

Backed bIB01 Risk Assessment

[PDF Version](#)

Links

- [MIP-6 Declaration of Intent – Invest in short-term bonds – Proposal for implementation](#)
- [MIP55c3-SP6: Legal Domain Work on Greenlit Collateral \(bIBTA\) Special Purpose Fund](#)

1. Legal disclaimer

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Steakhouse Finance bought some bIB01.

2. Executive Summary

Steakhouse Financial has been asked to analyze [the Backed proposal](#) to invest part of MakerDAO's reserves into bIB01, a tokenized structured product that tracks the price of [bIB01](#), the iShares \$ Treasury Bond 0-1yr UCITS ETF.

The key points are as follows:

- A ledger-based security.

bIB01 is issued out of Switzerland based on the Swiss DLT Act, an advanced civil and regulatory framework, which was among the first in the world to recognize blockchain technology for the legal validity of electronic records, including financial transactions. bIB01 has a public European prospectus, making detailed information about the product, Issuer and risks readily available.

- Low-risk underlying assets.

bIB01 is backed 1:1 by an ETF composed of US Dollar denominated government bonds issued by the US Treasury, with remaining maturities between zero and one year.

- There is no guarantee that third-parties willing to trade with the Maker protocol will be available at any given moment.

MakerDAO may have to utilize an off-chain legal entity to deal directly with Backed in order to acquire or dispose of bIB01 in the event that market makers elect not to fill or empty the bIB01 vault.

- bIB01 is compliant with Swiss regulations and the EU Prospectus Regulation.

Based on consultation with counsel, we understand bIB01 is compliant with the Swiss DLT Act, Swiss issuance and offering regulations and the EU Prospectus Regulation. Nevertheless, in a global setting, it is not clear what view other regulators, especially in the United States, may take. As such, to mitigate risk, MakerDAO would need to enact measures to limit access for U.S. citizens to bIB01 through its protocol.

- bIB01 has no management fees, only issuance and redemption costs.

Backed charges no management fees, but charges minting and redemption fees for bIB01, which are 20bps. The Issuer has confirmed with multiple customers that fees will be kept at 20bps for the issuance and redemption of bIB01 until December 2024, including customers that trade with MakerDAO on an ongoing basis. Additionally, there will be a need to provide an incentive for market participants to interact with the bIB01 Maker vault. We expect such an incentive (if Maker doesn't use an off-chain legal entity) to be 15bps, but it could be as high as 50bps. In comparison, MIP65 transaction costs are approximately 30bps per annum plus 30bps per issuance (including a 15bps Swiss stamp duty which is avoided by investing

directly in t-bills).

- Backed Finance controls a significant part of the issuance and redemption process.

As with most centralized issuers, Backed Finance controls the key to the minting and burning process through a 2 out of 3 multisig. While centralization of processes might help to avoid certain failures, compromised keys could be an issue.

3. Financial Analysis

IB01 functions as a tracker certificate, a structured financial product that tracks 1:1 the price of [IB01](#), the iShares \$ Treasury Bond 0-1yr UCITS ETF, after accounting for fees. As the financial risks and rewards associated with this product align with those of IB01, this section will primarily center around the latter. Furthermore, given that IB01 is an ETF which tracks the performance of Treasury bills, we will also incorporate a comprehensive review of the Treasury market. An evaluation of the structural risks particular to the structured product can be found in the structural analysis segment of this document.

We encourage readers to reference the [Key Investor Information Document \(KIID\)](#) of IB01 for additional, regulatory-compliant information from the Issuer. The KIID, a requirement of the European Union's UCITS (Undertakings for Collective Investment in Transferable Securities) Directive for investment vehicles such as mutual funds and ETFs, is a simplified, easily digestible document. It outlines crucial information on a fund's objectives, associated risks, costs, historical performance, and other significant details, all intended to assist investors in making well-informed decisions prior to investing.

3.1. Overview of the Treasury Market

The Treasury market refers to the global market for trading U.S. government debt securities, commonly known as Treasuries. These securities are issued by the U.S. Department of the Treasury to fund the federal government's operations and finance its budget deficits. The Treasury market is considered one of the largest and most liquid financial markets in the world, with investors ranging from individual retail investors to central banks, financial institutions, and large institutional investors.

There are four main types of Treasury securities:

1. Treasury Bills (T-Bills): Short-term debt securities with maturities that span from a few days up to 52 weeks. These are issued at a discount to their face value and do not distribute interest. Rather, investors are reimbursed with the full face value upon maturity.
2. Treasury Notes (T-Notes): Medium-term debt securities offered in maturities of 2, 3, 5, 7, and 10 years. T-Notes provide semi-annual interest, often referred to as coupon payments, and refund the face value when they mature.
3. Treasury Bonds: Long-term debt securities that come with maturities of 20 or 30 years. Analogous to T-Notes, Treasury bonds also disburse semi-annual interest and repay the face value upon reaching maturity.
4. Treasury Inflation-Protected Securities (TIPS): Inflation-indexed debt securities, available in 5, 10, and 30-year maturities. These securities are engineered to safeguard investors from inflation by adjusting both the principal value and interest payments according to fluctuations in the Consumer Price Index for All Urban Consumers (CPI-U). However, for the purposes of this analysis, this category will be omitted.

The Treasury market plays a critical role in the global financial system, as Treasury securities are often considered safe-haven assets due to the perceived low credit risk associated with the U.S. government. The prices and yields of Treasury securities serve as key benchmarks for interest rates in other markets, and their performance can influence the overall economy, monetary policy, and investor sentiment.

Theoretically, the U.S. government is never required to default on its debt, if it chooses not to. This is due to its ability to control the issuance of U.S. dollars through the Federal Reserve, which, in turn, may elect to subordinate monetary policy to governance expediency by acquiring new Treasury securities with U.S. dollars. The only conceivable route to default would be if the U.S. government restricted itself by failing to vote for an increase in the debt ceiling. This issue [came to the fore in 2023](#), when the debt ceiling was hit on [January 19th](#), but the effects were delayed through [extraordinary measures](#) until at least June 5th, and then later extended for several more years at the eleventh hour. There was no dramatic market reaction as this issue has recurred for decades. Nevertheless, 4-week T-Bills experienced high demand until their maturity date was after the potential default date. Demand significantly dropped after this point. Some asset managers increased their exposure to [longer Treasuries repos](#) or agency issues to avoid potential default.

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Treasury securities are issued via regular auctions conducted by the U.S. Department of the Treasury. T-Bills are [issued monthly](#) in volumes exceeding \$1,000 billion, while T-Notes see a monthly issuance around \$200 billion. Investors have the option to directly partake in these auctions, or alternatively, they can transact Treasury securities in the secondary market through a variety of avenues including brokers, dealers, and trading platforms. Notably, Treasuries are highly liquid, with daily trading volumes usually surpassing \$50 billion for Treasuries that have less than a 2-year maturity.

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Typically, the market categorizes Treasuries into two groups. On-the-run Treasuries, which represent the most recent U.S. Treasury issues for each respective maturity, serve as benchmarks for pricing and trading fixed-income securities due to their high liquidity and substantial investor demand. Conversely, off-the-run Treasuries are older issues that have been superseded by newer on-the-run issues. As a result, they tend to have lower trading volumes and less liquidity compared to their on-the-run counterparts.

The implications of this categorization are the following:

1. On-the-run Treasuries, due to their higher liquidity, typically command higher prices and yield lower returns.
2. Off-the-run Treasuries are less liquid and generally trade at a discount, offering higher yields to compensate investors for their reduced liquidity.

The difference in yield between on-the-run and off-the-run Treasuries, referred to as the [liquidity premium](#), functions as a barometer of market liquidity and investor sentiment. According to our research, this premium appears to be less significant for short-term Treasuries post-2000s, as demonstrated in the chart below ([source](#)).

Also shown below ([source](#)), trading impact on the shorter end of the curve is close to insignificant.

3.2. IB01

[IB01](#) is an ETF designed to track the performance of the ICE U.S. Treasury Short Bond Index, which is issued by the [Intercontinental Exchange \(ICE\)](#). This index is a market value-weighted gauge that tracks the performance of U.S. Treasury securities. It includes those with a remaining maturity of at least one month and less than one year and a minimum amount outstanding of \$300 million on the index rebalance date. The ICE U.S. Treasury Short Bond Index aims to provide a thorough representation of the short-term U.S. Treasury bond market. It undergoes a rebalancing and reconstitution process on a monthly basis.

As per the information on the [iShares ETF](#) website, the primary characteristic of this ETF is its weighted average maturity at 0.35 (slightly more than a quarter). The weighted average duration is marginally smaller due to the impact of the coupon on T-Notes, but this difference does not have a significant impact.

Since its launch in early 2019, the fund has been trailing its benchmark by approximately 4-8 basis points annually, consistent with its management fees. The assets under management tend to increase when yields are positive. The current net assets stand at \$7.4 billion. Notably, this same fund also offers a distributing share class (\$0.4 billion) and an accumulating share class hedged to the Mexican Pesos (\$3.2 billion), bringing the total assets near the \$11 billion mark.

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As one would anticipate, the composition of the fund primarily consists of T-Bills and T-Notes, specifically when their remaining maturity falls under a year. Additionally, there is a modest allocation to a Money Market Fund (MMF) and a few nominal cash positions.

As illustrated in the chart below (captured on 2023-04-18), the maturities are spread across a year but exhibit a pronounced concentration in shorter maturities. This distribution reflects the inclusion of short-term instruments such as 4, 8, 13, and 26-week bills, which are absent in the latter part of the chart. Consequently, the weighted average maturity is consistently below 6 months and typically closer to a quarter.

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IB01 functions as an accumulation ETF, which means that there are no distributions (typically made monthly or quarterly) to investors. Instead, the coupons earned from notes and the principal from treasuries are automatically reinvested. This process contributes to an increase in the net asset value (NAV) of the ETF.

3.3. Securities Lending

The IB01 actively participates in securities lending, a prevalent practice in the financial industry. In securities lending, an ETF or other institutional investor temporarily loans out its holdings, such as bonds or stocks, to a borrower. In return, the lender receives collateral and a fee. This method is employed by bond ETFs and various other types of funds to generate supplemental income, thereby enhancing the fund's overall performance.

Here's a brief overview of how securities lending works for a bond ETF:

1. The bond ETF holds a portfolio of bonds, aiming to replicate the performance of a specific bond index.
2. The ETF manager (or a third-party agent) engages in securities lending by lending out some of the bonds held in the ETF portfolio to interested borrowers, such as hedge funds, banks, or other financial institutions.
3. The borrowers typically use these borrowed securities for purposes like short selling, hedging, or arbitrage strategies.
4. In exchange for borrowing the bonds, the borrowers provide collateral to the ETF, which may include cash, government securities, or other high-quality liquid assets. The collateral value is usually set at a level higher than the value of the borrowed securities to account for market fluctuations and protect the lender.
5. The borrowers pay a lending fee to the bond ETF for the privilege of borrowing the securities. This fee contributes to the ETF's overall income and can help enhance its returns.
6. At the end of the lending agreement, the borrower returns the borrowed securities to the ETF, and the ETF returns the collateral to the borrower.

Securities lending does entail certain risks, including counterparty risk, which is the possibility that the borrower may default or fail to return the borrowed securities, and collateral reinvestment risk, referring to the potential complications associated with reinvesting the cash collateral. Nonetheless, ETF managers work to alleviate these risks by engaging with reputable counterparties and meticulously managing the collateral to ensure both security and compliance.

Overall, securities lending can be a valuable tool for bond ETFs and other types of funds to generate additional income, which may help improve their performance and benefit investors.

Between 2020 and 2022, securities lending yielded a consistent return of 0.02% for the IB01 ETF. As per BlackRock's policy, IB01 retained 62.5% of the securities lending income, while BlackRock received the remaining 37.5%. The collateralization ratio remained relatively stable, fluctuating between 109.5% and 110%. On average, 25-30% of the portfolio was lent out, although this figure spiked to 47.5% during 2021. As of the date 2023-04-17, the collateral comprised 1742 distinct securities, the vast majority of which (84%) were equities. The top five collaterals were all equities, including Microsoft (2.51%), JP Morgan Chase (2.28%), Amazon (2.28%), Taiwan Semiconductor Manufacturing (1.52%), and Banco Santander (1.48%).

[According to BlackRock](#), since 1981, only three borrowers have defaulted in their securities lending program. However, these defaults did not result in any loss, as the collateral was utilized to repurchase the missing securities, effectively mitigating the potential financial impact.

3.4. Duration risk

The primary financial risk associated with IB01 is its duration risk. Duration risk is a specific type of financial risk that stems from the sensitivity of the price of a fixed-income investment to fluctuations in interest rates. The duration of a fixed-income investment measures the average length of time until the investor receives the present value of all the investment's future cash flows, including both coupon payments and the principal amount at maturity. For a short-term and low coupon (t-bills don't have coupons) product like IB01, the duration is very close to the maturity.

When interest rates change, the present value of the future cash flows of a fixed-income investment changes as well. Duration risk is, therefore, the risk that the price of the fixed-income investment will vary in reaction to changes in interest rates. Generally, the longer the duration of a fixed-income investment, the more sensitive its price is to changes in interest rates.

With a duration of 0.35, an unexpected 1% interest rate raise (which is quite an outlier) would decrease the NAV of the fund by 0.35%. As currently the yield to maturity is above 4%, assuming no other surprise, it would take 25 days to be compensated by the yield to maturity (of 5% after the 1% increase). It's also worth noting that the 0.35% decrease should be considered in conjunction with transaction fees, which are not insignificant.

Therefore, as long as the interest rate remains sufficiently high (above 2%), the duration risk on IB01 is considered very low and not highly significant. This is especially true if the envisioned investment is geared towards the medium or long term, which is required anyway due to the trading costs associated with IB01.

4. Structural Analysis

In this section, we present the structure and the risks associated with bIB01. The information contained herein is primarily sourced from the officially approved prospectus in Liechtenstein by the Financial Market Authority (FMA) as of May 9, 2022, and in Switzerland by BX Swiss AG as of May 23, 2022, along with relevant supplementary materials.

4.1. Structure

4.1.1. Key Definitions

Term

Definition

Authorized Participant

(i) A licensed bank according to the BA, (ii) a securities firm according to the FinIA, (iii) an insurance company according to the ISA, or (iv) a non-Swiss institution being supervised in an equivalent manner, approved and engaged by the Issuer for the offering of one or several products to retail Investors and/or professional investors.

Collateral

The assets representing the Underlying in the account of the Issuer held with the Custodian.

Custodian

Any person administering the accounts to which the Underlyings purchased by the Issuer are credited.

Net Realization Proceeds

The amount resulting from the deduction of the service fees and additional costs of the Security Agent from the realization proceeds.

Paying Account Provider

Any person accepting or dispatching payments on behalf of the Issuer of the Products and by accepting or distributing the funds from/to the investors.

Realization Event

Events of default for the issuer. See 4.4 below.

Termination Event

An event which requires a discontinuation of bIB01.

Tokenholder

A holder of bIB01.

Underlying

iShares \$ Treasury Bond 0-1yr UCITS ETF, USD (Acc) Share Class (IB01).

4.1.2 Key Parties

The diagram provided below is extracted from the bIB01 prospectus and delineates the various parties engaged in the issuance process of bIB01.

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The Issuer is Backed Assets GmbH, a subsidiary of Backed Finance AG. It was established as an SPV and its principal activity is the issuance of Backed products in the form of blockchain-based cryptographic tokens. The Issuer retains some cash and stablecoins as working capital to enable smooth transactions and was adequately capitalized at the close of 2022. Below is an illustrative representation of the Issuer's balance sheet:

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The Issuer's financials are audited by Grant Thornton AG. As of the end of 2022, the audited balance sheet displayed approximately 500k CHF in equity, with the majority of the assets being held in cash and USDC. It should be noted that bIB01 had not been launched at that point in time.

The Tokenizer in this structure is Backed Finance AG, the parent company of the Issuer. It is responsible for the tokenization services, i.e, the creation and activation of bIB01 as well as handling the issuance and redemption transactions on behalf of the Issuer.

A key risk associated with the Tokenizer lies in its control over the minting process, managed through a 2 out of 3 multisig with hardware wallets on behalf of the Issuer. While there are other Externally Owned Address (EOA) wallets within the system, they typically don't hold significant amounts of assets and are generally covered by the Issuer's working capital.

If the keys associated with the Tokenizer were to be compromised, one potential resolution might involve using a pre-hack snapshot to ascertain legitimate ownership of bIB01. Nevertheless, this approach could still precipitate operational and legal complications.

Pursuant to separate framework agreements with the Issuer, the Custodians are [Maerki Baumann & Co. AG](#) and [InCore Bank AG](#). From time to time, the Issuer may also enter into similar framework agreements with additional custodians. The role of a Custodian is to maintain the securities accounts to which the bIB01 shares that are purchased are credited. Currently, Custodians also serve as Brokers for the underlying and are responsible for the acquisition and disposal of the bIB01 ETF. The Issuer also uses the services of other Brokers such as Flowtraders, Makor Securities and Jane Street.

As Paying Account Providers, Custodians will also hold cash amounts and other assets received by the Issuer in connection with the purchase and sale of the bIB01 shares in Paying Accounts. During normal operations, the Paying Account Provider will be directed by the Issuer. During a Net Realization Event, the Paying Account Provider will only act on the instruction of the Security Agent.

The Security Agent is [Security Agent Services AG](#). The Security Agent serves as the direct representative (direkter Stellvertreter) of bIB01 holders and is responsible for securing the claims of the investors to the Underlying as well as the Security Agent's own claims for ongoing costs.

The Security Agent is responsible for initiating the realization of the bIB01 when the products fall due and instructing the Paying Account Provider to initiate the payment of the pro-rata share of the Net Realization Proceeds to the Investors. Such activity qualifies as debt collection activity for and on behalf of the bIB01 holders as creditors. The Security Agent does not accept any funds on its own account for and on behalf of bIB01 holders as its principals. All proceeds are directly paid to the Paying Account Provider which will make partial or full repayments to the bIB01 holders upon receipt of the respective instruction by the Security Agent and after having deducted and paid authorized third party fees.

4.2. Issuance & Redemption Process

1. For security reasons, minting is done in weekly tranches – manually, and not by the automated system. It is controlled by 2 out of 3 [Safe](#). The [automated system](#), based on an MPC solution, is allocated an inventory.
2. Investors (that pass KYC/AML with Backed) place a buy order by sending USDC to the sweeping address allocated to them by Backed.
3. The received USDC is converted into USD and placed in the custody account, as part of the collateral for the product.
4. The underlying security is purchased and transferred to the custody account.
5. The pre-minted tokens are activated and transferred to the investor by the Tokenizer, acting on behalf of the Issuer.

In this process, the Tokenizer has full control over the stablecoins received as payment until they are converted and given to the Paying Account Provider for issuance. The Tokenizer also has control on the issuance of bIB01. Pre-minted tokens on EOA are not a huge risk at scale, assuming enough additional collateral on the Issuer side. The key risk is the minting function, which is controlled by a 2 out of 3 multisig. The consequences are unclear should those keys be compromised. Nevertheless, if we assume the extent of MakerDAO's interaction with bIB01 would be to buy and hold, those fraudulent tokens would not pose a legal or economic risk to the protocol.

The redemption process is essentially the opposite of the issuance process described above.

4.3. Issuer Redemption

The Issuer has the right to unilaterally terminate bIB01 if an event occurs that, in the sole discretion of the Issuer, requires the product to be discontinued (a "Termination Event"). bIB01 holders must be notified at the earliest possible date, but no later than 30 business days prior to the termination date. The notification method differs depending on how the token holder subscribed to bIB01 and will include email for KYC'd investors, other written forms of notification and a notice on the Issuer's website.

Termination can be exercised for various reasons, including lack of liquidity in the Underlying, legal or regulatory issues, increased collateralization costs, tax or governmental changes, cessation of services by major providers, or significant increases in technological or operational risks.

Following termination by the Issuer, bIB01 will be redeemed on the termination date, which may vary significantly depending on various market conditions.

Under Swiss law, claims for payment of the redemption amount in respect of the bIB01 will be available for up to 10 years.

4.4. Redemption Process in the Case of Issuer Default

The Issuer is considered to be in default if any of the below occur, (each, a "Realization Event"):

1. The Issuer is subject to any form of winding up, administration, receivership, insolvency or debt enforcement proceedings under Swiss Law.
2. The Issuer violates applicable law, leading to a regulatory order to cease activity.
3. The Issuer breaches the issuance terms of bIB01, resulting in a claim for the token holders, especially if a payment or delivery commitment isn't honored on time or without defects, and isn't remedied within 30 business days.

When a person acquires bIB01, they automatically declare to the Security Agent that they wish to enforce their rights under the Collateral Agreement (defined in 4.6.1) when a Realization Event occurs. The Security Agent, acting on behalf of the investors, either of its own initiative or based on information received from Tokenholders, has the powers to initiate the Realization Event at any point in time and assume control over the assets held as collateral.

In a Realization Event, the Security Agent has priority and is entitled to satisfy any claims against the Issuer from the realization proceeds, including any fees or extraordinary costs, before other payments are made to bIB01 holders.

After deductions, the remaining realization proceeds (Net Realization Proceeds) will be available for Tokenholders. The Security Agent will distribute these funds by instructing the Paying Agent upon a Realization Event.

The pro-rata share of the Net Realization Proceeds will be determined by the individual holdings in bIB01. Each Tokenholder's claim is limited to that share. Under Swiss law, claims for payment of the redemption amount in respect of the bIB01 will be available for up to 10 years.

4.5. Fees

Backed charges no management fees and only charges minting and redemption fees for bIB01, which are 20bps. The Issuer has confirmed with multiple customers that fees will be kept at 20bps for the issuance and redemption of bIB01 until December 2024, including customers that trade with MakerDAO on an ongoing basis.

In the event that the underlying ETF were to issue a dividend, it would be directed to Backed rather than to the individual Tokenholders. However, this consideration is not relevant for the current situation, as the ETF in question is of the accumulating variety and does not issue dividends.

Backed's business model enables the token to maintain a 1:1 relationship with the underlying asset, reflecting the same price. Given that the Issuer bears annual costs, the model operates on the assumption that a minimal amount of issuance and redemption transactions will be carried out each year. This ensures that the ongoing expenses are covered, thereby preserving the equivalence between the token and the underlying asset.

Assuming a 40bps cash generation per issuance/redemption and a 10bps annual cost (including custody and service provider fees), the model would necessitate a 25% turnover during a year. Turnover here is defined as the sum of tokens minted and burned, divided by the tokens in circulation. Since the inception of IB01 in 2019, the underlying ETF (not bIB01) has exhibited a 1-year turnover of around 100%, never falling below 60%. This figure is derived from the daily change in IB01 shares issued over the previous year, divided by the quantity of shares in circulation on that day.

SHV, a similar U.S. ETF with a longer history, displays comparable behavior but with increased activity. Its worth noting that the behavior could vary for bIB01 since the issuance/redemption fees are higher than in traditional finance. Investors should

closely monitor this aspect. With the data available, there's no clear evidence to suggest that the business model is inherently risky. However, real-world testing is necessary to evaluate the viability of the business model with greater confidence.

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4.6. Legal Analysis

4.6.1. Key Documents

Document

Description

Account Control Agreement

An agreement between the Issuer, Custodian and Security Agent, perfecting the Security Agent's interest over the Underlying held by the Custodian. Enables Security Agent to direct the disposition of the assets in the account as well as to prevent the Issuer from giving instructions with respect to the financial assets without Security Agent's consent.

Authorized Participant Agreement

An agreement between the Issuer and Authorized Participant regulating the rights and obligations of the Authorized Participant in the context of the issuance and redemption of bIB01.

Collateral Agreement

An agreement between the Issuer, bIB01 holders (represented by the Security Agent) and the Security Agent which creates a right of lien over the collateral in favor of (a) the bIB01 holders represented by the Security Agent acting in the name and on the account of bIB01 holders as direct representative, as well as (b) the Security Agent to secure its costs in connection with the realization of the Collateral.

Custody Agreement

An agreement between the Issuer and any Custodian according to general market standards for custody services. Sets out the duties and obligations of the Custodian in relation to holding all assets that the Issuer delivers to the Custodian in a separate account set up for the Issuer.

Paying Account Provider Agreement

Agreement between Issuer and respective Paying Account Provider which sets out the terms on which the Issuer holds the Paying Account with such provider.

Registration Agreement

An agreement between the Issuer and each holder of bIB01 which sets out the terms relating to the securitization (i.e., tokenization) of bIB01 in ledger-based securities, the effects, the rules of transfer and the process in case of loss of such ledger-based securities under Swiss law. The Registration Agreement forms part of the Terms and Conditions.

Tokenization Services Agreement

Agreement between Issuer and Parent, covering the provision of tokenization services by the Tokenizer.

4.6.2. Swiss Law Analysis

bIB01 tokens must primarily be analyzed with respect to their compliance with Swiss and EEA law, given that Backed Assets GmbH and Backed Finance AG are both Swiss companies, the token is issued under Swiss law and the underlying assets are held in custody in Switzerland.

A Structured Product

bIB01 is issued in the form of a freely transferable ledger-based security (ERC-20 token) under [Swiss law](#). bIB01 tokenholders possess a contractual claim against the Issuer for the market value of the underlying (i.e., units of the iShares \$ Treasury Bond 0-1yr UCITS ETF), minus fees.

bIB01 is issued as a "Tracker Certificate," which is a type of structured product. Under Swiss law, such structured products

are typically described as financial instruments whose return or redemption value tracks the performance of the underlying asset.

Transferability

Although bIB01 is freely transferable in the sense that there is no whitelisting functionality or similar on the smart contract level, the bIB01 Final Terms impose certain selling restrictions. bIB01 as “offered on primary and secondary markets and other platforms” is not for distribution to any U.S. person or in any other jurisdiction where distribution would be illegal (e.g., due to sanctions regulations) or which may be classified high-risk according to the Financial Action Task Force (FATF).

Under the bIB01 Final Terms, the Issuer assumes no responsibility for any subsequent offering of bIB01 (i.e., any offering not conducted by the Issuer itself). Any documentation by the Issuer may not be used for any re-selling activities in any jurisdiction/to any person where such activities would be illegal.

Collateralization

There is a Collateral Agreement in place between (i) the Issuer, (ii) the bIB01 holders (as represented by the Security Agent), and (iii) the Security Agent. Any Investor acquiring bIB01 on the primary or secondary market enters into and benefits from the Collateral Agreement. Under the Collateral Agreement, the Issuer collateralizes bIB01 by granting bIB01 holders a security interest in the form of right(s) of lien(s) on the Underlying held with the Custodian.

In case of a Realization Event, the Security Agent may sell the underlying and make the Net Realization Proceeds (i.e., realization value minus costs and fees) available to the tokenholders. The rights of Tokenholders in the case of a Realization Event can only be exercised through the Security Agent. The Tokenholder does not have any shareholder rights and does not have a direct claim toward delivery of the underlying.

Redemptions

Similar to issuance, the redemption of bIB01 is available on all open business days. Token holders must have undergone an onboarding process, including AML/KYC in order to be eligible to subscribe to or redeem bIB01. The Issuer retains the right to reject any issuance or redemption in case of negative findings within the onboarding process. Redemptions are settled in CHF, other fiat currencies or cryptocurrencies, as per the discretion of the Issuer.

Authorized Participants can redeem bIB01 directly with the Issuer (or with a third party appointed by the Issuer). Additionally, the Issuer has the right to terminate the bIB01 product as a whole. Following a Termination Event, bIB01 will be subject to redemption and settlement as outlined above.

The Issuer has broad discretion in determining the occurrence of a Termination Event. The Final Terms list a broad number of events that might trigger a Termination Event, including illiquidity of the Underlying, regulatory scrutiny against the Issuer, increased cost of operations, loss of any major service provider, and increased technological and operational risk. In sum, the Issuer has sole discretion to terminate bIB01 at any time, without providing specific reason and within 30 days' notice to the Investors.

The Issuer can reject redemption of bIB01 with no liability toward the Tokenholder in the event of ‘negative findings’ or other material negative issues in the mandatory redemption onboarding process with the Issuer. Considering the restrictions around selling the bIB01 to U.S. Persons/sanctioned countries, the Issuer has relatively broad discretion in rejecting the redemption of bIB01 by a specific Tokenholder.

4.6.3. U.S. Securities Law Analysis

Following consultations with U.S. legal counsel, their conclusion is that there is a high likelihood that bIB01 tokens would be deemed to be securities under U.S. law. As such, sales of bIB01 tokens to U.S. persons must either be registered or exempt from registration under the U.S. Securities Act of 1933 (the “Securities Act”).

Indeed, the bIB01 prospectus which is issued under the EU Prospectus Regulation and pursuant to which bIB01 is offered and sold is clear that bIB01 tokens will not be registered under the Securities Act and should not be sold to U.S. persons.

Furthermore, an intermediary that engages with U.S. persons in connection with the bIB01 tokens may be required to register as a broker-dealer if deemed to be engaged in: (i) the business of effecting transactions in bIB01 tokens for the accounts of others; or (ii) buying and selling bIB01 tokens for its own account as part of a dealer business.

As such, the position is clear when it comes to the current legal regime in the United States: if the intent is to distribute bIB01 tokens to U.S. persons, parties should be in a position where they possess the degree of sophistication required to guarantee their compliance with U.S. securities law. Otherwise, the safer and simpler approach is to take all available measures to restrict the access of U.S. persons to bIB01 tokens.

4.7 Key Risks for MakerDAO

Following consultations with multiple sets of Swiss legal counsel, their view is that the issuance and offering of bIB01 is in line with the requirements of Swiss financial market regulation.

Yet, some risks remain, and below is a list of some of those we believe to be the most pertinent to MakerDAO. For an extended discussion of risks, please also make reference to Section 2 of the Securities Note and Section 3 of the Registration Document ([see here](#)).

It is important to note that the risks listed below are not necessarily unique to bIB01 and may also be found in TradFi products, stablecoins and other tokenized T-Bill offerings.

4.7.1. Pausing / Freezing

Similar to USDC and USDT, the Tokenizer possesses the authority to halt all bIB01 transfers. The Tokenizer is bound by the issuance terms to only exercise a pause under specific circumstances including technological changes, discovery of vulnerabilities, or hack attempts, to ensure the proper functionality of the securities ledger (e.g., in the event of a hard fork).

In addition to the pausing functionality, it should be highlighted that the Issuer may introduce a freezing functionality as part of a future upgrade (see Upgradeability below). If introduced, the freeze could be executed if the Tokenizer is compelled by a competent court, regulator or other governmental authority, assuming the freezing generally does not violate applicable laws.

4.7.2. Upgradeability

In line with similar products, the Tokenizer has the capability to modify or upgrade the bIB01 smart contract. Such changes could introduce unforeseen restrictions or limitations, potentially altering the expected behavior or value proposition of the token. Tokenholders should be aware of this dynamic flexibility and the associated risks it might entail.

4.7.3 Counterparty Risk

The Issuer is exposed to the credit risk of a number of counterparties with whom the Issuer transacts, including, but not limited to: the Custodian, Paying Account Provider, Tokenizer and Authorized Participants.

Therefore, the Issuer is exposed to the risks of such parties, including, but not limited to, liquidity risk, reputational risk and settlement risk, arising from the failure of any of its counterparties to fulfill their respective obligations. If any such risk occurs, it may have material detrimental effects on the Issuer's business and financial position.

Concerning the Custodians, the Issuer is exposed to the credit risk of depository institutions with whom it holds cash, crypto and securities. This credit risk includes the possibility that the depository institution holding a financial instrument will fail to fulfill an obligation or commitment to the Issuer. The Issuer's Products are maintained by the Custodian accounts for the Products, which are intended to be protected in the event of insolvency of the Custodian.

Any insolvency of the Custodian may result in delayed or impossible access to the Underlying. In such an event, the investors may face a partial or total loss of their invested capital.

No party involved, including the Custodian or the Issuer is liable for partial or total loss of the market value of the Underlying.

Concerning the Paying Account Provider for the Products, the Issuer is exposed to the credit risk of the Paying Account Provider. In the event of insolvency of the Paying Account Provider during the interim period, the Issuer may be considered a general unsecured creditor.

In general, the Issuer relies on third parties providing trading on both the Products and any Underlying. Any dysfunction of such third parties or disruption at the exchanges and other platforms may result in a loss of value of the Products, which may, in turn negatively impact the Issuer and/or the investors.

4.7.4. Credit Risk

Tokenholders are exposed to the credit risk of the Issuer, the Custodian and other parties. A Tokenholder's ability to obtain payment in accordance with the relevant Terms and Conditions is dependent on the Issuer's ability to meet these obligations. bIB01 is not, either directly or indirectly, an obligation of any other party. As a result, irrespective of providing the Collateral for the benefit of the investors to secure its payment obligations under the Base Prospectus and the relevant Final Terms, the creditworthiness of the Issuer may affect the market value of bIB01, and in the event of default, insolvency or bankruptcy, investors may not receive the amount owed to them under the relevant Terms and Conditions. Next to direct credit risks, the Tokenholders are indirectly exposed to any indirect credit risks that the Issuer is exposed to, for example the credit risks of other affiliated parties of the offer. Furthermore, the Issuer may incur losses and/or fail to obtain delivery under any arrangements in place in respect of any Underlying held as Collateral.

4.7.5. General Insolvency Risk

Each Tokenholder bears the general risk that the financial situation of the Issuer could deteriorate. Unless specified otherwise, Tokenholders are exposed to the credit risk of the Issuer. bIB01 constitutes a primary claim to the Underlying and a subordinated claim (*pari passu*) to other Issuer's assets in case of insolvency. The insolvency of the Issuer may lead to a partial or total loss of the invested capital. Collateralization reduces the credit risk of the Issuer only to the extent that the proceeds from the liquidation of Collateral (less the costs of liquidation, including the fees and expenses of any person that

administers the accounts to which the Underlyings are credited as Collateral according to the Collateral procedures described in the relevant Securities Notes ("Security Agent"), and payout) meet the Tokenholders' claims. Tokenholders bear the risk, among others, that the liquidation of the Collateral may result in insufficient liquidation proceeds or, in extreme circumstances, that the Collateral may lose its value entirely before liquidation can take place.

4.7.6. Regulatory Risk

Blockchain technologies and cryptographic tokens have been and will be the subject of intense scrutiny by various regulatory bodies around the world. The functioning of the Ethereum network, associated blockchain networks and tokens may be adversely impacted by regulatory actions, including restrictions or prohibitions on their use, purchase, or possession. For example, some jurisdictions regulate providers of prepaid access or money transmission services who create a medium of exchange or a method by which value is transferred from one to another person or location. The implications of triggering such requirements may include registration with a state or national agency or enforcement authority and implementing an AML/KYC compliance program that meets the standards, including transaction monitoring, designation of compliance personnel, employee training, and periodic auditing and testing. Moreover, there may be various compliance obligations, including the need for a license, meeting minimum net-worth requirements, bonding, biographical and financial approval of officers and directors, and other ongoing compliance, such as examination and reporting obligations.

It is possible that certain jurisdictions will apply existing regulations on, or introduce new regulations addressing blockchain technologies-based applications, which may be contrary to the current setup of the smart contracts or the issuance of tokenized securities and which may, inter alia, result in substantial modifications of the smart contracts and/or the issuance of tokenized securities, including its termination and the loss of the investment for the Tokenholders. The Issuer could be impacted by one or more regulatory inquiries or regulatory action which could impede or limit the ability of the Issuer or third persons to continue to develop the Issuer's products and/or services. It could cause significant costs and adversely affect the development of Products and/or the operations. Further, the issuance of tokenized securities and/or the Issuer may be subject to unexpected tax burdens.

4.8. Potential Mitigants for MakerDAO

- A "buy and hold" approach, where MakerDAO would conduct two main transactions: (i) purchasing the tokens and holding them for an extended period and (ii) selling the tokens once the time comes to liquidate them.
- Agreements with APs to fill/empty the bIB01 Maker vault.
- NFT self-certification by wallet holders to confirm non-U.S. status.
- No front-end with respect to bIB01.
- No marketing that Maker is holding bIB01 tokens.
- A disclaimer stating that U.S. persons should not interact directly with the Maker protocol to access bIB01 tokens.
- A disclaimer stating that any front-end operators that make bIB01 tokens available to U.S. persons assume all liability.

5. Competitive landscape

In this section we review and compare bIB01 with other similar products that are already live. This isn't intended as a complete review of those products. For a detailed side-by-side, please refer to the [Tokenized T-Bill Memo by Steakhouse](#).

In short, bIB01 is:

- Atypical, given it is a permissionless ERC-20 token as opposed to other tokenized treasuries that feature restrictions on transferability
- Competitively priced on a management fee basis, as only the bIB01 ETF fees are taken (<7bps)
- Less competitive on a transaction fee basis, as Backed charges 20bps on the minting/redemption process.

5.1. Monetalis Clydesdale / MIP65

Maker started to invest in bIB01 (the direct ETF) in October through [MIP65](#) and has, at the beginning of 2023, over \$500M invested in bIB01 and IBTA (a similar ETF). This works off-chain by having an orphaned legal entity following guidance of MakerDAO tokenholders through a trust structure. DAI is minted from a Maker vault, swapped to USDC using Maker USDC PSM, sent to Coinbase where it is converted into US\$, sent to Sygnum Bank in Switzerland and invested in the ETF, which is held in custody by Sygnum.

With respect to fees, Monetalis charges 15bps annually and Sygnum charges an estimated 5-10 bps in annual custody fees. Total transaction fees are around 25-30 bps, of which the Swiss Stamp Duty of 15bps is significant.

With the bond ladder strategy, rather than the ETF strategy, Swiss Stamp Duty does not apply, reducing the transaction fees significantly. The structure has some setup costs (estimated to be ~\$200k) and some running costs (estimated to be ~\$50k per year).

5.2. Ondo Finance

[Ondo Finance](#) provides [OUSG](#) which is a fund mainly invested in [SHV](#), a US-version of IB01. At time of writing the TVL is \$160M (half of the market share of tokenized public securities on EVM chains which is tracked by [this dashboard](#)). It is a fully permissioned product.

On the fees side, SHV itself charges 15bps annually. Ondo's share is 15bps annually and the fund itself might charge up to 15bps of operating fees. There are no minting/burning costs.

5.3. Swarm Markets

[Swarm Markets](#) tokenizes IB01 under German law in the form of the TBONDS01 token on the Polygon chain. The token itself is whitelisted and Swarm provides a peer to peer exchange on its website where it gets some fees. Similar to bIB01, it is a structured product, specifically a certificate that tracks the underlying product (IB01). A prospectus is filled in Lichtenstein. At the time of writing, TBONDS01 TVL is less than \$10k. The Issuer charges 10 bps in minting/burning fees.

6. Oracles

Chainlink provides an oracle [here](#). It is updated every 24 hours or when the price deviates by more than 2% (which is unlikely for such a product).

7. Technical Implementation

[This technical implementation](#) could serve as inspiration for implementation.

8. Ecosystem Analysis

8.1. bIB01 usage

8.1.1. State of liquidity

Uniswap doesn't allow trading or adding liquidity for security tokens on its UI.

8.1.2. Ribbon Finance

[Ribbon Finance](#) is a structured product protocol. They have relaunched their [R-USDC Earn vault](#) which is selling options while investing the collateral (USDC here) in IB01. They currently hold ~\$7M of bIB01. Internally the smart contract relies on [a Safe contract](#) acting as market maker.

8.1.3. Angle Protocol

[Angle Protocol](#) is the issuer of agEUR, a EUR-based stablecoin. They have launched [a borrow module using IB01](#) then bHIGH (high yield EUR ETF) as collateral. Liquidation is whitelisted and the product is not accessible by US people in the UI.

They will soon launch Angle V2 which will use bC3M (similar to bIB01 but EUR government bonds)

8.2. Market Makers

A crucial element in the bIB01 proposal involves third parties handling the filling and emptying of the bIB01 vault. This is based on bIB01's permissionless nature, which allows any third party to act based on incentives provided by MakerDAO (such as discounts or premiums on bIB01 swap prices). However, technical feasibility doesn't guarantee that it will be done, as people are more cautious about dealing with securities in the current regulatory environment.

If bIB01 is used as collateral for a loan, then it requires liquidators. Against a USD-pegged loan, there is little price fluctuation to be expected (assuming a Net Asset Value or TradFi markets oracle) and so liquidation would happen if the interest rate on the loan is higher than the yield provided by bIB01. This makes the liquidation (for this particular Backed product) not time critical.

We consulted with four market makers who are currently negotiating with Backed to serve as Authorized Participants in the primary market. They have diverse views on legal issues, resulting in a variety of strategies.

As anticipated, all are open to conducting OTC trades with KYC-verified counterparties. However, limiting transactions in this manner fails to take full advantage of bIB01's permissionless nature. Nevertheless, such a move represents a reasonable first step given the novel nature of the product. It may be advisable for MakerDAO onboard one of its off-chain legal entities (e.g. RWA Foundation) with Backed and have it in place as a back-up plan.

Regarding the provision of capital to permissionless liquidity pools, only two market makers considered this option viable. However, at least three are willing to arbitrage the liquidity pools. One participant noted that any arbitrage activity wouldn't involve high-frequency trading (HFT) due to potential legal consequences.

The primary concerns of market makers relate to the following two issues (both pertaining to the U.S., which the product initially excludes):

1. Accidentally selling or facilitating the sale of bIB01, an unregistered security in the U.S., to U.S. citizens.
2. The potential for bIB01 to be used in money laundering.

No market makers foresaw any issues in purchasing bIB01 from MakerDAO. Some, but not all, mentioned they would conduct some form of KYC on MakerDAO (as a protocol).