

An Overview of the Legal Theory of Finance

Dan Awrey and Katharina Pistor

Today, few would argue that strong laws are not critical for financial market development.¹ Ultimately, however, this observation is little more than a useful starting point for exploring the complex, dynamic, and structurally interdependent relationship between law and finance within modern financial markets. The ‘Legal Theory of Finance’ (LTF) offers an analytical framework for probing deeper and potentially helping us locate vulnerabilities before they erupt into crisis.

The LTF proceeds from the observation that high information costs, uncertainty, and liquidity constraints are fundamental features of modern financial markets.² Indeed, the LTF views these frictions as fundamentally intertwined. In the absence of information costs and uncertainty, market participants would be able to write complete state contingent contracts which allocated risk in every potential future state of the world – thereby *ex ante* addressing potential future liquidity problems. In the absence of liquidity constraints, meanwhile, market participants could rest easy in the knowledge that – whatever unforeseen contingencies might arise *ex post* – it will be possible for them to obtain refinancing.

When high information costs, uncertainty, and liquidity constraints converge, however, the inevitably incomplete contracts written by market participants can become potentially significant triggers of market volatility and, *in extremis*, of financial instability. At the root of this potential instability is the relationship between funding and market liquidity. The ability of market participants to pay their liabilities (funding liquidity) is a function of their ability to transform non-cash assets into cash on a timely basis and with minimal price impact (market liquidity).³ This market liquidity, in turn, is a function of, *inter alia*, the information costs market participants must incur in order to value these assets, along with these market participants’ perceptions of any fundamental uncertainty associated with their value. *Ceteris paribus*, then, we would expect higher information costs and/or uncertainty to be reflected in lower levels of market liquidity, higher volatility and, ultimately, lower asset prices.

Where market participants are driven by liquidity constraints to sell assets into markets characterized by high information costs and/or uncertainty, the resulting realizations may be insufficient to cover their liabilities. Crucially, the law often plays a central role in terms of both triggering these liquidity demands and determining their degree of correlation.

It is against this backdrop of high information costs, fundamental uncertainty, liquidity constraints, and potential instability that the LTF seeks to enhance our understanding of the relationship between law and finance.

¹See the seminal work by Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, *Law and Finance* (1998), 106:6 *J. Pol. Econ.* 1113-1155.

²For a more detailed description of the LTF, see Katharina Pistor, “A Legal Theory of Finance” (2013), 41:2 *J. Comp. Econ.* 315.

At the heart of the LTF are four interwoven propositions.

- First, financial markets do not exist independently of the contracts, private rules, and public laws which create and support them. Put differently: contrary to the assumptions embedded within conventional law and finance scholarship, the law is *endogenous* to finance.
- Second, these legal constructions invariably emanate from both public and private sources: making financial markets *hybrid* systems.
- Third, the extent to which market participants will be required to strictly adhere to these legal constructions is a function of their position relative to the apex of the system. The financial system is thus inherently *hierarchical*.
- Fourth, while these rules are necessary to support the development of financial markets, they are also a potentially significant source of financial *instability*.

These propositions can serve as a tool kit for analyzing financial markets, detecting possible sources of instability and trying to preempt major crises by creating (well-monitored) safety valves. Each of these propositions is further illustrated below. Other examples could be given and we welcome them, as we invite any suggestions to refine further and to improve the framework.

(a) The Legal Construction of Financial Markets

Financial markets are not a naturally occurring phenomenon. Financial markets are *made*. They are made of private contracts which create the financial claims we often refer to as ‘equity’, ‘debt’ or ‘derivatives’. Financial markets are made of the private rules created by market participants in order to foster deep, liquid markets for these contracts. And, importantly, they are made of the public laws and legal institutions which support these contracts and ensure their effective enforcement.

Global swap markets offer an illustrative example. The emergence, growth, and proliferation of these markets in recent decades owes much to the development of standardized contracts by market participants working under the auspices of the International Swaps and Derivatives Association (ISDA) in making private rules, in ensuring the smooth and orderly functioning of these markets,⁴ and in lobbying for carve-outs from the fraudulent transfer and automatic stay provisions under public bankruptcy laws, thereby enabling market participants to enforce close-out netting and related financial collateral arrangements upon a termination event or event of default.⁵ In the absence of any one of these legal constructions, it seems highly unlikely that the structure of these markets would look anything like it does today.

Changes in public law can thus influence market structure and spur private contractual innovation. Thus, for example, the introduction of Regulation Q in the U.S. – which imposed a hard ceiling on the interest rates which banks were permitted to pay many depositors – set the stage for the emergence of money market funds during the high

⁴ See Dan Awrey, “Hardwired Conflicts: The Big Bang Protocol, Libor and the Limits of Private Ordering” (2013), Oxford Legal Studies Research Paper No. 51/2012, available at www.ssrn.com.

⁵ See Mark Roe, “The Derivatives Players’ Payment Priorities as Financial Crisis Accelerator” (2011), 63 Stan. L. Rev. 539.

interest rate environment of the late 1970s.⁶ The core contractual features of modern structured finance markets were, similarly, motivated by the desire to minimize the impact of the regulatory capital requirements introduced under Basel II.⁷ And the introduction of Basel III has, predictably, spurred a new round of contractual innovations such as collateral swaps and synthetic exchange-traded funds.⁸

At the same time, these private contractual innovations can also be seen as driving changes in public law: whether it be to ensure their enforceability or ameliorate their harmful effects. Law and finance are thus engaged in a dynamic process in which private contracts and rules emerge and evolve in response to changes in public laws, and in which public laws respond to the problems generated by these contractual innovations.⁹ Viewed from this perspective, the law becomes of first order importance in terms of explaining the behavior and interactions of market participants and, ultimately, the structure of the financial system.

(b) The Essential Hybridity of Finance

Once we acknowledge the legal construction of financial markets, the essential hybridity of finance comes squarely into view. This hybridity can be observed in a variety of different contexts. Perhaps most obviously, fiat money issued by central banks is used as a medium of exchange in what many might characterize as purely ‘private’ transactions. Ultimately, however, the fact that you bought your morning coffee with cash and not, say, a pineapple is a direct product of state intervention. This same observation applies equally to far more complex financial transactions where fiat money is used either as a medium of exchange or as financial collateral. This hybridity is also reflected in the structure of foreign exchange and sovereign debt markets: both private markets for financial claims underwritten by public actors.¹⁰ More fundamentally, contracting parties often rely on the state to provide background enforcement institutions and other laws necessary to support the development of ostensibly private markets. Finally, and perhaps most importantly, it is the state – in its capacity as lender of last resort – which stands as the ultimate guarantor of the contractual rights and obligations which collectively make up the financial system. Indeed, it is at precisely this point that the essential hybridity of finance intersects with yet another fundamental feature of the financial system: its inherent hierarchy.

(c) The Hierarchy of Finance and the Elasticity of Law

⁶ See Alton Gilbert, “Requiem for Regulation Q: What It Did and Why It Passed Away” (1986), Federal Reserve Bank of St. Louis Rev. 22, available <http://research.stlouisfed.org> and Timothy Cook and Jeremy Duffield, “Money Market Mutual Funds: A Reaction to Government Regulation or a Lasting Innovation?” (1979), 65 Federal Reserve Bank of Richmond Econ. Rev. 15.

⁷ See David Jones, “Emerging Problems with the Basel Capital Accord: Regulatory Capital Arbitrage” (2000), 24 J. of Money, Banking & Fin. 35.

⁸ See Dan Awrey, “Toward a Supply-side Theory of Financial Innovation” (2013), 41:2 Journal of Comparative Economics 401.

⁹ Pistor (n 1).

¹⁰ See Perry Mehrling, “Essential Hybridity: A Money View of Law and Finance for Foreign Exchange” (2013), 41:2 J. Comp. Econ. 355 and Rachel Harvey, “The Legal Construction of Global Foreign Exchange Markets” (2013), 41:2 J. Comp. Econ. 343.

In a world of relative certainty and ample liquidity, one could be forgiven for thinking that the financial system was essentially flat. Flat in the sense that we would observe relatively tight credit spreads between financial claims issued by public and private borrowers of varying degrees of creditworthiness. And flat in the sense that many privately issued financial claims would be viewed as effective substitutes for both fiat money and sovereign debt and, thus, widely used as collateral within, for example, derivatives and wholesale funding markets.¹¹

In times of uncertainty and illiquidity, however, the financial system reveals its inherent hierarchy. During such periods of market turmoil, private market participants may of course intervene to provide liquidity. It was private market participants, for example, who intervened to rescue the hedge fund Long-Term Capital Management in 1998.¹² Market participants will only intervene, however, where they perceive it to be in their best interests to do so and, in the end, only up to the point where their own survival is at stake. The only true lender of last resort is a market participant with no survival constraint and a theoretically unlimited supply of liquidity in the form of high powered money.¹³ Ultimately, there are a very small number of market participants which can perform this function: namely, sovereign states which both control their own currency and are able to issue debt in that currency.

The inherent hierarchy of finance can be observed at both the domestic and international level. At the international level, the importance of the U.S. dollar within global financial markets and its *de facto* status as the world's reserve currency put the U.S. and its central bank, the Federal Reserve, at the apex of the hierarchy.¹⁴ Immediately beneath the U.S. are then a select group of jurisdictions – including the E.U., U.K., Japan, Brazil, Canada and Switzerland – whose central banks have established swap lines with the Federal Reserve designed to ensure sufficient U.S. dollar liquidity during periods of market turmoil.¹⁵ At the domestic level, meanwhile, it is clear from the recent crisis that central banks do not stand prepared to provide liquidity support to *all* market participants on the same terms. The Federal Reserve's initial response to the crisis, for example, was to provide support for the primary dealers responsible for making markets in U.S. sovereign debt. Only later did the Fed extend support to other market participants. This decision reflected the harsh reality that – in the event of a crisis – the probability that a market participant will receive liquidity or other support from the lender of last resort will be a function of its position relative to the apex of the financial system.

¹¹ See Gary Gorton and Guillermo Ordonez, "Collateral Crises" (2013), American Economic Review [forthcoming]; Gary Gorton and Andrew Metrick, "Securitized Banking and the Run on Repo" (2013), 104:3 J. Fin. Econ. 425, and Gary Gorton, "Information, Liquidity, and the (Ongoing) Panic of 2007" (2009), National Bureau of Economic Research Working Paper w14649, available at www.ssrn.com.

¹² Although, even here, the Federal Reserve played an important role in coordinating the private bailout; see Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long-Term Capital Management* (Random House, London, 2000); Myron Scholes, "Crisis and Risk Management" (2000), 90:2 Am. Econ. Rev. 17, and Franklin Edwards, "Hedge Funds and the Collapse of Long-Term Capital Management" (1999), 13:2 J. Econ. Persp. 189.

¹³ Perry Mehrling, *The New Lombard Street: How the Fed Became the Dealer of Last Resort* (Princeton University Press, Princeton, 2011).

¹⁴ *Ibid.*

¹⁵ See generally Colleen Baker, *The Federal Reserve's Use of International Swap Lines*, 55 Ariz. L. Rev. 603 (2013).

This hierarchy has important implications in terms of the *elasticity* of the contracts, private rules, and public laws to which these market participants are subject. Elasticity in this context can be understood as a measure of the probability that the rights and obligations under these legal constructions will be strictly enforced in the context of an unfolding crisis.¹⁶ The lower the probability of enforcement, the more elastic is the law.¹⁷ At the apex of the system, the law is often relatively elastic. Indeed, this is frequently by design: with statutory incompleteness used as a ‘safety value’ to ensure that public authorities have the legal flexibility needed to respond to unforeseen circumstances. The absence of detailed legislative frameworks governing the activities of central banks in many jurisdictions, for example, enables them to pursue a policy of ‘constructive ambiguity’ with regard to the provision of lender of last resort facilities.¹⁸ Simultaneously, these frameworks typically also confer upon central banks considerable discretion to undertake extraordinary measures in the interests of maintaining financial stability.¹⁹ In many other cases, however, this elasticity is an *ex post*, essentially improvised response to the threat of financial instability.

(d) Law as a Source of Financial Instability

The most important contributions of conventional law and finance scholarship flow from its insights into how the law and legal institutions can help generate credible commitments and, thereby, support financial development. Far less appreciated, however, is the fact that the law can also be an important source of financial instability. First, in a world of incomplete contracting, contractual rights and obligations can be a source of structural rigidity.²⁰ It is the contractual rights of depositors to withdraw their money on demand, for example, which generates the risk of destabilizing bank runs. Similarly, it was the contractual rights of AIG’s CDS counterparties to demand that the insurer post collateral upon the occurrence of certain specified triggering events which, together with a corresponding run by its securities lending counterparties, put such severe pressure on AIG’s liquidity.²¹ Notably, the quality of the law in this context is positively correlated with instability: the easier it is for a market participant to enforce their contractual rights, the less likely they will be willing to renegotiate them in light of changing circumstances. Accordingly, while it may be in the rational self-interest of individual market participants to exercise these rights, this decision – especially where replicated across a large number of market participants – can have broader destabilizing effects.

Second, as described above, changes in public law and regulation can spur private contractual innovation. This innovation – or ‘regulatory arbitrage’ – is a product of the competitive forces which drive a modern market economy. These forces compel market participants to identify and to pursue arbitrage strategies designed to mitigate the private costs of public regulatory intervention. Perhaps most importantly, they compel market

¹⁶ Pistor (n 1).

¹⁷ Ibid.

¹⁸ See Xavier Freixas, “Optimal Bailout Policy, Conditionality and Constructive Ambiguity”, Centre for Economic Policy Research Working Paper No. 400 (December 15, 1999), available at www.ssrn.com.

¹⁹ See for example s. 13(3) of the Federal Reserve Act.

²⁰ See Kate Judge, “Fragmentation Nodes: A Study in Financial Innovation, Complexity and Systemic Risk” (2012), 64 Stan. L. Rev. 657 and Gorton and Metrick (n 11).

²¹ Congressional Oversight Panel (n 19) at 19-33.

participants to contract around regulation designed to ensure that they internalize any negative externalities generated by their risk-taking. Broadly speaking, these strategies involve either: (1) developing new contractual structures which reduce the impact of this regulation or (2) shifting activities to financial markets or institutions subject to less burdensome regulatory regimes. In effect, these strategies seek to exploit inconsistencies between the *economic* substance of a contractual structure and its *legal* or *regulatory* treatment.²²

Crucially, where these strategies prove successful, the same competitive forces which provided the impetus for this regulatory arbitrage also incentivize other market participants to *imitate* it. Market participants may thus pursue highly correlated arbitrage strategies: thereby driving capital and risk into potentially less developed, poorly regulated segments of the financial system. Where the markets and institutions into which this capital and risk are channeled are also vulnerable to uncertainty and liquidity shocks, the law can thus be understood as an endogenous source of potential instability.

Together with more conventional accounts, the LTF's four core propositions provide us with a potentially useful theoretical framework for exploring the complex, dynamic, interdependent relationship between law and finance. Ultimately, of course, the only real acid test for the LTF is whether these propositions can help us better understand the interactions between law and finance in the real world. Perhaps most importantly: what can the LTF tell us about the behavior of market participants? About the determinants of the constantly evolving structure of the financial system? And about the sources of potential financial instability?

²² See Victor Fleischer, "Regulatory Arbitrage" (2011), 88 Tex. L. Rev. 227.