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## Decoding Inside Information

Corporate insiders are a unique and potentially valuable class of securities traders to study because they have access to private information about their firms. In **Decoding Inside Information** (NBER Working Paper No. 16454), authors **Lauren Cohen, Christopher Malloy, and Lukasz Pomorski** note that, although they possess private information, insiders trade securities for many reasons, some of which are unrelated to such information. The authors find that more than half of total insider trades are “routine” and therefore not informative about the associated firm’s future prospects. The remaining trades, however, are “opportunistic”; they are information-rich and have predictive power for the firm’s future performance. The authors estimate that a portfolio strategy that focuses solely on opportunistic insider trades yields value-weight abnormal returns of 82 basis points per month, while the abnormal returns associated with routine trades are essentially zero. Further, opportunistic trades predict future news and events at a firm level, while routine trades do not.

Cohen and his co-authors develop a framework for classifying trades by insiders as “routine” or “opportunistic” based

on a variety of attributes, including when the trade takes place during the year and whether the relevant insider has a history of similar past trades. The data on insider

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“A portfolio strategy that focuses solely on opportunistic insider trades yields value-weight abnormal returns of 82 basis points per month.”

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trades used in this study are drawn from the Thomson Reuters insider filings database and cover the period January 1986 to December 2007. The Securities and Exchange Commission requires that open-market trades by corporate insiders be reported within 10 days after the end of month in which they took place. Corporate insiders are defined as officers with decision making authority over the operations of the firm, all board members, and beneficial owners of more than 10 percent of a company’s stock.

This study finds that the more opportunistic buys or sells identified for a given firm, the greater is the subsequent positive or negative effect on returns. By contrast, the authors find no relationship between the number of routine trades and future returns. Also, the researchers find that opportunistic traders decrease their trading

activity in the wake of increases in the number of news releases by the SEC regarding illegal insider trading cases. That is consistent with opportunistic traders being sen-

sitive to the potential costs of illegal insider trading.

Finally, the authors find evidence that some classes of opportunistic insiders make trades that are especially informative for future information events. Collectively, the results of this study suggest that it is possible to identify, out of the tens of thousands of insider trades made each year, which trades are more likely to be opportunistic and informative. More generally, the authors suggest that decoding the true information in other activities in the market, such as the trades made by banks or institutional investors, could help price-setters, market regulators, and all active participants in securities markets to develop a clearer picture of the information environment that helps form asset prices.

—Lester Picker

## Taxes and the International Migration of Superstars

A new NBER study of 14 European nations finds that football players tend to locate in countries that have comparatively low income tax rates. This response to tax

rates is especially pronounced for the most able and well-paid athletes, and is actually negative for the least able and lowest paid among the professionals. Often, national

tax breaks designed to lure top-notch foreign players displace the domestic players in a league.

In **Taxation and International**

**Migration of Superstars: Evidence from the European Football Market** (NBER Working Paper No. 16545), authors **Henrik Kleven, Camille Landais, and Emmanuel Saez** construct two models of the labor market for football players in order to determine the top tax rates that nations can levy without driving them out of the country. On the whole, they find that all 14 European nations have rates below these maximizing-revenue tax rates. But the competition for top foreign talent is fierce. And four nations (the United Kingdom, Germany, Greece, and Switzerland) charge foreign players a higher tax rate than the revenue-maximizing rate generated by the model.

By studying football players, the authors hope to begin to address the broader question of how tax rates affect taxpayer behavior. “[F]ootball players are likely to be a particularly mobile segment of the labor market, and our study therefore provides an upper bound on the migration response for the labor market as a whole,” the authors conclude. “Obtaining an upper bound is important to gauge the potential importance of this policy question.”

In December 1995, the European

Court of Justice handed down the so-called “Bosman ruling,” which liberalized the market for European football players. Specifically, it eliminated rules that effectively limited the number of foreign play-

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“[The location response] to tax rates is especially pronounced for the most able and well-paid athletes.”

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ers on any one team and practices that discouraged players from moving to another European team once their contract was up. The authors find that the share of foreign players went up dramatically after the Bosman ruling, and the share of domestic players went down in the top leagues of the 14 European nations they examine. Furthermore, in studying teams’ performances from 1980 through 2009, they find that low-tax nations had better teams after Bosman. “This suggests that low-tax countries experienced an improvement of club performances by being better able to attract good foreign players and keep good domestic players at home,” they write.

Their study also looks at the impact of tax reforms in specific countries. For example, in 2004 Spain introduced the so-called “Beckham Law” (named after British

superstar David Beckham, who was one of the first footballers to take advantage of it). It allowed nonresidents to be taxed at a flat rate of 24 percent instead of the progressive rate for residents, whose top marginal rate

by 2008 stood at 43 percent. After the law, Spain saw its share of foreign players increase while nearby Italy, which had a similar top league, saw its share of foreign talent shrink. Similarly, Denmark (in 1992) and Belgium (2002) introduced reforms that gave tax breaks to foreign players. Like Spain, their leagues experienced an increase in foreign players. In Greece, after the removal of a tax cap that effectively raised taxes on high earners starting in 1993, Greek players in their prime tended to migrate abroad more often than Greek players in their prime before the change—as well as those Greek players who reached their prime after the tax cap was reinstated (thus lowering taxes). “These observations provide...compelling evidence of a tax-induced migration response,” the authors write.

—Laurent Belsie

## The Effects of Government-Sponsored Venture Capital

Some of the world’s most influential enterprises, including Google, Intel, and Apple, were financed by venture capitalists. Rapidly growing entrepreneurial enterprises are thought to be important sources of innovation, employment, and productivity growth. Thus it is not surprising that many governments have provided financing to entrepreneurial ventures. The public sector’s commitment to venture capital is substantial, including forgone taxes, outright subsidies, preferential regulation, and public provision of investment capital.

In **The Effects of Government-Sponsored Venture Capital: International Evidence** (NBER Working Paper No. 16521), authors **James Brander, Qianqian Du, and Thomas Hellmann** compare the exit performance of commercial enterprises that obtained at least part of their funding from government sponsored venture capitalists (GVCs) with those that received

funding from only private venture capitalists (PVCs). They conclude that a modest amount of GVC finance seems to improve the performance of entrepreneurial ven-

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“A modest amount of government venture capital finance seems to improve the performance of entrepreneurial ventures relative to ventures supported purely by private venture capitalists.”

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tures relative to ventures supported purely by private venture capitalists. However, high levels of support from GVCs are associated with weaker performance. According to these findings, a little bit of government support appears to raise investment returns, but too much government support has the opposite effect.

The authors use data on 21,852 enterprises based in 25 countries, which received venture capital funding from 2000–2008. This large sample has broad international coverage of venture capital investment.

Just under half of these enterprises were based in the United States, but there was also substantial representation from various European and East Asian economies,

along with Australia, Brazil, Canada, India, and Israel. The authors focus on just one important summary performance measure: successful exits. This measure is correlated with other performance measures, such as investor returns, and employment and innovation.

The evidence presented in this paper suggests that GVCs may be helpful in providing certain kinds of support, including financial support, but may become less useful when they have actual control over business decisions. If they lack con-

control, then the usual concerns about governments de-emphasizing economic objectives to achieve alternative objectives are less likely to arise. In other words, GVC finance

may be at its most effective when it remains disciplined by private venture capital. The authors also find that there are significant differences between government owner-

ship and government support of venture capital firms, broadly suggesting that support outperforms ownership.

—Lester Picker

## Labor Laws and Innovation

Although certain labor laws may inhibit firms from firing employees who fail to meet expectations, those same laws evidently benefit firms by encouraging their employees to engage in more innovative pursuits. In **Labor Laws and Innovation** (NBER Working Paper No. 16484), co-authors **Viral Acharya, Ramin Baghai, and Krishnamurthy Subramanian** analyze data from five countries from 1970 to 2002 and find that stringent laws governing dismissal of employees foster innovation and economic growth, especially in the more innovation-intensive sectors. The authors add that firm-level tests arising from the federal Worker Adjustment and Retraining Notification (WARN) Act of 1989 in the United States confirm the cross-country evidence. Because the WARN act was applicable only to firms with 100 or more employees, the authors can compare what happens in firms subject to the Act versus firms that were not. Acharya, Baghai, and Subramanian measure innovation for an industry in a given year by the number of patents applied for and subsequently granted, the total number of subsequent citations to those patents, and the number of firms filing for patents in that year and industry. Their data come from the U.S. Patent and Trademark Office (USPTO)

and cover patents granted to both U.S. and foreign firms. The index of labor laws employed by the researchers details the evolution of differences in employment protec-

tion legislation in the United States, United Kingdom, France, Germany, and India since 1970. These five countries account for 72 percent of the patents filed with the USPTO during the sample period.

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“The ‘insurance effect’ of strong anti-dismissal laws leads employees to increase their investment in innovative projects relative to their investment in routine projects.”

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The researchers find that stronger dismissal laws lead to greater innovation, relatively more of which occurs in the innovation-intensive industries than in the traditional industries. Crucially, stronger dismissal laws also lead to greater country-level economic growth. The authors find that laws governing dismissal of employees are the only dimension of labor laws that enhance firm-level innovation *and* country-level economic growth.

To illustrate why this may be the case, the authors present a theoretical example in which a firm chooses between a routine project and an innovative one—the innovative project presents a higher risk but would generate significantly higher profits

if it succeeds. For example, a pharmaceutical company could choose to invent a new drug instead of manufacturing a generic one. The firm hires an employee to work on the project and may wish to replace this employee if the project fails, but dismissal laws impose limits on their ability to do so. Because innovative projects are riskier, employees face a greater risk of dismissal when working on innovative projects. However, the lower threat of termination induced by stronger dismissal laws acts as a commitment device for the firm not to punish the employees, even if the project is unsuccessful. This “insurance effect” of strong anti-dismissal laws leads employees to increase their investment in innovative projects relative to their investment in routine projects. Thus when dismissal laws are stringent, the firm accordingly finds innovative projects to be more value-enhancing than routine projects. This example provides a potential explanation for the finding that stringent dismissal laws encourage innovation, particularly in the more innovation-intensive industries.

—Matt Nesvisky

## What Hinders Investment in the Aftermath of Financial Crises?

There are two leading views on how financial crises can lead to recessions, both of which underline the role of financial constraints. The “illiquidity” view highlights the importance of a troubled banking sector: if it cannot provide credit to domestic firms, it forces them to decrease investment and output, and this potentially leads to recession. The “insolvency” view revolves around the firm’s weak balance sheets and the associated decline in firm net worth. A

weakened currency increases the competitiveness of domestic firms, whose products become relatively cheaper in export mar-

ket, thereby supporting growth. However, if firms’ short-term borrowing is held in foreign currency, then the depreciating domestic currency weakens their balance sheet

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“The key factor that hinders investment and growth [following a financial crisis] is the decline in the supply of credit.”

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In **What Hinders Investment in the Aftermath of Financial Crises: Insolvent Firms or Illiquid Banks?** (NBER Working Paper No. 16528), co-authors **Sebnem**

Kalemlı-Ozcan, Herman Kamil, and Carolina Villegas-Sanchez sort through the two theories and try to determine which causes financial crises to turn into recessions. They use a new firm-level database from six Latin American countries between 1990 and 2005 to test the importance of each view.

Their main hypothesis is that foreign owned exporting firms should perform better than domestic exporters during a twin crisis, when there is both a weakened currency and a banking crisis, but not during a currency crisis alone. During a currency crisis, both foreign and domestic firms are affected by the weakened currency. A twin crisis adds an illiquidity problem for domes-

tic firms because of problems in the banking sector, which foreign firms can avoid since they have access to foreign credit sources. In other words, given two firms with the same level of short-term dollar debt and exports, only the foreign firm would increase investment during twin crises. This hypothesis assumes, and the authors confirm in the data, that liquidity constraints are binding for domestic firms during banking crises and not during currency crises.

The researchers find that when there is only a currency crisis, domestic firms perform just as well as foreign firms. This implies that during a currency crisis, domestic firms are able to match their short-term debt losses with increased export revenues

flowing from their increased competitiveness. When there is a twin crisis, however, foreign exporters who hold short-term foreign-currency denominated debt actually increase investment by 13 percentage points compared to domestic exporters with foreign-currency denominated debt. The latter group presumably faces liquidity constraints. The authors conclude that the key factor that hinders investment and growth is the decline in the supply of credit. Therefore, they point out the importance of providing liquidity to the banking sector during banking crises, especially if the domestic sector is the main source of financing for firms.

— Claire Brunel

## How Childbearing Affects Women's Wages

Having a child lowers a woman's lifetime earnings, but how much depends upon her skill level. In **The Mommy Track Divides: The Impact of Childbearing on Wages of Women of Differing Skill Levels** (NBER Working Paper No. 16582), co-authors **Elizabeth Ty Wilde**, **Lily Batchelder**, and **David Ellwood** estimate that having a child costs the average high skilled woman \$230,000 in lost lifetime wages relative to similar women who never gave birth. By comparison, low skilled women experience a lifetime wage loss of only \$49,000.

Using the 1979 National Longitudinal Survey of Youth (NLSY), Wilde et. al. divided women into high, medium, and low skill categories based on their Armed Forces Qualification Test (AFQT) scores. The authors use these skill categories, combined with earnings, labor force participation, and family formation data, to chart the labor market progress of women before and after childbirth, from ages 14-to-21 in

1979 through 41-to-49 in 2006, this study's final sample year.

High scoring and low scoring women differed in a number of ways. While 70–75 percent of higher scoring women work

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“Women [who score in the upper third on a standardized test] have a net 8 percent reduction in pay during the first five years after giving birth.”

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full-time all year prior to their first birth, only 55–60 percent of low scoring women do. As they age, the high scoring women enjoy steeper wage growth than low scoring women; low scoring women's wages do not change much if they reenter the labor market after they have their first child. Five years after the first birth, about 35 percent of each group is working full-time. However, the high scoring women who are not working full-time are more likely to be working part-time than the low scoring women, who are more likely to leave the workforce entirely.

Controlling for actual labor market

experience and hours worked, the authors show that low scoring women face a one-time permanent pay reduction of about 6 percent when they have a child. High scoring women experience a net 8 percent

reduction in pay during the first five years after giving birth, a penalty that reaches 24 percent a decade after birth.

Men's earning profiles are relatively unaffected by having children although men who never have children earn less on average than those who do. High scoring women who have children late also tend to earn more than high scoring childless women. Their earnings advantage occurs before they have children and narrows substantially after they become mothers.

— Linda Gorman

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