Research Statement
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I am a microeconomic theorist with interests in pure and applied economic theory. A large fraction of my research falls into two main topics: collusion, and bargaining. I have also done work on dynamic Principal-Agent settings, corporate finance, and mechanism design.

**Collusion.** Collusion among firms and individuals has long been a central concern of regulators. My research on collusion has two main objectives: (i) design schemes that can help principals alleviate the problem of collusion, and (ii) develop tools to detect collusion.

In “Making Corruption Harder: Asymmetric Information, Collusion and Crime,” (*Journal of Political Economy*, 2018, with Sylvain Chassang) we study the problem of a principal who relies on the reports of a monitor to provide incentives to an agent. The contracting difficulty is that the agent may bribe her monitor in exchange for a favorable report. The framework fits a broad range of environments: collusion between polluting firms and environmental inspectors, tax-evaders and customs officers, public works contractors and local officials, and many others. The paper shows that the principal may benefit from randomizing the monitor’s incentives, and letting those serve as the monitor’s private information. Indeed, doing so generates endogenous asymmetric information between monitor and agent, making their side-contracting problem more difficult.

In “Collusion in Auctions with Constrained Bids: Theory and Evidence from Public Procurement” (forthcoming, *Journal of Political Economy*, with Sylvain Chassang), we show that procurement auctions with price floors can be effective in limiting collusion among bidders. Intuitively, price floors make price wars less effective. This limits the ability of a cartel to punish deviators and potential entrants, making the cartel less stable. Using procurement auction data from Japan, we show that the forces that our theory highlights are empirically relevant.

In “Data-Driven Regulation: Theory and Applications to Missing Bids” (with Sylvain Chassang, Kei Kawai and Jun Nakabayashi), we propose and develop *safe tests* to detect uncompetitive behavior in auctions; i.e., tests that are passed with probability one by competitive bidders, but need not be passed by non-competitive ones. The safe tests we propose are similar in spirit to the revealed preference tests of Afriat (1967) and Echenique et al. (2011). We argue that safe tests can be a useful tool for regulators: by design such tests never hurt competitive bidders, and they always make cartels (at least weakly) worse-off. We apply our tests to procurement auction data from Japan, and find evidence of widespread collusion.

Ongoing work with Chassang, Kawai and Nakabayashi is aimed at resolving a long-standing challenge in identifying collusion: that many apparently collusive bidding patterns can also arise under competition (Porter (2005)). For instance, bid rotation can arise under competition if firms have capacity constraints, and their future costs increase when they win an auction. We show that, under mild assumptions, in competitive environments a bidder’s probability of winning an auction *conditional on her bid being within a small margin of the winning bid* is approximately 1/2. This result allows us to detect collusive bid rotation by focusing on auctions with a small victory margin.

**Bargaining.** In many real-life situations, bargainers fail to reach mutually beneficial agreements: countries go to war, workers go on strike, US politicians fail to avoid a government shutdown, and
so on. A key question motivating my research on bargaining is: why do such inefficiencies arise?

In “A Theory of Political Gridlock,” (Theoretical Economics, 2017) I study how electoral incentives affect political parties’ ability to pass legislation. I show that electoral incentives can lead to gridlock if and only if a party’s electoral prospects deteriorate by implementing its most preferred policy. The paper helps explain why US Congress passes significantly fewer pieces of legislation prior to presidential elections (Mayhew, 1991), and delivers several other predictions.

In “Delays and Partial Agreements in Multi-Issue Bargaining,” (Journal of Economic Theory, 2013, with Avidit Acharya) we show that bargaining delays may arise when bargainers with heterogenous preferences expect to negotiate over new issues in the future. Indeed, one side may prefer to delay an agreement on an issue her opponent values relatively more, to use this as leverage to get a favorable deal in a future issue she cares more about.

“Durable Goods Monopoly with Stochastic Costs” (Theoretical Economics, 2017) studies the problem of a durable good monopolist whose production cost changes over time.\(^1\) Classic papers (Fudenberg et al., 1985; Gul et al., 1986) illustrate how a monopolist’s inability to commit to future prices can undermine her ability to extract rents. These classic papers study settings in which production costs are constant. In many markets, however, costs exhibit large fluctuations. A relevant example is high-tech firms, whose costs fall over time together with the prices of key inputs. My work shows how changes in costs affect price dynamics, sellers’ profits, and efficiency in durable goods markets.

A key assumption in “Durable Goods Monopoly with Stochastic Costs” is that the seller’s cost is publicly observed. In ongoing work, I consider a model in which the durable good monopolist privately observes her changing production cost. I focus on “revealing” equilibria, in which the seller’s current price reveals her current cost realization. Preliminary results highlight the new distortions and inefficiencies that arise from the seller’s evolving private information.

Other work. In “Progressive Learning,” (Econometrica, 2017, with Avidit Acharya) we study a dynamic Principal-Agent model with adverse selection and limited commitment. Previous literature (Freixas et al., 1985; Hart and Tirole, 1988; Laffont and Tirole, 1988) has shown that the combination of adverse selection and limited commitment leads to the ratchet effect: the agent is unwilling to disclose his private information, fearing that the principal will update the terms of his contract. As a result, the principal is unable to learn the agent’s private information. We show that this ratcheting dynamic may be overturned when the principal-agent relationship is subject to productivity shocks. Indeed, productivity shocks allow the principal to progressively learn the agent’s private information. As a result, the principal’s value from the relationship increases over time.

In “Pooling and Tranching under Belief Disagreement,” (with Martin Schmalz) we study optimal security design when the issuer has different beliefs about the profitability of the underlying asset than market participants. Our analysis provides a rationale for the common practice among issuers of asset-backed securities of pooling and tranching assets. Indeed, we show that under belief disagreement, pooling and tranching may be strictly profitable. We further show that belief disagreement may make pooling and tranching complements.

\(^{1}\)Durable good monopoly models have been shown to be mathematically equivalent to bargaining models with one-sided private information; see, for instance, Gul et al. (1986).
References


Mayhew, David R, Divided we govern, Yale University New Haven, CT, 1991.