

Is daylight saving time good for us?

*Daylight saving time is observed in over seventy countries with the goal of reducing energy use. However, there's no consensus on the desirability of changing the clock twice a year. In March 2019, the European Parliament voted to repeal daylight saving time. Studies show that, by reducing the number of hours we sleep, time shifts decrease our life satisfaction. **Joan Costa-Font, Sarah Flèche, and Ricardo Pagan** write that the night-time shift at the end of March reduces individual happiness by the equivalent of 393 euros a year.*

Daylight saving time (DST) is currently observed in over seventy countries around the world in order to reduce energy demand, even though studies have shown that DST produces [modest savings on electricity consumption](#). Furthermore, opponents of DST contend that even a one-hour time change can have long-term effects on individuals. In studies, the DST transition has been linked to an increase in the risk of car accidents, heart attacks, and depressive symptoms. The spring DST transition, according to our findings, has a negative impact on individuals' welfare, specifically a decrease in life satisfaction. In [a recent paper](#), we show that the lower life satisfaction can be explained by a decrease in sleep after the transition and an increase in time pressure, both of which have a significant impact on individuals' physical and emotional health in the days that follow.

DST policy and its contenders

DST policy has become increasingly divisive in recent years, with the European Parliament voting to repeal it in March 2019. However, the process has been halted so far. This is due, first and foremost, to the COVID-19 pandemic, but also to the fact that some countries, such as the United Kingdom and Ireland, argue that ending DST will result in a patchwork of time zones, further destabilising the European Union. No negotiations had begun at the time of writing, and it may be some time before DST is phased out in the European Union. DST has been in effect in the majority of US states since 1966, and it was extended as part of the 2005 Energy Policy Act. While the

rationale for implementing it was to better align sunlight with daily activities and reduce energy consumption, shifting the time can also have a variety of other effects on people's lives. To shed light on this debate, policymakers must have access to overall estimates of the welfare costs and benefits associated with DST.

Our study focuses on the first-order effects of DST policies—their impact on people's well-being. So far, most of the literature has concentrated on single outcomes of changing the time (energy consumption, car accidents, heart attacks, workplace injuries, etc.). However, to assess welfare costs and benefits, we must also consider how people experience the transition. DST has the potential to affect the well-being of the population through two primary mechanisms. For starters, it can have a significant impact on people's sleeping patterns. Some studies show that sleep duration decreases by 40 minutes on the Mondays following the spring transition.

Sleep deprivation can impair cognitive abilities and work performance, as well as cause fatigue and attention problems. Second, by moving the clocks forward by one hour, the DST transition reduces total time available and strengthens the time constraint in the days following the transition. Even if the increase in time constraints is only temporary, it is likely to increase people's feelings of being "rushed" by time and have an impact on their emotional health. Furthermore, as time constraints increase, people may devote less time to restorative activities like eating, socialising, and exercising, all of which are important for their health and emotional well-being.

The wellbeing effects of spring DST

To assess DST impacts on people's well-being, we used individual panel data from the German Socio-Economic Panel (SOEP) from 2008 to 2018, in which the same people were interviewed year after year. We began with a regression discontinuity design that takes advantage of the changes between standard time and DST on the last Sunday of the month in March. Our lower estimates show a decrease in life satisfaction of 0.055 standard deviations (SD), which is equivalent to a 1.25 percent decrease, whereas the other estimates show larger negative effects of around 0.069 SD, which is equivalent to a 1.57 per cent decrease. However, there is no difference in life satisfaction around the last Sunday of the month in previous and subsequent months (January, February, April, and May).

The effects are persistent

Given that critics state that DST does not have persistent effects, we then looked at effect duration. Our findings indicate persistent negative effects during the spring DST transition on individuals' life satisfaction. They last for about six days after the night-time shift and only then fade away. Interestingly, there is a positive effect on life satisfaction on the first weekend following the spring transition, which could imply that, at least temporarily, people enjoy having one extra hour of daylight in the evening once they have adjusted to the new time schedule.

Sleep and health explain the wellbeing effects

We then investigated potential mechanisms. According to the findings, the spring DST transition reduces sleep satisfaction by 0.15 SD and increases reported time pressure by 0.17 SD. Moreover, individuals tend to report lower physical and emotional health following the time change, as well as lower satisfaction with day-to-day activities. Once controlling for sleep variables, the impact of DST on life satisfaction falls by about 64 per cent, which suggests that sleep reduction is one of the main drivers explaining the decrease in life satisfaction.

Fall DST improves wellbeing

Other criticisms include the argument that people exhibit a 'preference for stability' (namely people do not like schedule changes), and that the effect has nothing to do with changing the time. To examine this concern, we look at the fall DST transition, which involves turning the clocks back one hour, increasing the total amount of available time. As a result, sleep patterns may adjust to the fall transition more quickly. If people exhibit a preference for stability, one should still observe a negative effect. However, when we replicate our empirical strategy, we find a significant increase in life satisfaction following the night-time shift at the end of October. These findings support the notion that people may sleep longer or have more time to complete their activities on the Sunday following the fall transition. Hence, the lower levels of well-being after the spring transition do not seem to be simply explained by a 'preference for stability'.

The welfare losses of DST policy

Do these effects matter? According to our study, the night-time shift at the end of March reduces individual happiness by the equivalent of 393 euros per year. However, this is compensated by the positive effects of the fall transition, and the year's income loss is reduced to 32 euros per capita. Then we compared the potential energy savings benefits. Taking into account a 0.5% decrease in energy consumption per year with DST, a figure accepted by other researchers, our estimates indicate that **abolishing DST would save approximately 27 euros per capita**. Given the recent debate over DST policy, our findings are timely and suggest room for wider European intervention to improve wellbeing.

So far, after the European Parliament's decision to abandon DST, the change is only waiting for a common position from member states in the European Council, especially after Brexit. This is because, unless the UK follows Europe, the end of DST could create two time zones for the Republic of Ireland and Northern Ireland, or for Ireland and the rest of the UK if Northern Ireland, part of the single market, follows the decision approved by the European Parliament in 2019.



Notes:

- *This blog post is based on [The Welfare Effects of Time Reallocation: Evidence from Daylight Saving Time](#), IZA DP No.14570*
- *The post represents the views of its author(s), not the position of LSE Business Review or the London School of Economics.*
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