

Samenvatting van RMFI scriptie: Liquidity mismatch risks and the determination of liquidity terms for corporate credit funds

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Introduction – Liquidity mismatch risks

Corporate credit mutual funds (CCFs)² offering unconstrained daily liquidity to its investors suffer from a fallacy of composition due to their collective action problem. The problem arises if a large part of the fund investors demand liquidity while the fund invests in less liquid corporate bonds. This liquidity mismatch risk is amplified if investors simultaneously redeem across a range of CCFs in a short period of time. Therefore actual and anticipated fund investor behavior plays an important role in assessing and mitigating liquidity mismatch risks. Future potential large outflows will stress the robustness of current liquidity risk management (LRM)-practices including fund liquidity terms.

The RMFI-thesis and accompanying research paper show that due to both secular and cyclical factors liquidity mismatch risks of CCFs have increased in the last decade. The liquidity of corporate bond markets has not improved, while the size of CCFs more than doubled. In addition, LRM-regulation, -practices and the structuring of liquidity terms have not kept up with required enhancements and vary between jurisdictions, asset managers and funds. Also regulation and fund documents are ambiguous in the design and actual implementation of exceptional liquidity measures. The increased mismatch is a timely and growing area of attention and concern of academia, regulators and asset managers as the role of capital market based finance has increased. However, as of late they have predominantly focused on liquidity risk mitigation via the asset side including corporate bond market liquidity. There was only limited digression on the potential risk mitigation via strengthening liquidity terms. This contrasts with recent regulatory changes for money market mutual funds (MMMF) including enhanced liquidity term regulation. The limited recent research on the topic also did not connect the (anticipated) redemption behavior of investors with either the decision making of the fund on various liquidity terms.³

With the exception of the large, though stretched out over time, redemptions and subsequent closure and liquidation of Third



Avenue Focused Credit Fund (FCF), actual runs on CCFs or broad redemption pressure on a range of developed market CCFs have so far not occurred. This contrasts with other investment and saving vehicles like banks, hedge funds and MMMFs. Hence, detailed empirical, experimental and theoretical research on investor redemption behavior for mutual funds in general and in particular for CCFs with illiquid assets is mostly absent. However, based upon available research in related areas and reasoning the absence of runs should not be taken as evidence that these cannot occur, especially not because of the increased mismatches.

This article describes in slightly more detail two of the three contributions of the paper to existing literature:

1. Determinants of the risk of large scale investor redemptions in CCFs and how these relate to the (anticipated) behavior of investors, fund managers and other stakeholders.
2. Initial framework to assess in a structured way different liquidity terms in the presence of different objectives of stakeholders.

The third contribution is an assessment of liquidity terms being redemption fees and four exceptional liquidity measures: suspensions, gates, side pockets and payments in kind.⁴

Each liquidity term has its benefits and drawbacks in certain circumstances and for the respective objectives. Hence, the actual decision making on which liquidity terms to set and how to implement them in practice is a challenging effort for fund managers and regulators. The presented assessment can assist them determining a solid regulatory and best practice framework to reduce the risk and consequences of runs on CCFs.

Determinants of risk of redemptions and related behavioral characteristics

This paragraph describes the reasons for redemptions, its risks and the related behavioral characteristics of investors and other stakeholders. The picture below provides an illustration of these topics and the role of liquidity terms as part of the funds' broader LRM-framework. It includes the objectives of stakeholders as described in the subsequent paragraph.

Besides the occasional individual investor liquidity needs, initial rational reasons for redemptions can be either driven by a top down asset class re-assessment of return and risk⁵ or a bottom up re-assessment of the return and risk of an individual fund or fund family. Both causes concern the probability of redemptions and can be amplified by investors responding to anticipated and actual behavior of other fund investors. This relates to first mover advantage and run risk.

A first mover advantage arises when one investor has a rational incentive to leave a fund before other investors independent of their original redemption reason. The redeemer can gain at the detriment of the remaining investor. As CCFs hold less liquid assets with higher transaction costs (including market impact) and have less transparent pricing, their first mover advantage risk is larger. The advantage is further increased if investors are able to redeem at NAV or if redemption fees are relatively low.

A run on a fund, or an even more detrimental run on a range of similar funds, is a large and concentrated flow of redemptions. It can originate from both a simultaneous updated view

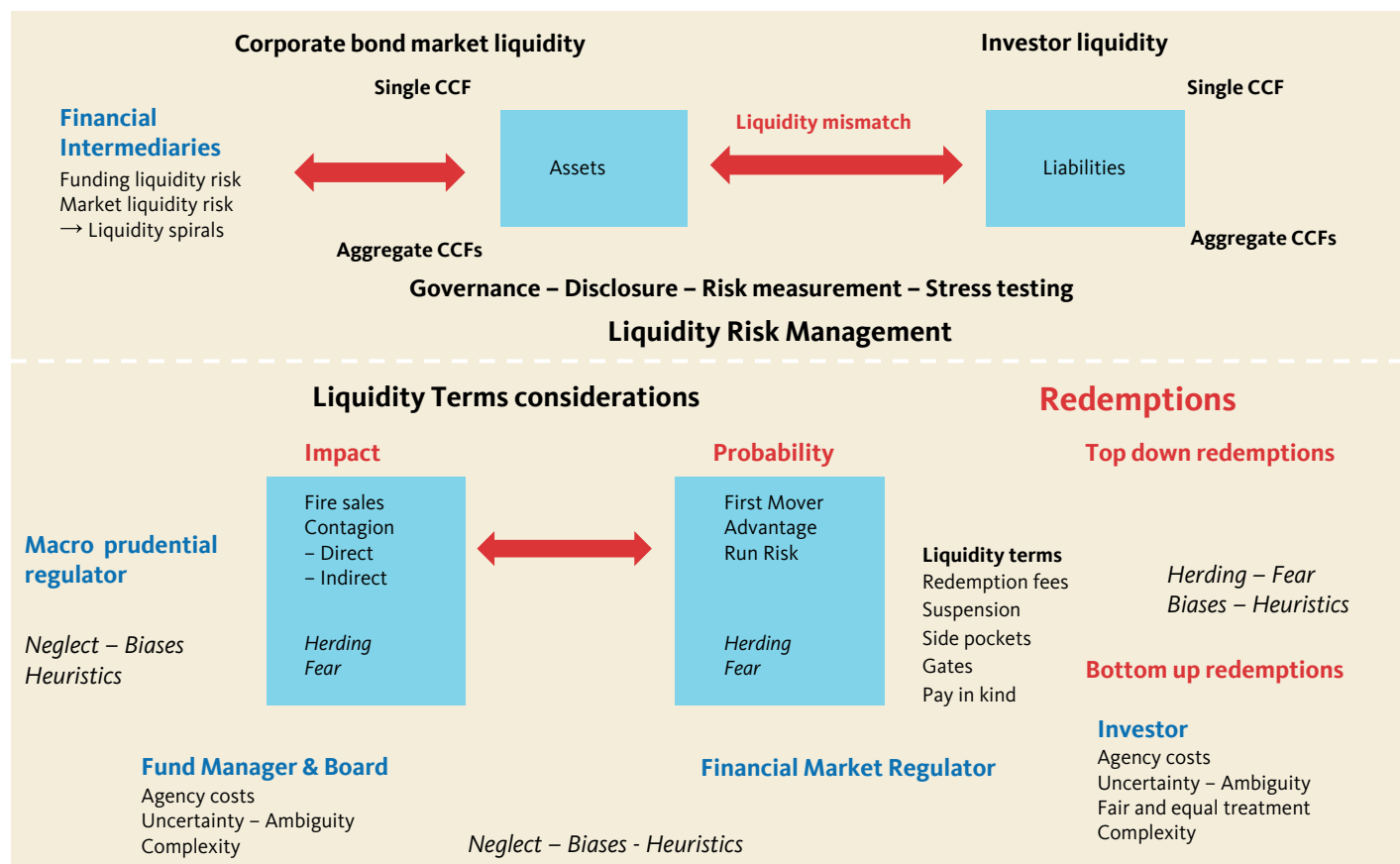


Figure 1: Overview of LRM of CCFs, stakeholders and their objectives, liquidity terms and direct and subsequent risks of liquidity risk mismatches arising from large redemptions.

of a large number of investors, but also from a rush for the exit to be ahead of others as waiting leaves less value in the fund, bearing transactions costs and be exposed to a likely a less liquid portfolio. This latter is the stage where the first mover advantage becomes the predominant driver of the run.

The maturity transformation of CCFs, somewhat similar to MMMFs and banks, combined with the illiquidity of the assets, make CCFs more vulnerable to both risks. These risks can reinforce each other especially for CCFs holding less liquid assets in a stressed market as illiquidity increases the liquidity premiums of financial intermediaries, hence transaction costs, and create negative feedback loops.

Redemptions further drive down prices, reduce the liquid assets in the fund, reduce market liquidity and encourage more redemptions not just in the specific fund but across CCFs. Decisions of the fund manager and board on the potential enactment of exceptional liquidity measures can enhance these negative feedback loops. Besides theoretical and empirical evidence of the existence of these risks in other asset classes and investment structures, the limited empirical research on CCF-flows indicates at least some presence of the first mover advantage as well as its relation with the asset's liquidity and liquidity terms.

Based upon available theoretical and empirical research the paper shows that large redemptions in CCFs cause fire sales. During stressed

times these can result in self-reinforcing liquidity spirals and liquidity and price contagion effects to other financial markets and have real economic impact. I.e. the risks and effects of large redemptions stretch beyond the fund and corporate bond markets. There is no evidence that large numbers of investors act contrarian to quickly close price gaps or discounts arising from fire sales. Due to the illiquidity of corporate bonds combined with the behavior of investors and financial intermediaries the price impact can be severe. As the asset management industry increases in size, including the increase in CCFs, this contagion can potentially result in systemic risks.

Behavioral characteristics like herding and fear have been documented as drivers of first mover advantage and run risk, i.e. increasing the probability of large redemptions, but also increasing the impact of them and enhancing the feedback loops. Several heuristics and biases that investors have been proven prone to, can be underlying factors of this behavior and/or even amplify redemption pressure and runs. These include ambiguity aversion, availability, bounded rationality, limitation of self control, hyperbolic discounting and the affect bias. Fund managers and boards, but also regulators, can also be prone to these biases including group think and neglect during both the decision making when setting liquidity terms of the fund and when and how

enacting exceptional liquidity terms during large outflows.

Awareness of these behavioral characteristics can improve the decision making of the investors, fund managers, boards and regulators about making redemption decisions and decisions regarding liquidity terms that reduce the probability and impact of concentrated redemptions in CCFs.

Framework assessing liquidity terms

Liquidity terms, among others, are an indispensable LRM-tool to manage and mitigate liquidity mismatches arising from concentrated outflows in one fund or across a range of CCFs. However, research on how to structure liquidity terms for CCFs in light of the above determinants and redemption risks and their interaction with behavioral characteristics is lacking. For this purpose the paper provides an initial framework (table 1) to evaluate the advantages and disadvantages and the effectiveness of several liquidity measures. It can assist fund management companies (FMC) and regulators assessing different liquidity terms.

Based upon reasoning from academic research and regulatory inquiries, among others, the diverse objectives and perspectives of stakeholders involved are reflected in the framework. The stakeholders include the financial market regulator concerned

Objectives	
First mover advantage – incentive Run risk	Lessen early redemption incentives and reduce probability of large redemptions in short period of time ('pre-redemption decision').
Need and risk of fire sales	Reduce impact of redemptions ('post-redemption decision'), i.e. improve the ability to manage concentrated redemptions in general and mitigate the impact on the fund(s), other mutual funds (not limited to CCFs, indirect contagion) and across markets and the economy.
Direct contagion	
Indirect contagion	
Uncertainty and ambiguity for investors	Are the liquidity terms (structure, actual implementation and decision making, disclosures) increasing or reducing the uncertainty and ambiguity of investors, but also for the fund manager and board?
Uncertainty and ambiguity for FM and board	
Complexity for investors	Ability of less educated investors to understand the liquidity term.
Operational complexities	Operational complexity increases costs and risks of errors.
Fair and equal treatment of investors	Balancing conflicting interests across fund investors – investor protection.
Retain basic fund integrity	Retain benefits of open ended structure even for less liquid assets: providing market exposure with an ability to redeem on short notice.
Moral hazard	Reduce agency costs and principal-agent conflicts of interests including captive investing, moral hazard of investing more in illiquid assets. Reputational risks arise when imposing an exceptional liquidity term, and also relate to the perception of equal treatment.
Reputational risk	
Effectiveness for bottom up redemptions	Ideally the liquidity term is both effective for broad based top down, across a range of similar CCFs, redemptions and large bottom up idiosyncratic, fund or FMC specific, redemptions.
Effectiveness for top down redemptions	

Table 1: Framework of objectives of stakeholders to assess liquidity terms of CCFs.

about the fair treatment of investors and the systemic risk regulator that focuses on potential contagion risks.

The main objectives in the framework are related to the direct ability of each liquidity term in reducing the risks of large redemptions, being both probability and impact. An additional objective relates to the reasons to invest in the asset class and/or specific fund: providing full (market) exposure via simple to understand fund structures while also providing liquidity on demand at low costs. The terms also have to be fair for the different fund investors. Redeemers and remaining investors have different objectives and therefore perspectives on the liquidity terms resulting in conflicts of interests between them.

The paper shows that several objectives are related and can reinforce, but also counterbalance each other. In addition, there are many potential

conflicts arising from the different objectives of the stakeholders. It describes that balancing the different objectives of the stakeholders and anticipating their current and future behavior into the decision making process on setting and implementing liquidity terms is very complex. There are numerous interactions both simultaneous as well as sequentially as markets, investors, fund managers and boards respond to actual and anticipated behavior of others. Hence, it is difficult to anticipate how the different liquidity measures separately and/or combined impact investor behavior and overall markets. In addition several measures create operational complexities, reputational risks and agency costs.

How the FMC and legislator ultimately set (guidelines for) liquidity terms depend on how they balance and weigh the stakeholder's objectives and perspectives.⁶ This is a topic of further research. One prerequisite is that

the decision on which liquidity terms to deploy and how these are implemented have to be set in unison and are part of the entire LRM-framework. The different parts of the LRM have to be set in such a way that these are consistent and mutually enforce each other. It has to operate and be robust across all different kind of market circumstances and redemption patterns. This will make CCFs safer, more resilient and robust investment vehicles. Assessing and determining these before a potential CCF-crisis occurs reduces neglecting such an event and its consequences by FMCs and regulators.⁷

Conclusion

A broad based run on CCFs, even though it might have a low probability, is a possibility and can result in a systemic risk, i.e. a low probability but high impact event. The risk of large CCF-outflows cannot be neglected and wait for the actual occurrence to develop consistent and well thought-out solutions. Hence, the need to act preemptively by creating a robust liquidity structure for CCFs and a regulatory framework, with less ambiguity on structure and how it is implemented, before such a potential event or risk transpires. Due to outdated regulation and the diverse and outdated LRM-business practices at at least several FMCs, this robustness is currently absent. This lack of robustness was underscored by the recent disordered events around the closure of Third Avenue FCF. Asset managers and regulators even have to question if funds investing in less liquid assets should still be offered or allowed to be offered to investors that expect instant liquidity at all times. I.e. keeping the liquidity illusion alive, even in the presence of funds having tools for exceptional circumstances.

The enhancement of regulation and LRM-practices has to be done in parallel with additional theoretical, empirical and experimental research on liquidity risks and the role and development of liquidity terms in light of the increased liquidity mismatches of CCFs. On this it can learn from theoretical and empirical research on runs on banks, MMMFs during the Global Financial Crisis, but also of large redemptions from numerous hedge funds. ■

Noten

- 1 Drs. M.J. Geene RBA CAIA is a senior investment consultant of PGGM Fiduciary Advice. This article, cited research paper (Geene (2016)) and thesis represent the research and opinions of the author, and not those of PGGM. The research paper has been written for the postgraduate program Risk Management for Financial Institutions (RMFI) of the Vrije Universiteit Amsterdam and is an extended version of the thesis with the similar topic, which has been supervised by Prof. Dr. Michael Damm. See Geene(2016) for the list of research papers and reports used.
- 2 CCFs are defined as institutional and retail mutual funds investing predominantly in investment grade

- (IG) and high yield (HY) corporate bonds in developed markets in Europe and the United States (see further Geene(2016), also on credit ETFs).
- 3 On this matter they only focused on run risk and first mover advantage, while not exploring other and related behavior characteristics of decision making as well as other risks and objectives of the stakeholders.
- 4 A potential new mutual fund vehicle, a hybrid fund, and closed end funds are also assessed.
- 5 This causes synchronized redemptions across a range of similar CCFs resulting in much larger market impact and contagion risks.
- 6 To improve the efficacy of the liquidity terms allowed for, including their structure and when and how used,

- legislators have to take into account the following considerations: avoid regulatory arbitrage, create a level playing field within an asset class and requiring a consistent, robust and coherent LRM-framework that includes making liquidity risks salient.
- 7 The framework can be applied to other investment strategies that face similar liquidity issues, like the rapidly growing mutual funds in emerging market sovereign and corporate debt.