of money controlled by the postal savings system and allocated through FILP, and the efforts to prevent bank and business failures have all prevented the market recovery process from working in Japan. These repeated government interventions have maintained the existing structure of production, delaying its alignment to the particular demands of consumers.

In the past half century Japan has experienced both high growth and prolonged stagnation. During the period of rapid growth, despite the existence of MITI, low taxes and low levels of government intervention were the main policies driving that growth. During the prolonged stagnation of the 1990s, economic growth suffered because the opposite was true.

About the Author
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Further Reading

Critical Accounts of State Industrial Planning

Favorable Accounts of Industrial Planning

Articles on Japan’s Recession


Job Safety
W. Kip Viscusi

Many people believe that employers do not care about workplace safety. If the government were not regulating job safety, they contend, workplaces would be unsafe. In fact, employers have many incentives to make workplaces safe. Since the time of Adam Smith, economists have observed that workers demand "compensating differentials" (i.e., wage premiums) for the risks they face. The extra pay for job hazards, in effect, establishes the price employers must pay for an unsafe workplace. Wage premiums paid to U.S. workers for risking injury are huge; they amount to about $2.45 billion annually (in 2004 dollars), more than 2 percent of the gross domestic product and 5 percent of total wages paid. These wage premiums give firms an incentive to invest in job safety because an employer who makes the workplace safer can reduce the wages he pays.

Employers have a second incentive because they must pay higher premiums for workers' compensation if accident rates are high. And the threat of lawsuits over products used in the workplace gives sellers of these products another reason to reduce risks. Of course, the threat of lawsuits gives employers an incentive to care about safety only if they anticipate the lawsuits. In the case of asbestos litigation, for example, liability was deferred by several decades after the initial exposure to asbestos. Even if firms had been cognizant of the extent of the health risk—and many were not—none of them could have anticipated the shift in legal doctrine that, in effect, imposed liability retroactively. Thus, it is for acute accidents rather than unanticipated diseases that the tort liability system bolsters the safety incentives generated by the market for safety.

How well does the safety market work? For it to work well, workers must have some knowledge of the risks they face. And they do. One study of how 496 workers perceived job hazards found that the greater the risk of injury in an industry, the higher the proportion of workers in that industry who saw their job as dangerous. In industries with five or fewer disabling injuries per million hours worked, such as women’s outerwear manufacturing and the communication equipment industry, only 24 percent of surveyed workers considered their jobs dangerous. But in industries with forty or more disabling injuries per million hours, such as the logging and meat products industries, 100 percent of the workers knew that their jobs were
dangerous. That workers know the dangers makes sense. Many hazards, such as visible safety risks, can be readily monitored. Moreover, some dimly understood health risks are often linked to noxious exposures and dust levels that workers can monitor. Also, symptoms sometimes flag the onset of some more serious ailment. Byssinosis, for example, a disease that afflicts workers exposed to cotton dust, proceeds in stages.

Even when workers are not well informed, they do not necessarily assume that risks are zero. According to a large body of research, people systematically overestimate small risks and underestimate large ones. If workers overestimate the probability of an injury that occurs infrequently—for example, exposure to a highly publicized potential carcinogen, such as secondhand smoke—then employers will have too great an incentive to reduce this hazard. The opposite is also true: when workers underestimate the likelihood of more frequent kinds of injuries, such as falls and motor vehicle accidents on the job, employers may invest too little in preventing those injuries.

The bottom line is that market forces have a powerful influence on job safety. The $2.45 billion in annual wage premiums referred to earlier is in addition to the value of workers’ compensation. Workers on moderately risky blue-collar jobs, whose annual risk of getting killed is 1 in 25,000, earn a premium of $280 per year. The imputed compensation per “statistical death” (25,000 times $280) is therefore $7 million. Even workers such as coal miners and firemen, who are not strongly averse to risk and who have knowingly chosen extremely risky jobs, receive compensation on the order of $1 million per statistical death.

These wage premiums are the amount workers insist on being paid for taking risks—that is, the amount workers would willingly forgo to avoid the risk. Employers will eliminate hazards only when it costs them less than what they will save in the form of lower wage premiums. For example, the employer will spend $10,000 to eliminate a risk if doing so allows the employer to pay $11,000 less in wages. Costlier reductions in risk are not worthwhile to employees (since they would rather take the risk and get the higher pay) and are not voluntarily undertaken by employers.

Other evidence that the safety market works comes from the decrease in the riskiness of jobs throughout the century. One would predict that, as workers become wealthier, they will be less desperate to earn money and will therefore demand more safety. The historical data show that this is what employees have done and that employers have responded by providing more safety. As per capita disposable income per year rose from $1,085 (in 1970 prices) in 1933 to $3,376 in 1970, death rates on the job dropped from 37 per 100,000 workers to 18 per 100,000. Since 1997, fatality rates have been less than 4 per 100,000.

The impetus for these improvements has been increased societal wealth. Every 10 percent increase in people’s income leads them to increase by 6 percent the price they charge employers for bearing risk. That is, their value of statistical life increases, boosting the wages required to attract workers to risky jobs.

Despite this strong evidence that the market for safety works, not all workers are fully informed about the risks they face. They may be uninformed about little-understood health hazards that have not yet been called to their attention. But even where workers’ information is imperfect, additional market forces are at work. Survey results indicate that of all workers who quit manufacturing jobs, more than one-third do so when they discover that the hazards are greater than they initially believed. Losing employees costs money. Production suffers while companies train replacements. Companies, therefore, have an incentive to provide a safe work environment, or at least to inform prospective workers of the dangers. Although the net effect of these market processes does not always ensure the optimal amount of safety, the incentives for safety are substantial.

Beginning with the passage of the Occupational Safety and Health Act of 1970, the federal government has attempted to augment these safety incentives, primarily by specifying technological standards for workplace design. These government attempts to influence safety decisions formerly made by companies generated substantial controversy and, in some cases, imposed huge costs. A particularly extreme example is the 1987 OSHA formaldehyde standard, which imposed costs of $78 billion for each life that the regulation is expected to save. Because the U.S. Supreme Court has ruled that OSHA regulations cannot be subject to a formal cost-benefit test, there is no legal prohibition against regulatory excesses. However, OSHA sometimes takes account of costs while designing regulations. For example, OSHA set the cotton dust standard at a level beyond which compliance costs would have grown explosively.

Increases in safety from OSHA’s activities have fallen short of expectations. According to some economists’ estimates, OSHA regulations have reduced workplace injuries by, at most, 2–4 percent. Why such a modest impact on risks? One reason is that the financial incentives for safety imposed by OSHA are comparatively small. Although total penalties have increased dramatically since 1986, they averaged less than $10 million per year for many years of the agency’s operation. By 2002, the total
annual OSHA penalties levied had reached $149 million. The $245 billion wage premium that workers “charge” for risk is more than sixteen hundred times as large.

The workers’ compensation system that has been in place in the United States since the early twentieth century also gives companies strong incentives to make workplaces safe. Premiums for workers’ compensation, which employers pay, totaled $26 billion annually as of 2001. Particularly for large firms, these premiums are strongly linked to their injury performance. Statistical studies indicate that in the absence of the workers’ compensation system, workplace death rates would rise by 27 percent. This estimate assumes, however, that workers’ compensation would not be replaced by tort liability or higher market wage premiums. The strong performance of workers’ compensation, particularly when contrasted with the command-and-control approach of OSHA regulation, has led many economists to suggest that an injury tax be instituted as an alternative to the current regulatory standards.

The main implication of economists’ analysis of job safety is that financial incentives matter and that the market for job safety is alive and well.

About the Author
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Further Reading

Junk Bonds
Glenn Yago

Junk bonds, also known less pejoratively as high-yield bonds, are bonds that are rated as “speculative” or “below investment” grade issues: below BBB for bonds rated by Moody’s and below Baa for bonds rated by Standard and Poor’s (the two main debt-rating agencies). Bond ratings measure the perceived risk that the bonds issuer will not make interest payments or repay the principal at maturity. The riskier a bond is, other things being equal, the lower its rating. The highest-rated nondefaulted bonds are rated AAA or Aaa, and the lowest are rated C, with defaulted bonds rated D; thus, junk bonds can be rated anywhere between Baa (BB) and D. As junk bonds are perceived to be riskier than other types of debt, they typically trade at higher yields—that is, higher rates of return—than investment-grade bonds. Over the past twenty years, this difference, or spread, between junk bonds and U.S. Treasury bonds has varied between three and nine percentage points, averaging six percentage points. The debt of 95 percentage of U.S. companies with revenues over $35 million (and of 100 percent of companies with revenues less than that) is rated noninvestment grade, or junk. Today, junk bond issuers that are household names include U.S. Steel, Delta, and Dole Foods. Moreover, the use of high-yield securities for corporate financing greatly expanded after the mid-1990s in Latin America, Asia, and Europe (both in transition markets in Central and Eastern Europe and in the European Union). Many high-yield bonds issued in the United States are now placed by foreign corporations spurred by privatizations, mergers and restructurings, and new technology expansions.

The history of high-yield bonds is nearly as long as the history of public capital markets, with early issuers including General Motors, IBM, J. P. Morgan’s U.S. Steel in the first few decades of the twentieth century, and the United States of America soon after the nation’s founding in the 1780s. The public market for new-issue junk bonds gradually atrophied, and for most of the twentieth century—up to the 1970s—all new publicly issued bonds were investment grade. The only publicly traded junk bonds were ones that had once been investment grade but had become “fallen angels,” having been downgraded to junk as the financial condition of the issuer deteriorated. The interest payments on these bonds were not high, but with the bonds selling at pennies on the dollar, their yields were quite high. Companies deemed speculative grade were effectively shut out of the public capital market and had to rely on more expensive and restrictive bank loans and private placements (where bonds are sold directly to investors such as insurance companies). Interestingly, even though these private placements were riskier than the public high-yield bonds of the 1980s, they were never labeled “junk.” Indeed, the label “junk” and the decision about what level of risk it applies to, though now well established, is essentially arbitrary.