11 Controversies about Work, Leisure, and Welfare in Europe and the United States

Robert J. Gordon

11.1 Introduction

As is widely known and further documented here, Europe (the fifteen EU members prior to the 2004 enlargement, hereafter the EU-15), has a lower standard of living than the United States as measured by PPP-adjusted real GDP per person. This per capita real income shortfall, which has persisted for the last four decades, combines a deficit both in output per hour and in hours per capita. This chapter asks whether Europe is really as poor as is suggested by comparative data on real GDP per capita. How much can the low Europe-to-United States (EU/US) ratio of real GDP per capita be supplemented by a careful analysis that adds to European welfare the value of leisure implied by shorter work hours, as well as subtracting components of US GDP that do not represent higher welfare.

The position that Europe has simply chosen equal-valued leisure hours over work hours is most strongly proposed by Blanchard (2004: 4), who writes that "The main difference is that Europe has used some of the increase in productivity to increase leisure rather than income, while the United States has done the opposite." An alternative interpretation is that the rise in the EU/US productivity ratio was artificial, as Europe made labor expensive through high labor taxes, high minimum wages, and tight labor and product market regulations. As a result firms were forced to slide northwest up their labor demand curves, retaining high-productivity workers while forcing low-productivity workers into unemployment or out of the labor force entirely. Under this interpretation the decline in hours per capita is largely involuntary and does not represent unmeasured welfare.

The "unmeasured leisure" hypothesis has only a grain of truth and fails for three reasons. First, many of those "not-worked" hours

represent involuntary unemployment and involuntary low participation. Second, the counterpart of low European hours spent in market work is only partly leisure with a remaining sizable portion of home production. Third, to explain away the low level of European real GDP per capita, the entire gap of low hours per capita in Europe not only would have to take the form of voluntarily chosen leisure, but *in addition* that leisure would need to be valued not at the after-tax real wage but at before-tax real GDP per hour worked—which is a problem of valuation. In Europe the after-tax real wage is only a third of GDP, meaning that leisure has a low value even before we recognize that most of the reduction in European work hours was involuntary and represents a shift into home production rather than pure leisure. A general point to emerge from this analysis is that work-leisure decisions are made based on the after-tax wage while tax revenue depends on the before-tax wage that in Europe may be twice as high as the after-tax wage in countries with effective tax rates of 50 percent.

This chapter extends the distinction between before-tax GDP per hour and the after-tax wage per hour. Each hour of reduced market work in Europe carries with it a "tax multiplier effect" by spreading the fixed costs of European government and welfare systems across fewer hours of work. A 25 percent reduction of work hours per capita implies a 33 percent increase in taxes per work hour in order to maintain a fixed level of government expenditure. When the reduction in work hours takes the form of early retirement the tax multiplier effect is increased by the need to increase government spending on pensions. Thus there is a mutual path of causation between tax rates and work hours, the tax rates to hours comparison emphasized by Prescott (2004) and the reverse causation of hours to tax rates suggested here.

This chapter differs from most of the previous literature in this field by emphasizing the turnaround of labor market behavior in Europe after 1995. Until 1995 productivity in Europe converged toward the US level while hours per capita fell relative to the US level. After 1995 there was a simultaneous turnaround, with productivity falling relative to the US level while hours per capita began a substantial recovery. This chapter examines the recent literature on the sources of this post-1995 turnaround that simultaneously raised European hours per capita relative to the United States but also reduced its relative level of output per hour.

The second aspect of the welfare comparison concerns not the interpretation of hours in Europe but rather output, the numerator of

both the output per capita and output per hour ratios. Is the translation of output to welfare different in the United States than in Europe? The comparisons undertaken in this chapter are rarely discussed. The claim that US GDP is overstated for welfare comparisons begins with its harsh climate that requires higher expenditures on energy to achieve a given level of interior comfort. Another portion of US GDP goes to maintaining an enormous prison system that currently incarcerates two million Americans, mostly for minor drug offenses. A more controversial claim is that longstanding US policies have encouraged inefficient low densities of metropolitan areas, adding to traffic congestion, commuting times, and air pollution. A final element that is both the largest and perhaps easiest to quantify is the enormous waste of resources involved in the dysfunctional American medical care system, amounting to perhaps 3 percent of US GDP.

The chapter includes a speculative section that addresses the distain of Europeans for the insecurity of the American way of life. Rather than place an explicit value on greater security in Europe than in America, it is assumed that high taxes in Europe buy something of value, that is the social welfare system, and accordingly this chapter's point of departure for all comparisons is before-tax income per capita rather than after-tax income per capita.

11.2   The Evidence: Productivity Almost Converges but Per Capita Income Does Not

Examined in this section are the basic data on output per capita and output per hour.[1] The data on both labor productivity (Y/H) and real GDP per capita (Y/N) come from the Groningen data bank, which provides cross-country comparisons with two base years and the weighting schemes.[2] An averaging of these two data sources shows that Europe's (EU-15) productivity level by 1995 had reached 91.7 percent of that of the United States and then by 2008 fell back to 83.0 percent. Three European countries exceeded the US level for a few years during the 1990s: France was at 103.6 percent in 1995 and 95.2 percent in 2008, Belgium was at 108.1 percent in 1995 and 96.4 percent in 2008, the Netherlands was at 105.0 percent in 1995 and fell back to 97.1 percent in 2008.

However, none of these countries came close to catching up with the level of US real GDP per capita. In the 1995 to 2008 period, when the

same two data sources were averaged, France achieved no better than
76.1 percent of the US level in 1995, and this ratio fell back to 73.1
percent by 2008. Thus the Y/N ratio for France was 30 points below its
Y/H ratio in 1995 and 20 points in 2008. By definition, this discrepancy
is due to a precipitous decline in hours per capita in France relative to
the United States over the past four decades. For the EU-15 the same
discrepancy was 10 percentage points in 2008, with a productivity ratio
to the United States of 83 percent and an income per capita ratio of 71
percent.

Figure 11.1 provides a display of the percentage per capita income
(Y/N) and productivity (Y/H) ratios of Europe to the United States and
reveals a dramatic contrast in the timing and magnitude of changes of
these ratios. To allow for the initial stage of rapid postwar reconstruc-
tion in Europe, each of the graphs of figure 11.1 begins in 1960 rather
than 1950. The productivity ratio rises steeply until 1995, holds at a
plateau near 90 percent until 2000, and then enters into a decline during
2001 to 2008. In contrast, the per capita income ratio first reaches 70
percent in 1973 and then fluctuates in a narrow range around 70 percent.
The 1982 peak in this ratio is artificial, as it reflects the US recession of
that year rather than progress for Europe.
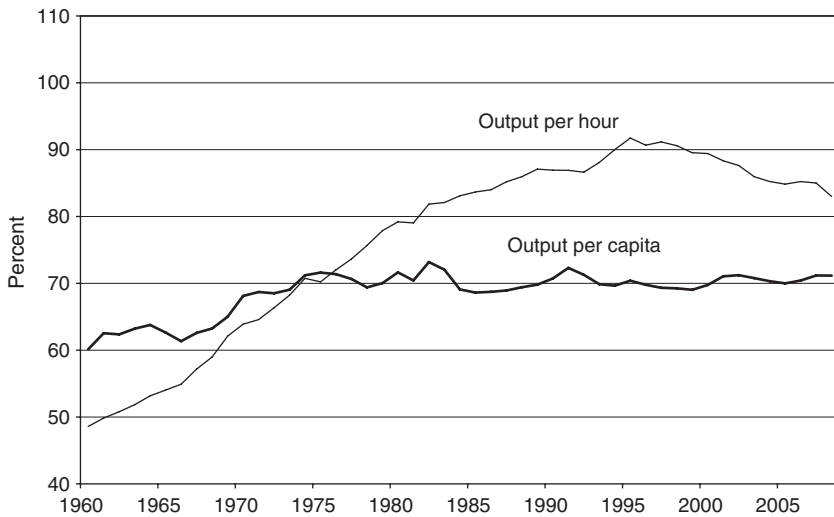
Figure 11.1
Ratio of Europe-15 to the United States, output per capita and output per hour, 1960 to
2008

11.2.1 Decomposition of the Decline in Europe/US Hours per Capita

By definition, real output (Y), population (N), hours of work (H), and employment (E), are related as

$$Y/N \equiv Y/H * H/E * E/N, \tag{11.1}$$

which states that output per capita equals labor productivity times annual hours per employee, times employment per capita. Equation (11.1) will be used to further subdivide changes in the E/N ratio into its two components, the employment rate (E/L) and the labor force participation rate (L/N).

$$E/N \equiv E/L * L/N = (1 + U/L) * L/N, \tag{11.2}$$

where U/L is the unemployment rate.

In figure 11.2 the dashed gray line is the ratio of the two lines in figure 11.1, namely the EU/US ratio of output per capita divided by the EU/US ratio of output per hour. By definition, the dashed gray line equals hours per capita and is labeled as such in figure 11.2. This shows a decline from almost 126 percent in 1960 to 108 percent in 1970 to 77 percent in 1995 and then a substantial recovery to 85 percent in 2008.
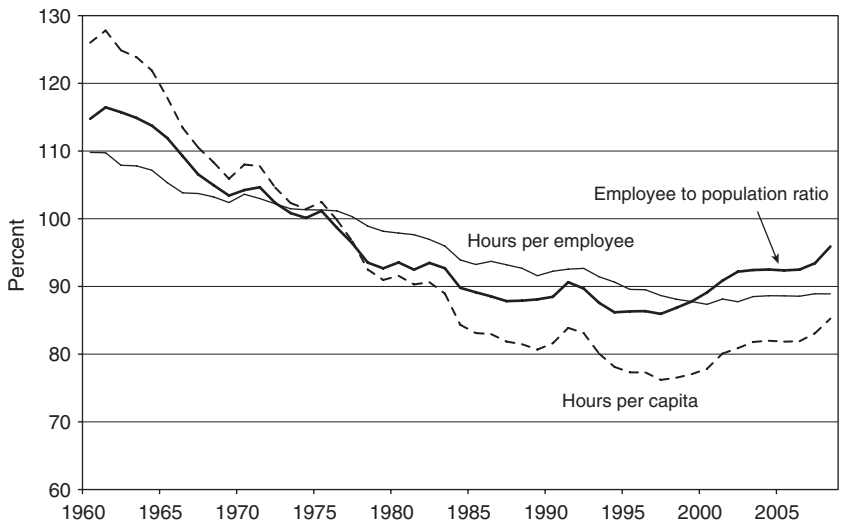
Figure 11.2
Ratio of Europe-15 to the United States, hours per capita, hours per employee, and employees per capita, 1960 to 2008

By definition, any changes in hours per capita (H/N) must be explained by changes in the same direction in the product of the hours/employee and employment/population ratios, as shown in figure 11.2 by the solid gray and solid black lines, respectively. An important finding is that the decline in the hours per capita ratio has been explained more by the decline in the employee to population ratio than by the hours to employee ratio. Thus Blanchard's (2004) overly facile explanation can be rejected, as quoted above, that the differential behavior of European productivity to European per capita income is simply a matter of the voluntary choice of shorter hours. Also there are two interesting aspects of timing to note here that may help distinguish alternative hypotheses. First, much of the decline in the employee to population ratio had already occurred by 1970, whereas the decline in the ratio for hours per employee was more gradual. Second, there was a distinct turnaround in the employee to population ratio after 1995 but not in the hours to employee ratio.

The time-series plots of the five ratios in figures 11.1 and 11.2 are summarized in table 11.1, which gives both the levels and growth rates for 1960, 1970, 1995, and 2008. Because the intervals are of different lengths, the focus here is on the growth rates shown in the bottom three lines of table 11.1. Column 1 shows that the European catch-up to the American level of real GDP per capita halted after 1970, with a growth rate of a mere 0.1 percent since then. In contrast, the European catch-up to the US productivity level shows a rapid growth rate of 2.7 percent

Table 11.1
Levels and growth rates of output and labor utilization: Ratio of Europe-15 to United States, 1960 to 2008

|	Output per capita	Output per hour	Hours per capita	Hours per employee	Employees per capita
Levels					
1960	60.1	48.6	126.0	109.8	114.8
1970	68.1	63.9	108.0	103.6	104.2
1995	70.4	91.7	77.3	89.6	86.3
2008	71.2	83.0	85.2	88.9	95.9
Annual growth rates					
1960–1970	1.2	2.7	–1.5	–0.6	–1.0
1970–1995	0.1	1.4	–1.3	–0.6	–0.8
1995–2008	0.1	–0.8	0.8	–0.1	0.8

per annum for 1960 to 1970, followed by a decline in the convergence growth rate by half in 1970 to 1995 to 1.4 percent per annum, and then a turnaround to a declining relative growth rate in 1995 to 2008.

Column 3 shows a steady decrease in hours per capita at an annual rate of –1.5 percent for 1960 to 1970 and –1.3 percent for 1970 to 1995, followed by a turnaround to a positive growth rate of 0.8 percent for 1995 to 2008. The mirror-image behavior after 1970 noted in columns 2 and 3 has elicited interest in the idea of a trade-off between hours and productivity, as will be explored further below. As shown in column 4, hours per employee also declined relatively steadily from 1960 to 1995—with 1960 to 1970 and 1970 to 1995 growth rates of –0.6 percent—and followed by a much slower rate of decline of –0.1 percent per annum after 1995. The "residual," employment per capita, declined steadily in 1960 to 1970 and 1970 to 1995 at respective growth rates of –1.0 and –0.8 percent, followed by a sharp turnaround after 1995 to +0.8 percent. This turnaround in the hours and employment per capita may be helpful in assessing alternative hypotheses to explain Europe's low hours per capita.

11.2.2   The Time Series of Hours per Employee and the Employment/Population Ratio

The EU/US ratios corresponding to equation (11.1) are quite revealing in the magnitude and timing of the changes. However, we can gain additional insights by looking at the raw numbers for Europe and the United States separately. As shown in figure 11.3, hours per employee in 1960 were higher in Europe, 2,148 hours per year compared to 1,956 hours in the United States. From 1960 to 1975 hours in Europe declined slightly faster than in the United States, in 1975 reaching 1,850 for Europe and 1,826 for the United States. After 1975 there was a sharp divergence, so that by 2008 hours in the United States had barely declined, from 1,826 to 1,775, whereas the decline in Europe was much more significant, from 1,826 to 1,578. Those like Prescott (2004) who attribute the entire decline in European hours to higher taxes must show that tax rates in Europe steadily increased during 1975 to 2008 at a pace corresponding with the decline in hours per employee.

Even more interesting are the results shown separately in figure 11.4 for the *E/N* ratio in Europe and the United States. In the United States the sharp increase in this ratio occurred between 1965 and 1985 with the entry of females into the labor force. Over the period plotted in
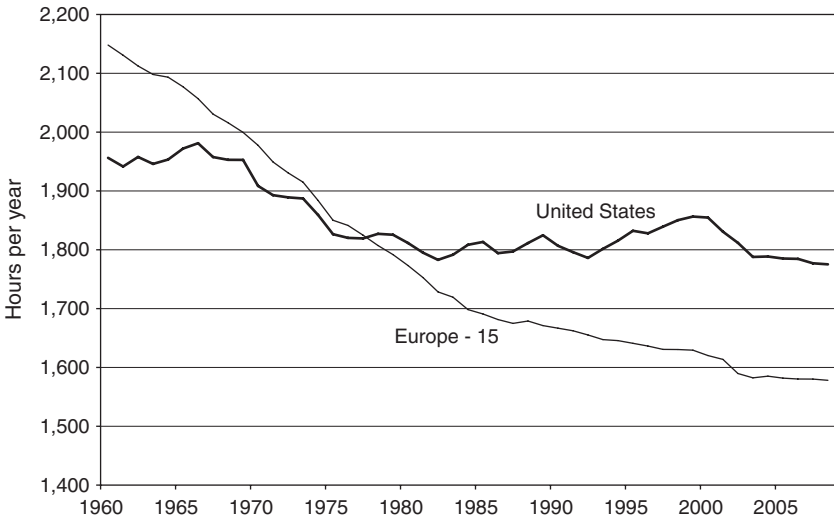
Figure 11.3
Hours per employee, Europe-15 and United States, 1960 to 2008
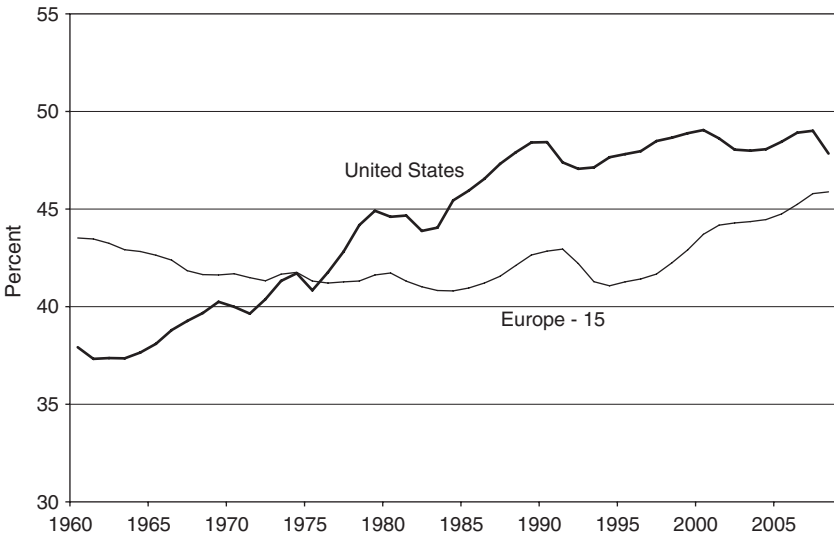
Figure 11.4
Employment-to-population ratio, Europe-15 and United States, 1960 to 2008

figure 11.4, the US ratio increased from 37.9 percent in 1960 to 48.4 percent in 1990 and then flattened out to 47.8 percent in 2008. In contrast, the European ratio fell from 43.5 percent in 1960 to 40.8 percent in 1983, and this was followed by a small recovery to 42.9 percent in 1991 and then a substantial revival to 45.9 percent in 2008.

Why did the entry of females into the labor force in Europe not generate the same rise in the *E/N* ratio in Europe as in the United States in the 1965 to 1985 period? The explanation may be, in part, the sharp increase in European unemployment that appeared over the same time interval. The increase in the unemployment rate reduced the ratio of employment to the labor force apparently by enough to offset the role of females who would have been expected to increase the labor force participation rate. Another explanation may be that the trend to earlier retirement age pushed down the labor force participation rate by enough to offset the increase in the female labor force participation rate. It is worth noting that fertility rates in the United States are substantially higher than in Europe, which suggests that more European women have time free from raising children and so would be expected to have higher labor force participation than in the United States.

11.3   Interpreting Changes in Hours per Capita

Thus far we have examined time-series changes in the key components of hours per capita in Europe compared to the United States. The pattern of changes over time may be more consistent with some types of explanations than others, helping us discriminate among them. Age is another dimension that may help with this discrimination; for instance, an explanation for falling hours per capita in Europe based on higher labor taxes would consider the impact on workers of all ages up to retirement age rather than disproportionately one age group or another.

11.3.1   The Age Distribution of Unemployment and Labor Force Participation

Unemployment rates by five-year age groups are shown for the EU-15 and United States in figure 11.5. The data refer to the year 2007, chosen deliberately to represent a relative prosperous period prior to the 2008 to 2009 recession. The European unemployment rate is uniformly higher across all age groups except for the age group 65 and above. These differences can be assessed using absolute or relative differences.
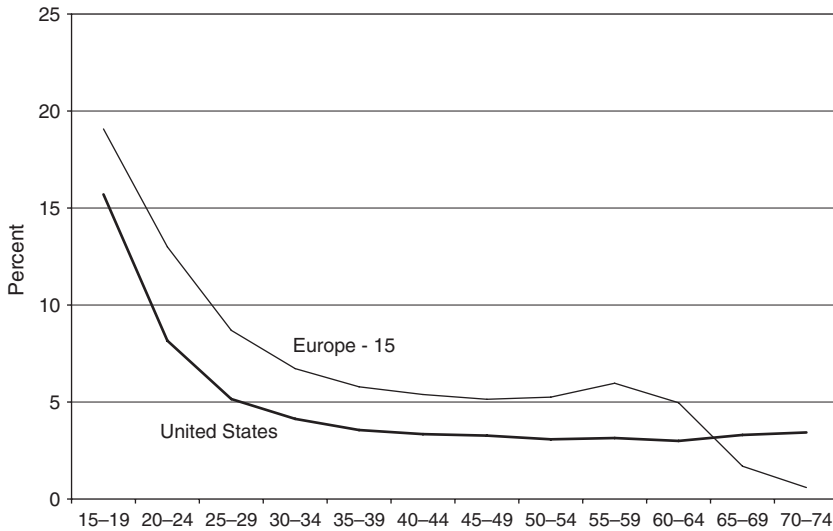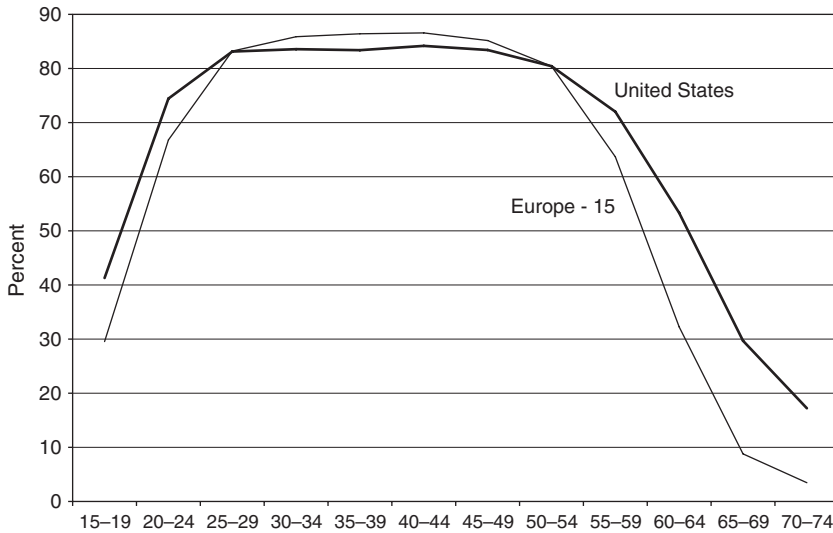
Figure 11.5
Unemployment rates by age group, Europe-15 and United States, 2007

For teenagers the European rate is 19.1 percent compared to 15.7 for the United States, an absolute gap of 3.4 points and a relative gap that is 22 percent of the US rate. The lowest absolute gap is for age group 45 to 49, where the European rate is 5.1 and the US rate is 3.3, for an absolute gap of 1.8 points and a relative gap of 55 percent. Because the absolute and relative differences occur for all age groups (except 65+), this evidence would seem to support a single explanation such as high labor taxes.

However, as shown in figure 11.6 the behavior of the labor force participation rate (LFPR) is different. For the four prime age groups from 30 to 49, the rates in Europe are slightly higher than in the United States, 86.0 compared to 83.7 percent, for a difference of 2.3 percentage points. The big differences that drag down the overall LFPR for the EU-15 are for the young and particularly for the older age groups. The absolute shortfall for Europe is 11.7 points for ages 15 to 19, 7.6 points for ages 20 to 24, 8.3 points for ages 55 to 59, and a huge 21.0 points for ages 60 to 64 and 65 to 69. These differences are not compatible with Prescott's (2004) labor tax explanation but are compatible with the Alesina et al. (2006) emphasis on the political process that put pressure on pension schemes to encourage early retirement. The low participation for the older groups in Europe may also be
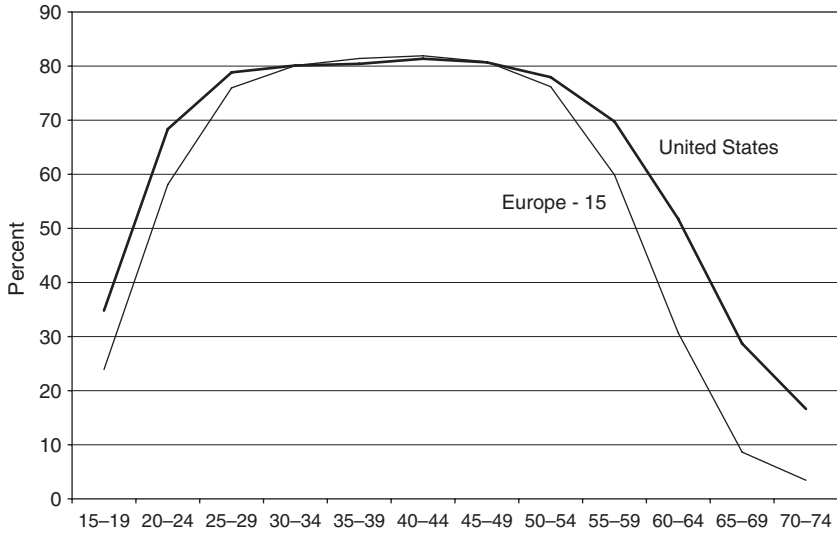
Figure 11.6
Labor force participation rates by age group, Europe-15 and United States, 2007

compatible with the Ljundqvist and Sargent (2006) claim that European social welfare policies have a stronger effect than labor tax rates on retirement age.

By definition, the employment rate (E/L) times the LFPR (L/N) equals the employment to population ratio (E/N), for which we have already examined time-series changes in figure 11.2 and table 11.1. Figure 11.7 shows the E/N ratio by age group, as combined with the age pattern of unemployment in figure 11.5 and the age pattern of the LFPR in figure 11.6. The overall pattern for the E/N ratio in figure 11.7 is similar to that for the LFPR in figure 11.6, with parity for the prime age groups and larger absolute and relative differences for the youngest and oldest age groups.

The aggregation of the group-specific unemployment rate and the LFPR depends on the relative size of each group. As shown in figure 11.8, Europe's population structure is more heavily weighted to the older age groups, as would be expected with lower fertility, higher life expectancy, and a smaller flow of immigration. All the European age groups, starting with ages 60 to 64, have a higher weight than in the United States, and all younger age groups have a higher weight in the United States between ages 15 and 29. When population weights are applied to the LFPR data plotted in figure 11.6, the overall LFPR of 70.7

Figure 11.7
Employment-to-population ratios by age group, Europe-15 and United States, 2007
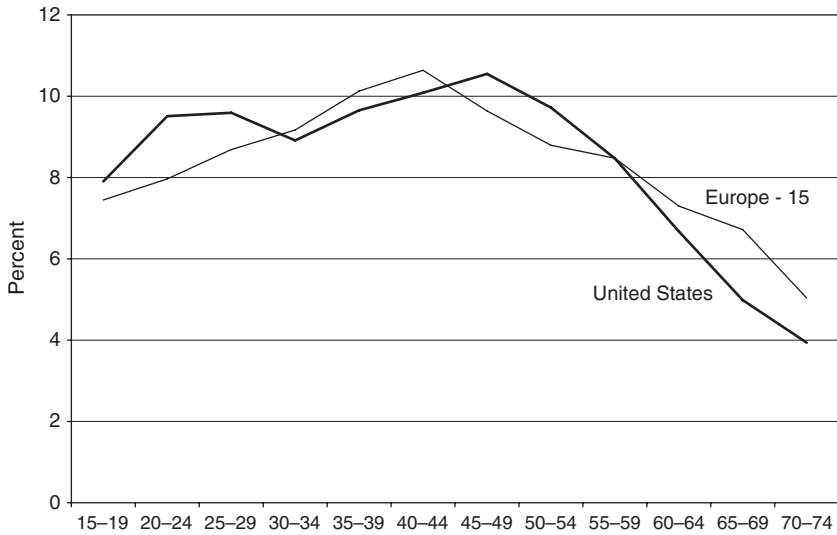
Figure 11.8
Share of population aged 15 to 74 by age group, Europe-15 and United States, 2007

in the United States exceeds the 64.4 rate in the EU-15 by 6.4 percentage points. The respective E/N ratios are 67.5, 59.9, and 7.6 percentage points.[3]

11.3.2 Summary of Findings on Changes in Hours per Capita

Changes in hours per capita in Europe compared to the United States can be divided into two categories: changes in hours per employee (H/E) and changes in employment per capita (E/N). The latter can be further subdivided into changes in the employment rate (E/L) and changes in the labor force participation rate (L/N). We learned from figure 11.2 and table 11.1 that the post-1960 period can be divided into two distinct phases split at 1995. Between 1960 and 1995, fully two-thirds of the decline in hours per capita was accounted for by the employment ratio (E/N) and only one-third by hours per employee (H/E). This provides useful dose of skepticism for Blanchard's previously cited view that Europeans used their high productivity to purchase more leisure; leisure in the form of shorter hours per employee were only one-third of the story through 1995.

The two-thirds of the decline in hours per capita consisting of higher unemployment and lower labor force participation is not an outcome of voluntary choice. An additional dimension of evidence in table 11.1 is that the EU/US ratio for employment per capita (E/N) turned around after 1995 while the hours per employee ratio, while declining more slowly, did not turn around. All this suggests that a different set of factors may have been driving changes in the hours per employee ratio from the employment per capita ratio.

While we do not have graphs on the time-series behavior of the split of the employment ratio between the unemployment rate and the labor force participation rate, we can calculate the importance of each of these components for a single year, 2002. Using US population weights as in figure 11.10 to aggregate across age groups, with EU unemployment and LFPR's the EU/US employment ratio (E/N) would have been 86.2 percent. Continuing with US population weights, with US age-specific unemployment rates that E/N ratio would have risen to 90.8 percent, and obviously to 100.0 percent with US age-specific unemployment rates and labor-force participation rates. Thus we conclude that in 2002, of the gap of 13.8 percent between the European and US E/N ratio, less than one-third (4.4/13.8) is explained by higher European age-specific unemployment rates and more than two-thirds (9.2/13.8) by lower European age-specific labor force participation rates.

11.4   Alternative Hypotheses to Explain Declining Hours per Capita

In recent journal and conference discussions most of the attention has focused on single-cause explanations of the secular decline in hours per capita in Europe, such as Prescott's labor taxes or Alesina's politically powerful unions. However, my examination of the data suggests that more nuanced multiple causes might provide a better explanation, including the post-1995 turnaround in the EU/US employment per capita (*E/N*) ratio and the sharp differences in the EU/US ratios of labor force participation by age group.

Among the alternative hypotheses should also be the welfare implications of extra hours per year spent by Europeans in nonmarket work instead of market work. Conventional economic analysis values leisure at the marginal after-tax wage. If a single cause like higher labor taxes causes a substitution from work to leisure, the value of the extra leisure consumed would be measured by the area under the labor supply curve in a diagram like figure 11.9. Since Prescott's approach to the analysis of labor taxes assumes that there is no income effect, because tax revenues are rebated to the population through government expenditures and transfers, the effect of taxes is to create a pure substitution effect. Presumably, if we imagine an upward-
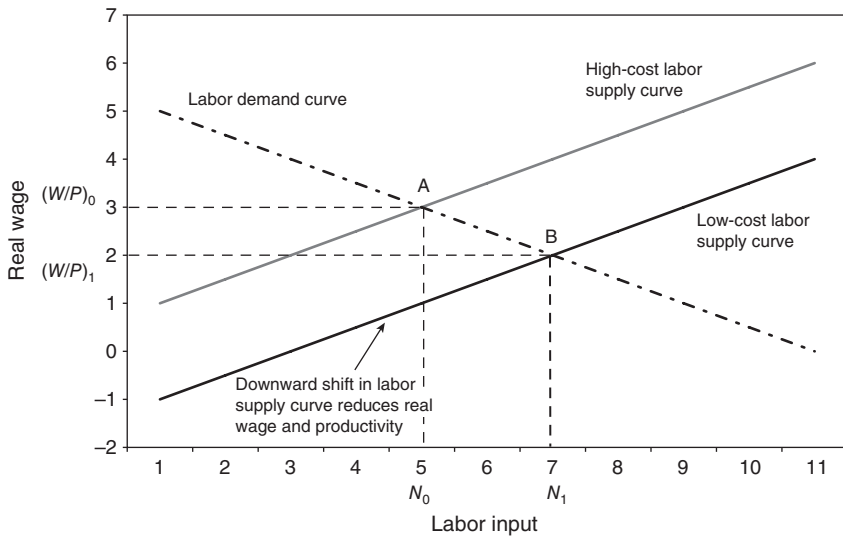
Figure 11.9
Labor demand and supply

sloping labor supply curve extending between the 2004 European *H/E* annual total in of 1,550 hours and the US ratio of 1,811 hours, then the average value of the extra leisure in Europe would be halfway between the marginal after-tax wage that Europeans receive today and the higher marginal after-tax wage that Europeans would receive in a hypothetical world in which taxes are levied at American rates. A basic question, of course, is whether this valuation of leisure should be applied to the entire reduction in hours per capita that includes the effects of higher unemployment and lower labor force participation rates, or only to the one-third of the drop in European hours per capita consisting of lower hours per employee, meaning vacations and shorter work weeks.

11.4.1   Prescott on Labor Taxes

Prescott (2004) claims that the entire difference between Europe and the United States not just for hours per employee but for hours per capita can be explained by higher tax rates on labor. The key to this demonstration, as explained by Alesina et al. (2006: 13), is that Prescott chooses a functional form that delivers a very high elasticity of labor supply, that is, a response of around –0.8 in logs to $1/(1 - t)$, where t is the tax rate on labor income. Alesina and coauthors show that the data require an even higher elasticity of –0.92, which is the ratio of the –29.7 percent log difference between European and American hours, divided by the 32.4 percent log difference in the marginal tax rate expressed as $1/(1 - t)$. They reject the Prescott assumptions after reviewing the micro labor supply literature that shows uncompensated labor supply elasticities for men that are close to zero. While labor supply elasticities for married women are high enough so that European tax rates could explain the entire EU/US difference for women, averaging the zero response for men and the large response for women leads the authors to conclude that tax rate differences can explain at best half of the hours per capita difference.

   A further weakness in the Prescott argument comes from the times series evidence. Most of the increase in tax rates occurred between the 1960s and mid-1980s, whereas the decline in hours continued at least through 1995. As we have noted, after 1995 the decline in hours per employee continued at a slower rate whereas the decline in employees per capita turned around into an increase. A final problem is that high tax rates may be standing as a proxy for a whole range of variables that differ between Europe and the United States but are not included

explicitly in cross-country correlations between tax rates and hours per capita, namely "generous welfare systems, workplace regulations, unemployment compensation programs, powerful unions, generous social security systems" (Alesina et al. 2006). Subsequently we report on regression analysis that joins together with taxes other sources of the pre-1995 decline in European hours or employment per capita (*H/N* and *E/N*), namely labor and product market regulation, generosity of unemployment insurance, and union density.

11.4.2 The Welfare State

Some critics, in particular, Ljungqvist and Sargent (2006), criticize Prescott's assumption that labor taxes are entirely redistributed to households as lump-sum transfers that are valued as if they were privately purchased goods and services. It is this device that allows Prescott to ignore income effects, and in turn to overstate the portion of changing work hours attributable to changing tax rates. These authors also criticize Prescott for ignoring the fact that in the early 1970s tax rates in France and Germany were already ten points higher than in the United States but hours per capita were basically the same, as shown above in figure 11.2.

Ljungqvist and Sargent (2006: 43–44) emphasize the different welfare implications of the "national family perspective" implicit for Prescott, in which the entire population is viewed as a set of representative agents. When higher taxes reduce labor force participation, there are voluntary transfers between working and nonworking members of the "national family." In reality, however, most nonemployed heads of households in Europe are not supported by voluntary intra–family transfers but rather by welfare systems that not only support reduced hours per capita but also "strain social insurance systems and government finances."

These authors argue that reforming European welfare systems would raise hours per capita more than cutting labor tax rates. They support their view in part by pointing to the fact that Europeans worked as much as Americans in the early 1970s despite higher labor tax rates, because Prescott's hypothetical costless lump-sum redistribution within the national family was not in fact available. "Tax revenues were funneled to public goods and government expenditures that were poor substitutes for private consumption. The negative income effect of taxation worked in favor of sustaining high employment in the European welfare states" (Ljungqvist and Sargent 2006: 45).

An additional consequence of generous welfare benefits is to encourage workers to remain unemployed for long periods of time after negative demand or productivity shocks. With heterogeneous workers who have previously accumulated skills, there will be a loss of those skills over prolonged spells of unemployment. The skill set of workers will no longer be high enough to warrant their high reservation wage, and they "become discouraged and are likely to fall into long-term unemployment or end up in other government programs, such as disability insurance and early retirement" (Ljungqvist 2006: 75).

Figure 11.10 illustrates the sharp contrast between the EU-15 and the United States in the duration of unemployment over the interval 1975 to 2008. The initial decade of 1975 to 1985 witnessed a sharp decline in EU short-term unemployment (less than three months) and a mirror-image increase in EU long-term unemployment (greater than one year). During the subsequent period from 1985 to 2008, an average of 69.9 percent of the US unemployed had durations of less than three months compared to only 19.7 percent in the EU-15. The corollary was that 47.0 percent of the EU unemployed had durations greater than one year, compared to only 9.0 percent in the United States. Thus the European Union had only about one-quarter the incidence of short-term unem-
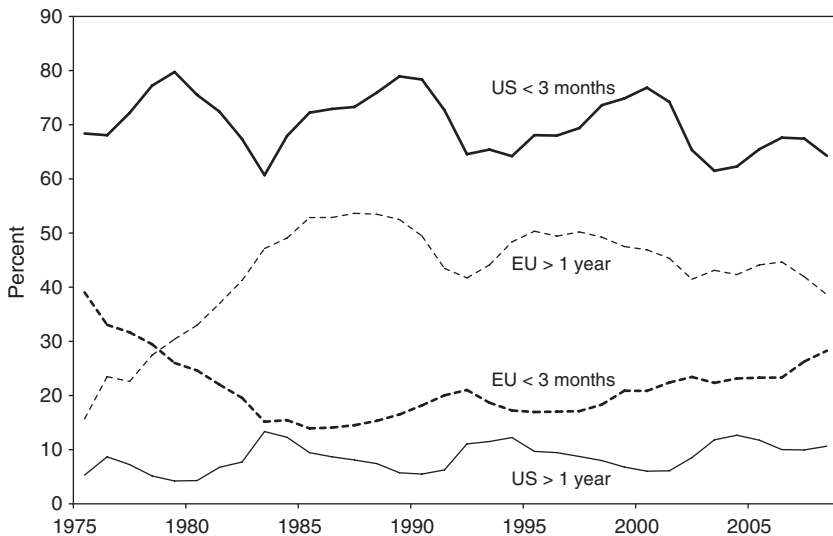
Figure 11.10
Percentage of unemployed population by duration of unemployment, 1975 to 2008

ployment and five times the incidence of long-term unemployment. My subsequent evaluation of the welfare benefits of low European hours per capita will return to these stark differences in the type of unemployment.

11.4.3   Unionization and Regulation

Alesina and coauthors make much of the higher penetration of unions in Europe than in the United States. As is well known, in the United States the unions had a negligible role prior to the 1930s. Unions were legitimized by New Deal legislation, reached their peak of influence in the 1940s and 1950s, and began to decline in importance from the late 1960s. Some authors, including Goldin and Margo (1992), have stressed the role of unions in helping achieve the "great moderation" of income inequality in the 1940 to 1970 era. More recently Gordon and Dew-Becker (2007), among others, have emphasized the role of the reversal of union penetration to help explain the downward pressure on wages in the bottom 50 percent of the income distribution and the corollary that the share of the top 10 percent has increased substantially relative to the bottom 50 percent.

In contrast, "union strength reached a peak in most European countries in the late 1970s and ear 1980s" (Alesina et al. 2006: 29). These authors trace two channels between high unionization and lower hours. First, unions keep wages artificially high and thus restrict employment, and in this sense labor demand is just like a labor tax. Second, unions may pursue a political agenda to reduce work hours per employee in order to force firms to hire more unionized workers to achieve the assumed fixed total of aggregate work hours. They derive several propositions from a simple model (1) that regulations limiting work hours will decrease productivity per worker but will raise productivity per hour, (2) that total hours worked under unionization will be lower and productivity per hour will be higher, and (3) that unions impede the reallocation of labor in response to sectoral shocks and can cause a decrease in overall hours worked, in comparison to an increase in hours worked in response to sectoral shocks in a competitive economy.

The authors support their emphasis on unions by demonstrating a negative correlation between union coverage and hours of work that they claim is at least as high as between marginal tax rates and hours of work.[4] However, this kind of cross-sectional evidence is fragile, both because of the large size of the outliers and because there is no attempt to model the time-series properties of unionization against the pattern

of European hours per capita. Neither the Alesina et al. (2006) paper nor the comments by its discussants recognize the sharp turnaround in the EU/US employment population ratio after 1995. This turnaround provides an opportunity to weigh the explanatory power of alternative hypotheses. Overall, the authors' analysis provides little insight beyond the general idea that unions push the labor market northwest along the labor demand curve, thus reducing hours per capita and raising the marginal and average product of labor.

Alesina et al. (2006) go beyond a reliance on union density to provide numerous examples in individual European countries in which unions promoted policies like "work less, work all," which reflected the belief that an enforcement of regulations that reduced work hours would create more jobs. Since this political pressure required that wages per job remain fixed, it forced upward the wage per hour and pushed hours per capita lower than otherwise. Examples are given for France, Germany, and Italy of union political involvement not only in shortening work hours without pay reductions, but also in "promoting and defending the welfare state in general and public pension systems in particular" (Alesina and Glaeser 2004). They cite the role of unions in the push for early retirement and in negotiating early retirement schemes for older workers in cases where the closing of a large plant might otherwise cause unemployment. Alesina and Glaeser attribute the concern of unions with early retirement to the political power of older workers within the union hierarchy.

Recall from figure 11.6 that the most important single source in Europe's reduction in hours per capita relative to the United States is early retirement, as shown by the age-specific labor force participation rates in the figure. Thus the key differences espoused by the leading authors is that Blanchard implicitly assumes that early retirement has been voluntary, Prescott assumes that early retirement is an endogenous response to high labor taxes, and Alesina et al. regard early retirement as the outcome of a political process led by unions who were involved in a political philosophy of work sharing regardless of whether workers actually want to stop working and live off pension income. Illustrated below is an example of the enormous cost to any society of early retirement.

11.4.4 Empirical Evidence on the Tax Hypothesis

Prescott's focus on taxation as the only cause of low European hours per capita relies on a model with parameters that are assumed rather

than estimated. A more convincing demonstration of the importance of tax effects is provided by Davis and Henrekson (hereafter D-H 2004: 37–38) who find a multidimensional tax impact:

Higher tax rates on labor income and consumption expenditures lead to less work time in the market sector, more work time in the household sector, a bigger underground economy, and smaller value added and employment shares in industries that rely heavily on low wage, low skill labor inputs.

The D-H empirical work extends only to 1995 and thus has nothing to say about the post-1995 turnaround in European hours per capita. Regressions are run across countries for four years (1977, 1983, 1990, 1995) in which the dependent variable is alternatively the H/N, H/E, or E/N ratio, and the explanatory value is the sum of the employer labor tax rate, employee income tax rate, and indirect tax rate on consumption. In contrast to Prescott's assumed elasticity of –0.92 on the H/N ratio (as discussed above), the D-H estimated elasticity for 1995 is –0.47.[5] Thus the D-H paper arrives at the same conclusion as Alesina et al. reached by a different route, that Prescott overstates the tax effect by a factor of roughly two. Subsequently we will summarize the results of Basannini and Duval (2006) and Dew-Becker and Gordon (2008), which use richer and updated data sets going through 2003 to explain the pre-1995 decline in E/N and the post-1995 recovery of European E/N.

An important point discussed by D-H relates to the emphasis by Ljundqvist and Sargent (2006) on effects of the welfare state. D-H admit that their tax elasticities do not reflect simply the impact of taxes; they reflect also the disincentive effects of the welfare state on hours per capita, due to the fact that taxes are used primarily to finance the welfare state so that countries with high taxes also have high levels of welfare support. Finally D-H cite the work of Olovsson (2004) showing that higher taxes shift work from the marketplace to home production, and this leads to large reductions in market work time with much smaller reductions in total work time as the time devoted to home production increases. Indeed the empirical results of Freeman and Schettkat (2005) cited below show that home production in Europe more than offsets the low level of market work, so leisure is lower in Europe than in the United States for both men and women.

Another study of tax effects by Warren and Worthington (2004) is limited only to changes in hours per employee, not hours per capita, and thus misses the bulk of the reduction in European H/N, which takes

the form of lower *E/N*. The results are hard to interpret because the authors include both an income tax variable and a separate "tax wedge" variable that includes the income tax. Nevertheless, a rough guess from the author's reported results is that the elasticity of hours per employee to an increase in both the income tax and in the tax wedge is roughly −0.25, and this is consistent with a further −0.25 effect coming from the tax effect on the *E/N* ratio.

The best recent work on the response of *E/N* to the tax wedge, with data that extends to 2003, is by Bassinini and Duval (2006). They include numerous additional control variables, among these some unique variables that control for the costs of employment by women. In Dew-Becker and Gordon (2008) we replicated and extended their results by confining the sample to the EU-15 (they include the United States, Canada, and Japan) and dropping some of their particular specification choices. Fortunately, our tax wedge coefficients are very close to theirs, −0.37 for us compared to their −0.30 for males, and a tax wedge coefficient of −0.4 compared to their −0.5 for females. Overall, the large literature on tax effects seems to be converging to a significant impact with an elasticity of about −0.4, less than half of Prescott's conjectured elasticity.

11.4.5 Further Evaluation

One line of criticism of the Alesina emphasis on unions is that the timing is wrong. As shown by Rogerson (2006: 83), union density averaged over 19 European countries rose through the late 1970s and fell until 1995, reaching a level that was little different than the starting value of 1960. If unions became strong and then became weak, why was their political influence still strong enough to explain low European hours per capita in 2004? Rogerson supports his skepticism by showing that union density and a measure of employment protection have very little explanatory power for changes in European hours per capita. This criticism falls into the trap of simple correlation and ignores inertia in the political process. It is possible that Europe could still be suffering from legislation that unions successfully pushed when they were strong in the 1980s but which opposing political forces have thus far been unable to overturn. The demonstrations in Paris in October 2010 against modest reforms in retirement ages suggest the power of such political inertia.

None of the explanations reviewed from the recent literature has any explanation of the post-1995 reversal in the ratio of the EU / US employ-

ment to population (*E/N*) ratio. Most observers are startled to find that employment has grown faster relative to population in Europe than in the United States, where hours of work per capita in 2007 were still 4.3 percent their peak level in 2000 while the corresponding EU-15 figure increased from 2000 to 2007 by 2.3 percent. There is a chicken-and-egg aspect to this phenomenon of growing work hours in Europe and shrinking work hours in the United States since 2000. Is the phenomenon to be explained an autonomous shift in the incentives for work hours in Europe compared to the United States, as is implicitly assumed by most of the literature reviewed above, or is the behavior of work hours a by-product of differences in productivity growth in Europe compared to the United States that emerge from a totally different set of factors? Simple single-cause explanations of falling hours in Europe, such as "higher taxes," "welfare state," and "unions" appear to have missed completely the post-1995 turnaround and the related chicken-egg question.

Dew-Becker and Gordon (2008) are among the first to provide a quantitative explanation of the post-1995 turnaround of *E/N* growth in Europe. They use their regressions that explain annual changes in *E/N* across the fifteen EU countries over 1978 to 2003 and create counterfactual simulations that assume no changes in the explanatory variables after 1995. They attempt to explain an increase of 8.2 percent (in logs) of *E/N* in the EU-15 between 1995 and 2003. Their regression equations, following Basannini–Duval, allow for both country fixed effects and time effects, which measure those changes in the dependent variable *E/N* that cannot be explained by the five policy/institutional variables and the cyclical variable, the output gap. They find that the most important contribution is made by the time effects, explaining 5.4 of the 8.2 point increase in *E/N*, and they interpret this as largely due to increases in EU-15 female labor force participation arising from a shift in cultural acceptance of females in the workplace. They conclude that such time effects cannot be explained by the policy and institutional variables. This leaves 2.8 percent of the overall change to be explained by the explanatory variables other than the time effects. Of this, about two-thirds is explained by declining tax rates, and the remaining third is explained by a combination of lower values of the product and labor market regulation indexes, lower union density, and a decline in the business cycle variable measured by the output gap. Overall, much of the post-1995 revival in the growth of *E/N* in Europe seems to involve

female labor force participation, not the turnaround of the tax, welfare, and policy variables that have dominated the debate in the literature.

11.5 Welfare Implications of the Decline in Hours per Capita

Why does it matter whether the decline in the EU/US ratio of hours per capita is mainly caused by higher labor taxes, employment and product market regulations, generous unemployment benefits, by other aspects of the welfare state, or political pressure engineered by unions? In each case the decline in European hours per capita is involuntary, in contrast to Blanchard's interpretation that Europeans value leisure more than Americans. The Prescott tax story has Europeans pushed northwest along the labor demand curve, voluntarily choosing to reduce labor hours subject to the constraint of a large tax wedge between before-tax and after-tax labor income. Prescott's interpretation includes the assumption that the high taxes buy high welfare benefits that are valued by citizens as much as the same monetary value of market consumption, thus eliminating any impact of the income effect and making the labor response into a voluntary movement up or down the labor supply curve.

Employment and product market regulations and generous unemployment benefits also push European labor markets northwest along the labor demand curve. These explanations, which play an important role in the regressions of Basannini–Duval (2006) and Dew-Becker–Gordon (2008), are complementary with the Alesina et al. (2005) emphasis on the role of unions in the political process that created the regulations and the benefits. The Alesina political explanations imply that European households are not receiving leisure that they value as highly as in the standard economics textbook analysis. Ljundqvist–Sargent (2006) claim that the high labor taxes in Europe buy welfare benefits that are valued less than the equivalent monetary value of market consumption. Alesina assumes that unions and left-wing political parties push the labor market equilibrium away from that which would have been voluntarily chosen.

We can provide additional insight by looking more closely at the nuances of how those spending time in unemployment, home production, and early retirement value leisure. How valuable is the leisure that Europeans gain from their shorter working hours due to higher unemployment and lower labor force participations?

11.5.1   The Welfare Cost of Higher Unemployment

An elementary textbook analysis would value hours spent in unemployment just as in any other kind of leisure by multiplying each hour by the after-tax real wage. This overstates the value of unemployed time by ignoring the slope of the labor supply function. Only the marginal hour of leisure is worth the after-tax real wage; each additional hour of leisure (each hour less of work) is valued at less than the after-tax real wage. If the normal work week is 40 hours, 80 hours are spent in leisure (ignoring for now home production), and the remainder in sleep, then reducing work to 20 hours and raising leisure to 100 hours adds extra hours of leisure that are valued less than the after-tax real wage, due to the diminishing marginal value of leisure. In parallel, the 60th hour of leisure is worth more than the 80th, which is why workers receive premia for working overtime.

Gordon's (1973) analysis of the welfare cost of higher unemployment begins with the fundamental distinction between a temporary increase in unemployment caused by a short recession that pushes the actual unemployment rate above the natural rate of unemployment, as contrasted with a permanent increase in unemployment caused by a higher natural rate of unemployment. Europe's transition from 2 percent unemployment before 1973 to 9 or 10 percent in the 1990s represents a permanent shift. Nevertheless it is interesting briefly to review the temporary case, where Gordon includes the welfare costs associated with temporary recessions that cause large welfare losses beyond the time use of the workers who shift from work to officially defined unemployment. These include the value of the lost work hours of those who leave the labor force and of those who work a shorter work week, as well as the value of the lower productivity of the remaining work hours. Lost hours and productivity are valued not at the after-tax real wage but at private output per hour because society loses all the output produced by the lost hours, including that which would otherwise go to indirect taxes, capital taxes, after-tax income to capital, and taxes on labor income. Society also loses the extra unemployment compensation that is paid to the unemployed.

Consider the valuation of the time spent in search or at home by the unemployed. Gordon places a value on this time that for adult males is only about one-tenth private output per hour, with a higher fraction for females and teenagers. Part of the argument is that the estimated labor supply curve for adult males is nearly vertical, implying a zero value of leisure for those hours that are normally spent at work. A

related argument, based on a survey of blue-collar workers, relates to a question regarding a hypothetical government payment. Would these workers require a government payment higher or lower than their present wage to stay at home rather than working? Seventy-five percent of the males responded that they would require a higher payment, 25 percent "the same," and nobody said "less." This reverses the normal textbook analysis that assumes that leisure raises utility and work reduces it, at least for adult males during the hours of the normal work week. Overall, a 1.0 percent temporary increase in the unemployment rate is associated with a 2.7 percent decline in market output when no value is imputed to nonmarket activity of those who shift from work to home activity, and this is reduced only from 2.7 to 2.3 when an appropriate price is applied to nonmarket activity (Gordon 1973: 162–64).

The welfare effects of a permanent 1.0 percent increase in the unemployment rate are less than in the temporary case, largely because the procyclical movements of hours per employee and of productivity are absent. The reduction in labor input is assumed to be accompanied by a long-run unit elastic reduction in capital input, leaving the capital to labor ratio unchanged. However, in the permanent case the welfare analysis of the time value of unemployment for adult males remains the same, and there is only a minor offset of lost output by the value of leisure time. Gordon's value of lost output associated with a permanent one percentage point increase in unemployment is 0.7 percent, as contrasted with 2.3 percent for the temporary case.

11.5.2 Early Retirement and the Valuation of Leisure

Perhaps the most convincing aspect of the Alesina approach is the interplay between the political process and early retirement in Europe. If individual households in a welfare state are given the option of a defined benefit government-funded pension plan that allows them to retire at nearly full pay at age 58, they would be crazy to turn down the option of receiving the same income for not working as they would receive for working. Nevertheless, the survey cited above suggests that 75 percent of male respondents would need retirement pay higher than their current wage to consider retiring.

The costs of early retirement to society can be illustrated by a simple example. Consider an economy that initially has people work from ages 20 to 65 and then retire from ages 65 to an assumed age of death of 84. There is no private saving. A 30 percent tax finances pay-as-you-

go pensions with a balanced government budget. This tax finances a level of consumption during the 20 years of retirement equal to consumption during the 45 years of work. Now let the politicians reduce the retirement age from 65 to 55. Instead of 45 years of work financing 20 years of retirement, now 35 years of work finances 30 years of retirement. The tax rate must increase from 30 to 45.6 percent. Even ignoring the Prescott-like withdrawal of work hours by people of working age that reduces market GDP, there is a 25.1 percent decline in consumption during both work years and retirement years. In short, a 22.3 percent reduction in total work effort (from 45 to 35 years) generates a 25.1 percent decline in consumption.

With a few additional assumptions we can translate this decline in market consumption into a welfare measure. Let us ignore for this purpose the Gordon (1973) argument that adult males place little value on leisure time during the normal work week; shifting to those assumptions would strengthen the argument of this section that the leisure value of early retirement is a minimal offset to the lost market consumption caused by early retirement. Let us assume instead that hours that are normally spent by current workers in leisure-time activities, namely on weekday evenings and on weekends, are valued at 4/3 of the after-tax market wage but that hours switched from work to weekday leisure as a result of early retirement are valued at 2/3 of the after-tax market wage. Total welfare is market consumption plus the total value of leisure. The early retirees continue to enjoy high-valued weekday evening and weekend leisure but switch from market consumption to low-valued weekday daytime leisure. A simple simulation shows that as a result of the decline in market consumption of 25.1 percent determined above, total welfare declines by 22.6 percent, and the value of extra leisure as a result of early retirement offsets only 10 percent of the loss of market consumption that results from early retirement. Part of the reason for this is the 2/3 value of leisure for the work hours transferred into retirement leisure, but another less recognized part is that the increase in the tax rate from 30 to 45 percent required to finance existing government spending with a reduced number of work years reduces in proportion the after-tax wage and thus the value of both types of leisure, weekday and weekend.

The time-study research by Freeman and Schettkat (2005: table 3) provides another qualification regarding the value of leisure time gained by those who are not working. They find that the time allocation of men across market work, home production, leisure, and personal

time (mainly sleep) is quite similar in Europe and the United States, but the story is very different for women. On average, European women spend eight hours per week less in market work than American women and ten hours more in home production, and actually experience three hours less of leisure (the remaining small difference is in personal time). European mothers cook more at home; American mothers more frequently go out to eat as they spend their higher market income on market consumption. Higher labor force participation in the United States brings not only the benefits of higher market incomes that allow the substitution of restaurants and hired help for household drudgery but also provides for greater socialization as people remain in an organized social context during the workday in contrast to loneliness at home.

As interpreted by Mees (2006), Europe has fallen into a "leisure trap" in which both the best educated and least educated women are out of the workplace. The Freeman–Schettkat evidence fits nicely with the D-H result showing that a substantially smaller share of work hours and GDP in Europe occurs in the trade and service sectors. As Mees interprets the transatlantic divide:

Instead of performing these household jobs themselves, Americans pay other people to do them. Americans eat more often in restaurants, make ample use of laundry, dry-cleaning and shopping services, and hire nannies to take care of young infants. Indeed, in the US, one finds all kinds of personal services that do not exist on a similar scale in Europe. A manicure, carwash, or a massage is often only a stone's throw from one's home. Doorman buildings provide round-the-clock service to residents and dog-walkers look after pets during the workday. . . . By contrast, European women work less and have less money to spend on services. In their "free time," European women are busy cleaning the house and looking after the children. On balance, therefore, European and American women work about the same amount of hours.

As we have seen, Freeman–Schettkat emerge with the amazing result that leisure is no different in Europe than in the United States. The extra hours of market work by Americans are completely balanced by extra hours of household production by Europeans.

The Freeman–Schettkat evidence blends nicely with the Nordhaus (2006) discussion of time use summarized below—in several surveys work is actually viewed as more "enjoyable" than several aspects of home production in which European women participate more than American. The Mees list of service occupations that are much more common in America than in Europe echoes Gordon's (1997) recitation

of four low-skilled jobs that have long been common in the United States but barely exist in the rich countries of Europe—grocery baggers, busboys in restaurants, parking lot attendants, and valet parkers. As a result of the post-1995 turnaround in Europe's hours per capita, some of these contrasts are lessening, as witness the profusion of *voituriers* ("valet parkers") in 2010 Paris.

11.5.3   Idle European Youth

We learned from figures 11.5 and 11.6 that a major contributor to lower labor force participation in Europe compared to the United States is not only early retirement but also lower participation and higher unemployment among youth aged 15 to 29. The French riots of the *banlieue* in 2005 and riots in southern Italy in January 2010 remind us that many European youth are marginalized from contact with the market economy. Are unmarried Italian 30-year-old males sitting at home, insisting that their mothers cook for them and do their laundry, because they have a special taste for leisure or because the economy and society do not provide sufficiently rewarding jobs for them?[6]

Differences in the economic environment of American and European youth are pervasive. Because of the flexibility of American labor markets, American high-school students easily find after-school jobs in fast-food restaurants and other service outlets. Instead of receiving government-funded tuition grants for college, American youth are expected both by their parents and by colleges to work part-time during the school year and full-time during the summer. They adopt early a culture of work rather than idleness, and this continues after graduation from college. In contrast, judging from the low employment to population ratios for Europeans aged 15 to 29, much of the time in this European age group is wasted, especially when we recognize the larger share of American youth compared to European youth going to college and hence removed from the *E/N* ratio.

11.5.4   Does Conventional Economics Miss the Welfare Valuation of Work versus Leisure?

Gordon's (1973) reported survey result showed that adult male blue-collar workers prefer work to staying at home during the normal work week. Nordhaus (2006: 156–57) reports on a much more extensive set of evidence, the compilation by Robinson and Godbey (1997: 243) of several surveys of US households about their degree of "enjoyment" of different activities.[7] The most striking result is that while some types

of leisure activities are more enjoyable than work, in turn work is more enjoyable than other types of leisure and most types of home production.

The many activities ranked in the compilation can be sorted into four groups that have roughly equal evaluations of enjoyment, ranked on a scale of 0 to 10. At the top in order with enjoyment scores between 7.8 and 6.3 are stereo, conversations, child play, sleep, eating, and cultural events. In the second group with scores between 5.8 and 6.0 are socializing, grooming, hobbies, child care, religion, reading, sports, and *work*. In the third group with scores of 5.0 to 5.4 (and thus less enjoyable than work) are relaxing, cooking, TV, education, and work commute. In the bottom group with scores of 4.3 to 4.8 are paperwork, organizations, maintenance, grocery shopping, cleaning, and other shopping.

Nordhaus provides several interpretations of this surprising evidence that are relevant to the discussion of this chapter. First, the survey results may refer to average rather than marginal evaluations. People want to have some contact with "work," possibly because of its social aspects, but at the margin work has sufficient disutility that few people choose to work in second or third jobs. Second, most workers cannot choose their hours and effectively have a marginal wage of zero, explaining why enjoyment from work does not differ markedly from many other nonwork activities. Third, and consistent with our discussion above, which places a different value on leisure hours during the normal work week from leisure hours in the evening and on weekends, is that people place different values on different times of the day and different days of the year. Fourth, Nordhaus considers as inconclusive the criticism that the survey results have methodological flaws.

Nordhaus also raises the issue of simultaneous activities. In his example many home activities mix home production and leisure (cooking while watching TV or socializing with friends and family). To provide a more relevant example, office workers not only work, but they socialize in the cafeteria or near the vending machines, they use their high-speed Internet connections to shop on the Web, and some office workers (including two of my former secretaries) play games installed on their office computers. It is possible that the social aspects of work help explain the paradoxical result that work is as enjoyable as some other activities traditionally considered as leisure. But also it is possible that, at least for adult men, the absence of a job carries with it a social stigma. We have all read anecdotes about unemployed American men in the Great Depression or Japanese men in the 1990s who

would dress up and leave the house in the morning so that the neighbors would think they still had jobs, then frittering away the day across town until it was time to return home.

11.6 By How Much Does American GDP Overstate Welfare?

Up to this point the chapter has been about welfare interpretations of the decline in European hours per capita relative to the United States. By definition, this decline explains why Europe performs much better in comparisons with American productivity than in comparisons with American market output per capita. This section addresses several issues that concern the numerator of the productivity and output per capita ratios, namely real GDP itself. How much does measured real GDP with typical PPP exchange rate translations exaggerate or understate welfare in Europe compared to the United States?

11.6.1 Housing
A considerable part of the US advantage in cross-country comparisons of living standards must stem from the much larger size of average American dwelling units, both their internal dimensions and the amount of surrounding land. Fully three-quarters of the American housing stock consists of single-family detached and attached units. The median living area in the detached units is 1,720 square feet, with an average acreage for all single-family units of 0.35 (equivalent to a lot size of 100 by 150 feet or 1,394 square meters). Another figure that must seem unbelievable to Europeans is that fully 25 percent of American single-family units rest on lots of one acre or more, equivalent to 4,052 square meters. Available data, although spotty for Europe, suggest that the average American dwelling unit is at least 50 to 75 percent larger than the average European unit.[8] Since construction of new units and imputed rent on old units are included in GDP comparisons across countries, our EU/US ratio of per capita output in figure 11.3 already incorporates the superiority of the US housing stock (as long as the cross-country PPP-based price indexes make adequate allowance for housing quality).

11.6.2 Energy and Metropolitan Dispersion
Yet a European might retort that while the gap between US and European standards already includes the housing difference, it also includes activities that are not welfare enhancing. A significant fraction of GDP

in the United States does not improve welfare but rather involves fighting the environment whether created by nature or human-made decisions. The American climate is more extreme than in Europe (excluding the ex-USSR), and this means that some of GDP is spent on larger air-conditioning and heating bills than in Europe to attain any given indoor temperature.

The harsh American climate introduces additional issues in welfare comparisons beyond the narrow calculations of energy use. Americans in most regions of the country are afflicted by meterological events that rarely occur in Europe, including hurricanes, tornadoes, and forest fires. The world learned in early September 2005 that the Katrina hurricane could not only devastate a region but also a culture, could send residents to temporary homes hundreds of miles away, and also could reveal squalor and inequality that may not exist to the same degree in most of the EU-15 nations. The US GDP includes a sizable share of the insurance industry and also self-financed reconstruction that in some regions echoes the destruction of central Europe during World War II. The harsh climate itself does not actually represent much of an economic burden measured as a share of GDP. One source cumulates the total costs of insured disaster losses over the period 1986 to 2005 were $289 billion in 2005 dollars, a mere 0.15 percent of GDP over those twenty years measured in 2005 prices. Even if the losses are doubled to take account of uninsured losses and supplemented again by the costs of administering the insurance, the marginal cost of the severe US climate in terms of direct damage is unlikely to exceed 0.5 percent of GDP.[9]

Some of US GDP is spent on extra highways and extra energy to support the dispersion of the American population into huge metropolitan areas spreading over hundreds or even thousands of square miles, in many cases with few transport options other than the automobile. European real GDP is held down by the correctly measured high price of petrol, but sufficient credit is not given for convenience benefits from frequent bus, subway, and train (including TGV) public transit. High taxes in Europe provide not only the benefits of the welfare state but also large subsidies to allow high-speed rail and urban public transport to coexist with motor expressways of similar density to those in the United States. However, to the extent that tax-financed subsidies are the major source of the greater quality and density of public transportation in Europe, these transportation benefits (just as the entire European tax-financed welfare and medical-care system) are

already included in Europe's real *before-tax* GDP that is the basis for the comparisons in table 11.1 and figure 11.1.

While an economist's first reaction is that the dispersion of US metropolitan areas must be optimal, since people have chosen to buy houses in the outer suburbs, a more careful reaction would be to view the American dispersion as related to public policy in addition to private choice, a point related to Alesina's emphasis on political decisions that do not necessarily reveal voter preferences. These policies include subsidies to interstate highways in vast amounts relative to public transport, local zoning measures in some suburbs that prohibit residential land allocations below a fixed size, such as two acres, and the infamous and politically untouchable deduction of mortgage interest payments from income tax.

Europeans enjoy shopping from small individually owned shops on lively central city main streets and pedestrian arcades, and recoil with distaste from the ubiquitous and cheerless American strip malls and "big-box" retailers—although Carrefour, Ikea, and others, provide American-like options in some European cities. To counter the effects of American land-use regulations that create overly dispersed metropolitan areas, European regulation includes land-use rules that preserve greenbelts and inhibit growth of suburban and exurban retailing and have indirectly prevented Europeans from enjoying either the low prices or high productivity growth of American big-box retailers.

Tastes are in part the result of circumstances and habit, and to the European critique many Americans would deliver a counter-retort. An American mother of two small children wants nothing to do with schlepping those kids through endless tunnels while making connections on the London or Paris subways, or with waiting in the rain for the next bus, or with shopping for groceries more often than once per week. The three-quarters of American households living in single-family units treasure their backyards, decks, and barbeques and do not want to be forced to go to a public park for outdoor recreation—whose barbeque grill would they use, and why should they have to compete with others for a limited supply of public picnic tables?

European land-use planning that restricts the growth of American-style big-box retailing is considered by many analysts to be the single most important reason for the slump in European productivity growth shown in figure 11.1 (e.g., see Inklaar, O'Mahony, and Timmer 2005; McGuckin, Spiegelman, and van Ark 2005). Reform of European land-

use planning is the first-listed recommendation for structural reforms in the comprehensive recent evaluation of the European economy by Baily and Kirkegaard (2004: 8). In fact, consideration of American big-box retailing reveals it not only to be a source of rapid productivity growth in retailing since 1990 but also a source of unmeasured US growth in output per capita. As shown by Hausman and Leibtag (2005), Wal-Mart reduces retail food prices by 25 percent, of which 20 percent is the direct effect of its own low prices and the other 5 percent represents the reduction of prices by competitive stores. Because the US Consumer Price Index "links out" price differences among outlets for the same products (the so-called outlet substitution effect, the impact of Wal-Mart and other big-box retailers in lowering prices is ignored by the CPI and as a result in the deflators for US personal consumption expenditures and GDP. Putting it simply, European restrictions that protect inner-city pedestrian shopping districts create value for the rich, who live inside Europe's cities, while the restrictions that make it hard for low-priced big boxes to establish in the city and suburbs hurt the poor.[10] European regulations also restrict the sale of nonprescription drugs in self-service aisles; in many countries routine nonprescription drugs are still dispensed on a one-by-one basis to individual customers by pharmacists. This reduces retail productivity and drives up the cost of living for many Europeans. This European set of policies that favor the rich and hurt the poor may offset some of the increased skewness of the American income distribution, discussed below.

Even if part of American energy use is not welfare-enhancing, either because it offsets the harsh climate or politically motivate "excess dispersion" of American metropolitan areas, how much could this possibly be worth? Figure 11.11 displays the time path of energy consumption per dollar of GDP in the United States and Europe since 1980. Despite the continuation of low gasoline taxes in the United States, the gap between American and European energy use has narrowed and now amounts to no more than 2 percent of GDP. If we take half of that gap as welfare enhancing (the value of heating large interior spaces and driving larger cars and trucks), and the other half as non–welfare enhancing (offsetting the harsh climate and unnecessary driving caused by excess dispersion and the lack of public transit), the energy story emerges with an overstatement of US welfare by only 1 percent of GDP. Other US expenditures, including keeping 2 million people in prison, might add another 1 percent of GDP in non–welfare-enhancing activities.
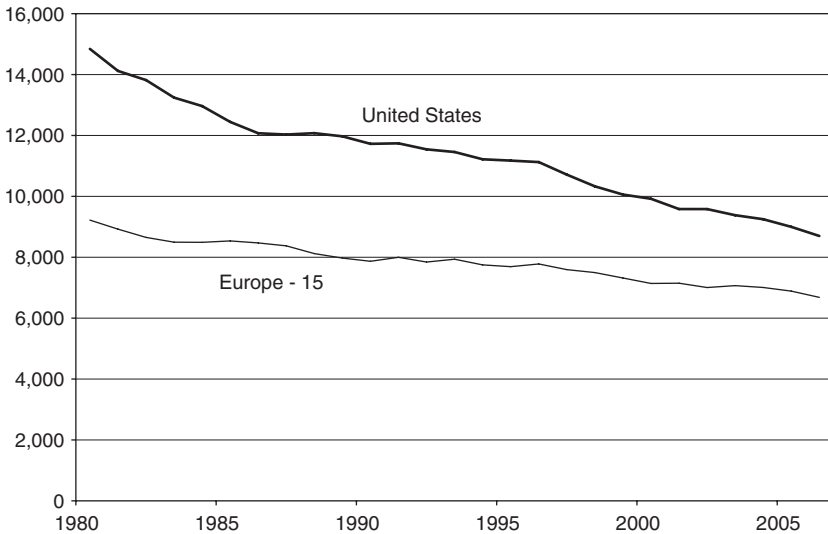
Figure 11.11
BTUs of energy consumption per dollar of GDP, Europe-15 versus United States, 1980 to
2006

11.6.3   Insecurity and Inefficiency

Finally some attention must be paid to the widespread European dis-
taste for American institutions as providing insufficient welfare bene-
fits, job security, and inadequate medical care. Louis Uchitelle (2006)
documents the "human damage" inflicted by layoffs of the low-skilled
blue-collar worker and high-skilled professional alike. However, to
make a separate allowance for the benefits of the European welfare
state would amount to double counting. We have compared real GDP
per capita between the European Union and United States on a before-
tax, not after-tax basis. Thus (as assumed also by Prescott 2004)
we implicitly assumed that high taxes in Europe are buying govern-
ment expenditures that are valued by households as highly as an equal
dollar of private consumption. Ljundqvist–Sargent (2006) question this
assumption as ignoring the inherent inefficiency in government
spending.

I would offset this alleged inefficiency of higher European govern-
ment expenditure against the notable inefficiency of the American
medical care system, which spends a much larger share of GDP and
yet produces mediocre outcomes in life expectancy and medical care
inputs. As much as 3 percent of US GDP may be wasted in excessive

administrative expenditure by the private insurance companies that run the American medical care system. This is clearly a component of GDP that does not raise the welfare of American consumers of its dysfunctional medical care system and should be added to our final tally of the amount by which market GDP comparisons overstate US welfare.

11.6.4   Immigration and the Black Economy

Three final issues must be considered in an evaluation of European and American welfare. The first two issues involve immigration and the black economy. As many as 11 million Americans are illegal immigrants. To the extent that they are working for cash and do not pay taxes, their contribution to GDP is missed, and American GDP is understated. Since most of the illegal immigrants are picked up in the population census, American GDP per capita is understated. Because of tighter border controls, fewer immigrants in the United Kingdom and continental Europe are illegal. However, any unmeasured GDP in the United States should be offset by the incentive in Europe of high labor taxes to enlarge the underground economy. Without definitive information on the role of illegal immigrants in the United States as compared to the black economy in Europe, we consider this issue to be a toss-up and do not include it in our final score-keeping in table 11.2.

11.7   A Summary of the Welfare Adjustments

Table 11.2 summarizes the results of the chapter and asks the question, how much of the measured shortfall of European relative to American income per capita is eliminated by adding the value of extra leisure in Europe or subtracting non–welfare-enhancing components of American GDP? In the top row there is copied from table 11.1 the 2008 EU/US ratio of 71.2 percent for real GDP per capita and in row 8 the 2008 ratio of 83.0 for real GDP per hour. How much can we add to the initial ratio of 71.2 percent? Are the additions sufficient to exceed the 83 percent EU/US productivity ratio in 2008?

The most important addition reflects the value of extra leisure in Europe as a result of declining European work hours per employee. However, the leisure gained from each employee working fewer hours than in the United States is worth surprisingly little because the value of the after-tax wage in Europe is so low. The 2004 value of the before-tax share of employee compensation in EU-15 GDP was only 55 percent,

Table 11.2
Summary of adjustments to the EU/US ratio of per capita income, 2008

	EU/US ratio of real GDP per capita	Adjustment to leisure component of hours	Adjustment to GDP
1. Market PPP ratio of Y per capita (table 11.1)	71.2		
2. Add: 1/2 times 2/3 of 1/3 ratio of real after-tax wage to GDP to allow for EU/US difference in hours per employee (table 11.1)		1.2	
3. Add: 1/10 of difference in employment per capita (4.1 percentage points from data underlying figure 11.4)		0.4	
4. Add: Half of energy use difference			1.0
5. Add: Prisons and other			1.0
6. Add: Medical care inefficiency			3.0
7. Sum of market PPP ratio and above additions (sum rows 1–6)	77.8		
8. Market PPP ratio of Y per hour (table 11.1)	83.0		
9. Percent productivity gap explained (row 7 minus 1 divided by row 8 minus 1)	55.9		
10. Percent total gap explained (row 7 minus 1 divided by 100 minus row 1)	22.9		

about six points below labor's share in the United States. To calculate the after-tax wage, we multiply the 55 percent labor's share by unity minus the labor tax rate of 39 percent based on population-weighted labor tax rates across the EU.[11] This brings the after-tax wage down to only 33 percent of real GDP. But we have argued above that converting hours from mid-week work time to leisure is worth less than the value of leisure at the margin, say 2/3 the real after-tax wage. This brings the value of leisure converted from work to vacations or short hours per week to 2/3 times 1/3 of GDP, or 2/9 (22.2 percent). But this still exaggerates the value of European leisure, since we have cited sources that show that Europeans do not enjoy more leisure than Americans, with extra home production more than offsetting shorter hours of work. Our inclination is to split the difference and to credit Europe with half of the 22 percent of GDP that the leisure would be worth if every hour of reduced work was converted into leisure and none into home production. While the Freeman–Schettkat evidence suggests that Europeans do not have more leisure to enjoy than Americans, Europe should still be given some credit because having longer vacations is surely valuable and because some aspects of home production are combined with leisure, as in watching TV while cooking. Thus in row 2 of table 11.2 we have added 11 percent of the 11.1 point gap between Europe and the United States in lower hours per employee.

However, for the reduction in the *E/N* ratio, we view this as largely involuntary and, using our example of early retirement, providing a relatively small value of additional leisure, roughly one-tenth of the value of output that could have been produced by those extra hours. This adds another 0.4 percent, equal to one-tenth of the 4.1 percentage-point difference between employment per capita in Europe compared to the United States.

The three adjustments to real GDP add, first, 1.0 points for excess US energy use. Second, another 1.0 percent is added to reflect the wasted resources created by excess incarceration and the creation of a gigantic prison population of 2 million people who in their future life are deprived of educational and job opportunities as a result of their prison records. Third, 3.0 percent of US GDP is added to reflect the excess administrative costs of the American medical care system, with its battalions of clerks employed by insurance companies to dispute claims submitted by doctors and hospitals, and the countervailing battalions of extra clerical personnel employed by doctors and hospitals to pursue their half of the never-ending battle.

Adding together these supplements to the European standard of living raises the ratio from the initial 71.2 percent at the top of table 11.2 to a more robust 77.8 percent, and this explains more than half of the initial 11.8 point gap between the EU/US ratio of output per capita to output per hour. However, the full gap between Europe and the United States to be explained is between Europe's 71.2 percent of US per capita GDP and the US level of 100 percent, or a gap of 28.8 percent. The adjustments in table 11.2 eliminate only 23 percent of the total EU/US income per capita gap.

11.8   Conclusion

This chapter has examined two classes of arguments implying that standard PPP-based ratios of European output per capita relative to that of the United States understate true European welfare. As is documented in the chapter, the EU/US ratio of real GDP per capita has languished at close to 70 percent since 1975, while the same ratio for productivity (output per hour) reached 92 percent in 1995 before falling back to 83 percent in 2008. By definition, the gap between the income per capita ratio and the productivity ratio represents the influence of the decline in European hours per capita relative to the United States until 1995 and its partial recovery since then.

A novel contribution of this chapter has been to show that even if all the decline in European hours per capita represented a voluntary transfer of work hours to pure leisure, that leisure is not worth much. The traditional valuation of an extra leisure hour is the after-tax wage per hour. But in Europe, with labor's income share only 55 percent and 39 percent of pre-tax labor income removed by taxation, the after-tax wage per hour is only 33 percent of GDP per hour. But this is still an overstatement of the value of leisure, for three reasons. First, the declining marginal value of any commodity applies to leisure; each extra hour taken by Europeans in longer vacations has a value below the after-tax real wage. This chapter suggests that the value of leisure hours taken on weekends (which are work-free both in America and Europe) may be worth say 4/3 of the after-tax wage, while leisure hours obtained by transferring mid-week hours of work to leisure may be worth only two-thirds of the after-tax wage.

Second, most of the decline in European hours per capita has taken the form of higher unemployment, particularly of youth, and lower

labor force participation of both young and old people. Ample evidence suggests that European youth to a much greater extent than in the United States are detached from the labor market, experiencing not just low participation but spells of unemployment that are much longer than in the United States. For all age groups the average European unemployed person is five times more likely to be unemployed more than one year and only one-quarter as likely to experience an unemployment spell less than three months.

Third, time-use studies reported by Freeman–Schettkat (2005) and others turn the standard European interpretation of "less work, more leisure" on its head. Hours transferred from work in Europe are not spent in leisure activities but rather in household production. Americans use their higher market income to buy services much more often than in Europe with its proportionately smaller retail service sector. Europeans cook more and devote more time to household chores and child-rearing, while Americans go out to eat, hire cleaning services, and buy child-care services. The Freeman–Schettkat evidence concludes that Europeans work less than Americans but do not enjoy more leisure, despite their fabled long vacations.[12] In the summary table 11.2 modest credit is given to Europeans for their extra leisure despite the Freeman–Schettkat evidence, both because longer vacations must involve at least some valuable leisure and because some household chores can be combined with entertainment such as watching TV.

The "tax multiplier" emphasized in this chapter is often neglected. A reduction in work hours reduces income. To the extent that government expenditures remain fixed, the tax rate on each remaining labor hour must increase, and to the extent that the lower work hours are caused by earlier retirement, the resulting increase in government pension expenditures raises the tax rate on the remaining work hours even more. In a simple example, a reduction in the retirement age from 65 to 55 requires an increase in the average tax rate from 30 to 45 percent to maintain average consumption in retirement at the same (reduced) level as during work years.

This chapter has provided a review of debates involving four leading interpretations of the relative decline in European hours per capita. These are that most or all of the difference represents a different taste for leisure in Europe, that all of the difference reflects high taxes on labor in Europe, that much of the difference represents the effects not of high taxes but of an overly generous welfare state, and finally that

hours per capita have been driven down not by voluntary choices but by political pressure initiated by unions that have promoted product-market and labor-market regulations leading to high labor costs, high unemployment, a shorter work week, long vacations, and early retirement.

In sorting through the debate about these explanations, we examined data that allows us to make three distinctions that rarely appear in the literature. First, the time-series evidence shows that from 1960 to 1995 only one-third of the relative decline in European hours per capita was due to a decline in hours per employee, namely due to the famous European long vacations and short work week. The remaining two-thirds was divided into roughly two-thirds due to falling labor force participation and one-third to rising unemployment, both corrected for differences between the United States and Europe in the composition of the working-age population by age group.

Second, the time-series data showed a distinct turnaround after 1995. While hours per employee continued to fall in Europe relative to the United States, albeit at a slower rate, there was a complete turnaround in the behavior of employment per capita, from 35 years of steady decline to 9 years since 1995 of steady increase. None of the recent literature on European hours, at least that cited here, calls attention to this turnaround nor provides any explanation of this phenomenon.

Third, our examination of European and US unemployment rates and labor force participation rates by age group showed another little discussed contrast. The unemployment rate is higher across the board in every European age group. But for labor force participation the pattern is completely different. Among prime-age workers (aged 30 to 44) European participation rates are identical to those in the United States, whereas participation rates are much lower in the 15 to 29 and the over 60 age groups. These patterns make it unlikely that a single explanation of lower European hours per capita can suffice. For instance, if high labor taxes are the dominant cause of falling European hours per capita, why did this not affect the labor force participation rate of prime-age Europeans at all?

From the econometric research that we cite there emerges a surprising conclusion. Fully two-thirds of the growth revival in European employment per capita after 1995 is due not to policy responses such as lower taxes and loosened regulations but rather to an unexplained

"time effect" that has raised *E/N* over time. We interpreted this as reflecting a cultural change favoring the movement of females from home production into market employment. Of the remaining increase in employment per capita not explained by the time effect, a reduction in the tax wedge explains fully two-thirds.

The chapter then turned to possible dimensions in which measured PPP GDP overstates welfare in the United States compared to Europe. The easiest case to make is that the United States has a harsher climate and so some of the extra energy consumption in the United States (measured relative to GDP) is not welfare enhancing. A more debatable position is that the United States has long instituted policies that have created overly dispersed metropolitan areas with few public transit options, also leading to excess energy use. However, the extra use of energy in the United States compared to Europe is currently worth only around 2 percent of GDP, so any allowance for "excess" energy use could at most account for only 1 percent of GDP. Our discussion of GDP overstatement also made an allowance of 1 percent of GDP for excessive incarceration in prisons. A brief discussion of insecurity, inefficiency, immigration, and the black economy identified only one further source of overstatement of US GDP, and this is the estimated 3 percent of GDP that is lost to the inefficiency of the dysfunctional US medical care system.

Almost everything discussed in this chapter is debatable. Some of the adjustments are subjective. But this chapter is the first to put the issues in the terms of the matrix format of table 11.2. Future research will need to address table 11.2, as to whether additional line items should be added, and what way individual items should be changed, should they be moved higher or lower? This chapter has begun the process not just of debating the causes of relatively low hours per capita in Europe but also of rethinking the translation of real GDP into welfare comparisons across countries and regions.

Notes

1. As indicated before, all data on GDP, population, and hours come from the Groningen economywide database, which has assembled data for many countries going back to 1950.

2. These are the "G-K" (Geary–Khamis) weights calculated in 1990 dollars and the "E-K-S" (Eltetö, Köves, and Szulc) weights calculated in 2008 dollars. All data on productivity, income per capita, and hours per capita come from the Groningen economywide database http://www.conference-board.org/economics/database.cfm.

3. The ratios here are higher than in the official US data (e.g., 66.0 percent LFPR for 2007) because our data exclude the population aged 75 and over.

4. This comparison is not appropriate, because the measure of hours in the tax correlation is H/N but is H/E in the union correlation.

5. This can be calculated as a response of H/N of 122 fewer hours divided by a 1995 total of 1,067 hours per adult, to a change in the combined tax rate of 12.8 percentage points on a base of 53.7 points in 1995. See Davis and Henrekson (2004: 38) for the changes and table 11.1 for the 1995 base values.

6. Roughly 52 percent of Italians between the ages of 20 and 34 live at home with their parents (Rhoads 2002).

7. Five surveys were taken from 1965 to 1985 with samples sizes ranging from 133 to 2,500.

8. The average estimated useful floor space of dwellings in 1997 or 1998 was 2,058 square feet for the United States and 995 for the average of Austria, Denmark, Finland, and Switzerland (none of the large European countries are listed). For newly constructed dwellings, "average living floor space" for Germany and Italy was 969. See United Nations, *Annual Bulletin of Housing and Building Statistics for Europe and North America 2000*, pp. 21 and 24, obtained from www.unece.org/env/hs/bulletin/00pdf/h10.pdf. An alternative measure for the United States in 2003 is a median square footage of all existing single detached and mobile homes occupied year-round (71 percent of all occupied year-round housing units) equal to 1,756. For all newly constructed privately owned single-family houses in 2004, the median was 2,140 and the average was 2,349. See *Statistical Abstract of the United States: 2006*, tables 951 and 932, respectively. The former table is the source of the average lot size data given in the text. All available data for the United States seem to refer only to single-family units and omit apartments in multifamily units, which presumably are smaller in size.

9. The total of $289 billion in 2005 prices comes from slide 8 of nhc2007-1.ppt, a Power-point presentation available by googling "ISO on historic catastrophe losses."

10. I owe this connection between retail regulation and the income distribution to Ian Dew-Becker.

11. The tax rates come from oecd.org/document/4.

12. Even the extent of European long vacations has been exaggerated. It is not five weeks for Europeans and two weeks for Americans. Mercer Human Resources Consulting reports a total of 33.7 annual vacation and paid holidays per year in Europe compared to 25 in the United States.

References

Alesina, A., and G.-M. Angeletos. 2005. Fairness and redistribution: US versus Europe. *The American Economic Review* 95 (September): 913–35.

Alesina, A., and E. Glaeser. 2004. *Fighting Poverty in the US and Europe: A World of Difference.* Oxford: Oxford University Press.

Alesina, A., E. Glaeser, and B. Sacerdote. 2006. Work and leisure in the United States and Europe: Why so different? *NBER Macroeconomics Annual 2005* 20: 1–64.

Alesina, A., and E. La Ferrara. 2005. Preferences for redistribution in the land of opportunities. *Journal of Public Economics* 89 (5–6): 897–931.

Baily, M. N., and J. F. Kirkegaard. 2004. T*ransforming the European Economy.* Washington, DC: Institute for International Economics.

Bassanini, A., and R. Duval. 2006. Employment patterns in OECD countries: Reassessing the role of policies and institutions. Social, Employment, and Migration working paper 35. OECD, Paris.

Blanchard, O. 2004. The economic future of Europe. *Journal of Economic Perspectives* 18 (4): 3–26.

Daveri, F., and C. Jona-Lasinio. 2005. Italy's decline: Getting the facts right. Working paper 301. IGIER, Milan.

Davis, S. J., and M. Henrekson. 2004. Tax effects on work activity, industry mix, and shadow economy size: Evidence from rich-country comparisons. Working paper 10509. NBER, Cambridge, MA.

Dew-Becker, I., and R. J. Gordon. 2008. The role of labour-market changes in the slowdown of European productivity growth. Working paper 13840. NBER, Cambridge, MA.

Freeman, R., and R. Schettkat. 2005. Marketization of household production and the EU-US gap in work. *Economic Policy* 20 (41): 6–50.

Goldin, C., and R. A. Margo. 1992. The great compression: The wage structure in the United States at mid-century. *Quarterly Journal of Economics* 107 (February): 1–34.

Gordon, R. J. 1973. The welfare cost of higher unemployment. *Brookings Papers on Economic Activity* 4 (1): 133–95.

Gordon, R. J. 1997. Is there a tradeoff between unemployment and productivity growth? In D. Snower and G. de la Dehesa, eds., *Unemployment Policy: Government Options for the Labour Market.* Cambridge: Cambridge University Press, 433–63.

Gordon, R. J., and I. Dew-Becker. 2007. Selected issues in the rise of income inequality," *Brookings Papers on Economic Activity*, vol. 38, no. 2, pp. 191–215. A longer and more complete version is NBER Working Paper 13982, May 2008.

Hausman, J., and E. Leibtag. 2005. Consumer benefits from increased competition in shopping outlets: Measuring the effect of Wal-Mart. Working paper 11809. NBER, Cambridge, MA.

Inklaar, R., M. O'Mahony, and M. P. Timmer. 2005. ICT and Europe's productivity performance: Industry-level growth account comparisons with the United States. *Review of Income and Wealth* 51 (4): 505–36.

Ljungqvist, L. 2006. Comment on "A. Alesina, E. Glaeser, and B. Sacerdote, Work and leisure in the United States and Europe." *NBER Macroeconomics Annual 2005* 20: 65–77.

Ljungqvist, L., and T. J. Sargent. 2006. Indivisible labor, human capital, lotteries, and personal savings: Do taxes explain European employment? Paper presented at NBER Macroannual conference, April 7–8.

McGuckin, R. H., M. Spiegelman, and B. van Ark. 2005. The retail revolution: Can Europe match the US productivity performance? *Perspectives on a Global Economy.* New York: Conference Board.

Mees, H. 2006. Europe's leisure trap. *Project Syndicate.* www.project-syndicate.org (accessed July 8).

Nordhaus, W. D. 2006. Principles of national accounting for nonmarket accounts. In D. W. Jorgenson, J. Steven Landefeld, and W. D. Nordhaus, eds., *A New Architecture for the US National Accounts.* Chicago: University of Chicago Press, 143–60.

Olovsson, C. 2004. Why do Europeans work so little? Working paper. Stockholm School of Economics.

Paramio, J. L., and J. L. Zofio. 2005. Labor market duality and leisure industries in Spain: Quality of life versus standard of living. Working paper. Universidad Autonoma de Madrid.

Prescott, E. C. 2004. Why do Americans work so much more than Europeans? *Federal Reserve Bank of Minneapolis Quarterly Review* 28 (1): 2–13.

Ramey, V. A., and N. Francis. 2006. A century of work and leisure. Working paper 12264. NBER, Cambridge, MA.

Rhoads, C. 2002. Short work hours undercut Europe in economic drive. *Wall Street Journal*, August 8, p. A1.

Robinson, J., and G. Godbey. 1997. *Time for Life: The Surprising Ways Americans Use Their Time.* University Park: Pennsylvania State University Press.

Rogerson, R. 2006. Comment on "A. Alesina, E. Glaeser, and B. Sacerdote, Work and leisure in the United States and Europe." *NBER Macroeconomics Annual 2005* 20: 79–95.

Smeeding, T. M. 2006. Poor people in rich nations: The United States in comparative perspective. *Journal of Economic Perspectives* 20 (1): 69–90.

Sonin, K. 2003. Why the rich may prefer poor protection of property rights. *Journal of Comparative Economics* 31: 715–31.

Uchitelle, L. 2006. *The Disposable American: Layoffs and their Consequences.* New York: Knopf.

Warren, S., and S. Worthington. 2004. The impact of taxes, laws, and inequality on hours worked. Working paper. University of Puget Sound.