

## IN THIS ISSUE

- Teacher Incentives
- The Misallocation of Credit in Japan
- Do Tax Subsidies Increase Health Insurance Among the Uninsured?
- The Flattening of Corporate Management
- Multinationals, Wages, and Working Conditions in Developing Countries
- Incapacitation, Concentration, and Juvenile Crime

## Teacher Incentives

Giving merit pay increases to teachers in U.S. schools with improved student scores on standardized tests has been promoted enthusiastically as one solution to the dismal performance of some public schools. In **Teacher Incentives** (NBER Working Paper No. 9671), co-authors **Paul Glewwe**, **Nauman Ilias**, and **Michael Kremer** analyze data from a randomized evaluation with similar teacher incentives in Kenya and find “little evidence” that “teachers responded to the program by taking steps to reduce dropouts or increasing effort on stimulating long-run learning.”

As in the United States, teacher salaries in Kenya are set primarily through collective bargaining. Hiring is based on academic qualifications, and salaries depend primarily on education and experience. Strong civil service and union protection make teachers difficult to fire. With benefits included, Kenyan teachers’ total compensation is up to 5 times the average annual per capita income in that country.

There are waiting lists for jobs

and substantial unemployment among people qualified to be teachers. Absenteeism is also a serious problem. Teachers are absent from school about 20 percent of the time.

In 1997, a Dutch charity sponsored a two-year program of prizes for the top-scoring and most-improved schools based on 4th through 8th grade student scores on

value from 21 to 43 percent of teacher monthly salaries.

Students in the incentive program schools were more likely to take the exams and had higher test scores, primarily in geography, history, and Christian religion, the subjects most susceptible to gains from extra coaching and memorization. The authors conclude that “Teacher

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district exams in two Western Kenyan districts. Fifty schools were randomly selected out of the 100 that applied. To discourage schools from manipulating the pool of students taking the exams, students who did not take the exam were assigned low scores. Prizes were comparable to merit pay programs in the United States, ranging in

attendance did not improve, homework assignments did not increase, and pedagogy did not change. There is, however, evidence that teachers increased effort to raise short-run test scores by conducting more test preparation sessions.” The test score gains evaporated after the end of the incentive program.

— Linda Gorman

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## The Misallocation of Credit in Japan

**I**n **Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan** (NBER Working Paper No. 9643, commissioned for an NBER Project on Japan and originally presented at a conference in Tokyo), co-authors **Joe Peek** and **Eric Rosengren** investigate what they consider an important factor in the long-running economic stagnation in Japan: Japanese banks' practice of continually extending credit to very weak or even insolvent firms. The authors maintain that in Japan's bank-centered economy, where banks often have responsibility for corporate monitoring and governance, many lending decisions are strongly influenced by a perceived duty to support troubled firms, rather than by the sort of credit-risk analysis practiced in the United States. Peek and Rosengren point out that both government policy and bank regulations in Japan actually encourage banks to keep extending credit to problematic borrowers. As a result, the banks "evergreen" loans.

To investigate how Japanese banks allocated credit across firms in the 1990s, Peek and Rosengren examine the pattern of loans obtained by all firms included in the Pacific-Basin Capital Market Databases, which encompass all first- and second-section firms traded on the Tokyo stock exchange, and information from several bank capital and loan monitoring databases. Their analysis bears out a number of their suspicions.

First, they confirm that banks "evergreen" loans: that is, they fund firms to enable the firms to make

interest payments on outstanding loans, and thus to avoid, or at least delay, bankruptcy. This practice allows the banks to have healthier looking balance sheets, because the banks report fewer problem loans and make smaller loan loss provisions. The evergreening of bank

bearance by bank regulators has allowed the banks to neglect restructuring, bank support for troubled and noncompetitive firms has prevented the needed restructuring of non-financial firms. The evergreening of loans in Japan clearly insulated many severely trou-

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"The evergreening of bank loans for 'cosmetic purposes' was widespread, with banks more likely to increase loans to firms with weaker financial health."

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loans for "cosmetic purposes" was widespread, with banks more likely to increase loans to firms with weaker financial health. With "balance sheet cosmetics" in mind, banks had more of an incentive to extend additional credit to troubled firms with loans already outstanding as those same banks' reported risk-based capital ratios neared their required capital ratios. What was important was the appearance rather than the reality of adequate capital.

Second, the data confirm that corporate connections make it even more likely that banks will extend such credit. Third, government-controlled banks were also more likely to increase loans to financially weak firms. Finally, the data strongly indicate that the only lending institutions apparently not subject to the incentives and pressures to evergreen loans to the weakest firms are non-affiliated, non-bank lenders.

From their analysis, Peek and Rosengren conclude that just as for-

bled Japanese firms from market forces and may have prevented a bank credit crunch. Yet that practice only made economic problems worse by promoting the allocation of an increasing share of bank credit to many of the firms least likely to use it productively. In other words, to the degree that banks reacting to perverse incentives extended credit to firms with poor prospects, overall economic recovery was hampered.

By insulating troubled, and perhaps insolvent, firms from market forces that would force either a major restructuring or bankruptcy of the firms, Peek and Rosengren say, the misallocation of credit severely prolonged the malaise as seen in "the lost decade" of the 1990s. Furthermore, such a misallocation of credit, by inhibiting the needed restructuring of the economy, adversely affects the long-run prospects for growth of the Japanese economy.

— Matt Nesvisky

## Do Tax Subsidies Increase Health Insurance among the Uninsured?

In recent years, politicians have expressed concern with the growth over the past two decades in the number of people not covered by health insurance. About 41 million non-elderly Americans are without health insurance coverage, one 2002 study notes, despite efforts in the past 15 years to expand the public insurance safety net, especially for children.

Roughly one-quarter of the uninsured are offered health insurance through their job, or the job of a family member, but do not take it up. These individuals are typically considered the “low hanging fruit” of the uninsured population, as the potentially cheapest group to bring into the ranks of the insured. Moreover, increases in the number of employees who decline to take up insurance offered by their employers largely explain the drop in insurance coverage over the last two decades.

However, new work by NBER Research Associate **Jonathan Gruber** and **Ebonya Washington** indicates that government subsidies to encourage workers to take up employer-provided insurance do little to improve coverage. Moreover, the authors note in **Subsidies to Employee Health Insurance Premiums and the Health Insurance Market** (NBER Working Paper No. 9567), the cost to the government in lost revenues from such a tax subsidy could be huge.

To reach this conclusion, the authors examine what happened to

employee take-up decisions when tax subsidies were given to federal workers in the Federal Employee Health Benefits Program (FEHBP). Roughly one-half of all employees in the United States pay their insurance premiums with pre-tax dollars. But until 1994, virtually all of the federal employees insured through FEHBP paid their insurance premiums on a post-tax basis. Then, in 1994, employees of the postal service, representing roughly one-third

employees. Their central estimates suggest that for each 10 percent that health insurance premiums were tax subsidized, take-up went up by only 0.2 percent, a very small reaction. These results confirm other papers’ findings that employees are not very sensitive to health insurance contribution rates in their decision to take up health insurance coverage.

Moreover, Gruber and Washington find that subsidizing insurance coverage caused federal employees to

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“Their central estimates suggest that for each 10 percent that health insurance premiums were tax subsidized, take-up went up by only 0.2 percent, a very small reaction.”

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of all federal workers, were given the right to pay their insurance premiums on a pre-tax basis. The remaining federal employees were given this right in October 2000. This saved them tax dollars, significantly reducing the cost of taking up insurance coverage; for a typical worker in Washington, DC, the cost of taking up health insurance fell by about \$1000.

These changes provide Gruber and Washington with an excellent laboratory for learning about the impact of a sizeable reduction in the after-tax price of FEHBP insurance on the take-up of that insurance by federal employees. But they find that this sizeable reduction had essentially no impact on the rate of take-up of insurance by federal

choose more expensive health insurance plans, when they did choose coverage. This further raised the cost to the government of this intervention.

The authors conclude that “subsidizing employee premiums is unlikely to be a cost-effective avenue for increasing insurance coverage.” They estimate that these new tax subsidies cost the government roughly \$700 million in revenues. And they have prompted only 11,000 to 20,000 new persons — a tiny percentage of the total number of federal employees — to take up the insurance coverage. So the revenue cost for each newly insured person was \$31,000 to \$83,000.

— David R. Francis

## The Flattening of Corporate Management

U.S. corporate hierarchies have become flatter over the past two decades, according to new research from the NBER by **Raghuram Rajan** and **Julie Wulf**. Chief Executive Officers (CEOs) are increasing the number of managers who report directly to the top while there has been a reduction in the ranks of middle managers. As organizations become flatter, salary and bonus profiles across the hierarchy become steeper, and long-term incentive pay, including the use of stock grants and stock options, spreads through the organization.

In **The Flattening of the Firm: Evidence from Panel Data on the Changing Nature of Corporate Hierarchies** (NBER Working Paper No. 9633), Rajan and Wulf present evidence from top managers at more than 300 U.S. companies represented in the largest private compensation survey, conducted by Hewitt Associates, a human resources consulting firm. The companies in the survey, which draws on established firms across industries, have an average of almost 50,000 employees.

The number of managers in a company who report directly to the CEO has increased from an average of four in 1986 to an average of seven today. Rajan and Wulf concentrate on divisional managers — the lowest management rank with profit center responsibility and the position most consistently defined in the survey — and find that the number of division heads who report directly to the CEO has increased by 300 percent. The number of levels in the management hierarchy between division heads and CEOs has declined by 25 percent.

Rajan and Wulf show that these patterns do not simply reflect a change in corporate structure, whereby companies have regrouped into fewer, larger operating divi-

sions. By focusing on division manager positions for which they have a number of years of data — and which were not affected greatly by restructuring over the period — the authors show that, regardless of changes in size, management ranks are becoming flatter. Further, more divisional managers are being appointed officers of their companies. (Officers are defined by the individual's responsibilities and duties in accordance with Securities

tend to have more long-term pay incentives, like stock and stock options. This is close to what is traditionally seen in a partnership, with significant pay increases associated with promotion, and a greater emphasis on long-term incentives relative to short-term compensation, especially at the top.

Rajan and Wulf conclude that the explanation for flatter corporate hierarchies that fits most closely with the facts is technological and

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“Layers of intervening management are being eliminated, and ... the CEO is coming into direct contact with more managers in the company.”

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and Exchange Commission and Internal Revenue Service rules.)

These findings suggest that layers of intervening management are being eliminated, and that the CEO is coming into direct contact with more managers in the company. One example of this change is the elimination of the position of Chief Operating Officer (COO), which accounts for a significant part of the increase in CEO reports. The number of firms with COOs has decreased by 20 percent over the study period. Getting rid of the COO also is associated with granting greater authority to division heads: they are more likely to be appointed officers in firms that have eliminated the COO position. This suggests that they inherit some of the authority of the eliminated middle layers.

The structure of pay is different in flatter organizations, too, with pay and long-term incentives more closely reflecting a partnership model. Division managers in companies with flat hierarchies are paid less in salary and bonus than people in similar positions in companies with taller corporate hierarchies. Employees in flatter organizations

environmental change. As companies use relatively less physical capital — and rely more on human capital — organizational structure and pay patterns more reflect those of partnerships. Pay increases more sharply with promotion, and long-term incentives — such as equity-based compensation — help to tie employees into the company, thus bringing management and shareholder interests into closer alignment.

If companies face increasingly stiff competition, as a result of deregulation or increased international trade, there may be changes in the delegation of responsibility within corporate hierarchies. Managers may be given greater autonomy so that they can respond more quickly to competitive pressures. The elimination of layers of middle management clearly allows companies to delegate more responsibility to divisional managers. Pay that is linked to personal performance and long-term share price performance may help to keep these managers focused on achieving long-term performance.

— Andrew Balls

## Multinationals, Wages, and Working Conditions in Developing Countries

**D**o multinational firms exploit workers in poor nations? In **The Effects of Multinational Production on Wages and Working Conditions in Developing Countries** (NBER Working Paper No. 9669, originally presented at the 2002 NBER International Seminar on International Trade), authors **Drusilla Brown, Alan Deardorff,** and **Robert Stern** offer a resounding “no.” Indeed, the authors conclude that “there is virtually no careful and systematic evidence demonstrating that... multinational firms adversely affect their workers, provide incentives to worsen working conditions, pay lower wages than in alternative employment, or repress worker rights.” In fact, they argue, the opposite is true.

Their paper begins with an overview of two influential organizations involved in the anti-sweatshop movement: the Fair Labor Association (FLA), and the Worker Rights Consortium (WRC). The FLA was created in 1998 as an outgrowth of Apparel Industry Partnership established by the Clinton administration, while the WRC is the product of student movements on U.S. campuses. Although the groups differ on specific issues — such as the establishment of a “living wage” and the choice of confrontation versus dialogue as campaign tactics — they have both sought to provide codes of conduct and to monitor multinational firms that produce apparel and related items for colleges and universities.

Academic economists have different responses to these debates. In September 2000, a group of economists (including Deardorff and Stern) formed the Academic Consortium on International Trade (ACIT). It circulated a letter to presidents of 600 academic institutions, urging that greater attention be given to the possibility that mandating codes of conduct and higher wages in response to the anti-sweatshop advocates actually could be

detrimental to workers in poor countries. In October 2001, a rival group called Scholars Against Sweatshop Labor (SASL) wrote a letter to some 1600 academic presidents, expressing their support for the activist movements.

Further, a careful examination of economic theory on capital and technology flows fails to reveal any unambiguous conclusions regarding the impact of multinational production on wages in host countries, the authors contend. “There seems to be

largest premiums accrue to white-collar workers, foreign investment may raise wages on average yet produce increased income inequality between skilled and unskilled workers in the host nation.

Finally, the authors tackle the popular criticism that multinational firms are drawn to countries with poor worker rights. Citing a 1997 survey of transnational managers, the authors explain how labor costs are actually less important than many other factors — such as mar-

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a presumption...that FDI [foreign direct investment] will at least raise some wages, but even this is not certain...” they explain. “It is therefore an empirical question whether the actual operations of multinationals have raised or lowered wages in developing countries.”

When they look at the empirical evidence, the authors review survey data as well as econometric studies. The surveys they cite reveal that foreign-owned and subcontracting manufacturing firms in poor nations tend to pay higher wages than local firms, and that export-oriented firms tend to pay higher wages. In Mexico, for example, firms with more than 80 percent of all sales devoted to exports paid wages at least 58 percent higher than non-exporting firms. And, a 2001 study found that foreign-owned plants in Indonesia paid 33 percent more for blue-collar workers and 70 percent more for white-collar workers than locally owned firms.

Brown, Deardorff, and Stern consider possible reasons for such wage premiums and conclude that the premiums are most likely linked to labor productivity gains resulting from foreign ownership. Interestingly, the authors explain that, since the

ket size, political stability, labor quality, and the legal environment — that global companies consider when they select a country or location for FDI. “Labor rights that promote political stability and enhance labor quality,” the authors explain, “may in fact make a particular location attractive to foreign investors.” Also, the authors cite analyses finding that FDI is positively correlated with the right to establish unions and the right to strike, but negatively correlated to an index of child labor. Most conclusively, they cite a 2001 study by International Labor Organization economist David Kucera, who finds that FDI is attracted to countries with stronger civil liberties, even if labor costs there are higher.

The authors acknowledge that public pressure might be brought to bear on some multinational companies (and their suppliers) in cases of abusive labor policies in developing nations. But they caution that “measures that are punitive or provide firms an incentive to alter the location of production are unwarranted and may adversely affect the very workers they are intended to benefit.”

— Carlos Lozada

## Incapacitation, Concentration, and Juvenile Crime

Crime by juveniles affects millions of people in the United States each year, imposing substantial costs on society. In 1997, 2.8 million people under the age of 18 were arrested, accounting for approximately 20 percent of all arrests. Incarceration of a juvenile is associated with a 10-30 percent decrease in lifetime earnings. The cost to society of allowing one youth to leave high school for a life of crime is estimated to range from \$1.7 to \$2.3 million.

In **Are Idle Hands the Devil's Workshop? Incapacitation, Concentration, and Juvenile Crime** (NBER Working Paper No. 9653), **Brian Jacob** and **Lars Lefgren** examine the effect of school attendance on juvenile crime. They use data from 29 jurisdictions from 1995-9 collected by the Bureau of Justice Statistics and compiled in the National Incident-Based Reporting System. To this crime data, they add school calendar data for each year, as reported by the corresponding school districts. However, crime may be systemically higher or lower on days when school is not in session for a variety of unrelated reasons. For example, there is evidence that violent crime increases with temperature and on weekends. To address this concern, the authors focus on teacher in-service days — the days on which students do not attend

school because teachers are receiving professional training or for planning purposes. Because these days are scattered throughout the school year, they are less likely to be correlated with other factors that may influence juvenile crime.

Jacob and Lefgren find that school attendance appears to reduce the incidence of juvenile property crime by about 15 percent, but increases the level of juvenile crime by nearly 30 percent. They estimate

crime: the incapacitation and social interaction models. The incapacitation model assumes that when juveniles are provided with structured or monitored activities, they are less likely to engage in anti-social behaviors such as property crime. The social interaction or concentration model assumes that as the concentration of juveniles in a given place increases and they subsequently interact socially more frequently, their involvement in violent crimes

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“Lengthening the school year by one day would lead to a decrease of 0.29 property crimes and an increase of 0.25 violent crimes in a city with a population of 120,000.”

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that lengthening the school year by one day would lead to a decrease of 0.29 property crimes and an increase of 0.25 violent crimes in a city with a population of 120,000. Given the average reported value of stolen or damaged property in the study sample of \$1,088, the reduction of property crime would result in a savings of approximately \$318. However, the total cost of an assault committed by a juvenile is \$8,515, making the costs of adding another school day about \$2,170, not including the costs associated with processing the case through the criminal justice system.

The authors' findings are consistent with two theories of juvenile

increases.

The findings have important implications for after-school youth activities. Proponents of these activities point to the fact that violent crime for teenagers rises during the after-school hours. But, because these programs increase the concentration of young people in certain locations, they run the risk of raising the number of altercations that turn violent. For these programs to be effective, they need to offer structured and monitored activities without substantially increasing the concentration of youth involved.

— Les Picker

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