask respondents to keep a 24-hour time diary of everything they do over a one to two week period (Robinson & Bostrom, 1994). Such time diary surveys were first carried out by the University of Michigan Survey Research Center in 1965 and 1975 and then again by the University of Maryland in 1985.⁷ The accuracy of work time estimates derived from this survey approach is presumably better than CPS measures for three reasons. Survey respondents are required to account for every minute of the time segment they are asked to audit, formal work time is not singled out for special attention, and the recall period is at most one or two days. Respondents do not have to think back to what they did a week ago or try to instantly calculate how many weeks they worked last year.

⁷ Similar time diary studies were carried out in the mid-1960's in a number of other countries as well (Szalai, et.al., 1972).

Based on a comparison of CPS-estimated hours of work and diary entries, John Robinson of the University of Maryland and Ann Bostrom of Georgia Tech University have found that the gap between hours reported using CPS-type questions and the hours reported in diaries increases as the number of reported hours of work rises. Among those reporting 20-44 weekly hours, the CPS-type estimates were only slightly higher than the diary entries. Among workers claiming to “usually” work more than 55 hours per week, the gap was found to be 10 hours or more per week. Values of the CPS-diary difference were generally found to be higher among women than men. Robinson and Bostrom conclude that “the diary data suggest that only rare individuals put in more than a 55-60 hour workweek, with those estimating 60 or more hours on the job averaging closer to 53-hour weeks.”

These results imply that Americans are not as overworked as CPS estimates suggest. Moreover, using the diary studies for 1965, 1975, and 1985, Robinson and Bostrom find a systematic increase in the size of the CPS-diary hours gap over time. The gap rises from just one hour in 1965 to four hours in 1975 to 6 hours in 1985. This increase is more than enough to account for the alleged “overwork” that Schor and Mishel and Bernstein claim.

When the diaries for 1965, 1975, and 1985 are analyzed more carefully, Robinson and Bostrom find only small changes in hours worked among those who normally work 20 hours or more per week. Between 1965 and 1985, men’s average hours declined by 0.7 hours per week from 47.1 to 46.4 hours. Working women’s hours increased by the same amount (0.7) from 39.9 to 40.6 hours. This would seem to suggest that working hours have increased only modestly.

How can we reconcile the Schor and Mishel/Bernstein findings with Robinson and Bostrom? A large part of the answer lies in the fact that Schor and Mishel/Bernstein are looking

at *annual* hours of work and most of the increase in hours is due to increases in weeks worked, not hours worked per week — the focus of Robinson and Bostrom's diary studies. Indeed, according to Mishel and Bernstein, average hours per week increased by just 0.6 hours between 1967 and 1992. However, average weeks worked per year increased from 43.3 to 45.2 over this period. Hence, about three-fourths of the increase in annual hours of work is accounted for by increased weeks of work — the factor ignored in the diary studies.

New Estimates Using the Panel Study on Income Dynamics (PSID)

In our earlier work, we turned to still a third data source to obtain working hours estimates. This was the Panel Study of Income Dynamics (PSID) collected by the University of Michigan Survey Research Center since 1968. Instead of a snapshot that is supposed to reflect the overall population in different years, the PSID has been surveying the same families and their children year after year. Part of its standard labor market section is a series of questions used to ascertain annual hours of work. First, the survey asks respondents to detail their work experience by recalling how many days they were on vacation, on sick leave, on strike, or on leave due to other family members' illness. It then asks questions about regular hours of work per week and weeks worked on the respondent's main job. It poses the same questions concerning up to three other jobs held during the year. Finally, all of this information is combined to yield an estimate of annual hours. Obviously, this approach suffers from recall problems as is true of the CPS, but the detail on each job presumably permits a better estimate than we obtain from the CPS survey.

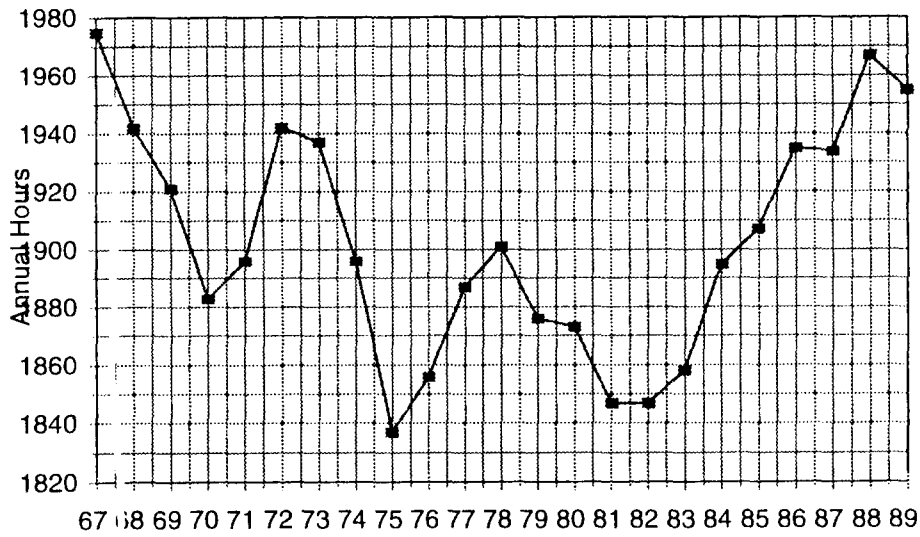
These data can be used in two fashions. First, because of the greater detail on annual working time, we can presumably compute better estimates of yearly working hours than we can

with the CPS. Second, the longitudinal aspect of the PSID offers a unique opportunity to trace the year-to-year variations of individual workers over a ten-year period. Further, because the PSID started so long ago, we can compare the histories of working time during two ten-year periods -- the "Seventies" (1969-1979) and the "Eighties" (1979-1989), each encompassing two complete business cycles. For each of these approaches, demographic information is available so that we could track trends in annual work hours for men and women, whites and blacks, and for segments of the population with differing amounts of schooling.

Using the PSID as a series of cross sections, we computed the average hours of work in each year from 1967 through 1989 for prime age workers (age 25-54). In this case, the sample individuals in each year vary as younger individuals enter the prime age group and aging workers leave it. We limited our sample in each year to those who reported hours of work, eliminating those from consideration who were out of the labor force in a given year. Separate estimates were run for men and women, and by race and by education. Chart 2 provides the results for all prime age workers.

Chart 2

Average Hours Worked All Prime Age Workers



Source: Author's analysis of PSID survey data

From the chart itself, there was clear evidence of variation related to the business cycle. Average hours dipped sharply in 1970-71, in 1975, and then again during the steep 1981-82 recession. But overwhelming the business cycle was a U-shaped long-run trend in hours of work. Average hours declined through the early 1980's and then began a sharp recovery throughout the rest of the decade. When we compared 1979 and 1989, the last two business cycle peaks, it appeared that there had been an increase of 79 hours per year for the average worker.⁸ But over a longer period, this increase marked not so much a startling increase as a

⁸ This result is almost identical to the 1979-89 increase reported by Mishel and Bernstein. Using the CPS, they find an 82 hour increase in annual hours compared to our 79. See Mishel and Bernstein, *The State of Working America 1994-95*, Table 3.1, p. 112.

return to levels which prevailed in the late 1960s.

To obtain a more accurate estimate of the trend in hours — one that controls for the business cycle, we ran regressions where a time trend and the unemployment rate were regressed on annual hours of work for the entire 1967 to 1989 period.⁹ The results for the all worker regression as well as those for various subgroups are found in Table 3. According to the regression, after controlling for the business cycle, there is a small, statistically significant, overall upward trend in annual hours for prime age workers as a group. The trend amounts to only 3.3 hours per year. Hence, over a twenty-year period, we found a 66 hour increase in annual work -- the equivalent of 1.5 FTE weeks per year. This is well below Schor's estimate of 163 hours and a third below that of Mishel and Bernstein. Nonetheless, the trend is decidedly upward in contrast to what is essentially the flat line Robinson and Bostrom find for the 1965-1985 period using the diary method.

⁹ Because of autocorrelation, these regressions were run using the Cochran-Orcutt transformation. OLS regressions for the groups reported in Table 2 generated Durbin-Watson statistics that ranged from .89 (white female regression) to 1.62 (black male regression).

Table 3

**Estimates^a of the Time Trend in Hours Worked
Prime Age Workers, 1967-1989**

	All	Men	Women	White Men	Black Men	White Women	Black Women
Year	3.301 (3.79)	-2.642 (2.97)	18.810 (15.50)	-2.060 (2.23)	-7.735 (5.55)	20.521 (15.31)	10.735 (4.18)
Unemployment Rate	-20.67 (6.369)	-23.74 (7.15)	-8.694 (2.35)	-23.304 (6.62)	-33.003 (5.80)	-9.660 (2.44)	-2.251 (0.79)
Constant	1773.0	2599.9	55.3	2574.4	2860.0	-86.8	733.2
Adjusted R²	.659	.808	.919	.773	.863	.917	.435
N	22	22	22	22	22	22	22

^a Cochran-Orcutt transformed regression estimates.
t-statistics in ()

Source: Authors' calculations based on data from the Panel Study on Income Dynamics.

Our method also detected sharp differences in work hour trends for men and women. Among men, the trend was found to be slightly negative after controlling for the business cycle. Over a twenty-year period, the regression model projected a 53 hour decline in cycle-adjusted annual hours — just a bit steeper than the Johnson-Bostrom diary estimate of 36 hours (but clearly in the opposite direction from Schor's positive trend estimate.)¹⁰ For women, the trend is strongly positive. Indeed, our estimate of 18.8 additional hours per year translated into a 20 year

¹⁰ Robinson-Bostrom's diary estimates for men for 1965 and 1985 are 47.1 and 46.4 weekly hours, respectively. Multiplying the difference between these two estimates by 52 yields 36.4 annual hours.

total somewhat greater than even Schor's estimate — 9.4 FTE weeks vs. 7.5 FTE weeks. It should also be noted that working women's hours were increasing at the same time a higher percentage of the total paid workforce was comprised of women.

We also found significant differences in the hours trajectories by race. Reflecting trends well-documented elsewhere, our point estimate of a decline of 7.7 hours per year for black men translated into an average work year in the late 1980s more than 150 hours *shorter* than in the late 1960s. For 1989, we estimated that black men averaged only 1,950 hours per year compared with just under 2,300 hours for white men. Higher unemployment rates were responsible for part of this difference. Shorter work weeks explain the remainder.¹¹

The racial gap in hours worked among women revealed an intriguing time pattern. On an annual basis, there appeared to have been virtually no gap in work hours in 1967. The gap then widened significantly so that by the mid-1970s black women were working almost 200 hours more per year than white women. White women caught up again so that by 1989 white and black women were working virtually the same amount. To close the gap, white women's cycle-adjusted hours had to rise substantially faster than that of black women. This is precisely what happened as the entries in Table 3 demonstrate. Over twenty years, white women's annual hours increased by the equivalent of 10.3 FTE weeks, nearly double the 5.4 FTE weeks for black women.

¹¹ In 1989, the average white unemployment rate was 4.5% while the black rate was 11.4%. On average, then, whites experienced $(52 * .045 * 40) = 93.6$ hours a year of lost work due to unemployment. By the same calculation, blacks experienced 237 hours of lost work. The difference (143.4 hours) accounts for just $(143/350) = 41$ percent of the difference in annual hours between white and black men. The remainder, approximately 210 hours, must be due to shorter work weeks with black men working roughly 4 hours per week less than white men after accounting for differences in unemployment.

Family Working Time

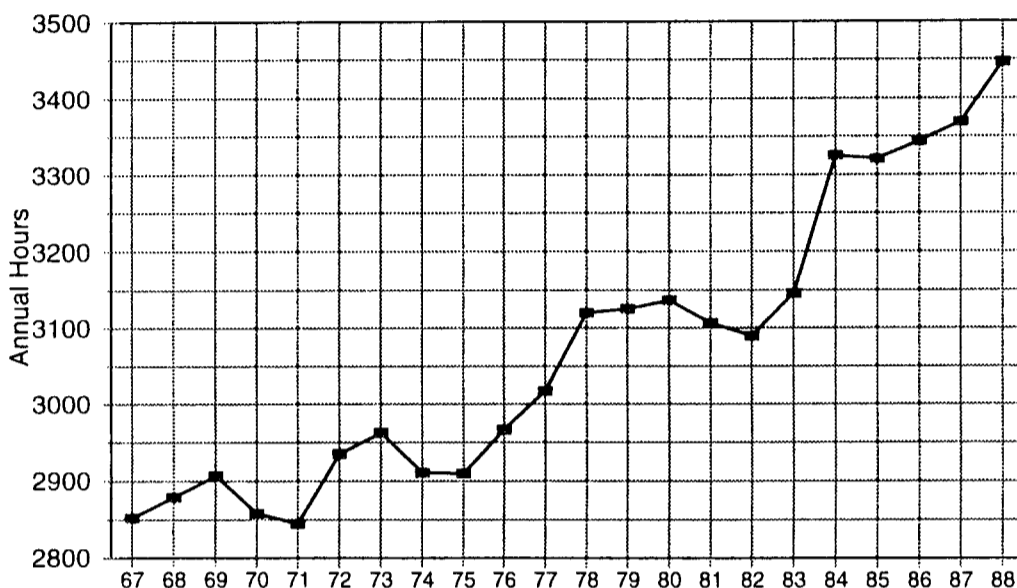
We also investigated what had happened to family work time and family earnings. In this case, we began by estimating the combined hours of work for “prime age” families in which both husband and wife are working.¹² The long term trend is shown in Chart 3. There was, as expected, a clear and nearly unbroken trend toward much greater work effort, interrupted only modestly by the recessions of 1971, 1974-75, and 1980-1982. By 1988, prime age working couples were putting in an average of 3,450 hours per year in combined employment, up from 2,850 two decades before.¹³

¹² This analysis is limited to intact husband-wife families in which the husband is “prime age” (age 25-54) and in which both husband and wife worked at least one hour in the survey year.

¹³ Because of incomplete family hours and earnings data for 1989 in the PSID we used for conducting this study, the following analysis is done for the period ending in 1988.

Chart 3

Average Hours Worked Husband & Wife - Prime Age Husbands



Source: Authors' analysis of PSID survey data

As before, we used regression analysis to calculate business cycle adjusted hours. These are found in Table 4. According to the regression for all husband-wife working couples, family work effort increased by more than 32 hours per year during the 1970's and 1980's -- the equivalent of adding nearly another month of full-time work effort *every* five years (160 hours). Hence, in the span of just two decades, working husband-wife couples increased their *annual* market work input by a cycle-adjusted 684 hours or *four months* of full-time work. Put plainly,

the typical dual earner couple at the end of the 1980's was spending an additional day and half on the job *every week*. We concluded that "if individuals are not more overworked than before, families certainly seem to be."

Table 4

**Estimates^a of the Time Trend in Hours Worked
Prime Age Husband-Wife Couples, 1967-1988**

	All	White	Black	HS Dropouts	HS Grads	Some College	BA+
Year	34.212 (24.24)	35.140 (25.31)	22.778 (9.80)	24.474 (7.25)	32.968 (15.41)	32.586 (7.69)	36.391 (19.75)
Unemployment Rate	-36.87 (7.10)	-37.24 (7.26)	-31.78 (3.68)	-49.39 (4.12)	-48.39 (6.16)	-44.54 (4.36)	-10.238 (1.61)
Constant	652.7	591.7	1450.9	1317.5	826.4	924.8	365.6
Adjusted R²	.969	.972	.831	.718	.924	.766	.958
N	21	21	21	21	21	21	21

^a Cochran-Orcutt transformed regression estimates. t-statistics in ()
Source: Authors' calculations based on data from the Panel Study on Income Dynamics.

Increases in family work effort were found to differ significantly by race and by education. The increase in working hours among white working couples was sixty percent larger than the increase for black couples — a reflection of both the sharp decline in black men's hours and the large increase in white female work effort. More educated working couples also increased their work effort more than those with less schooling. Those in which the husband had at least a four-year college degree increased their combined work effort by nearly 730 hours

compared to an increase of only 490 hours for couples headed by a high school dropout.

How much had this enormous increase in work effort paid off in terms of increased family earnings? The results for this inquiry are found in Table 5. Here we had estimated the percentage growth in real combined earnings and compared it to the growth in combined work hours for the period 1973 to 1988.¹⁴

Table 5
Percentage Growth in Annual Hours Worked vs.
Percentage Growth in Annual Earnings
Prime Age Working Husband-Wife Couples
1973-1988

	All	White	Black	HS Dropouts	HS Grads	Some College	BA+
Hours	16.3	17.1	11.8	11.6	16.1	17.4	16.6
Real Earnings	18.5	19.8	15.8	-8.2	3.7	3.8	32.5
“Family” Hourly Wage	1.8	2.2	3.6	-17.7	-10.7	-11.5	13.6

Source: Authors’ calculations based on data from the Panel Study on Income Dynamics

For prime age working couples as a group, combined real earnings rose by 18.5 percent between 1973 and 1988. (This represents an increase from \$43,851 to \$51,955 in 1991 dollars). These families saw their material standard of living increase by just a little bit better than 1 percent per year. Most of this modest increase, however, did not come from improved wages, but from increased work effort. *The 18.5 percent increase in real earnings was purchased with a*

¹⁴ The year 1973 was chosen as the base year for this analysis for that year represents the end of the postwar boom in real average hourly wages.

16.3 percent increase in hours worked. Over the entire sixteen year period, the combined average husband-wife *hourly wage* increased by only 1.8 percent — the equivalent of a real hourly wage increase of less than 2 cents each year! Schor's depiction of workers imprisoned in "capitalism's squirrel cage" does not appear to be far off the mark. From a purely material perspective, the "average" working family with two earners appears to have been able to increase its consumption over time, but only by working much longer and harder to enjoy what is basically a modest improvement in the amount of goods and services they can buy. The story is much the same for both white and black families with real earnings rising, but chiefly because of increased work effort.

However, when the data were disaggregated by education group, we found an even more telling story than that of workers sacrificing family time in order to indulge in a cornucopia of material consumption. For all families -- with the notable exception of those headed by a worker with at least a college degree -- the enormous increase in work effort over the past twenty years has accomplished no more than to allow families to maintain their *old* standard of living. For high school dropout families, the situation has been even tougher. Between 1973 and 1988, these families increased their annual work effort by nearly 12 percent yet ended up with 8 percent *less* annual income. For families headed by high school graduates or some college, work effort was up by 16 to 17.4 percent. All of these added hours of work left such families with less than a 4 percent increase in total earnings. These families, we concluded, were trapped in an Alice in Wonderland world running faster and faster just to stay in the same place. For all of these families, the "family" hourly wage has fallen precipitously, by as much as 17 percent in the case of the high school dropout.

The one great exception to the Alice in Wonderland world was found among families headed by a college graduate. These families increased their work effort by about the same percentage as those headed by high school graduates or those with some college. But this added work effort paid off, permitting their material consumption standard to increase by nearly a full third between 1973 and 1988. In this one case, hard work apparently has its reward. Unfortunately, such well-educated families comprise less than a third (31%) of all families.

The Recent Trend in Work Hours: What Has Happened to Work Time Since 1989?

Since the appearance of our earlier work, we have turned to *Current Population Survey* data to investigate the trend in hours worked since 1989.¹⁵ Did the trend in increased hours continue as the economy recovered in the 1990's or did it once again decline as it had between 1967 and 1982?

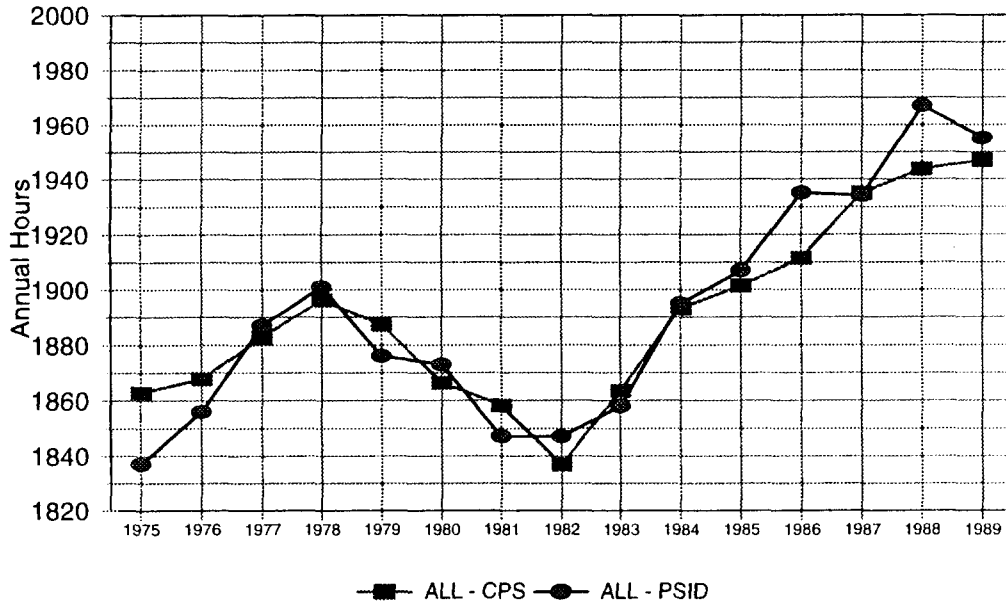
The first task was to compare annual hours estimates from the two data sources we have been using. The questions asked in the CPS and the PSID to ascertain work hours are not identical. Yet, we found such a close correspondence between the two data series that in this new work we feel confident in using the CPS as the basis for estimating working time (see Chart 4) and in some cases, we have concatenated the two files in order to produce a full 1967-1995 data series.¹⁶

¹⁵ This was necessary because our version of the PSID contains data only through 1989.

¹⁶ In these concatenated analyses, hours estimates for 1967-1974 are from the PSID and those from 1975 through 1995 are from the CPS.

Chart 4

Average Annual Hours of Work
All Prime Age Workers (Age 25-54)

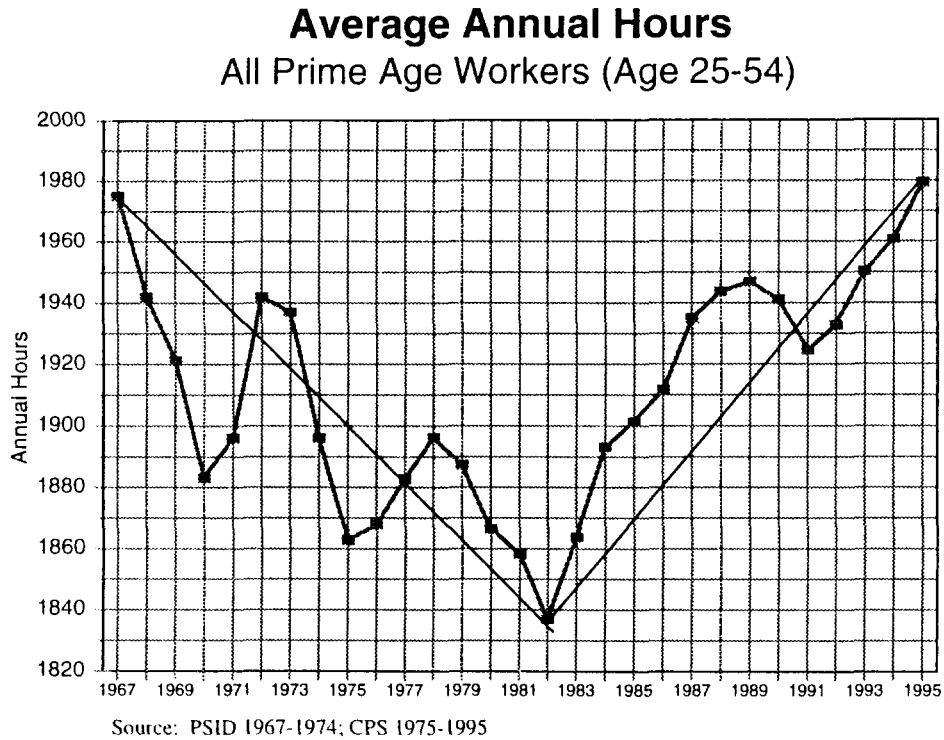


Source: Authors' calculations based on CPS and PSID data.

We focus our initial analysis on the prime age workforce, in line with our previous research. Chart 5 reproduces Chart 2, adding the data for the most recent period. It shows, as before, the trend — or more accurately — the two trends in annual work hours since the late 1960's. While there is a clear cyclical component in the data, it shows the sharp decline in annual hours from 1967 through 1982 and after then the even sharper monotonic increase through the business cycle peak in 1989. What we now know from Chart 5 is that following a brief dip during the 1990-1991 recession, the growth in hours began to climb again. In 1995, average annual hours reached a new peak, surpassing its 1967 level. *Since the last business cycle peak in*

1989, annual hours have increased by another 32 hours — a 1.6 percent increase in labor supply from incumbent workers.

Chart 5



Charts 6 and 7 depict the same trends by gender. These results suggest that from 1967 through 1982, the overall decline in annual hours was due to a collapse in men's hours that could not be fully offset by increases in those of women. After 1982, however, even men's hours began to increase and they continued to right through the 1989-1995 period. Since 1989, the average men's work year has increased by 18 hours — nearly half an FTE work week or 0.8

Chart 6

Average Annual Hours
MALE Prime Age Workers (Age 25-54)

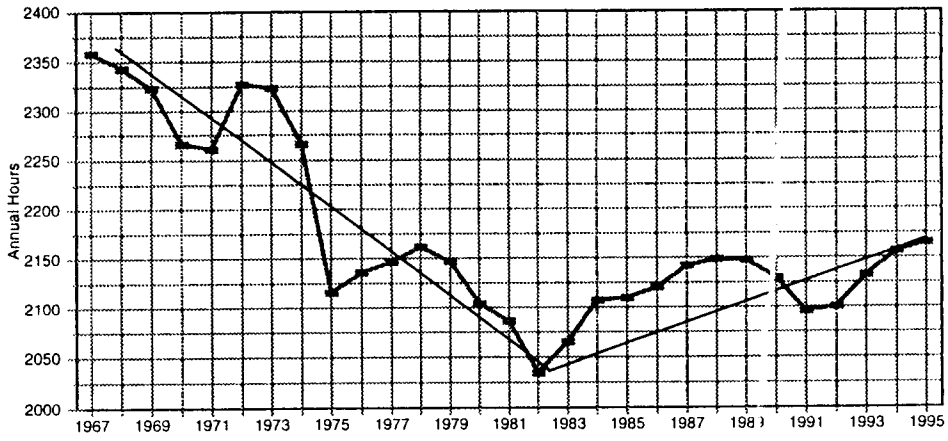
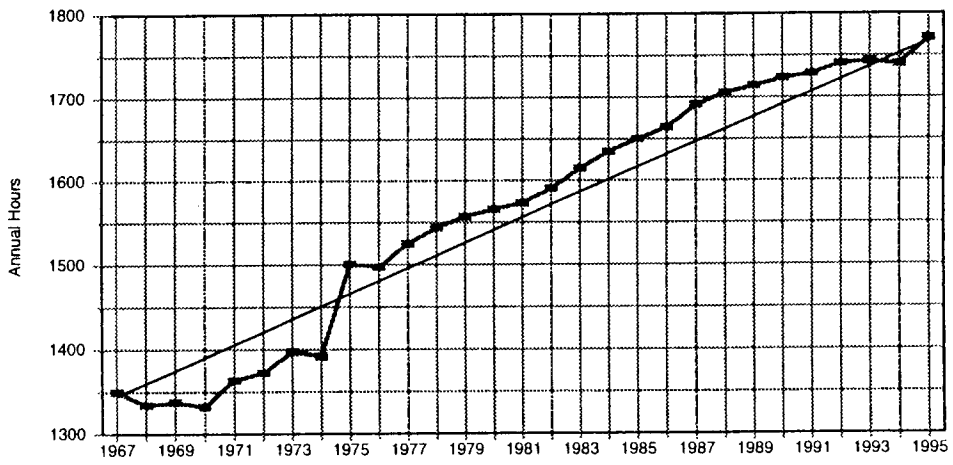


Chart 7

Average Annual Hours
FEMALE Prime Age Workers (Age 25-54)



per cent while women's annual hours continued to increase at a rapid pace. Just between 1989 and 1995, the average work year for women increased by 57 hours — 3.3 percent. Note also the sharp cyclical recovery in men's hours since the recession of 1991-92.

Changes in annual hours can be decomposed into two components — changes in annual weeks worked and changes in average hours worked per week. The former includes the effect of changes in the official unemployment rate while the latter does not. As we have measured them here, weekly hours are estimated only for those who are already counted as employed. Chart 8 shows the increase in average work weeks. Note that in 1979, when the unemployment rate was 5.8 percent, prime age workers averaged 46.0 weeks of work per year. In 1987, when the jobless rate was 6.2 percent, the average work year was nevertheless longer — about 46.8 weeks. Thus, by 1987, a portion of the overall labor supply “lost” to unemployment was being made up by the fact that those who were working were spending more weeks in the labor market.

More important for unraveling the mystery of low unemployment and low inflation is what we have found regarding average weekly hours. Chart 9 shows the trend for prime age workers since 1975. Of particular note is the remarkably different pattern following the recessions of 1975, 1981-82, and 1991. Average weekly hours rose between 1975 and 1978, but fell back to their 1975 level by 1979. Essentially, there was no added labor supply coming from incumbent prime age workers during this strong economic recovery. In the last two recoveries, however, average weekly hours have climbed dramatically as indicated by the superimposed slopes in this chart.

Chart 8

Average Annual Work Weeks Prime Age Workers (Age 25-54)

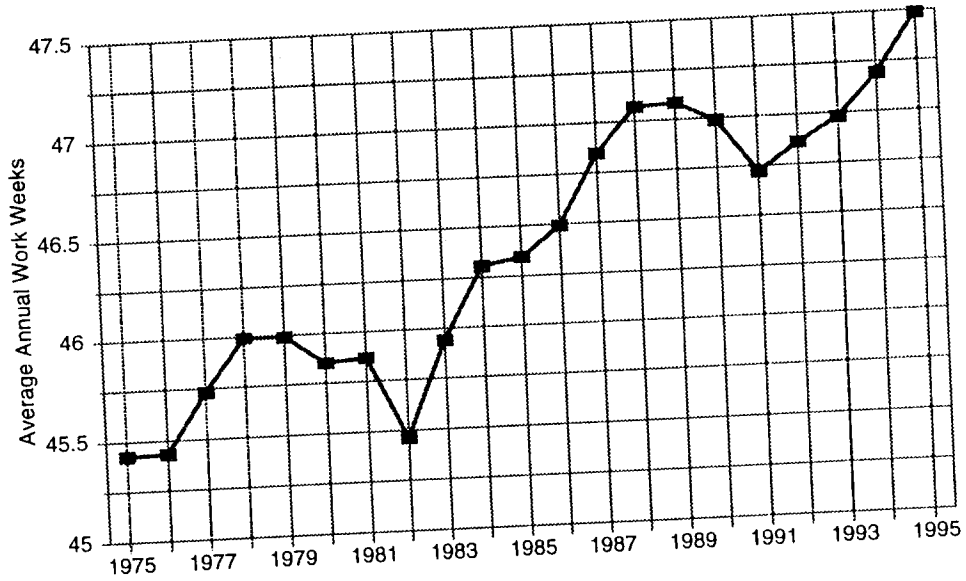
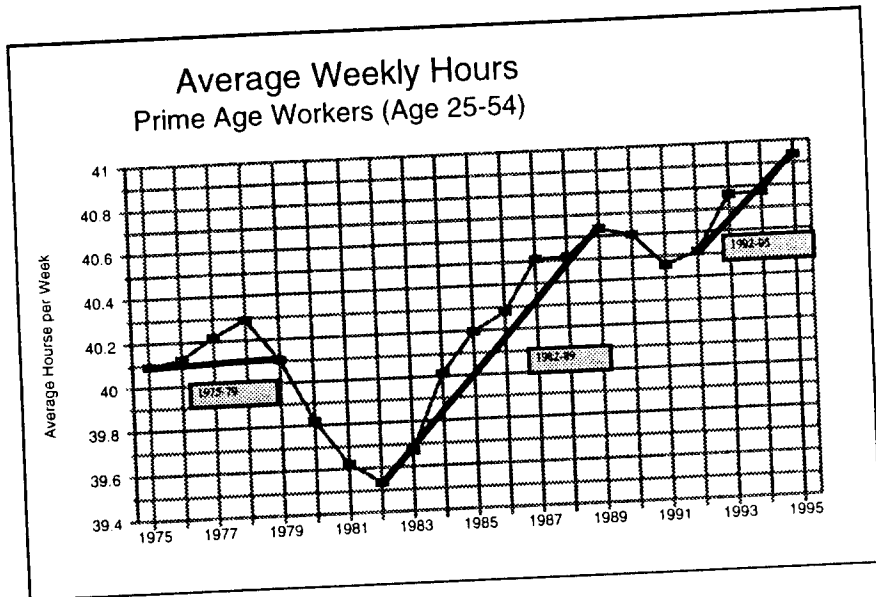


Chart 9

Average Weekly Hours Prime Age Workers (Age 25-54)



Increased Work Effort in Total Workforce

To this point, we have focused attention on the prime age workforce, age 25-54, in order to compare recent trends with the ones we investigated in our original research in this field. Our previous work had used this age group so as to assure that estimates of changes in working time were independent of changes in the age composition of the workforce.¹⁷ For present purposes, however, we are interested in work time trends among all workers for this is the relevant variable for studies of the macro economy. Moreover, to accomplish the hours decomposition we reported in Table 1, our attention is drawn to average weekly hours instead of annual hours or average weeks worked.

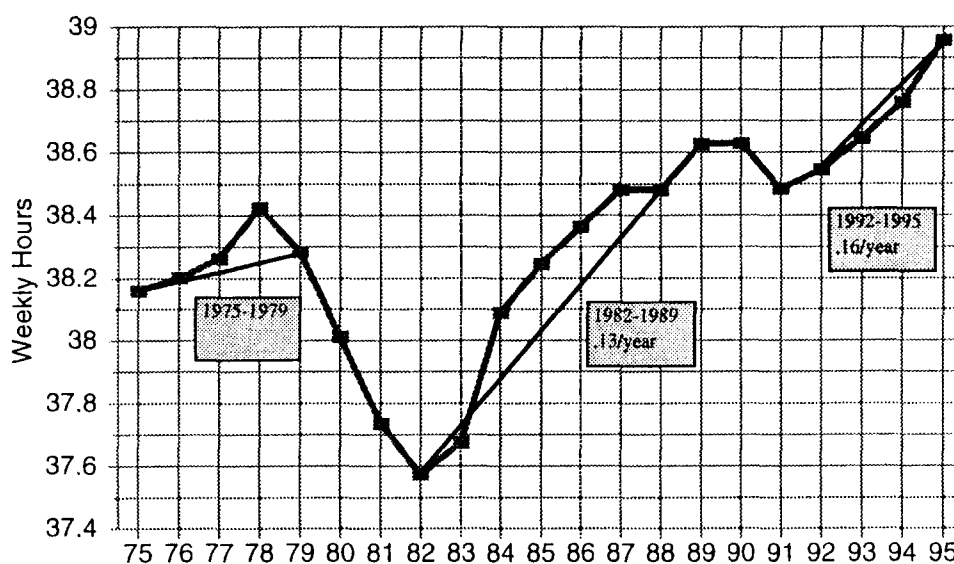
The results of our CPS analysis are found in Charts 10-14. The first of these provides the 1975-1995 trend in weekly hours for all workers age 16 and older. It bears a close resemblance to the trend for prime age workers. Weekly hours have expanded from a low of 37.6 in 1982 to a present level of close to 39.0. From a labor supply perspective, this is the equivalent of increasing the size of the working population over this 13 year period by 3.7 percent. Given that the workforce was just about 100 million strong in 1982, this increase in weekly hours represents about the same addition to labor supply as adding 3.7 million new workers to the total workforce — or reducing the official unemployment rate by 3.7 percentage points. Between 1982 and

¹⁷ Age composition affects estimates of average working time because of the reduced hours put in by both younger workers and older workers. Younger workers are more likely to mix work with school and therefore a larger proportion will be working part-time hours. Workers in their pre-retirement years are likely to cut back hours and therefore also affect overall hours estimates. Therefore, as the age profile of the working population changes, there will naturally be a change in hours worked unrelated to changes in labor supply regime. By measuring the labor supply of prime age workers, we held the demographic profile fixed over the time series we investigated.

1995, the workforce as conventionally measured increased by 25.4 million. Hence, the increase in weekly hours among incumbent workers was equivalent to about 15 percent of the hours available from new workers. This is hardly a trivial amount.

Chart 10

Average Weekly Hours All Workers (16+)



The weekly hours trends for the past three recoveries are also depicted in this chart. Note that in the 1975-79 recovery, weekly hours increased by only .05 hours per year. In the subsequent recovery (1982-89), the rate increased to .13 hours per year. Finally, in the current recovery, weekly work time has been rising at .16 hours per year. This is the best evidence of a labor supply regime change.

Charts 11 and 12 depict these weekly hours trends for men and women separately. The

hours recovery for men since 1982 is particularly noteworthy. By 1995, the average workweek was back up to the peak level reached in 1979 — 41.7 hours. Moreover, the rate of increase has grown over the last three recoveries. In the current recovery, weekly hours are increasing by 2/10 of an hour per year, about double the rate during the 1970's expansion.

For women, there has been a nearly continuous increase in weekly hours. Despite reports of women reaching a plateau in terms of labor force participation and workforce attachment, the shift from part-time to full-time work seems to be as strong as at any time over the past twenty years. In 1975, women averaged 33.9 hours per week. During the 1975-1979 economic recovery, they increased their weekly hours at a rate of .076 hours per year. At that pace, by 1995, they would have been working 35.4 hours per week. In actuality, they were working even more — 35.8 hours.

There is a distinct racial and ethnic pattern to the weekly hours trend as well. As Chart 13 demonstrates, non-Hispanic whites, non-Hispanic blacks, and Hispanics have all seen increases in the length of their work weeks, but at different rates. Whites still work the longest work week, but the gap between whites and blacks is closing -- in contrast to the annual hours patterns for prime age workers. In 1975, whites worked 1.6 hours more per week than blacks; by 1995, the gap had closed by nearly half to .86 hours. Hispanics had the slowest increase in weekly hours, having started out at the white level. They kept pace with whites throughout most of the period, but began to fall behind after 1989. This may reflect recent immigration patterns and, as we shall, the role of education.

Chart 11

Average Weekly Hours Men (Age 16+)

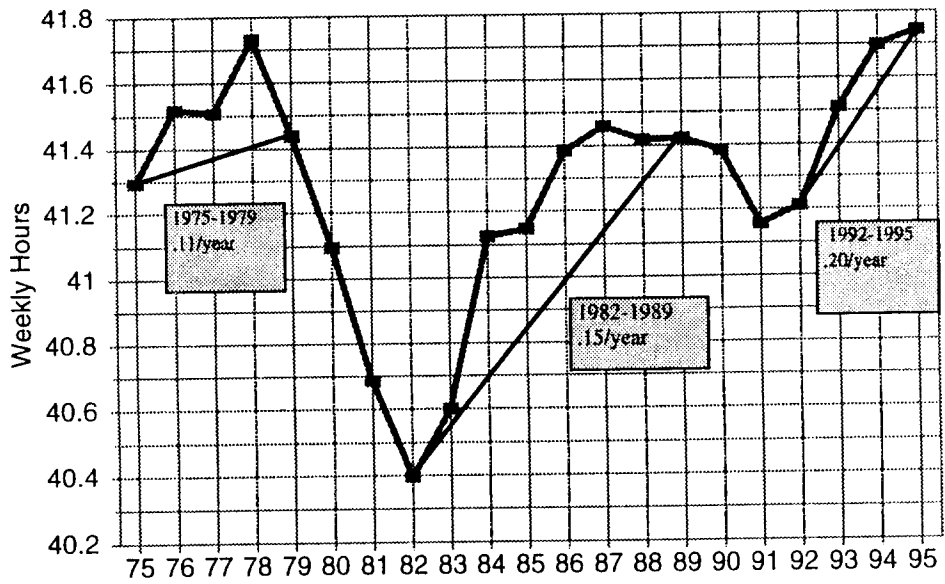


Chart 12

Average Weekly Hours Women (Age 16+)

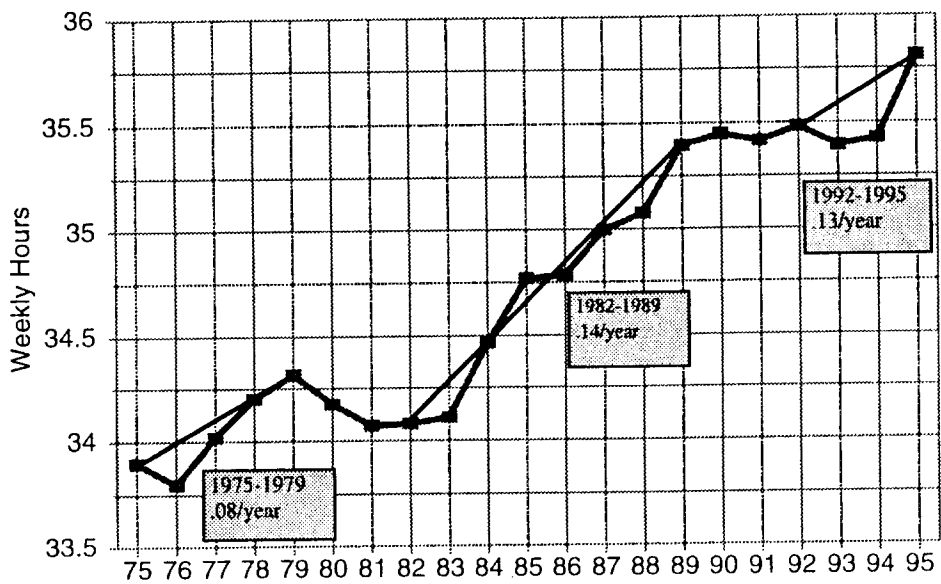
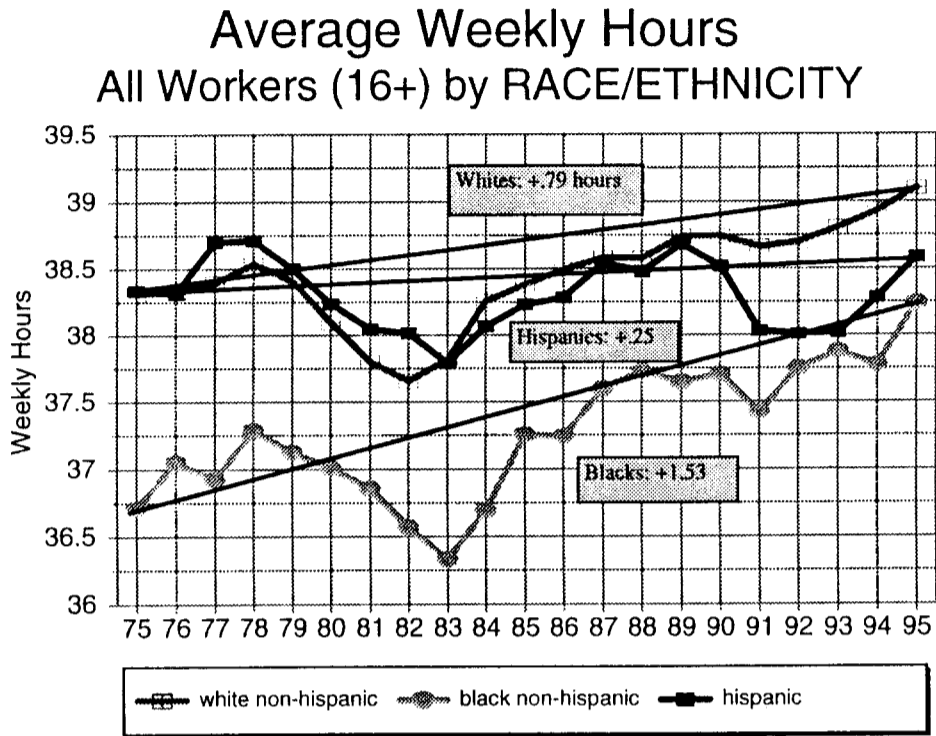


Chart 13



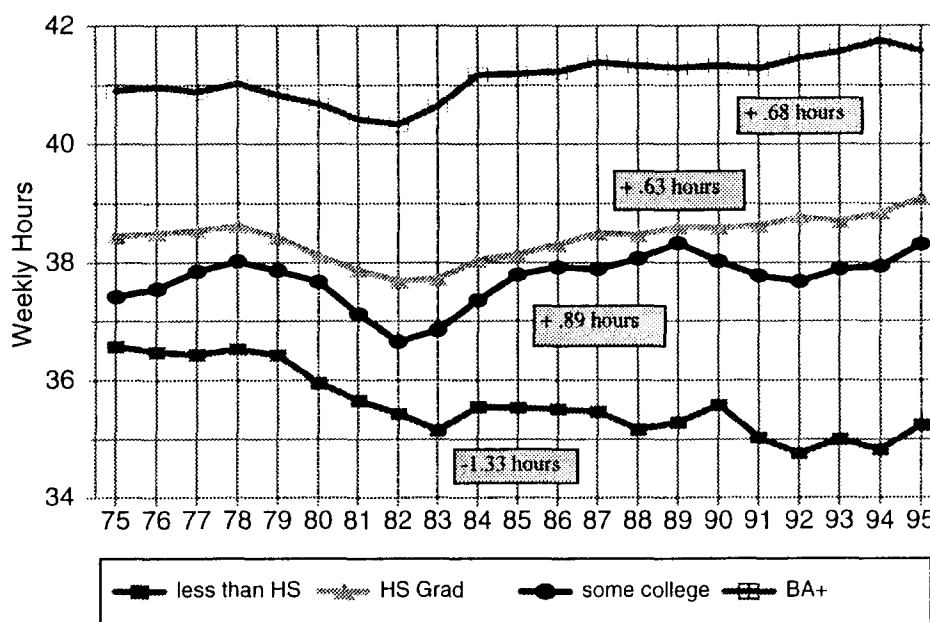
Finally, Chart 14 shows the trend in weekly hours by education level. In general, the more educated the worker, the longer the workweek. College educated workers averaged 41.6 hours per week in 1995 compared to only 35.2 hours for high school dropouts. High school graduates and those with 1-3 years of college fell near the middle of these two extremes. These results help explain the overall upward trend in weekly hours. As the labor force has become better educated, a larger proportion of the workforce falls into schooling categories which normally work longer hours. By 1995, 25 percent of the workforce had a college degree. By contrast, in 1975, only 16.1 percent was this well educated. If the level of education had not

increased over these twenty years, average work time would have increased by only about 9 minutes (from 38.16 to 38.31 hours) between 1975 and 1995.¹⁸ As is, the actual increase in work time was 48 minutes. Hence, more than 80 percent of the long-run increase in average weekly hours over the past twenty years can be associated with the increased education level of the workforce. Schooling not only contributes to faster economic growth by improving labor productivity, but by adding to the overall level of labor supply.

Chart

14

**Average Weekly Hours
All Workers (16+) by EDUCATION**



¹⁸ This value was calculated by weighting the 1995 weekly hours for each education group by the 1975 share of the workforce in each of these education groups. The difference between the actual 1995 weekly hours estimate and this 1975 education-weighted 1995 weekly hours estimate was then divided by the actual weekly hours increase between 1975 and 1995. This yields the percentage associated with increased education level (80.8%).

The contribution of increased education to increased weekly hours varies substantially across the last three business cycles. During the 1975-1979 recovery, nearly 90 percent (88.5%) of the small total (7 minute) increase in the average workweek is associated with rising schooling levels. This leaves very little of the increase to be explained by other factors including worker response to changing wage rates or expectations about job insecurity. In the two most recent recoveries, however, these other factors clearly dominate. Only 17.3 percent of the 65 minute total increase in weekly hours between 1982 and 1989 can be attributed to rising education levels. In the most recent recovery, only 21.5 percent of the total 25 minute increase is associated with schooling. Thus, while over the long run, education plays a critical role in explaining increased labor supply, in the short-run other factors seem to have been more important.

Variation in Working Time of Individuals

We now turn to the full longitudinal capacity of the PSID to investigate whether workers are experiencing less job stability. If so, it is possible that workers voluntarily work as much overtime as they can when work is available in order to cushion the blow of depressed income when joblessness strikes.

Working in a longitudinal mode requires making a number of decisions about how to classify individuals for their status can change over time. Individuals marry and divorce, for example. Over a ten year period, how should one classify an individual who was single for six years and married for four? An individual's occupation and industry may change over time. In what labor market categories should we place them? An individual's income changes over time.

In what quintile should we place an individual? Essentially, what would be point estimates in cross-section data become ranges in longitudinal data sets.

For our purpose here, we separate the PSID into two ten-year time frames corresponding to the 1970's (1969-1978) and the 1980's (1979-1989). Both of these ten-year periods had similar growth rates in real output per person and in job creation and each encompassed two complete business cycles. This helps make for an appropriate comparison. We restrict our analysis to prime age workers in order to exclude those who would normally be moving from part-time work to full-time work as they school and those who might be moving from full-time work to part-time work as they approach retirement. Given the longitudinal nature of the data, we restrict our analysis of each decade to individuals who began at age 24 to 48 and ended the decade aged 34 to 58.

Our first task is to investigate continuity of employment -- the ability to hold a full-time, full-year job consistently over ten years. Let us define "strong continuity" as working at least 1750 hours (50 weeks at 35 hours per week) in eight out of ten years and never working less than 1000 hours in any single year. In the 1970's, 79 percent of prime-age men met this criteria, but only 71 percent did in the 1980's (see Table 6).

Various demographic groups had differing degrees of employment continuity, but for every group *except* college graduates continuity declined between the 1970s and the 1980s. The decline for black prime age men was the most precipitous, from 73 percent to 51 percent indicating that nearly half of these men either had a year in which they worked less than half-time (<1000 hours) or had at least three years out of ten in which they worked only part-time (<35 hours/week on average). Persistent low-earners (based on their ten-year earnings history putting

them in the lowest earnings quintile) went from over one in two having strong continuity to under one in three. Finally, the share of high school dropouts with strong attachment declined from 68 to 51 percent. These declines show the added difficulty faced by the lower end of the male labor force and are fully consistent with other studies showing a sharp deterioration in the labor market fortunes of less-educated men (Mishel, et al., 1994; Bluestone, 1990a; Bluestone, 1990b; Levy & Murnane, 1992).

Table 6

**“Strong” Employment Continuity
in the 1970's and 1980's - MEN
(in percent)**

	1970s	1980s
<i>All</i>	79	71
<i>Race</i>		
White	79	71
Black	73	51
<i>Education</i>		
HS Dropout	52	30
HS Graduate	84	72
Some College	87	70
College Graduate +	77	79
<i>10-year Earnings Quintile</i>		
Lowest	52	30
Fourth	76	66
Middle	82	75
Second	90	87
Top	94	91

Source: Stephen J., *On Shaky Ground: Rising Fears About Incomes and Earnings*, Washington, D.C.:National Commission for Employment Policy Report No. 94-02, 1994 (Rose, 1994).

For women, the ten-year approach accentuates the differences from men in terms of their labor force attachment (see Table 7). In the 1970's, prime-age women as an entire group averaged only 870 hours of paid labor per year. This level increased dramatically to 1243 hours per year in the 1980s but still lagged considerably behind the male average of over 2100 hours. In terms of strong continuity -- staying persistently in the labor force full-time, full-year -- only one in nine prime-age women met this criteria in the 1970's. By the 1980's, this ratio had risen to one in five. So, while the increase was dramatic, women's persistent attachment as measured by our "strong continuity" indicator, still remained much lower than that of men.

Another way of measuring the degree of labor force participation of prime-age workers is to define weak continuity as working full-time, full-year in three or fewer years and working less than 1000 hours in five or more years. Only 2 percent of prime-age men in the 1970's had such little labor force activity and only 4 percent in the 1980's. For prime-age women by contrast, nearly three out of five had this low level of labor market participation in the 1970's. That is, by the definition we have adopted here, nearly 60 percent of women would be considered "part-time" in the 1970's. Only a decade later, this proportion had shrunk to 38 percent, mirroring what is well known about female labor force participation.

Moreover, as Table 7 indicates, the racial difference among prime-age women in labor force continuity is the reverse of that for men. In both decades, black women have both higher levels of strong attachment and lower levels of weak attachment to the labor market -- although both gaps are closing. In general, more educated women have stronger attachment as expected

with the one anomaly being the drop off in attachment among college-educated women.¹⁹

Table 7
“Strong” and “Weak” Employment Continuity
in the 1970s and 1980s - WOMEN
(in percent)

	Strong		Weak	
	1970s	1980s	1970s	1980s
<i>All</i>	11	20	59	38
<i>Race</i>				
White	10	20	61	39
Black	13	22	48	33
<i>Education</i>				
HS Dropout	8	13	65	56
HS Graduate	12	22	60	38
Some College	15	25	56	35
College Grad +	8	19	48	29
<i>Marital Status</i>				
Never Married	29	35	33	20
Sometimes	13	24	45	26
Always Married	8	15	67	48

Source: Stephen J. Rose, *On Shaky Ground: Rising Fears About Incomes and Earnings*, Washington, D.C.:National Commission for Employment Policy Report No. 94-02, 1994.

¹⁹ At this point, we do not have a good explanation for this finding. It is possible that this may reflect a contingent of better educated women who have gone back to school during their “prime working years” to complete additional education. Another possibility is that this reflects delayed child-bearing among college educated women and therefore more part-time employment in the early prime working years.

Marital status is important as expected. Those women who were married in all ten years of a decade had had the lower persistent labor force participation (75 percent in the 1970's and 62 percent in the 1980's). Never married women, by contrast, were much more likely to have strong continuity and much less likely to have weak continuity.

The greater difficulty that men have been facing in maintaining persistent employment continuity can be tied directly to changing business practices, particularly related to downsizing, outsourcing, and the move to greater job contingency. Using the same ten-year approach, we can determine how many prime-age male workers had a “strong” connection with the same employer. Defining strong career stability as changing employers in no more than one year out of ten, 67 percent of men in 1970's and only 52 percent of men in the 1980's met this criteria (see Table 8). As for weak connections to employers — defined as having four or more years over a ten-year period in which a worker changed employers— we find such weak attachment has doubled for men from 12 percent to 24 percent over the two decades. Clearly job stability has declined for men.

Table 8
Attachment to Same Employer in the 1970s and the 1980s
(in percent)

	Weak		Medium		Strong	
	1970s	1980s	1970s	1980s	1970s	1980s
All	12	24	21	24	67	52
Race						
White	12	23	21	25	67	52
Black	13	34	22	17	65	49
Educational Attainment						
HS Dropout	14	39	23	20	63	41
HS Grad	10	20	21	21	68	60
Some College	12	25	21	28	67	47
College Grad +	11	18	19	26	70	56

“Strong Stability”: Having no more than 1 year in which the worker changed employers

“Medium Stability”: Having 2-3 years in which the worker changed employers

“Weak Stability”: having 4+ years in which the worker changed employers

Source: Stephen J. Rose, *Declining Job Security and the Professionalization of Opportunity*, Washington, DC: National Commission for Employment Policy, Report No. 95-04, 1995 (Rose, 1995).

Job Stability and Working Time

We can also explore the question of whether greater job instability been accompanied by more variance in hours worked? In brief, do workers face a “feast or famine” phenomenon in working time. Given that job instability is increasing and workers are forced to change jobs more often, then it is plausible that an increased perception or actual experience of greater job insecurity may induce individuals to work more hours when they are available because they realize that three months, six months, or a year or two from now they likely face a period of short

work hours or none at all. In this case, increased job insecurity could explain a number of labor market phenomena: increased voluntary overtime, increased moonlighting; *and* higher rates of underemployment. Job instability may mean that the same Americans are both overworked *and* underemployed.

In order to verify this, we develop two methods to estimate the proportion of workers who experience large year-to-year variation in annual hours worked:

- (1) *HiLo* This statistic measures the proportion of individuals in a demographic group who, during a decade, experience at least one year in which they work more than 2,400 hours and at least one year of 1,750 hours or less. The “Hi” value is equivalent to an average workweek of approximately 46 hours or more. The “Lo” value is equivalent to less than 35 hours per week. These cutoffs were arbitrarily set, but correspond to a reasonable definitions of “overtime” work and “part-time” work.
- (2) CV_i This statistic is the coefficient of variation (σ/\bar{x}) of annual hours worked for individuals in each demographic group during each decade.

To the degree that these measures rise over time, we have more circumstantial evidence that insecurity is driving increased work time.

The results for the HiLo analysis for men are found in Table 9. According to this analysis, among all prime age males, more than 28 percent experienced substantial year-to-year variation in hours worked during the 1980s. Nearly three out of ten workers had at least one year of substantial “overtime” (>46 hours/week) and at least one year of significant “underemployment” (<35 hours/week) during the 1980s. Compared to the 1970s, the proportion of such individuals experiencing such hours variation was up by nearly 5 percent.

For black men, the incidence of “HiLo” variation is substantially higher than among white men with well more than one third of all black men experiencing this type of “feast and

famine” working hours. While white men experience less inter-year variation in hours worked, over the two decades they moved closer to the black average. In the 1980s, those who did not obtain a high school diploma experienced more hours variation than all other workers. But by the far the strongest correlates with elevated inter-year hours variation can be found in terms of earnings levels and number of job changes. Among those with the lowest average quintile earnings, four out of ten experience HiLo hours variation — more than double those in the top quintile. Simply put, those who confront “feast and famine” work experience are more likely to have low average earnings. Similarly, those who change employers often face the highest rates of “HiLo” activity. More than half of prime age men who change employers at least four times in a decade end up with years of overtime and years of underemployment.

Table 9
“HiLo” Analysis of Hours Variance for
Individual Workers - MEN

	% of individuals in group with at least one year >2,400 hours and at least one year < 1,750 hours		
	1970s	1980s	%Difference
<i>All</i>	27.3	28.5	4.6%
<i>Race</i>			
White	26.2	27.9	6.4
Black	38.6	37.2	-3.4
<i>Education</i>			
HS Dropout	30.5	38.2	25.2
HS Graduate	26.0	24.7	-4.9
Some College	31.3	28.6	-8.6
College Graduate +	22.2	26.6	19.5
<i>Earnings Quintile</i>			
Lowest Q	40.6	39.2	-3.5
Fourth Q	40.0	37.3	-6.0
Middle Q	23.5	28.6	21.5
Second Q	21.8	21.3	-2.4
Top Q	10.3	16.3	58.0
<i>Number of Years with Employer Changes</i>			
0-1	18.2	15.5	-15.2
2-3	35.9	33.6	-6.4
4+	56.1	50.8	-9.4

Source: Authors' calculations based on data from the Panel Study on Income Dynamics.

Which men have experienced the greatest increases in hours variation? According to Table 9, high school dropouts, those with at least a baccalaureate degree, and those with the highest ten-year earnings had substantial rises in HiLo activity between the two decades. From this, one might conjecture from these findings that those with the fewest skills and those in the ranks of middle managers have been particular victims of downsizing, but future research with the PSID is needed to provide more evidence to test this hypothesis.

The “HiLo” analysis for women is driven by different factors. As was discussed above, relatively few prime-age women tend to work full-time, full-year consistently over ten years. Even in the 1980s, only 33 percent of prime-age women (versus 86 percent of men) averaged over 1,750 hours working per year. Therefore, few women are likely to meet the test of long hours in one year, although most women are likely to have at least one year with under 1,750 hours worked. This perspective is borne out in the data: in the 1970s, only 12 percent of women met the HiLo criteria with this figure jumping to 21 percent in the 1980s. The differences among women by race and education were not large. But since women with higher ten-year earnings tended to work much longer hours than women with lower earnings, they obviously were much more likely to experience both some years of long hours and other years of short hours.

Another way to measure the change in variation in hours over a ten-year period in workers’ lives is to look at movements in the coefficient of variation (CV_i) for both men and women. As expected, the estimates for men are generally consistent with the “HiLo” estimates (see Table 10).

For prime age men as a group, there is a small (9.1%) increase in hours dispersion between the two decades, a slightly higher figure than the 4.6% increase in the “HiLo” estimate.

However, for specific subgroups, the CV_i estimates and the “HiLo” estimates do not yield the same rank orderings. For example, we found much larger inter-decade growth in the “HiLo” index for white men than for black men; the ordering is reversed for the CV_i . Similarly, we find that the largest growth in CV_i hours dispersion is found among the lowest earnings quintile so that this group not only had the highest level of inter-year variance, but the largest inter-decade growth in dispersion.²⁰

Among women, the inter-year variance in hours worked is anywhere from three to five times as great as for men. This is a statistically quirk of this measure. Since women tend to move in and out of the labor force, this results in large variances around the mean. Thus among women with continued labor force attachment (those in the highest earnings quintile), the CV_i is not that different than men. Further, unlike men, the variance declines sharply between the 1970s and the 1980s. Again, this reflects the movement of women into the permanent full-time workforce — with fewer women spending years away from paid work. Given that women still have primary responsibility for children and household chores, this represents women’s increased “second shift” and is evident in Schors’, ours, and other people’s data on overall women’s work.

²⁰ This particular result suggests just why the two measures of dispersion can yield different outcomes. It is possible that the lowest earnings quintile could have a low “HiLo” estimate because few of its members ever worked more than 2,400 hours. However, if variance below 2,400 hours were to increase, the coefficient of variation could be substantial and trend upward.

Table 10
CV_i Analysis of Hours Variance for
Individual Workers - by Sex

	Men			Women		
	CV _i		%	CV _i		%
	70s	80s	Change	70s	80s	Change
<i>All</i>	.22	.24	9.1%	1.02	.67	-34.3%
<i>Race</i>						
White	.22	.23	4.5%	1.05	.68	-35.2%
Black	.28	.36	28.6%	.90	.60	-33.3%
<i>Education</i>						
HS Dropout	.30	.34	13.3%	1.14	.96	-15.8%
HS Graduate	.21	.24	14.3%	1.04	.67	-35.6%
Some College	.18	.25	38.9%	.98	.56	-42.9%
College Grad +	.17	.17	0.0%	.79	.56	-29.1%
<i>Earnings Quintiles</i>						
Lowest Q	.45	.54	20.0%	2.29	1.72	-24.9%
Fourth Q	.21	.20	-4.8%	1.39	.78	-43.9%
Middle Q	.17	.17	0.0%	.79	.43	-45.6%
Second Q	.15	.14	-6.7%	.41	.25	-39.0%
Top Q	.13	.14	7.7%	.24	.18	-25.0%

Source: Authors' calculations based on data from the Panel Study on Income Dynamics.

Conclusions

In this paper, we have carefully traced the changes in men's, women's, and family working time. When considered together, we believe the evidence suggests a new regime in labor supply. The new regime is not well measured by the official unemployment rate. This analysis of work time provides strong evidence of both "overwork" and "underemployment" not only across the work force, but for individual groups of workers (particularly men) who face bouts of full-time, full-year work with overtime interspersed with years of less than full-time, full year work (either working part-time hours or not working all the weeks of the year). In both the 1970s and the 1980s, more than one-quarter of men experienced at least one year as "overworked" (averaging over 46 hours per week) and at least one year as "underemployed" (averaging less than 35 hours per week).

It should also be noted that Americans have many fewer vacation days than their Western European counterparts. American manufacturing workers average 4.6 weeks of vacations and holidays per year versus a comparable European average of 7.5 weeks of time off. German workers have the most generous benefits, with 8.5 weeks of vacation and holidays, and work 2.4 hours less per week. As a result, American manufacturing workers put in 260 more hours per year than their German counterparts.

How much of this long and persistent working time is voluntary cannot be known with certainty, but the evidence would seem to indicate that Americans expect to work long hours through their prime working ages. For men, this means full-time, full-year work year in and year out. Women, on the other hand, remain the prime care givers in the home and have to juggle

these family responsibilities with their time in the paid labor force. Due to stagnant or declining male wages, the increased working time of wives has been pivotal in maintaining family living standards.

Therefore, whenever workers lose their jobs or are temporarily laid off, they feel compelled to try to make up for lost income. This is what has made the apparent change in company employment policy towards a smaller core long-term staff such an explosive issue. Not only do workers lose income while they are unemployed, many have great difficulty finding subsequent jobs at the same pay rate and same benefits (Farber, 1996). One of the coping mechanisms is to work long hours in one or more jobs to fill this income gap. This process was confirmed in our finding that those workers who change jobs more than four times in a decade are more than three times as likely to face bouts of “overwork” and “underemployment” as those who have at most one job change in a decade.

Furthermore, we found that the feast or famine cycle was prevalent among all classes of prime-age male workers. While inter-year work time instability was particularly acute among black men, among high school dropouts, and among men in the lowest quintile of earnings, more than one-quarter of college graduates experienced both “overwork” and “underemployment” as defined here. For prime-age women, their labor hours variability remains much higher than that of men because they move in and out of the labor force. However, there has been a substantial drop in inter-year hours dispersion as more women enter the permanent full-time workforce.

Returning to our theme in the introduction, we can now better understand why the connection between low unemployment and rising inflation no longer seems to hold at unemployment rates significantly below the purported 6 percent NAIRU limit. Job instability

and stagnant wages have made workers try to hold onto good jobs. Too many have experienced the costs of losing a job (or seen family members or friends faced with this prospect) for their confidence level to be high enough to forego overtime work or moonlighting if the opportunity arises. Furthermore, their bankbooks are hardly flush enough to support them during their job search.

Consequently, there is more labor market slack than many realize. Many researchers have noted the failure of the official unemployment rate to include involuntarily part-time workers and those discouraged from actively seeking employment. As we have shown, the rise in labor force participation and the decline in unemployment has accounted for a smaller share of the increased hours worked during the current expansion. Even more important, as we have shown, the length of the typical work week has been growing so that more than *one-sixth* of the additional hours offered the labor market is now coming from this important, but normally unmeasured, source. Finally, we have uncovered greater volatility and insecurity in individual worker careers.

Whether all of these factors can be combined and quantified into a single measure of labor market tightness requires more research and historical experience. But surely, such a development would be immensely useful as a substitute for the currently measured unemployment rate.

Will the current climate of job insecurity, frequent job loss, and stagnating wages soon change? Are we on the verge, given low unemployment rates, of returning to the old labor market regime of declining average work weeks and annual work hours? We do not think so. The underlying phenomena of global competition, technological change, weakened unions, and

industry deregulation give no sign of dissipating. As such, at current sustainable economic growth rates, over the foreseeable future one can expect a continued upward trend in hours which will provide the needed labor supply to keep inflation under control. These institutional phenomena will therefore accomplish much of what the Fed might have done in the past to keep price increases in check. Indeed, the Fed might even be able to relax short-term interest rates a bit in a bid to increase growth rates without endangering price stability.

There are, to be sure, often enormous personal, family, and community costs incurred as a result of the trend toward “overwork” in America. But, as we have seen here, there is one substantial benefit — price stability at low unemployment rates. If we can now reward hardworking Americans with faster growth and the prospect of rising wage rates, the longer work weeks will not have been totally in vain.

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