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School Ties and Mutual Fund Success

"Who you know" — often touted as the key to career success — also may be a big part of investing success, at least for the professionals who manage mutual funds. Consider the stock-picking savvy of one Mr. Smith, portfolio manager of the Phantom Aggressive Fund (his name and the fund's name have been changed). In the six months starting in October 1995, he bought 233 thousand shares of Cummins Engine Co., which soon thereafter announced two joint ventures, record annual sales, and a new market for its engines. By June 1997, the engine maker's stock was up 72 percent and Smith, having bought additional shares, sold all of his holdings for a hefty profit. His secret?

The secret is connections — specifically, university connections — conclude **Lauren Cohen**, **Andrea Frazzini**, and **Christopher Malloy** in **The Small World of Investing: Board Connections and Mutual Fund Returns** (NBER Working Paper No. 13121). Smith is a Harvard MBA; Cummins is what the authors call a "Harvard stock." In 1996, 62 percent of the directors on its board held Harvard degrees; 46 percent of them had Harvard MBAs.

These university connections are not only common in the investment world, they're also profitable, the authors conclude. Managers tend to place bigger bets on companies with board members who share the same college or university affiliation. And, their holdings of such "connected" companies outperform their holdings of "non-connected" stocks by up to 8.4 percent a year.

Managers earned those outsized returns largely around news events, such as mergers, that boosted the stock price, the study finds. That finding suggests "social networks may be an important mechanism for information flow into asset prices," the authors conclude.

> "Among managers with the strongest connection to senior officials (same school at the same time with the same degree), the connected holdings earned an average annual 16.05 percent excess return (the total gain minus the Treasury bill return). That was more than double the fund's average 7.69 percent excess return on non-connected stocks or the fund's overall average: 7.81 percent."

Of course, it's a matter of endless debate, even among academics who have investigated the issue, whether portfolio managers really do earn higher-than-normal returns. In the few studies that have found a positive link, the higher returns have been related to above-average SAT scores of the managers' undergraduate institutions or the geographical proximity of the companies they invest in. Other research has shown that managers tend to make similar portfolio choices if they live in the same city or have similar educational backgrounds. This study suggests not only that such educational institution links exist, but also that they give fund managers an informational advantage over other investors.

To put their thesis to the test, the authors focused on 2,501 portfolio managers of 1,648 actively managed equity funds that specialized in aggressive growth, growth, or growth and income stocks between January 1990 and December 2006. They matched the managers' educational backgrounds — from undergraduate and business to law and even medical degrees — with those of 42,269 board members and 14,122 senior officials at 7,660 publicly traded companies. They found many ties.

For example: of all publicly traded firms in the United States, 12 percent have mid-level managers and/or senior officers with Harvard degrees. So do the portfolio managers at 16 percent of active equity mutual funds. The University of Pennsylvania, University of Chicago, and Columbia University also consistently rank in the top five most "connected" schools, both among officers at public companies and mutual-fund managers.

The study finds that the stronger the educational connection, the more concentrated was the bet a mutual fund

manager placed on a given company. The average stock in a fund's portfolio represented 89.4 basis points of the fund's assets. Funds in the study invested an added 28.45 basis points in companies whose senior officials attended the same institution as the portfolio manager. If their time on campus overlapped and they received the same degree, the manager invested an additional 41 basis points in the firm on average.

Those decisions turned a handsome profit. Among managers with the strongest connection to senior officials (same school at the same time with the same degree), the connected holdings earned an average annual 16.05 percent excess return (the total gain minus the Treasury bill return). That was more than double the fund's average 7.69 percent excess return on non-connected stocks or the fund's overall average: 7.81 percent.

"Connected holdings outperform non-connected holdings in a statistically and economically significant way for all four degrees of connectedness," the authors conclude. Such gains in the connected stocks did not involve increased risk, as measured by their Sharpe ratios.

The authors also find a significant advantage in performance—up to 6.32 percent per year for the strongest connection—for connected stocks that managers owned compared with connected stocks that they chose not to own. Such results "lend support to the hypothesis that fund managers have comparative advantages in gathering information about connected firms," the study says. By contrast, managers didn't appear very good at timing the selling off of connected stocks, a pattern consistent with the notion that portfolio managers were more likely to get positive rather than negative information through their social network.

To determine the robustness of their conclusions, the authors tested alternative explanations. They looked at the characteristics of the funds, those of the firms they invested in, and the industries. They divided up the holdings by geography, examined stretches of time within their sample period, and looked at whether a handful of top schools were driving the results. In no case could they find a factor other than educational connection to explain either the managers' large bets on connected stocks or the significant abnormal returns they earned.

"[S]ocial networks are important for information flow between firms and investors," they write. "What we document using these networks is not an isolated situation or constrained to a few portfolio managers or firms, but rather a systematic effect across the entire universe of U.S. firms and portfolio managers."

—Laurent Belsie

The Increasing Prevalence of Obesity

NBER Research Associate **Christopher Ruhm** predicts that 33 percent of American men and 38 percent of American women will be obese (as defined by a body mass index, or BMI, above 30) in 2010. Obesity prevalence rates will rise to 40 percent for men and 43 percent for women by 2020, he predicts using data from the National Health Examination Survey (NHES 1) and various National Health and Nutrition Examination Surveys (NHANES).

As Ruhm explains in **Current and Future Prevalence of Obesity and Severe Obesity in the United States** (NBER Working Paper No. 13181), there was little change in the body weight distribution of the U.S. population between NHES 1 in 1960–2 and the first and second NHANES surveys in 1971–4 and 1976–80. After that, however, measured body mass index grew 50 percent faster and that growth was disproportionately strong among the most overweight. Ruhm notes that after 1980 the prevalence of class 2, 3, and 4 obesity (that is, BMI above 35, 40, and 45 respectively) "tripled, quadrupled, and quintupled."

The morbidly obese are defined as having a BMI above 40. To reach this level, a 5'5" woman must weigh more than 240 pounds. Ruhm's estimates suggest that the fraction of people who are morbidly obese will reach 6 percent of men and 13 percent of women by 2020. He concludes that population-wide health campaigns to reduce growth in overweight and mild obesity will be less effective in combating severe obesity, and that additional strategies focusing on the heaviest people will be necessary to reduce severe obesity.

What has caused this increase in massive overweight? In **Age, Socioeconomic Status and Obesity Growth** (NBER Working Paper No. 13289) **Ruhm** and co-author **Charles Baum** find that excessive body weight grows with age for both men and women, and that it is inversely related to socioeconomic status (SES). High SES individuals have higher incomes, are more physically active, smoke less, and are lighter. Of those in the highest SES group, 1.9 percent are obese at age 18 and 19.6 percent are obese at age 40. Of those in the low SES group, 4.6 percent are obese at age 18 and 31.3 percent are obese at age 40. The authors' preferred SES measure is maternal education, but

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they obtain similar results when using other SES measures.

The most important correlate with obesity is years of schooling, they find, followed by race/ethnicity. Including both factors in predicting body weight explains almost half of the overall disparity among SES groups observed at age 40. An individual's family income, marital status, number of children, his propensity to drink, smoke, or exercise, or whether his job is physically demanding explains relatively little of the SES weight difference.

The detailed data for this study come from the National Longitudinal Survey of Youth (NLSY). The information in the NLSY allows the authors to explain about half of the correlation between weight and SES.

— Linda Gorman

Tax Effects on Foreign Portfolio Investment

Because so many other factors come into play, determining how taxes — and particularly tax reforms — influence portfolio choice traditionally has proven difficult to identify cleanly. But in **Taxes And Portfolio Choice: Evidence from JGTRRA's Treatment of International Dividends** (NBER Working Paper No. 13281), coauthors **Mihir Desai** and **Dhammika Dharmapala** overcome many of these difficulties by analyzing a tax reform that differentially changed the tax treatment of investments in a manner that was unlikely to produce confounding side issues such as changes in risk assessment or supply side responses. In their study, Desai and Dharmapala not only assess the impact of a particular tax reform but also see lessons for future tax policies.

Ideally, say Desai and Dharmapala, a tax reform with clear consequences for investor aftertax returns and with no effects on supply decisions would most conclusively isolate tax effects. For just this reason they focus on the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003 which allowed for dividend tax relief to U.S. investors who owned stock in countries with suitable tax treaties with the United States. The "treaty countries" constitute a treatment group, with equities held in those countries enjoying a reduced U.S. personal tax rate relative to equities held in the control group of non-treaty countries. Furthermore, because the tax reform affected only American investors, it was unlikely to cause a supply response from foreign firms that would affect Americans' portfolio choices.

Desai and Dharmapala based their study on data of outbound U.S. foreign portfolio investment (FPI) from the Treasury International Capital (TIC) reporting system, which cover some 213 countries. Prior to the JGTRRA, dividends were taxed as ordinary income, at a rate of 38.6 percent for taxpayers in the top tax bracket. Under JGTRRA, dividends were taxed at the same rate as capital gains, a reduced maximum rate of 15 percent. This lower rate applied to dividends paid by domestic corporations and by "qualified" foreign corporations. A foreign corporation qualified if it satisfied at least one of several tests. One of those tests was the "Treaty Test," which encompassed corporations resident in countries with which the United States had a tax treaty containing certain information-exchange requirements. Fifty-two countries met this requirement.

> "U.S. equity Foreign Portfolio Investment in the average treaty country rose by over 90 percent relative to U.S. equity holdings in the average non-treaty country, in response to the large relative decrease in the dividend tax rate for corporations in treaty countries."

Even though JGTRRA's favorable tax treatment of dividends excluded such relatively significant investment destinations as Argentina, Brazil, Malaysia, Singapore, and Taiwan, the reform applied to an extensive subset of foreign corporations. The 52 countries hosted 82 percent of U.S. outbound equity FPI holdings in 2001.

Analyzing the portfolio choices in these countries against a background of data compiled for all countries in the TIC reporting system over a number of years before and after JGTRRA went into effect produces stark results. Desai and Dharmapala find that despite factors that would tend to bias the estimate downward, the positive effect of JGTRRA was quite large. In their baseline specifications, the estimated coefficient of 0.649 implies that U.S. equity FPI holdings in the average treaty country rose by over 90 percent relative to U.S. equity holdings in the average non-treaty country, in response to the large relative decrease in the dividend tax rate for corporations in treaty countries. (The rate for treaty countries fell from 38.6 percent to 15 percent while the rate for non-treaty countries fell to 35 percent.)

The data also show in particular that because of JGTRRA, American investors' holdings of lightly taxed foreign equities increased significantly in a manner consistent with an implied elasticity of asset holdings with respect to the tax rate of approximately -1.6. This elasticity is larger than most estimates of the responsiveness of portfolio shares to tax rates but is consistent with estimates of the sensitivity of FDI to taxes. The researchers stress that their results cannot be explained by a number of other potential alternative hypotheses, such as differential changes to the preferences of American investors, differential changes in investment opportunities, differential time trends in investment in treaty and

non-treaty countries, or changes in patterns of tax evasion.

Desai and Dharmapala weigh the possible impacts of these first three factors but conclude that they are negligible, adding that the strong information-exchange provisions in treaty countries are hardly conducive to tax evasion. To the degree that evasion occurs, they say, it is more reasonable that it would occur through investment in tax haven countries with weak or no information-exchange provisions and no withholding taxes, and that the effect of reduced evasion after JGTRRA would appear in the form of transfer of funds from havens to treaty countries.

Desai and Dharmapala say their results suggest that taxes can play a large role in shaping international portfolio choices. The results, moreover, have implications for tax policies aimed at corporate tax integration, which has been widely supported by economists as a means of reducing distortions to firm payout and financing decisions. If dividend relief is not fully extended to foreign dividends, the researchers surmise, corporate tax integration may cause significant distortions in international portfolios resulting in welfare losses. Such effects, say Desai and Dharmapala, could be considerable.

— Matt Nesvisky

A Theory of Military Dictatorships

Non-democratic regimes almost always rely on some degree of repression against competing groups, often exercised by the military. However, there has been little systematic analysis of why and how the military uses its coercive powers to support such regimes rather than setting up their own. This question is relevant because, although many non-democratic regimes survive with the support of the military, there are numerous examples of military dictatorships that have emerged as a result of a coup against a non-democratic regime or against the subsequent democratic government.

In **A Theory of Military Dictatorships** (NBER Working Paper No. 13915) authors **Daron Acemoglu**, **Davide Ticchi**, and **Andrea Vindigni** point out that creating a powerful military is a double-edged sword for the elite who wish to maintain their political power in a non-democracy. On the one hand, a powerful military is more effective in preventing transitions to democracy. On the other hand, it necessitates either greater concessions on the part of the elite or an increased risk of a military takeover. The authors investigate the conditions under which the military will act as the agent of the elite in non-democratic regimes (oligarchies) versus those conditions under which oligarchies will turn into military dictatorships. The framework they develop emphasizes the importance of economic inequality, natural resource abundance, and the national defense role of the military — all important factors in determining whether a strong military will emerge in non-democratic regimes and whether it will later prevent transition to, and the consolidation of, democracy.

The authors construct a model that assumes that the means of violence in the society are in the monopoly of the military; if the elite decide to form a strong military, then they have to live with the political moral hazard problem that this causes. In particular, a strong military may not simply work as their agent, but instead may turn against them, creating a regime more in line with its own objectives. Thus the cost of using repression in non-democratic regimes is higher, because the elite need to pay "efficiency wages" to soldiers, or make other social or policy concessions to the military, in order to prevent coups.

> "Societies where the elite form a strong military in order to prevent democratization are more likely to later lapse into military dictatorships because the military retains some of its power during transitional democracy and can attempt a successful coup against democracy."

Once a transition to democracy takes place, a strong military poses a coup threat against the nascent democratic regime until the military is reformed. Indeed, the anticipation that the military will be reformed in the future acts as a central motivation for it to undertake coups against democratic governments. In particular, democratic regimes are most vulnerable when they are not strong enough to immediately reform the military, but also cannot commit to making concessions and to not reforming the military (to reduce its power) in the future. Consequently, the authors find, societies where the elite form a strong military in order to prevent democratization are more likely to later lapse into military dictatorships because the military retains some of its power during transitional democracy and can attempt a successful coup against democracy. This leads to a specific and novel channel for the emergence of military dictatorships, which appears to be consistent with the historical evidence. It also highlights how repression during a non-democratic era can have important effects on the economic and political success of a later democratic regime.

The model proposed by the authors also suggests that greater inequality makes the use of the military in non-democratic regimes more likely, and also makes it more difficult for democracies to prevent military coups. Both of these effects increase the likelihood of military regimes following brief democratic

episodes. In addition, greater inequality exacerbates the political moral hazard problem in non-democratic regimes, creating another channel for the emergence of military dictatorships.

The authors further show that natural resource rents may also fuel military coups against emerging democracies, though they generally have only ambiguous effects on the political equilibrium in non-democracies: in natural-resource-abundant societies, controlling politics in the context of a non-democratic regime becomes more valuable for the elite, but also more expensive to maintain because of the more severe political moral hazard problem that results from the higher natural resource rents.

Finally and most interestingly, democratic consolidation may also be facilitated by the presence of a potential foreign threat, which makes the military necessary for national defense. This new link between international politics and domestic politics is related to the main economic force in this framework: when there is an international threat, concessions from democratic regimes to the military become more credible, because democracy also needs the military.

— Les Picker

Exchange Rates Can Forecast Commodity Prices

A recent study by co-authors **Yu-Chin Chen, Kenneth Rogoff,** and **Barbara Rossi — Can Exchange Rates Forecast Commodity Prices?** (NBER Working Paper No. 13901) — demonstrates that exchange rates can be used to help predict commodity prices. This is a quite a surprising and "out of the box" result, Rogoff points out, but it flows naturally from the fact that exchange rates are asset prices that embody expectations of future movements in macroeconomic fundamentals. Given that commodity prices are extremely volatile and difficult to predict — and that commodity price futures are notoriously bad predictors of future commodity prices — this new approach to predicting commodity prices has important potential practical value, the authors argue.

The authors also uncover some evidence that commodity prices help to predict exchange rates, but the evidence is much weaker — the reverse forecasting regression does not survive out-of-sample testing. They argue, however, that it is quite plausible that exchange rates will be better predictors of exogenous commodity prices than vice-versa, because the exchange rate is fundamentally forward looking, whereas asset prices tend to be very sensitive to small perturbations in current demand or supply.

The basic point — that forward looking asset price models can be inverted to predict fundamentals — has been developed in earlier papers by Campbell and Shiller (1987) and Engel and West (2005). Those earlier efforts, however, were stymied by the fact that the fundamental variables being used (for example savings, interest rates, outputs, money supplies) are themselves endogenous, making it difficult to draw any structural inferences. In contrast, world commodity prices for the exports of certain small countries can legitimately be considered independent of their exchange rates, making the commodity currencies an ideal testing lab.

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In their paper, Chen, Rogoff, and Rossi analyze quarterly data, gathered over one to three decades, relevant to the "commodity currencies" of Australia, Canada, New Zealand, South Africa, and Chile. These countries produce a variety of primary commodity products, from agricultural and mineral to energy-related goods. Together, commodities represent from one quarter to well over one half of each of these countries' export earnings.

Each of the five countries has a long history of market-based floating exchange rates. Because they are relatively small players in the overall global commodity market, these countries are "price takers" for the vast majority of their commodity exports. As such, global commodity-price fluctuations serve as easily observable terms-of-trade shocks to these countries' exchange rates and affect a significant share of their exports.

For each country, the researchers aggregated the relevant dollar spot prices in world commodity markets to construct country-specific, export-earnings-weighted commodity price indexes. In addition to dollar rates, the authors also considered cross rates relative to the Japanese yen and the British pound as a robustness check. In addition, they used the IMF's "All Commodities Index" — a world export earnings-weighted price index for over 40 commodities traded on various exchanges — in U.S. dollars to measure movements in the overall aggregate world commodity markets.

Chen, Rogoff, and Rossi add that their results are sufficiently robust to be applied to alternative benchmark currencies, forecast combinations, and long-horizon predictions. "One might eventually extend the approach," they suggest, "to look at countries that have few or no commodities, such as most of Asia, to see if commodity prices affect the value of their currencies, and if their currency fluctuations may offer predictive power for, say, oil prices."

— Matt Nesvisky

Capital Account Liberalization, Real Wages, and Productivity

In the late 1980s developing countries all over the world began easing restrictions on capital flows. A decade later many of the same nations experienced a string of financial crises, triggering a debate over the relative merits of capital account liberalization as a policy choice for developing countries. Critics claim that liberalization brings few benefits and high costs. But recent surveys show that capital account liberalization in developing countries reduces the cost of capital, temporarily increases investment, and permanently raises the level of GDP per capita.

In the process of debating the costs and benefits of capital account liberalization, both critics and apologists have neglected the labor market. While it is important to understand how opening up affects prices and quantities of capital, there had been no systematic evidence on the behavior of wages in the aftermath of that policy change, almost two decades after the advent of capital account liberalization in the developing world.

In **Capital Account Liberalization, Real Wages, and Productivity** (NBER Working Paper No. 13880), authors **Peter Blair Henry** and **Diego Sasson** attempt to fill that gap. They find that in a sample of 18 developing countries that opened their stock markets to inflows of foreign capital between 1986 and 1993, the average annual growth rate of the real wage in manufacturing jumped from 1.3 percent per year in non-liberalization periods to an average of 8.6 percent in the year liberalization occurred and each of the subsequent two years. The temporary 7.3 percentage-point increase in the growth rate of the real wage permanently drives up the level of average annual compensation for each worker in the sample of liberalizing countries by about 752 US dollars, an increase equal to more than a quarter of their annual pre-liberalization salary.

> "... capital account liberalization in developing countries reduces the cost of capital, temporarily increases investment, and permanently raises the level of GDP per capita."

Opening the stock market to foreign investment drives up real wages in the manufacturing sector of developing countries without eroding profitability, according to the authors' data. Because workers gain, and owners of capital do not lose, the authors question why countries wait so long to liberalize.

The authors are cautious in addressing this question because the evidence they present applies only to manufacturing. In the absence of data on wages in agriculture, or services, they cannot conclude that capital account liberalization improves aggregate welfare. Integration into the world economy during the 1980s and 1990s increased the ratio of skilled-to-unskilled wages in developing countries. Easing restrictions on capital inflows may have contributed to the widening of the gap. Therefore, while it may not cause distributive conflict within manufacturing, liberalization may create winners and losers across other sectors, with attendant political economy implications for the decision of whether and when to open up.

Nonetheless, the evidence the authors present demonstrates that trade in capital has significant consequences for the real economy beyond its impact on prices and quantities of capital. All else equal, capital account liberalization raises the average standard of living for a significant fraction of the workforce in developing countries.

— Les Picker

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