M11 CREDIT

Credit Lending Mechanisms for Crypto Trading Firms

A Risk Management Perspective for Capital Allocators

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Executive summary:

The research article “Credit Lending Mechanisms for Crypto Trading Firms” presents a detailed examination of credit lending dynamics within the digital asset sector, with a particular focus on trading entities. The study delves into various lending paradigms prevalent in the cryptocurrency market, including: over-collateralized, under-collateralized, and prime brokerage (PB) financing, each distinguished by its risk profile and capital efficiency.

Against the backdrop of the cryptocurrency credit market’s nascent stage and ongoing evolution, recent developments, such as the collapse of centralized finance (CeFi) lenders, underscore the necessity of establishing robust credit frameworks. The sector’s inherent volatility has been compounded by challenges such as a lack of transparency, trust deficits, and structural issues within the credit landscape. Notably, the predominance of retail capital in the market, combined with the prior misuse of “credit-only underwriting” methodologies to extend leverage to trading firms, underscores the urgency of transitioning to more robust lending practices tailored to the specific needs of these entities. This evolution towards transparent and established financial principles is pivotal in fostering a more stable and secure cryptocurrency financial ecosystem in the long run.

The article highlights key insights, including the potential of PB models to enhance safety and capital efficiency in the crypto space. Addressing systemic challenges in the crypto credit market, such as the establishment of price discovery mechanisms, diversification of funding sources and adherence to professional reporting standards, is crucial in enhancing market stability and transparency.

Looking ahead, the study envisions the integration of traditional PB model strengths with digital asset innovations, such as Decentralized Finance (DeFi) Capital Market Platforms acting as Capital Formation Layers. This convergence has the potential to catalyze the development of more sophisticated services in the crypto credit market, catering to the evolving needs of trading firms and capital allocators, and contributing to the maturation of the digital asset ecosystem.

Key Takeaways:

Spectrum of Lending Models in Crypto:
The article underscores the spectrum of lending models prevalent in the cryptocurrency market, illustrating the trade-offs between safety and capital efficiency. Over-collateralized lending, while offering heightened security, is constrained by its limited capital utilization. On the other hand, under-collateralized lending provides greater flexibility but is accompanied by increased risk exposure. This heightened risk often stems from the reliance on credit underwriting methods that may not align adequately with the unique business models and requirements of trading firms. It is crucial to recognize that loans extended to trading firms in the crypto space serve a distinct purpose; primarily financing trade positions or providing margin funding, significantly diverging from traditional private credit's scope.

Prime Brokerage as a Holistic Solution:
Drawing inspiration from Traditional Finance (TradFi), the PB model emerges as a holistic solution, amalgamating the security of over-collateralized lending with the efficiency of under-collateralized models.

Navigating Challenges in the Crypto Credit Market:
The article identifies critical challenges in the crypto credit market, underscoring the need for structured price discovery mechanisms and the adoption of universal professional reporting standards akin to IFRS or US GAAP. This includes the implementation of a robust digital asset categorization system. Furthermore, the article emphasizes the significance of diversifying funding sources as a pivotal factor in enhancing market stability and facilitating improved access to capital.

Envisioning the Future Financing for Trading Firms in the Crypto Space:
This piece offers a visionary outlook on sustainable financing for trading firms within the crypto space. The future is characterized by the integration of traditional PB frameworks with cutting-edge digital asset innovations, envisaging a crypto finance ecosystem that is both robust and adaptable.

Strategic Role of Capital Allocators:
This article highlights the essential role of capital allocators in the evolving world of digital asset finance. Their role in directing capital to PBs is key to developing more effective strategies for capital use and improving operational infrastructures. This strategic involvement is crucial in enhancing the growth and complexity of the crypto finance sector, as capital allocators play a significant part in shaping its future and fostering innovation.

In the dynamic world of digital assets, the robustness of the credit market is paramount. For trading firms such as market makers, high-frequency trading firms, and hedge funds, sophisticated financing and lending models are not just tools but essential for maximizing profits. These firms, which use leverage to optimize returns, require robust and transparent credit mechanisms.

The cryptocurrency credit market is still developing and experiencing a significant shift. Recent developments, such as the downfall of CeFi lenders, have underscored the necessity for sturdy credit infrastructures. This volatile landscape has been characterized by a lack of transparency, issues of trust, and challenges within the credit market. Consequently, under-collateralized lending saw a 90% decrease within a year[1], prompting a comprehensive reevaluation of the lending practices that support the crypto credit ecosystem. Fidelity's research underlines this pivotal shift, advocating for the integration of PB-like services to fortify the credit market for trading firms. This move to stronger lending practices highlights the importance of being open and using well-known financial rules, leading us to a more stable and secure cryptocurrency financial ecosystem for the future.

This article is structured to provide capital allocators comprehensive insights into both the present and the evolving landscape of the cryptocurrency credit ecosystem. It places a particular emphasis on trading firms that rely on robust and transparent credit mechanisms.

The article is divided into four sections:

Section 1. Current State of the Lending Mechanism in the Crypto Credit Ecosystem

This section provides an in-depth examination of the primary lending mechanisms, providing insights into the characteristics of each model. Additionally, we explore the balance of risk and returns for capital allocators in this context.

Section 2. Prime Brokerage Risk Model: Overview and Future Outlook

This section focuses on the PB financing model, a growing and critical component in the crypto credit market. It explores the relevant risk factors, operating model, and mitigants associated with this model.

Section 3. Addressing Key Challenges in the Crypto Credit Market for Trading Firms

This section pivots to systemic issues in the crypto credit market. It underscores the critical need for established price discovery mechanisms, professional reporting standards akin to IFRS or US GAAP, and diversified funding sources. Highlighting the contrast with TradFi, it advocates for the adoption of PB models and innovative DeFi integrations to enhance market stability and capital accessibility.

Section 4. Future Outlook: Realizing the Potential of Prime Brokerage in Crypto Finance

This section of the article illustrates our conceptual vision for sustainable financing, merging traditional PB strengths with digital asset innovations.

[1] *This estimate is derived from M11 Credit's market insights gathered trough discussions with trading firms, PBs and liquidity providers.*

Section 1

Current State of the Lending Mechanisms in the Crypto Credit Ecosystem

We will begin by examining three primary methods that crypto trading firms use to obtain financing today:

- Over-collateralized Lending
- Unsecured / Under-collateralized Lending
- Prime Brokerage Financing

Detailed Overview of Lending Models:

Lending Mechanism	Over-Collateralized	Under-Collateralized	Prime Brokerage Financing
Uses of Capital	Unrestricted	Unrestricted	Restricted
Efficiency of Capital	Low	High	High
Level of Risk	Low	High	Low
M11's Price Expectations (as-of 4Q23) | Stablecoins	7-9%	13-15%	8-13%

Definitions:

Uses of Capital: This term describes the various ways in which trading firms can deploy borrowed capital. Restrictions on the use of capital can limit a firm's ability to execute diverse trading strategies. The unrestricted use of capital is often preferred by trading firms as it provides operational flexibility (i.e., whether for expanding trading positions, diversification, hedging, or other operational needs) to adapt to market conditions and opportunities as they arise.

Efficiency of Capital: Capital efficiency in lending models refers to the effectiveness with which trading firms can use their capital to generate profits. A capital-efficient model allows firms to maximize their trading potential with less capital tied up unnecessarily. In an over-collateralized model, capital efficiency is lower because a significant amount of assets must be locked up as collateral. Under-collateralized models, on the other hand, are seen as more capital efficient because they require less collateral for the same loan amount, freeing up capital for other uses.

Level of Risk: In this context, the risk is specifically about the ability to assess and measure the likelihood of a borrower defaulting on a loan or failing to fulfil contractual obligations. This assessment can range from straightforward to challenging, depending on various factors that lenders consider to evaluate and mitigate the potential for defaults.

Price Expectations: This term refers to the interest rate expectations by lenders from borrowers for the use of their money. In the context of lending models for trading firms, borrowing rates are a critical factor as they directly impact the cost of capital. Lower borrowing rates can increase a firm's profitability, as they reduce the expense associated with leveraging positions in the market. Conversely, higher borrowing rates can lead to increased costs and may deter firms from taking on additional leverage.

In Price Expectations, we provide estimates based on our network of where capital allocators and borrowers are likely to converge in the market (as of 4Q23).

A. Over-Collateralization Lending Model

TLDR for Capital Allocators:
Among the three lending mechanisms examined in this article, this model stands out as the safest for lenders, albeit offering the lowest return rates. Traditional credit assessments are less emphasized here, with the main risk mitigation strategy being the maintenance of high over-collateralization rates and a robust margin system that can swiftly liquidate faltering loans. **However, due to the capital inefficiency inherent in this model, it is seldom the preferred funding source for trading firms.**

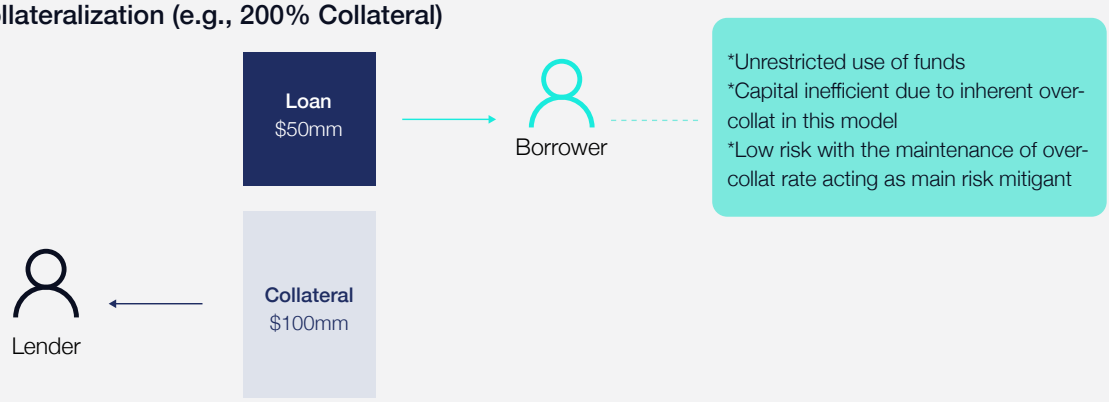
Over-collateralization has long been a cornerstone of lending, acting as a safety net for lenders by ensuring that the value of the collateral exceeds the loan amount. In the early stages of DeFi, platforms like Maker, Aave, and Compound pioneered the use of over-collateralized DeFi lending, setting a precedent for secure transactions without the need for traditional credit checks. This approach was rooted in the principle of trustless transactions, a fundamental ethos of blockchain technology.

The inception of DeFi was marked by a straightforward idea: instead of relying on credit scores, borrowers could obtain loans by locking in cryptocurrency worth more than the loan itself. This over-collateralization was a simple solution to the problem of trust in a pseudonymous ecosystem. It also introduced the recursive nature of leverage to the blockchain world, where borrowers could use their borrowed assets as collateral for further loans, creating layers of leveraged positions.

As DeFi protocols matured, they refined the mechanisms of over-collateralization, balancing the risks and rewards of lending and borrowing. The recursive nature of leverage present in these protocols allowed for innovative financial products and strategies, albeit with an increased complexity and risk profile.

CeFi cryptocurrency institutions (e.g., Celsius, BlockFi) observed the success of this model in DeFi and adapted it for their use, especially when dealing with less creditworthy counterparties or when traditional credit risk assessments were deemed unreliable or untrustworthy. In cryptocurrency CeFi, over-collateralization provided a semblance of security in a domain where the opacity of credit operations often prevailed.

Over-Collateralization (e.g., 200% Collateral)



Capital Inefficient but Low Risk (Risk mitigant - maintenance of high over-collateralization rate)

Below are key attributes of the over-collateralized lending mechanism relevant for capital allocators and borrowers alike:

Uses of Capital	Capital is unrestricted and there is flexibility in using the proceeds from loans.
Efficiency of Capital	The approach is inherently less efficient in terms of capital usage for trading firms. Higher collateralization requirements lead to a significant tie-up of assets, which hinders optimal trading opportunities and limits overall efficiency. As such, this model is rarely put to use by trading firms given the capital efficiency limitations.
Level of Risk	The key risk mitigant is to ensure the over-collateralization rate can withstand market shocks and be liquidated at minimal haircuts to the collateral. Creditworthiness plays a much less critical role, if any, as risk is primarily mitigated through proper over-collateralization calibration techniques. A robust margin infrastructure is crucial for maintaining margin-level reporting and ensuring that liquidation protocols are adhered to.
Cost of Capital	Low borrowing/lending rates are aligned with low risk for lenders and capital inefficiency for borrowers. As a result this lending mechanism typically yields the lowest returns.

B. Unsecured / Under-collateralized Lending Model

TLDR for Capital Allocators: This lending model promises the highest returns among the three lending mechanisms but comes with substantial risk, even when under-collateralization is factored in. Despite the use of rigorous Credit Review/Underwriting standards, these methods have inherent limitations, especially in the context of lending to trading firms. Financial statements, crucial for credit assessment, often lack detail and may not be audited, adding to the risk. In TradFi, this approach of lending to trading firms based **solely on credit reviews is not practised**, as it is fundamentally flawed when applied to trading firms. The mismatch between the timing of credit reviews and the highly reactive nature of a trading firm's balance sheet to volatile markets makes this approach impractical.

Moreover, some collateralization, while serving as a vital risk mitigant and ensuring the counterparty's ability to meet margin calls, does not entirely eliminate risk. Even with under-collateralization in place, there is typically a portion of the loan that remains effectively unsecured. This unsecured portion poses a significant risk in the volatile crypto market.

The under-collateralized lending model emerged in the crypto space as a response to the capital inefficiencies of over-collateralized loans. This model, which allows borrowers to receive loans with collateral that is worth less than the loan amount, promises greater capital efficiency and fluidity within the market. It was particularly attractive to trading firms that could leverage their positions to a greater extent than what over-collateralization permitted.

Historically, under-collateralized lending has been more capital efficient because it enables firms to utilize their assets more freely, rather than tying up large amounts of capital as collateral. This efficiency has been a driving force for innovation and growth among crypto trading firms, allowing for more aggressive trading strategies and the potential for higher returns.

However, the shift towards under-collateralization introduced new layers of risk. It was inherently riskier, as lenders did not have the same level of security that over-collateralization provided. The model relied heavily on the creditworthiness of the borrower, which in the rapidly evolving and sometimes opaque world of crypto, was challenging to assess accurately.

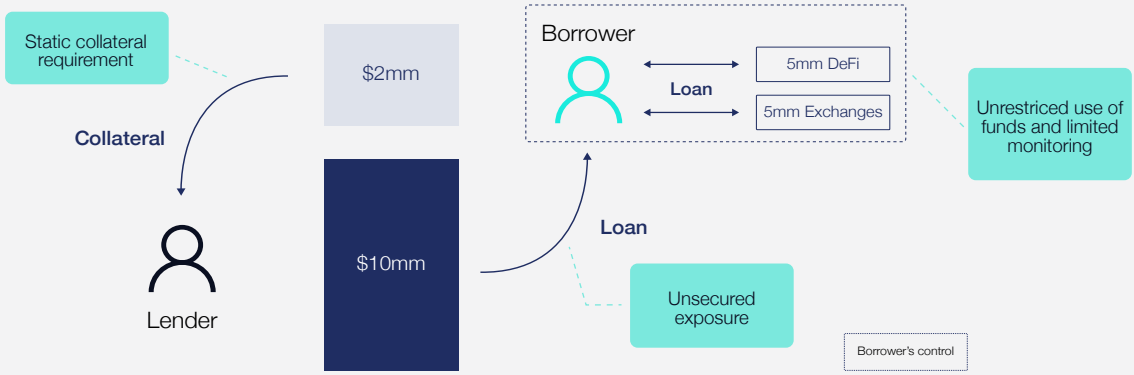
One of the significant challenges with under-collateralized lending in the crypto industry has been the accuracy of credit reviews. The nascent nature of the industry meant that many trading firms and counterparties lacked a long history of financial stability, and the financial statements provided for credit reviews lacked detail and timeliness. The absence of standardized financial reporting in the crypto space further exacerbated the issue, making it difficult for lenders to perform due diligence and assess the true risk of lending.

Another significant challenge associated with under-collateralized lending is the difficulty in monitoring counterparty risk effectively. Once the loan is extended to the borrower, the lender becomes vulnerable to the entirety of the borrower's business activities. For instance, while a loan might have been granted for market-making activities, if the borrower is also engaged in degen staking (e.g., TERRA LUNA), the lender is unknowingly exposed to that additional risk. Discovering these activities during the credit review process is crucial. Borrowers are often savvy and understand the criteria that lenders use to assess loan candidates. They may present themselves as ideal borrowers, emphasizing market-making activities as the primary focus while concealing other riskier activities.

Moreover, the industry has seen its share of high-profile collapses and frauds, which have cast a shadow over the reliability of the financial information provided by cryptocurrency firms. These events have underscored the risks associated with under-collateralized lending and have led to calls for better risk management practices and more stringent credit assessment processes.

Despite these challenges, the under-collateralized lending model continues to be a part of the cryptocurrency lending landscape. It represents a balancing act between capital efficiency and risk management, one that continues to evolve as the industry matures and as new tools for credit assessment and risk mitigation are developed.

Under-Collateralization (e.g., 20% Collateral)



Capital Efficient but High Risk

Below are key attributes of the under-collateralized lending mechanism relevant for capital allocators and borrowers alike:

Uses of Capital	This model grants trading firms the freedom to use loan proceeds for nearly any purpose, enhancing operational flexibility.
Efficiency of Capital	It enables firms to optimize capital utilization by reducing idle assets.
Level of Risk	The extension of a loan is primarily contingent upon the borrowing entity's creditworthiness which inherently involves significant risk. Furthermore, when under-collateralization is required, a robust margin infrastructure is crucial for maintaining proper margining/liquidation procedures.
Cost of Capital	Trading firms face the highest borrowing expenses, reflecting the broad flexibility for unrestricted use and capital efficiency that this lending model offers.

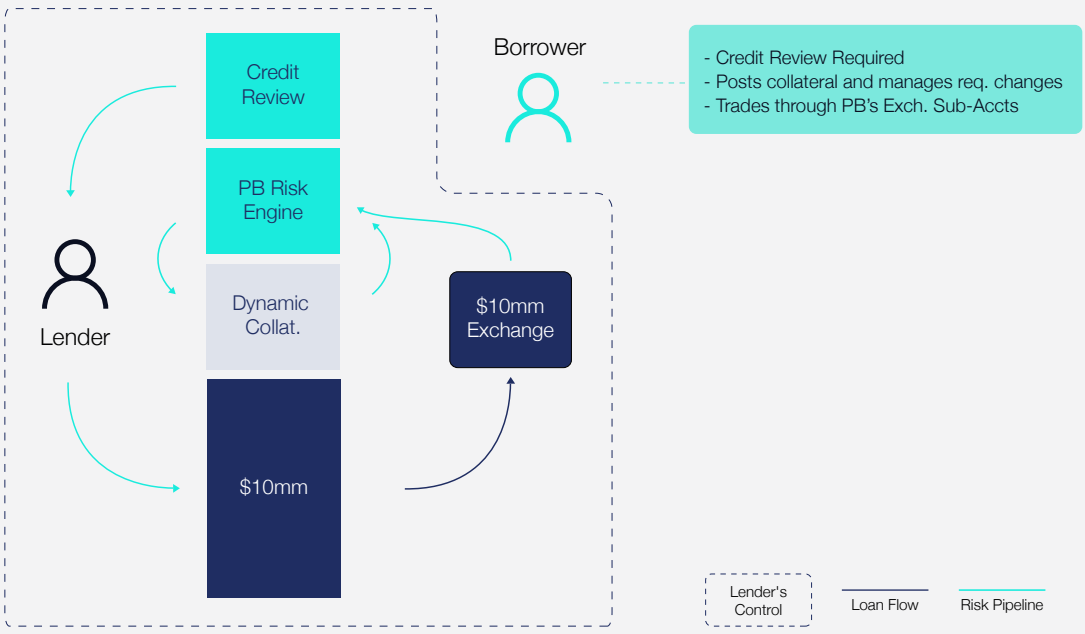
C. Prime Brokerage Financing

TLDR for Capital Allocators: This type of lending balances efficiency akin to under-collateralized lending, while technically maintaining over-collateralization due to the PBs control over assets within the controlled ecosystem. Despite receiving less attention in the crypto space, the PB model closely mirrors how trading institutions secure capital in TradFi and is gaining notable traction in the crypto space today. We advocate for the adoption of the PB lending model, considering it is the most balanced approach for both capital efficiency and sound risk management, drawing on the established and proven practices of TradFi. Ideally, this model incorporates both credit assessment and PB risk assessment, handled by separate teams with vastly different skill sets as seen in TradFi. The credit risk team would perform broader, albeit less timely, due diligence and credit review, setting general borrowing limits for trading firms. Meanwhile, the PB risk team would manage a more responsive risk-margin engine, imposing tighter and dynamic controls on loan sizes and thus serving as the primary risk manager in the borrower <> PB relationship.

PB is a service offered by major TradFi banks to trading firms who need the ability to borrow securities or cash to achieve leverage / shorting activities. This model has a storied history in TradFi, where it has been a linchpin for hedge funds and institutional traders seeking to maximize their investment strategies. The PB model allows clients to outsource their trading infrastructure and custody services, while also providing access to financing and leverage. It is a testament to the model's success that it has been adopted across the financial industry, becoming a hallmark of sophisticated and efficient capital markets.

As noted earlier, trading firms aim for lending models that balance for efficiency. They seek to access funds in a manner that optimizes capital usage, aligns with their strategic goals, and leads to maximizing returns for their trading strategy. The over-collateralized and unsecured/under-collateralized models offer a range of possibilities, **yet the optimal approach would fuse the security of over-collateralized lending with the capital efficiency of the under-collateralization model, all at competitive borrowing rates**. The PB model achieves this combination with the sole limitation that capital is restricted to the PB's ecosystem.

Prime Brokerage Lending Model



Capital Efficient and Low Risk

Below are key attributes of the PB financing mechanism relevant to capital allocators and borrowers:

Uses of Capital	Capital is typically restricted to the PB's ecosystem and is designated for a specific purpose, namely, providing trading capital.
Efficiency of Capital	Efficiency is on par with the under-collateralized lending model.
Level of Risk	The extension of a loan is primarily based on the borrowing entity's creditworthiness, in conjunction with a margin/risk engine that ensures proper liquidation protocols are in place at the PB. This engine operates within a well-defined framework that draws on the established and proven practices of TradFi. Trading firms can borrow funds based on the value of their existing assets and equity at the PB. The amount that can be borrowed is determined by a combination of factors, including the type of trading strategy, asset quality, asset liquidity, and the broker's specific margin methodologies (typically a dynamic rules-based or stress-based methodology calibrated to the risk profile of the trader's underlying portfolio of assets). Should the value of the securities used as collateral decrease, the PB will issue a margin call, requiring the trading firm to deposit additional funds to maintain the position or the position will be liquidated, with the trading firm's equity absorbing any losses.
Cost of Capital	Offers moderate borrowing costs. Furthermore, when assets are in custody with a PB and are eligible for rehypothecation (i.e., similar to the setup in TradFi), borrowing costs can be highly competitive compared to alternative financing models.

Section 2

Prime Brokerage: Exploration of the Prime Brokerage Model

In light of the complexities and evolving nature of the crypto credit market, as discussed throughout our article, we recognize the need for a focused exploration of the PB model. This recognition has led us to dedicate a separate piece to 'PB Risk: Exploration of the PB Model.' A dedicated piece allows us to delve deeper into how traditional finance's PB models can inform and potentially transform risk management and operational strategies within the crypto space.

First an Overview of How PBs Operate in TradFi:

A PB is a key financial institution typically engaged by hedge funds, family offices, and large traders to support the execution and financing of their trading or portfolio strategies. These institutions, collectively referred to as "trading firms" in this context, rely on PBs for a variety of services. The most common offerings include financing, capital introduction, lending, clearing, and custodial services. Among these, financing and margin lending stand out as critical elements, which this section aims to explore in detail.

- **Margin Lending: An Integral Part of Financial Services:**
  - Margin lending is a cornerstone of the financial ecosystem, empowering trading firms to enhance their trading strategy capabilities by borrowing funds against their existing securities or cash holdings.

- **Mechanics of Margin Lending at PBs:**
  - Within PBs, margin lending is conducted through a methodical and prudent approach, reflecting a responsible way for brokers to engage in such financial activities. This process allows trading firms to borrow funds, with the amount being carefully determined based on the value of their securities and cash holdings. The borrowing capacity is meticulously calculated, taking into account several critical factors: the nature of the trading firm's trading strategy, the quality of their held securities, and the broker's specialized risk-margin methodologies. These methodologies are not static; they are dynamically adapted to suit the risk profile of the trading firm's portfolio daily, ensuring that the lending process is both secure and judiciously managed. This approach underscores the PB's commitment to responsible business practices in margin lending.

- **Benefits of Margin Lending:**
  - Enhanced Potential for Returns: Margin lending empowers trading firms to amplify their position sizes, which can significantly boost profits, especially when market trends are advantageous. This aspect is particularly crucial for strategies like statistical arbitrage and other arbitrage strategies, where leverage can play a key role in maximizing returns.
  - Expanded Strategy Options: By providing access to a larger pool of capital, margin lending enables a more diverse array of trading strategies. This is not only beneficial for standard practices like Long / Short strategies but is also essential for complex strategies such as statistical arbitrage and other forms of arbitrage, where the ability to swiftly mobilize larger capital is often a prerequisite for success.
  - Increased Trading Flexibility: This lending model grants traders the ability to swiftly seize market opportunities as they arise, without the necessity of procuring additional capital from external sources.

- **Pricing Dynamics:**
  - In scenarios where trading firms leverage or short-sell securities, they borrow capital or securities from the PB, incurring interest charges. The pricing of these loans typically adheres to the following structure:
    - » Benchmark Rates: Interest rates are often pegged to benchmarks like the Federal Funds Rate or Secured Overnight Financing Rate plus a PB's spread.
    - » Tiered Pricing: PBs may implement tiered pricing based on the level of leverage or short selling, with higher levels potentially attracting higher interest rates.

PB in the Crypto Ecosystem:

While traditional PBs offer a comprehensive range of services including funding, lending, clearing, custodial solutions, and execution capabilities, crypto PBs are currently more focused on core services like settling transactions and lending, with other PB peripheral services being somewhat limited. They are, however, gradually expanding their services to meet the growing demands of the crypto market. In both traditional and crypto finance, leverage and financing play pivotal roles. However, the methods of providing leverage differ markedly. Traditional PBs have established margin methodologies for offering leverage, using clients' assets to enhance buying power. In contrast, the crypto world, while familiar with the concept of leverage, lacks the robustness and standardization seen in TradFi. Risk management practices, including margin-risk engines/methodologies, are more advanced and common in TradFi compared to the relatively nascent crypto ecosystem, which is still developing its offerings and practices in these areas.

Key Challenges for PBs in the Crypto Space:

PBs face a unique set of challenges, particularly in **(1) diversifying and obtaining funding sources and (2) integrating with the broader crypto ecosystem**. While the crypto PB sector is growing, it still lags behind TradFi in terms of capital access and seamless integration with exchanges. Broadening the participant base is crucial for enhancing market robustness and ensuring a more diverse and resilient funding environment.

One of the significant hurdles is managing the demands on a PB's balance sheet, particularly concerning cross-exchange margining and the provision of on-demand leverage. Moreover, assets in transit between exchanges are exposed to heightened risk. PBs that offer integrated solutions encompassing multi-venue execution and settlement can significantly mitigate these risks by minimizing asset movement.

Trading firms in the crypto market often face the necessity of pre-funding accounts across multiple exchanges, a task typically managed by PBs in traditional markets. This requirement not only ties up significant capital but also prevents the cross-margining of positions across different exchanges, leading to increased capital costs and inefficiency.

These challenges starkly highlight the limitations in capital efficiency within the current framework. A digital asset PB can address these issues by enabling the netting of collateral and providing consolidated settlement services. Such an approach allows for the funding of a single account that connects to multiple high-quality liquidity providers and exchanges. This not only streamlines the investment process but also reduces the operational burden on clients, who would otherwise need to conduct extensive due diligence on each trading venue.

In summary, the evolution of PB in the crypto space is not just about adopting new technologies or expanding services. It's about restructuring the role of PBs to meet the unique demands of digital assets, thereby fostering a more efficient, secure, and accessible market for all participants.

Opportunity for Capital Allocators:

The evolving dynamics of PB in the cryptocurrency sector not only underscore the need for innovation but also reveal a substantial opportunity for capital allocators. As PBs endeavor to bridge the gap between the fast-paced crypto markets and the stability of TradFi systems, the role of capital allocators becomes increasingly significant. **Their ability to provide capital is especially valuable, considering that balance sheet strength is a critical component for a successful PB model.**

Capital allocators are positioned to act as vital conduits of capital in this changing landscape. The capital provided to PBs is not just funding; it's a key asset that enhances the brokers' balance sheet strength. This strength is essential for PBs to operate effectively, manage risks, and offer robust services. By channelling capital into these PBs, allocators facilitate the development of more sophisticated services that address current limitations in funding, margining, and asset movement. This capital allocation is crucial for the expansion and maturation of crypto PB services, potentially leading to lucrative financial returns as these services grow and diversify.

A significant advantage for capital allocators in this environment is the benefit of relying on the PB's advanced risk systems, such as margin risk engines. These systems provide a robust framework for managing the inherent risks in crypto trading, allowing capital allocators to mitigate their unsecured risk exposure while capitalizing on the growth potential of the sector. The integration of these advanced risk management tools by PBs ensures a more secure and stable platform for capital allocation, enhancing the overall safety and efficacy of investments.

Moreover, the capital infusion from allocators is pivotal in integrating crypto markets with TradFi systems, fostering a more seamless, efficient, and secure trading environment. It enables PBs to develop more efficient capital deployment methods and robust operational infrastructures, which are vital for the long-term sustainability and growth of the crypto market.

In the final section of this article, we will introduce a setup that capital allocators can leverage to maximize their returns. This setup is designed to capitalize on the limited commodity of capital in the crypto PB space, offering a healthy risk-reward balanced approach for those allocators who strategically position themselves in this evolving market.

Section 3

Addressing Key Challenges in the Crypto Credit Market for Trading Firms

Following our exploration of the crypto lending mechanisms and a deep dive into the PB risk model, we now shift our focus to a critical aspect: the systemic challenges facing the crypto credit market. These challenges, encompassing price discovery, lack of professional reporting standards, and diversified funding sources, critically dictate the market's stability and growth trajectory. Notably, in the realm of price discovery, the Jump Crypto[2] article 'Paradigms for On-Chain Credit' offers an insightful exploration of emerging on-chain credit models and their implications, further enriching our understanding of these market dynamics.

Price Discovery and Benchmarks:

One of the most critical challenges in the crypto credit market is the lack of a structured price discovery process and established benchmarks. This absence turns loan pricing into a subjective negotiation between the lender and borrower, devoid of broader market visibility. Consequently, pricing often fails to accurately reflect the risk/reward profiles of individual borrowers. Establishing market-wide benchmarks and transparent price discovery mechanisms is essential to rectify this issue, ensuring that loan pricing is both fair and reflective of the actual market conditions and borrower risks.

Professional Reporting Standards:

The quest for on-chain transparency in the crypto market often overlooks a crucial aspect: the origin of funds. Current methods fall short of providing a comprehensive perspective, underscoring the need for professional reporting standards in crypto-native trading firms. These standards are indispensable for fully understanding the underlying credit risks.

This deficiency is starkly evident when compared to TradFi Market Makers, particularly publicly listed firms, which offer detailed disclosures in their financial reporting, including exhaustive notes. Furthermore, their financial statements undergo semi-annual audits. The lack of such thorough reporting in the crypto sector not only impedes precise financial analysis but also poses risks to informed decision-making.

Adopting universal reporting standards, similar to IFRS or US GAAP, along with implementing a robust digital asset categorization system, would considerably enhance transparency in the crypto market. This progression would bring the industry in line with TradFi best practices and significantly refine the accuracy of credit assessments and investment decisions.

Diversified Funding Sources:

A significant hurdle in the crypto market is the lack of diversified and reliable funding sources, a challenge exacerbated by regulatory uncertainties and capital inadequacies. This issue parallels the early days of TradFi, where PB models eventually emerged as a solution, offering a suite of services to streamline access to capital for trading firms.

In the crypto world, adapting this battle-tested model from TradFi could offer a path forward. Innovative hybrid approaches, integrating aspects of DeFi Capital Market Platforms with the PB framework, have the potential to enhance capital accessibility. Such a development could lead to a more robust and dynamic funding environment, essential for the growth and stability of the crypto credit market.

Confronting these challenges head-on is crucial for the evolution and stabilization of the crypto credit market. By adopting best practices from TradFi, adapting to evolving regulatory landscapes, and innovating in funding models, the sector can progress towards a more stable, transparent, and efficient market. Such advancements are not just imperative but foundational in supporting the dynamic requirements of trading firms within the crypto ecosystem.

[2] Jump Crypto is a division of Jump Trading Group, one of the largest research-driven HFT firms across traditional asset classes.

Section 4

Future Outlook: Realizing the Potential of Prime Brokerage in Crypto Finance

As already discussed in previous sections, various financing models each offer distinct advantages and challenges. Over-collateralized models are appreciated for their straightforwardness but lack in capital efficiency, a key element for trading firms aiming for maximum leverage. Conversely, the Unsecured/Under-collateralized Lending Model, while offering greater flexibility, faces challenges due to limitations in risk management.

The PB Financing model emerges as a holistic solution, successfully combining safety and efficiency. Leveraging its proven track record in TradFi, this model introduces critical services like cross-exchange margining and readily available leverage, essential for digital asset trading firms.

For capital allocators without advanced credit and PB risk teams capable of effectively evaluating associated risks, a new conceptual model is proposed. M11 Credit suggests a model utilizing DeFi platforms, facilitating straightforward and robust capital syndication for PB lending. The pool delegate, comprising experts in credit and PB, employs a five-pronged approach to determine the eligibility of PBs for capital pool access. This approach, rooted in traditional risk frameworks developed by entities like M11 Credit, includes 1. Capital Allocation Framework; 2. Liquidity Framework; 3. Rate Model; 4. Risk Framework (including credit assessments and concentration limits); 5. Governance & Reporting.

These frameworks are briefly outlined as follows:

1. Capital Allocation Framework: A model determining the capital allocation to PB borrowers in the pool, considering factors like the risk rating of PBs, rate bids, term bids, and concentration limits.
2. Liquidity Framework: A model ensuring effective liquidity management within the pool, aligning the capital providers' duration with that of the borrowers.
3. Rate Framework: A model designed to implement a rate auction strategy, facilitating price discovery in the market to achieve competitive rates for both borrowers and lenders.
4. Risk Framework: Processes for conducting thorough credit risk assessments of PBs, including evaluations of their margin methodology and risk systems.
5. Governance & Reporting: Ensuring proper aggregate reporting of the PB borrower pool, balancing confidentiality of specific PBs while providing a comprehensive view of metrics to reassure capital allocators to the PB pool.

This diagram illustrates our strategic vision for a sustainable financing model for trading firms in the current market context. It represents the integration of traditional PB strengths with innovative digital asset features.

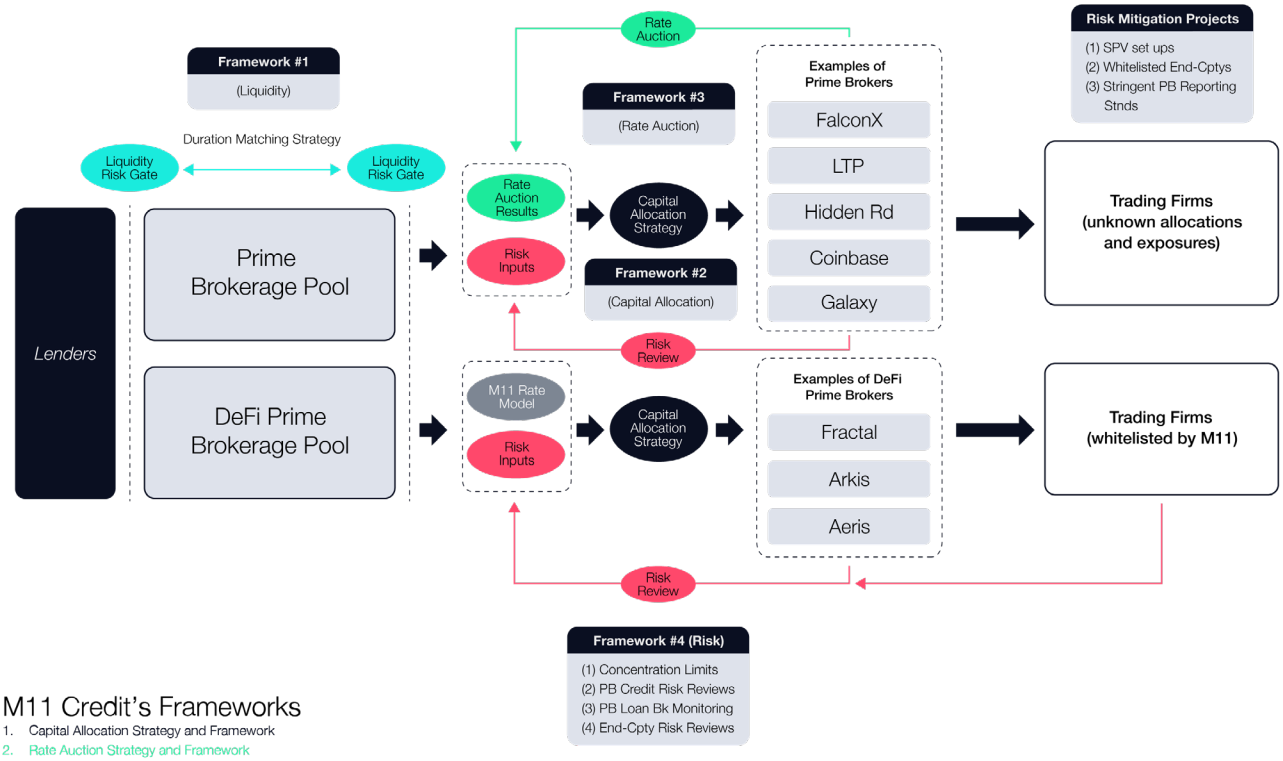
Our strategic vision for the future of financing trading firms harnesses the synergy between the DeFi and PB models. This model innovatively addresses the capital constraints faced by digital asset PBs by funnelling resources through Permissioned and KYC/AML-compliant DeFi Lending Pools, thereby streamlining the capital allocation process.

The PB model will serve as the credit risk engine, bolstered with attributes to mitigate risk. To further enhance the security of this model, we propose the creation of isolated bankruptcy-remote Special Purpose Vehicles (SPVs) that provide real-time visibility of end borrowers' exposure and risk parameters. This allows capital allocators to assess the isolated risk on specific pools, rather than the entire loan book of PBs, with a clear strategy and a pre-approved list of borrowers. Similarly, borrowers would utilize SPVs to limit capital allocators' exposure, aligning with the robust risk management systems of PBs.

To adapt to market shifts and ensure competitive rates, our vision includes implementing a rate auction model for select PB pools. This approach is aimed at achieving well-regulated exposure and efficient pricing. Conceptually, this model is intended to enhance the robustness and transparency of the crypto finance ecosystem, providing benefits not just to capital allocators but also ensuring that trading firms have equitable access to the necessary capital.

This vision, illustrated in the accompanying diagram, marks a significant shift towards integrating TradFi's reliability with DeFi's innovation in digital asset PB. Our approach aims to create a more robust, transparent, and adaptable crypto finance ecosystem for trading firms. We are dedicated to this path and welcome collaboration within the industry to explore and realize the potential of this new model.

M11 Credit's PB Credit Pool Model (End State)



M11 Credit's Frameworks

1. Capital Allocation Strategy and Framework
2. Rate Auction Strategy and Framework
3. Liquidity Risk Framework
4. Risk Framework - PB Loan Portfolio Monitoring, Credit Risk on PBs and End-Cpty (where applicable), Review of Margin Methodologies
5. Risk Mitigations Projects (SPV setup, ring fencing exposure to specific end-counterparties

About M11 Credit

Founded in 2021, M11 Credit operates at the forefront of bringing traditional capital markets on-chain by providing fixed income investment opportunities and credit solutions to established and profitable crypto-native companies. We use Decentralised Finance (DeFi) infrastructures such as Maple Finance and Zest Protocol but also offer bespoke underwrit ing services.

We are an experienced team of 5 professionals with 40 years combined experience in areas such as leveraged finance, asset management and capital markets.

M11 Credit is part of the M11 Group, a global blockchain and crypto-native investment firm.

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