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Increased Arrests Deter Crime

Stiffer punishment for criminal acts can reduce crime in either of two ways: deterrence or incapacitation. Deterrence means that the increased threat of punishment will convince potential criminals not to commit some crimes. Incapacitation means that a criminal who is behind bars will not be able to victimize society.

In **Why Do Increased Arrest Rates Appear to Reduce Crime: Deterrence, Incapacitation, or Measurement Error?** (*NBER Working Paper No. 5268*), **Steven Levitt** points out that the distinction between deterrence and incapacitation is important from a public policy perspective. If incapacitation is the primary source of crime reduction, then a "three strikes and you're out" policy is likely to be both costly and inefficient. The total number of prisoners will increase dramatically. But since the frequency of criminal activity declines steeply for almost all individuals after their early twenties, the prison population increasingly will be composed of aged inmates who likely would not be committing crimes if they were free, and thus would pose little threat to society. In contrast, if the primary effect of tough laws is deterrence, then there actually could be a reduction in total time served, while the crime rate would fall.

Using city-level arrest data from 1970 to 1992 for seven crimes—murder, forcible rape, aggravated assault, robbery (theft involving violence or the threat of force), burglary (unlawful entry of a structure to commit a felony or theft), larceny (unlawful taking of property without violence, force, or fraud), and motor vehicle theft—and statistics on recidivism (the percentage of prisoners who commit crimes upon release from prison), Levitt finds that deterrence is more important than incapacitation in reducing crime. This is particularly true for property crimes and assault, which account for more than 90 percent of the seven crimes he studies. Deterrence explains about 75 percent of the overall impact of increased arrests on reducing crime.

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In the case of burglary, each additional arrest eliminates two burglaries through deterrence, compared to only 0.1 burglary via incapacitation. Each additional arrest for auto theft reduces the number of such crimes by 0.5 through deterrence and 0.1 through incapacitation.

To differentiate between deterrence and incapacitation, Levitt examines how the crime rate for one crime category responds when the arrest rate for a *different* crime changes. If deterrence is at work, criminals will tend to commit more robberies and fewer burglaries when the penalties for burglary increase. If incapacitation is operative, however, both robberies and burglaries should decline.

Early experiences with "three strikes" laws appear to be consistent with the argument that deterrence works. Indeed, the state of Washington, whose voters passed a "three strikes" law in 1993, has seen a drop in violent crime, and projects the need for only a 10 per-

cent increase in prison capacity over the next ten years. California saw a 7.2 percent decline in violent crime in the first year under "three strikes," and the California Department of Corrections recently reduced by 25 percent its projection of the increase in prisoners attributable to the policy. DRF

In the Stock Market, Value Beats Glamour

One of the great unsolved questions about stock market investing is why "value" strategies—that is, investors choosing stocks based on ratios such as book-to-market or earnings-to-price—produce superior returns to other strategies over the long term. Some researchers have held that the difference is attributable to higher risk with value stocks. Others have disagreed, suggesting that value stocks have been underpriced relative to their risk-and-return characteristics. This second group of researchers suggests that value stocks provide superior returns in the future because the market slowly realizes that their earnings–growth rates are higher than it initially expected. Conversely, the market slowly realizes that growth rates for the earnings of "glamour stocks"—those that have provided superior returns in the past—are lower than expected.

In a new study for the NBER, **Rafael LaPorta, Josef Lakonishok, Andrei Shleifer,** and **Robert Vishny** examine the role of errors in expectations in explaining the superior return to value stocks. In **Good News for Value Stocks: Further Evidence on Market Efficiency** (*NBER Working Paper No. 5311*), they find that a significant portion of the difference in return between value and glamour stocks is attributable to "earnings surprises" that are systematically more positive for value stocks. Their results are based on assigning stocks to value and glamour portfolios according to two criteria: the book-to-market ratio, and a two-way classification based on cash-flow-to-price and long-term sales growth.

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The authors measure the effect of quarterly earnings announcements on the stock prices of the two portfolios. These "event returns" are substantially higher for the value stocks than for the glamour stocks. In the full sample of all stocks traded on the New York Stock Exchange, the American Stock Exchange, and over the NASDAQ, earnings-announcement differences in returns explain 25–30 percent of the annual differences in returns between value and glamour stocks in the first two years after portfolio formation, and approximately 15–20 percent of differences in returns over years four and five after formation.

The authors conclude that more research must be done to adequately explain investors' apparently irrational preference for holding glamour stocks. According to a forthcoming working paper by Lakonishok, Shleifer, and Vishny, institutional investors historically have overweighted glamour stocks in their portfolios. Given the evidence in the current study, this might partially explain the well-known fact that money managers, in the aggregate, have underperformed the overall market in the past 25–30 years. RN

How Good Are Estimates of the Natural Rate of Unemployment?

Debates on U.S. monetary policy often focus on the level of unemployment and whether it is nearing its natural rate, which is often inelegantly referred to as the "NAIRU" (the nonaccelerating inflation rate of unemployment). If unemployment drops below the NAIRU for a prolonged period of time, then inflation tends to rise.

Because the NAIRU cannot be measured directly, it must be inferred indirectly from statistical evidence on the past and present relationship between inflation and unemployment. In the recent NBER

study, **How Precise Are Estimates of the Natural Rate of Unemployment?** (*NBER Working Paper No. 5477*), **Douglas Staiger, James Stock,** and **Mark Watson** examine various estimates of the NAIRU and focus in particular on the statistical precision of those estimates.

Based on their work, they argue that "the NAIRU is known with substantially less precision than is implicitly assumed in the current debates." The most common measure of statistical precision is the interval that has a 95 percent chance of containing the true value. Using data updated since writing the Working Paper, they suggest that the current value of the NAIRU is 6.1 percent—but that the 95 percent confidence interval is a wide 4.6 percent to 6.9 percent!

Although this measure of uncertainty is used often, other measures are arguably more useful for policymaking. For example, based on the most recently available data, the odds that the NAIRU is less than the recent level of unemployment, 5.6 percent, are small, approximately one in seven. Thus, while there is considerable uncertainty about the precise value of the NAIRU, it is fairly unlikely that it falls much below recent and current levels of unemployment.

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In additional work, the authors find that the NAIRU has been trending downward during the late 1980s and 1990s, although the determinants of this trend are difficult to pinpoint because of the imprecision with which the NAIRU is estimated.

State Financing of Local Schools Raises Costs and Lowers Quality

In 1956, an economist named Charles Tiebout wrote an article in which he claimed that competition between local governments would work similarly to competition between firms: just as consumers switch from one firm to another that charges a lower price or provides a higher-quality product, "customers" would move from one local government jurisdiction to another in response to better government-provided services or lower taxes. In other words, people would "vote with their feet."

In **Is There an Equity–Efficiency Trade-Off in School Finance? Tiebout and a Theory of the Local Public Goods Producer** (*NBER Working Paper No. 5265*), **Caroline Hoxby** reasons that when households are better able to choose among school districts, their comparisons give them more information about how their own school district is doing. Armed with this better information, local referendums and budget votes are much more powerful tools for making schools care about both quality of education and cost. Using data on the degree of competition that school districts face, Hoxby finds that school districts that face more competition have lower costs and better quality of education for a given cost.

Hoxby measures the degree of competition by the extent of state funding for public schools: the higher the percentage of funding provided by the state, the lower the degree of competition. State-provided funding lessens the incentive for public school managers to provide quality or to cut costs, because the state-provided portion of their budget comes through whether they are efficient or not. In states where the government provides a smaller portion of the budget, by contrast, public schools have a stronger incentive to provide quality and to produce it at lower costs, because doing so raises property values. Therefore, property owners in such districts who want to maximize the value of their property have an incentive to make sure that low-cost, high-quality education is available.

Hoxby observes that the degree of state funding for schools varied dramatically among states between 1940 and 1980, especially in the earlier decades. Even as late as 1970, Delaware's state government accounted for 88 percent of public school spending, while the Commonwealth of Massachusetts contributed only 19 percent. Hoxby shows that more competition does mean lower cost: a 10-percentage-point increase in the state's share of school spending raised per-pupil spending by 11.1 percent in the 1940s and by 5.6 percent in the 1980s. Hoxby also finds that a 10-percentage-point increase in the state's share of school spending caused the student/teacher ratio—

another measure of school costs—to fall by 0.8 students in the 1940s and by 0.3 students in the 1970s.

How do competing school districts keep costs down? One way is by resisting unionization of teachers, because school districts typically must pay unionized teachers more. A 10-percentage-point increase in the state's share of school spending, Hoxby finds, raises the average teacher salary by 2.5 percent and raises the percentage of teachers covered by collective bargaining agreements by a whopping 14 percentage points.

Interestingly, even though the less competitive, more state-funded schools had higher costs, they did not produce higher quality, she finds. A 10-percentage-point increase in the state's share of funding caused a 0.4-percentage-point decrease in high school completion in the 1950s and a 1-percentage-point decrease in high school completion in the 1970s. DRH

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