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Towards a Legal Theory of Finance

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Towards a Legal Theory of Finance¹

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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 core. Here, power becomes salient. This helps explain why finance is concentrated around ultimate lenders of last resort and why regulating finance's core has become so elusive. It also holds lessons for future reforms.

¹ The paper results from a 2-year research project, the Global Finance and Law Initiative. Funding from the Institute for New Economic Thinking is gratefully acknowledged. It 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. All remaining shortcomings are mine.

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. In such a 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 yet, as will become clear, re-enforced by law: Fundamental uncertainty and liquidity constraints. The two go together: If the future were known we could take precaution to deal with future liquidity constraints; if liquidity were 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 core and a periphery, the differential application of law in its different parts and finally the locus of discretionary power.

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. Its 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 and their implications for the nature of finance. 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.

Where there is disagreement is whether inherent instability extends beyond intermediaries to financial markets, or whether financial markets can instead solve the instability problem by diversifying risk. There are good reasons to believe that the roots 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 is imperfect and liquidity not a free good.

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 built on this insight by emphasizing 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, like Knight before him, distinguished uncertainty from probability:

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)

Frydman and Goldberg (2011) expand on this by developing 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 over time. Rather than following a pre-determined strategy built on a fixed set of indicators, investors demonstrably engage in *non-routine* change. 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 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)). I define liquidity as the ability to sell any asset for other assets or for cash at will.² 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

² 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).

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 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 for today’s courts nor arguably modern day academics in economics or law.³ Moreover, in a market based credit system that is largely reliant on “Ponzi-finance”, as Minsky has defined financing strategies that rely ex ante on the ability to refinance 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; this increases the more investors have come to rely on refinancing. In short, for a crisis to occur imperfect knowledge must meet liquidity shortage.

³ BASIC INC. v. LEVINSON, 485 U.S. 224 (1988) at 255.

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). Incomplete contract theory (Hart and Moore 1999) has established that no matter how hard parties try, they cannot write complete contracts; that is, contracts that will never have to be renegotiated at a future date. Within their framework this is attributed to the transaction costs such an effort would entail. However, a plausible alternative explanation is the sheer impossibility of such a task in light of fundamental uncertainty. If the future is unknown it cannot be contracted for and attempts to do so must be futile. In fact, as I will argue below, under conditions of fundamental uncertainty such an unbending commitment is counter-productive because it can result in the self-destruction of the system.⁴

Lastly, the literature on the soft budget constraint (SBC) has pointed out inefficiencies in finance that make it vulnerable to instability. The SBC was first used to denote the lack of financial discipline in the socialist economies (Kornai, Maskin, and Gerard 2003). By refinancing or cross-subsidizing firms the socialist system undermined efficiency, as firms knew *ex ante* that they would not be held to account *ex post*. In contrast, a hard budget constraint implies that a firm “does not receive support from other organizations to cover its deficit and is obliged to reduce or cease its activity if the deficit persists” (*ibid* at 1097). That, of course, assumes that in efficient economies firms are by and large held to conservative financing strategies, or what Minsky called “hedge-

⁴ See the Law-Finance Paradox discussed *infra* at 4.c.

financing” (Minsky 1986 at 225). Yet, reliance on refinancing on demand has become a hallmark of modern day finance and has exacerbated the “dynamic commitment problem” (Dewatripont and Roland 2000, 247) the literature associates with the SBC.⁵ Because parties have made sunk costs in the past, they tend to throw good money after bad money. An efficient system should prevent parties from refinancing bad projects. A possible strategy to strengthen the commitment not to refinance at a future date is to choose co-financing. By introducing coordination problems among multiple parties who need to reach agreement for refinancing to be approved, more bad projects will be cancelled at an earlier stage (Huang and Xu 2000). This resolves the commitment problem but does not address the problem of fundamental uncertainty. It may, however, improve the judgment that is called for as complex problems are best resolved by more than one pair of eyes.⁶ In a similar vein Kornai et al. (2003) describe SBC in finance as a credible commitment problem (ibid at 1126). If only banks could credibly commit to cancel bad projects they would not get themselves into a position where they have to gamble for resurrection. This, of course, assumes that parties have perfect foresight and ignores the risks inherent in maturity transformation. Without perfect foresight banks are bound to make binding commitments to fund long-term projects that will not generate the expected returns in time to pay all their depositors on demand. Finally, it is oblivious to Keynes’ insight that wealth is accumulated over time and that some projects may in fact need more time to mature. More generally, the case for rent seeking and shirking or fraud seems to be vastly overstated. In consumer finance, for example, evidence suggests that

⁵ This work builds on (Dewatripont and Maskin 1995).

⁶ This argument is at the core of the literature on why juries or collegial courts are superior to single judges. See (Kornhauser 1981).

the most important cause of default is sickness, not fraud. This implies that more information or stronger commitments at the ex-ante stage are unlikely to address the underlying issue, which is largely one of uncertainty (Rona-Tas and Guseva 2013).

In sum, financial instability can be derived from the two premises of uncertainty and liquidity constraints. Other theories have come to similar conclusions. Yet, as I will argue below, exclusive focus on the commitment problem can produce unexpected, even undesirable outcomes. Rather than stabilizing the system it may trigger its undoing. To see this we need to discover how finance is legally constructed.

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, just as financial intermediaries, are constructed in law and do not exist outside it.

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 core or apex of the financial system.⁷

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 by private or public parties. Examples of publicly issued IOUs 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 of pay in 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

⁷ I will use “core” and “apex” synonymously throughout this paper.

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, states cannot be seized and liquidated (Schwartz and Zurita 1992). Moreover, when debt is issued under their own laws, they can escape legal obligation by changing those very laws.

Still, financiers have successfully sued 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 time – 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. Foreign investors in sovereign bonds have brought arbitration proceedings against sovereigns that have defaulted on their external debt, and a recent court case raises the specter of enforceability of such claims in foreign courts, notwithstanding sovereign immunity.⁸ This suggests that law matters even for contracts with a sovereign.

As for IOUs that are issued by private entities, they may be designed by them or use a legal template, which may or may not be amendable. Shares in a publicly traded company must, in principle, be transferable, and several jurisdictions or stock markets impose one vote per share voting structures. Irrespective of whether these legal design features are

⁸ 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).

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.⁹ 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 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, two things had to happen. First, contractual practices had to be standardized to ensure scalability. And second, reasonable assurance was needed that these instruments would withstand legal scrutiny by regulators and courts in countries where they were issued, held and traded. This was accomplished by creating a

⁹ Interestingly, charter provisions that might affect such scenarios are typically not priced at the IPO stage. See (Klausner 2001).

private organization, the International Swaps and Derivatives Association (ISDA), that brought together the major issuers and brokers of these instruments as well as their legal advisors (Morgan 2008). Not only did it create standard contracts, it adapted them to different legal systems around the world and enlisted major law firms in these jurisdictions to opine on their enforceability. While law firms cannot guarantee court outcomes, their views nonetheless lend additional credibility to these contracts.

The web of legally permissible IOUs – credits, bonds, derivatives, but also common stock, convertible shares etc. – that link counterparties to one another constitutes financial markets and determines 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 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 banks¹⁰), 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.

¹⁰ The fact that LIBOR is not discovered as a market rate but a construct was 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.

b. *Legal Sources of Finance's Instability*

Fundamental uncertainty paired with the liquidity constraint renders financial markets inherently instable. Under such conditions, pre-determined binding legal commitments that are non-negotiable can trigger the self-destruction of the financial system.

Take the example of AIG Financial Products (AIGFP), the London subsidiary of AIG, which doled out US\$31 million in the first nine months 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 and had taken precaution for its exposure to potential collateral calls by opening an unlimited credit line with its parent company to make up for its losses. This arrangement, however, brought AIG 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. The mere takeover (as opposed to bankruptcy) left existing contractual commitments intact, prompting the US government eventually to acquire all outstanding credit default swaps (CDS) at the nominal value of US\$62 bln (ibid at 39). Had they allowed AIG and its subsidiary to go bankrupt and be liquidated, creditors would have received any leftovers and their contractual claims would have been cancelled. After all, that is precisely what bankruptcy and hard budget constraints are meant to achieve: To liquidate firms that fail to balance their assets and liabilities. Yet, this has important repercussions for creditors that cannot recover their claims, repercussions that are particularly pronounced in finance. Specifically, AIGFP had issued huge volumes of CDS in the years leading up to the crisis to major financial intermediaries around the world. Had these insurance contracts 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\$14.5 bln 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 (States 2011, 324).

While perfectly rational from the perspective of individual contractors, pre-determined and non-negotiable obligations to act in response to future contingencies, such as collateral calls, margin calls, etc., can lead to the system's self-destruction. They are designed to make the future predictable for the contracting parties in question, but are necessarily based on assumptions about future events (i.e. a low probability that they would occur) that might turn out to be false. Moreover, individual contractors are oblivious to the systemic effects such commitments might create. Without this design CDS may not have found as many buyers; indeed, allowing for renegotiation would have created the very commitment problems the incomplete contracts and SBC literatures seek to eliminate. Yet, under conditions of fundamental uncertainty and liquidity constraints this legal construction of finance puts the system inevitably on autopilot to self-destruction.

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 many financial instruments are close substitutes in the sense that they can easily be bought and sold for one another or for cash. Under pressure, however, it turns out that not all means of pay are equally credible. 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 IOUs 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 IOUs, 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, they 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, if only 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, and since it was sufficiently small to fail, 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 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 was incapacitated by the lack of its own currency and most emerging markets by the fact that most of their external debt was denominated in foreign currency (Kinsella and Leddin 2010). By attempting to offer unlimited liquidity to its financial system, Ireland triggered its own sovereign debt crisis, which pushed the search for a lender or dealer of last resort one level up to the issuer of the euro, i.e. the ECB.

The hierarchy of finance can also 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.¹¹ They were established to provide liquidity to beneficiaries in the following order: first to primary dealers authorized to acquire US treasuries at the New York Fed's open market desk;¹² 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 (among them again money market funds); and last to intermediaries investing in asset backed consumer loans. The chronology of Fed actions illustrates its primary concern with ensuring the proper

¹¹ 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).

¹² Appendix IV of the document lists the primary dealers as of June 2010.

functioning of the core 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 close proximity to the core 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), 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.

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 ensure that they 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;¹³ the lower that probability the more elastic the law. In general, law tends to be relatively elastic at the system's core, but inelastic on its periphery. It is at the periphery where default is most likely to occur and involuntary exit will be enforced. In contrast, at the core where the very survival of the system is at stake, law tends to be

¹³ Suggested by Sarah Quinn at the final workshop of this research project.

more elastic by design and/or as a result of the discretionary powers abrogated to or by the system's ultimate backstops.¹⁴

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”.¹⁵ 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. 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.

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 be at the very bottom of the US financial system. While major financial intermediaries received government support and bailouts, homeowners faced personal bankruptcy and foreclosure in accordance with the law. However, they are still in a far superior position 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)

¹⁴ The chairman of the Fed, Ben Bernanke, famously defined this role as “we do everything it takes” to save the financial system.

¹⁵ See Sec. 13(3) of the Federal Reserve Act prior to changes introduced by the Dodd-Frank Act.

relative to the domestic currency (Rona-Tas and Guseva 2013).¹⁶ Moreover, in Spain (and most other countries outside the US) mortgage backed loans are full recourse loans: 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 a core and a periphery, where homeowners at the periphery carry not only the full credit risk, but frequently also the currency risk.

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. Collateralized debt obligations have been so popular for this very purpose (Romano 2011). Regulatory reforms in the aftermath of the financial crisis have triggered another round of financial innovation to mitigate the costs of these regulations for individual firms. Examples include synthetic exchange traded funds (ETFs) and collateral swaps (Awrey 2013).

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.¹⁷

¹⁶ Note, however, that the Hungarian government intervened and forced creditors to adjust loans and share their currency risk.

¹⁷ This prompted Sester to title one of his blogs "Where is my Swap Line?"(Sester 2008).

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 G10) 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 centers they house. Where one is located in the hierarchy matters for one’s survival constraint. Those at the apex of the system tend to exercise discretionary powers in times of crisis over whether to intervene and whom to rescue. By the same token, those sufficiently close to the core 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 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 at the ex-post stage.

On rule of law grounds such differential application of the law is objectionable. Yet, the elasticity of law has proved time and again critical for avoiding a complete financial

meltdown. Indeed, 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). Importantly, however, the degree of elasticity and discretion that is required to stabilize a financial system depends 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 and legal practices that are bound to destabilize the system, the greater the pressure to suspend the full force of the law in times of crisis.

4. Towards a 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 as well as 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 may create the impression that finance can be fully supported by private, or self-regulatory, arrangements (Bernstein 1992). There is, however, no financial system of substantial scale that is not backed by 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. The credibility and value of financial contracts, or IOUs, depends on such backing. Thus, for all its rule-making activism, ISDA is not really a rule maker for derivatives markets, and certainly not a rule enforcer (it offers only limited arbitral services). Instead, its functions are best described as a legal engineer.¹⁸ It develops templates for financial instruments so that they are enforceable in multiple jurisdictions and lobbies states to ensure that critical pieces of legislation – such as netting rules for counterparty claims in bankruptcy – recognize 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 precisely, when their very purpose is to mitigate regulatory costs for the issuer.¹⁹ 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

¹⁸ See also Ron Gilson, who has described lawyers as transaction cost engineers. See (Gilson 1998)

¹⁹ See, for example, the negotiation of JP Morgan with the SEC over its issuance of collateral debt obligations reported in (Tett 2009).

extensive negotiations with regulators or redrafting in the wake of court challenges. Yet, without 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 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). 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).²⁰ 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, 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, mostly because sovereigns enjoy immunity from litigation and prosecution in most countries around the world. However, as mentioned previously, this has now been questioned by a recent ruling of the Southern District of New York in a case involving Argentine debt.²¹ More generally, however, sovereigns have learned to use their immunity with care especially when relying on foreign investors to finance their debt. Even if not every contract is enforceable in a court of law, rule compliance is sanctioned by other sovereigns or multinationals that perform lender of last resort functions to sovereigns in distress.

b. Financial Markets' Essential Hybridity

²⁰ 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.

²¹ See *supra* note 10.

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.²² 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 financial systems that are not backed by state money cannot exist, at least for a while. However, they tend to be instable and prone to collapse whenever commitments made in the past require substantial readjustment in light of new events. 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. Consider the fate of bank-issued money in the US prior to the establishment of the US dollar as the common

²² The term “essential hybridity” was coined by Geoffrey Hodgson and Perry Mehrling at the final workshop of this project.

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). Even with a common currency but without a common 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 viability of private sector bailouts to provide the political impetus for a new central bank, the Federal Reserve, established in 1913. 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 rules²³ on what assets it could possibly accept against cash, the only means of pay that would find takers.

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 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

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).

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 collectively.

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 shadow 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 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,²⁵ and in the event of bankruptcy common stockholders are last in line to recover. In its unadulterated form equity finance ensures that the fortune of stockholders and firms is tied to one another. 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 is less clear-cut. 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.

Individual market participants will seek to protect themselves against the vagaries of fragile finance. They will enter into hedging transactions or buy insurance that places the burden of future loss on their counterparties. When too many rely on insurance of this kind and the event that triggers payout actually materializes (irrespective of the low probability assigned to it), these legal mechanisms set the system on autopilot to self-destruction. 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.

²⁵ 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 tap into corporate capital (so called "nimble" capital rule). These legal choices affect the vulnerability of corporations to future change.

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 and to coordinate political and economic resources to make credible its commitments. 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 (Kapadia 2013). 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 might push the US economy into a recession²⁶ – 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 frequently issue their debt 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 their respective laws. In contrast, most developed economies issue debt without such formalities, relying instead on a telex that specifies the amount and interest rate (Gelpern and Gulati 2013). This places emerging markets further on the periphery of the global system. There is also a clear divide in the re-negotiability of this debt. If debt is issued under domestic law it is, in principle, always renegotiable, as the sovereign can change the terms of the underlying legislation. 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 markets.²⁷ Similarly, when countries in the Eurozone agreed to introduce CACs in their own sovereign debt contracts, concerns were raised that these

²⁶ Gillian Tett, “Be prepared for a lengthy era of US political cliff-dancing”, *The Financial Times*, 9 November, 2012 at 24.

²⁷ 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.

countries were thereby putting themselves on equal footing with the likes of Zimbabwe (ibid). This suggests that there is a perceived difference 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 core.

For actual renegotiation or refinancing to occur, the size of the debt tends to be less important than the likely effect a default would have on the core. In 1994, the US lent a hand to Mexico in the midst of the Tequila crisis because of the likely repercussions a default would have had for US banks (Eichengreen 1999). In contrast, the debt of Argentina, a much larger country, was too dispersed to create a comparable threat in 2001, and the international community represented by the IMF allowed Argentina to default (Gelpern 2005; Feldstein 2002). Greece may have accounted for only 2 percent of the EU's GDP, but as long as German and French banks were critically exposed to Greek debt, a potential default was perceived as a threat to the pan-European financial system. As foreign banks used the breathing space provided by interim bailout packages to shed their exposure, this threat declined. Not surprisingly, discussions about 'Grexit' (i.e. Greece's exit from the Eurozone) resumed.²⁸

These examples demonstrate that 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

²⁸ Still, a study by a German think tank published in October 2012 suggests that Grexit could come at huge costs. See "'Grexit' could spark global economic crisis: German think tank", Reuters 10/17/2012, available at <http://www.reuters.com> (last visited 11 November 2012).

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. Private and public dealers can, in principle, perform such backstopping functions.

Private dealers tend to do this only as long as it is profitable; they cease their activities when their own survival might be at stake. Goldman Sachs provided a lifeline to Bear Stearns by effectively guaranteeing (for a fee) its derivatives obligations until days before it collapsed.²⁹ It withdrew support when 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. They (or other regulators) may be legally obliged 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, these constraints are relaxed in the name of financial stability. It is here where power becomes salient.

²⁹ Roddy Boyd, “The Last Days of Bear Stearns,” CNN Money, 31 March 2008, available at www.CNNMoney.com.

e. LTF in a Nutshell

Taken together, the elements of LTF discussed above 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 dualism or 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 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 core. Second, actors will seek to position themselves strategically towards the core of domestic or global systems where they are most likely to benefit from another lifeline. Third, jointly these forces will lead over time

to a greater concentration of finance at the core; that is, where they believe the ultimate backstop resides. Fourth, the greater concentration of finance at the core 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 this polity that will determine the fate of global finance.

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 of finance, but have been less explicit about the role they attribute to law or the state as compared to other structures. Moreover, 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 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. 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. That does not necessarily require the abandonment of all aspects of neoclassical economics. As discussed above, authors writing within this framework have recognized instability. Yet, they tend to assume that financial markets will approximate their idealized efficient outcomes if only law offered better protection and addressed more forcefully problems of information asymmetry. LTF

suggests that this may be misleading. Under conditions of uncertainty and liquidity constraints rigidly enforced commitments can destroy the 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. 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, at times, 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 the sometimes tense relation between the Crown and its private financiers resulted in the creation of a financial intermediary, the Bank of England (Carruthers 1996). The diamond exchange in New York (Bernstein 1992) has been shown to be embedded in social practices of Jewish diamond traders; in fact these practices 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 core stakeholders (Harvey 2010). In contrast, modern financial markets are neither about stakes nor about exchange, but instead about position taking. Actors build and maintain inventories of financial products, and the promises they entail (Knorr-Cetina 2009). Their actions are not determined by relations but by changes in their portfolio.

The importance of social structures is also revealed by the strategies used for introducing consumer credit markets into different countries and legal systems. Where confidence in a reasonably high repayment rate was high, 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 (Guseva 2008). Where 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 fact 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 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. It does not deny that law is not the exclusive force that shapes markets. However, LTF maintains that law plays a more decisive role than socioeconomic analyses suggest. Financial relations are built on promises to deliver at a future date and contemporary finance can no longer rely on social relations to ensure compliance with these promises. In fact, the LIBOR scandal, which revealed that banks reported wrong data about the costs of their own lending to keep interest rates low, can be read as an example of how systems built on trust and reputation can be undermined by new entrants that succeed by breaching traditional rules of reputation and honor. Somewhat ironically, the shift from relational to arms-length to computerized finance has meant that commitments have become increasingly legally hardwired, with little room left for responding to change. As the Law-Finance Paradox demonstrates, the belief that credible commitments can resolve future uncertainty has been at the core of the system's undoing.

c. Financial Instability Theories

LTF builds on two premises: Imperfect knowledge and the liquidity constraint. Both predict independently and jointly finance's instability. Fundamental uncertainty, i.e. the inability to make quantifiable predictions about future outcomes, necessitates the adjustment of investment decisions made in the past based on past knowledge (Knight

1921). For each entity or investor this is not only sensible, but also critical for its own survival. The cumulative effect of these investments, however, can destabilize the financial system. Frydman and Goldberg (2011) suggest that this occurs because investment strategies are sticky and are often adjusted only when price swings have reached extreme territory, making them rather costly. 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 theories. Under conditions of imperfect knowledge, however, these rational actions don't result in equilibrium outcomes, but instability. They 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 the allocative function they perform. If investors did not have to concern themselves with funding the capital they invest, liquidity concerns could 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 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 legally endorsed structure of money market funds that invest in risky assets without maintaining capital requirements to buffer any distress. In short, allocation and funding are two sides

of the same coin that is finance. The legal structure of entities and commitments they enter into creates self-enforcing feedback loops in times of liquidity shortages.

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. Moreover, because they are contractually hardwired, they will run their course irrespective of calls to moderation.

In comparison, Minsky is more sensitive to the legal structure of finance. While he asserts that financial markets are “inherently” instable, he also maintains 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 inevitably 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.

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 domestic

to global markets. It helps identify 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 frontier 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. 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 IOUs 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 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 the governance of finance. Since this paper has only introduced a theory that has not been subject to extensive testing,³⁰ 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 inevitably re-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 again credible by strengthening regulatory oversight and by creating resolution mechanisms even for systemically important banks. If future crises fit the pattern of past crises this strategy might work; otherwise we will have to rely once more on the ultimate backstops doing whatever it takes to stabilize the financial system. Moreover, as the Law-Finance Paradox suggests, strengthening commitment devices alone without reducing the systems' 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

³⁰ On the various strategies that might be used to put this theory to a test, see Simon Deakin's comments in this Issue.

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 law³¹), 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, legislatures 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.

The most important space of regulatory arbitrage remains 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 hamstring 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.

³¹ 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).

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. 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. 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 sooner rather than later by relaxing contractual commitments may prevent a full-scale crisis. This may well 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 that transforms them into “weapons of mass destruction”.³²

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. In addition, there is little appreciation that liquidity pressures tend to build from below and tend to affect first those assets for which a market has only recently been created (Mehrling 2011). Their convertibility into

³² 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).

other assets or cash in times of stress remains to be tested, which is why investors are most likely to take flight from them first.

This may sound like an impossible task and is certainly contrary to conventional understanding of the role of law in finance. 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. The most famous may still be the handling by the German Supreme Court (*Reichsgericht*) of credit contracts during the period of hyperinflation in the 1920s. After ruling for years that “pacta sunt servanda”, causing an “endogenous legal boom” that almost brought the legal system to its knees (Wolf 1993), it used the principle of good faith to modify contracts. These principles have since been incorporated into 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 distribution of risk, one of the parties cannot reasonably be expected to uphold the contract without alteration. (Sec. 313 BGB).³³

Other examples are “material adverse change” clauses and “reverse termination fees” in major transactions that have been upheld by US courts (Afsharipour 2009). One of the major lessons LTF holds is that we need more safety valves of this kind throughout the financial system. The alternative is to put our faith into being willing and able to do the right thing next time around.

³³ The English translation is available at http://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p1094.

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