[Dynamic coordination with timing frictions: theory and applications](#)

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Several economic problems exhibit strategic complementarities: one's payoff from some action is larger if others take this action as well. For example, in a scenario of bank runs, withdrawing deposits from the bank might be the optimal action only if others also do so; for firms considering whether to invest or not, one important factor is the demand for their goods, which in turn depends on whether other firms choose to invest; adopting a new technology may not be the best decision if others in the production chain will keep working with an old technology.

Several models that capture these economic problems give rise to multiple equilibria. In a range of parameters, different outcomes can arise in equilibrium depending on what agents expect others will do. For example, in models of bank runs, for an intermediate range of fundamentals, there is an equilibrium where agents attempt to withdraw their deposits and banks go bankrupt and another one where runs do not occur. One important question left unanswered by models with multiple equilibria is what determines which equilibrium will be played.

This survey focuses on a stream of the literature that looks at this problem from a dynamic point of view. In the model of Frankel and Pauzner (2000), the seminal contribution to this literature, agents choose between two states (say, low and high) and get opportunities to revise their behavior according to a Poisson clock. Their instantaneous utility gain from being in the high state increases on a exogenous fundamental variable and on the fraction of agents in the high state. The fundamental moves according to a Brownian motion.

We start by presenting the general model of dynamic coordination with timing frictions and some key theoretical results. We present results on equilibrium multiplicity and equilibrium uniqueness; we show a method to solve the social planner problem in this context; and we derive expressions for the equilibrium threshold in the limiting cases of vanishing shocks and vanishing frictions.

With this toolkit in hand, we get analytical results for a case with linear preferences and present several applications, ranging from network externalities to macroeconomics. Besides generating insights for specific questions, the applications illustrate the potential of the model to accommodate a large set of economic problems. Last, we show extensions of the framework that allow for endogenous hazard rates, preemption motives and ex-ante heterogeneous agents.