Research That Impacts Business

Google Ads ROI

Short Sellers

Causes & Crises

Less Is More

Comp Plan Pitfalls

Enterprise Risk Management

Women Need Not Apply

When to Call It Quits
Research You Can Use

We live in the information age. Knowledge is power, and business leaders need to keep up with the latest discoveries, insights, and data to stay competitive. Olin’s faculty conducts relevant and rigorous research on business topics that you can use to maintain the knowledge advantage.

To share the knowledge created at Olin, a team of MBA students and professional editors distill timely faculty research into the executive summaries presented here. They translate the formal academic research papers into easy-to-apply nuggets of valuable information that you can put to work. From finance and strategy topics to workplace and marketing trends, we have selected research that covers a broad range of our faculty expertise.

Please feel free to share this publication with your colleagues, it is available online and on the Olin Business app for iPhone. I also encourage you to contact our faculty if you would like to know more about their research or propose a project that would benefit from an academic collaboration.

Solving problems, seeking improvements in processes, and helping businesses be proactive instead of reactive are all part of our mission. Olin’s research centers work with small companies and large corporations year-round in the pursuit of creating new knowledge that powers innovation for success in the global marketplace.

Olin’s research has great potential to impact business. Let us know how you plan to use it to your advantage.

Mahendra Gupta
Dean and Geraldine J. & Robert L. Virgil Professor of Accounting & Management
dean@olin.wustl.edu

The Olin Award

Established in 2007 by Richard J. Mahoney, former chairman and CEO of the Monsanto Company and Olin executive in residence, the Olin Award is granted annually to an Olin faculty member(s) whose research is selected by a committee of esteemed business executives for its potential impact on business results.

Authors of the winning paper receive a $10,000 honorarium.

The 2012 Olin Award-winning paper is featured on pages 2–3.
Hidden Value of Google Search Ads

Paper: “Measuring the Lifetime Value of Customers Acquired from Google Search Advertising”  
Author: Tat Y. Chan, Associate Professor of Marketing, Ying Xie, PhD, Chunhua Wu, PhD, Olin Business School, Washington University in St. Louis  
Published: Marketing Science, August 2011  
Link to video on Olin Business School
As the number of online advertising and marketing channels has exploded, many business owners wonder if purchasing an Internet keyword search ad is worth the cost. Olin researchers Tat Chan, Chunhua Wu, and Ying Xie have an answer.

The researchers examined one company’s experience with purchasing key search terms from Google. The researchers used company data and computer addresses to connect sales to viewers who clicked on their ads, which appeared at the right of a viewer’s search results.

What they found is that Google keyword ad purchases actually produced more sales and higher margins than the browser industry realized.

The new research finds that multiple studies have overlooked two key factors that boost the return on investment in Google ad words:

1. The amount a customer spends over his or her lifetime
2. How purchases are actually made, known as cross-channel spillover

After studying three years of keyword purchases and product sales from biomedical and chemical supplier Gold Biotechnology Inc. in St. Louis, the authors discovered that customers who originated with Google ads bought items more often and spent more per transaction than those from other sources. The researchers calculate that the cost per click, or CPC, on each ad has a break-even value of just over $10.

Older methods of calculating CPC would have put the same break-even at 37 cents. What this means is that companies can spend more on keyword advertising than they realize and still get a strong ROI. However, firms should monitor their CPC because ad rates have increased fourfold just in the time (2004–2007) that the researchers studied transactions.

The study also calculated that the customer’s lifetime value was about $1,100 more than a non-Google keyword customer.

Another overlooked aspect of Google keyword calculations is that prospects who clicked on ads often didn’t make their first purchase with the company online. Instead, about two-thirds of prospects purchased in person, over the phone, or using another method, the researchers found. And over time, they purchased an increasing amount of goods at a higher margin.

The researchers offer several explanations for this cross-channel spillover: larger corporate customers tended to purchase more initially online than smaller, regional ones, and keyword prospects who initially purchased off-line developed more trust in the company and eventually began spending more online.

Gold Biotechnology found the authors’ research intriguing and useful. “The research and analysis from Dr. Chan and his team provided us with valuable insights that led to a new way of thinking about our search engine marketing and our entire e-commerce system,” said marketing director Bart Saracino.

Google’s total advertising revenues:

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<tr>
<th></th>
<th>2002</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$439 million</td>
<td>$28 billion</td>
</tr>
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</table>

Olin Award judges’ comments on the winning research paper:

“The research is fresh, the topic is of widespread interest and its usefulness profound in an age of small business startups. This is an excellent paper that addresses one of the most crucial aspects of retail business today. Small and large retailers alike would find the research fascinating and reassuring.”

“This research could be very impactful as online advertising is gaining a bigger share of marketing dollars. Very practical and answers an important question relating to value of advertising online.”

“This is a subject no business in sales can afford to ignore. This paper will give good guidance to businesses trying to decide how best to spend their advertising dollars.”
Innovation Caused the 2008 Financial Crisis

Paper: “Incentives to Innovate and Financial Crises”  
Author: Anjan V. Thakor, John E. Simon Professor of Finance, Olin Business School, Washington University in St. Louis  
Economists still debate the causes of the 1929 stock market crash. Dozens of books have dissected the 2008 subprime mortgage crisis that pushed the banking sector to the brink of collapse and triggered the Great Recession. A federal inquiry concluded that the 2008 crisis was avoidable, but no one agrees on the actual causes.

Anjan Thakor eschews many of the traditional theories on the causes of financial crises. Instead, he proposes an examination of the structure of the banking industry that, he argues, can create conditions for crises.

Thakor finds the seeds for financial crises in the combination of a competitive financial market with limited patent protection for new financial products. The competitive nature of the financial market means that it is hard for financial firms to make high-risk-adjusted profits on well-established products. Thus, they seek financial innovations that are inherently more risky but less susceptible to imitation by their competitors. The market for these products is (at least initially) not very competitive and allows the innovator to earn high-risk-adjusted profits.

In other words:

- A competitive financial system with no patent protection means profits of financial institutions, or banks, are driven to relatively low levels on products offered by other banks.
- Incentives are, therefore, created for banks to create innovative products that are less susceptible to poaching by competitors.

The catch is that banks must create products with limited risk data (i.e. credit default swaps; bundles of subprime mortgages) to ensure disagreement among potential competitors about profitability of these products. Competitor disagreement limits market entry and boosts profits for the innovator bank.

This means that banks must invent products that are unfamiliar to all. But the downside of this is that these products are also unfamiliar to investors, so there is a risk that investors may decide to withdraw funding at some point if they lose confidence in these products. The likelihood of this happening is higher the more unfamiliar the product.

“Progress and crisis are intimately related; the elements that make innovation possible necessarily open the door to market instability.”

How innovation can lead to crisis

Within the confines of a competitive financial market where none of the players can patent a new product to attract investors, no one has a monopoly on innovation. Information on the amount of risk versus the potential for return on an investment product is the key differentiator in the creation of new banking products. In general, the more innovative a product is, the greater the risk.

After providing initial funding, bank financiers may receive signals that cause them to question the soundness or desirability of continued investment in a new, innovative product. When this occurs, they might refuse to provide new funding to the bank, causing premature liquidation of the loan.

The risk grows if investors aren’t sure which banks are making standard loans and which are using the new lending vehicles. This sort of “partially opaque” view can cause investors to withdraw funding not just from the banks with the innovative products but from all banks. Such withdrawals could quickly snowball into a full-out financial crisis.

This was the scenario in the subprime mortgage crisis and provides additional evidence for Thakor’s theory that innovative financial systems are more prone to financial crises. In fact, a crisis is more likely to arise after complex financial products are introduced, he finds.

While it increases risk for investors, Thakor suggests some opaqueness in banks’ balance sheets may be necessary for financial innovation. But if regulators force banks to increase the transparency of their balance sheets for investors, banks’ incentives to innovate will diminish.

To lessen the likelihood of a crisis, regulators could require banks to have relatively high amounts of capital on hand for new products, according to Thakor. But, he cautions, more regulation could curtail innovation and its potential benefits.

Thakor rejects traditional crisis theories, which fall broadly into three groups:

- **PANIC GROUP**
  - Crises arise from panics unrelated to underlying economic fundamentals.

- **BUSINESS CYCLE GROUP**
  - Crises arise from shocks to economic fundamentals and are an intrinsic part of the business cycle.

- **COMPLEXITY GROUP**
  - Crises arise as a result of the interconnectedness of banks and complexity.
Pay Day:
Pitfalls of Performance-Based Pay

In theory, pay-for-performance compensation plans make sense. In practice, they are much more complicated. This new research delves into the disparity between the predictions of economic theory and the reality of compensation choices to find out why performance-based pay may not always be the best plan for nonexecutive employees.

The dominant economic theory on strategic compensation predicts that many efficient businesses will compensate employees based on their individual performance. But in reality, pay-for-performance plans for nonexecutives do not occur nearly as frequently as that theory predicts.

Traditional theories have good reason to predict that performance-based pay may maximize efficiency. Theoretically, only highly skilled workers will be attracted by this type of compensation package since they know that, as over-performers, they would earn more. Consequently, this compensation strategy should serve as a sorting mechanism, weeding out low performers and even preventing them from applying for the job.

Traditional theory also suggests that financially motivated employees work harder than those receiving a fixed salary. So if performance-based pay ensures a workforce of highly skilled, hardworking employees, why don’t more managers adopt it? There are several reasons.

Pierce and his research colleagues focus on two important psychological factors that increase the real costs of pay-for-performance:

1. **Tendency for people to compare their income to others’, especially their peers**
2. **Workers’ overconfidence in their ability to perform familiar or oft-repeated work**

When an employee compares his or her income to that of his or her peers—easier than ever thanks to social networking—the result is profound on individuals and organizations. Especially when performance metrics are subjective or not easily observed, employees see differences in pay rates as inequities, not reflections of varying worker performance.

Employees’ feelings of injustice can lead to:

- Decreases in quantity and quality of work
- Higher levels of attrition
- Lower morale and commitment to the organization
- Potential sabotage or unethical behavior

These effects all represent added costs to an organization that suggest pay-for-performance may not be as effective as employees believe.

“People don’t really think of money and compensation as just money and compensation. They think of it as a statement on their own net worth and pride,” Pierce says.

On the second factor—overconfidence—people often overvalue their abilities, especially on frequent, easy, or familiar tasks. They then believe they would fare well under a pay-for-performance system.

In fact, the opposite frequently occurs, and employers are less able to sort out less skilled workers. As a result, employers use pay-for-performance even less.

What, then, is the optimal compensation scheme?

“There is no one solution, and a lot of it really depends on the type of employee you’re working with,” Pierce says.

Some workers, for example salespeople, actually benefit from overconfidence, suggesting that pay-for-performance might work well for them. But in other situations that is not the case.

Take the example of research and development workers tied to high-incentive pay structures. They might risk too much on new products or process development. Similarly, for companies that rely heavily on internal teamwork and cooperation, employee comparisons to one another are likely to hurt the organization in a pay-for-performance model.

The lesson is that human behavior dramatically impacts the effectiveness of compensation systems. By understanding the needs of the tasks to be performed and the needs of the people who will be performing them, managers can develop compensation packages that are far more effective for recruitment and for organizational efficiency.

Psychology and social networking play a bigger role than previously realized in adopting pay schemes, according to the new study.
Mean Girls

New research about the way women feel about their female colleagues in the workplace may come as a shock to those who thought male chauvinists were the only ones preventing more women from attaining the upper rungs of the corporate ladder.

According to Michelle Duguid’s findings, when a woman is the only female member (referred to as the “token* female”) of a high-prestige work group and is asked to vote on another candidate for the group, she is much more likely to choose a male candidate than a female one. The research further suggests that this is likely because the token female feels her value within the group is threatened by the possible female entrant and what the newcomer’s credentials represent.

Lone women in higher-status groups may actually perceive other women candidates for their group as a dual threat, according to the new research.

**Competitive threat:** Another highly qualified woman could prove to be more valuable and potentially overshadow the existing female member of the group.

**Collective threat:** If the newcomer is less qualified than the incumbent female member of the group, her poor performance could be seen as validating negative stereotypes.

As a result, women in high-prestige work groups may avoid inviting other women into their groups.

“They [the token females] feel like they have a lot at stake, from status, pay, and position,” Duguid says.

Women in high-prestige work groups may also be concerned about appearing to favor other women, Duguid suggests in a related paper. But if the favored woman is highly qualified, it gives the existing female member a pedigree she can cite to explain her preference, validating the favoritism.

“Organizational leaders really need to recognize these potential threats,” Duguid warns, “as they could have a significant impact on the interaction between female group members, which could ultimately affect performance.”

To counteract these biases, Duguid suggests creating external, demographically diverse search committees to integrate high-status groups. She also recommends programs to counteract the negative effects of so few women at upper levels of corporate management and to foster a greater sense of belonging among females in their high-prestige groups.

In sharp contrast, Duguid finds women in low-status groups support each other and feel less threat from their counterparts.

Encouraging or facilitating women’s identification with their demographic group may be instrumental in helping them to manage their relationships at work and to develop constructive alliances and mentoring relationships with other women. This proactive approach may not only facilitate further group integration, Duguid concludes, but it may be crucial to organizations’ ability to realize the potential benefits associated with diversity.

Duguid’s research makes clear that in order for women in high-status roles to be able to support and encourage other women to join them, salient fears and reservations concerning female peers must be understood on a much deeper level and ultimately overcome.

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**Who’s Guarding the Glass Ceiling?**

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<thead>
<tr>
<th>High-Prestige Work Groups</th>
<th>Low-Prestige Work Groups</th>
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<tbody>
<tr>
<td>% of similar women selected</td>
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- Results from one of Duguid’s studies show that token women who are in the numerical minority of a high-prestige group are the least likely to choose another woman with similar qualifications to join the group.
- When women make up the majority of a high-prestige group they are much more willing to select other qualified women to join their group.
- Women who are in the gender minority or majority of low-prestige groups are very likely to select other qualified women to join their group.

* Tokens are members of a demographic category that is significantly underrepresented in a work group
Short Sellers: Villains or Visionaries?

Paper: “How Are Shorts Informed? Short Sellers, News, and Information Processing”  Authors: Matthew Ringgenberg, Assistant Professor of Finance, Olin Business School, Washington University in St. Louis; Adam Reed, University of North Carolina; and Joey Engelberg, University of California–San Diego

Short sellers may not be the villains of the 2008 stock market crash after all. New research suggests that short sellers—traders who profit from stock trades when the stock price falls in the future—may actually be well-informed visionaries, with a knack for interpreting company news and the underlying value of a company’s stock. By examining trading activity and the release of news stories involving a broad selection of companies on the New York Stock Exchange over a two-year period (2005–2007), researchers discovered surprising evidence on the role short sellers play in the financial markets. A longer version of this interview with Professor Ringgenberg is on YouTube.

**Did a recent insider-trading scandal or the 2008 market crash inspire your research into how short sellers are informed and make their trading decisions?**

**A:** The financial crisis focused a lot of attention on short sellers and blamed them for the crisis. We really wanted to investigate whether or not that blame was to some extent correct or not. What our research actually found, somewhat surprisingly, was that short sellers can actually play a beneficial role in the market.

**What are the benefits of short selling?**

**A:** One of the things we found was that short sellers tend to be really good at processing publicly available information. So, if a news article comes out about a firm, it usually contains a lot of complex information. And what we found is that short sellers tend to interpret—kind of do more homework—and do a good job of understanding what that information means for the value of the firm. So, in that sense, short sellers actually provide a benefit because they help prices represent the fundamental information about a firm.

**Does this ability to interpret company news give short sellers an unfair advantage over other people who play the market?**

**A:** On average, I don’t think it creates an unfair advantage. The evidence suggests that short sellers do their homework and get rewarded fairly for doing their homework. If you look back at the history of short sellers, they were some of the first vocal critics of Enron. Short sellers looked through the financial statements, they questioned the accounting practices, and in that sense it was something that they profited from by selling Enron short.

**What are the implications of your research for short sellers and other investors?**

**A:** One of the big implications has to do with market regulations. In 2008 and 2009 the SEC [Securities and Exchange Commission] here in the United States and other market regulators around the world imposed short sale bans as a result of the financial crisis. Regulators, at the time, were arguing that a ban would help stabilize prices.

What we saw in our research, and in other papers, is that may not have actually been the best policy implication. So, in some cases, short sellers actually provided benefit to the market, and locking them out could make things worse.

**Have you shared your research with professional stock traders including short sellers? What do they think?**

**A:** We talked to a number of short sellers. We talked to hedge funds, pension plans, regulators, the Federal Reserve, and the SEC. In general, I think market practitioners—the hedge funds, the investors—are largely not surprised. A lot of them do believe that short sellers play a beneficial role in markets.

When we talked to regulators, that’s where I think our research may have provided some new information. They’re generally interested in hearing what are the benefits, what are the costs, if any. And I think the idea is that hopefully that will help them make better-informed decisions in the future.

**Is there a way to know which stocks short sellers are trading, or is that something that you can only find out long after the transaction in archival data?**

**A:** Thanks to a relatively new database created by the people who are lending their shares to short sellers, you can see which shares were borrowed, and that gives you a much better idea of who’s shorting and what they’re shorting. That’s data we didn’t really have access to 10 years ago.

**If short sales data is available in real time, could it be a valid market indicator?**

**A:** I think it already is becoming an indicator. A company called Data Explorers gathers this data for clients who study the trends to see which stocks are being shorted. Active short-sale trading of a particular stock might be a signal that you should go and do your homework about that firm.

“Short sellers are often the villains of financial markets, or at least they’re portrayed that way. Our research suggests that’s not necessarily a fair characterization. I think the source of their bad reputation is that they profit when prices fall. If they’re not making the prices fall, they’re basically revealing the bad information [about a stock’s underlying value] faster.”

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**Finance**

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**Research that Impacts Business**

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**11**
Who Uses All Those Bells and Whistles?

Paper: “Having versus Consuming: Failure to Estimate Usage Frequency Makes Consumers Prefer Multi-Feature Products”

Author: Joseph K. Goodman, Assistant Professor of Marketing, Olin Business School, Washington University in St. Louis; and Caglar Irmak, University of South Carolina

Published: Working Paper
Is buying that brand new iPhone 5 with all those extra features really going to make you happy? New research from Olin suggests it may not.

Across five studies and four product domains, researchers Goodman and Irmak found that consumers do not typically estimate their probable use of a product’s features before buying it. And when buyers fail to consider how often they will use product features—features that may be trivial or too complicated to master in the long run—consumers are less satisfied with their purchase.

“Why do people fail to incorporate feature usage in their purchase decisions? Our research suggests that individuals are concerned more about ‘having’ the features rather than using them.”

But when consumers stop to think about how much they will actually use all those nifty bells and whistles, they often decide they don’t really need them. Instead, they choose the product with fewer options, Goodman and Irmak find. They also tended to be happier with their choice and the product overall.

For some buyers, simply having the latest, greatest gadget is all that matters, the researchers discovered. Such shoppers with “high material values” are simply concerned about having the newest iteration of the product because of the status it conveys on the buyer: wealthy, tech savvy, fashionable, and current. For those consumers, the fully loaded model trumps how often they will actually use those features.

“Our findings can’t tell consumers what to buy, but they do suggest that consumers should at least stop and consider how often they are going to use each new additional feature before they make their decision,” Goodman says. “This little act of consideration can lead to greater satisfaction down the road.”

“Our findings suggest that manufacturers and retailers may suffer from a decrease in customer loyalty when consumers are caught paying more for multifunctional products and not using the features, which we show can damage customer satisfaction.”

Research implications for:

Marketers

• Emphasize the bells and whistles of your product, but don’t call attention to how long it will take consumers to learn how to use them or even if they need those functions.

• Focusing the consumer on having a feature will be more likely to drive purchase to multifunctional products.

• Consumers not only overestimate their feature usage but also fail to estimate usage altogether.

Manufacturers and Retailers

• Customer satisfaction and loyalty may decrease when consumers have paid premium prices for multifunctional products but realize they are not using the features.

• Focus on matching a consumer to a product that he or she will use in the first place, and then encourage and educate the consumer to use the features that are purchased.

Consumers

• Consumers should consider how often they will use each product feature before making multifunctional product purchase decisions.

• Products with multiple features usually come with a hefty price tag. Purchasing products with fewer but more useful features is likely to lead to greater savings for consumers.
ERM:
Prepare for the Worst

Paper: “Enterprise Risk Management in Financial Intermediation”
Author: Stuart I. Greenbaum, former dean and Bank of America Emeritus Professor of Managerial Leadership, Olin Business School, Washington University in St. Louis; Jacobs Visiting Professor at the Kellogg School of Management, Northwestern University
Link to video on Olin Business School
“The possibility of a severe accident occurring is so small that from an engineering standpoint, it is practically unthinkable.”
- From the accident-management protocols for the Fukushima Daiichi nuclear power plant in Japan

Those words came back to haunt the Tokyo Electric Power Company on March 11, 2011, when a 9.0 magnitude earthquake hit northeastern Japan, triggering a tsunami with 10-meter-high waves that breached the sea wall and inundated the Fukushima Daiichi nuclear power plant, crippling its backup cooling system and causing explosions and radioactive emissions. It’s an extreme and dramatic example of poor risk management that Professor Greenbaum uses to illustrate the importance of enterprise risk management, or ERM. In this interview, Greenbaum explains how ERM works, a bit of its history, and best practices. A longer version of the interview is on YouTube.

9 What is enterprise risk management?
A: Enterprise risk management is really a formulation that seeks to aggregate all risks within the enterprise so that they can be seen in their full flowering. You get a picture of the risks that the enterprise faces in its totality. This is a more sophisticated approach to the management of risk.

9 Were there events that led to greater attention to ERM?
A: The origin of the idea is the very, very disturbing failures that we’ve encountered going back to Enron and WorldCom, Health South, and failures associated with the Great Recession. Many of these failures were seen, in retrospect, as failures in risk management.

9 What are the advantages of implementing companywide ERM programs?
A: They foster a broader recognition of all of the hazards that the institution faces, so you’re encouraged to take steps to manage these risks in a rational way. Denial is not a rational response.

9 Should the responsibility for ERM start with the board of directors and spread downward?
A: That’s considered best practice. In public companies the ultimate responsibility for managing enterprise risks resides with the board of directors. But it doesn’t end with the board of directors. There will be people on the management team who will be responsible for risks, then committees that will usually be communication channels so that new risks can be communicated up and down and across the organization. You’re building an organization within the organization, one that’s addressed to safety, risk mitigation, risk control, hazard control, and security. Once you acknowledge the hazards, then you begin to think of ways to control them.

9 If companies want to optimally implement ERM, how do they do it?
A: The first things that are involved are making a commitment and the willingness to accept the cost of managing risks. Then, either examine what best practices are in the industry, see what others are doing and make judgments, or hire a consultant. There are many consultants available to help you structure an ERM program. Practically all the large accounting firms do this. Actuaries do this; they’re particularly adept. Large organizations have chief risk officers who guide their programs. They usually build an organization within the organization around this risk management. The best large organizations do this in a very disciplined and structured way.

“ERM is a process, but it is also a frame of mind, a culture. It is a collective assertion that the organization will bring its best talents to bear upon the challenge of avoiding surprises that threaten sustainability.”
- Stuart Greenbaum
When to Call It Quits

Paper: “No Exit: Failure to Exit Under Uncertainty”  
Author: Daniel W. Elfenbein, Associate Professor of Organization and Strategy, and Anne Marie Knott, Professor of Strategy, Olin Business School, Washington University in St. Louis  
Published: Under second review, Strategic Management Journal
During the unraveling of the 2008 financial crisis, 165 banks failed. They were ultimately bailed out at a cost of $8.9 billion. But the question on the minds of ordinary taxpayers, investors, regulators, and many others was: why didn’t the bank managers cut their losses, quit while they were ahead, run for the exit before the government pulled the plug?

Two researchers at Olin explore this question and the process of delaying the difficult decision of when to call it quits in a study of bank closures from 1984 to 1997.

Irrational vs. Rational Delays

The dominant theoretical explanation for this delayed exit is “escalation of commitment.” Escalation of commitment is a tendency to hold onto investments in spite of negative feedback when there is uncertainty about outcomes. Because this behavior is irrational, there is a presumption that making people more rational might solve the problem.

Elfenbein and Knott offer an alternative view. They argue that some delay is rational. When there is uncertainty about market demand or about your own ability, and when that gets coupled with variable profits, it doesn’t make sense to pull the plug at the first sign of losses. Those losses may merely reflect temporary setbacks—you don’t want to scrap all your investment if profits will ultimately rebound. In this view, some waiting is good, but too much waiting leads to more losses.

The question Elfenbein and Knott ask is: when do firms pull the plug relative to when they should pull the plug?

Quitting Time

The researchers use a formula for the optimal time to exit that was developed by operations professors who applied it to research and development projects. The formula had not been applied to whole firms prior to this study.

Elfenbein and Knott applied the formula to 7,800 banks and found that 25% of failed banks exit within a year of the optimum exit point but nearly 50% delay exit for three years beyond that.

This finding suggests some behavioral biases were coming into play. In order to explore how these biases might influence exit strategy, Elfenbein and Knott compared how firms responded to good news (profitable quarters) versus bad news (loss quarters).

In theory (using the formula), all news should be treated equally. However, the researchers found that firms were a thousand times more sensitive to good news—meaning it took $1,000,000 of losses to get an equivalent (but opposite) response to $1,000 of profits.

Since most of the banks in the study were entrepreneurial independent banks, it might be assumed that they are more irrational than bureaucratic firms—the idea being that bureaucracy rids the firm of emotion. Elfenbein and Knott actually found the opposite to be true. Independent banks exited sooner than banks belonging to large holding companies. The most likely explanation is: independent bank owners have their own money at risk and unnecessary losses directly affect their personal wealth.

Conclusions & Takeaways:

1. Some delay in cutting losses is rational, whether closing a failing firm or divesting underperforming divisions.
2. The good news is there’s an algorithm to help identify when a firm should cut losses and exit.
3. The algorithm is most effective when there is good information about the market—including information about rivals’ performance.
4. Banking has better information than any other industry because the FDIC publishes quarterly data (approximately 2,400 variables) for all insured banks (roughly 10,000), so delays in other industries are probably worse than the ones in this study.
5. Since banking remains highly competitive even with this level of disclosure, firms in other settings should lobby the government for greater disclosure of tax and economic census data.
prax·is
— noun, plurals praxes, praxes
1. the practice and practical side of a profession or field of study, as opposed to the theory
2. a practical exercise
3. accepted practice or custom

Collins English Dictionary – Complete & Unabridged 10th Edition