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Towards a Legal Theory of Finance

Katharina Pistor
Columbia Law School, kpisto@law.columbia.edu

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Towards a Legal Theory of Finance

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Katharina Pistor

Columbia Law School, Columbia University

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Towards a Legal Theory of Finance

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The paper is the product of a two-year research project, the Global Finance and Law Initiative. Funding from the Institute for New Economic Thinking is gratefully acknowledged. The paper could not have been written without the research of those who have participated in this project, their input in the discussions at the workshops that have accompanied it and the many comments I have received from them on earlier drafts of this paper. In alphabetical order these researchers are Dan Awrey, Bruce Carruthers, Anna Gelpern, Mitu Gulati, Alya Guseva, Rachel Harvey, Anush Kapadia, Tamara Lothian, Perry Mehrling and Akos Rona-Tas. This paper has also benefited from comments by Geoffrey Hodgson, Simon Deakin and Ernst-Ludwig von Thadden. Special thanks go to Casey Quinn and Agnieszka Janczuk-Gorywoda for excellent comments and editing and to Ron Gilson, Matthias Thiemann and Richard Shamos for detailed comments on earlier drafts. All remaining shortcomings are mine.

Abstract

This paper develops the building blocks for a legal theory of finance. LTF holds that financial markets are legally constructed and as such occupy an essentially hybrid place between state and market, public and private. At the same time, financial markets exhibit dynamics that frequently put them in direct tension with commitments enshrined in law or contracts. This is the case especially in times of financial crises when the full enforcement of legal commitments would result in the self-destruction of the financial system. This law-finance paradox tends to be resolved by suspending the full force of law where the survival of the system is at stake; that is, at its apex. It is here that power becomes salient.

JEL Classifications: F5, G01, G2, K0, K22, N20, P1

Katharina Pistor*
Michael I. Sovern Professor of Law
Columbia University School of Law
435 West 116th Street
New York, NY 10027
United States
phone: +1 212 8540068, fax: +1 212 8547946
e-mail: kpisto@law.columbia.edu

*Corresponding Author

A Legal Theory of Finance[1]

Katharina Pistor

Abstract:

This paper develops the building blocks for a legal theory of finance. LTF holds that financial markets are legally constructed and as such occupy an essentially hybrid place between state and market, public and private. At the same time, financial markets exhibit dynamics that frequently put them in direct tension with commitments enshrined in law or contracts. This is the case especially in times of financial crises when the full enforcement of legal commitments would result in the self-destruction of the financial system. This law-finance paradox tends to be resolved by suspending the full force of law where the survival of the system is at stake; that is, at its apex. It is here that power becomes salient.

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1. Introduction

This paper develops the contours of a legal theory of finance (LTF) for contemporary financial systems, i.e. systems that mobilize capital today for future returns. The history of money and credit dates back millennia (Hodgson 2013), but the configuration of global financial capitalism is of more recent vintage. It is this system that is the concern of this paper and the theory it develops. LTF asserts that finance is legally constructed; it does not stand outside the law. Financial assets *are* contracts the value of which depends in large part on their legal vindication (Bradley 1902). Which financial assets will or will not be vindicated and as such be enforceable is a function of legal rules and their interpretation by courts and regulators. This may vary from legal system to legal system. In a world of free capital flows, legally enforceable financial commitments that link market participants from different countries and legal systems to one another determine the scope of the financial system. The ability to design instruments that are not obviously in conflict with existing rules in different jurisdictions even as they seek to mitigate their costs on the issuers or holders of such instruments renders a comparative advantage. In short, law and finance are locked into a dynamic process in which the rules that establish the game are continuously challenged by new contractual devices, which in turn seek legal vindication.

LTF is based on two premises outside of yet, as will become clear, re-enforced by law: Fundamental uncertainty and liquidity volatility. The two go together: If the future were known we could take precaution to deal with future liquidity scarcity; if liquidity were always available on demand, i.e. a free good, we could refinance commitments when the future arrives. Based on these premises LTF can illuminate core features of the contemporary global financial system, including its inherent instability, its organization into a apex and a periphery, the differential application of law in its different parts, and last but not least the locus of discretionary power. As such LTF can serve as the foundation for a political economy of finance.

Within this framework there is ample room for analyzing the behavior of actors using rational choice models, but also a more socially embedded approach in socioeconomics (see further infra under 5). LTF's critical contribution is to emphasize that the legal structure of finance is of first order importance for explaining and predicting the behavior of market participants as well as market-wide outcomes.

2. Uncertainty, Liquidity and the Instability of Finance

Before explaining the elements of LTF in greater detail I turn to the two premises on which it rests -- uncertainty and liquidity volatility -- and their implications for the nature of finance, namely its inherent instability. Frank Knight argued long ago that any attempt to capture dynamic rather than static phenomena must grapple with the problem of fundamental uncertainty; that is, with risk that *cannot* be quantitatively measured (Knight 1921). This is the case whenever circumstances are unique and deviate from "invariable and universally known laws" (ibid at Iii.VII.3). They cannot be organized into variables that lend themselves to probability calculations, and the distribution of possible outcomes is unknown (ibid at III.VIII.2). What is called for in these cases is judgment, not calculus. Keynes developed a similar concept in his Treaty on probability also published in 1921

(Keynes 1921(2010)). Building on this insight he later emphasized that the process of accumulating wealth is necessarily a long-term project that is beset by our inability to know the future. Writing in 1937 he elaborated:

> "The sense in which I am using the term [uncertainty] is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth-owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know." (Keynes 1937, 214)

A substantial body of evidence has been amassed suggesting that financial markets go hand in hand with financial crises. Historians of finance have asserted that the history of financial markets is a history of crises (Kindelberger 2005). Reinhart and Rogoff offer eight hundred years of evidence that financial crises occur much more frequently than people are willing to believe (Reinhart and Rogoff 2009). In fact, there is little disagreement even among proponents of the efficient capital market hypothesis (ECMH) that at least some aspects of finance are beset by inherent instability. Specifically, entities that engage in maturity transformation, i.e. banks, are widely held to be vulnerable to crises (Allen and Gale 2001; Levine 1998). They finance long-term commitments with short-term funds that can be withdrawn on demand. Whenever too many depositors seek to withdraw their money these entities face extinction with potential repercussions for other entities and the system. The vulnerability of financial markets to such bank run has found a regulatory response in the form of deposit insurance. Private intermediaries that engage in similar maturity transformation, such as hedge funds, have instead unilaterally redemption restrictions to ensure their survival in times of liquidity shortage.

Where there is disagreement is whether instability extends beyond intermediaries to financial markets, or whether financial markets can instead solve the instability problem by diversifying risk. Financial innovation has made possible the splitting of credit, default and interest rate risk; prior to the global crisis it was widely believed that this kind of risk diversification had ushered in a period of 'great moderation', where instability was contained.[2] There are, however, good reasons to believe that the root causes of instability are the same for banks and markets. Both offer mechanisms for investing capital today in the hope and expectation of positive future returns; and both have to confront the conundrum that knowledge about the future is imperfect and liquidity not a free good. Under these conditions, splitting risk cannot offer full protection against future events or a reversal of liquidity abundance.

Frydman and Goldberg (2011) agree fundamental uncertainty affects markets and renders them instable by invoking the notion of Imperfect Knowledge Economics (IKE). They present empirical data showing how investors change the indicators (firm-specific information, macroeconomic trends, psychology, political factors) they use for determining their investment strategies at different times. Rather than following a pre-determined strategy built on a fixed set of indicators, investors demonstrably engage in *non-routine* change (ibid at pp. 199). They do so if and when there is compelling evidence that current prices no longer reflect trends. This can be gauged not only from data but also from behavior of other market participants. Re-interpreting Keynes' famous beauty contest, they argue that investing is not so much a guessing game about other

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[2] See Ben Bernanke, "The Great Moderation", 20 February 2004 available at http://www.federalreserve.gov/boarddocs/speeches/2004/20040220/default.htm for an argument that macroeconomic policies account for the decreased volatility in the economy.

people's preferences, but results from a rational decision making process in which the judgment of others factors into one's own judgment (ibid at 120).

Still, it can be argued that the adjustment of investment strategies on its own need not cause financial instability. Frydman and Goldberg suggest that it does so when adjustment comes only after prices have entered extreme territory (ibid at 175). The problem is that for assets without a long empirical track record, "extreme territory" can be established only with hindsight by investors and regulators alike. There is, however, another explanation for when fundamental uncertainty or imperfect knowledge can trigger instability, namely when uncertainty meets the liquidity constraint (Minsky 1977 (1982)). The concept of liquidity as used in this paper is the ability to sell any asset for other assets or for cash at will.[3] Selling or buying assets is intertwined with balancing one's assets and liabilities and as such necessarily links funding liquidity and market liquidity.

This definition differs from others used in the literature. Brunnermeir and Pedersen (2009), for example, define market liquidity as the "difference between the transaction price and the fundamental value" and funding liquidity as "speculators' scarcity (or shadow costs) of capital" (ibid at 2202). This assumes that it is possible to determine an asset's fundamental value as compared to their value or volatility relative to other assets and to conceptually differentiate speculators from other investors. Yet, as the US Supreme Court has put it, while "scholastics of medieval times professed a means to make such a valuation of a commodity's 'worth'", this may not be a meaningful exercise

[3] See also Keynes, who defines "liquidity preferences" as "a schedule of the amounts of his resources, valued in terms of money or of wage-units, which he will wish to retain in the form of money in different sets of circumstances". See (Keynes 1937) Chapter 13 at II. See also Mehrling (2011, at 5/6) who associates liquidity with shiftability (ibid at 38).

for today's courts nor arguably modern day academics in economics or law.[4] In fact, as the empirical evidence compiled by Goldberg and Frydman shows, it is not what market actors do: they are more concerned with relative, not absolute value. Lastly, in a market based credit system that is largely reliant on "Ponzi-finance", as Minsky has defined financing strategies that rely ex ante on refinancing in the future (Minsky 1986 at 226), the distinction between speculators and other market participants becomes less tenable. Adjusting existing investment strategies to new facts entails selling some assets and/or buying new ones. Yet, not all assets may find takers, or only at a substantial loss, and not all sellers will obtain refinancing, which they must when confronting shortfalls in assets or cash needed to meet their own liabilities. In the worst case scenario a fire sale of assets may occur which can trigger an economy-wide downward price readjustment and potentially mass insolvencies. The likelihood of such an extreme scenario depends on how many investors will have to seek refinancing at the same time; the number will be higher the more investors have built their strategies on the ability to refinance on demand. In short, for a crisis to occur imperfect knowledge must meet liquidity shortage.

3. Generating Theory from Facts: LTF as an Inductive Theory

LTF is an inductive theory. It is derived from observable facts from across the whole spectrum of finance, including stock markets, credit markets, sovereign debt markets, foreign exchange markets and markets for derivatives. Markets rather than intermediaries were chosen as the primary unit of analysis to highlight the fact that markets themselves,

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[4] BASIC INC. v. LEVINSON, 485 U.S. 224 (1988) at 255.

just as financial intermediaries, are constructed in law and do not exist outside it and that they too can experience runs, as the global financial crisis has vividly demonstrated.

The theory of science teaches us that one can hardly identify relevant empirical observations without an underlying idea of an order in one's mind, i.e. without a theory. This does not mean, however, that one is limited to the mental maps that are currently in use. It is possible, though difficult, to construct new theoretical maps, to compare them with existing ones, and to ask whether they explain what is known about a specific field of inquiry in a more consistent or unified fashion than its chief competitors (Viskovatoff 1999). The stylized facts further explained below should therefore be understood as the construction site for a new theoretical map for the field of finance.

The most important stylized facts of contemporary finance, both national and global, are first, that financial assets are legally constructed; second, that law contributes to finance's instability; third, that there is a pecking order of the means of pay, which implies that finance is inherently hierarchical; and fourth, that the binding nature of legal and contractual commitments tends to be inversely related to the hierarchy of finance: Law tends to be binding on the periphery and relatively more elastic at the apex of the financial system.

a. The Legal Construction of Finance

Financial systems comprise a complex interdependent web of contractual obligations, or IOUs, that link market participants to one another. What one owes to another must be funded by current assets or by claims owed by a third party. IOUs can be designed and issued by private or public parties. Examples of publicly issued financial instruments are the officially designated state money, or legal tender, as well as sovereign debt contracts. Money is not only a means of exchange or storage of value, it is the means by which sovereign states collect their revenue and pay most of their debt and the default payment within jurisdictions where it is legal tender. In the hands of investors on foreign exchange markets money becomes another financial asset, and its value is determined in relation to other currencies (Mehrling 2013). One critical determinant for that value is whether the currency is backed by a sovereign willing and able to stand in for it (Kapadia 2013). The Eurozone crisis illustrates the difficulty of maintaining a viable currency once that has been called into question (ibid).

Sovereign debt may be issued under domestic or foreign law and may be denominated in domestic or foreign currencies (Gelpern and Gulati 2013). It creates a contractual obligation for a sovereign state. This renders the enforceability of debt contracts at times doubtful. After all, entire states cannot be seized and liquidated (Schwartz and Zurita 1992) only assets located overseas can be frozen. Moreover, when debt is issued under their own laws, they can escape legal obligation by changing those very laws.

Still, financiers have successfully sued even their own sovereigns for default as early as the seventeenth century in England (Neal 1990). In fact, most states pay most of their debt most of the tim, if not out of fear of being sued, in order to secure future access to capital markets. The risk of litigation appears to be increasing in our own time especially with respect to sovereign debt issued to foreign investors. Foreign investors in sovereign bonds have brought arbitration proceedings against sovereigns that have defaulted on their external debt (Halverson Cross 2011), and a recent court case raises the specter of enforceability of such claims in foreign courts, notwithstanding sovereign immunity.[5] This suggests that law matters even for contracts with a sovereign albeit in a more circumspect or elastic fashion.[6]

As for financial instruments that are issued by private entities, they may be tailored to specific clients or standardized with or without clauses that allow some adaptation. Shares in a publicly traded company must, in principle, be transferable, and laws or stock market rules impose govern voting arrangements, such as one-share-one-vote. Irrespective of whether these legal design features are priced by the market, they do entail different rights and obligations. Their relevance is revealed in critical life and death situations – i.e. when a company faces a merger or takeover or seeks to reorganize.[7] Further, the proliferation of preferred stock or convertible shares illustrates how legal innovation can alter firms' capital structure with important governance implications. Complex capital structures devised by banks in response to regulation or to diffuse takeover threats, for example, have undermined shareholder 'voice' in these entities (Benston et al. 2000).

Credit contracts entail obligations to repay the principal plus interest at a future date, but the form of pay and the structure of interest rate payments can vary considerably. In addition to simple credits and bonds there is a wide range of tradable IOUs, from commercial papers to asset-backed securities, from options to futures and swaps, from

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[5] See the recent decision of the Southern District of New York on the "pari passu" (meaning equal standing of different creditors) clauses in Argentine sovereign debt contracts. NML Capital Ltd. Vs. Argentina, 26 October 2012, 12-105(L). Note, however, that the decision is currently under appeal.

[6] One the elasticity of law at the apex of the system see infra under d.

[7] Interestingly, charter provisions that might affect such scenarios are typically not priced at the IPO stage. See (Klausner 2001).

simple derivatives to synthetic ones (Awrey 2013). Some are purely private constructs, others, such as mortgage-backed securities, were first created by law but subsequently mimicked and further developed by the private sector (Hyman 2011).

The critical role law plays in the construction of financial markets may be best illustrated by the emergence of global derivatives markets (Awrey 2013)(Carruthers 2013). Derivatives had been known for quite a while before a global market in these instruments arose. For this to occur contractual practices had to be standardized to ensure scalability and reasonable assurance was needed that these instruments would withstand legal scrutiny by regulators and courts in countries where they were issued, held, and traded. The International Swaps and Derivatives Association (ISDA), a private organization that brought together the major issuers and brokers of these instruments as well as their legal advisors (Morgan 2008), played a critical role in the rise of these markets. It created standard contracts, adapted them to different legal systems around the world, enlisted major law firms in these jurisdictions to opine on their enforceability, and lobbied legislature to adapt their bankruptcy laws to the netting agreement contained therein. Without extending the legal infrastructure to these new instruments it is hardly conceivable that global derivatives markets would have grown into multi-trillion dollar markets.

The web of legally permissible IOUs – credits, bonds, derivatives, but also common stock, convertible shares etc. – that link parties to one another constitute financial markets and determine their scope. An additional layer of interdependence is created by the fact that many IOUs explicitly reference other assets or IOUs. Securitized mortgages are tied to underlying mortgages and their interest schedule. Credit default swaps are insurance contracts designed to protect buyers of bonds and other instruments against changes in the value of the underlying asset and require their issuers to put up additional collateral should that price change. Other instruments are contractually linked to changes in anchor interest rates, such as the London Interbank Offered Rate (LIBOR, which is constructed by the British Bankers' Association with input from selected banks)[8], or in the price of assets that were deemed safe at the time of issuance, such as certain sovereign debt. These contractual cross-references can trigger a pre-determined chain reaction with potentially system-destabilizing effects as further discussed below.

b. *Legal Sources of Finance's Instability*

Fundamental uncertainty paired with the liquidity constraint renders financial markets instable. Given these conditions, pre-determined binding, non-negotiable legal commitments can hasten a financial crisis and in the extreme case the financial system's demise.

Every depositor who places his money in a bank account has the right to withdraw her funds on demand, so does every investor in an open-ended mutual or money-market fund. Their rights are contractually created and protected by law. If all enforce their rights at the same time, however, a system built around maturity mismatch *must* collapse. Deposit insurance is one way to mitigate against this risk, but because of moral hazard concerns is limited to regulated banks. Market based solutions tend to protect individual

[8] The fact that LIBOR is not simply a market product but constructed by financial intermediaries at the apex of the system has been revealed by the LIBOR scandal, which showed that banks that purportedly reported actual borrowing costs (which would be used to construct LIBOR) often under-reported these costs. See Brooks Masters, "Libor rates cull proposed for April", The Financial Times, 9 November 2012 at 24.

parties against future events through insurance devices; they tend to operate in a pro-cyclical fashion and can therefore exacerbate rather than mitigate the system's instability.

Take the example of AIG Financial Products (AIGFP), the London subsidiary of AIG, which doled out US$31 bln in the first nine month of 2008 in response to contractually agreed upon collateral calls when US housing prices decline (COP 2010). AIGFP in turn had to balance its own assets and liabilities; it had taken precaution for its exposure to potential collateral calls by opening a credit line with its parent company. This arrangement brought AIG parent close to bankruptcy, from which it was saved only by a government bailout. Notably, the US government takeover did not and could not stop the bleeding, because it left existing contractual commitments intact. This prompted the US government to acquire all outstanding CDSs at the nominal value of US$62 bln (ibid at 39). Had they allowed AIG and its subsidiary to go bankrupt and be liquidated, under existing bankruptcy laws creditors would have been left with empty hands and their contractual claims would have been extinguished. Because of the contractual interdependencies built into the system, such an event would have had serious repercussions for global financial markets. Specifically, AIGFP had issued huge volumes of CDS in the years leading up to the crisis to major financial intermediaries around the world. Had the CDS been cancelled, the French bank Société General would have had to make up for a shortfall of insurance in the amount of US$16.5 bln, Goldman Sachs in the amount of US$14.5bln and Deutsche Bank in the amount of US$8.5 bln (ibid at 94). That in turn would have required them to make up for these losses, a difficult if not impossible proposition in the immediate aftermath of the collapse of Lehman Brothers when global financial markets had come to a virtual standstill (NCCFEC US 2011). Even entities without direct exposure to AIG issued CDSs might have implicated, because they were trading bonds insured by CDS AIG had issued or were transacting with major banks directly exposed to them. In short, while perfectly rational from the perspective of individual contractors, pre-determined, non-negotiable obligations designed to mitigate the effect of future contingencies on individual parties, such as collateral calls, margin calls, etc., can increase the financial system's vulnerability to crisis. They are necessarily based on assumptions about future events (i.e. a low probability that they would occur) that might turn out to be false.

c. Finance as a Hierarchical System

As stated above, public and private entities make, issue and trade financial instruments, i.e. contractual commitments that are enforceable in a court of law. In normal times most financial instruments appear as close substitutes to official or state money in the sense that they can easily be bought and sold for one another or for cash. However, when too many investors seek to change their portfolio of assets at the same time, some assets will no longer find takers as investors flee to safety: They buy cash or close cash substitutes, such as reputable corporate or government bonds. This implies that finance is not flat, but hierarchical (Mehrling 2012).

A complex system of interdependent contractual commitments can be maintained and might even appear to be flat as long as there are enough intermediaries willing and able to acquire all kinds of financial instruments, if only for a premium. Many financial intermediaries make money in good times by offering two-way dealer services to other market participants against a premium to cover the liquidity risk they take on. Without these two-way dealer services many markets for assets would simply not exist (Mehrling 2012), and when dealers no longer offer liquidity these markets crash (Brunnermeier and Pedersen 2009).

Private lenders and dealers at times step in to dampen a liquidity crisis and buy assets for which there are only few buyers left – usually in the hope of making a profit by selling them once markets have recovered or to a lender or dealer or last resort. Consider, for example, MF Global's investment in distressed European sovereign debt in late 2011 in the expectation that interventions by the European Central Bank (ECB) would drive up prices before its funding dried up. In the end, ECB intervention came too late for MF Global, which had used short-term hedges that matured before the bonds thus upping the ante.[9] Ultimately the brokerage was forced into bankruptcy. This example holds important lessons for private parties as emergency lenders or dealers in times of crisis. They can assume this role only up to the point where their own survival is at stake. This implies that in the last instance the only true lender or dealer of last resort is an agent with *unlimited* supplies of high-powered money (Mehrling 2011). Only few actors can assume this role: Sovereigns (or their central banks) that control their own currency and who issue most of their debt in that currency.

The global crisis demonstrated that Ireland, for example, lacked these attributes. The lack of its own currency undermined its ability to stabilize finance by socializing private debt. The ensuing sovereign debt crisis raised questions about Ireland's ability to ever grow out of this debt burden, thereby undermining its ability to refinance itself on

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[9] See Miles Weiss, Cristina Alesci & Matt Leising, "Corzine Pushed Europe Bet to $11.5 Billion", Bloomberg 29 November 2011, available at www.bloomberg.com/news (last visited 2 February 2013).

international debt markets – forcing it ultimately to accept a European bailout. Most emerging markets that have their own currency but are forced to borrow in foreign currency find themselves in a similar predicament (Kinsella and Leddin 2010). There is thus a clear hierarchy in global finance, which is mirrored in the organization of foreign exchange markets. The dollar occupies the apex of the system. It is the currency against which other 'major' currencies are compared before they are compared to one another (Mehrling 2013) and it is the currency for which there is the highest demand in times of crisis irrespective of weaknesses in the performance of the US economy. Many other currencies never make it into the pages of the financial press, because they are rarely traded indicating that they are not deemed important assets in global foreign exchange markets.

Domestic financial markets are also hierarchical. This can be illustrated by examining the measures the US Federal Reserve took in response to the global crisis. It created six major liquidity facilities between March and November of 2008 (OIG 2010) known by their acronyms: TSLF, PDCF, AMLF, CPFF, MMIFF and TALF.[10] They were established to provide liquidity to different intermediaries in the following order: first to primary dealers authorized to acquire US treasuries at the New York Fed's open market desk;[11] second to special purpose vehicles of major banks (many of which also operate primary dealer desks) that invested heavily in sovereign and corporate bonds; third to intermediaries with exposure to asset backed commercial papers of non-financials

[10] These acronyms stand for: Term Securities Lending Facility (TSLF), Primary Dealer Credit Facility (PDCF), Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), Commercial Paper Funding Facility (CPFF), Money Market Investor Funding Facility (MMIFF) and Term Asset Backed Securities Loan Facility (TALF). For details see (OIG 2010, 3).

[11] Appendix IV of the document lists the primary dealers as of June 2010.

(among them again money market funds); and last to intermediaries investing in asset backed consumer loans. The sequence of Fed actions reflects its primary concern with ensuring the proper functioning of the apex of the system, namely the funding of the sovereign, followed by the funding of intermediaries that fund the sovereign, followed by the funding of their counterparties. This implies that the first order funders and their immediate counterparties find themselves in closest proximity to the apex of the system. In contrast, intermediaries lending to firms or consumers were last in order, signifying their peripheral status. They were thrown a lifeline at long last, but primarily for political reasons (the fear that austerity might create structural unemployment or a political backlash), not because they posed an immediate threat to the system. As will become clear in the subsequent section one's location in the hierarchical system has important implications for one's legal treatment in times of crisis and beyond.

d. Law's Elasticity

A legal system committed to the rule of law is meant to apply law irrespective of status or identity. Contracts are designed to create credible commitments that are enforceable as written. Yet, closer inspection of contractual relations, laws and regulations in finance suggests that law is not quite as evenly designed or applied throughout the system. Instead, it is elastic. The elasticity of law can be defined as the probability that legal commitments will be upheld in the future irrespective of changes in circumstances;[12] the lower that probability the more elastic the law. In general, law tends to be relatively elastic at the system's apex, but inelastic on its periphery. It is thus at the

[12] Suggested by Sarah Quinn at the final workshop of this research project.

periphery where default is most likely to result in involuntary exit. In contrast, at the apex where the very survival of the system is at stake, law tends to be more elastic by design and/or because the system's ultimate backstops abrogates the discretionary power to do what it takes to rescue the system.[13]

Contractual arrangements are often hardwired, but not all are equally so. Private swaps and derivatives contracts consist of hundred of pages that stipulate the conditions that trigger collateral calls and specify their amounts. In contrast, the Federal Reserve Act empowered the Fed in emergency situations to lend against "adequate collateral".[14] The swap agreements between major central banks meant to secure the global payment system occupy only seven pages of text even as they deal with billions of dollars, euros, francs, pounds or yens.[15] What are in substance similar transactions (i.e. swaps) can take different forms depending on who the parties are and where they are located in the hierarchical financial system.[16]

Similar patterns can be found elsewhere in the global hierarchy of finance. Consider the different fates of homeowners in the context of plummeting real estate markets in countries around the world. Homeowners in the US may on the periphery of the US financial system (see supra). While major financial intermediaries received emergency liquidity support from the Fed or government bailouts, homeowners faced personal bankruptcy and foreclosure in accordance with the law. However, they are still better off

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[13] The chairman of the Fed, Ben Bernanke, famously defined this role as "we do everything it takes" to save the financial system.

[14] See Sec. 13(3) of the Federal Reserve Act prior to changes introduced by the Dodd-Frank Act, which still grant substantial discretion to the Fed in determining the conditions under which it will extend liquidity.

[15] These agreements are available at http://www.newyorkfed.org/markets/liquidity_swap.html.

[16] Note that frequently private contracts make broad reference to standard swaps, which makes them appear shorter than they are. That is still consistent with the argument.

as compared to their counterparts in Hungary or Spain. The debt of Hungarian homeowners, for example, was compounded by the fact that two thirds of mortgages were made in foreign currency – the euro or Swiss franc – and these currencies appreciated in the midst of the crisis (by 40 percent) relative to the domestic currency (Rona-Tas and Guseva 2013).[17] Moreover, in Spain (and most other countries) mortgage backed loans are full recourse loans (whereas in many states in the US they are not (Ghent and Kudlyak 2011)): If property value is under water, homeowners still carry the burden of the entire amount they had contracted for. The global market for real estate finance thus also exhibits an apex and a periphery, where homeowners at the periphery carry not only the full credit risk, but frequently also the currency risk. If anything, the difference between apex and periphery is more pronounced, because in the transnational realm there are fewer mechanisms to distribute loss.

Financial innovation plays an important role in managing the elasticity of contractual commitments as well as legal constraints. An important purpose of financial innovation is to alleviate the costs of regulation by, for example, freeing capital from reserve requirements and making them available for lending purposes. Some authors have attributed the rise of sometimes destabilizing financial innovation with the constraints imposed by the Basel Accord. It is said to have created incentives for the extensive use of off-balance sheet accounting and structured finance to free up regulatory capital (Acharya and Richardson 2009). Regulatory reforms in the aftermath of the financial crisis have triggered another round of financial innovation to mitigate the costs of these regulations

[17] Note, however, that the Hungarian government intervened and forced creditors to adjust loans and share their currency risk.

for individual firms. Examples include synthetic exchange traded funds (ETFs) and collateral swaps, further discussed by Awrey in this issue. Or take the case of central bank swap lines. When financial markets froze trade suffered because parties no longer had access to liquid foreign exchange (FX) markets. The solution was for Central Banks to act as each other's go between in supplying the relevant FX to domestic parties (Obstfeld, Shambaugh, and Taylor 2009). However, not every central bank received a swap line from the Fed or the guardians of the other major currencies; only those deemed critical for stability did.[18]

These examples suggest that while hierarchy may be "inherent" to modern finance (Mehrling 2013), its specific manifestation is anything but natural. The countries at the top of the global hierarchy owe their position to historical contingencies, for example as winners of world wars (the US) or beneficiaries of cold wars (Germany). Their position has been enhanced by the fact that they (the G7) also controlled the rules of the game for global finance set forth in the Basel Concordat and the Basel Accords, and not coincidentally, by the prowess of the financial intermediaries they house.

Where one is located in the hierarchy matters for one's survival constraint. Those at the very apex of the system exercise discretionary powers in times of crisis over whether to intervene and whom to rescue; and those sufficiently close to the apex are more likely to benefit from the relaxation or suspension of ex-ante legal commitments than those on the periphery. Law matters for the position of different actors within the hierarchy. Whether housing loans are structured as recourse or non-recourse loans determines the distribution of losses between borrowers and lenders from a steep decline in real estate

[18] This prompted Sester to title one of his blogs "Where is my Swap Line?"(Sester 2008).

value. It also matters whether the parties to a derivatives contract can net out their claims outside the pool of assets available for distribution to all other creditors. This effectively prioritizes them over other creditors and has contributed to the growth of derivatives markets (Morgan 2008; Carruthers 2013). Similarly, whether sovereigns can issue debt under their own law or that of a foreign jurisdiction affects the borrower's room to maneuver ex post.

On rule of law grounds such differential application of the law is objectionable. Yet, in the context of a highly instable financial system the elasticity of law has proved time and again critical for avoiding a complete financial meltdown. This was the most important lesson drawn from the Great Depression, when the Fed's refusal to buy but those assets that had been enumerated in law contributed to collapse (Mehrling 2011, 35). The degree of elasticity and discretion that is required to stabilize a financial system depends, of course, in large measure on how much instability it tolerates in the first place, i.e. on its legal construction. The greater the tolerance for financial instability ex ante, the more likely that law and contracts will have to be suspended ex post – even though this undermines the credibility of financial contracting on which the system rests.

4. The Legal Theory of Finance

These stylized facts can be woven into a legal theory of finance. The goal is to develop a theoretical map that is internally consistent and offers explanations for how contemporary finance operates in good as well as in bad times. No attempt will be made to systematically test this theory at this point. That is left to future research. Instead, evidence taken from case studies published in this issue and other sources will be used to explain the theory's main building blocks, which explain finance as (a) rule-bound systems that are (b) essentially hybrid and (c) beset by the law-finance paradox, which reveals the location of (d) power, defined as the differential relation to law.

a. Financial Markets as Rule-bound Systems

Financial markets do not exist outside rules but are constituted by them. It is possible to distinguish different rules and rule makers, such as private and public ones. This has led some to argue that actors can opt out of the legal system and constitute their own system (Bernstein 1992). This system, however, is also rule-bound. The more a financial system moves from relational finance to entity and ultimately markets, the more it depends on a formal legal system with the capacity to authoritatively vindicate the rights and obligations of contractual parties or to lend its coercive powers to the enforcement of such claims.[19] The credibility and value of fungible financial contracts depends on such backing. This is why an organization such as the ISDA was formed to develop templates for financial instruments that would be enforceable in multiple jurisdictions and lobbied states to ensure that critical pieces of legislation validated the contracts it sponsors.

The central role of law in financial contracting is reflected in the fact that every financial intermediary wanting to issue a new financial instrument employs lawyers to ensure that it is compliant with relevant laws and regulations. This is done even, or

[19] Some authors have identified China as a possible exception to this rule. See (Allen 2005). Yet, their analysis of the quality of law in China is rather narrow and disregards other means by which the state or the Communist Party in China effectively backs the financial system. See (Heilmann 2005).

precisely, when their very purpose is to mitigate regulatory costs for the issuer.[20] Regulatory arbitrage is a sophisticated process by which financial innovation is made rule-compliant at least on its face (Awrey 2013). This is costly and often requires extensive negotiations with regulators or redrafting in the wake of court challenges. Yet, without this these instruments would have little value.

There is therefore no such thing as ‘unregulated’ financial markets, and de-regulation is a misnomer (Hodgson 2013). It signifies not the absence of regulation, but the delegation of rule making to different, typically non-state actors, with the understanding that in all other respects they enjoy the full protection of the law. The delegation of such rule-making powers is not limited to small-scale markets. Indeed, the governance of the largest of all financial markets, the global foreign exchange market, has been delegated to a club-like informal coalition of market participants and public regulators (Harvey 2013). That, however, does not make these markets rule-less or external to the law. There is hardly a market where the presence of sovereigns is stronger than in FX markets. After all, what are traded in these markets are currencies issued by sovereign states. They are the principals in these transactions, with private intermediaries effectively posing as their agents (Mehrling 2013).

The peculiar structure of global FX markets as we know them today emerged after the demise of the Bretton Woods system. It resulted as much from turf fighting among different US regulators as from a sustained attempt to design a useful governance structure for these markets. Incidentally, it framed domestic and global derivatives

[20] See, for example, the negotiation of JP Morgan with the SEC over its issuance of collateral debt obligations reported in (Tett 2009).

markets for the decades that followed. It all started with an amendment to the 1974 Commodities Future and Trading Act introduced by the US Treasury, the so-called Treasury Amendment (TA) discussed by Harvey and Awrey in this issue. The TA deliberately cordoned off futures and swaps, and because of its broad phrasing effectively *all* derivatives, from the oversight of the Commodities Future and Trading Commission (CFTC).[21] The major justification was that the primary dealers in these markets were best equipped to govern them. Moreover, the Treasury assured Congress that it, through the Office of the Comptroller of the Currency, together with the Fed would operate as foreign exchange markets' shadow regulator. The Fed, of course, is not only a shadow regulator, but also a market participant. It forged an alliance with key market participants by establishing the Foreign Exchange Committee housed at the New York Fed (itself owned by major banks), which facilitates the coordination of market governance. Private membership in this organization is determined by market share (Harvey 2013).

Sovereign debt markets pose the greatest challenge for the assertion that all financial markets are rule-bound, because sovereigns can manipulate the legal basis on which they issue debt and enjoy far-reaching immunity from litigation and prosecution. They can decree the riskiness of sovereign debt in national law (thereby inducing financial intermediaries to hold lots of it) and so far have been able to maintain that stance for global prudential regulation as well (see Gelpern and Gulati in this issue).[22] This reflects

[21] The text of the Treasury Amendment reads as follows: "Nothing in this Act shall be deemed to govern or in any way be applicable to transactions in foreign currency, security warrants, security rights, resales of installment loan contracts, re-purchase options, government securities, mortgages and mortgage purchase commitments, or in puts and calls for securities, unless such transactions involved the sale thereof for future delivery conducted on a board of trade." For details see Harvey in this Issue.

[22] The sovereign debt of OECD countries is still weighted at zero risk, notwithstanding the fact that many OECD member states find themselves in the midst of sovereign debt crises.

the fact that they occupy by definition the apex of their domestic financial system. Still, sovereign debt markets are also rule-bound. Sovereigns are reluctant to default on their debt and when they do seek to give it the appearance of rule abidance. As Gelpern and Gulati point out, when Greek restructured its debt it sought to legitimize this action by pointing to negotiations with ‘major creditors’. It also subjected new bonds to the law of England, thus relinquishing its power to unilaterally enforce another restructuring in the future. In short, sovereign debt markets occupy an interesting place in the legal construction of global markets. The central role of sovereigns in these markets imposes limits on the legal enforceability of contractual commitments. That, however, does not place sovereign debt outside the law or commonly accepted rules of conduct in global financial markets as those countries that have repeatedly thwarted these rules have found out when trying to re-access the market after a default.

b. Financial Markets’ Essential Hybridity

The discussion of FX and sovereign debt markets highlights another features of finance that permeates it from top to bottom: its essential hybridity. Financial systems are not state or market, private or public, but always and necessarily both (Mehrling, this issue). This follows from the fact that financial instruments must be enforceable, that finance is hierarchical and that in the last instance a sovereign has to stand in to protect the financial system from self-destruction.

Anyone can issue IOUs, whether public or private. But not all IOUs find takers at all times; even those that do initially may not be sellable at a future date when liquidity shortages privilege cash or cash substitutes. Cash, of course, is the *legal* tender that states, not private parties, alone can issue. This official money is the default currency and the benchmark for valuing other assets traded in the economy. Moreover, all final settlement between financial institutions and between them and the central bank is done in the official legal tender. Money is also the currency used by the government to make its (domestic) payments and collect on its claims, including its tax claims.

This is not to say that currencies not backed by state money cannot exist. However, they tend to be instable and prone to collapse whenever commitments made in the past require substantial readjustment in light of new events. Consider the fate of bank-issued money in the US prior to the establishment of the US dollar as the common currency. Many state banks issued their own IOUs with nothing but their own assets to back them. Predictably, they failed whenever too many claimants sought to make good on their claims at the same time (Dwyer 1996). This follows from the hierarchy of finance and the fact that non-state entities by definition have limited resources. Critically, their ability to mobilize fresh resources may falter precisely when it is most needed, namely in times of crisis.

Even with a common currency but without a public backstop a financial system is on instable footing. Mr. JP Morgan was able to coordinate a private sector rescue of the US financial system in 1907, but only because relative to the capacity of the private entities involved in the rescue its size was still manageable. The crisis raised sufficient concerns about the reliability of private sector bailouts to provide the political impetus for a new central bank, the Federal Reserve, established in 1913 (Carlson and Wheelock 2012). That even such a system is not immune to crisis was revealed in the Great Depression when thousands of banks failed as the Federal Reserve stood by, hamstrung by legal rules[23] on what assets it could possibly accept against cash, the only means of pay that would find takers in the midst of the crisis.

Even absent such restrictions not all central banks or all sovereigns have access to unlimited supplies of high-powered money. Those without their own currency or with debt denominated in foreign currencies do not. Without such resources, a country that faces a banking crisis typically finds itself in a currency and sovereign debt crisis as well. To be effective any outside help must come from more credible backstops, i.e. other sovereigns or their agents, such as the International Monetary Fund, which itself is funded by sovereign states (Woods 2006). The US government helped Mexico in 1994 in the midst of the Tequila crisis to the tune of US$50 bln;[24] the IMF played a critical role in the East Asian financial crisis of the late 1990s (Feldstein 2002); and a consortium of the IMF, the ECB and the European Commission (the Troika) is now at work in the European sovereign debt crises.

In sum, describing finance as a system of private/private commitments subject to some (external) constraints that may enhance market efficiency or distort it as the case might be (Gilson and Kraakman 1984) misses much of what is unique to contemporary finance: It is based on money as the legal tender, relies on the legal enforceability of private/private commitments and in the last instance depends on backstopping by a sovereign. Indeed, the scale of today's transnational financial markets would not be feasible without their legal backing, even as the very size of financial markets thus created pushes the limits of what sovereigns are willing or able to provide, individually or

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[23] Specifically, Section 13 (2) of the Federal Reserve Act in force at the time.

[24] The Economist, "From Tequila Crisis to Sunrise", 22 September 2012, available at http://www.economist.com/node/21563291 (last visited 11 November 2012).

collectively. The essential hybridity of finance thus also points to where ultimate power over finance rests: with the polities that are backstopping the system. Central bankers may have replaced their voice by speedy action for now: “Forget the G7 – Watch the C5” as Mehrling put it in a blog.[25] And yet, their effectiveness ultimately hinges on the legitimacy of their actions in the eyes of the public that entrusts them with their discretionary powers.

c. *The Law-Finance Paradox*

It follows that law and finance stand in an uneasy, paradoxical relation to one another. Law lends credibility to financial instruments by casting the benevolent glow of coercive enforceability over them. But the actual enforcement of all legal commitments made in the past irrespective of changes in circumstances would inevitably bring down the financial system. If, however, the full force of law is relaxed or suspended to take account of such change, the credibility law lends to finance in the first place is undermined.

The propensity of a financial system to reach the point of crisis or self-destruction at which only the suspension of ex-ante commitments can save it is determined by how it is constructed in the first place. Different financial instruments are associated with different risks for investors and the overall system. Every IOU entails some future commitment to pay, but not all require payment of a fixed amount at a future date irrespective of actual earnings. Credit instruments do, but common stock does not: Paying dividends is tied to profits actually generated,[26] and in the event of bankruptcy common stockholders are last

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[25] http://ineteconomics.org/blog/money-view/lords-finance-redux.

[26] Different corporate laws contain different rules for this. Some require profits made for the year prior to pay out; others, including Delaware, allow for surplus generated for the past 2 years and allow directors to

in line to recover. In its unadulterated form equity finance ensures that the fortunes of stockholders and firms are tied to one another, which is why greater reliance on equity finance especially by financial intermediaries has been called for {Admati, 2013 #3671}. In contrast, creditors can extract repayment irrespective of the firm's actual earnings to the point of insolvency. The power to "toll the bells to firms" (Pistor 2008) is what gives creditors so much leverage. In practice, the distinction between equity and debt finance has become increasingly blurred, not the least because of regulatory leniency. Equity is often credit-financed and debtors seek refinancing if they cannot make due on their obligations to creditors. Actual earnings thus become a second order concern to access to liquidity. Yet, the more a system relies on refinancing, the more fragile it is (Minsky, 1986).

Individual market participants will seek to protect themselves against the vagaries of fragile finance. They will seek to shift the burden of uncertainty to their counter parties. A good example is the bargaining power banks use to shift the burden of dealing with future uncertainties to their customers (Rona-Tas and Guseva in this issue). Alternatively, market participants they will enter into hedging transactions or buy insurance. That, however, does not purge uncertainty or liquidity scarcity from the system. Indeed, those least capable of dealing with the burden of uncertainty are unlikely to offer much protection against a crisis building up from the periphery towards the center. Similarly, when too many rely on insurance and the event that triggers payout actually materializes (irrespective of the low probability assigned to it), these legal mechanisms can further

tap into corporate capital (so called "nimble" capital rule). These legal choices affect the vulnerability of corporations to future change.

destabilize the system by causing a run on viable assets or intermediaries. At this point the system can be saved only by relaxing or suspending the full force of law: By making funding available where no funding is owed and by bailing out intermediaries that should be liquidated in accordance with the law.

d. Power as the Differential Relation to Law

Unpacking the legal construction of finance thus leads us to the elasticity of law and from there to the political economy of finance. Where law is elastic decisions are not predetermined by legal rules but left to the discretion of "power wielders" (Grant and Keohane 2005). Power can thus be defined as the differential relation to law. Where law is elastic power becomes salient. The critical questions are who exercises it, to whose benefit, how its exercise is legitimated and to whom the power wielders are held accountable.

Power is exercised throughout the financial system. It is exercised by those who have the resources to extend support to others without being legally obliged to do so. Those who have access to unlimited resources have the most power: Sovereigns with control over their own currency and debt. Their access to unlimited resources derives from their power to issue the legal tender, to use their means of coercion to levy taxes on their subjects and to coordinate political and economic resources to make credible its commitments (Kapadia 2013). The absence of any of these three conditions can undermine the credibility of a sovereign as effective lender of last resort. By the same token it positions the sovereign towards the periphery of the global hierarchy of finance. The Eurozone crisis vividly demonstrates that the absence of either taxing power or political unity undermines the viability of the common currency (ibid). This in turn has undermined the euro's quest to compete with the US dollar for global reserve status. Similarly, investors' fears about the US 'fiscal cliff' – the automatic budget reductions that was feared to push the US economy into a recession[27] – suggests that the mere power of the sovereign to tax is not sufficient. The ability to mobilize the political will to use this power and coordinate other policies that are conducive to effective economic management are equally important.

Emerging markets are more likely to issue their debt for the most part under foreign law, and detailed debt covenants specify their obligations in contracts designed by law firms in London or New York and issued for the most part under the laws of these jurisdictions with underwriter involvement. In contrast, most developed economies issue debt without such formalities, (Gelpern and Gulati 2013). If debt is issued under domestic law it is, in principle, always renegotiable, as the sovereign can change the terms of the underlying legislation (see supra). Debt issued under foreign law requires contractual provisions, such as collective action clauses (CACs), lest every single creditor can veto its renegotiation. CACs have been common in sovereign debt covenants issued under English law, but not those issued under New York law. Indeed, there was widespread fear that the introduction of such clauses might increase the costs of borrowing for emerging markets (ibid). This signifies that for countries on the periphery an unrelenting adherence to contractual commitments was deemed critical for their access to global capital

[27] Gillian Tett, "Be prepared for a lengthy era of US political cliff-dancing", The Financial Times, 9 November, 2012 at 24.

markets.[28] Similarly, when countries in the Eurozone agreed to introduce CACs into sovereign debt contracts for their domestic debt, concerns were raised that these countries were thereby putting themselves on equal footing with the likes of Zimbabwe (ibid). Market participants thus distinguish between formalizing the elasticity of contractual commitments and retaining an informal option to change the conditions of debt contracts. The latter is reserved for those who are or would like to be at the system's apex.

One's location in the hierarchical financial system is not determined by one's own actions alone or the raw size of their economy. When events necessitate the readjustment of investment strategies, investors flee to assets they regard as relatively more safe. These actions render the ones left holding assets others have dumped on the periphery of the system where their fate will be decided by the full force of the law – unless they find a backstop willing and able to step in and accept these assets against more credible ones or cash. The availability of a viable backstop determines the credibility of different assets in times of crisis and in doing so the survival chances of those who hold them.

In principle, private and public dealers can perform such backstopping functions. Yet, private dealers face a hard budget constraint.[29] They therefore tend to cease recue operations when these activities might undermine their own survival. Thus, Goldman Sachs provided a lifeline to Bear Stearns by effectively guaranteeing (for a fee) its derivatives obligations until days before it collapsed.[30] It withdrew support when it feared

[28] In fact, the introduction of CACs has not had any measurable impact on the costs of their debt. For a discussion of this puzzle see Gelpen and Gulati in this Issue.

[29] Janos Kornai famously pointed out that the nature of the socialist system is not determined primarily by its ownership structure but by the soft budget constraint associated with state ownership. See (Kornai, Maskin, and Gerard 2003).

[30] Roddy Boyd, "The Last Days of Bear Sterns," CNN Money, 31 March 2008, available at www.CNNMoney.com.

that its own viability was put at risk. At that point there was only one place left to go: The US Fed, with its *unlimited* access to high-powered money.

Neither private nor public dealers are legally obliged to provide liquidity to entities in distress, and no one has a legal claim to be rescued. Goldman Sachs was not obliged to offer a lifeline to Bear Stearns and faced no liability when it withdrew it. Similarly, central banks are not legally obliged to offer convertibility to most or all assets into legal tender and are sometimes explicitly barred from doing so – as is the ECB with regards to lending directly to sovereign members or was the Fed in the Great Depression. They (or other regulators) may be legally required to make good on deposit insurance or honor requests for cash at their discount window to eligible entities, but these obligations are limited in scope – and purposefully so. In the event of a crisis, however, legal constraints are more often honored in their breach than in their enforcement.

e. LTF in a Nutshell

Taken together, the elements of LTF suggest that law is central to finance in at least three respects: Law lends authority to the means of payment; it spurs regulatory pluralism by delegating rulemaking to different stakeholders; it vindicates financial instruments and other financial contracts. State authorized and backed money serves as the backbone of modern financial systems. It is the common reference price for all other assets; it is also the asset of last resort when others no longer find takers. Further, law sets the stage for legal pluralism by determining which actors, activities, and instruments to regulate and which to leave to private regulation. The greater the tolerance for competing regulatory regimes, the greater the probability that competition will increasingly take the form of regulatory arbitrage, i.e. the gaming of the very system that makes and shapes finance. Last but not least, law recognizes contracts and defines the contours of their enforceability. This enhances their credibility, but to the extent that financial instruments are designed to weaken regulatory costs it effectively sanctions regulatory arbitrage and the erosion of formal law.

Several predictions about the development of finance can be derived from this analysis. First, legal reforms and contractual devices that create credible commitments support the expansion of finance into the periphery both domestically and globally. This implies that in times of crisis they will face the full force of the law. Contraction is therefore more likely there than at the system's apex at least in the initial stages of the crisis, but can build from there towards the apex. Second, actors will seek to position themselves strategically towards the apex of the domestic or global system where they are most likely to benefit from another lifeline. Individual actors may not have full control over their location in the system, but they can influence it by various means ranging from social or political ties to influencing the rulemaking process, to making themselves systemically important. Third, jointly these forces are likely to lead over time to a greater concentration of finance at the apex where the ultimate backstop resides. Fourth, the greater concentration of finance at the apex will require the mobilization of ever-larger resources to stabilize it. Fifth, because these resources are tied to sovereigns they require political backing of the ultimate backstop's polity. In the last instance it is the polity of whoever happens to be the global backstop that will determine the fate of our global financial system.

5. LTF through the Lens of Competing Theories

LTF differs from other theories on finance in that it calls attention to finance's legal construction. Recognizing the importance of law to finance is not new, but asserting that law is essential to the very existence of contemporary finance is. This also puts LTF apart from theories in socioeconomics that have long asserted the relevance of social structures to finance, but have been less explicit about the specific role attributed to law or the state as compared to other structures (Hodgson 2009). Finally, while various economic theories have recognized the inherent instability of finance, they tend to abstract from the legal and institutional structures. LTF complements these theories by illuminating the legal and institutional transmission mechanisms of instability.

a. Law & Finance

The literature on law and finance is of relatively recent vintage. It emerged in recognition of the difficulties of developing financial markets in the former socialist world and emerging markets (Shleifer and Vishny 1997; La Porta et al. 1998). The major insight of this literature is that law matters to finance mostly by vindicating investor rights: Legal systems that better protect these rights tend to have more developed financial systems. The choice of legal system in turn has been linked to politics in the early development of the new nation states (Glaeser and Shleifer 2002). Those with greater political stability could afford decentralized systems of legal ordering whereas those that faced chaos were beholden to centralized control with weaker property rights afforded to individuals (Djankov et al. 2003). This was the birth of the “New Comparative Economics”, published in this journal ten years ago.

Thus, Law & Finance offers both a theory of how law relates to finance and an account of the political economy of legal systems. However, unlike LTF it treats law and finance as separate spheres that are related in a causal, unidirectional fashion, not as structurally intertwined. Law determines the degree of investor protection and thereby establishes the rules of the game for a financial market place in which actors respond to the incentives law creates. Absent legal protection investors would have to rely more on tangible assets, such as large stakes in firms, to exercise control. It follows that within this theoretical framework law plays a critical role in the making of liquid markets in that the protection afforded by law replaces more primitive forms of control. But this is where the story ends. Better protection of individual rights is always associated with better finance and negative feedback loops are ruled out. Any deviation is attributed to exogenous factors, such as wars, natural catastrophes or financial crises (La Porta, Lopez-de-Silanes, and Andrei 2008). Law & Finance is thus a theory for good times in finance, not one for bad times.

Further, Law & Finance assumes that knowledge is perfect and liquidity is a free good. Only then does the equation of better protection equals better financial systems hold. If instead knowledge is imperfect and market participants cannot fully predict the future, they will need to readjust past investment strategies. Under these conditions strong legal protection may prevent the adjustment of commitments made in the past to account for change. Moreover, while Law & Finance asserts that good law creates the right incentives for good behavior, and bad law for bad behavior. Yet, what is good or bad law, good or bad behavior may well differ when viewed from the perspective of individual actors or the system. Financial innovation that gives an entity a competitive edge over others by mitigating the effects of regulation may enhance its profitability. The same actions may destabilize the system, especially when widely mimicked by others, as they will be in a competitive system. In theory, actors should anticipate the potential harmful effects of their action. However, they can do this only if they have unlimited foresight as to what effects their individual actions may have on the system as a whole. Even then, they may bet on a rescue by a lender of last resort. Moral hazard is, of course, a staple in standard economics. What is less appreciated is that the need for bail out may be *caused* by the very legal protections that are meant to further financial development. That would require a shift from the belief in the equilibrating forces of markets to recognizing their inherent instability.

Reaching the conclusion that finance is instable does not necessarily require conversion to Keynesianism. Mainstream economists have arrived at similar results only by different routes. Allen and Gale have shown that 'incomplete' financial markets tend to spread contagion, a key source of market instability (Allen and Gale 2000). Moreover, incomplete contract theory (Hart and Moore 1999) has established that no matter how hard parties try, they cannot write complete contracts. Incomplete contract theory recognizes not only transaction costs but also uncertainty as the root causes for this imperfect state of the world: Parties are fundamentally unable to foresee future contingencies. Indeed, Bolton and Rosenthal have shown that under conditions of extreme uncertainty (they use the case of agriculture in 19th century US) ex post intervention by the state in private contracting can be socially optimal (Bolton and

Rosenthal 2002). They suggest that debt contracts that are not state-contingent in their payment obligations are incomplete. Viewed in this light, a debt moratorium is means for completing contracts when unforeseen contingencies actually materialize. The Law-Finance Paradox goes a step further. It proposes that state contingencies, which are frequently built into modern financial contracts can themselves become the cause for financial crisis, in particular when an unrealistically low probability is attached to the possible manifestation of such an event. Still, their basic argument is consistent with LTF: under conditions of uncertainty contracts may require future adjustment – and not only at the apex of the financial system.

b. Theories on the Social Structure of Finance

The rise of law and finance has been paralleled in the rapidly expanding field of financial sociology (Carruthers and Kim 2011). From this perspective finance is a social system like many others, and financial relations are socially and culturally embedded. Law is but one of multiple normative (or legal) orders that complement one another or compete for dominance. Markets develop within these structures and are formed by them. Detailed case studies developed in this tradition have shown how finance emerges from and is shaped by social and political structures. A good example is the City of London, where tensions between the Crown and its private financiers resulted in the creation of the Bank of England, a privately owned entity that increasingly performed public, market stabilizing functions (Carruthers 1996). The diamond exchange in New York (Bernstein 1992) is embedded in social practices of Jewish diamond traders, practices that were sustained even as the trade expanded globally. For hundreds of years the global gold market has been similarly embedded in a gentile culture of London-based financial intermediaries that perceived themselves not only as market participants, but as their apex stakeholders (Harvey 2010).

Differences in social structures also help explain different strategies used for introducing consumer credit markets into different countries and legal systems. In contexts where confidence in a reasonably high repayment rate was high, as in US consumer lending markets, banks used a ‘big drop’ approach for resolving the problem of linking consumers, banks and retailers at once: They mailed millions of credit cards to customers in urban centers in the 1950s (Guseva 2008). Where, in contrast, the absence of a credit culture suggested that the propensity of repayment was too low to risk such a strategy, as in post-socialist Russia and other transition economies, banks tied the issuance of credit cards to managing the bank accounts of customers into which their salaries were deposited (ibid) (Rona-Tas and Guseva 2013).

Sociologists have also integrated technological change into the analysis of finance. Electronic trading has eliminated traditional stock or commodities exchanges with their call-out system where traders could observe the stress their actions were causing on others standing in same pit next to them (MacKenzie 2006). This has effectively eliminated the possibility to signal distress at a relatively early state. Information technology has increased the pace of financial transacting and introduced new systems of ordering. Computer screens and the logic of algorithms used in the construction of financial instruments have become new ordering devices (Lepinay 2011).

The argument that finance is embedded in social structures has been taken to new heights in a subfield of socioeconomics that deals with “performativity” (Callon 1998).

This concept stands for the notion that by analyzing, observing and modeling the market, we shape it. These analytical tools are “an engine, not a camera” as MacKenzie has put it (MacKenzie 2006). In short, markets and the social structures in which they are embedded are interdependent and shape one another.

LTF has in common with these theories the idea that markets do not exist outside law or other social structures. The theory does not deny that law is not the exclusive force that shapes markets. However, it maintains that law plays a more decisive role than most socioeconomic analyses suggest. Financial relations are built on promises to deliver at a future date (Carruthers and Kim 2011) – importantly, however, contemporary finance can no longer rely on social relations to ensure compliance with promises made in the past. Large scale markets are feasible only if commitments made by someone far afield can be enforced without any concern for the conditions under which those commitments were made. The rise of complex financial markets is thus inextricably linked to the legal construction of these markets.

The notion that private contracting takes place ‘in the shadow of the law’ is, of course, not new and has been made in particular in reference to self-regulating markets (Charny 1990). Yet, LTF goes a step further by arguing that absent state backing contemporary financial markets could not exist. Two factors account for that: the scale and anonymity of contemporary financial markets, and their need for (occasional) backstopping which can effectively provided only by an entity with unlimited recourse to high powered money. Such an entity can by definition only be a state.

c. Financial Instability Theories

As discussed at the outset, LTF is premised on uncertainty and liquidity volatility. In contrast to other theories that have emphasized these attributes of finance, LTF asserts that the legal structure of financial markets can contribute not only to the success of financial markets, but also to their undoing. In contrast, Frydman and Goldberg (2011) argue that financial instability result from the need to adjust investment strategies in light of new events. Because investment strategies are sticky and are often adjusted only once price swings have reached extreme territory, adjustment costs tend to be high. They offer a detailed account of investor behavior, insisting that most of their actions can be deemed rational in accordance with standard assumptions made in economic theory.[31] Under conditions of imperfect knowledge, however, rational actions don't result in equilibrium outcomes, but instability.

Frydman and Goldberg do not link these insights to the legal and institutional construction of contemporary financial markets. In part this can be explained by the choice of financial markets that frame their analysis – equity markets – and in particular on the allocative function they perform. If investors or traders did not have to concern themselves with funding the capital they invest, liquidity concerns could indeed be safely ignored. After all, equity finance is the most stable of financing strategies given its reliance on future returns rather than future refinancing options. Yet, equity finance does not operate independently of the manner in which equity positions are funded or the legal commitments different funding strategies entail. Consider only the difference between

[31] On the ultimately unsatisfactory attempt by Behavioral Economics to blame irrationality for the failure of neoclassical models to hold true in the real world, see Rona-Tas and Guseva this issue.

open- or closed-end investment funds, where the former allow investors to withdraw their investment at any time just as depositors can pull their money from a bank; the effect of market-to-market accounting rules on investors who themselves manage a volatile portfolio of assets; or the ways in which repo markets link securities traders to dealers that offer short term liquidity (Copeland et al. 2012). In short, allocation and funding are two sides of the same coin that is finance and should not be separated. The legal structure of entities and the effects it has on their funding abilities as well as nature of the contractual commitments they enter into set the stage for financial market development in good times and their undoing in bad times.

Adding law to their analysis would also refine the policy prescriptions Frydman and Goldberg derive from their analysis. They see a role for regulators primarily when asset prices reach extremes, which in light of historical evidence appear unsustainable. Specifically, they call for a range of "excess-dampening measures", such as guidance-range announcements and monetary response strategies (Frydman and Goldberg 2011, 240). A legally inspired analysis would suggest that excess is built into financial contracting long before extreme asset prices are reached, namely at the time of designing fungible financial contracts with rigid, non-negotiable commitments. Because they are contractually hardwired, they will run their course irrespective of calls to moderation.

Minsky was more sensitive to the legal structure of finance. While he asserted that financial markets are "inherently" instable, he also maintained that the *relative* stability of financial systems is a matter of social choice and institutional design (Minsky 1986, 7). If and when markets destabilize, as they will as competition drives them to take positions that expose them to the vagaries of an uncertain future, proactive intervention is required to set them once again on a more stable path. He therefore called for far reaching legal restructuring of the economy (ibid at pp. 327).

LTF expands this framework in several directions. Minsky concluded his opus magnum almost 30 years ago, at a time when the credit system was still largely entity-based rather than market-based, as it is today. Markets have also become more interdependent globally, which requires a framework that is not tailored to a single system, such as the US. Neither is it sufficient to focus on private credit relations alone. Lastly, Minsky never developed a political economy of finance, and neither did most other students of modern finance. LTF expands the institutional analysis from banks to credit markets, and from domestic to global markets. The theory helps identity patterns of vulnerability to financial distress that operate across legal systems and offers the starting point for a more in-depth analysis of the kind Minsky offered for the US system. Moreover, it offers a framework for tackling the political economy of finance by relating it to the intersection of finance's hierarchy and the elasticity of law.

Finally, LTF pushes the frontiers of Mehrling's 'Money View'. It builds on his insight that finance is hierarchically organized. Yet, the "inherent" hierarchy of money is deconstructed as being in important aspects institutionally determined (see also Mehrling in this issue). While every credit-based financial system may have a pecking order of means of pay, the particular configuration of the system, the number and complexity of financial commitments and their interdependencies is determined by contractual commitments that are sanctioned by law.

In sum, LTF builds on theories that take seriously the notion of fundamental uncertainty and liquidity constraints. It expands on these theories by emphasizing that financial interdependencies are legally hardwired and suggesting that this can amplify liquidity constraints when past investments are adjusted in light of new facts. This allows LTF to point to critical tensions in the makeup of modern-day finance: Its dependence on law on one hand and law's potentially destructive effect on finance on the other; the tendency of law to create regulatory pluralism with corrosive effects on the efficacy of system-stabilizing laws and regulations; and the interdependency between 'private' credit and 'public' money, i.e. the essential hybridity of finance.

6. Concluding Comments

LTF holds potentially important lessons for future reforms of domestic and global markets. Since this paper has only introduced a theory that has not been subject to extensive testing,[32] it would be premature to spell out in detail what these policy implications might be. In lieu of that, this conclusion suggests how LTF's reframing of the relation between law and finance might affect reform strategies already adopted or currently in the making.

Legislatures in countries around the world have told their constituencies that the primary goal of these reforms is that "it" would not ever happen again – "it" being the bailout of major financial intermediaries. Yet, as Minsky pointed out long ago, financial instability is inherent to modern finance and therefore the "it" he referred to in his paper "Can "It" happen again" (Minsky 1982 (1963)), namely a major financial crisis, will re-

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[32] On the various strategies that might be used to put this theory to a test, see Simon Deakin's comments in this Issue.

occur. The only question is when and how bad it will be – and that, of course, is impossible to predict with any degree of certainty.

Legislatures have sought to make their commitment to not bailout credible by tightening rules and strengthening regulatory oversight including for systemically important banks. Yet, as the Law-Finance Paradox suggests, strengthening commitment devices alone without reducing the systems' structural vulnerability to crises can prove counterproductive. Legislatures have also sought to limit the powers of regulators and central banks by subjecting bailout decisions to political control (Gadinis 2012). Politicians have recognized that discretionary decision-making is an exercise of power that may require political accountability. It remains to be seen where this leaves us in a future crisis. When staring into the abyss of a financial collapse, politicians like bureaucrats may opt for rescue rather than self-destruction. As the showdown over the bailout package in the US in September 2008 has shown (when Congress voted down the first version of the law[33]), however, this is by no means a foregone conclusion. Thus, political control may increase the likelihood that Minsky's "It" will happen again.

In contrast, recent reforms have not for the most part put the financial system on more stable footing. Regulation of some entities has been strengthened. Banks in particular have been taken to task and more derivatives have been forced onto formal exchanges, reversing in part the 1974 Treasury Amendment. These reforms, however, do not address the problem of the plurality of legal regimes – public and private – which under competitive pressure will be exploited by regulatory arbitrage.

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[33] Carl Hulse and David Herzenshorn, "House Rejects Bailout Package, 228-205, Stocks Plunge", The New York Times, 29 September 2008. Available at www.nytimes.com (last visited 11 November 2012).

The most important space of regulatory arbitrage is the transnational financial system. Most financial regulation remains at the national level, with regulatory standardization the most important mode of transnational coordination. However, agreeing on standardized rules today that shall apply in an uncertain future does not address the core problems of contemporary finance. On the contrary, it hamstrings domestic regulators, as these rules are impossible to alter short of another crisis. This makes the transnational regulatory regime unresponsive to future change and as such unfit for dealing with an inherently instable financial system.

Many see a unified regulatory regime at the transnational level as a possible solution. The most important example is the move towards a European Banking Union contemplated for the Euro zone. Yet, a global financial regulator would face an impossible task, and the European Banking Union remains an incomplete solution: It includes only countries within the Eurozone plus other EU member states that opt into this structure, but ignores interdependencies with other markets and financial centers, most importantly with the City of London. Moreover, the banking union is premised on the belief that financial crises can be prevented by firm ex-ante commitments as suggested by its emphasis on the enforcement of a common rulebook. This has proven to be wrong time and again. Indeed, from the perspective of LTF, unbending and unbendable credible commitments may well increase rather than decrease the likelihood and/or severity of a crisis. Addressing this Law-Finance Paradox earlier rather than later by relaxing contractual commitments may prevent a full-scale crisis. This may to some extent undermine the credibility of many innovative instruments – but that might be socially desirable. It makes little sense to lend the coercive powers of the state to instruments if in doing so it transforms them into “weapons of mass destruction”.[34]

What is instead needed is an approach to financial regulation that recognizes both the interdependencies of financial instruments, intermediaries and markets and the ways in which law can amplify these interdependencies. This may sound like an impossible task and is certainly contrary to conventional understanding of the role of law in finance as efficiency enhancing infrastructure. Yet, there are plenty of examples in legal practice that demonstrate how legal and contractual commitments can be adjusted to take account of an uncertain future. Credit moratoria in response to draughts or other shocks in agriculture are one example (Bolton and Rosenthal 2002 discussed supra). The handling by the German Supreme Court (*Reichsgericht*) of credit contracts during the period of hyperinflation in the 1920s is another. After ruling for years that “pacta sunt servanda”, causing an “endogenous legal boom” that almost brought the legal system to its knees as more and more creditors rushed to the court systems to beat the loss in value their claims suffered as the value of the currency was in free fall (Wolf 1993). The court used the principle of good faith embodied in the civil code to adapt contracts to new circumstances. The principles it and subsequent courts developed have since been incorporated into a new provision of Germany’s civil code:

> If circumstances which became the basis of a contract have significantly changed since the contract was entered into and if the parties would not have entered into the contract or would have entered into it with different contents if they had foreseen this change, adaptation of the contract may be demanded to the extent that, taking account of all the circumstances of the specific case, in particular the contractual or statutory

[34] Warren Buffet famously called derivatives “weapons of mass destruction”. See “Buffet’s Time Bomb Goes Off on Wall Street”, Reuters, 18 September 2008, available on www.reuters.com (last visited 11 November 2012).

distribution of risk, one of the parties cannot reasonably be expected to uphold the contract without alteration.[35]

One of the major lessons LTF holds is that we need more safety valves of this kind– not only at the core where law is relatively more elastic to begin with, but also on the periphery of the system. The alternative is to put our faith into central banks – their willingness and ability to do the right thing ex post facto. Obviously this raises important question about how best to design such safety valves; whether courts, regulators, or other agents are best placed to perform such a role; about who should be empowered to initiate an intervention and how to ensure that the relief safety valves would offer in times of distress is not abused or weakens ex ante commitments. These are difficult questions that require further research and analysis. An important contribution of LTF is to put such questions up front and center for future financial reforms.

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[35] Sec. 313 BGB. The English translation is available at http://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p1094.

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