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Working Paper

It's the tail-risk, stupid! Precluding regulatory arbitrage in shadow banking with a normatively charged approach to supervision capitalizing on multipolar regulatory dialogues

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Matthias Thiemann – Tobias H. Tröger

It's the Tail-Risk, Stupid!

SAFE Working Paper No. 260

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It's the Tail-Risk, Stupid! – Precluding regulatory arbitrage in shadow banking with a normatively charged approach to supervision capitalizing on multipolar regulatory dialogues

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It's the Tail-Risk, Stupid!

Precluding regulatory arbitrage in shadow banking with a normatively charged approach to supervision capitalizing on multipolar regulatory dialogues

(October 7, 2019)

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Abstract: *The use of contractual engineering to create channels of credit intermediation outside of the realm of banking regulation has been a recurring activity in Western financial systems over the last 50 years. After the financial crisis of 2007 and 2008, this phenomenon, at that time commonly referred to as 'shadow banking', evoked a large-scale regulatory backlash, including several specific regulatory constraints being placed on non-bank financial institutions (NBFI). This paper proposes a different avenue for regulators to keep regulatory arbitrage under control and preserve sufficient space for efficient financial innovation. Rather than engaging in the proverbial race between hare and hedgehog that is emerging with increasingly specific regulation of particular contractual arrangements, this paper argues for a normative approach to supervision. We outline this approach in detail by showing that regulators should primarily analyse the allocation of tail risk inherent in the respective contractual arrangements. Our paper proposes to assign regulatory burdens equivalent to prudential banking regulation, in case these arrangements become only viable through indirect or direct access to an (ad hoc) public backstop. In order to make the pivotal assessment, regulators will need information about recent contractual innovations and their risk-allocating characteristics. According to the scholarship on regulatory networks serving as communities of interpretation, we suggest in particular how regulators should structure their relationships with semi-public gatekeepers such as lawyers, auditors and consultants to keep abreast of the real-world implications of evolving transactional structures. This paper then uses the rise of credit funds as a non-bank entities economically engaged in credit intermediation to apply this normative framework, pointing to recent contractual innovations that call for more regulatory scrutiny in a multipolar regulatory dialogue.*

Keywords: shadow banking, regulatory arbitrage, principles-based regulation, credit funds, prudential supervision, non-bank financial intermediation

JEL Classification: G21, G28, H77, K22, K23, L22

It's the Tail-Risk, Stupid!

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1 Introduction

Since the financial crisis of 2007/2008, the provision of financial services outside the realm of traditional banking has garnered significant attention from regulators around the globe.¹ Scholars from various disciplines have endeavoured to provide research-based guidance for these regulatory efforts.²

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¹ For an overview of the multiple regulatory initiatives see Tobias H. Tröger, 'How Special Are They? Targeting Systemic Risk by Regulation Shadow Banking' (2014) Research Center Sustainable Architecture for Finance in Europe (SAFE) Working Paper 68, 1-2 <<http://ssrn.com/abstract=2505909>> accessed 22 January 2015.

² For a review of the economic literature see Tobias Adrian and others, 'Shadow Banking: A Review of the Literature' (2012) Federal Reserve of NY Staff Report No. 580 <www.newyorkfed.org/research/staff_reports/sr580.pdf> accessed 22 January 2015.; important legal scholarship includes Margaret M. Blair, 'Making Money: Leverage and Private Sector Money Creation', (2013) 36 Seattle U L Rev 417; Benjamin F. Jackson, 'Danger Lurking in the Shadows: Why Regulators Lack the Authority to Effectively Fight Contagion in the Shadow Banking System', 127 (2013) Harv L Rev 729; Jonathan Macey, 'It's All Shadow Banking, Actually', 31 (2012) Rev Banking & Financial L 593; Steven L. Schwarcz, 'Regulating Shadows: Financial Regulation and Responsibility Failure', 70

Much of this research has been driven by the underlying assumption that non-bank banking poses a discrete challenge to policy makers that has to be met by an original set of new rules and standards which will require regular updates in line with the financial industry's innovation cycle, leading to the proverbial ride on the seesaw in the race between policy makers intervening by way of regulation and firms seeking to avoid regulatory burdens.³ In this paper, we explore the viability of a different route towards socially beneficial outcomes. We capitalize on the fundamental distinction between efficiency-enhancing and socially desirable financial (and technological) innovation on the one hand, and activities that intend to exploit regulatory arbitrage opportunities⁴ on the other. By so doing, we embrace an ambiguity inherent in the new forms of finance that were originally characterized pejoratively as 'shadow banks' and have now become labelled more neutrally as 'non-bank financial intermediation'.⁵ We develop our approach without driving regulators or supervisors into the gargantuan task of gauging the overall welfare effects of new financial products, transaction structures and other innovations *ex ante*. Instead we show that the crucial divide can be operationalized close to the ground.

When confronted with a financial innovation, supervisors first have to assess the economic function and the inherent risk structure of the given transaction. In particular, they have to determine who will bear its tail risk.⁶ If their analysis shows an indispensable link to the traditional banking sector (i.e. if the transaction structure imposes tail risks on regulated financial institutions), supervisors have to then explore how these exposures were treated by existing regulation if banks assumed the same risks on

(2013) Washington & Lee L Rev 1781; Steven L. Schwarcz, 'The Governance Structure of Shadow Banking: Rethinking Assumptions About Limited Liability', (2014) 90 Notre Dame L Rev 1. Important sociological and political science scholarship includes Benjamin Braun, 'Central Banking and the Infrastructural Power of Finance: The Case of ECB Support for Repo and Securitization Markets' (2018) Socio-Economic Review (forthcoming) <<https://doi.org/10.1093/ser/mwy008>> accessed 29 September 2019; Daniela Gabor, 'The (impossible) repo trinity: the political economy of repo markets', (2016) 23 Rev Int'l Pol Econ 967; Donald MacKenzie, 'The Credit Crisis as a Problem in the Sociology of Knowledge' (2011) 116 Am J Soc 1778; Russel J. Funk and Daniel Hirschman, 'Derivatives and Deregulation: Financial Innovation and the Demise of Glass-Steagall' (2014) 59 Admin Sci Q 669; Matthias Thiemann and Jan Lepoutre, 'Stitched on the Edge Rule Evasion, Embedded Regulators, and the Evolution of Markets' (2017) 122 Am J Soc 1775.

³ See Edward J Kane, 'Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation' (1981) 36 JF 355; for the common view that firms are always one step ahead of regulators in this interplay see Annelies Riles, 'Managing Regulatory Arbitrage: A Conflict of Laws Approach' (2015) 47 Cornell Int'l LJ 63, 66.

⁴ We understand the term as signifying the choice of a less stringent regulatory regime by changing the legal structure of a transaction without altering its economic objectives, ie the generation of profits without the creation of additional social value, see e.g. Timothy E. Lynch, 'Gambling by Another Name: The Challenge of Purely Speculative Derivatives' (2011) 17 Stan JL Bus & Fin 67, 119-20; Frank Partnoy, 'Financial Derivatives and the Costs of Regulatory Arbitrage' (1997) 22 J Corp L 211, 227. A subcategory of regulatory arbitrage that we do not explore any further here is the avoidance of regulation through relocating the transaction to another jurisdiction, see Joel F. Houston, Chen Lin and Yue Ma, 'Regulatory Arbitrage and International Bank Flows' (2012) 67 JF 1845; John Armour et al, *Principles of Financial Regulation* (OUP 2016) 84.

⁵ On October 22, 2018 the Financial Stability Board (FSB) announced its decision to replace the term 'shadow banking' with the term 'non-bank financial intermediation' in all future communications, in an attempt to emphasise the forward looking aspect of the FSB's work in the field, Financial Stability Board, 'FSB reviews financial vulnerabilities and deliverables for G20 Summit' (2018) <<https://www.fsb.org/wp-content/uploads/R221018.pdf>> accessed 14 August 2019.

⁶ We understand tail risks as those risks that have to be borne when very unlikely but severe events occur and markets therefore take decisively negative turns, potentially fed by negative feedback loops when market liquidity – the ease with which an asset trades – and funding liquidity – the ease with which a trader can obtain funding for their trades – are intertwined, see Markus K. Brunnermeier and Lasse Heje Pedersen, 'Market Liquidity and Funding Liquidity' (2007) NBER Working Paper No. 12939 <<https://www.nber.org/papers/w12939>> accessed 2 September 2019; Tobias Adrian and Hyun Song Shin, 'Liquidity and Leverage' (2010) 19 JFI 418.

their balance sheet in functionally equivalent transactions. Finally, supervisors have to apply the existing rules at the level of the regulated entities to the innovative transaction just like they would to its functional equivalent.

Therefore, at the level of the ultimate risk-bearer, the regulatory costs of the new transactional structure would be identical to those incurred in its traditional equivalent. This levelling of the costs of complying with prudential rules automatically removes the key incentive to engage in regulatory arbitrage without prohibiting new transaction structures that create additional value. Moreover, supervisors do not have to understand exactly what overall welfare effects discrete financial innovations will ultimately entail for society. Instead, it is sufficient to assess their function and risk-structure with respect to the parties involved in the transaction.

The suggested approach – which tries to operationalize a functional perspective⁷ – requires no comprehensive overhaul of the regulatory framework, but rather a readjustment of an overly formalist approach to supervision that incorporates the normative foundations of prudential regulation more vigorously into the interpretation and enforcement of existing rules.⁸ In this paper, we explore the preconditions that must be fulfilled in order for supervisors to make the pivotal determinations as accurately as possible. We use insights from finance and economics, legal scholarship and social studies of finance to characterize the specific features of financial (and technological) innovation that regulators and supervisors need to investigate, how they can (re-)arrange their relationships with the supervised to be able to better understand these issues, and how, going forward, they can ensure equal treatment in regulation.

The remainder of this paper is structured as follows: we first recall the rationale for regulating non-bank financial institutions (NBFI) (2), and we then pinpoint the specific issues which require regulation in NBFI (3). From these conceptual foundations we move on to the central policy question of how regulators can effectively analyse financial (and technological) innovations and their contractual network characteristics, which define the critical points of NBFI that ultimately allocate tail risks (4). The next section presents what we consider a practical route for supervisors to implement our suggested approach we suggest. We point to the social structures of regulatory and supervisory networks that could facilitate the key analysis of tail risk-allocation, involving the expertise of semi-public gatekeepers such as lawyers, auditors or rating agencies in a multi-polar procedural analysis (5). We then apply this framework to the case of credit funds to show the potency of our approach and document the potentially perilous developments in that industry (6). The last section concludes by summarizing the results (7).

2 Why regulate shadow banking?

The wide agreement in the regulatory sphere that the observable expansion of non-bank banking⁹ deserves advertence is rooted in the concern that the pertinent activities pose a threat to financial

⁷ For the seminal contribution which outlined this method for dealing with institutional change in the financial sector see Robert C. Merton, 'Financial Innovation and the management and regulation on financial institutions' (1995) 19 JBF 461,

⁸ See already Tröger (n 1) 15-19.

⁹ For the latest data see Financial Stability Board, 'Global Monitoring Report on Non-Bank Financial Intermediation 2018' (2018), 13-15 <<https://www.fsb.org/wp-content/uploads/P040219.pdf#page=8>> accessed 14 August 2019.

stability.¹⁰ Some of the attempts to scope the issue in a more substantiated manner have pegged the regulatory rationale against the normative foundations of traditional prudential rules in banking. They have thus referred to “maturity/liquidity transformation, leverage and flawed credit risk transfer” that occur outside the regular banking sector as the ultimate source of concern.¹¹ As is the case in banks, leverage (that is the use of debt to finance assets) and liquidity and maturity mismatches (the refinancing of long-term, illiquid assets with shorter-term, easier redeemable debt) carry inherent refinancing risks for NBFIs. Deeply analysed as run-risks for banks,¹² these refinancing risks are often even more pronounced in NBFIs, which refinance themselves in the wholesale market. Not only are seasoned investors who transact on these markets more prone to run,¹³ but the funding liquidity of NBFIs and the market liquidity of the assets they use to collateralize their balance sheets are also strongly correlated. This potentially creates an ever-accelerating downward liquidity spiral.¹⁴

Closely related, yet more specific in describing the mechanics that potentially create system-wide crises as a result of non-bank risk transformations, are proposals that turn towards the necessity of backstops as the hallmark of shadow banking.¹⁵ Risk-transforming activities leave residual tail risks that ultimate claim-holders sometimes do not want to bear.¹⁶ If the entities involved cannot create the essential risk absorption capacity themselves (e.g. because low margins prevent them from accumulating sufficient internal capital), then they require a credible private or public sector backstop in order

¹⁰ See for instance Financial Stability Board, ‘Shadow Banking: Scoping the Issue’ (2011), 3 <www.financialstabilityboard.org/publications/r_110412a.pdf> accessed 22 January 2015.

¹¹ *ibid.* The definition is adopted for instance in European Commission, ‘Green Paper on Shadow Banking’, COM(2012) 102 final, 3-5; Klára Bakk-Simon and others, ‘Shadow Banking in the Euro Area’, (2012) ECB Occasional Paper No. 133, 8 <www.ecb.europa.eu/pub/pdf/scpops/ecbocp133.pdf> accessed 22 January 2015.

¹² For the seminal model see Douglas W. Diamond and Philip H. Dybvig, ‘Bank Runs, Deposit Insurance, and Liquidity’ 91 (1983) JPE 401.

¹³ Gary Gorton and Andrew Metrick, ‘Securitized Banking and the Run on Repo’, 104 (2012) JFE 425 (finding that concerns about the liquidity of markets for securitized bonds led to increases in the amount of collateral required for repo-transactions that entailed the collapse of this pivotal short-term funding market which in turn rendered the U.S. banking system effectively insolvent); Daniel Covitz, Nellie Liang and Gustavo A. Suarez, ‘The Evolution of a Financial Crisis: Collapse of the Asset Backed Commercial Paper Market’ 68 (2013) JF 815 (showing a massive withdrawal of liquidity in more than 100 ABCP-programs that affected roughly one third of the market in 2007).

¹⁴ Tobias Adrian and Hyun Song Shin, ‘Liquidity and Leverage’ 19 (2010) JFI 418 document that marked-to-market leverage behaves strongly procyclical; Antoine Martin, David Skreie and Ernst-Ludwig von Thadden, ‘Repo Runs’, 27 (2014) RFS 954 present a stylized model to expose the root cause of this kind of instability. For the path-breaking contribution that first outlined the role of leverage built-ups for financial crises see Hyman Minsky, *Stabilizing an Unstable Economy* (Yale UP 1986); for a brief summary see Hyman P. Minsky, ‘The Financial Instability Hypothesis’ (1992) Jerome Levy Economics Institute Working Paper No. 74 <<https://ssrn.com/abstract=161024>> accessed 2 September 2019.

¹⁵ Stijn Claessens and Lev Ratnovski, ‘What is Shadow Banking?’ (2014), Int’l Monetary Fund Working Paper 14/25, 4-5 <www.imf.org/external/pubs/ft/wp/2014/wp1425.pdf> accessed 22 January 2015.

¹⁶ As a consequence, for instance hedge funds, who frequently engage in highly leveraged risk transformation and are thus susceptible to run-like scenarios (see Andreas Engert, ‘Transnational Hedge Fund Regulation’ (2010) 11 EBOR 329, 343), are conceptually excluded from the universe of shadow banking because their investors are in principle willing to digest the total loss of their money if their fund’s strategy fails. It shouldn’t be overlooked though, that the rapid liquidation of hedge-funds’ portfolios following a loss of confidence in their viability can destabilize asset markets and *in extremis* trigger systemic crises by affecting critical financial institutions. On this account, bail-out rationality is not entirely absent from the hedge-fund universe. In fact, implicit government guarantees exist for some players as famously exemplified by Long Term Capital Management’s rescue in 1998, see The President’s Working Group on Financial Markets, ‘Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management’ (1999), 10-22 <www.treasury.gov/resource-center/fin-mkts/Documents/hedfund.pdf> accessed 22 January 2015. But see also below 3

to become viable counterparties in financial transactions. The literature has established that the presence of public backstops distorts investors' incentives, dulls market discipline, and hence allows for risk-insensitive funding of (shadow) banking.¹⁷ This observed market failure calls for regulation and supervision to counter the hazards of risk accumulation on a dramatic (systemic) scale.¹⁸ Therefore, the fundamental policy rationale that underpins the potential regulation and supervision of NBFI is akin to the normative foundations of prudential rules and standards enforced vis-à-vis regular banks.¹⁹ This shared normative DNA of the regulation of NBFI and banks carries important consequences, the understanding of which can determine what should be regulated in shadow banking and how this should be done.

3 What should be regulated in shadow banking?

If prudential regulation of banks is an inherent complement to these institutions' access to public safety nets, it becomes apparent that attempts to capitalize on this kind of transaction without incurring its costs are socially undesirable.²⁰ Therefore, transaction structures in non-bank banking that are fuelled by an appetite for regulatory arbitrage should not be recognized by law. Instead, prudential regulation should treat them with regard to their economic substance and risk structure (i.e. prudential regulation should apply irrespective of legal form).²¹

3.1 Paying the price for safety net access

Where a transaction benefits from the direct or indirect access to public safety nets,²² it benefits from a subsidy because investors will be willing to provide funding on more favourable terms than they would if the default probability was determined only endogenously in the asset valuation process.²³ To be sure, sound reasons militate in favour of such a lower bound to the value of claims against a bank because it prevents the system-wide destruction of liquidity in times of panic.²⁴ Yet, from a public policy point of view, the negative effects of risk-insensitive funding (moral hazard) need a counterbalance in a mechanism that ultimately shifts the costs of the guarantor(s) on to the investors.²⁵

¹⁷ For the key argument with a particular view to shadow-banking see Tobias Adrian and Adam B. Ashcraft, 'Shadow Banking Regulation' (2012) Federal Reserve of NY Staff Report No. 559, 8-10 <http://www.newyork-fed.org/research/staff_reports/sr559.pdf>.

¹⁸ Claessens and Ratnovski (n 15) 6.

¹⁹ Tröger (n 1) 8-15.

²⁰ For a general description of the inefficiencies that the strive for regulatory arbitrage entails for financial regulation see Charles Goodhart and Rosa Maria Lastra, 'Border Problems' (2010) 13 J Intl Econ L 705; Christie Ford, *Innovation and the State: Finance, Regulation, and Justice* (CUP 2017) 48-50.

²¹ For details see below 4.

²² The latter prototypically occur in the form of deposit insurance schemes and central bank lender of last resort facilities.

²³ For empirical evidence see Zoe Tsesmelidakis and Robert C. Merton, 'The Value of Implicit Guarantees' (2012) Working Paper <<http://ssrn.com/abstract=2231317>> (estimating the funding advantage of 74 U.S. financials benefiting from implicit government guarantees to sum up to \$365 bn.); Frederic A. Schveikhard and Zoe Tsesmelidakis 'The Impact of Government Interventions on CDS and Equity Markets' (2012) American Finance Association 2012 Chicago Meetings Working Paper <<http://ssrn.com/abstract=1573377>> (showing how model-estimated risk premiums for bank debt deviated significantly from actual market premiums charged for major U.S. banks in CDS-markets through the financial crisis).

²⁴ Douglas W. Diamond and Philip H. Dybvig, 'Bank Runs, Deposit Insurance and Liquidity' (1983) 91 JPE 401.

²⁵ The seminal paper that develops a model to estimate the costs of deposit insurance for the guarantor that should ultimately be borne by the covered depositors is Robert C. Merton, 'An Analytical Derivation of the Cost of Deposit Insurance and Loan Guarantees' (1977) 1 J Banking & Fin. 3; for an extension see Robert C. Merton

Conventionally, prudential regulation is regarded as a substitute for deficient debt governance in banks (i.e. it reacts to a market failure that prevents investors from taking care of the financial soundness of the institutions and, ultimately, the continuous and stable provision of liquidity to the real economy).²⁶ Yet, contemplated from a different angle, compliance with prudential regulation can be understood as the price that investors in bank assets have to pay – indirectly through the increase in the regulated firms’ costs of doing business – for access to public safety nets.²⁷ Transactions that are deliberately structured to formally fall outside the scope of application of banking regulation but exhibit a risk-structure that ultimately imposes a downside on a covered institution, seek to sever the inherent connection between access to backstops and prudential rules and standards. Infamously successful attempts have been made to bypass prudential regulation and economize on compliance costs in precisely the inefficient manner just described. These can be found in those securitization transactions in which banks ultimately carried the tail risks, although the securitized loan portfolios were held by off-balance sheet vehicles and thus (arguably) provided relief from regulatory capital requirements.²⁸

3.2 Access to ad hoc public backstops for unregulated entities?

To be sure, many varieties of non-bank risk transformation do not draw indirectly on public safety nets by shifting tail risks on to regulated institutions. Instead, they benefit from direct access to government backstops, albeit not regular ones. Government bail-outs of shadow-banking entities occur when these entities’ market exit threatens to precipitate a decline in economic output.²⁹ This can be the case either because these entities are themselves important providers of liquidity (too big to fail) or because their failure has knock-on effects for their competitors that would lead to the demise of a critically important fraction in private sector money supply (too interconnected to fail).³⁰

An important example of such a scenario is the run-like withdrawals of funds from US constant net asset value (CNAV) money market mutual funds (MMMFs) (CNAV MMMFs) post-Lehman. They were triggered by the announcement of one fund to redeem shares below par (‘breaking the buck’) and led to an *ad hoc* bail-out of the whole sector by the Federal Reserve and the Treasury.³¹ To be sure, a link

and Zvi Bodie, ‘Deposit Insurance Reform: A Functional Approach’ (1993) 38 Carnegie-Rochester Conference Series on Pub. Pol’y 1 (1993).

²⁶ Mathias Dewatripont and Jean Tirole, *The Prudential Regulation of Banks* (MIT Press 1994) 141; for a review of the economic literature see Sudipto Bhattacharya, Arnoud W.A. Boot, and Anjan V. Thakor, ‘The Economics of Bank Regulation’ (1998) 30 J Money, Credit and Banking 745.

²⁷ In a rough analogy, prudential regulation can be understood as a Pigovian tax to internalize the costs of providing public safety nets, Tröger (n 1) 15.

²⁸ For a description of these transactions see Viral V. Acharya, Philipp Schnabl and Gustavo Suarez, ‘Securitization Without Risk Transfer’ (2013) 107 JFE 515, 519-20; William W. Bratton & Adam J. Levitin, ‘A Transactional Genealogy of Scandal: From Michael Milken to Enron and Goldman Sachs’, (2013) 86 S Cal L Rev 783, 836-41.

²⁹ For general accounts of the rationale for government bail-outs see Jonathan R. Macey and James P. Holdcroft, Jr., ‘Failure Is an Option: An Ersatz-Antitrust Approach to Financial Regulation’ (2011) 120 Yale LJ 1368, 1375-83; Randall D. Guynn, ‘Are Bailouts Inevitable?’ (2012) 29 Yale J Reg 121, 123-29.

³⁰ For a stylised model that highlights the financial stability implications of NBFI with a particular view to the role of regulated banks see Stephan Luck and Paul Schempp, ‘Banks, Shadow Banking, and Fragility’, (2014) ECB Working Paper No. 1726 <<https://ssrn.com/abstract=2479948>> accessed 19 August 2019. Fabrizio Malatesta, Sergio Masciantonio and Andrea Zaghini, ‘The Shadow Banking System in the Euro Area: Definitions, Key Features and the Funding of Firms’, (2016) 2 Ital Econ J 217 provide data indicating the relevance of NBFI for the liquidity supply of the economy in the euro area; see also Günter W. Beck and Hans Helmut Kotz, ‘Euro area shadow banking activities in a low-interest-rate environment: A flow-of-funds perspective’ (2016) SAFE Policy White Paper No. 37 <https://safe-frankfurt.de/fileadmin/user_upload/editor_common/Policy_Center/Beck_Kotz_Euro_area_shadow_banking_activities.pdf> accessed 19 August 2019.

³¹ Adrian and Ashcraft (n 17) 21-22.

between MMMFs and the regulated banking sector may exist where banks run reputational risks in case of a fund's failure and therefore need to support ailing funds (step in-risk) which in turn connects the troubled entities indirectly to the traditional public backstops for financial institutions.³²

In these instances, our approach that focuses on the allocation of tail risks would yield results that are fully in line with international soft law. Indeed, the Basel Committee on Banking Supervision (BCBS) recommends inter alia to bring the interconnection between off-balance sheet entities and banks that induce step-in risk within the remit of prudential regulation (capital requirements, etc.) through accounting standards that force consolidation of the respective vehicles and thereby bring the relevant exposures on to banks' balance sheets.³³

Yet, this is not the story of the US MMMF industry, which had no significant reputational links to regulated banks but was systemic as a liquidity feeder for these institutions who refinanced themselves largely through commercial paper bought by MMMFs. The general rationale for applying prudential regulation where transaction structures benefit from the access to (implicit) public backstops certainly applies in these instances, too. It is not obvious, though, that regulators can indeed implement banking policy by the mere enforcement of existing rules.³⁴ However, we do not need to explore this any further if we put trust in governments' pledges not to bail-out financial market players in the future, except for those who explicitly enjoy access to public safety nets (and thus bear the costs of prudential regulation).³⁵ Indeed, where NBFI entities cannot market their products with implicit guarantees, they will discourage investors who do not want to bear tail risks thereby re-instilling some form of market discipline.

Moreover, competent supervisors could rely on our suggested approach to thwart regulatory arbitrage efforts at an early stage, that is before a new form of NBFI in itself becomes systemically relevant. For instance, supervisors could have treated MMMFs as deposit-taking institutions at the time these funds were first marketed as an alternative to regular bank deposits with an interest rate cap³⁶ – precisely because they potentially require a public backstop to avoid runs in a confidence crisis as the ultimate investors would not be willing to bear the tail risks. Such an early intervention would eradicate problems that political decision makers could otherwise face later, once the newly-emerging form of NBFI

³² See for instance Basel Committee on Banking Supervision (BCBS), 'Guidelines: Identification and management of step-in risk' (2017), para. 26 <<https://www.bis.org/bcbs/publ/d423.pdf>>.

³³ BCBS (n 32) para. 71-77. However, the sheer size of the respective entities, such as MMMFs, may prevent the promulgation and enforcement of stringent consolidation requirements, because of the massive capital demands they created for an already struggling financial sector and its political influence post-crisis, for the European experience see Vanessa Endrejat and Matthias Thiemann, 'Reviving the Shadow Banking Chain in Europe: regulatory agency, technical complexity and the dynamics of cohabitation' (2018) SAFE Working Paper No 222 <<https://ssrn.com/abstract=3237354>> accessed 16 August 2018.

³⁴ In the case of CNAV MMMF a rather simple, though – at present – quite bold move could follow from treating them as banks, for instance within the meaning of Federal Deposit Insurance Act §3(a) (12 USC § 1813(a)), and thus subjecting them immediately to the entirety of prudential banking regulation. Arguably, the then applicable own funds requirements alone would kill the whole industry, creating exactly the systemic problem the regulatory intervention aims to avoid.

³⁵ See for instance Dodd-Frank Act § 214 (12 USC § 5394).

³⁶ Regulation Q (12 CFR 217) prohibited US banks to pay interest on demand deposits (until 2011) and prescribed an interest rate cap for savings deposits (until 1986) which proved particularly incisive when this cap was set below the market rate for treasury bills, see R Alton Gilbert, 'Requiem for Regulation Q: What it Did and Why It Passed Away' (1986) 68(2) Federal Reserve of St Louis Rev 22, 25. Besides massive capital flows into treasury bills, another move to avoid these regulatory restrictions was the invention of MMMF in 1971, see Robert D. Hershey, Jr., 'Overnight Mutual Funds for Surplus Assets' *NY Times* (New York, 7 January 1973) 5.

has gained importance with respect to the economy: any regulatory reaction that unhinged the business model of the whole sector of the financial industry would automatically precipitate the systemic crisis that it was seeking to prevent. To achieve the ambitious goal of facilitating effective early-stage intervention, our procedural approach to identifying the allocation of tails risks in a collaborative discourse (see section 5 below) becomes even more crucial.

4 How to regulate shadow banking

Once recognized, circumventing the substance of existing rules should lead to the application of these very rules at the level of the covered institution or innovative NBFIs in need of a public backstop. This would automatically level the regulatory cost structures of functionally equivalent transactions and curb the appetite for regulatory arbitrage. This approach reduces the gap between a transaction's economic properties and its regulatory treatment.³⁷ On the other hand, the approach would not impede efficient transaction structures, because their comparative advantage vis-à-vis traditional equivalents, by definition, does not hinge on lowering the costs of compliance.

What is primarily required to put this approach into practice is a radical departure from the literalist stance of supervisors in the face of financial and/or legal innovation. Overseers should instead dare to capitalize more vigorously on the normative substance of existing rules in their enforcement.³⁸ In a sense, this approach can be understood as a reaction to the breach of the implicit regulatory contract³⁹ between regulators and the regulated industry.

Quite importantly, such a normative approach would not be tantamount to compelling supervisors to assess the overall social welfare effects of specific financial products *ex ante*.⁴⁰ Supervisors only have to determine the ultimate risk-structure of innovative transaction designs and determine whether they impose tail risks on regulated institutions⁴¹ or potentially create the need for extraordinary ad hoc public backstops. This task is greatly facilitated not only by the clear guidance that supervisors receive in terms of what to look for, but also by the observation that the burden of proof lies with the innovating market participants. If these market participants want different treatment for their transaction

³⁷ See Victor Fleischer, 'Regulatory Arbitrage' (2010) 89 Tex L Rev 227. For a description of the many conscious efforts pre 2008 that substituted highly regulated transactions with (arguably) less restricted structures in order to exploit a cost delta and thereby generated the fragilities that ultimately lead to the financial crisis see Randall S. Kroszner and Philipp E. Strahan, 'Regulation and Deregulation of the US Banking Industry: Causes, Consequences, and Implications for the Future' in Nancy L. Rose (ed), *Economic Regulation and Its Reform: What Have We Learned* (University of Chicago Press 2014) 485.

³⁸ Tröger (n 1) 17.

³⁹ For the seminal work framing the basic problem of regulation as one in a contractual relationship see Victor P. Goldberg, 'Regulation and Administered Contracts' (1976) Bell J Econ 426; for a recent advance to conceptualize financial regulation using a transaction cost economics approach emphasizing the relational elements of the implicit regulatory contract see Heikki Marjosola, 'The Problem of Regulatory Arbitrage: A Transaction Cost Economics Perspective' (2019) University of Helsinki Working Paper.

⁴⁰ For such a proposal see Eric Posner and E. Glen Weyl, 'An FDA for Financial Innovation: Applying the Insurable Interest Doctrine to 21st Century Financial Markets', (2013) 107 Nw U L Rev 1307; for a procedurally more elaborate approach see Saule T. Omorova, 'License to Deal: Mandatory Approval of Complex Financial Products' (2012) 90 Wash U L Rev 63, 113-39; for an in-depth critique of the proposition John C. Coates IV, 'Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications', (2015) 124 Yale LJ 882.

⁴¹ For evidence that supervisors close to the ground have a good understanding of banks' actual risk exposures long before losses are realized see M. Todd Henderson and Frederick Tung, 'Pay for Regulator Performance' (2012) 85 S Cal L Rev 1003, 1023-26 (conducting two case studies that indicate that bank examiners knew well in advance about banks' risk taking and fragility).

(e.g. capital relief), they have to show to the supervisor that it indeed has a unique risk-structure in which storm-resilient investors bear the tail risks.

Moreover, the huge advantage of this approach is that it strengthens the supervisors' involvement *ab ovo*. Where market participants cannot be sure to steer clear of prudential regulatory requirements by deliberately designing transaction structures to fall outside the narrowly interpreted wording of existing rules, they will naturally engage in a more candid dialogue with supervisors to avoid being taken by surprise later. Nevertheless, supervisory approaches and procedures have to be designed carefully in order to achieve the optimal outcome.

5 Routes to achieving optimal outcomes: multipolar supervisory dialogues

The practical question then is how to achieve a more nuanced understanding of financial innovations and their ultimate risk-structure, in order to capture those directed at regulatory arbitrage and to enforce equal regulatory treatment.⁴²

5.1 Exploiting social dynamics to overcome information asymmetries

Our search for an answer draws upon a rich conceptual and empirical literature, predominantly in socio-legal studies, that has analysed the social dynamics and features associated with principles-based, responsive regulation, which is a close relative of the supervisory approach proposed in this paper.⁴³ This strand of literature emphasises the need for regulators to overcome information asymmetries vis-à-vis the regulated by actively involving the latter in shaping regulatory approaches and supervisory practices to enhance effective compliance. Principles-based regulation could ensure such involvement through regulatory dialogues. Both regulators (due to a lack of in-depth understanding of recent advances in transactional practices) and the regulated (due to a lack of certainty about the pending decisions of the regulator's treatment of financial innovations) have a strong interest in communicating with each other at nascent stages of a product's development. This feature of principles-based regulation (mutual interest in engaging in a two-way dialogue to reduce informational asymmetries), which it shares with its slight variation proposed here, namely the normative approach to supervision, allows supervisors to fine-tune the meaning of prudential rules with a view to early-stage developments. Regulation-centred dialogues that involve actors intertwined by a long-term relationship⁴⁴ therefore, in

⁴² For a similar question, see Christie L Ford, 'Innovation-Framing Regulation' (2013) 649 [1] *Annals of the American Academy of Political and Social Sciences* 76, 91-93.

⁴³ See for instance Anita I Anand, 'Rules vs. Principles based Approaches to Financial Market Regulation' (2009) 49 [7] *Harvard Intl LJ* 111-5; Christie L Ford, 'New Governance, Compliance, and Principles-Based Securities Regulation' (2008) 45 [1] *American Business LJ* 1; Christie L Ford, 'New Governance in the Teeth of Human Frailty: Lessons from Financial Regulation' [2010] 2 *Wisconsin L Rev* 101; Ford (n 20) 85-96; Julia Black, 'The Rise, Fall and Fate of Principles Based Regulation' (2010) LSE Law Working Paper 17/2010 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1712862> accessed 5 September 2019; Julia Black and Robert Baldwin, 'Really Responsive Risk-Based Regulation' (2010) 32 [2] *Law and Policy* 181; Julia Black, 'Enrolling Actors in Regulatory Systems: Examples from UK Financial Services Regulation' (2003) PL 63; Julia Black, 'Regulatory Conversations' (2002) 29 [1] *JL & Soc* 163.

⁴⁴ See for instance Charles Goodhart et al., *Financial Regulation: Why, how and where now?* (Routledge 1998) 50

principle, provide an ideal platform for limiting the circumvention of existing regulation through financial innovation.⁴⁵

However, the events of 2007/2008 undermined the pre-crisis enthusiasm of scholars who emphasised the possibilities in involving the proprietary knowledge of the regulated to improve the regulatory process, leading such scholars to feel disenchanted.⁴⁶ In particular, it was found that a weakness of these regulatory dialogues was the insufficient engagement of supervisors. This can be traced back to the lack of essential skills and institutional sanctioning powers held by supervisors, which they required if they were going to momentarily structure these dialogues, according to their mandate, in the public interest.⁴⁷ A fundamental research interest of the existing literature then has been to understand how the regulatory community and its dialogues are, and should be, organised to facilitate such steering.

Our contribution seeks to answer this question more succinctly and looks particularly at the pivotal features of the interaction between supervisors and the regulated that allow the former to gain a fuller comprehension of financial innovations, their ultimate risk-structures and their motivations through either efficiency gains or (perceived) regulatory arbitrage opportunities. We argue that this requires monitoring of the production processes that lead to financial innovations and particularly the negotiations that the regulated conduct with semi-public⁴⁸ gatekeepers in order to determine the regulatory treatment of new products.

5.2 Engaging gatekeepers in a candid regulatory dialogue

The first important analytical step is to move away from an overly simplistic perspective of financial markets. Such a view sees these markets essentially as populated exclusively by regulators/supervisors and the regulated. According to this view, the two camps are linked to each other by both entrepreneurs' desire to develop new products that fall outside of the remit of existing regulation and by regulators' desire to re-capture them.⁴⁹ Instead, financial market regulation and supervision today is largely decentred. For the enforcement of existing regulation, this means that there are several agents (private and public) which are tasked with verifying the compliance of the regulated with the rules. In particular, these agents include auditors, rating agencies and lawyers, which – where commissioned

⁴⁵ As Black argues, broad principles, to wit those normative precepts that underpin existing rules cannot be easily gamed and also stay up to date for longer, decreasing the risk of creative compliance and/or regulatory arbitrage and, as a consequence, release the regulator from running behind the industry. Julia Black, 'Paradoxes and Failures: "New Governance" Techniques and the Financial Crisis' (2012) 75 [6] MLR 1037, 1044.

⁴⁶ *ibid* 1044.

⁴⁷ As Ford states, "though principles-based prudential regulation was formally designed around a meaningful regulator-industry dialogic process, in practice the regulatory presence in the conversations was insufficient.", Christie L Ford, 'Macro- and Micro-Level Effects on Responsive Financial Regulation' (2011) 44 [3] U British Columbia L Rev 589, 617. See also Matthias Thiemann and Jan Lepoutre, 'Stitched on the Edge: Rule Evasion, Embedded Regulators, and the Evolution of Markets' (2017) 122 American J Soc 1775.

⁴⁸ The attribute signifies that the relevant agents are private, for-profit organizations whose services also directly affect the public interest in its most extreme version, these private agents are tasked to perform explicit public functions, such as the supervision of compliance with prudential rules of companies by auditors. In less explicit form, other agents such as lawyers have to ensure that the contracts they set-up are conform with the regulatory framework. We do not make a normative claim that these gatekeepers should assume a specific duty to serve the public interest beyond abiding by existing laws.

⁴⁹ Yuval Millo, 'Making Things Deliverable: The Origins of Index-Based Derivatives' in Michel Callon, Fabian Muniesa and Yuval Millo (eds.), *Market Devices* (Wiley-Blackwell 2007) 196, 211.

with quasi-supervisory functions – act as semi-public gatekeepers in financial markets.⁵⁰ Acknowledging this fact requires us to widen our perspective to embrace the multiple agents in regulatory networks and their interactions that involve private agents on a mezzanine level between public supervisors and the regulated industry.⁵¹ These semi-public gatekeepers play an important role in the creation of financial innovations: they seek to ensure regulatory compliance of the invented products and want to achieve regulatory advantages for the regulated as well. It is therefore in regulatory dialogues that involve not only the regulated themselves but also the private agents of compliance that supervisors can gain a more nuanced understanding of the purpose of financial innovations and the particular contractual structure designed to achieve this.

In their conversations with the regulated and semi-public gatekeepers, supervisors should be incisive, ask simple questions and require simple answers.⁵² They should seek and reward honesty.⁵³ At the same time, in order to bring about openness from the regulated in these dialogues it is important that supervisors do not generally presume criminal behaviour.⁵⁴ The literature on principles-based regulation has pointed out that regulatory interventions which are “broad, general and purposive,” and supported by high-level principles as a “backstop,”⁵⁵ are conducive to making the regulated seek these regulatory dialogues in good faith, as the regulated depend more heavily on supervisory judgment than in a rules-based prudential environment. The supervisor is the final arbiter of rules.⁵⁶ Supervisors are the actors who ultimately determine the interpretation and scope of prudential regulation. Therefore, the regulated are dependent on their decision-making.

Principles-based regulation and its close relative, the normatively charged approach to supervision, requires supervisors and firms to determine the precise meaning and scope of the rules and standards potentially applicable to financial innovations during their implementation and enforcement. Ideally, this leads to a collaborative effort in which joint deliberations carve out the respective laws’ meaning and scope. In this setting, compliance officers and other industry personnel, consultants, accountants, lawyers and supervisors engage in a discourse in which they quasi-negotiate – by exchanging arguments – the context-specific meaning of principles and rules for business practice as they apply to financial innovations; they form the *interpretive community* central to a principles-based approach.⁵⁷ In turn, this means that the ‘battle over interpretive control’ becomes key.⁵⁸ Put differently, the question is how the supervisor can maintain control over the content of prudential regulation and its scope

⁵⁰ John C Coffee, *Gatekeepers: The Professions and Corporate Governance* (Oxford University Press 2006).

⁵¹ For illuminating evidence on the powerful role of gatekeepers (tax advisors) in swaying the behaviour of market participants see eg Marco Battaglini et al., ‘ (2019) NBER Working Paper No. 25745 <<https://www.nber.org/papers/w25745.pdf>> accessed 29 September 2019.

⁵² Jose Viñals and Jonathan Fiechter, ‘The Making of Good Supervision: Learning to Say “No”’ (2010) IMF Staff Position Note 05/2010.

⁵³ Julie Etienne, ‘Ambiguity and Relational Signals in Regulator-Regulatee Relationships’ (2013) 7 [1] Regulation & Governance, 30; Ian Ayres and John Braithwaite, *Responsive Regulation-Transcending the Deregulation Debate* (Oxford University Press 1992).

⁵⁴ John Braithwaite, *Regulatory Capitalism: How it Works, Ideas for Making it Work Better* (Edward Elgar Publishing 2008). Black and Baldwin (n 43) 190, suggest distinguishing between well-intentioned and ill-informed companies and those being ill-intentioned and ill-informed, requiring different strategies of the supervisors, in particular a slowly accelerating chain of sanctions applied to the perpetrator, seeking at the same time the unprejudiced dialogue and allowing the perpetrators to correct their (unintentional) mistakes.

⁵⁵ Black (n 45) 1043; Black (n 43).

⁵⁶ Black (n 43) 7.

⁵⁷ Ford (n 43).

⁵⁸ Black (n 43).

(the universe of products to which it should apply) not only in a formal sense, but also with regard to its substance (the “law in action”). Only if supervisors are indeed in a position to knowledgeably exercise such a prerogative of interpretation can they determine which activities need to come under prudential regulation according to its normative foundations. Interpretive control is vested in the agent who ultimately, in full consideration of the material facts, establishes which financial innovations, products, and transactions are governed by existing rules and what compliance with these rules actually means in this context.

5.3 Creating incentives to participate in a collaborative effort

Understanding the positions of relevant actors in the interpretative community is all the more important when we look closely at the processes that produce (undesirable) financial innovations. Insofar as they are driven by the purpose of evading prudential rules and standards, they are intrinsically tied to the regulatory environment they intend to avoid.⁵⁹ These financial innovations face crucial regulatory passage points in order to become viable. At these points, the question that arises is whether they fall under incisive prudential banking regulation or whether the particular contractual structure permits these instruments to sail in less rigidly overseen waters. This is the case, for instance, on capital markets where securities regulation only mandates transparency but does not mandate holding regulatory capital against risky exposures.⁶⁰ Financial innovations that aim to circumvent banking regulation need to be designed in a way that brings them outside the scope of prudential rules in order to reap profits from a lower regulatory burden. This requires market participants to tailor these products to fit into the low-regulatory burden environment, which in turn typically requires substantial accounting and legal engineering.⁶¹ Semi-public gatekeepers such as auditors and lawyers are instrumental in providing supportive expert opinions and thereby ensuring (formal) compliance with regulation. Without the privately beneficial regulatory treatment,⁶² a financial innovation driven by an appetite for regulatory arbitrage would not survive. Various relevant professions are engaged in the creation of financial innovations from the outset, working as both gatekeepers and advisors who seek to optimize regulatory costs for their clients.⁶³

Fitting financial innovations into the regulatory environment in a way that maximizes their profitability for the industry, particularly under the normatively charged approach to supervision advocated here, will typically require intense debates at an early stage of the process between the gatekeepers foreseen in regulation and advisors who provide services for market participants.⁶⁴ For instance, determining whether an investment vehicle can be treated as an off-balance sheet entity or needs to be consolidated in the bank’s financial statement for regulatory purposes will require a dialogue between the

⁵⁹ Ford (n 42).

⁶⁰ Matthias Thiemann, *The Growth of Shadow Banking: A comparative institutional analysis* (Cambridge University Press 2018).

⁶¹ For the case of the ABCP market and how banks exploited securities law in Canada to avoid banking regulation there, see Ford (n 42); see also supra n 28.

⁶² Such a product may enhance the utility of market participants, but it creates a negative externality for the public if it puts financial stability at risk.

⁶³ Coffee (n 50).

⁶⁴ In the wake of the Enron etc. line of accounting scandals, regulation sought to minimize the conflict of interest arising from a double role by limiting accounting firms’ leeway to provide advice to clients whose books they audit, see for Europe, Regulation (EU) No 537/2014 of the European Parliament and of the Council of 16 April 2014 on specific requirements regarding statutory audit of public-interest entities and repealing Commission Decision 2005/909/EC [2014] OJ L158/77, art. 5.

bank's auditors, its advisors – including lawyers – and the relevant departments in the bank.⁶⁵ While the regulated and their advisors have incentives to seek the lowest regulatory burden conceivable for a financial innovation, gatekeepers in their semi-public function arguably have to guarantee at least minimum standards of substantive compliance with the rules in order to maintain credibility vis-à-vis the supervisor, as otherwise they would imperil the reputational basis on which their public role hinges. These debates often lead to a process of negotiation between the different agents about how financial innovations have to be structured to ensure compliance while keeping the regulatory burden at a minimum. Semi-public gatekeepers in this respect are bound to their clients' interest⁶⁶ and in the end will most likely accept any financial innovation that can reasonably be represented as falling outside the scope of banking regulation. Hence, it is paramount that supervisors are close to these debates and understand how they evolve. This allows them to understand better the new product's proximity to banking activities and where the risks of these new contractual structures for financial stability may emanate. In other words, it allows them to acquire a deeper understanding of the allocation of tail risk between the different parties to the contract and whether this allocation calls for prudential regulation because it ultimately requires public backstops to absorb losses (see sections 2 and 3 above).

Therefore, supervisors should use their powers to gain information about these negotiations, their content and their direction. By opening up channels of communication to those inside the market that hold critical information, supervisors can gain important insights about the drivers behind specific financial innovations. In particular, they should seek to understand if and how new products and transaction structures are construed to avoid the costs of complying with prudential regulation, while, at the same time, they create economically equivalent risk exposures and allocate tail risks in a way that taps into or requires public backstops. This knowledge will in turn facilitate understanding of the product's ultimate risk structure, which should determine its regulatory treatment.⁶⁷ In that sense, gatekeepers and the many other private providers of services providers to the regulated are key to understanding the precise, context-specific interaction between existing prudential regulation and financial innovation. Rating agencies, law firms and audit companies are obvious interlocutors for supervisors in this respect. However, opening up these channels of communication for a meaningful flow of information requires aligning the supervisor's goals with those of the gatekeepers. A first step in doing so is to lift the professional secrecy of these gatekeepers in relation to the regulator with respect to innovations that raise concerns about their compliance with the spirit of the law. But, while this is a necessary condition, it by no means creates an incentive for gatekeepers to talk candidly to the regulator.

Inducing gatekeepers to report frankly on their negotiations with the regulated (and their advisors) on the treatment of financial innovation is key to exposing dubious attempts at creative compliance. However, semi-public gatekeepers will not disclose sensitive information voluntarily as long as they fear that doing so would incur negative reputation effects that would potentially imperil their relationships with their clients. Hence, in order to facilitate this flow of information, gatekeepers need to have an overriding interest in acquiring and maintaining a good standing in the eyes of the supervisor. To achieve this goal, a carefully calibrated set of carrots and sticks must be established to induce all agents to provide the input necessary to turn joint deliberative effort into a mutually and socially beneficial endeavour. Supervisors need to make an upfront investment and act as a forthcoming partner ready

⁶⁵ For evidence that these dialogues can turn into hefty debates see Matthias Thiemann, *The Growth of Shadow Banking: A Comparative Institutional Analysis* (Cambridge University Press 2018).

⁶⁶ *ibid.*

⁶⁷ See above 3 and 4.

to help overcome the uncertainty regarding the exact meaning and scope of prudential rules and standards by candidly sharing their views on the regulatory treatment of financial innovations in a timely manner.⁶⁸ On the other hand, the price that gatekeepers pay for this hospitable treatment of legitimate information requests is that they become accountable for their information-sharing behaviour towards the supervisor and can be excluded from the interpretative community in the event of misconduct.⁶⁹ The upside for well-behaving gatekeepers though is the competitive advantage of being able to provide their clients immediate access to the supervisor's evaluation during the supervisory discourse. This arrangement ensures that all agents in the interpretative community have an interest in an ongoing honest and candid exchange on relevant matters, making it a proper quid pro quo that reciprocally reduces the informational asymmetries and thus minimizes uncertainty on both sides. The supervisory discourse is based on trust, but should be backed up by adequate sanctions that minimize opportunistic behaviour.

Therefore, the sanctioning power of supervisors should collateralize the pivotal information exchange between gatekeepers and supervisors in a way that makes it in the gatekeepers' own interest to speak openly with the supervisor about evolving transactional practices and contractual designs, particularly their risk-allocating features. Accordingly, regulators can enrol these semi-public agents for their task of supervision.⁷⁰ Supervisors need discretion to exclude certain gatekeepers from their regulation-related mandates if these semi-public agents do not report known material facts discussed during innovation design that determine the risk-structure and allocation of tail risks. The respective agents should communicate relevant considerations voiced during the drafting of transaction structures (e.g. considerations regarding the allocation of tail risks) to the regulator, thereby flagging the need for a proper regulatory assessment of the final contractual allocations.

This proposal is anchored in existing regulation, which, for instance, requires accounting firms to report evidence that indicates certain misbehaviour on the part of the audited institution⁷¹ and gives the prudential supervisor the power to ask for a termination of the auditing mandate in case of misbehaviour.⁷² From here, the next logical step appears to be to broaden the communicative obligations of gatekeepers, in particular where this obligation is coupled with the rewards for candid collaboration in the form of expedited answers to legitimate requests for regulatory assessments.⁷³

To establish a real threat for gatekeepers that has the capacity to change their behaviour to be more contributive, the expertise of the supervisor becomes important. Indeed, a certain amount of knowledge and skill concerning gatekeeping functions, such as auditing or lawyering, coupled with an

⁶⁸ This 'service oriented approach' may well require hiring additional staff by supervisors, in order to make sure that the competent authorities can provide quick and satisfying answers to legitimate information requests.

⁶⁹ To be sure, in severe cases where gatekeepers aid and abet fraudulent behaviour, more draconic sanctions like administrative fines or even criminal liability should apply as well.

⁷⁰ Black (n 43) 25.

⁷¹ See in Europe Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, [2013] OJ L176/338, art. 63 para. 1.

⁷² See for instance the German rule in § 28 para. 1 sentence 2 of the 1961 Banking Act (*Gesetz über das Kreditwesen*).

⁷³ To be sure, we do not argue for a preferential treatment in terms of content, which would obviously contradict the goals of our approach. Yet, expedited answers, which provide clarity to clients are in and of themselves desired by all gatekeepers as a competitive edge suitable to attract or at least retain clients.

understanding of the tail risks involved in NBFIs, needs to be present within the supervisory body and ideally should be updated through constant exchange with practising gatekeepers.

In gaining access to the relevant information, regulators can and should exploit the fact that semi-public gatekeepers are themselves complex organizations with internal compliance departments. For example, every auditing company has its own technical departments, which supervise and decide whether new transaction designs developed by auditing partners on the ground with clients comply with applicable auditing standards. Similarly, albeit in a less institutionalized manner, law firms have partner committees and practice group meetings that discuss innovative transaction designs that potentially circumvent prudential regulation. Hence, regulators should also connect to these units to keep abreast of the challenges the latter face, which would inform the regulators about financial innovations and how they interact with the regulatory framework. Knowing about these internal debates could provide a signal inducing supervisors to look thoroughly into the ultimate risk structure of these transactions.

In sum, it is not only the regulated and their financial innovations, which need to be the subject of supervision. Gatekeepers and their interactions with the regulated over the regulatory status of financial innovations also need to be considered when the regulatory treatment of these innovations is being determined. By incentivizing gatekeepers to keep regulators abreast of current exchanges between gatekeepers and the regulated (and their advisors), the supervisor can avoid a backward-looking perspective that only understands market developments long after they have occurred.⁷⁴ Positive incentives to voluntarily provide relevant input on the one hand, and holding both the regulated and the gatekeepers accountable for their compliance decisions on the other, are the crucial elements in setting up this multipolar deliberative relationship for the benefit of market participants and society at large.

6 The example of credit funds

Credit funds are a typical example of an ambiguous form of NBFIs. These alternative investment vehicles – largely non-present in bank-centred Europe before 2007 – observed a significant upswing after the financial crisis.⁷⁵ Policy makers mostly hailed this development and supervisors acquiesced in it, largely because it coincided with the objective of unblocking liquidity supplies to the economy and stimulating growth by activating market-based finance in an environment where banks that were still wobbly and subject to heavy regulation had cut down on lending.⁷⁶ However, the potentially negative flip-side of

⁷⁴ A danger pointed to by Black and Baldwin (n 43) 188.

⁷⁵ According to Munday et al „investments in private credit approached \$600 billion globally by the end of 2016“, Shawn Munday, Wendy Hu, Tobias True and Jian Zhang, ‘Performance of Private Credit Funds: A First Look’ (2018) 21 [2] The Journal of Alternative Investments 31, 2. In 2018, the private credit fund industry had an estimated \$ 777 bn of assets under management, with the industry being on track to reach \$ 1 trillion by 2020, therefore see <<https://iclg.com/practice-areas/lending-and-secured-finance-laws-and-regulations/19-the-global-private-credit-market-2019-update>> accessed 5 September 2019.

⁷⁶ For this vision behind the European project of creating a Capital Markets Union (so called Juncker plan) see Jean-Claude Juncker, ‘A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change’ (Opening Statement in the European Parliament Plenary Session, Strasbourg, October 2014) <https://ec.europa.eu/commission/sites/beta-political/files/juncker-political-guidelines-speech_en.pdf> accessed 19 August 2019; Commission, ‘Green Paper – Building a Capital Markets Union’ COM (2015) 63 final.

the coin becomes obvious when the legal design of typical European credit fund operations⁷⁷ is analysed carefully with a view to determining where tail risks are allocated. Not only are the typical assets held by the funds (warehoused, pre-packaged loan portfolios) similar to those found in pre-crisis securitisation deals, but the transaction structures also resemble each other in critical dimensions (see figure 1 below).

This paper does not set out to scrutinize the risk allocation in all conceivable variations of marketable transaction structures comprehensively. Instead, it highlights the main features that an attuned supervisor should examine deeply in the supervisory discourse when it comes to determining the regulatory treatment of credit funds.

6.1 Basic structure, increasing leverage and maturity transformation

The basic structure of credit funds is a progeny of the well-established structure of fund vehicles in general. Specifically it entails a contractual arrangement that sees investors put their money into the shares of the fund, which the latter in turn invests under pre-specified conditions into credit instruments issued by other market participants. Figure 1 sketches the basic structure of credit fund transactions.

■■■ insert figure 1 about here ■■■

Designed carefully not to come under the relevant European definition of a ‘credit institution’⁷⁸ and catering mainly to professional investors⁷⁹, these funds escape much of the constraining and costly prudential regulation, although they are subject to the AIFM Directive and the implementation thereof in the Member States. The underlying assumption is that these funds operate essentially without lev-

⁷⁷ For various reasons we do not need to explore here, typical European credit funds are set-up under the law of Luxembourg and supervised by the Grand Duchy’s (hospitable) Commission de Surveillance du Secteur Financier (CSSF). This pro-active, market-friendly regulatory environment has made Luxembourg home to 47 % of private credit funds globally, see Dechert LLP, ‘The Role of Private Credit Managers in Supporting Economic Growth’ [2018] Financing the Economy 41 <<https://www.aima.org/educate/aima-research/fte-2018.html>> accessed 5 September 2019.

⁷⁸ Art. 4 para. 1 no. 1 of Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, [2013] OJ L176/1 requires a covered undertaking “to take deposits or other repayable funds from the public and to grant credits for its own account”. However, Alternative Investment Funds (AIF) and these funds’ managers (AIFM) are subject to a special regime under Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 (AIFM Directive), [2011] OJ L174/1. Hence, as long as the funds comply with this regulatory framework and engage in activities permissible for AIF (see also below n 81), they do not become subject to prudential banking regulation. For an example of such regulatory deferral see § 2 para. 1 no. 3b to 3c of the 1961 Banking Act (*Gesetz über das Kreditwesen, KWG*) which explicitly exempt the extension of loans by funds as a collective asset management activity from the bank licensing requirement; the German legislator, however, limits the loan capacity of funds to 30 % of their own funds thereby ruling out pure credit funds, see § 285 para. 2 no. 1 of 2013 Capital Investment Code (*Kapitalanlagegesetzbuch, KAGB*).

⁷⁹ The relevant definition in AIFM Directive, art. 4 para. 1 lit. (ag) refers to the definition of a professional client in art. 4 para. 1 no. (10) of MIFID II (Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, [2014] OJ L173/349) and encompasses all types of institutional investors and, on their own request, experienced investors with relatively large trading activities or portfolios. Some jurisdictions, like for instance Germany, prohibit the extension of loans by funds to consumers, KAGB, § 285 para. 2 no. 2.

erage and that professional investors are able to take informed investment decisions after the necessary due diligence. It is however important to point out here that investors have the right to withdraw their funds should they become unsatisfied with returns. Where the funds' assets have longer maturity and are relatively illiquid, such a more or less unrestricted redeemability creates a prototypical run risk in the structure. Yet, this basic structure is what national securities regulators can, and are sometimes eager to, admit under the current regulatory framework⁸⁰ for alternative investment funds, in order to position their jurisdiction as a welcoming home to such funds, with Luxembourg being the prime example of this in Europe.⁸¹

From this point of inception, the underlying structures of these funds have evolved gradually over time with an incremental increase in the maturity mismatch and the leverage these funds entertain. While credit funds originally had only little to no maturity mismatch or leverage, the European credit funds' leverage in 2018 amounted to a factor of 1.8. This means that on every euro invested by a residual claimant, an additional debt-load worth 1.80 euro is taken on to leverage the available funds and to generate higher returns for equity investors. It is noteworthy that the investment behaviour of a subset of credit funds drives these observations. While in 2018 the vast majority of funds (66%) only used limited to no leverage (with an average debt to equity ratio of 1:1) and matched the maturity of assets and liabilities,⁸² large credit funds especially pursued a more aggressive leverage strategy which also coincided with a stronger maturity mismatch, with 17% of longer-term assets being refinanced by liabilities of less than one year. The trend seems to be relatively recent, with the leverage ratio going up from 1.3 to 1.8 from 2017 to 2018.⁸³ Figure 2 depicts the relatively advanced structure of an originator-driven credit fund transaction.

■■■ insert figure 2 about here ■■■

As figure 2 shows, leverage and maturity mismatch are introduced through issuing debt notes (through the operating company, OpCo) and short-term commercial paper (through the financing company, FinCo) to outside investors in a structure known as the net asset value fund. Here, the fund (the holding company, HoldCo) pledges the loans at their net asset value as the collateral for the funds' issuance of debt. Encumbered in this way, the loans are sealed off from investors, and serve as guarantees for outside debt investors of the fund. The logical implication of this debt issuance however is that fund

⁸⁰ As a component of the European Capital Markets Union Project, EU co-legislators are contemplating a specific regulatory framework also for loan originating credit funds, see European Securities Markets Authority (ESMA), 'Opinion: Key Principles for a European Framework on Loan Origination by Funds' (2016) <https://www.esma.europa.eu/sites/default/files/library/2016-596_opinion_on_loan_origination.pdf> accessed 4 September 2019.

⁸¹ In light of new European regulations that explicitly allowed special AIF (long term investment funds, venture capital funds, and social entrepreneurship funds) to extend loans, many national regulators explicitly allowed loan origination, loan acquisition or loan participation activities for all AIF, subject to specific organisational and investment product related requirements, after this position was indirectly endorsed by ESMA. For instance the Luxembourg regulator, the "Commission de Surveillance du Secteur Financier" (CSSF) published an update of its AIFM Law FAQ in June 2016, officially confirming that Luxembourg-based AIFs may engage in said activities, CSSF, 'Frequently Asked Questions concerning the Luxembourg Law of 12 July 2013 on alternative investment fund managers as well as the Commission Delegated Regulation (EU) No 231/2013 of 19 December 2012 supplementing Directive 2011/61/EU of the European Parliament and of the Council with regard to exemptions, general operating conditions, depositaries, leverage transparency and supervision' (version 10, 9 June 2016) 45-46 <https://www.cssf.lu/fileadmin/files/AIFM/FAQ_AIFMD_version090616.pdf> accessed 4 September 2019. As a consequence of this swift reaction and a very supple regulatory framework, 47 % of global credit funds in terms of volume in 2018, are domiciled in Luxembourg, see Dechert LLP (n 77).

⁸² Dechert LLP (n 77) 38.

⁸³ *ibid.*

investors, while potentially gaining higher returns due to increased leverage and the limited interest rate that needs to be paid for the collateralized debt securities, now have less collateral available in the event they want to exit the fund,⁸⁴ thereby increasing the run risks. The situation worsens when the net asset value falls: this could lead to an increase in investor withdrawals which could spur forced sales of loans, which in turn could further depress the value of the portfolio held by the fund. In a leveraged fund, debtholders, whose collateral also depreciates in value, might take the opportunity to accelerate the downward spiral in larger-scale fire-sales. This has the potential to destabilize the financial system in cases where the expanded non-bank credit channel has become systemic. In that scenario, the system could not survive without an implicit public backstop, which would warrant the application of prudential regulation (see section 3 above).

6.2 The use of subscription credit facilities

A second way of increasing leverage, which is increasingly coupled with the net asset value collateralization for financing funds, is the use of so-called 'subscription credit facilities.' An industry source described their evolution as follows: "While originally developed as a mechanism for funds to 'bridge' a funding gap when making an investment, thereby eliminating the risk of any shortfall and providing the fund with certainty that the requisite funds would be available to it at the moment of investment, they are increasingly used in a broader investment context for more general purposes, such as providing debt or bridging debt refinancing, funding follow-on investments or bridging co-investments."⁸⁵

These facilities act as permanent short-term debt financing instruments at the disposal of the credit funds, as the following remarks from the same industry source clarified: "[t]he facility is usually short term (2-3 years) and aligned with the fund's investment period" and is usually structured as "a senior, secured revolving credit facility that is renewed at expiry."⁸⁶ Overall, the point of these facilities is to assure the investors in the credit fund, who purchase commercial papers and mezzanine notes, that the capital that these investors provide can always be repaid by the fund, even if there are difficulties in terms of the roll-over of the short-term and medium-term credit instruments in financial markets.⁸⁷ In their plainest form, these facilities use the as-yet-uncalled capital of the credit funds as collateral to secure the credit extended by the bank. Other facilities use the net asset value method to determine the value of the portfolio of the fund and then borrow against this net value as collateral. More recently, so-called 'hybrid facilities' have combined these two forms of credit facilities.⁸⁸

⁸⁴ The logic behind this is simple: debt investors, although provided with collateral, will discount the pledged loan portfolio's value and therefore only provide new funds equal to a fraction of the original portfolio's nominal value (they apply a haircut rate). Hence even if the fund fully reinvests the debt capital it raises, it will acquire less unencumbered assets available for equity investors than it had before leveraging the fund.

⁸⁵ Fiona Keating and Fabien Debroise, 'Fund Finance in Luxembourg: The Essentials' (*Ogier*, 11 June 2019) <<https://www.ogier.com/publications/fund-finance-in-luxembourg-the-essentials>> accessed 5 September 2019.

⁸⁶ See Keating and Debroise n 85, s. also William B Beekman, Craig A Bowman and Victoria GJ Brown, 'Considering a Subscription Credit Facility? Here's What You Need to Know' (*Debevoise & Plimpton*, 2014) <https://www.debevoise.com/insights/publications/2014/03/considering-a-subscription-credit-facility-heres__> accessed 5 September 2019.

⁸⁷ Depending on the exact design of these facilities, there is an obvious functional similarity to the contractual structures that secured liquidity provision to Asset-Backed Commercial Paper conduits pre-crisis, which made these investment vehicles ultra-safe counterparties for investors but shifted risks to the banking system, see Acharya, Schnabl and Suarez (n 28).

⁸⁸ For a detailed description of the various options available to funds for generating leverage see Jeff Norton and Ben J Leese, 'The Global Private Credit Market: 2019 Update' (2019) *Lending & Secured Finance* <

As a result of the transaction, the loan-originating bank reduces its capital requirements with respect to the loans it thus far had fully on its balance sheet,⁸⁹ although it potentially still assumes some of the portfolio's credit risk as a function of the 'subscription credit facility.'⁹⁰ Depending on the exact contractual arrangement, this may result in an all-too-familiar disappearance of risky exposures from banks' balance sheets without actual risk transfer taking place.

While, *prima facie*, the sketched structure in each separate element provides safety to the investors in and to the creditors of the fund, its stability hinges on the correct, risk-adequate and information-insensitive pricing of the portfolio loans in financial markets and the persistent roll-over possibility of the debt. Should a negative credit scenario arise, funds may have to draw indirectly on public safety nets through the institutions that provide the subscription credit facility, at least in systemic crises. For example, should the net asset value of the transferred and pledged loans fall, investors tend to withdraw their capital, and short-term commercial paper creditors will not renew their investments. In both cases, the credit facility, and hence the publicly back-stopped banking system, is left as the ultimate absorber of this negative shock.

6.3 Mark-to-market valuation of collateral

In short, what we can observe in the recent evolution of the credit fund industry is that more leverage, more maturity mismatch and more opacity are all emerging incrementally from rather boring, but relatively risk-free, business practices. A good example of this incremental change is evident in the subscription credit facility: originally its main function was to provide bridge funding and liquidity but its main function now is to increase the leverage of the fund. The most radical departure from the original trajectory, however, seems to be the coupling of such credit facilities with the refinancing methods of net asset value (NAV) funds. These entities use the assets in their portfolios based on weekly mark-to-market valuations as the collateral for the extension of credit to the fund. These new structures rebut the argument that risks are fully absorbed by the funds' equity investors. In fact, the incremental use of leverage and the market valuation of pledged, potentially illiquid assets should at least remind us of the dangerous pre-crisis dynamics that linked solvability of funds to market valuations, coupling funding and market liquidity⁹¹ and leaving the publicly back-stopped banking system as the ultimate absorber of negative shocks.

6.4 Consequences of a fruitful multi-polar supervisory dialogue

Against this background, supervisors should look into: the transactional design and the contractual arrangements between those granting debt financing and credit funds; the funds' contractual stipulations regarding investors providing equity (redemption rights); and, finally, the banks providing collat-

<https://iclg.com/practice-areas/lending-and-secured-finance-laws-and-regulations/19-the-global-private-credit-market-2019-update>> accessed 5 September 2019.

⁸⁹ Consolidation requirements for the fund are deliberately avoided through the 50:50 equity ownership structure of the fund, cf. figure 2, which allows for at equity drawing up of joint ventures' balance sheets under IFRS 10(7).

⁹⁰ While in theory, any bank could provide the subscription credit facility, anticipated information asymmetries let fund managers demand that the bank, which originated the acquired loan portfolio, also provides the subscription credit facility. However, even if regulators intervened in these arrangements and required non-originating banks to provide these facilities, the respective risks would still remain within the banking sector, arguably without holding regulatory capital against the exposure.

⁹¹ See above at n 14.

eralized financing facilities. Supervisors should seek to prevent structures that only become viable because they benefit from the direct or indirect access to explicit or implicit public safety nets without paying the price of adhering to the full set of prudential regulation.

This look-through to the allocation of tail risks may lead *inter alia* to the application of regulatory capital requirements in shadow banking, just like in traditional banking business. Under the approach favoured here, the extension of subscription credit facilities by banks could force banks to consolidate credit funds on their balance sheets and, therefore, to hold capital against these exposures in amounts equal to those if the banks directly held the funds' loan portfolios.⁹² However, to arrive at fully informed, socially beneficial decisions, supervisors need to engage in regulatory dialogues with gatekeepers and industry advisors, keeping supervisors abreast of contractual innovations and their consequences with respect to the allocation of tail risks. In fact, we gathered much of the information on fund structures and tail risk allocation provided in this paper from dialogue with members of the accounting profession and the bar. To make these regulatory dialogues a source of valuable information, supervisors need to signal recurrently to the regulated which regulatory stance they are taking in light of incremental changes in transactional structures.

7 Conclusion

This paper has discussed a possible route to regulating and supervising NBFIs. We have argued for equal treatment in regulation and normatively charged supervision of activities that allocate tail risks in a way that they have to be ultimately absorbed by (implicit or explicit) public safety nets. Moreover, we outlined how regulators might be able to undertake the required analysis of risk structures in NBFIs and showed how a multi-polar regulatory dialogue within the interpretative community can facilitate real-time continuous understanding of evolving transactional practices and their risk-allocating contractual features. Gatekeepers, such as auditors, law firms and also rating agencies, play a fundamental role in this regard.

We then illustrated the potential of this framework using the example of credit funds, and pointed to the set of incremental contractual changes that may have led to a replication of banks' business models and their inherent fragility in this realm of financial market activity. Credit funds today increasingly use maturity mismatch and leverage to increase the profitability of their business, thereby enhancing the run risks and, through their intricate relationships with banks, creating the possibility that public backstops will ultimately have to bear the tail risks.

Credit funds are not yet systemic, but they could become so. This potential development requires a persistent and critical look at the adequacy of such funds' treatment in prudential regulation, thus making the proposed multi-polar regulatory dialogues all the more essential.

⁹² See above 4.

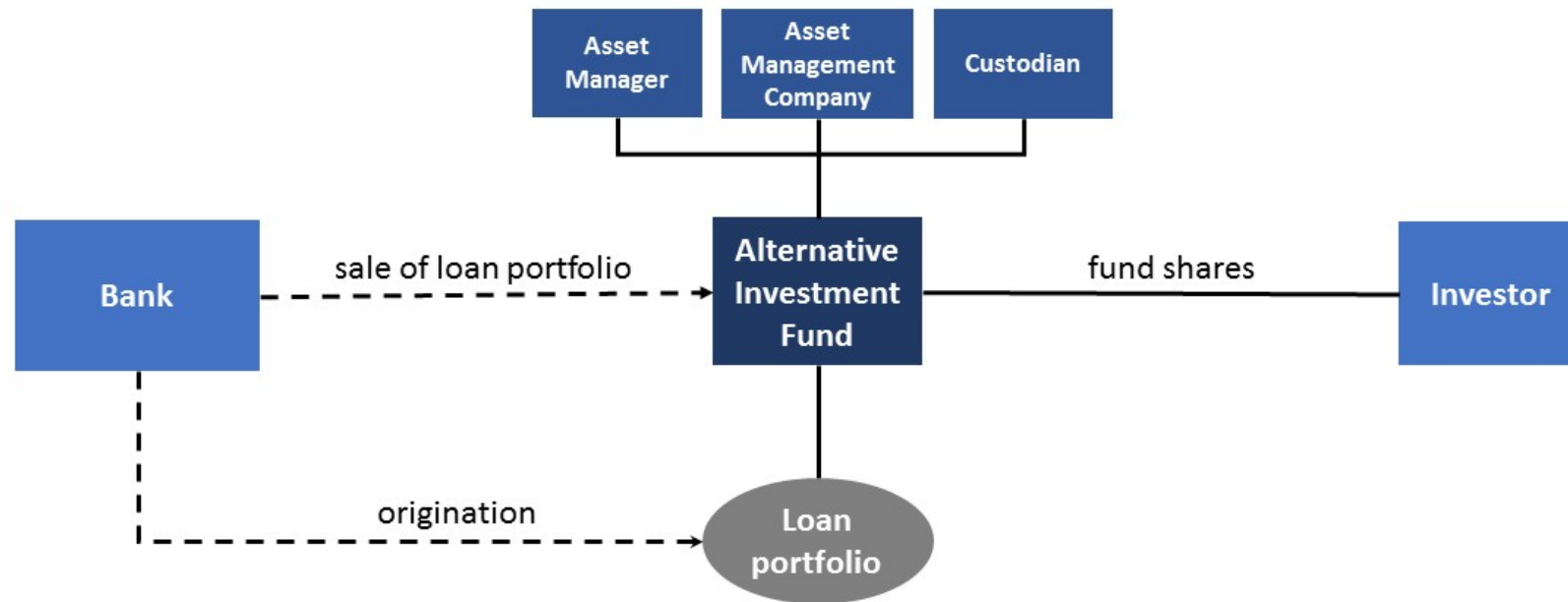


figure 1 - basic transaction structure of European credit funds

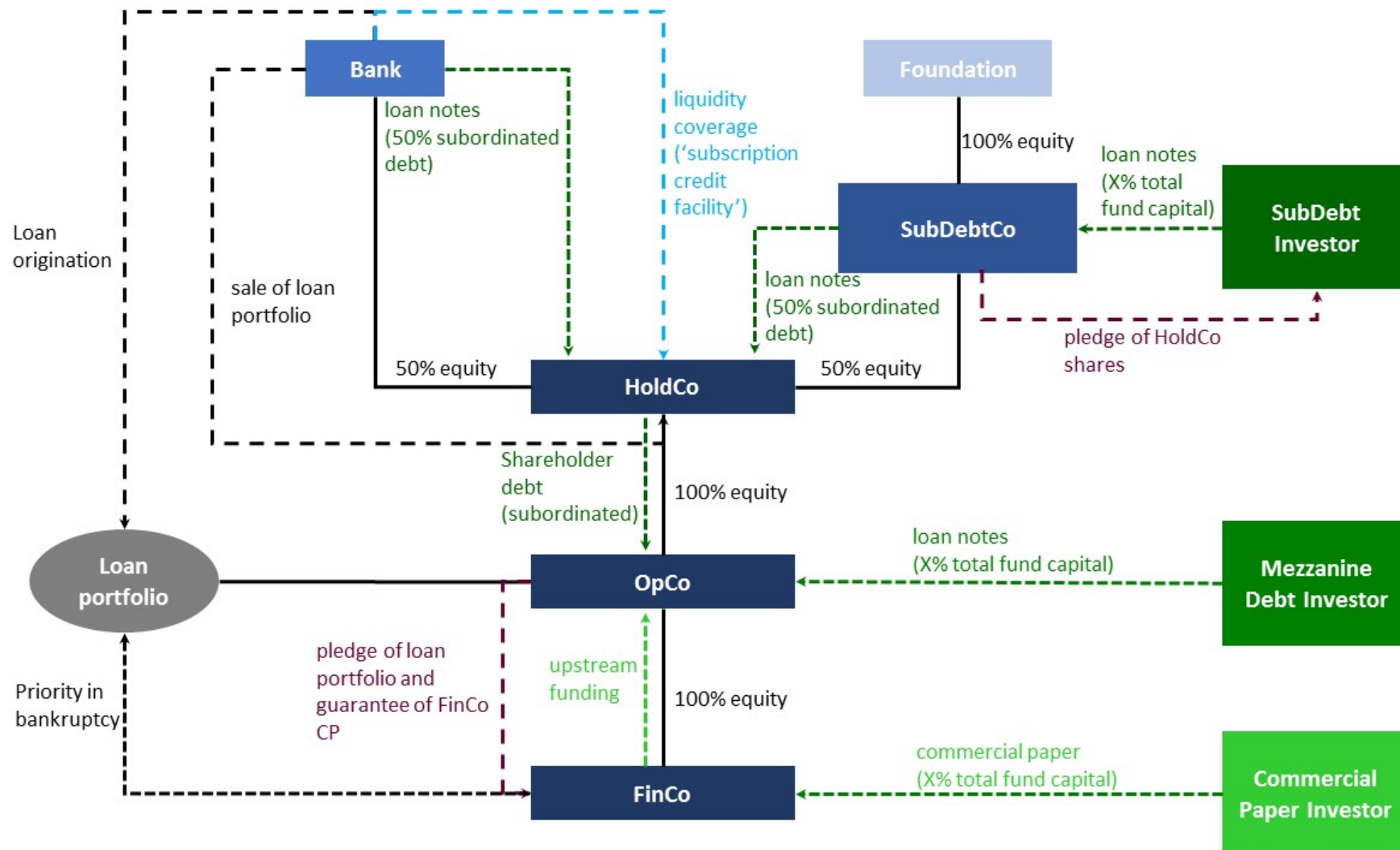


figure 2 - structure of loan originator-driven, leveraged credit fund



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