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## A Four-day Workweek:

### A Policy for Improving Employment and Environmental Conditions in Europe

By Nicholas A. Ashford & Giorgos Kallis



**Can working less lead to a healthier economy and better environmental conditions? Which factors should be taken into consideration when forming an answer to this question?**

In this article Nicholas Ashford and Giorgos Kallis discuss how affluent economies often have shorter workweeks and why, under the right conditions, more free time can decrease unemployment and help develop a greener, more sustainable Europe.

#### Why reduce the workweek?

Three arguments have been offered in support of a reduced workweek:

1. Less hours worked by each currently employed worker means more hours available for the currently unemployed.<sup>1</sup> Work-sharing may allow an economy to maintain, or even increase the number of jobs, even when it does not grow.<sup>2</sup>
2. While productivity gains have historically resulted in reductions of working hours, this trend has stopped, or even been reversed, in the last 20 years in the U.S. and some European countries.<sup>3</sup> Some of these productivity gains could be rechanneled into liberated time and leisure for working people.<sup>4</sup>
3. Fewer hours worked may lead to less production, less consumption, and more free time for leisure. This will reduce environmentally-harmful activities and carbon emissions.<sup>5</sup>

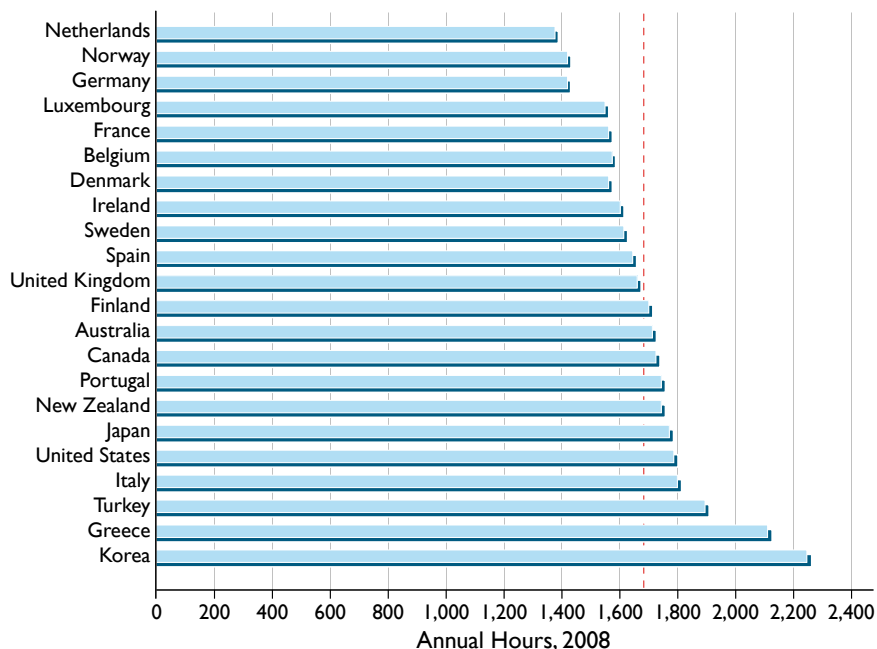
However, economists have been skeptical of regulating working hours, and even more so, of reducing working hours. Their concern is that these may raise the cost of labour, suppressing output. In the long-term, it is argued, this can lead to less, not more work.<sup>6</sup>

In contrast, environmentalists enthusiastically endorse the proposal<sup>7</sup> because: first, it can secure employment without growth (argument 1) making economic restrictions in the name of climate change socially stable<sup>8</sup> and second, because it promises to reduce consumption (argument 3).

In this article we take a different approach than most economists and environmentalists. We argue that the economic, social and environmental effects of any particular policy of reduced working hours are uncertain, and depend on contextual conditions, which we discuss below. Reduced working hours are likely to lead to some employment gains, especially in the short-term. Unlike some environmentalists however we advocate a reduction of the workweek to 4 days *without* a change in weekly wages; in other words, we call for an increase in hourly wages. If reduced working hours are to come at the cost of wages for currently employed workers, then this in effect is a proposal of making them poorer so as to save the environment, and giving them more leisure, when in effect what they need might be a sustainable earning capacity. Note that this form of work-sharing is effectively a wealth transfer within the working class, from the employed to the unemployed, and not a wealth transfer from capital owners and the wealthy to the working class. In the current financial crisis, the major problems are increasing unemployment, the decline in the earning capacity of workers, and the disappearance of large segments of the middle class.<sup>9</sup> Below we explain why a reduction in working hours without wage losses might create more and better conditions of employment, and, also why against common wisdom, it may also be good for the environment, provided other reforms are instituted as well.

#### Benefits for employment

In the current political climate in Europe, contrary to work-sharing, the tendency is to liberalize working time restrictions and to increase work beyond 5 days where necessary.<sup>10</sup> The rationale for this is partly that Europe is experiencing a crisis of productivity; by increasing hours of work (without increasing hourly wages proportionally), the less productive economies can become more competitive. Note, however, that in reality the most productive and wealthy countries are the ones that work less. As figure 1 shows it is not the lazy PIIGS that work fewer hours, but the productive German and the Dutch. This does not suggest that a nation gets more productive by working less. It suggests however that the more productive a nation gets, the more time it liberates for its workers. More leisure time has historically, at least in Europe, been a sign of progress and betterment. Working more may be a sign of economic

**Figure 1.** Working hours in the OECD, 2008 (Data: OECD Stat).

and social regression. Interestingly also, there is a historical precedent in reducing working hours during a crisis. It was in 1933, and during the Great Depression that President Roosevelt introduced a massive program of work-sharing in the US. By 1936 this became the law for a 40-hour workweek<sup>11</sup>, which gradually became the norm for the rest of the developed world. The argument during the Great Depression, remarkably absent in the current crisis, was that this would generate more new jobs.

The argument is largely absent today because most economists in positions of influence have been convinced that work-sharing is bound to the “lump-of-labour fallacy”. The fallacy is to think that the amount of available work in an economy is a fixed total. Indeed, the amount of work available changes as the cost of labour changes. A simple firm-level theoretical model can illustrate why work-sharing may backfire. Labour costs have both fixed and variable components, so any reduction in hours per worker increases the average hourly cost of production.<sup>12</sup> Fixed costs include the costs of training new workers, or social security contributions. The price of inputs climbs higher if a work-time reduction is accompanied by an increase in wage

compensation per hour, either due to higher wages, higher fixed cost or higher coordination costs. This can be considered a direct tax on productivity. The conclusion is that reduced working hours reduce firm productivity, output, and hence employment, unless offset by significant reductions in wages (per hour) or counter-improvements in productivity.<sup>13</sup>

Yet this lump-of-labour criticism is partly a straw man. Serious proponents of working hours reduction never claimed that there is a fixed lump sum of labour or that a reduction in working hours will lead to a 1:1 increase in employment.<sup>14</sup> What they argued is that work-sharing will reduce unemployment. This is a much milder proposition. Does it find support in the data?

Intuitively, we know that the transition from the 6 to the 5 day workweek was not accompanied by any unsettling work losses in most countries; rather the opposite. Still, it is possible that other confounding factors increased employment independently, and masked declines due to work-sharing. An evaluation of work-sharing policies in Germany in the 1980's finds that although this produced employment gains of around 1.1%, it remained small relative to the ‘counterfactual’ of 1.7% gains in the US during the same

period without any similar policy.<sup>15</sup> Nonetheless, Germany's work-sharing program did produce employment gains even though it maintained monthly wage parity, i.e. it increased hourly wages. This according to the simple model presented above should have had dramatically negative effects on output and employment.

Studies from the employment effects of work-sharing during the Great Depression find that there were employment gains, even if smaller in the long term than anticipated by government. Indeed work-hour reduction during the Great Depression put 2.7 million back to work in the short-term. In the long-term the potential employment gains were offset by an increase in the wage rate, reducing the total gains to 1 million.<sup>16</sup> Still, there were an additional 1 million jobs. As Taylor's study concludes: ‘*Work-sharing, through mandated shorter work-weeks, can be an effective short-run tool in combating major episodes of cyclical unemployment*’. Even if work-sharing had only short-term benefits, these can still be important if they succeeded in keeping active a part of the population that might otherwise fall permanently out of the job market during a crisis. One of the greater risks with the current recession is that a considerable portion of the younger generations stays out of the labour force for such prolonged periods that it might become permanently unemployable.<sup>17</sup>

In the simplistic world of the firm-level model, such sustained gains can only have been the result of counter-improvements on productivity (note that in a Keynesian model the benefits could also have come from the demand-side, the increase in employment and wages causing an increase in demand and output). An important question is the extent to which workers may become more or less productive by working less. For our purposes it is helpful to distinguish between improvements in labour productivity (e.g. workers being more productive due to acquiring greater skills or due to less exhaustion), capital productivity (capital becoming more productive through technological progress) and the substitution of labour by

capital.<sup>18</sup> Whereas the first increases wages, the second and third, suppresses wages and increase profits. Reduced working hours may *increase* labour productivity by: reducing the exhaustion of workers in the workplace; concentrating work in the more productive parts of the day and the week (i.e. reducing the hours spent “hanging out” in the office); allowing a more flexible distribution of labour during peak demand hours; liberating time that can be invested in lifelong training and education; liberating time that can be invested in human and social capital; attracting creative workers from abroad who find appeal in a more favourable work-life balance.<sup>19</sup>

Plausibly, work-sharing can also *reduce* labour productivity by: entry in the workforce of the less-productive workers; coordination, congestion and transaction costs (more workers per task); less time spent in skill-acquisition through work; loss of workers from abroad who find appeal in harder work - higher earning opportunities. From a firm perspective also the costs of labour may increase as a result of higher fixed costs (social security contributions), higher hourly wages and higher labour costs as unemployment declines (Kallis et al, 2013). In turn, rising labour costs may prompt substitution of labour by capital and/or energy, and increase in productivity without a rise in labour productivity, resulting in a reduction of employment and wages in the longer term.<sup>20</sup>

The above analysis suggests that it is difficult to predict what will happen in any given case, since it is really hard to foresee how the above factors may play out. Even with reduced output, wages may even increase, if reduced working hours increase labour productivity sufficiently. One can adopt various mathematical formalizations and reductionist models with limiting assumptions to illustrate the conditions under which one or the other outcome might occur. We see little added value in this exercise. Historical observation can be a better basis for policy. History suggests initially large, and, over time, reduced

gains in employment with sustained wages. Positive factors seem to dominate overall, but over time are dampened by the rising labour costs and the substitution of labour by capital. If this were the case for the reduction from 6 to 5 days of work, the question is whether it will hold for a further reduction to even less hours. Rather than ambitious proposals such as the 21-hour workweek,<sup>21</sup> we propose a more cautionary, learning-by-doing approach, reducing working hours first by one day, to 32 hours a week. The main attraction of this policy is the short-term boost of employment, even if all else fails.

The French adoption of a 35h workweek was for a while at best a temporary moderate financial success for most workers, but not successful for some, and it had mixed results on conditions of work and gender.<sup>22</sup> Hayden<sup>23</sup> provides a detailed analysis of the implementation of the shorter workweek with some wage retention that was accomplished by reducing the payroll taxes levied on employers. Thus, rather than wage parity maintained by transferring wealth from employers to workers, it was actually accomplished indirectly by transfers from the taxpayers to the workers. Even so, because of concessions in work-time flexibility of hours (including evening and weekend work) that could be demanded – on short notice – by employers of their workers in any particular week, the advantages of extra leisure time was compromised by uncertainty in time demands on workers, especially those that were lower-paid and less-skilled, as well as reductions in overtime pay. The overall level of employment was essentially unaffected.<sup>24</sup>

The case in favour of reduced working hours is stronger if one adopts a broader view of welfare that extends beyond purchasing power. A reduction of output and consumption is not necessarily bad,

if Daly<sup>25</sup> is right, and economic growth in advanced economies has become uneconomical, i.e., it has more social costs than benefits. Reducing the deleterious effects of climate change is a good reason for reducing output. The question is whether output and consumption can be reduced while increasing welfare, what has been called “sustainable degrowth”.<sup>26</sup> Liberating time from work for leisure is likely to increase welfare, not least by liberating time that can be invested in social, human or cultural capital. At the individual level empirical estimates point to an inverse relationship between working hours and life satisfaction or happiness when other individual characteristics have been controlled for, with greater importance for men.<sup>27</sup> Alesina et al.<sup>28</sup> use data on individual life-satisfaction from GSOEP, a German survey, and comparative national data for European countries from the Eurobarometer, in both cases finding that fewer hours worked are correlated with greater life satisfaction, controlling for other factors, such as income. They show that the negative relationship between hours worked across countries and life satisfaction holds for the international comparison after using collective bargaining agreements as an instrument, addressing in this way reverse causality concerns, i.e. the possibility that it might be happier people (or nations) that choose to work less. These empirical findings suggest that Europeans might obtain a higher level of welfare with fewer hours spent at work. The satisfaction from working less is likely to increase if there is coordination in the timing of the free days; people generally prefer to go on holidays together, or spend weekends together. This ‘social multiplier’ effect [the utility of leisure rising in the quantity of leisure consumed by peers<sup>29</sup>] might amplify the

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benefits of shortening the workweek from five to four days. It offers a basis for government intervention and for coordinating the liberated time around say an extra day off (e.g. “Friday-off” or “Saint Monday”). Of course, the extent to which the newly adjusted weekly wage can provide an adequate access to *essential goods and services* will greatly influence the outcome.

In conclusion, a reduction in working hours with the maintenance of weekly wages could very well increase employment for previously unemployed people, as well as improve employment and living conditions for existing workers by increasing leisure without a loss in earning capacity. In a period of crisis where workers experience losses on all fronts, such non-monetary welfare gains are an extra reason for reducing working hours.

### Benefits for the environment

The recent reincarnation of work-sharing proposals has come from environmentalists, but the environmental benefits of reduced working hours are not immediately evident. First, by tightening labour markets and increasing wages, more capital may substitute for workers, increasing energy and resource intensity.<sup>30</sup> Second, if work-sharing redistributes income and earning capacity to people with lower incomes, then consumption may increase given the increased propensity for consumption by low-income groups. Third, leisure is not necessarily environmentally benign. When Henry Ford gave Saturday off to his workers, his objective was that they buy and travel with his cars more, not that they consume less. It is not clear that if people got more free time and leisure, this would be directed to less resource-intensive activities. In general, leisure can be consumption intensive and the leisure services offered by the market are resource intensive: if more leisure time is offered with no change in preferences, then resource consumption may potentially increase as a result. To put it metaphorically, the office lights may be off, but those of the hotel room will be on.<sup>31</sup>

None of the above outcomes is inevitable, however. First, if as a result of reduced working hours workers could become more productive (i.e. an increase in labour productivity), then the increased wages need not lead to a substitution of workers by capital or energy. Also if energy and resource prices increase, due to natural or imposed scarcity (e.g. CO<sub>2</sub> caps) or green taxes, the inverse will be true, i.e. the relative cost advantage of employing workers over capital or energy will likely increase. Price volatility is important here. General price (market) volatility favors capital over workers, since it is less costly to leave a machine idle, than fire workers in times of low demand, or hire less-productive contingent labour in times of increased demand. But if there is excessively high volatility in energy and trade (transportation) costs, then labour is likely to be more favored. Which effect will predominate may not initially be known.

Second, on the one hand, reducing working hours will reduce output and some consumption by previously employed workers, assuming unchanged labour productivity. For the environment this may be good: less will be produced, and less will be available to consume. On the other hand, if more workers are hired, they will also increase demand and output and this may have the opposite effect.

Third, while the poor tend to consume comparatively a higher share of their income, the wealthier tend to save and invest a greater portion of it. It is not evident that decreased saving/investment is more environmentally beneficial than increased consumption by newly hired, and previously poor workers. If a reduction of savings leads to less extractive projects than otherwise would be the case, then the net environmental effect

of less saving may be positive. More earning capacity for the poor through work-sharing does not necessarily lead to more use of environmental resources in the aggregate.

Fourth, it is unknown whether liberated time (for workers previously working five days) changes leisure-related consumption patterns in ways that are environmentally beneficial. One possibility is that the liberated time is directed towards low-intensity convivial activities (walking, reading, playing with friends). Also households scarce in time tend to use more timesaving appliances and technologies, which in general tend to be more environmentally intensive (even if more efficient per unit of product delivered). Transport and food preparation are two obvious cases where time compression is linked to more intense resource use. Fewer hours spent at work means reduced transport demand and reduced consumption (of energy, water, etc.) at the workplace.<sup>32</sup> Assuming that production and service facilities will also operate fewer hours, then reduced working hours are likely to lead to less energy spent on public and office buildings and a decline of commuting, which are sources of greenhouse gas emissions. (This depends crucially though on the ‘social multiplier effect’ and coordination between workers on common days-off; if with work-sharing there is no change in the actual hours and days that offices or shops are open, reduced working hours may lead to more employees, and hence more commuting, per hour worked). Of course, all these effects must be compared to the case of having a larger number of workers performing the work, with all their work-related costs and changes in their total consumption accounted for.

What does the empirical evidence show? There is tentative evidence

**There is tentative evidence suggesting that working hours correlate positively with ecological footprint and energy consumption per capita after controlling for factors such as labour productivity, labour participation rate, and climate.**

suggesting that working hours correlate positively with ecological footprint and energy consumption per capita after controlling for factors such as labour productivity, labour participation rate, climate, and population.<sup>33</sup> These studies however do not control for inverse causality and omitted variable bias, such as changes in wages. The only study that has used fixed effects and panel data to date, by Knight et al.<sup>34</sup> with data for 29 high-income OECD countries, finds that shorter work hours tend to have lower ecological footprints, carbon footprints, and carbon dioxide emissions.

If a working hours policy is accompanied by a policy of shifting taxes from labour to consumption (or energy, or pollution), then it is more likely that reducing working hours will be good for the environment. This will favour convivial over material consumption, as well as investment in low-intensity over high resource-intensity projects.<sup>35</sup> Furthermore, the reduction of labour taxes will reduce the costs of labour making employment gains more likely.

## Conclusion


Can a reduction of working hours provide for increases in employment and earning capacity and a healthier economy without leading to a growth of environmentally-damaging production and consumption? This article has revealed how complicated this question is. Predictions of policies that focus on working hours can only be made, if we start with assumptions about how workers would use their free time (e.g. in environmentally friendly ways), what effects reduced hours will have on labour productiveness and labour costs, how wages/incomes and the number of workers employed would change, and how the implementation or enforcement of a work hour reduction might vary by industry, occupation, or firm size. In addition, the effects of a work hour reduction would depend heavily on union bargaining power and environmental and social policies, such as lifelong education programs or green taxes that might simultaneously be enacted to influence how workers use their additional free time and how firms and workers respond to the new limits on work hours. We conclude that mainstream economists and neo-liberal politicians who are eager to dismiss the reduction of working hours, or propose to increase them, are wrong, but that so may be those in the environmental camp who call for reductions in working hours without taking into account the effects that may make such policies ineffective and counterproductive to their own objectives.

Yet, beyond this complexity, there is a strong argument that in economies that progress technologically and in which capital gets more and more productive, workers should work less and less. However, in order to ensure that workers and poor people have the financial means to acquire an adequate supply of essential goods and services, either wages need to increase or workers and the poor need to be given access to capital ownership.<sup>36</sup> Prior to the burst of the financial bubble in 2008, this was happening less and less because the surplus was reinvested in new goods and more consumption, rather

than more leisure and increases in wages. If economic output were not a goal in and of itself for a nation, then the main concern with reduced working hours, i.e. that it might reduce output, is not necessarily bad since workers may have the same earning capacity and more free time. In other words, productivity gains could be directed to free time and not further accumulation, which is damaging for the environment. The questions are: what will currently employed workers do with their liberated time, and what will newly hired workers consume? If total material and energy-intensive goods and services are consumed, environmental gains may be limited. If more consumption results instead for convivial activities, then the net effect may be positive. Ecological taxes or investments in convivial infrastructures, such as for example playgrounds or public squares, or in educational and cultural activities, can further shift consumption in favour of low-intensity environmentally benign activities.

**It is important to ensure with government policies that the reduction in working hours is not achieved at the expense of workers.**

Simply mandating a reduction of working time is not sufficient. First, it is important to ensure with government policies that the reduction in working hours is not achieved at the expense of workers or the poor: reduction of working hours should come without a decline in wages. Second, given that more free time with same wages may lead to more material consumption, additional policies are necessary to shift incentives in favour of convivial, environmentally friendly consumption. Finally, given that we live in a world that is far from optimal or ideal, any policy of reducing working hours is likely to have unintended and undesired effects. For example, if the policy is not implemented as well for service workers, then manual workers and public employees may lose as a result (emulating the case in France). Also if the policy leads to capital and energy substituting for workers, or if factories or services move elsewhere where workers are cheaper and work longer hours – or environmental concerns are minimized – then employment, wages, and environmental conditions stand to lose.

We propose therefore the reduction of working hours be implemented initially as an interim measure to relieve unemployment, and over time improved through trial and error as other structural changes (in taxation, increasing working and poor people's access to capital and investment of convivial infrastructures) are instituted. An interim, trial and error approach makes sense also since in a future of expensive energy, capital productiveness may decrease, not increase, and we might have to work again more, rather than less. 

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