The "skinny" on financial incentives for exercise programs

Much has been written about poor diet and lack of exercise and the health threat they pose to millions of Americans in the workplace. However, despite growing interest among employers in instituting financial rewards for exercise and other healthful behaviors, research on whether workplace incentives are effective in promoting such behaviors is limited.

In "Incentives, commitments and habit formation in exercise: evidence from a field experiment with workers at a Fortune-500 company" (National Bureau of Economic Research, working paper no. 18580, November 2012, **http://www.nber.org/papers/w18580.pdf?new_window=1**), authors Heather Royer, Mark F. Stehr, and Justin R. Sydnor help add to our knowledge of the usefulness of financial incentives with their report on the results of just such a program introduced at the Midwest headquarters of a Fortune 500 company. The program was designed to obtain long-term, rather than temporary, behavioral changes. The goal of the study was to measure those changes.

The program consisted of two stages. In the first stage, a group of 1,000 randomly selected employees was paid $10 for each visit (up to 3 visits a week) to the company's exercise facility during the course of a month. In the second stage, some of those completing the program were made no further offer. Others, however, were offered a self-funded "commitment contract," in which individuals pledged an amount of their choosing that they would continue to use the gym for an additional 2 months. If an employee kept the commitment, all money he or she pledged was refunded; if not, the money was given to the United Way.

The authors note that this study was the first to test the effectiveness of commitment contracts as an extension of an incentive program, rather than being a stand-alone program, to a broad population. The study produced the following notable findings:

- Employees responded very positively to financial incentives. Their rate of gym usage doubled during the incentive period, and it is estimated that at least 70 percent of those attending the gym hadn't done so previously.
- There was a modest increase of 16 percent of the incentive-period gym usage beyond the 1-month incentive period. Most of the improvement was among those who had been offered a commitment contract.
- Usage results were much better for individuals who were offered both a financial incentive and a commitment contract; their gym use during the next 2 months reached 47 percent of the original incentive-period use and continued to be high a full year later.
- Those who exercised regularly during the incentive period but who fell short of maximizing their earnings were the most likely to make commitments; also, women were much more apt to sign commitment contracts than were men.
- The appeal of commitment contracts was shown to be unrelated to individuals' awareness of difficulty controlling their own behavior.

Hence, the authors determined that a temporary incentive program coupled with a commitment contract option is a much better option because it is more likely to produce lasting changes.

The authors drew a couple of implications from the study. First, a relatively small share of the money spent by the employer on incentives results in new exercise; in this study, 65 percent of what the employer paid employees went for exercise they would have done without the program. Nonetheless, if the increase in exercise drove down health care costs by about 1 percent, the program paid for itself. Similarly, if the additional exercise caused 1 in 3 employees to experience 1 fewer day of absence per year, the program paid for itself in that manner.

What determines wage levels during the business cycle?

Economists have long been interested in how wage levels are determined during the course of the business cycle. In particular, they look at how macroeconomic factors such as government spending, aggregate productivity, and Gross Domestic Product influence the price of labor at the microeconomic level. As the economy expands and contracts, are wage levels primarily determined by the current state of the economy—that is, what economists call "contemporaneous conditions"? Or are there lasting effects

from the boom-and-bust cycle that make wage levels more dependent on historical factors? Over the last several decades, economists have assembled a large body of theoretical and empirical evidence supporting the former view, and it has become the standard theoretical approach in contemporary quantitative macroeconomics.

Although there is disagreement about the particulars—some studies stress the effect of substantive productivity changes, known as "productivity shocks," on wage levels and others emphasize the role of changes in government spending—economists generally agree that the present condition of the economy is the primary factor affecting wage levels. But in recent years a number of influential studies have challenged the prevailing view by presenting evidence that wage levels are in fact "history dependent," meaning that aggregate labor market conditions continue to influence workers' wage levels long after the economy has moved from one phase of the business cycle to the next. These two competing theories have very different implications for understanding how wage levels are determined in a macroeconomy.

In a recent study called "Job selection and wages over the business cycle" (*American Economic Review*, April 2013, pp. 771–803), economists Marcus Hagedorn and Iourii Manovskii examine this topic from a new perspective and provide an alternative to the history-dependent thesis. Their study argues that wage levels are mostly determined by current economic conditions in combination with what they call "idiosyncratic match qualities"—the individual characteristics of workers and firms and the role they play in the hiring or "matching" process. The authors explain that these "unmeasured match productivities" have not been accounted for in the studies that stress historical factors, leading those studies to reach erroneous conclusions. Hagedorn and Iourii develop a model that accounts for what they view as the key missing variable in the history-dependent studies. They provide a theoretical explanation for the importance of accounting for matching qualities and present empirical evidence in support of their findings by applying their model to data from the National Longitudinal Survey of Youth and the Panel Study of Income Dynamics.

Hagedorn and Iourii's model considers a job search among people who are currently employed and assumes that wage levels depend *only* on current aggregate labor market conditions and idiosyncratic productivities. The Hagedorn-Iourii model generates many of the same features that previous studies have interpreted as evidence that historical factors are the primary determinant of wage levels. For example, a number of studies present evidence that people who enter the labor market during a recession receive lower wages than those who enter during an expansion and that these wage disparities persist over time. Other studies suggest that wages depend less on the current unemployment rate than on the lowest unemployment rate since the job began. But when Hagedorn and Iourii construct a variable to account for matching productivities, they are able to explain these same factors in terms of current economic conditions.

The main innovation of this study is the method the authors use to measure the expected job match quality, which they argue can be approximated by the expected number of job offers received. Although the number of job offers is not directly measurable, Hagedorn and Iourii show that it is roughly equal to what they call "the sum of labor market tightness"—that is, the ratio of the aggregate stock of vacancies to the unemployment rate. When the authors include this measure of the expected number of offers in their regression analysis to control for unobserved idiosyncratic productivity, they find that factors such as the lowest unemployment rate since the start of a job or the present unemployment rate when a job begins lose their significance in terms of predicting wages. □