

# Lying Fallow in a Restless World: Using the Bible to Explain the Implications of Rest in Economics

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**ABSTRACT:** Economic courses pay little attention to the economic implications of insufficient rest. This paper identifies several biblical references to the role of rest with economic implications, examining what the Bible says about the importance of rest for creation and contrasting this with the economic consequences of inadequate rest. It also provides some specific areas of economics courses where incorporating these connections between biblical guidance on rest and actual examples could be meaningful to students.

## INTRODUCTION

One in three Americans fails to get enough rest, and the consequences are significant. The American Academy of Pediatrics (AAP) and the Center for Disease Control and Prevention (CDC) are among those organizations identifying sleep deprivation as a considerable but unappreciated threat to public health and safety. In a 2014 review of adolescent sleep patterns, the AAP includes higher risks of academic failure, depression, obesity, and driving accidents among the consequences of insufficient sleep. Likewise, seven of the fifteen leading causes of death, declines in worker productivity, industrial accidents, and traffic accidents are among the consequences of sleep deprivation in the U.S. (Hafner et al., 2017).

Traditional economic courses pay little attention to the economic implications of insufficient rest. This paper identifies several biblical references to the role of rest with meaningful implications for the individual and the economy, further extending the current literature by examining what the Bible says about the importance of rest for creation and contrasts this guidance with the economic consequences of inadequate rest. It also provides some specific areas of economics courses where incorporating these connections between biblical guidance on rest and actual examples could be helpful and meaningful to students. This paper consists of six sections. Section 1 reviews literature relevant to this analysis as it considers how one might perceive the cost of rest. Section 2 examines the implications that inadequate rest has for resources, particularly labor and land. Section

3 considers how rest and sleep can be used to better understand demand. Section 4 analyzes the impact of rest on labor productivity. Section 5 considers additional repercussions that inadequate rest generates in terms of costs, especially external costs, while section 6 concludes by reflecting on the connections between biblical guidance for rest and the examples included in the text.

## LITERATURE REVIEW AND THE COST OF REST

Christianity serves an essential role in teaching economics. Heyne (2008) recognizes the necessary role of faith in the study of economics:

Our “facts” are not “data”; they are “made,” not “given.” So-called factual or scientific judgments are formulated on the basis of particular preconceptions and addressed to others who appropriate them on the basis of their own preconceptions. ( p. 109)

Similarly, Penn (2019) identifies appropriate areas in an introductory microeconomics course where a Christian perspective can not only be successfully included, but necessary. A world with scarcity requires individuals to make choices. Penn recognizes an important implication of making choices: two people armed with the same facts and weighing the same alternatives can make entirely different choices as a result of differences in their worldviews.

Heyne and Penn are developing a solid foundation for those seeking ways to use the Bible to add meaningful content to their economics courses. This paper extends this

foundation by examining what the Bible says about the importance of rest for creation and contrasts this guidance with the economic consequences of inadequate rest.

What is the opportunity cost of rest? For the worker, it might be wages foregone, while a student might view it as a higher test score. These perceptions are among the reasons it is common for many to disregard the importance of rest, even going so far as to associate sufficient rest as detrimental to professional success. Why is this? One possibility is the impression that lack of sufficient rest adheres to the Protestant work ethic (PWE). However, Smith and Smith's (2011) analysis identifies a number of aspects of PWE that are not biblical and are incompatible with following Christ: "Neither acquisition nor asceticism should be central to a Christian's life. Willingness to work hard is biblical; however, hard work does not create personal value or integrity, both of which come from God" (p. 69). Simply put, while working hard can provide a pleasant lifestyle and a rewarding sense of accomplishment, it is important to understand that true satisfaction comes from following God, not from work in and of itself.

Viewing rest as a lost opportunity to earn income or increase a GPA ignores the interdependent nature of rest and work. Keller (2012) identifies three ways rest impacts work. First, rest serves a replenishing function. Second, regularly getting away from work keeps it in its appropriate role in our lives. Finally, by preventing work from becoming central to our identity, we have the opportunity to experience what Keller refers to as "gospel rest," a rest that will provide ongoing rejuvenation, restoration, and renewal. Keller points out that humans are designed to require periodic rest at regular periods. Ignoring this aspect of our design by working too little or too much is problematic, upsetting order in our own lives and the lives of those around us.

### RESOURCES AND PRODUCTION POSSIBILITIES CURVES

The factors of production and the production possibility curve provides an excellent opportunity to introduce a Christian worldview of the role of rest in the economy. Examples of causes of an increase/outward shift of the production possibility curve are readily available in textbooks, including trade, historical exploration, and technological advances. However, easily recognizable examples of the PPC shifting inward are less apparent. Actually demonstrating that insufficient rest has a profound and measurable impact on the potency of resources such as labor and land can help

students better understand the connection between this tool and production in the economy. Consider Exodus 23:10-11:

For six years you are to sow your land and gather its produce, but in the seventh year you must let it rest and lie fallow, so that the poor among your people may eat from the field and the wild animals may consume what they leave. Do the same with your vineyard and olive grove. (NIV)

While being directed to leave food in the fields for the poor is not surprising to a Christian, one might question why God instructs his followers to have a valuable resource rest and lie fallow. A British definition of fallow offers two possible explanations. First, fallow land is land "left unseeded after being ploughed and harrowed to regain fertility for a crop." This suggests that cultivated land allowed to rest periodically will remain fruitful and continue being productive. Second, when used to describe an idea or state of mind, fallow means "undeveloped or inactive, but potentially useful," indicating this resting process can apply to resources other than land.

One way to show students how ignoring the Bible's advice to allow the land to rest has had measurable costs on the economy is to incorporate material regarding the Dust Bowl (available at <https://www.history.com/topics/great-depression/dust-bowl>). Technological and economic forces in the 1920s allowed massive conversion of grassland to cultivated farmland, promoting overuse. Over cultivating the land and removing its native grasses also removed the deep roots that had trapped the topsoil. The Dust Bowl began with a severe drought in 1930, resulting in dust storms in 1931, followed by additional droughts. By 1934, approximately 35 million acres of farmland could no longer be used for that purpose, and 125 million additional acres were losing topsoil. While the Dust Bowl officially ended in 1939, economic consequences persisted.

Another biblical reference that provides guidance on the importance God places on rest occurs in the account of creation is provided in Genesis 2:1-3:

Thus the heavens and the earth were completed in all their vast array. By the seventh day God had finished the work he had been doing; so on the seventh day he rested from all his work. Then God blessed the seventh day and made it holy, because on it he rested from all the work of creating that he had done.

It is helpful to read the verse above with Genesis 1:27: "So God created mankind in his own image, in the image of God he created them; male and female he created them."

Two points relevant to the importance of rest and economic production occur in these passages. First, once God completed a task, he did not rush forward and begin

a new task. Rather, he stopped. How does this apply to us? Stopping after completing a task provides an opportunity for reflection. Reflecting on the role of work in our own lives, we realize that God's gift of work for us is one that not only generates income but is intended by our creator to bring meaning and satisfaction to our lives as we pursue his will in our lives. Second, we are created in the image of God. After God finished creation, he took sufficient time to rest and enjoy his creation. This point is further emphasized in Exodus 20:8-11, the fourth commandment:

Remember the Sabbath day, maintaining its holiness. Six days you are to labor and do all your work, but the seventh day is a Sabbath to the Lord your God. You are not to do any work—neither you, nor your son, nor your daughter, nor your male or female servant, nor your livestock, nor any foreigner who lives among you—because the Lord made the heavens, the earth, the sea, and everything that is in them in six days. Then he rested on the seventh day. Therefore, the Lord blessed the Sabbath day and made it holy.

The danger of not stopping to rest is we lose sight of God's purpose for our lives. We begin to place importance on something else above God, such as working more to attain additional affluence. As this goal becomes first and foremost in a Christian's life, she spends less time with God and other people, meaning her life is no longer centered around glorifying God and enjoying what he has intended for her.

#### QUESTIONS RELATED TO DEMAND

If "lying fallow" is biblically and economically rational, why has sleep deprivation imposed the health, labor, and other economic costs that it has? One possibility is to consider what the immediate "price" of sleep is to an individual. As indicated earlier, the opportunity cost to a factory worker is lost wages while to a student, it could be a lower grade on an assignment or exam. Other ways to think of its cost is to consider other reasons we may fail to get sufficient sleep such as staying awake to use social media, bingeing on Netflix shows, or even worrying. While many of these are choices that we can identify with, Exodus 20: 2-3 reminds us it is important to recognize that allowing them to replace rest allows them the potential of becoming destructive. 2 "I am the Lord your God, who brought you out of the land of Egypt— from the house of slavery. 3 You are to have no other gods as a substitute for me." This verse warns us of the dangers of allowing other things to get between ourselves and God. For a business professional, it can be the

job and income that work their way in ahead of God. For a disciplined student, maintaining a high GPA at all costs may become the top priority. As Keller (2012) points out, the Sabbath is an emancipation from the slavery we create when we pursue these secular goals. That is, observing the Sabbath releases us from academic stresses, workplace expectations, and other secular demands, while failing to observe the Sabbath enslaves us. Relying on these goals for security can make an individual so desperate to protect them they even seek substitutes.

Are there actually secular substitutes for sufficient rest? How does the amount of rest we consume change when the prices of these related goods change? In class discussions resulting from these questions, students might identify popular caffeinated choices such as Red Bull or a Starbucks beverage as being an adequate substitute for lost hours of sleep. One interesting exercise is to have students consider how changes in the prices of these items would impact their demand for sleep. Likewise, have students demonstrate how changes in the price of sleep (overtime wage rates, exams during final exam week) might impact the demand for one of these complements.

However it is worth noting that while students may perceive caffeine as an effective solution to sleep deprivation, academic research disputes this. In a study of over 7,000 adolescents, Owens (2014) examines possible causes of changes in academic performance and identifies caffeine use as a significant cause. While students use caffeine consumption to offset sleep loss, this study reports that those using more caffeine actually experience more daytime sleepiness due to poorer quality sleep.

Is sleep a normal or inferior good? What happens to the amount of sleep people get as their incomes increase or decrease? Patel et al. (2010) examine the impact of socioeconomic factors such as income, education level, and employment status on the quality of sleep experienced by over 9,000 individuals. Their results confirm poorer sleep quality is more commonly experienced by those in poverty. In addition to the studies cited above, an instructor could also have students consult websites such as the National Sleep Foundation to research statistics across different countries regarding the quality/quantity of sleep and per capita real GDP to see if there is any apparent association.

The ideas developed above can also be used in lectures regarding income and cross price elasticity. Based on some of the statistics students find if they complete the assignment suggested above, ask them what will be the sign of income elasticity coefficient if an increase in income results in more sleep being consumed. Likewise, having students reason through how an increase in the price of Red Bull

might force students to sleep more could be an instructive way to help students see why cross price elasticity for substitutes will be positive.

### MARGINAL PRODUCTIVITY AND MARGINAL ANALYSIS

How does a lack of rest impact labor productivity? According to the Occupational Health and Safety Administration (OSHA)(2020), sleep deprivation reduces U.S. productivity by \$136.4 billion per year. Where do these losses occur? Causes cited include losses in efficiency, increases in costs due to injury and worker compensation, and increased sick days. OSHA warns employers that fatigued workers will impose a very real cost on the business in the form of less production. Tired construction workers are more likely to fall, the cause of one third of all construction fatalities. In the medical industry, worker fatigue accounts for increased needle sticks, medical mistakes, and occupational injuries. Manufacturers will experience lower productivity in the form of lower output. Consider Proverbs 21:5-6 and the path to true productivity: “Plans of the persistent surely lead to productivity, but all who are hasty will surely become poor. A fortune gained by deceit is a fleeting vapor and a deadly snare.”

Skipping rest to work more is a tempting means to increase income for workers and profits for employers but, as the verse above warns, does not bring long term success. OSHA and the American Safety Council (2020) reach a similar conclusion, reporting that insufficient rest reduces worker productivity, increasing the probability of having an accident at work by 70%. There are a number of opportunities to incorporate this biblical and occupational safety guidance into lessons on marginal productivity and diminishing marginal returns. A tired worker may be asked or required to work additional hours to meet production or other occupational output requirements. However, for a worker with insufficient rest, an additional hour on the job will result in less and less additional output. It is at this point that diminishing marginal returns occurs. In some cases, the decision to have this employee work even more additional hours results in an injury or workplace accident, causing output to decline and marginal productivity to become negative.

One tragic example of such a situation occurred in 1986 when the Challenger space shuttle exploded after its launch, causing all seven crew members to die. Mitler et al. (1988) refers to the report of the Presidential Commission on the Space Shuttle Challenger Accident, which openly details the deadly impact of sleep deprivation on human judgment,

specifically that managers central to the launch operation had slept less than two hours and had been working since 1 a.m. that day.

Once the student makes the connection between worker fatigue and marginal productivity and understands that marginal productivity declines once diminishing returns has occurred, ask her what will happen to the incremental cost of getting the same increases in productivity that had been occurring prior to diminishing returns. Marginal product and marginal cost are “mirror images” of one another. Just as marginal cost declines while marginal productivity is increasing, the reverse holds as well. Having students reflect on some of their own experiences when “pulling an all-nighter” can help make this connection between these two concepts. As our student becomes more exhausted with each hour she spends awake, she finds herself completing fewer and fewer problems. The only way she can complete an additional set of problems is to remain awake even longer, causing the marginal cost of this additional output to increase. And not only does sacrificing sleep result in completing fewer and fewer problems or reading fewer pages with each hour spent awake, it has been known to cause more than one student to oversleep the day of an exam.

### EXPLICIT, IMPLICIT, AND EXTERNAL COSTS

Luke 14:28-30 explicitly states the importance of considering all costs relevant to a project before beginning work:

Suppose one of you wants to build a tower. He will first sit down and estimate the cost to see whether he has enough money to finish it, won't he? Otherwise, if he lays a foundation and can't finish the building, everyone who watches will begin to ridicule him and say, 'This person started a building but couldn't finish it.'

Medical and psychological studies regarding the physical and mental impact of sleep deprivation provides a number of examples of explicit and implicit costs. Zeek et al. (2015) examine survey data of 364 student pharmacists to see how inadequate sleep affects academic performance. Results support a positive relationship between sufficient sleep the night before an exam and student course grades and semester GPAs. As indicated earlier, an AAP study associates higher risks of academic failure, depression, obesity, and driving accidents as possible consequences of insufficient rest. Likewise, Christ has us consider our impact on others if our saltiness disappears. “You are the salt of the earth. But if the salt loses its saltiness, how can it be made salty again? It is no longer good for anything, except to be thrown out and trampled underfoot” (Matthew 5:13).

Among the attributes of salt that Christ expects his followers to exhibit is to serve as a preservative and as an enhancement to others we encounter. Likewise, anything that diminishes a follower's "salt" has repercussions that extend beyond himself. An individual's lack of rest imposes costs not only on himself but the livelihood and safety of others as well. A medical study of 2,737 medical residents reports a 16.2% increase in the monthly risk of a traffic accident for every extended shift scheduled in a month (Barger et al., 2005). Industrial disasters are another consequence of worker sleep deprivation that imposes costs not only for their employer but for others. Sleep deprived workers in these industries impose external costs on the marketplace, making the marginal private cost curve underestimate the total marginal costs of production and leading to output that exceeds what it socially optimal.

The American Safety Council (2020) cites a number of industrial accidents resulting from worker fatigue that are helpful when demonstrating the impact of external costs of the supply of a good and the reduction in quantity that would be indicated. For instance, the Exxon Valdez oil spill of 1989 is considered to be the most costly oil spill in terms of damage to the environment. Shortly before the accident, the crew had completed a 24-hour shift loading oil onto the tanker. Third mate Gregory Cousins fell asleep at the wheel, causing the ship to crash and spill 250,000 barrels of oil off the coast of Alaska. Other examples of fatigue-induced accidents that are useful include the 2005 Texas City BP oil refinery explosion, nuclear accidents at Chernobyl and Three Mile Island, and the 2009 Colgan Air Crash.

### CONCLUSION

It comes as no surprise to students in Christian business schools that Christian employers are expected to treat their workers ethically. This includes providing a safe working environment, not for legal or profit-maximizing reasons, but because humans are made in the image of God. Specifically, given that workers benefit from "the restorative power of rest," limiting the number of hours an employee is on duty is reasonable. Pope Leo XIII (1931) recognizes the impact of rest on the dignity of man:

It is neither justice nor humanity so to grind men down with excessive labor as to stupefy their minds and wear out their bodies. Man's powers, like his general nature, are limited and beyond these limits he cannot go. His strength is developed and increased by use and exercise, but only on condition of due intermission and proper rest. Daily labor, therefore, must

be so regulated that it may not be protracted during longer hours than strength admits. (p. 14)

Or, as the American Safety Council puts it, humans wear out faster than machines. It is the wise employer who remembers this when considering the impact a worker's health has on his productivity. Including what the Bible has to say regarding the role of rest for the individual and other resources used by the economy provides a number of opportunities to further expand on a student's understanding of economic principles. Examples provided here also show the consequences that ignoring the need to lie fallow can have for students, workers, and other parties.

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