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Mutual Fund Portfolio Contagion

Do fund managers at different mutual funds influence each other in terms of what stocks to buy? Yes, according to **Harrison Hong**, **Jeffrey Kubik**, and **Jeremy Stein**, writing in **Thy Neighbor's Portfolio: Word-of-Mouth Effects in the Holdings and Trades of Money Managers** (NBER Working Paper No. 9711). The researchers show that — controlling for what fund managers in other cities are doing — fund managers are more likely to hold or trade stocks if their neighbors do so. They find that fund managers' holdings of a particular stock as a percentage of their total portfolios increase by roughly 0.2 percent when fund managers at different firms in the same city increase their holdings in the same stock by a single percent.

This is the first large-scale study of whether the common wisdom, that investors who communicate regularly influence one another's thinking, is indeed true. The data on mutual fund holdings come from CDA Spectrum. The researchers augment the data by including the name of the city where the fund manger is located and the city in which each stock in question is located. Their sample contains 1,715 mutual funds, located in 15 cities, and 2,000 stocks owned in those funds. New York is home to 462 funds, the most of any city, but these account for only 16 percent of total funds under management. Boston is home to 340 funds, but accounts for 39 percent of total funds under management. The next largest fund cities are Philadelphia and Los Angeles.

The researchers compare the observed relationship to an epidemic, with the fund managers spreading the information by word-of-mouth when they come into contact with others. One interpretation of the results is that stocks tend to under-react to information when it first becomes public, leading to momentum effects as more and more investors realize its importance. Physical distance — between cities — may be why it takes time for information to disperse across a company's entire investor base.

Hong, Kubik, and Stein purposely control for the distance between the fund managers and the headquarters of the company whose stock is in question. After all, fund managers are better informed about local companies, and therefore more likely to act ahead of the crowd or to have a "home-bias." The authors also control for investment styles, showing that the relationship they find does not simply reflect the fact that fund mangers in a particular city might be more likely to invest in growth, or value, or small cap, or technology stocks.

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Of course, the researchers cannot reject the possibility that fund managers in the same city read the same newspapers, or watch the same television shows, thus deriving some investment ideas from the same sources. Another possibility is that companies feed fund managers information; for example, a company executive may visit a series of fund managers in the New York area in local conferences or one-on-one meetings, and convey the same

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information to investors in the same town. However, small companies are less likely to feature in the media, or to have conducted extensive investor relations or put on road shows, yet the researchers show that fund managers in the same city are more likely to hold or trade very small company stocks in tandem. Moreover, both the "town crier" and the "local investor relations" effects are instances of investors getting information from a local source. They are both consistent with the idea that information about stocks diffuses gradually across the investing population, and that this "epidemic effect" leads to momentum effects in stock ownership and trading.

— Andrew Balls

New Drugs and Increased Longevity

It costs a pharmaceutical firm around $800 million to develop a new drug. In effect, that amount is the bill for the first pill produced and sold. But if the market for the drug is large enough, then the cost of research and development will be spread over perhaps millions of users and eventually will make a profit for the company.

Therefore, as drug consumers, individuals are better off if their ailment — say, hypertension or elevated cholesterol — is common. That's because the drug companies have a stronger financial incentive to develop a drug to treat that disease than to do research on a drug for some rare condition that will bring in relatively few new customers. In other words, those with common diseases are more likely to have multiple potential remedies, according to NBER Research Associates **Frank Lichtenberg** and **Joel Waldfogel**.

In **Does Misery Love Company? Evidence from Pharmaceutical Markets Before and After the Orphan Drug Act** (NBER Working Paper No. 9750), the economists explain that the Orphan Drug Act (ODA), passed by Congress in 1983, gave pharmaceutical companies new incentives to develop drugs for diseases afflicting fewer than 200,000 Americans. By reducing the cost of development and protecting the market from competition, the Act makes these new drugs potentially more valuable.

First, the ODA gave the maker of a new drug seven years of exclusive access to the market — that is, to sell the drug to those suffering from a specific rare disease — following approval of the drug by the Food and Drug Administration (FDA). The FDA cannot approve another drug for the same condition without the consent of the first pharmaceutical concern. This "exclusivity" is ranked as "the most sought incentive."

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Second, drug makers qualify for a tax credit for clinical research expenses of up to 50 percent of clinical testing expense. Third, the FDA provides grant support for an investigation of rare disease treatments. These last two provisions reduce the large fixed costs to the company of developing a new drug. The result of the ODA has been the development since 1983 of more than 200 drugs and biological products to treat rare diseases. In the decade prior to 1983, fewer than ten such products came to market. By 1998, the number of orphan drugs had increased five fold, while the number of non-orphan drugs merely doubled.

Moreover, over the past 20 years the use of orphan drugs increased more than the use of non-orphan drugs, according to a survey of physicians. And, the longevity of those with relatively rare diseases lengthened by about seven years, versus the two years of life added to those with common maladies. However, those with uncommon diseases still die younger on average than people with common death-causing diseases.

Most observers applaud the ODA for its effect of reducing the dependence of those with rare conditions on market size. The authors note that at least one incentive, boosting the extent of the market, does encourage extra investment in new drugs. So, a government-mandated price reduction of say 25 percent in the price of a drug might have as discouraging an effect on investment as a 25 percent reduction in the prevalence of a disease, and thus in the size of the market.

In **The Impact of New Drug Launches on Longevity: Evidence from Longitudinal, Disease-Level Data from 52 Countries, 1982-2001** (NBER Working Paper No. 9754), Lichtenberg outlines his finding that

new drug launches have added greatly to longevity in the last two decades in these nations, both developed and developing. Over the past 50 years, life expectancy around the world has increased sizably, from an average of 46.5 years for a child born in 1950-5 to an average of 65 years for a child born in 1995-2000. Also, the gap in life expectancy between rich and poor countries has been halved, from 25 to 12 years. Sorting out the causes for longevity improvements, however, has proved difficult. Many health researchers have primarily credited more education, higher income, better lifestyle, and a safer environment for increased longevity. In this paper, Lichtenberg calculates that about 40 percent of the two years added to the average life span between 1986 and 2000 can be traced to the introduction of new drugs. New drug launches account for a substantial fraction of medical innovations. On average, the introduction of new drugs lengthened the life of people in these 52 countries by just short of three weeks each year.

Lichtenberg uses data from the IMS Health Drug Launches database and the World Health Organization Mortality database. He ties together the number of new drugs launched since 1982 with the number of those surviving to certain ages, such as 55 and 65 years, for each major disease category, country, and year. An increase in the stock of new chemical entities — drugs whose key ingredient has not previously been available in the country to treat disease — boosts the survival rate to age 65. When the stock of drugs is measured with a lag of three to six years, the effect on longevity is more than twice as large as in the first three years. This suggests that it may take several years for a new drug to be diffused to more consumers and have its full impact on survival rates.

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Using his results, Lichtenberg calculates an upper-bound cost per life-year gained from the launch of new drugs of $4,500. That sum is far lower than most estimates by economists of the value of a life-year. So Lichtenberg suggests that spending on new drugs may be a cost-effective way to increase longevity.

— David R. Francis

Private Insurance Replaces Medicaid Cutbacks for Immigrants

In the wake of the 1996 federal welfare reform legislation there were numerous predictions that new provisions denying or restricting benefits to non-U.S. citizens would greatly swell the ranks of immigrants who lacked health insurance. But a study by NBER Research Associate **George Borjas** finds that immigrants most affected by the cutbacks in Medicaid, the government program that provides health benefits to the poor, largely responded by securing jobs that included employer-sponsored benefits. As a result, he writes in **Welfare Reform, Labor Supply and Health Insurance in the Immigrant Population** (NBER Working Paper No. 9781), the anticipated steep rise in the immigrant uninsured never materialized.

"This increase in the probability of coverage through employer-sponsored insurance was large enough to completely offset the Medicaid cutbacks," Borjas writes. He reaches his conclusion after examining the various state responses to the welfare reform provisions and studying how they affected non-citizen participation in government-funded health insurance.

> "Facing a potential loss of government-funded health benefits, non-citizen immigrants appear to aggressively seek out jobs that offer employer-sponsored benefits."

According to Borjas, a case can be made that the federal legislation ultimately did not greatly restrict immigrant access to benefits. Nonetheless, he notes that some states responded to its "presumed" adverse impact by increasing state-funded assistance. Depending on what they did or did not provide to immigrants, Borjas classifies the states as either "more generous" or "less generous."

Not surprisingly, Borjas reports that Medicaid usage among non-citizen immigrants declined much more sharply in the states that were less generous with their post-welfare reform benefit offerings. But what is surprising is that this did not trans-

late into an uptick in uninsured immigrants. In fact, overall health insurance coverage rates for immigrants actually appeared to be better in the less generous states than in the more generous states.

"Most striking," observes Borjas, is that "the health insurance coverage for non-citizens dropped by 1.7 percentage points in the more generous states but rose by 2.1 percentage points in the less generous states." In other words, the more stingy the state was with its benefits, the more likely its non-citizen immigrants were to have health insurance.

The explanation Borjas offers for this phenomenon is quite simple. Facing a potential loss of government-funded health benefits, non-citizen immigrants appear to aggressively seek out jobs that offer employer-sponsored benefits. While after 1996 employer coverage for non-citizens rose by only 2.7 percentage points in the more generous states, Borjas reports that it shot up by "an astounding 11.4 percentage points in the less generous states," from 36.5 percent of those states' non-citizens to 47.9 percent.

Borjas asserts that the observed increase in employer-sponsored coverage cannot simply be dismissed as a result of the booming economy of the late 1990s, as opposed to a "behavioral response on the part of immigrants." If the national economy were the key factor, there would not have been such a sharp contrast between employer coverage in the less generous versus the more generous states.

Ultimately, Borjas believes his findings show that states did not need to "protect" their non-citizen immigrants from Medicaid cutbacks. Given how coverage rates went up in the states that were more restrictive, Borjas concludes that people in this group are quite capable of taking care of themselves.

"In an important sense, the state programs were unnecessary," Borjas writes. "In the absence of these programs, the targeted immigrants themselves would have taken actions to reduce the probability that they would be left without health insurance coverage."

— Matthew Davis

Coordinated Currency Interventions Temporarily Move Exchange Rates

Frequent (but previously secret) Japanese efforts to influence the value of the yen through aggressive purchases of U.S. dollars have been successful, especially when these market "interventions" involve more than $1 billion and are conducted in concert with the Federal Reserve System, according to a study by **Rasmus Fatum** and **Michael Hutchison**.

In **Effectiveness of Official Daily Foreign Exchange Market Intervention Operations in Japan** (NBER Working Paper No. 9648, commissioned for NBER's Japan Project), they show that Japan may be able to use currency market interventions as a tool to influence the value of the yen and, in turn, to stimulate economic activity.

As a policy alternative, that is significant, because the lever governments most often pull to affect currency values — the one that allows them to raise or lower interest rates — is not currently available to Japan. Japanese interest rates have been set at zero since 1995. This has seemingly left the country's government poorly positioned to perform the kind of currency value adjustments that could reverse the chronic deflation that has been a major component of Japan's seemingly intractable recession.

> "At least in the very short run, intervention policy is effective in moving the exchange rate, even when not accompanied by interest rate changes."

Fatum and Hutchison note that for many years Japan's Ministry of Finance, through its Bank of Japan (BoJ), has been the most aggressive government entity in the world when it comes to participation in foreign exchange markets. Yet there was no evidence that its interventionist proclivities actually yielded results. Economists, many of whom are skeptical that government currency purchases can substantially alter currency values, had been unable to study the effect of Japan's bold actions because the government did not officially report or discuss its activities in this area. That changed in 2001, when Japan began disclosing the date and amounts of its currency buying and selling.

The authors use this new information to study some 43 separate intervention "events" — some of

which took place over several days — between 1991 and 2000. These were occasions in which Japanese officials, sometimes with the help of their American counterparts, attempted to influence the value of the yen. The authors were particularly interested in whether the intervention achieved the desired exchange rate changes even in the absence of the more tried and true tool: central bank-instigated interest rate adjustments. They find that, "at least in the very short run intervention policy is effective in moving the exchange rate," even when not accompanied by interest rate changes.

They observe that Japan's interventions were most effective when the BoJ joined forces with the Federal Reserve System to conduct currency transactions in excess of U.S. $1 billion. Of the 12 "large scale coordinated" interventions they study, 11 achieved the desired effect: they moved the yen either up or down in accordance with the policy goal of the moment.

"This result suggests that the Bank of Japan could indeed engineer exchange rate depreciation, thereby counteracting deflation and recession, even though interest rates cannot be moved further downward," the authors state. However, getting the United States to cooperate with Japan's currency purchases appears to be the key ingredient of success. Fatum and Hutchison note that Japan and the United States have not coordinated their efforts in this area since September of 1995. Since then, Japan's attempts at solo interventions have been successful only 60 percent of the time. "Under these circumstances it would appear that only persistent, large-scale and coordinated interventions (Bank of Japan and the Fed) would seem likely to effect a sustained movement in exchange rates," the authors conclude.

— Matthew Davis

State Education Subsidies Shift Students to Public Universities

In 2002, states spent about $66 billion on higher education subsidies, a substantial fraction of the $289 billion spent on U.S. post-secondary education. According to the National Center for Education Statistics, U.S. post-secondary expenditures were $19,220 per student, the highest in the world.

Rather than giving aid directly to individuals to use at the college of their choice, states historically have subsidized tuition for in-state students at public colleges and universities by giving operational funds directly to the schools. As a result, in 2002, the average list price for four-year private colleges was $18,273 while it was only $4,081 for in-state students at four-year public colleges. Because colleges vary in their instructional resources, the question of whether the price gap created by the state subsidies affects enrollment decisions is an important one.

In **Does the Format of a Financial Aid Program Matter? The Effect of State In-Kind Tuition Subsidies** (NBER Working Paper No. 9720), author **Bridget Terry Long** uses several data sources from the early 1990s to examine how changing the structure of state aid might alter student undergraduate enrollment decisions. She finds that expenditures, the student-faculty ratio, and the percent of faculty with a Ph.D. degree positively affect the likelihood of attendance at a particular school. Higher tuition and distance from home have negative effects on the probability of enrollment. The quality of the other students also matters. For every 10 points that an individual's SAT score exceeds the average at a particular college, his likelihood of enrolling falls 29 percent.

Long finds that the current regime of state subsidies primarily increases enrollment at public four-year colleges. If state subsidies were instead given directly to students as portable grants or vouchers that could be applied to any in-state college, total enrollment would remain approximately the same overall but an estimated 29 percent fewer students would choose public four-year colleges. Most would shift to private four-year schools.

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Is Manual Labor Bad for your Health?

Despite the fact that women live longer than men on average, women around the world report worse health than men until age 60-65. After that, self-reported health declines more slowly for both men and women. But splitting up the population by income changes the pattern. At age 20, men in the bottom income quartile report worse health than men in the top income quartile at age 50. And, although women in the bottom income quartile initially report worse health than men, after age 50 they report better health than men.

In **Broken Down by Work and Sex** (NBER Working Paper No. 9821), authors **Anne Case** and **Angus Deaton** use self-reported health status from the National Health Interview Survey to describe how individual health varies by age, occupation, and sex. Case and Deaton find that for both women and men, manual laborers report a more rapid decline in health than professionals. And, much of the difference in self-reported health status across the income distribution can be explained by health-related absences from the labor force. So that while it may be true that being poor makes people sick, it is also true that being sick makes you less able to work, and lowers your income — so that much of the strong relationship between ill-health and poverty comes from poor health making you poor.

To untangle the relationship between work, earnings, health, and education, the authors examine health over the life cycle and explore the relationship between the rate at which health deteriorates at any given age, individual investments in health maintenance, and the rate at which the "stock of health" declines. Perhaps their most important finding from the data is that the rate at which health deteriorates with age is faster in manual occupations than in non-manual occupations. For many people, work wears out their health.

— Linda Gorman

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