

The NBER Digest

NATIONAL BUREAU OF ECONOMIC RESEARCH

Digest OnLine at: www.nber.org/digest September 1999

IN THIS ISSUE

- New Facts in Finance, and Portfolio Advice for a Multifactor World
- Fiscal Incentives Raise Student Disability Rates
- Banks are Key to Full Mexican Recovery
- Higher Beer Prices Would Reduce Campus Violence

New Facts in Finance, and Portfolio Advice for a Multifactor World

The last 15 years have seen a revolution in the way financial economists understand the world, and in turn, their portfolio advice. In **New Facts in Finance** (NBER Working Paper No. 7169) and **Portfolio Advice for a Multifactor World** (NBER Working Paper No. 7170) **John Cochrane**, Director of the NBER Program on Asset Pricing, surveys these developments and summarizes their implications for investors.

Fifteen years ago, economists largely agreed that stock and bond returns were fairly unpredictable over time. This is the famous "random walk" or "coin flip" view of the market. Each day might see good luck or bad luck, but there was no way of telling which in advance. This view, in itself revolutionary, was confirmed in study after study. "Technical" trading rules, newsletters, and other systems were all found to be worthless at predicting day-to-day returns; a good day was just as likely to be followed by upward "momentum" as by downward "profit-taking."

Now we see substantial *long-run* predictability. Signals such as a high price/earnings ratio, a high yield on long-term bonds relative to short-term bonds, and a high foreign interest rate relative to U.S. interest rates seem to predict subsequent stock, bond, and currency returns. They can't predict day-to-day returns, but

it tends to move up or down with the market, the theory says.

Now we recognize that the average returns of many investment opportunities cannot be explained by their tendency to move with the market. In particular, the CAPM does not explain the average returns of stocks sorted on the basis of market price

"High returns apparently are earned for holding risks related to recessions and financial distress, as well as for holding the risk of market declines."

they can predict returns more than half the time at horizons of a year or more.

The Capital Asset Pricing Model (CAPM) once reigned supreme as the explanation for why some stocks, funds, or portfolio strategies do better, on average, than others. In this theory, there is one and only one source of risk that earns a reward: namely, movements in the market as a whole. An asset only earns a return higher than a money-market fund if

relative to book value and to overall market value.

Therefore, financial economists now recognize a long-anticipated possibility: that there are *multiple* sources of risk or "factors" that give rise to high average returns. The multiple sources of risk all suggest a common *macroeconomic* character. High returns apparently are earned for holding risks related to recessions and financial distress, as well as for holding the risk of market declines.

NBER Working Papers On-Line

A complete list of all NBER Working Papers with searchable abstracts, and the full texts of Working Papers (issued since November 1994) are available at <http://www.nber.org/wwp.html> to anyone located at a university or other organization that subscribes to the (hard copy) Working Paper series.

If you believe that your organization subscribes, but you cannot access the on-line Working Paper service, please e-mail the NBER at wwp@nber.org for more information and assistance.

Similarly, the long-run forecastability seems related to macroeconomics. Few investors want to hold risk in the bottom of a recession, so stock prices are lower than usual. As we come out of the recession, prices rise, so the low prices have signaled a period of unusually high returns. Conversely, stock returns are predictably low in good times. Most investors are feeling wealthy and are willing to hold substantial risks. They drive up prices, and thus drive down the returns we can expect from the stock market in the future.

What should an investor do about these new facts? Cochrane starts by reviewing the traditional advice, that applies when returns are unpredictable over time, and there is only one source of risk that enhances returns across assets. That advice is to split one's wealth between a money-market fund and a passively man-

aged index fund. The split depends on one's tolerance for risk, but does not depend on investment horizon.

The new facts offer a tantalizing chance to escape this boring advice. For example, people who might lose their jobs in a recession should keep away from stocks that do badly in a recession, or even short sell them, even if those stocks provide high average returns. People who are more secure can then buy such stocks, earning the high average returns. Neither group follows the traditional advice, and the buyers serve a socially useful function by providing "recession-insurance" to others. Similarly, people who are hurt by recessions will naturally sell stocks in recessions, despite their attractive returns. This gives others the opportunity to "market-time": buying stocks when low and selling them later in the boom when high, again provid-

ing a kind of insurance. Cochrane surveys these strategies and a number of careful studies that caution on how they should be used.

However, in the end the average investor must hold the market. For everyone who should buy "value" and other high-yield strategies, there *must* be someone else who, rationally, wants to sell it. If this is not the case, then the unusual returns *must* disappear, and will do so quickly. This proposition is true both for "rational" and for "behavioral" theories of the stock market. Therefore, one portfolio advice cannot fit all investors. Cochrane advises, then, to take the new portfolio advice and depart from an index fund only if you understand the economic function (like recession insurance) behind the strategy, and if you are "different from average" in knowing the right way to exploit it.

Fiscal Incentives Raise Student Disability Rates

Student disability rates have increased by more than 50 percent in U.S. school districts over the past two decades. Since 1977, the proportion of students nationally in grades K through 12 that have been classified as disabled has increased

finds a link between these increases and the state funding formulas that reward local school districts for identifying additional students with special needs.

Relying on data from Texas schools in the 1991–2 through the 1996–7 school years, Cullen finds that a 10 percent increase in the supplemental

approximately 80 percent of the special education population.

Cullen also finds that minority students, students in districts that receive declining levels of state aid, and students in districts with more concentrated enrollments are more likely to be classified as disabled in response to fiscal incentives, suggesting that school districts may be classifying such students for fiscal gain. Cullen cites a study of the Vermont special education system which shows that over a three-year period following a switch from per-pupil funding for special education to a total district enrollment funding model, the number of students receiving special education declined by over 17 percent. Most of the students who returned to general education had been classified with minor learning disabilities or speech impairments. Cullen suggests that localities appear to manipulate special education populations to leverage state funds.

—Lester A. Picker

"More than 35 percent of the six-year increase in student disability rates in Texas is explained by the contemporaneous increase in fiscal incentives."

from 8 percent to 12 percent. Over the same period, the fraction of school district spending that is allocated to special education has increased from 4 percent to 17 percent. For the 1993–4 school year, the 5.4 million students who received special education services cost taxpayers more than \$32 billion in total spending (above what was spent for other students). In **The Impact of Fiscal Incentives on Student Disability Rates** (NBER Working Paper No. 7173), author **Julie Berry Cullen**

revenue generated by a disabled student attributable to the state aid formula results in a 1.4 percent increase in the fraction of students classified as disabled. The data show that more than 35 percent of the six-year increase in student disability rates in Texas is explained by the contemporaneous increase in fiscal incentives. As expected, the greatest increase in student disabilities over this period was in the mildest and least well defined disability categories. These categories currently represent

Banks are Key to Full Mexican Recovery

Mexico's quick emergence from the currency crisis of 1995 is widely viewed as an impressive achievement, both for the country's policymakers and for the international effort that helped Mexico. Rather than resort to protectionism, as in the 1982 debt crisis, Mexico's leaders decided to stick with ongoing trade and economic reforms, while the United States, Canada, and several international institutions offered a vote of confidence in the form of a \$52 billion line of credit. Ultimately, Mexico was able to take advantage of its sharply depreciated real exchange rate to greatly increase exports, creating a surge in trade credited with curtailing a recession. The government was also able to reduce inflation rapidly.

But according to **Anne Krueger** and **Aaron Tornell** writing in **The Role of Bank Restructuring in Recovering from Crises: Mexico 1995–1998** (NBER Working Paper No. 7042), the crisis management strategy did not adequately address the fact that Mexican banks ended up with a lot of bad loans on their balance sheets, and the defaults continue to pile up, despite the overall recovery. They observe that, because of deteriorating banking conditions, Mexico's admirable comeback is also one in which the rising tide does not lift all boats.

In fact, the authors note that outside of the export sector, Mexican businesses have recuperated "sluggishly." Some key domestic-oriented sectors have yet to reach pre-crisis production levels, a situa-

tion Krueger and Tornell link to a credit crunch in which struggling banks have little to lend, and what they do have is available only at very high interest rates.

Ironically, the credit crunch may be linked, to some degree, to the success enjoyed by export-oriented industries. Krueger and Tornell note that mining, manufacturing, and other booming trade-focused businesses are doing so well that they routinely bypass Mexican banks and

1997, the ratio of nonperforming loans to total loans at commercial banks in Mexico was 30 percent. This does not include bad debt already transferred to the Central Bank.

Krueger and Tornell believe there were good reasons Mexico did not deal forthrightly with the banking crisis during the 1995 peso pummeling. In 1995, restoring investor confidence was paramount, and suddenly writing off a giant portfolio of bad loans would have been like trying

"While...it's possible to recover quickly from a major currency crisis, problems in the banking system must be 'fixed' if recovery is to be broad and sustained."

secure capital directly from international financial markets, or from "upstream" partners, all of whom offer much better terms than domestic lenders. That deprives domestic banks of a significant pool of "high quality" patrons who have good credit ratings internationally and whose borrowing would strengthen the quality of the Mexican banks' portfolios. Then banks would be able to provide more money—at better rates—to creditworthy "non-tradable" (that is, firms that sell primarily in the domestic market) firms, such as those in services, construction, and commerce.

According to Krueger and Tornell, some banks are now making matters worse by engaging in risky schemes, as they seek a sudden reversal of fortune in the form of a big payback if the projects are—against the odds—successful. But, predictably, they just end up creating more bad loans. Krueger and Tornell report that in

to put out fire with gasoline. But the authors believe the country today has an economic and political environment sufficiently stable to permit a comprehensive bank overhaul and the imposition of new regulations without major upheaval. They note that, in some ways, Mexico has had "the misfortune of being lucky," with the export surge having "eliminated the immediacy of the crisis and the necessity to fix the banking problem."

A key lesson here, the authors state, is that while, given the proper conditions, it's possible to recover quickly from a major currency crisis, problems in the banking system must be "fixed" if recovery is to be broad and sustained. "Despite Mexico's impressive recovery, the data speak for themselves," the authors conclude. "The small and nontradable firms have recovered only sluggishly and are starved for credit." —Matthew Davis

Higher Beer Prices Would Reduce Campus Violence

If beer cost 10 percent more, the number of college and university students involved in various kinds of

violence would shrink by 4 percent, according to a study by NBER Research Associates **Michael Grossman** and **Sara Markowitz**. Since about one-third of the higher educa-

tion student population of 14.5 million (in 1999) will be involved in some kind of campus violence, the Grossman-Markowitz estimates imply that a 10 percent beer price boost

would cut the number of students engaged in violence each year by around 200,000.

In **Alcohol Regulation and Violence on College Campuses** (NBER Working Paper No. 7129),

“A 10 percent beer price boost would cut the number of students engaged in violence each year by around 200,000.”

Grossman and Markowitz note that as the consumption of alcohol increases on campus, so does violence. Since higher prices of alcohol discourage drinking, higher prices also reduce violence.

In this paper, the authors look at four types of violence: getting in trouble with the police, residence hall, or other college authorities; damaging property or pulling a fire alarm; getting into an argument or a fight; and taking advantage of another person sexually or having been taken advantage of sexually. They use data from 1989, 1990, and 1991

on 122,416 students from 191 colleges and universities in 29 states. As a measure of the price of alcohol, they use the average price of a six-pack of Budweiser or Miller Light in those states.

Different tax levels, primarily, result in variations in the price of those beverages among states, ranging from a minimum of \$3.25 to a maximum of \$5.53 a six-pack in 1992. By comparing price levels and violence levels, Grossman and Markowitz can estimate the impact of beer price on levels of the various types of violence and on total violence on campus.

They find that a 10 percent price increase for beer would reduce the proportion of students who got into trouble with the police and college authorities from 12.3 percent to 11.7 percent. In the case of property dam-

age, the 7.5 percent of students involved would shrink to 7.1 percent of all students. The percent of students who get into fights, either verbal or physical, would fall from 31.2 to 30.2 percent of all students. The students involved in sexual misconduct would fall from 14.3 percent to 13.8 percent. Of course, a bigger price hike for beer—say 20 or 30 percent—would have a proportionately stronger impact on violence.

The data that Grossman and Markowitz had available show that students living in a fraternity or sorority have approximately six more drinks per week than students who live off-campus, and about five more drinks per week than students who reside in a dormitory. If a student's mother has alcohol/drug problems, the student is likely to have one extra drink per week. In the case of a father with these alcohol or other drug problems, it makes a half drink per week difference.

—David R. Francis

NBER

The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:

Martin Feldstein—President and Chief Executive Officer

Sam Parker—Director of Finance

John H. Biggs—Chairman

Carl F. Christ—Vice Chairman

Contributions to the National Bureau are tax deductible. Inquiries concerning the contributions may be addressed to Martin Feldstein, President, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

The NBER Digest summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision. The Digest is issued for similar informa-

tional purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the Digest has been reviewed by the Board of Directors of the NBER.

The Digest is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.

Preparation of the Digest is under the supervision of Donna Zerwitz, Director of Public Information.

Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside of the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. To order, call the Publications Department at (617) 868-3900 or visit www.nber.org/papers.

Please have the Working Paper Number(s) ready.

Subscriptions to the full NBER Working Paper series include all 500 or more papers published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$1850; for academic libraries and faculty members, \$1070. Higher rates apply for foreign orders.

Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

Requests for Digest subscriptions, changes of address, and cancellations should be sent to Digest, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.