

# RESEARCH AND TEACHING STATEMENT

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## 1 Research

Innovation and creativity are crucially important for the success and survival of organizations. As a result, “stimulating innovation, creativity and enabling entrepreneurship” is a top priority for management and widely regarded as the “greatest challenge” facing organizations according to CEO surveys.<sup>1</sup> My research focuses on what drives and hinders innovation, both in and outside organizations and thereby draws and contributes to a number of otherwise distinct fields including antitrust, strategy, behavioral economics, and corporate finance. My work also combines theoretical models, experimental methods, and empirical analysis drawing on insights from these disparate fields.

More broadly and beyond innovation, my work focuses on how incentives within and outside organizations are affected by social interactions and more realistic assumptions about the motives of principals and agents.

All my papers are available at <https://florianederer.github.io/research.html>.

### 1.1 Incentives for Innovation in Organizations

**Ederer & Manso (Management Science 2013)** resolves a long-standing debate between economics and psychology on whether performance-based financial incentives encourage or inhibit innovation. The paper provides the first clean causal evidence that the combination of tolerance for early failure and long-term rewards leads to more exploration and innovation. Standard pay-for-performance can fail badly in situations that require creativity and innovative thinking, but properly designed incentive plans lead to better innovation outcomes. Specifically, in a newly designed controlled laboratory experiment, subjects under an incentive scheme that tolerates early failure and rewards long-term success explore more and are

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<sup>1</sup>CEO Challenge 2004: Perspectives and Analysis, The Conference Board, Report 1353.

more likely to discover a novel business strategy than subjects under fixed-wage or standard pay-for-performance incentive schemes. In addition, the threat of termination can undermine incentives for innovation, whereas golden parachutes can alleviate these innovation-reducing effects. **Ederer (2016)** extends the theoretical and experimental results to social learning settings in which several innovators explore new research avenues in parallel, and shows that optimal incentives for innovation should reward long-term *group* success. Finally, **Ederer & Manso (Handbook of Law, Innovation, and Growth 2011)** documents that the same principles gleaned from these papers also apply to bankruptcy protection, labor laws, corporate takeover provisions, and CEO compensation.

These papers have also influenced the next generation of innovation researchers as they feature in PhD and MBA courses at NYU, MIT, Northwestern, HBS, Berkeley, Stanford, Toronto, and many other institutions. The laboratory experiment itself is widely used for teaching undergraduates, MBAs, and executives and has been adopted to study innovation in numerous research papers. As a result of its influence, Ederer & Manso (2013) won the 2018 INFORMS TIME Award for most influential paper in innovation in the last 5 years.

Instead of analyzing the design of payment schemes **Campbell et al. (AEJ Microeconomics 2014)** takes these as given and focuses on how social learning between R&D workers in established firms or team members in entrepreneurial startups can spur the discovery of innovation, but can also create impediments for knowledge flow. In particular, the paper provides a cautionary tale for full peer observability in innovative organizations because doing so excessively blunts the incentives to generate new discoveries. In particular, the desire to maintain another workers's or entrepreneurial team member's motivation to search for a new innovation leads to a reluctance to share information and impedes social learning. Both freeriding on effort provision and the lack of information sharing between workers can inefficiently delay project implementation. Setting deadlines for project completion can alleviate these problems. The optimal deadline depends on the degree of peer observability and trades off between these two forces—maintaining innovation incentives while avoiding delays. However, the paper shows that with an optimally designed deadline full peer observability of discoveries is strictly worse than private performance observability.

Yet, social learning is not the only way in which peers (e.g., workers in the same organi-

zation) influence each other. **Bursztyn et al. (Econometrica 2014)** is the first paper to separately identify and empirically quantify two channels of social influence among peers: social learning and social utility. Before this paper, all of the large literature on peer effects had focused on distinguishing between causal and correlational peer influence, but pinning down the exact channel of the causal peer effect had remained elusive. We show that when a worker adopts a new technology or purchase an asset, her peers may also want to do the same, both because they learn from her choice (“social learning”) and because her technology adoption or possession of the asset directly affects others’ utility (“social utility”). Using a high-stakes field experiment conducted with a financial brokerage, we randomize over (i) possession of an asset and (ii) information about the peer’s revealed preference for an asset to estimate large effects of social learning and social utility. Social learning effects vary with the degree of financial sophistication of peers. Social utility effects are consistent with “keeping up with the Joneses” preferences. These results shed light on the mechanisms underlying herding behavior in financial markets and suggest how to use peer observability in structuring incentives for new technology adoption in organizations. Because of its innovative experimental design as well as its sharp empirical results, the paper was a finalist for the 2015 Exeter Prize for Experimental and Behavioral Economics and features in MBA and PhD courses at MIT, Berkeley, Toronto, Chicago, and Rochester.

## 1.2 Incentives for Innovation outside Organizations

After decades of neglect and existence out of the limelight of public interest, antitrust and competition policy are once again at the forefront of political debate. Leading antitrust law scholars such as Herbert Hovenkamp argue that “for large parts of its history antitrust law has worked so as to undermine innovation competition by protecting too much.” Indeed, critics accuse antitrust economics of focusing excessively on price and quantity effects and neglecting the central role that antitrust should play for innovation.

In the past decade arguably no paper has led to more of a paradigm shift in worldwide antitrust enforcement to focus on innovation and potential competition effects than **Cunningham et al. (Journal of Political Economy 2021)**. The paper highlights the strong disincentives for innovation that arise from product market competition. It shows that the

threat of future competition creates incentives to acquire and even *terminate* innovation. Such “killer acquisitions” arise from an incumbent’s desire to prevent the profit cannibalization of existing products that overlap with the target’s innovation. We provide a theoretical analysis under which conditions such killer acquisitions can occur and are likely to be particularly prevalent and harmful. In addition, we provide empirical evidence for this phenomenon from 35,000+ pharmaceutical drug projects. We show that acquired drug projects are less likely to be developed when the acquired project overlaps with the acquirer’s product portfolio and when the acquirer has strong incentives to protect profits due to weak existing competition. Furthermore, killer acquisitions are quite common (50 per year) and often intentionally avoid antitrust scrutiny. The paper won several prizes (e.g., Satterthwaite Healthcare Prize, WFA Corporate Finance Best Paper Prize, Academy of Management Sumantra Ghoshal Award, AdC Competition Policy Award, Robert F. Lanzillotti Antitrust Paper Prize) in fields as diverse as health economics, competitive strategy, antitrust, and corporate finance. Its results have been widely cited in Congressional antitrust reports and antitrust lawsuits against big tech companies. It has already become a staple of MBA and PhD courses around the world.

The incentives to improve firm productivity (e.g., through non-disruptive process innovation) are influenced by the motives of firm owners, in particular when large shareholders hold ownership stakes in multiple firms that compete in the same product market—a phenomenon called common ownership. Prominent antitrust law scholars such as Scott Hemphill claim that common ownership “has stimulated a major rethinking of antitrust enforcement” because it may severely blunt product market competition. But until **Antón et al. (2020)** no paper could provide a theoretical foundation or empirical evidence for a plausible mechanism linking common ownership and reduced product market competition. By combining canonical models from organizational economics, innovation economics, industrial organization, and corporate governance we show that common owners optimally choose to be passive in their governance choices thereby allowing managers “enjoy the quiet life” which leads to lower firm productivity and softer product market competition. Consistent with existing empirical evidence, firm-level variation in common ownership causes variation in managerial incentives and productivity *across firms*, as well as *intra-industry cross-market* variation in prices, market shares, concentration, and output—all without communication between shareholders and

firms, coordination between firms, knowledge of shareholders' incentives, or market-specific interventions by top managers. We empirically show that managerial incentives to improve firm productivity are less performance-sensitive in firms whose investors hold greater stakes in industry competitors. The paper won a number of academic research awards including the SIOE Oliver Williamson Award and the IEAF-FEF Prize and has received a tremendous amount of academic, policy (including the DOJ, FTC, OECD, and European Competition Commission), and corporate attention (e.g., BlackRock and ICI dedicating resources to discredit academic research) in the debate on common ownership.

**Antón et al. (2021)** combines the insights of the previous two papers and analyzes the effect of common ownership on innovation in general. Firms typically have inefficiently low incentives to innovate. This is because other firms benefit from such innovative activity and the innovating firms do not capture the full surplus of their innovations. We theoretically and empirically show under which conditions common ownership of firms can mitigate this impediment to corporate innovation. Common ownership increases innovation when technological spillovers (as measured by firms' distance to each other in technology space) are sufficiently large relative to product market spillovers (as measured by distance in product market space). Otherwise, the business-stealing effect of innovation dominates and common ownership reduces innovation. By focusing on innovation across a wide range of industries (rather than focusing on a specific industry, a particular mechanism, or on just price and quantity effects), these results inform the debate about the welfare effects of the increase of common ownership among publicly listed U.S. corporations.

### **1.3 Other Work on Incentive Design and Social Interactions**

Much of the remainder of my research studies how incentives in and outside organizations are affected by social interactions and more realistic assumptions about the motives and sophistication of principals and agents.

Gaming of incentive plans (e.g., hospital evaluations, law school rankings, sales agent compensation) is a common problem in incentive design and is often exacerbated by the informational advantage that the organizations or individuals who are being evaluated, possess. Bentham (1830) suggests that deliberate lack of transparency about the incentive

scheme can reduce gaming. **Ederer et al. (RAND Journal of Economics 2018)** formally investigates these arguments and shows that opaque incentives (incentives that make agents uncertain about how exactly they will be rewarded) effectively curb gaming. However, opaque incentives impose more risk, thereby creating a trade-off between gaming deterrence and more expensive incentive pay. We show that opaque incentives are better than transparent ones when the incentive designer suffers a lot from agents gaming the incentive scheme, the agent has some but not too much of an informational advantage, the agent is more risk-averse, and the available performance measures are more precise.

Related to my work on social learning within organizations I also investigate the impact of social comparison in incentive design in **Ederer & Pataconi (Journal of Economic Behavior and Organization 2010)**. When workers care about their relative pay, tournament incentives can be too strong and have to be muted to avoid promoting the most competitive rather than the most able individuals. However, monetary incentives are by no means the only feature of tournament design: feedback mechanisms are equally important. For example, without feedback, in an innovation race contestants do not know whether their innovation efforts actually improve on already existing approaches. **Ederer (Journal of Economics and Management Strategy 2010)** shows under which conditions feedback has motivational effects in promotion or research contests. Although the paper is entirely theoretical its predictions have subsequently been investigated and confirmed in several empirical settings including high school & university students, furniture sales staff, computer retail sales outlets, and even World War II fighter pilots.

In contrast, **Ederer & Fehr (2017)** documents the dark side of performance feedback: motivational feedback creates incentives for contest designers to misreport performance to contestants. If workers dislike being lied to, allowing discretionary feedback can have a deleterious impact on morale and tournament performance. However, lying aversion or a moral desire to keep promises may counteract these negative performance effects by forcing economic agents to report truthfully and in a way that is consistent with their future actions—even in environments where contractual enforcement or reputational incentives are absent. **Ederer & Stremitzer (Games and Economic Behavior 2017)** provides the first causal evidence that guilt aversion leads to more promise-keeping and estimates a model of conditional

guilt aversion that nests the previously contradictory findings of the gigantic literature on communication in experimental trust games as special cases. **Ederer & Schneider (AEJ Microeconomics 2021)** shows that such promises have a large, persistent effect even outside the confines of economic laboratories and even across the more economically meaningful time horizon of several weeks than the just the short minute-long time horizons commonly studied in laboratory experiments.

## 2 Teaching

Since arriving at Yale in 2013-14 I have taught elective courses in Behavioral Economics and Competitive Strategy. I won the Elective Teaching Award in 2013-14 and 2017-18. Due to Yale SOM policy which excludes past winners for the following three years, I was ineligible for any teaching award in all other years. I was chosen as one of the “Best 40 Business Professors Under 40” by Poets & Quants in 2017. My courses are ranked #1 and #2 as the most popular electives at Yale SOM by student enrolment. They draw on my research expertise and feature insights from recent research in organizational economics, industrial organization, entrepreneurship, and behavioral economics.

Teaching MBA students has significantly contributed to my research. My papers on killer acquisitions and common ownership originated from teaching sessions on entry deterrence, antitrust, and innovation management in my Competitive Strategy course. I will continue to explore and exploit such synergies between research and teaching in the future.

Finally, I advised and mentored postdocs at Yale SOM, PhD students in the economics department, and JD students at the law school and also co-authored papers with some of them (Frédéric Schneider and Weicheng Min).

## 3 Personal

My wife is a tenured law professor and we have two daughters born during my time at Yale SOM. As the primary caretaker for our younger daughter during my wife’s tenure process I took a one-semester teaching reduction and an additional year on my tenure clock.

I did not take a teaching reduction or extension of my tenure clock when my older daughter was born or for COVID-19.

## References

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- [2] **Antón, M., F. Ederer, M. Giné, and M. Schmalz** (2021): “Innovation: The Bright Side of Common Ownership,” *SSRN Working Paper*. (22 citations)
- [3] **Bursztyn, L., F. Ederer, B. Ferman, and N. Yuchtman** (2014): “Understanding Mechanisms Underlying Peer Effects: Evidence from a Field Experiment on Financial Decisions,” *Econometrica*, Vol. 82, No. 4, pp. 1273-1301. (417 citations)
- [4] **Campbell, A., F. Ederer, and J. Spinnewijn** (2014): “Delay and Deadlines: Freeriding and Information Revelation in Partnerships,” *American Economic Journal: Microeconomics*, Vol. 6, No. 2, pp. 163-204. (55 citations)
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- [6] **Ederer, F.** (2010): “Feedback and Motivation in Dynamic Tournaments,” *Journal of Economics & Management Strategy*, Vol. 19, No. 3, pp. 733-769. (270 citations)
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- [8] **Ederer, F., and E. Fehr** (2017): “Deception and Incentives: How Dishonesty Undermines Effort Provision,” *SSRN Working Paper*. (69 citations)
- [9] **Ederer, F., and G. Manso** (2011): “Incentives for Innovation: Bankruptcy, Corporate Governance, and Compensation Systems,” *Handbook of Law, Innovation, and Growth*, Edward Elgar Publishing. (32 citations)
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- [11] **Ederer, F., R. Holden, and M. Meyer** (2018): “Gaming and Strategic Opacity in Incentive Provision,” *RAND Journal of Economics*, Vol. 49, No. 4, pp. 819-854. (62 citations)
- [12] **Ederer, F., and A. Pataconi** (2010): “Interpersonal Comparison, Status and Ambition in Organizations,” *Journal of Economic Behavior & Organization*, Vol. 75, No. 2, pp. 348-363. (59 citations)
- [13] **Ederer, F., and F. Schneider** (2021): “Trust and Promises over Time,” *American Economic Journal: Microeconomics*, forthcoming. (4 citations)



[14] **Ederer, F., and A. Stremitzer** (2017): “Promises and Expectations,” *Games and Economic Behavior*, Vol. 106, pp. 161-178. (80 citations)

Total (including papers not mentioned): 1,964 citations (March 7, 2020)