WHY HASN'T ECONOMIC PROGRESS LOWERED WORK HOURS MORE?*

By Tyler Cowen

Abstract: *Why hasn't economic progress lowered work hours more? One of Keynes's most famous essays is his "Economic Possibilities for Our Grandchildren." Keynes predicts that within one hundred years — which would bring us to 2030 — most scarcity will have disappeared and most individuals will work no more than fifteen hours a week. My question is a simple one: Why wasn't Keynes right? Why have working hours remained as long as they have? Why hasn't progress taken a more leisurely and less material form than what we have observed? Investigating that issue will help us get at the question of just how much progress has occurred. Under one view, Western life has been caught in a kind of rat race, and a lot of the gains of progress are illusory. For instance there is the argument that higher incomes are largely consumed as part of a futile race to win relative status, and living standards aren't nearly as high as they might appear. Under some alternative scenarios, people haven't moved to Keynes's scenario for some good reasons, such as enjoying work more than we might think, or other hypotheses, as I will outline. In that case the observed changes in real income are robust, and measured correctly, or progress may even be greater than income measurements would indicate. I hope that addressing Keynes's paradox can help us better understand this longstanding debate on the nature of modern progress.*

KEY WORDS: labor supply, leisure, work hours, wages, Keynes

I. Introduction

One of John Maynard Keynes's most famous essays is his "Economic Possibilities for Our Grandchildren." In this short piece Keynes makes a variety of points, but most famously he predicts that within one hundred years — which would bring us to 2030 — most individuals will work no more than fifteen hours a week, and often at leisurely and fun jobs too. In essence, in Keynes's vision more and more material needs are met and people are able to develop norms where additional leisure is enjoyed more than numerous hours of work. It will be as if everyone is a Cambridge tutor with a limited student load.

Most of all, in his essay Keynes was predicting a resumption of economic growth and prosperity, in light of an extreme pessimism pervading British discourse in the 1930s. But it is the point about work hours that has had the longest-running influence. Predictions of very low work hours

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have become a staple of science fiction and also can be found in futurism, popular culture, and other forms of common speculation about how human society will evolve.

The intuition behind Keynes's prediction is easy to grasp. Work is hard and unpleasant for many people, or often just boring. It takes up most of our day, may require a costly commute, and very often it subjugates our personal will to bosses, companies, and co-workers. Most people look forward to their days off and celebrate the coming of the weekend, or whatever their work break may consist of. People often have to be paid higher sums to work overtime. At the same time, the pleasures of money appear to be limited. In Keynes's time it may have seemed that a yearly income of $50,000 made a person quite well-off. For purposes of comparison, $50,000 is about today's American median household income, but in the 1930s Great Britain median household income might have been in the $12k to $15k range, estimated roughly.[1] So to someone writing from Keynes's vantage point, it might seem $50,000 a year would be more than enough to take care of basic needs, and then a good bit more. After that, the desire for happiness, play, and creativity could reign, as many of the Bloomsbury writers had fantasized about, and indeed often realized in their own lives, at least for a while. That may be why Keynes expected so much shifting into leisure time and away from work.

In economic terminology, there is a substitution effect — higher wages give people more incentive to work — and an income effect. In the latter, higher wages mean you can have more wealth and thus you don't have to work as hard. If you could earn a billion dollars an hour, how many hours would you really need to labor? More rigorously, think of the substitution effect as the change in labor hours that results from changing the relative wage of labor compared to leisure. The income effect is the change in labor hours induced by higher (or lower) net value, following a change in the wage. In essence Keynes was predicting that the income effect from increasing wages would be dominating the substitution effect, at least after some point within the next few decades from his vantage point. But the data, at least from the postwar era, seem to be showing a quite robust set of substitution effects.[2]

My question is a simple one: Why wasn't Keynes right? Why have working hours remained as long as they have? Why hasn't progress taken

[1] For a starting point on British living standards in the 1930s, see Stephen Broadberry and Carsten Burhop, "Real Wages and Labor Productivity in Britain and Germany, 1871–1938: A Unified Approach to the International Comparison of Living Standards," *Journal of Economic History* 70, no. 2 (2010): 400–427.

[2] On the distinction between labor force responses at a point in time, and across long swathes of time, see Alberto Alesina, Edward Glaeser, and Bruce Sacerdote, "Work and Leisure in the United States and Europe: Why So Different?" *NBER Macroeconomics Annual* 20 (2005): 1–64; I will return to this theme.

a more leisurely and less material form than what we have observed in the West or for that matter in the wealthier East Asian societies?

Investigating that question will help us get at the deeper and more philosophical question of just how much progress has occurred. Under one view, Western life has been caught in a kind of rat race and a lot of the gains of progress are illusory. For instance, I sometimes hear the claim that higher incomes are largely consumed in part of a futile race to win relative status, and that actual living standards aren't nearly as high as they might appear. Under some alternative scenarios, people haven't moved to Keynes's scenario for good reasons, such as enjoying work more than we might think, or other hypotheses, as I will outline. In that case, the observed changes in real income are robust, and measured correctly, or progress may even be greater than income measurements would indicate. I hope that addressing Keynes's issues can help us better understand this longstanding debate on the nature of modern progress. Work is a truly important part of our lives, but the determinants of work hours and conditions are not always well understood.

I also hope this discussion can give us insight as to how we might expect progress to look, moving forward. Is it just a matter of time before we all end up in ten- or maybe twenty-hour workweeks? Or is something like a wealthier, work-ridden status quo likely to be the case for a long time to come?

The essay will proceed as follows. The first section will examine the data on how working hours have evolved over time, to pin down exactly what we are trying to explain, and look also at differences across gender. The second section of the essay will consider the cross-sectional variation of working hours across nongender categories. That means variation across countries, across age groups, and across other distinctions. I will ask what we might learn from breaking down the category of working hours in these ways, rather than just looking at work hours in the aggregate. The third section will consider the main explanations for why work hours have not declined more than they have, and evaluate these explanations and what they might mean for the nature of progress. The essay closes with a brief conclusion.

II. How Much Has Work Declined and For Whom?

The data show that the number of hours worked has declined significantly, and for centuries, since the onset of the Industrial Revolution. For instance, in the mid-nineteenth century a worker in a developed economy might have worked somewhere between 2800 and 3300 hours a year. To make that more concrete, 3000 hours per year is working six days a week, ten hours a day. By the turn of the twenty-first century, this had fallen to within the range of 1400 to 2000 hours a year.[3] You can

[3] Michael Huberman and Chris Minns, "The Times They Are Not Changin': Days and Hours of Work in Old and New Worlds, 1870–2000," *Explorations in Economic History* 44, no. 4 (2007): 538–67.

think of 2000 hours a year as being more like forty hours a week, with two weeks off, and that is toward the upper end of the work hour distribution for the population as a whole, even if it would not describe wealthy workaholics.

These facts are also broadly consistent with the distribution of work hours across countries. In low-income countries, adults work 29.3 hours a week on average, whereas in high-income countries they work only 19.1 hours a week on average.[4]

For our purposes, a key question is whether the decline in work slows down over time, and in most countries it seems to. In some data sources, the postwar decline in labor hours proceeds at roughly the same rate as before the war.[5] But other numbers suggest a different picture, namely that the length of the workweek fell quite dramatically in the late nineteenth and early twentieth centuries, but since then has fallen more slowly. It is even possible to read the data as implying a kind of asymptotic convergence to about 1400 hours a week, with the United States having a greater-than-normal interest in continuing to work long hours.[6]

Those numbers might lead an observer to conclude that Keynes essentially was correct, and that workweeks will continue to fall, although Keynes overestimated how quickly this would happen. A deeper dive into the data, however, suggests that the conclusion is not quite so simple.

By some important metrics, work hours in the United States haven't really declined at all, at least not for a long time. For instance if we measure number of hours worked per person, that variable has been essentially flat since World War II, with a recent downward blip resulting from the financial crisis and Great Recession. The average workweek has declined in duration, as discussed above, but most of this has been a reallocation effect. Women are working more hours and men are working fewer hours. Old people are working fewer hours, and retiring earlier, and young people are working more hours. We have more individuals working for shorter periods of time, but the total number of American work hours per person at a given point in time — to repeat and reiterate the fact from above — has not in general been going down.[7]

[4] Alexander Bick, Nicola Fuchs-Schündeln, and David Lagakos, "How Do Average Hours Worked Vary With Development? Cross-Country Evidence and Implications," *National Bureau of Economic Research Working Paper No*. 21874 (2016).

[5] Huberman and Minns, "The Times They Are Not Changin'," 541.

[6] See for instance Max Roser, "Working Hours," Published online at OurWorldInData.org, http://ourworldindata.org/data/economic-development-work-standard-of-living/working-hours/.

[7] Ellen R. McGrattan and Richard Rogerson, "Changes in Hours Worked, 1950–2000," Federal *Reserve Bank of Minneapolis Quarterly Review* 28, no. 1 (2004): 14, document these claims in detail. On some of the institutional factors behind the move to an eight-hour work day, see Robert Whaples, "Winning the Eight-Hour Day, 1909–1919," *Journal of Economic History* 50, no. 2 (1990): 393–406.

Here are the numbers:

Hours worked per person, United States[8]

1950: 22.34

1960: 21.55

1970: 21.15

1980: 22.07

1990: 23.86

2000: 23.94

2010: no estimate available

If anything, those numbers show a slight upward trend. The employment to population ratio also shows a largely upward trend, rising from 52.69 percent in 1950 to 59.17 in 2000 and, after cyclical turmoil from the financial crisis, returning to slightly above 59 percent today. Much of the increase, of course, stems from more women working, with other demographic trends embedded in those numbers, such as an older society having more retirements. In any case, the gross trend is not in line with Keynes's prophecy, and arguably the most interesting stories are about composition and changing demographics rather than the aggregates.

There is some limited support for a Keynes effect in average weekly hours worked per worker, which goes from 41.8 in 1948 to 39.1 in 2002 and then 38.6 in 2014, a slight downward trend. Still, these disaggregated numbers, taken as a whole, show that work has remained pretty popular, at least in the United States, and that the real story is about redistributing work hours across different demographic groups.[9]

As noted, the 2010 numbers are to some extent skewed by the Great Recession, so the 2000 numbers may give a better sense of the long-term trend. In my 2013 book *Average is Over*, I consider the possibility of a longer-run trend toward less work in the United States, due to a combination of competition from automation and smart software, and also

[8] McGrattan and Rogerson, "Changes in Hours Worked, 1950–2000," 16. Note that I have not found a simple way to do a 2010 updated estimate with consistent methodology.

[9] This is drawing on Bureau of Labor Statistics data and Valerie A. Ramey and Neville Francis, "A Century of Work and Leisure," *American Economic Journal: Macroeconomics* 1, no. 3 (2009): 189–224. Slightly different numbers from different years, but with a similar overall trend, can be found in McGrattan and Rogerson, "Changes in Hours Worked, 1950–2000," 16. It is worth noting that good estimates on how many hours of the workday *employees actually work* are hard to come by. Other scholars report an estimate of seven percent of the workday being spent not working. See Michael Burda, Katei R. Genadek, and Daniel S. Hamermesh, "Not Working at Work: Loafing, Unemployment and Labor Productivity," *National Bureau of Economic Research Working Paper No*. 21923 (2016), 4. This is based on self-reports, however, and arguably the actual amount of shirking is higher. We also don't know whether this shirking has gone up or down over time, which could affect our estimates of overall trend.

greater competition from lower-wage workers abroad. That view remains controversial, but for the time being it suffices to note that it is more or less the opposite of Keynes's hypothesis. To the extent that labor supply has been low or shrinking, *that has been combined with lower or stagnant real wages*, and indeed the median household income is down about seven percent since 1999. The possibility that low-wage opportunities, combined with the opportunity to collect government benefits such as disability, might give us less work as the standard economic story based on the substitution effect. Keynes's hypothesis was that higher real wages would instead lead to that result *through an income effect*. So the 2000 – 2010 developments do not show that Keynes's story is finally pushing to the fore.

One possible way to read the longer-term numbers is to consider that we may be allocating our work responsibilities more efficiently. To cite an obvious point, post-1970, many more women have wanted to work. Birth control is commonly available, fertility is down, workplace discrimination is down, and most women take pleasure from not being at home all day long for the entire week. Women, thus, have worked more. That shift is probably not so well explained by a theory suggesting we want to move away from work altogether. In fact, it seems quite consistent with an emphasis on substitution or relative price effects being dominant. The female wage has been rising relative to the male wage, due to better education for women and less discrimination, and in that setting women have responded by working more, just as the substitution effect would imply.[10]

Most of all, married women have worked more, although that is over the longer run rather than in very recent years. In 1890, only 4 percent of married women held formal jobs in an external workplace, whereas by 1980, 49 percent of married women did in the United States.[11] Single women are working more too, compared to early in the twentieth century, although the net change is stronger for married women, including married women with children. Within the category of married women, the subgroup seeing the biggest increase in employment since 1950 is those with a child under age six.[12]

Overall the post-World War II trend seems to be toward a more efficient allocation of labor across different individuals, rather than an absolute decline in labor hours per worker. But then we are back to Keynes's observation being an incorrect prediction of the future, as American society as a whole is not taking significantly more leisure time over the last seventy years. We therefore have to wonder how much we can expect working

[10] On relative female to male wages and labor supply response, see McGrattan and Rogerson, "Changes in Hours Worked, 1950–2000," 15. For gender convergence by sector, see generally Claudia Goldin, "A Grand Gender Convergence: Its Last Chapter," *American Economic Review* 104, no. 4 (2014): 1091–1119.

[11] Jeremy Greenwood and Guillaume Vandenbroucke, "Hours Worked: Long-Run Trends," *National Bureau of Economic Research Working Paper No*. 11629 (2005), 1.

[12] McGrattan and Rogerson, "Changes in Hours Worked, 1950–2000," 20.

hours to decline looking forward. Perhaps the more distant future looks less like John Lennon's "Imagine," or even *Star Trek*, and more like a world where more people lead the quite busy, quite commercialized lives that are so common among today's wealthy.

And indeed most research finds that substitution effects outweigh income effects in labor markets. When workers are given pay raises, typically they wish to work more rather than less; or if workers switch to higher paying sectors they again wish to work more in most cases. If the government increases taxes on labor income, individuals typically will wish to work somewhat less, even if the size of this effect has been exaggerated by some of the supply-side economists. There is an entire government policy — the relatively effective Earned Income Tax Credit — based on the assumption that tax credits for work will induce poorer individuals to work more, as indeed seems to be the case.[13]

Even the increased demand for leisure has been explained by some economic historians as primarily about a substitution effect rather than an income effect. The prices of entertainment and recreational goods have fallen at especially high rates, and some of our substitution into leisure has been driven by these price effects.[14] Maybe today vacations have become so fun, cable TV is so interesting, and the value of a higher speed Internet connection is so great, that we are keener to earn more money just to enjoy those things. In this scenario, of course, the gains from progress would appear to have very direct and very real positive implications for human happiness, even if people are not lowering the number of hours they work by much. It is a generally acknowledged stylized fact that as economic growth proceeds, people spend an increasing percentage of their incomes on leisure and leisure goods.

Note that the broader evidence doesn't show a very strong connection between income or wealth and labor supply. In a lengthy survey, Richard Brown, Courtney Coile, and Scott Weisbenner concluded " . . . the few studies that have attempted to isolate the effect of a wealth shock on labor supply have found collectively ambiguous results."[15] The effects of surprise inheritances on work hours is unclear,[16] and legislated improvements to future Social Security benefits also do not seem to have a significant connection to labor supply decisions.[17] The most serious and detailed

[13] For an affirmation of the relevance of the substitution effect to Keynes's argument, see Richard B. Freeman, "Why Do We Work More than Keynes Expected?" in Lorenzo Pecchi and Gustavo Piga, editors, *Revisiting Keynes: Economic Possibilities for our Grandchildren* (Cambridge, MA: MIT Press, 2008), 135–42.

[14] Dora L. Costa, "Less of a Luxury: The Rise of Recreation Since 1888," *National Bureau of Economic Research Working Paper No*. 6054 (1997).

[15] Richard Brown, Courtney C. Coile, and Scott J. Weisbenner, "The Effect of Inheritance Receipt on Retirement," *Review of Economics and Statistics* 92, no. 2 (2010): 425–34.

[16] David Joulfaian and Mark Wilhelm, "Inheritance and Labor Supply," *Journal of Human Resources* 29, no. 4 (1994): 1205–34.

[17] Alan B. Krueger and Jorn-Steffen Pischke, "The Effect of Social Security on Labor Supply: A Cohort Analysis of the Notch Generation," *Journal of Labor Economics* 10, no. 4 (1992): 412–37.

study of this question focuses on Swedish lottery winners and has very good data.[18] The authors conclude: "[t]he magnitude of the response [to lottery winnings and thus greater wealth] is modest; pre-tax labor earnings decrease by about 1% of the wealth shock in each of the first 10 years following the win." It seems that the effects of wealth on labor supply are ambiguous or possibly very small, and that is yet another piece of evidence militating against Keynes's prediction.

A broader look at history also indicates there is nothing inevitable about total labor hours going down. There are no actual data on hours worked in hunter-gatherer societies, but it is commonly argued those individuals spent much less time working than did individuals in agricultural and post-agricultural societies.[19] They would hunt, or gather fruits, nuts, and roots, and then go back to family care or socializing with friends. Due to limited facilities for storage and accumulation, the opportunities for work often were fairly limited. In agricultural societies, there is more scope for advance work of planning, preparation, and working with the soil. Often the product can be stored, which raises the possibilities of accumulation and also may necessitate a higher degree of protection and surrounding support services. Again, it is at least possible that economic growth will not bring lower labor hours.

Another substitution effect that keeps people working is the quality of jobs. Today's jobs are safer and more pleasant than ever before. Offices are nicer, the chance of an actual death or disability while working is lower, and the chance that jobs involve creative challenges is higher than ever before. This in part derives from an income effect — wealthier individuals demand better workplace treatment because in essence they have more money to spend on that demand — but the resulting higher quality of the workplace in turn reinforces a substitution effect. The more that work is fun, or at least if it is less arduous and dangerous, the more likely we are willing to work longer hours.

The productivity of household production also is a factor behind the changing allocation of hours. Just as productivity increases in the workplace, so does productivity increase in the home; for instance the equipping of Western homes with electrically powered appliances was one of the most important technological advances of the twentieth century for human welfare. Washing machines and dryers make it easier to spend less time working at home, most of all for women. This can boost the time spent at work, even when other economic variables might seem to indicate that leisure consumption should be rising. A study of Middletown,

[18] David Cesarini, Erik Lindqvist, Matthew J. Notowidigdo, and Robert Ostling, "The Effect of Wealth On Individual and Household Labor Supply: Evidence from Swedish Lotteries," *National Bureau of Economic Research Working Paper No*. 21762 (2015).

[19] For one classic statement of this argument (which I am not endorsing), see Jared Diamond, "The Worst Mistake in the History of the Human Race," *Discover Magazine* (1987): 64–66.

Indiana found that in 1924 about 87 percent of housewives were spending over four hours per day on housework; by 1999 only fourteen percent of housewives were spending more than four hours a day working at home, and a third of that group spent less than an hour a day working at home.[20]

Alternatively, it can be said that time spent at home is more like leisure than it was in the past, and we may prefer to consume much of our additional leisure in this manner, rather than spending less time at work. The nonmeasured but very real increase in leisure is spending your time watching TV, or surfing the Internet, or walking the dog, rather than slaving over a hot stove. You can think of this third "household production" factor as a confound which may complicate what might otherwise be simple predictions of any economic theory based only on first-order income and substitution effects.

By the way, this confound suggests that Europeans don't consume as much leisure as many people think, compared to Americans. Americans have commodified cooked food and child care and elderly care more than Europeans have. Overall, Europeans spend more time working at household production than Americans do, thereby balancing out some of what would otherwise appear to be a fairly large labor-leisure gap across the two cultures. According to one estimate, the "market work per person" gap between Sweden and the United States goes from about ten percent to one percent, once we take household production into account. This difference in time allocation is what you would expect when one of the cultures has a higher rate of tax on labor income, as most of Western Europe does.[21]

III. Further, Non-Gender Cross-Sectional Differences in Labor Supply

Even if Keynes was not right about the aggregate data, many groups are working less in today's America, and indeed in most other developed societies.

Most prominently, the American elderly have, at least until about 2000, cut back dramatically on their labor force participation. To find a realization of Keynes's vision, go no further and consider Americans age sixty-five

[20] See L. Rachel Ngai and Christopher A. Pissarides, "Trends in Hours and Economic Growth," *Review of Economic Dynamics* 11, no. 2 (2008): 239–56; on these points, and on the Middletown study see Greenwood and Vandenbroucke, "Hours Worked: Long-Run Trends," 1.

[21] See Ngai and Pissarides, "Trends in Hours and Economic Growth," on Europe versus America; and on the import of labor taxation, see Edward C. Prescott, "Why Do Americans Work So Much More Than Europeans?" *Federal Reserve Bank of Minneapolis Quarterly Review* 28, no. 1 (2004): 2–13. On Sweden and America, see Conny Olovsson, "Why Do Europeans Work So Little?" *International Economic Review* 50, no. 1 (2009): 39–61. If you are wondering, time spent with children has gone up by about two hours a week, for males and females each, when children are present; of course it can be debated how much of this is work and how much is leisure (Aguiar and Hurst, "American Time Allocation: 1965–2005," 61).

and above. Fewer than 20 percent of these individuals are in the workforce, but circa 1880, 75 percent of men aged 65 and above were in the labor market. On top of that, today's elderly are also more able-bodied and thus more able to enjoy the leisure they do have.[22]

Data on recreation show a consistent picture. Men in the age bracket 55-64 spent about 19 percent more time on recreation than did men in the age bracket 25-54. Men over 65 spend almost 43 percent more time on recreation than prime age working males. They spend more time reading, watching TV, reading books, and they devote a greater share of their expenditure to leisure goods.[23]

There is good evidence that the retired are relatively happy, and in fact happier on average than their peers who are still working, adjusting for the relevant demographic variables. There is also good evidence that the unemployed are relatively unhappy, and experience serious health and mental health problems, again on average, noting that the direction of causality is not always clear. Nonetheless part of the difference seems to be that one state of not working —retirement — is socially sanctioned and peer sanctioned, yet unemployment is not. The unemployed also face ongoing uncertainty as to when they will find a job and what kind of job they might find, and this uncertainty injects additional stress and disappointment into their lives. The retired do not have the same dilemma, although some percentage of them do eventually have to reenter the work force, for instance if their savings run out or if unexpected expenses arise.

There is a study that tracks individuals who are able to relabel their "unemployment" as "retirement," if they remain unemployed for enough time at a sufficiently old age. The result is striking: these individuals self-report much higher levels of happiness when they move into "retirement," even though their daily routine, as it might be defined in the physical terms of what they do, has not changed very much.[24]

This study suggests that the pressure to work depends in part on social forces. For instance, Alberto Alesina, Edward Glaeser, and Bruce Sacerdote stress the idea of a "social multiplier" in determining the relevant income effect for how greater wealth translates into leisure.[25] That is, people are more likely to use more income to "buy" more leisure time if they observe other individuals doing the same. This helps account for why unemployment and retirement can have such different results on individual well-being. At least potentially, this could mean that the "everyone does it together" income effect on labor supply is much stronger than the "cutting

[22] Karen A. Kopecky, "The Trend in Retirement," *International Economic Review* 52, no. 2 (2011): 287–316, at 287.

[23] Ibid., 192.

[24] See Clemens Hetschko, Andreas Knabe, and Ronnie Schoeb, "Changing Identity: Retiring from Unemployment," *The Economic Journal* 124, no. 575 (2013): 149–66.

[25] Alesina, Glaeser, and Sacerdote, "Why So Different?" 3.

back on work hours solo" effect. That is an intriguing hypothesis, and I will return to it later.

In any case, before we assert that Keynes's dream has not come true, a qualifier for age is important. It most definitely has come true for many senior citizens. I will return to this point, but it may provide some clues for figuring out some underlying factors behind labor supply and, thus, the nature of progress. Do note, however, that there has been a significant increase in the labor force participation of older American workers since the Great Recession, counter to this longer-term trend. This increase may be "old people having to take jobs at Walmart" to get by, or "old people discovering they still enjoy being involved in the workplace," but to what degree we do not yet know. The labor force participation rate of those above sixty-five has gone up from about 13 percent in 2000 to about 19 percent in 2014.[26] In this sense Keynes's vision does not describe the very latest trend for the elderly.

Another group that has cut back on labor supply is prime age working men, at least in the United States and also in many other industrialized societies, including Western Europe. Deindustrialization and the loss of manufacturing jobs are commonly a major factor behind this change in work behavior. It is an increasingly well-known fact that in America the male median wage was higher in 1969, inflation-adjusted, than it is today. That comparison is probably mismeasuring inflation in some regards and thus undervaluing the real wage today, as well as undercounting some of today's "free goods," such as cleaner air or various Internet services. Still, even the possibility that such a comparison could favor 1969 shows that economic progress for many males has been disappointing over the last forty plus years. Many men have responded to these changes by working less, and this change has been especially pronounced for men at lower levels of education and income.[27]

In many cases these labor supply changes have been accompanied by lower rates of marriage, higher rates of incarceration, the use of stronger drugs including methamphetamine and strong marijuana, and, anecdotally, high rates of usage for Internet pornography. These men are also collecting disability at higher rates, even though life expectancy is up and most jobs are safer than ever before, especially with the decline of manufacturing employment. In 2014, about 12 percent of prime age American men neither had jobs nor were looking for work; in 1991 this same number was only about 7 percent.[28]

Note that while these men are formally listed as unemployed or out of the labor force, very often they do have some part-time jobs, typically off

[26] Martin Wolf, "America's Labour Market Is Not Working," *The Financial Times*, Nov. 3, 2015.

[27] Charles A. Murray, *Coming Apart: The State of White America, 1960–2010* (New York: Crown Forum, 2013); Isabel V. Sawhill, "Where Have All the Workers Gone?" Brookings Institution, Nov. 17, 2015; Wolf, "America's Labour Market."

[28] Wolf, "America's Labour Market."

the books. This may involve helping out on construction work sites, doing spare jobs for cash, selling drugs, and other forms of participation in the underground economy. So their actual labor hours may in reality not be so far from what Keynes postulated, even though these stories probably do not fit Keynes's vision very closely.

Can it nonetheless be said that many of these men are living Keynes's dream? That's a complex question, but for the time being I'll simply note that these male employment patterns are commonly considered a social and economic problem, unlike the move of more of the elderly out of work into formal retirement. These prime-age working males don't have the positive progress in social indicators that I think Keynes had expected to be part of his vision.

Another group that has been working less in recent times is teenagers. Economist Allison Schrager put it simply: "According to Census data from the '70s, '80s, and early '90s, around 55% of 16- to 19- year-olds were employed each July; in 2014 fewer than 35% were. Even college-aged Americans are much less likely to work. To be sure, the recession contributed to young peoples' non-employment. But the trends pre-date the recession and, despite some increase, persist into the recovery." Some of this decline in teenage work may be the need to spend more time preparing for college or graduate school, and thus actually involve another kind of work, albeit unpaid. Some of the change may reflect the rise of unpaid internships, and some of it may be the result of a generally slower or more stratified or more incumbent-friendly job market. In any case the numbers are pretty clear that teen and student employment has been falling for some time.[29]

The increase in leisure has been relatively small for the relatively wealthy. Over the last few decades, the lowest-income Americans have increased their consumption of leisure the most, and the highest-income Americans the least, and in both cases a lot of the new leisure comes from declines in household production. This is again consistent with a major role for the substitution effect, as lower wages are associated with less work and higher wages are associated with more work and rising workloads. This is also a kind of mirror image of the rise in income inequality. Leisure inequality has gone up too, but in the opposite direction, with the lower earners capturing the biggest leisure gains.[30]

Finally, the work gap between Americans and Europeans seems to be holding steady or even growing. Much of the gap between American and

[29] Allison Schrager, "An Entire Generation of Young American Workers is Missing Crucial Skills," *Quartz*, Aug. 31, 2015.

[30] See Mark Aguiar and Erik Hurst, "Measuring Trends in Leisure: The Allocation of Time Over Five Decades," *Quarterly Journal of Economics* 122, no. 3 (2007): 969–1006; Mark Aguiar and Erik Hurst, "A Summary of Trends in American Time Allocation: 1965–2005," *Social Indicators Research* 93, no. 1 (2009): 57–64; Dora L. Costa, "The Unequal Work Day: A Long-Term View," *National Bureau of Economic Research Working Paper No*. 6419 (1998).

European working hours seems to be driven by rates of taxation on labor[31] and also regulations from labor unions.[32] Most of the European economies apply higher taxes to labor income, and to offer higher social benefits for people who do not work. The end result is lower interest in working high hours and thus Europe's shorter workweek. It is not obvious that this represents some kind of naturally greater inclination of Europeans to "enjoy life" or to consume leisure. Before the shift of Western Europe to a higher tax regime in the 1960s and 1970s, in fact Western Europeans worked somewhat more than did Americans.

Overall, when we consider these stylized facts as a whole — about who is working more or less and why — it indicates that the substitution effect for labor and working hours is stronger than the income effect. The effects from relative prices, wages, and returns from leisure seem to be stronger than the effects from absolute levels of income or wealth alone.

IV. Why Has Work Remained So Popular?

I'll now go through some of the main reasons why working hours might have stayed as long as they have, with an eye toward whether these reasons address why Keynes's prediction of the much shorter workweek has not come true. These possibilities will cover status competition, unbalanced growth, corporate control, and mate attraction theories.

Behind those hypotheses, however, whether singly or in combination with other explanations, lies a very simple possibility which the data do not reject. It may well be that a significant proportion of individuals have kept on working as much as they have because a) they really enjoy earning and spending money, and b) they consider their jobs to be relatively attractive ways to invest their time and energy. In that case economic progress would in fact seem to translate into very real forms of human satisfaction. I am not suggesting we have any kind of direct proof for this hypothesis, but it does stand in the background as a kind of default conclusion and, of course, it would indicate that progress is very real indeed. But let's now consider possible alternatives or add-ons to this rather optimistic understanding of the landscape. Note in advance that none of these hypotheses has to pretend to be universal and to cover all workers; it is also possible they simply cover different parts of the overall landscape.

A. Status competition?

Perhaps the most popular explanation for why Keynes was wrong cites status competition. The claim is that even though most people have more wealth, they are on a kind of status-based treadmill. Wealth goes up, but

[31] Prescott, "Why Do Americans Work So Much More Than Europeans?" 2.
[32] Alesina, Glaeser, and Sacerdote, "Why So Different?" 29.

required expenditures go up too, to keep up with the proverbial Joneses. You will note that in many versions of this view a lot of the purported progress is illusory. The "treadmill" aspect of the problem is this: the added expenditures from each year of economic growth largely help people stay in place in a zero-sum or negative-sum status game, rather than improving human welfare. In other words, if your neighbor did not have cable television and Netflix streaming, you might not need it either, yet many people end up feeling the need to buy cable and Netflix.[33]

The good news is that most of the evidence does not support this rejoinder as an explanation for why labor hours have remained so high.

Most importantly, status factors do not seem to be a major determinant of consumption expenditures in general. There are many status-based hypotheses about consumption, and they do seem to have some explanatory power.[34] Yet no one who works on the economics of consumption treats status competition as the main driver of consumption habits or consumption levels. Instead, traditional features of income, income growth expectations, an individual's place in the life cycle, family, uncertainty and other factors play by far the biggest roles in shaping consumption. For all the squabbling at the margins, those theories are not controversial nor does their acceptance depend on some kind of non-scientific partisan loyalty. It is then the case that status factors can add some explanatory power to consumption theory, as indeed many of us can vouch for through introspection. Still, there is a pretty clear scientific consensus that status factors are but one element of consumption theory and far from the main element.

We can now see the problem. If status is only a *secondary* driver of consumption expenditure, why should we think it is a *primary* driver of labor supply? Well, it probably isn't. The desire for status expenditures probably explains some of our labor supply behavior, because to buy those nice shoes or that nice handbag you do have to work harder. But status desires won't explain the big facts about labor supply behavior any more than they explain the big facts about our consumption expenditures.[35]

[33] For two versions of this hypothesis, see Robert H. Frank "Context is More Important Than Keynes Realized," in Lorenzo Pecchi and Gustavo Piga, editors, *Revisiting Keynes: Economic Possibilities for our Grandchildren* (Cambridge, MA: MIT Press, 2008), 143–50; and Chris Thron, "Lifestyle Tradeoffs and the Decline of Societal Well-Being: An Agent-based Model," *Physics and Society* (2015), http://arxiv.org/abs/1508.03524.

[34] Francisco Alpizar, Fredrik Carlsson, and Olof Johansson-Stenman, "How Much Do We Care About Absolute Versus Relative Income and Consumption?" *Journal of Economic Behavior and Organization* 56, no. 3 (2005): 405–21.

[35] For one attempt to apply relative status to explain cross-national differences in labor hours, see Samuel Bowles and Hongjin Park, "Emulation, Inequality, and Work Hours: Was Thorstein Veblen Right?" *The Economic Journal* 115, no. 507 (2005): F397–F412. Note that their claim that inequality should predict higher work hours, through a status effect, need not follow. It could just as easily be that people "close together" in terms of income and background care more about their relative status; more concretely, people may care more about their status relative to the rest of their high school class, or their brother-in-law, than relative to Bill Gates. At the very least this would seem to be an open question.

Furthermore the status hypothesis for labor supply does not explain very well the cross-sectional variation in the data. For instance there is good evidence that African-Americans in percentage terms spend more on status goods than do white Americans.[36] If we are to use the status hypothesis also to explain the course of work hours, the implied prediction would be that African-Americans are especially likely to be working long hours as economic growth proceeds. Yet we do not see this in the data.

Or look at some of the time shifts that have occurred. For instance, it could be argued that the average Western workweek over the last hundred and fifty years has dropped by about thirty hours. Estimates are again rough, but it also can be argued that over the same period of time, the average amount of time spent watching television every week has gone up by about twenty-eight hours. It could be said, somewhat tongue in cheek, that we are working less to watch TV more. But if you think about this time shift, it is not really what a status-driven model would predict. It is far from obvious how watching more television contributes so much to our relative status, although perhaps it enables us to make some good wisecracks around the water cooler at work.[37]

We also see in the data that since the 1970s women are working many more hours. But is this to be explained by a shift in female preferences for status goods? Women may see the chance to buy more nice luxury consumption items, but overall the case hasn't been made, and other factors such as the birth control pill, declining fertility, and declining discrimination seem to explain much more of what is going on. Are elderly people working less (and then more) because they care less (and then more again) about status goods? The evidence remains to be presented. So the status competition hypothesis doesn't do so well explaining the micro features of labor markets and labor market changes. That again makes it difficult to present the status competition hypothesis as the main story behind the persistence of a relatively high number of work hours.

There are a few other problems with the status competition hypothesis that are more conceptual in nature. First, even if the hypotheses were completely true, the status competition does not have to be zero- or negative-sum. If we are so biologically wired to pursue status for its own sake, are we not also wired to *enjoy* the pursuit of status? Don't people for instance enjoy many forms of struggle and competition, just as they enjoy sports? If that is the case, the status hypothesis could be true but progress would not be an illusion. We would be spending more and more of our money having more and more fun

[36] Kerwin Charles, Erik Hurst, and Nick Roussanov, "Conspicuous Consumption and Race," *Quarterly Journal of Economics* 124, no. 2 (2009): 425–67.

[37] On this comparison, see Henry Blodget, "Over the Past 150 Years, There Has Been a Profound Shift in What Humans Do With Their Time," *Business Insider*, Dec. 27, 2014.

fighting for status. This status competition also will drive a lot of socially beneficial innovation.[38]

Alternatively, maybe we enjoy winning status but we don't enjoy fighting for it. It remains the case that status competition can be positive-sum. In contemporary society not everyone is running after the same designation of success. Instead, the world has created a greater number of niches, a greater number of awards and prizes, and a greater number of fields in which one can earn achievement and recognition. The supply of status in fact seems to be highly elastic, most of all with the onset of the Internet — just look at how many people have become well-known through blogging, Instagram, or YouTube, among other outlets. Again, non-zero-sum status competition restores the idea that the progress of economic growth is real rather than an illusion.

Finally, the status hypothesis cannot easily explain why status competition cannot take the form of leisure rather than additional working hours. For instance we might think that individuals, in their unrelenting quest for status, would take jobs with lots of vacation, and spend the rest of their time documenting their budget travel, or their domestic hobbies, to impress others. Thorstein Veblen himself considered this hypothesis, but he rejected it when he wrote: "The only practicable means of impressing one's pecuniary ability on these unsympathetic observers of one's everyday life is an unremitting demonstration of the ability to pay."[39]

Even if that was true in Veblen's time, it hardly seems true today in an age of Facebook and other social media. A lot of people spend a lot more time and energy documenting their social lives, their parties, their friends, their hobbies, and their vacations than just boasting about that new fancy tie they bought. Yes, there are both kinds of status-seeking, but it seems that status competition for leisure is at least on an equal footing today. And in fact there is good evidence that the status-seeking motive does apply to vacations.[40] That again means a status-seeking hypothesis will have a hard time explaining the persistence of relatively high levels of work hours, most of all because leisure is a form of status too.

B. Unbalanced growth

Unbalanced growth hypotheses suggest that perhaps modern society is not as wealthy as it appears, because that growth does not come evenly. For instance, if the average rate of economic growth is about 2 percent, this does not mean all goods and services become 2 percent more available

[38] On the latter point, see Holger Strulik, "How Status Concerns Can Make Us Rich and Happy," *Economica* 82, no. 1 (2015): 1217–40.

[39] See Thornstein Veblen, *The Theory of the Leisure Class* (New York: Modern Library, 1934), 71.

[40] Alpizar, Carlsson, and Johansson-Stenman, "Absolute Versus Relative Income and Consumption."

each year. Instead some goods become much cheaper, such as flat screen televisions, while other goods and services, such as health care and higher education, become more expensive. Furthermore, a home in an above average school district is in most major urban areas far more expensive than in times past. If individuals still need to work hard to buy the more expensive goods, their labor supply may not decline very much, even if real incomes as traditionally measured have been rising.[41]

In theory, the construction of index numbers, and thus inflation adjustments, take such effects into account. For instance, if flat screen TVs become a smaller part of your expenditure portfolio, and college a higher part, your measured rate of growth of real income is adjusted accordingly by the government statisticians. The estimate of say two percent income growth is already taking such financial burdens into account.

In terms of the statistics, it is widely believed among economists that current procedures are fairly close to the correct ones. Still, if we are trying to estimate the income effect from continuing economic growth, it's not just a question of finding the right index number procedure, but also a question of what makes human beings, in this case Americans, happy or content. For instance, imagine there are six primary goods in life, say health, education, food, sex, sleep, and creative work. Your happiness might be determined how well you are doing in the least successful category or two. So, to make that concrete, let's say the relative prices of food, sex, sleep, and creative labor are way down, in part because of the Internet, and the price is down for good sleep because of better medications. Still, the high and growing expense of health care and education may make your life more stressful and make you less happy. It will appear as if you should be experiencing a positive income effect, but maybe you are not, or at least you are not as much as the numbers otherwise would be indicating. Economic science won't pick up those effects, but they are nonetheless real to citizens and voters.

In technical terms, the point could be put as follows: traditional index number methods assume that most economics goods are substitutes. But, when it comes to human happiness, some of the primary goods may be *complements*. That is, maybe we need all of them in satisfactory amounts to be happy. If not, we are just going to stress over the one or two that we do not have in adequate amounts, and so unbalanced growth isn't always making us so much happier. Today, this could mean that the American middle class, and sometimes even the upper middle class, is stressing over the expense of quality health care and education. The positive income effect, which would otherwise induce us to work less, is much weaker than cost of living adjustments would indicate.

[41] For a version of this hypothesis, combined with some insights from the zero- or negative-sum status hypothesis, see Joseph E. Stiglitz, "Toward a General Theory of Consumerism: Reflections on Keynes's Economic Possibilities for Our Grandchildren," Lorenzo Pecchi and Gustavo Piga, editors, *Revisiting Keynes Economic Possibilities for our Grandchildren* (Cambridge, MA: MIT Press, 2008), 41–85.

Note that under this hypothesis a lot of measured economic progress is an illusion. We are consuming a lot more in terms of goods and services, but our level of stress is perhaps not down so much. But this hypothesis differs from the zero-sum status game hypothesis. For the status hypothesis, a lot of the social surplus from economic growth is wasted and brings society no net benefit. That seems implausible, for some reasons I discussed above. Under the unbalanced growth hypothesis, the problem is that economic growth is more *incomplete* than it appears on first glance. A fully complete version of growth, with all the relevant complements available to citizens, would in fact probably bring us much closer to Keynes's postulated world.

The incomplete growth hypothesis does seem at least broadly consistent with some basic facts about labor supply across nations. If a country makes its health care and education free or relatively cheap to users, that should lower labor supply, and furthermore labor supply should continue to fall as measured real wages rise. Indeed we observe exactly that in the Western European welfare states. The wealthier Asian economies tend to have smaller welfare states, smaller than the American welfare state too. And those same economies still have relatively high work hours. The incomplete growth hypothesis also helps explain why wealthier countries are not always much happier than somewhat less wealthy countries, and why many countries do not report significantly higher levels of happiness across time. It is very hard to wring all of the stress out of life, even in light of lots of technological progress.

I therefore find that the unbalanced growth hypothesis has some appealing features. And while it may sound pessimistic about the current state of the world, it also has an optimistic side. It holds out hope that if we can make economic growth more complete, a big boost in human well-being lies before us, in fact quite an explosive boost due to the effects from complementarity, namely that a removal of our major worries will allow us to enjoy so much of what we have accumulated.

That all said, the incomplete growth hypothesis has two major and perhaps insuperable problems.

First, the incomplete growth hypothesis, to explain Keynes's paradox, requires that income effects are more powerful than substitution effects in labor markets. It implies that the true, happiness-based real wage is not so much higher, and thus in that setting we should not expect much of a substitution effect from measured wage changes. Yet that postulate seems to run against a broad swathe of data, as surveyed above.

Second, as mentioned above, it predicts that in the data some goods, or primary goods as I have called them, should appear as complements rather than substitutes. That is, if the price of one set of primary goods goes down, and if real income remains constant, *the demand for some other, different set of primary goods should go up*. That is precisely what the complementarity means in this context, operationalized into an economic

measurement. The reality, however, is that such economic complements are hard to come by and virtually all economic goods are substitutes, at least as we observe them in the data. Left and right shoes may be complements, or perhaps, to cite an old example, tea and milk. But the overwhelming majority of economic goods appear to be substitutes.

One specific version of the unbalanced growth hypothesis is presented in a recent paper by Benjamin M. Friedman on Keynes's hypothesis.[42] Friedman argues that due to rising inequality, middle class incomes haven't actually risen so fast, and thus people are continuing to work long hours. Yet this hypothesis runs squarely contrary to the data. As I've mentioned, over the course of the last few decades, it is the lower earners who have increased their consumption of leisure, and the higher earners who are working more, contra Friedman's core hypothesis. So that version of the unbalanced growth hypothesis doesn't seem to stand up either, as we cannot use stagnant middle class incomes to explain the slow growth of leisure.

C. Corporate control, or do workers in fact choose work hours?

Most economic treatments of labor supply assume that workers themselves determine the desired level of work hours, at least over the long run. In the short run, particular employers have a lot of power over workers, and may demand they work longer hours than the employees might wish; it's not always possible to just run away and find an equally good job. Still, when examining longer run issues, such as the evolution of the workweek, it is difficult to tell a convincing story from the side of the employer. Workers choose professions and employers, and the more that is expected of them in terms of work hours, the higher the required wage will be. The mere fact that bosses might wish to exploit workers, or for that matter succeed in exploiting workers, doesn't get around this basic logic. At the margin, longer hours will mean a higher wage bill. Nor is employer power so prevalent in longer-run settings, and it is hard to find cases of monopsony, namely where the worker cannot much choose which firm to work for. For instance Walmart — the largest private sector employer in America — does not seem to have significant monopsony power in most parts of the country, except for some rural areas.[43]

[42] Benjamin M. Friedman, "Work and Consumption in an Era of Unbalanced Technological Advance," *National Bureau of Economic Research Working Paper No*. 21713 (2015).

[43] For two looks at monopsony, see William M. Boal and Michael R. Ransom, "Monopsony in the Labor Market," *Journal of Economic Literature* 35, no. 1 (1997): 86–112; Orley Ashenfelter, Henry S. Farber, and Michael R. Ransom, "Modern Models of Monopsony in Labor Markets: A Brief Survey," *IZA Discussion Paper No*. 4915 (2010). On Walmart, see Alessandro Bonnanno and Rigoberto A. Lopez, "Is Wal-Mart a Monopsony? Evidence from Local Labor Markets," (2009, unpublished). For a look at why the monopsony model has not won over most economists, most of all as an explanation of medium- to long-run phenomena, see Peter Kuhn, "Is Monopsony the Right Way to Model Labor Markets? A Review of Alan Manning's Monopsony in Motion," *International Journal of the Economics of Business* 11, no. 3 (2004): 369–78.

Furthermore, the more "market power" that bosses have over workers, the more likely the bosses will pay heed to the quality dimensions of the job, at least as a percentage of total pay. This runs counter to most people's intuitions, as we typically associate monopsony with lower bargaining power for workers; so let's look at the argument more closely.

The monopsony model does not predict that workers will enjoy less freedom or fewer perks in the workplace. Some time ago, economists realized that product monopoly does not predict lower product quality, as profits may be maximized more readily at a higher product quality level than a lower product quality level (for example, you might rather monopolize diamonds than cheaper stones). An analogous proposition holds for monopsony, namely that employers may improve workplace conditions, including hours, in order to lower wages all the more. Or consider an employer who would like to lure in more workers, but without bidding up wages for all workers, as a monopsonistic giant is likely to do. Offering employees selective workplace freedoms, such as lower working hours, is one possible way to "wage discriminate" (a concept analogous to price discrimination) and increase company profits. It doesn't have to work out this way, but in the model it very easily can. The upshot is that simply postulating a lot of market power for employers does not itself explain why working hours might be long or why they have ceased to fall as rapidly as many people expected.[44]

Extant empirical work supports the notion that worker-controlled firms won't do much to cut work hours. For instance, in the Pacific Northwest between 1968 and 1986, worker co-operatives ran plywood production. Stanford labor economist John Pencavel has described this as " . . . the most substantial worker-owned and worker-managed sector in United States manufacturing industry."[45] A look at company practices indicates that the worker-run firms had slightly longer working hours than comparable shareholder-controlled firms. In other words, putting workers in charge doesn't seem to matter much, and if anything may lengthen the workweek. This should not come as a surprise to anyone who has considered the history of legal or investment banking partnerships, among other organizational forms where the workers are in charge and yet they enforce long hours.[46]

[44] For analyses of some related scenarios under monopsony, see Kip Viscusi, "Union, Labor Market Structure, and the Welfare Implications of the Quality of Work," *Journal of Labor Research* 1, no. 1 (1980): 175–92; Alison L. Booth and Gylfi Zoega, "Why Do Firms Invest in General Training? 'Good' Firms and 'Bad' Firms as a Source of Monopsony Power," (2000, unpublished); and Francis Green, Stephen Machin, and Alan Manning, "The Employer Size-Wage Effect: Can Dynamic Monopsony Provide an Explanation?" *Oxford Economic Papers* 48 (1996): 433–55.

[45] John Pencavel, "The Labor Supply of Self-Employed Workers: The Choice of Working Hours in Worker Co-Ops," *Stanford Institute for Economic Policy Research Discussion Paper No*. 13-036 (2014), 2.

[46] See also John Pencavel, "Whose Preferences are Revealed in Hours of Work?" *Stanford Institute for Economic Policy Research Discussion Paper No*. 15-025 (2015).

D. Demographic theories

Finally, let's consider a demographic approach. Let's say that one set of purposes of work and material accumulation involve attracting mates and then providing for offspring. Perhaps we have evolved as programmed in this manner, whether or not it makes us happy in every instance, or maybe we are just conditioned this way by society. So prime age individuals become wealthier; they do not necessarily consume more leisure time because their inclination is toward work and accumulation and building a wealthy and stable family structure. It is even possible that individuals with this programming may do better in the long run at passing on their genetic heritage, which would make it an evolutionarily stable strategy. And while it is sometimes assumed that such motives apply more to men than to women, my exposition does not require any such differential treatment.[47]

This approach offers some simple cross-sectional predictions. Individuals in their prime mating and child-siring years should be working at relatively high and robust rates, while other kinds of work will be subject to greater discretion and more opportunistic. For instance, the elderly may or may not work, depending on wealth stocks, wage rates, and leisure opportunities, and their work habits will be far more contingent. We can draw a simple distinction between those who psychologically need to work and those who choose to work.

The mate attraction hypothesis shares some features with the relative status hypothesis, but with two differences. First, many prime age individuals want and need to work, and they will be unhappy if they do not or cannot, regardless of any particular relative status relationships. They psychologically need to work, as they are in prime family-supporting years, and if they cannot work that is likely a social problem, as discussed above. But if older people are able to enjoy more leisure, they will be happier outright. Second, some groups can in fact earn relative status through leisure time, but others cannot. The elderly, for instance, may well earn higher status by taking wonderful vacations and talking about them or putting them on social media. Many of the elderly will be striving to do this, although not all of them can afford it. Prime age males however face a different set of expectations.

Richard Rogerson describes the labor market data in a way that seems consistent with this basic hypothesis: " . . . the data reveal that big differences in total hours across countries are concentrated among certain groups. In particular, we found that almost all of the differences in

[47] For some evidence that women adjust better to part-time work and lower-skill work, see Mary Gregory and Sara Connolly, "The Price of Reconciliation: Part-Time Work, Families and Women's Satisfaction," *The Economic Journal* 118, no. 526 (2008): F1–F7. On whether evidence shows a wage gap between part-time and full-time workers by gender, see Barry T. Hirsch, "Why Do Part-time Workers Earn Less? The Role of Worker and Job Skills," *Industrial and Labor Relations Review* 58, no. 4 (2003): 525–51.

employment are accounted for by young and old workers. More generally, aggregate responses are likely to be dominated by the responses of 'marginal' workers."[48] In other words, there is a lot of variation in the data, but core workers keep on laboring at a pretty constant rate, both across time and across a variety of the wealthier developed economies.

Under the demographic hypothesis, there are some very real gains from progress. For instance, as the male workweek falls, life is more enjoyable for many men, and still the workaholics face no shortage of work-intensive options in modern-day America. If all goes well, and a high percentage of men keep their jobs, there is an efficient reallocation of work energies, somewhat away from men and toward women and married women. That makes most people better off, and it is broadly consistent with a lot of patterns in the data from 1950–2000.

There remains, however, an open question: Just how much does the need to work make people happier? Let's consider the men. According to the traditional view, most men want to work, letting them work satisfies a preference, and therefore they are better off. The more they want to work, the higher those gains must be. But there is an alternative and perhaps more "behavioral" interpretation of the male desire to work, and it is less optimistic. It is possible that men have evolved an extreme vulnerability where they must work in their prime years or they lose status and then they are miserable. Working doesn't so much make them happier in any cardinal or Benthamite sense, but rather not working would make them much less happy. So they work to prevent loss, to prevent becoming part of a lost generation, to prevent suicide risk or incarceration, and so on. The gains from putting those men to work are mostly defensive gains, to prevent bad social outcomes, and it's not yielding as much value as if the men would actually enjoy all of that work for its own sake.

On normative grounds, how real is progress under the demographic hypothesis? Well, individuals who take discretionary attitudes toward work do indeed enjoy working less, and have the opportunity to work less. So the young and the elderly are much better off. Prime age men, however, may not be much better off, to the extent they are locked into having to work full-time in any case by their psychological natures. They are somewhat better off, because the growing flexibility of labor markets gives them a chance to cut back on their hours slightly, but without necessarily losing first-tier status. But they are denied some benefits of economic growth because their underlying psychology limits their ability to cash in on the potential for a growing demand for leisure through an income effect. A disproportionate share of the gains from economic growth go to the young, to the old, and to those who psychologically have no trouble

[48] Richard Rogerson, "Understanding Differences in Hours Worked," *Review of Economic Dynamics* 9, no. 3 (2006): 365–409.

considering work as an option rather than a necessity. Overall, the gains of progress are real but unevenly distributed and probably smaller than income statistics, interpreted naively, would indicate.

The demographic hypothesis requires testing against plausible alternatives, but still it is another way of thinking about why Keynes's predictions have not come to pass. It implies that a lot of progress is real, but not always as high as measured. I find this an intuitively appealing conclusion, although whether we should trust our intuitions in such matters is itself subject to debate.

V. Concluding Remarks

The most important point we can learn from the data is that substitution effects predict labor supply behavior better than do income effects, at least in recent world history. That is the core reason why Keynes's prediction has not come to pass. To put it more bluntly, people still work a lot because they want to be paid a lot and because their jobs are not so terrible. That is true for more people than some academicians, including it seems Keynes, have thought.

We don't know exactly which features of human nature account for the robustness of the substitution effect. The most pessimistic hypotheses, such as that of zero- or negative-sum status competition, probably can be rejected, at least as driving factors. I conclude that, at least with regard to the questions raised in this essay, there are some good reasons for not dismissing the idea that progress is real. Both money and jobs are relatively attractive options at current margins, and it seems this attractiveness has not been going away. That said, there are still plausible channels through which we might believe that actual progress is not quite as high as we are measuring it.

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