



A BLOCKCHAIN BASED

Lending

Debt Management

Secondary Debt Marketplace

Debt Collection and

Credit Rating Platform

JPROTOCOL.IO

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Abstract

Financial lending, secondary debt markets, credit ratings, debt collection and management of debt are a critical part of the global economy. However, overregulation by governments and unenforceable mechanisms for collecting debt have hurt the ability of businesses to remain liquid, consolidated third-party debt buyers, and reduced creditor choices for debtors.

We introduce Joos, an investment grade debt management platform. Joos is a multidisciplinary initiative enabling the world's first decentralized credit registry, social debt collection tool and asset-aware blockchain management protocol that will also power a new peer-to-peer marketplace for secondary debt and financial loans.

Lenders are able to secure tokenized assets as loan collateral and enforce loan payments using a novel public shaming mechanism. Joos allows creditors to tokenize debt and sell it to third-party debt buyers, establishing a rich secondary debt market that benefits creditors and debtors. In addition, an immutable credit rating system provides transparency to credit scores and ensures that lenders and third-party debt buyers have the information they need when offering terms.

All financial loans, debt payments, and secondary debt purchases are recorded on the Joos blockchain,

thus providing a single global, public, and permanent record of debts. Joos operates without borders, outside of government regulations, and will eventually be fully open-source and managed by the Joos community.

01

Introduction

Lending is one of the most basic and essential services in any economy. For individual consumers, financial lending allows them to make large purchases such as a car or house, or to temporarily increase their spending rate. For small businesses all the way to large corporations, lending enables them to scale their workforce, offer new products and services, and deal with large capital startup costs. All of these activities contribute dramatically to overall economic development such that straightforward access to affordable lending can quickly lead to increases in real income, economic diversification, and quality of life.

However, lending is also highly contentious and somewhat financially speculative, in large part because not all debtors pay back their creditors within the previously agreed-upon timeframe. This lack of payment has created a financial system in which 39% of European companies state that they have liquidity problems due to defaulted debts or late payments, and debt collection is a \$13.7 billion industry in the US¹ alone.

As a result, two systems have emerged in tandem with financial lending: secondary debt collection and credit ratings. Both of these systems are essential to financial lending, yet have been the source of innumerable issues for consumers, companies, and the economy as a whole.

In addition, both secondary debt collection and credit ratings suffer from a lack of transparency and live under a cloud of ever-changing regulation.

Secondary Debt Collection

Debt collection is an essential component of the lending economy. A widespread perception that the debt collection system is both effective and more financially painful than paying debts on time is ultimately at the root of any voluntary cooperation with debt payments by consumers and businesses. Furthermore, debt collection ensures that financial lending operates with enough of a profit margin to encourage further lending, which, in turn, is critical to continued economic growth.

However, an important aspect of debt collection is that it is often not pursued by the original creditors of a loan. In many cases, it is not financially worthwhile for primary creditors such as large banks to sink more time and money into collecting from stubborn or non responsive debtors.

A secondary debt collection system has thus emerged in which debt is transferred from the primary creditor to a third-party company that typically specializes in recovering defaulted payments. This debt is transferred at a fraction of its worth, resulting in a loss for the primary creditor but



potentially a profit for the secondary creditor if—and only if—they are able to re-initiate payments from the debtor.

In the past, consumers and businesses have actually profited from the existence of this secondary debt market. High levels of competition among third-party debt buyers allowed the establishment of local and niche creditors, which typically have more leeway and willingness to work with debtors on a repayment plan that is feasible and not excessively oppressive². In addition, the plethora of secondary creditors has allowed some debtors to hold debt with multiple creditors, and to play them off one another when negotiating over the amount and timeline of debt payments.

However, regulations imposed in the US by the Consumer Financial Protection Bureau, and in Europe by the European Union have led to a strong consolidation of the third-party creditor industry. In 2008, for example, the nine largest debt-buying firms controlled 76% of all debt sold in the US in that year³. This had led to a rapid deterioration of transparency in the secondary debt market for regulators and debtors alike, as well as an increased frequency and severity of extralegal debt collection methods such as phone calls and messages. Worse, consolidation has made it more difficult for consumers to find recourse with their creditors and



led to the emergence of so-called “zombie debt⁴ .” The problem is particularly severe in emerging economies where there is less institutional regulation to protect consumers in debt situations and less education about the secondary debt market⁵.

Credit ratings

The other sub-development of the financial lending industry is the credit rating industry, which essentially gives a numerical or letter score to consumers, businesses, and even governments, that indicates their likelihood of paying back a debt. Credit systems predate the modern financial system and are an essential part of any trade-based economy—credit ratings are essentially a measure of trustworthiness between strangers, which allows trust-based transactions to proceed.

However, credit ratings in the modern financial system are marked by a number of problems that put consumers in particular at risk of losing access to lending or bind them into extremely high interest rate loans. Automated credit rating systems make it impossible for individual and time-limited circumstances to be considered, and the credit system is designed such that it can be nearly impossible to recover a high credit following a short-lived period of illiquidity.



More frightening, the data found within credit rating systems is often incorrect— these databases may contain duplicative information, mix up data between two individuals with similar identifying information, or simply lack a consumer or business' complete financial history⁶. Especially for individual consumers attempting to right incorrect data, it can be nearly impossible to find recourse as consumer credit ratings in the US are dominated by just three massive companies with little incentive to serve the people whose credit they rate.

Blockchain and financial lending

The current state of the secondary debt market and credit rating systems leaves business and consumers at a significant disadvantage while simultaneously reinforcing an extremely opaque system. Meanwhile, additional attempts by governments to regulate the secondary debt industry to protect consumers from abuse unintentionally contribute to the problem by making it more difficult for small third-party debt buying firms to compete.

However, the advent of blockchain technology offers a novel and promising mechanism for conducting financial lending, third-party debt buying, and establishing accurate credit ratings. Blockchain-based platforms are fully transparent, thus removing much of the veneer that has



prevented consumers and businesses from interacting with the secondary debt market in good faith and from seeing why their credit ratings are what they are. Furthermore, transactions recorded to a blockchain are unique, public, and immutable, meaning that there can be no data mix-ups like those that have plagued the credit rating system.

Most important, blockchain-based platforms are globally distributed, meaning that they are not controlled by any central person, group or corporate entity and are beyond the reach of regulation by national governments. This is of great significance for financial lending, since it creates opportunities for the re-emergence of small third-party debt buyers in the secondary debt market. In addition, circumvention of traditional regulatory and legal systems means that financial lending on a blockchain is not subject to the limitations that have kneecapped the secondary lending market while also forcing lenders and debtors to work out payment plans without resorting to expensive and time-consuming legal recourse.

Bitcoin, one of the earliest and most successful implementations of blockchain technology, demonstrated the feasibility and effectiveness of using a blockchain to record financial transactions. Importantly, Ravencoin took the financial focus of Bitcoin one step further in 2018 by developing an



asset-aware protocol level system built on blockchain⁷. This system allows users to issue their own unique tokens, known as assets, without the need for mining.

Assets are different from Bitcoin specifically in that assets represent real-world items that hold some value such as a house, a gold bar, shares of a company, or even licenses and service contracts. While other cryptocurrency-derived platforms such as Open Assets, Mastercoin, and Ethereum offer tokenized assets, Ravencoin's assets are comparatively easier to use, tightly integrated with Bitcoin, secured with proof-of-work mining, and identified by unique names.



Joos: A Blockchain- based Lending, Secondary Debt and Credit Rating Platform

We now introduce Joos, a blockchain-based financial platform that adopts on some of the properties of Ravencoin to enable fully transparent, decentralized, and code-based lending, collateralized tokenization and debt management.

Joos intends to offer:

- *A single, immutable global registry of financial loan transactions on a blockchain*
- *Tokenized collateral to protect lenders*
- *A secondary debt market trading in tokenized debt products*
- *Digital, enforceable debt collection solutions*
- *A global, transparent credit rating system*

Financial transactions on Joos are not constrained by national borders and fall outside the legal control of any government. Joos itself is not for profit, it's open source, and maintained and operated by the Joos community.

Joos intends to develop asset management capabilities to develop a fully securitized financial lending system in which debtors are able to offer tokenized assets as security for a loan. Loans are recorded on the blockchain as a public ledger, resulting in a single immutable, public, and global registry of all loans, collateral, repayments, debt purchases, and credit scores.

In addition, Joos enables lenders to issue debt tokens for debt they hold, which may be bought and sold on the peer-to-peer secondary debt marketplace. All debt token sales are recorded on the blockchain, and debtholders are given enforceable debt collection options above and beyond what is normally available to third-party debt buyers, including a public shaming mechanism that can be used to increase payment compliance by defaulted debtors.

Finally, Joos establishes a credit rating system based on financial transaction histories of every user recorded to the blockchain. As these transactions are fully transparent and immutable, Joos' credit rating system solves many of the data and opacity issues that plague the traditional credit rating system.

The following sections will go into further detail about the three foundational pillars of Joos: financial lending on a blockchain, tokenized debt and the establishment of a secondary lending market, and fully transparent credit rating system.



Financial Lending on the Joos Blockchain

All financial loans transacted on the Joos platform are signed and registered by both the lender and debtor before being added to the Joos blockchain. Following the initial loan transaction, all payments by the debtor on that loan are also recorded to the blockchain.

The result is a single global, public, and immutable public ledger of all debt issued on Joos and all payments made towards that debt. Recording to the blockchain ensures that the lending system can operate between strangers in the absence of a trusted third-party intermediate, thus creating a decentralized peer-to-peer marketplace for financial lending.

This offers several immediate benefits for both lenders and debtors. First, costs for both lenders and debtors are dramatically reduced compared to the traditional lending system, in which centralized intermediaries—e.g. banks—take a significant portion of the profits from the lender and can upcharge fees on the debtor. This incentivizes lenders to use Joos rather than the traditional lending market as their profit margin is potentially increased, as well as debtors who may be offered more favorable interest rates.

Second, the peer-to-peer nature of the marketplace increases the number of available lenders and

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creates competition in the lending market. Thus, lenders on Joos are less likely to make debtors jump through hoops to get a loan as traditional lenders are infamous for doing. In addition, debtors have more lenders to choose from in taking out a loan, which offers incentive for lenders to diversify and cater to specific subpopulations, or to offer better loan terms to potential debtors.

Third, because financial loans transacted on Joos occur over a globally distributed network with no centralized intermediary, they occur outside the bounds of any national government. This essentially removes borders in the financial lending system, creating opportunities for individuals, and business financing in countries or populations that have not historically had access to favorable loans— or any loans—through the global banking system. In addition, it ensures that loans made through Joos are not subject to sudden changes in government financial regulations or interest rates, which is a driver of turbulence and unfairness in the traditional lending system.

Collateral using tokenized assets

Collateral is a hallmark of the traditional lending system and plays an important role in protecting lenders from fraudulent activity or failure to repay loans by debtors. Likewise, collateral is a necessary

feature of Joos to give lenders leverage when trying to collect on debts and to ensure their potential capital loss in the event of a default is limited.

Importantly, Ravencoin enabled users to create tokens to represent physical or digital assets such as a house or land deed, car, physical currency, stocks, or even digital tickets or services—the types of assets that Ravencoin enables users to tokenize is virtually unlimited.

Furthermore, asset tokens are tightly integrated with Bitcoin and secured with proof-of-work mining, and it is straightforward for users to manage multiple assets.

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Joos adopts some of Ravencoin's concepts by creating a framework for tokenized assets to be securitized as collateral for debt management and security.

Thus, when a loan is registered by both the lender and debtor, the debtor's tokenized assets will be put into an escrow account, and the collateral assignment will be registered to the blockchain along with the loan itself. Upon successful and timely repayment of the loan, these asset tokens will be returned to the debtor. However, if the loan is not repaid and no new payment plan is agreed upon (and registered to the blockchain) by the lender and

debtor, the collateralized asset tokens will be automatically released to the lender, executed autonomously by smart contract.

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Tokenized Debt and Secondary Lending

Another central feature of Joos is the ability for lenders to tokenize debts they hold, and for users to buy and sell tokenized debt within the Joos network. The result is the creation of a highly competitive secondary debt market in which any Joos user can act as a third-party debt buyer.

The tokenization of debt is, like collateral, enabled by the assignment of said debt contract to a token. Just as debt issuance by a lender is recorded on the Joos blockchain, debt tokenization and the sale and purchase of debt tokens are recorded on the blockchain so as to be public and immutable while fostering a liquid market to enable contract proprietors to liquefy debt on their ledger to assist immediate cashflow needs.

The establishment of a peer-to-peer secondary debt market is advantageous for primary lenders, third-party debt buyers, and debtors.

Primary lenders who are unable or unwilling to collect loan repayments from the debtor of a loan are able to claim the loan collateral (assuming the loan has defaulted before the debt token is sold to a third-party) as well as sell the rights to collect on that debt to a third-party to further recoup their lost investment.

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Anyone on Joos who has the capital to purchase debt tokens can serve as a third-party debt buyer, dramatically lowering the barrier to entry for populations around the globe who have otherwise limited opportunities to reap the monetary benefits of participating in the global financial system. Because Joos intends on becoming an open-source code-governed protocol, it is not limited by government regulations. None of the constricting regulations that squeezed smaller third-party debt buyers out of the secondary debt market in the US and Europe exist on Joos. Any future regulations must be approved by a vote of the Joos community.

Debtors benefit from the re-expansion of the secondary debt market because it allows the establishment of smaller third-party lenders who can work more closely with them to renegotiate payments and resolve their debts. In addition, because sales of debt are registered to the Joos blockchain, debtors can always see what users are holding their debts—something that seems intuitive, but is often not the case in the traditional lending system.

Debt Collection

While the proliferation of third-party debt buyers should naturally lead to more localized interactions between debt holders and debtors, which, in turn,

should produce higher repayment rates on secondary debt, debt token holders are also given additional tools to enforce collections on Joos.

First, failure to repay debt affects debtors' credit scores, which, in turn, can make it more difficult for them to secure favourable loans in the future. Credit scores, discussed in greater detail below, are automatically updated according to the balance of debts and payments registered for each debtor on the blockchain.

Second, Joos includes a mechanism for publicly shaming debtors who default on their loans and fail to negotiate with their debtholders. When a debtor signs a loan with a lender, the debtor must also provide their personal information—name and address, a copy of government-issued ID, social media handles, professional profiles, and contact information for professional peers. This data is cryptographically sealed in the equivalent of an escrow account, separate from the debt collateral.

In the event the debtor not only defaults, but becomes delinquent on payments by avoiding contact with the debtholder (either the primary lender or a third-party who holds the debt), this personal information will be released to the debtholder. Third-party debt buyers can thus use the threat of this information as leverage to restart

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debt payments, or can use the information itself to publicly shame the debtor in their online or professional networks until contact is made or payments are restarted.

Importantly, this public shaming mechanism is something that is unique to Joos and cannot exist in the traditional secondary debt market because of heavy-handed government regulations. The development of this debt collection tool underscores how Joos' independence from regulation and government censorship can lead the Joos community to further improve on the financial lending system without fear of intervention.

These two mechanisms, together with collateral, are designed to protect primary lenders against defaulting and delinquent debtors as well as to encourage the development of a rich and diversified secondary debt market within Joos.

Credit rating system

The third component of Joos is an automatic and immutable credit rating system for all users on the platform. Users' credit scores will be based on the history of their transactions and interactions made within the joos network—including debts incurred, repayments made, and the timeliness of payments based on loan smart contracts—recorded in the

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Joos blockchain. All credit scores will be stored on the Joos network and will automatically update as transactions are added to the blockchain.

Using the blockchain to determine credit scores is an important step forward over the traditional credit rating system, which is rife with incomplete data or mix-ups between individuals with similar identifying information.

Moreover, Joos will allow users to not only see their own credit score, but to view the history of transactions that led to that credit score. To facilitate decision-making about appropriate loan terms for individual debtors and debt purchases by third-party debt buyers, all users on the Joos network will be able to download and check other users' credit scores. More compelling is the relinquish of control that primary operators in the traditional markets wield, an initiative that Joos sees of greatest importance.

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Conclusion

Joos is a novel financial lending platform Conclusion 6 built on blockchain with a cryptographic asset management system influenced by Ravencoin.

Joos enables users to register loans to the blockchain and put up tokenized digital or physical assets, including cryptocurrencies issued. The blockchain thus serves as a single global, immutable, and public record of debts and payments between all Joos users as well as a controller for the release of collateral upon successful loan repayment or default.

Debts themselves can be tokenized by primary lenders and publicly bought and sold by third-party debt buyers. This capability will establish a rich secondary debt market that benefits all Joos users and creates a new global economic opportunity. However, while debtors benefit from competition between lenders and third-party debt buyers, they are also held accountable for repaying their loans by the threat of a public shaming mechanism integrated into debt agreements.

Finally, Joos establishes a new, immutable record of credit for all users on the platform. In contrast to traditional credit rating systems, credit scores on Joos are updated automatically as transactions are added to the blockchain and offer full transparency for users. Credit scores for any user on Joos can be

downloaded to inform loan terms and secondary debt purchases.

All of these features of Joos operate outside the bounds of any national government and without borders, freeing financial lending on the platform from the same regulatory constraints that have resulted in consolidation of the traditional secondary debt market.

In addition, recording debts and payments to the blockchain allows lending to operate without a central intermediary, which lowers the bar for users to obtain favorable loans and reduces costs for lenders, third-party debt buyers, and debtors. Joos is open source and maintained and controlled by the Joos community, which further ensures that it is benefitting the entirety of its user base rather than the traditional global financial system or any limited group of individuals.

The aforementioned data is for informational purposes only and is not financial advice. This document will be updated according to the team's findings during development and is subject to change without prior notice.

We will be including our development roadmap once we have confirmed initial assumptions. We will also include the economics of our utility token,



token distribution and the business model with the release of the WP 2.0 starting March.

Initial technical schematics will be slowly introduced via the video series and github as we further advance through the development. We wish to maintain competitive advantage until we have achieved a certain level of maturity. To keep the community up to date, please be sure to tune into Joos TV—a weekly video series initiative aimed to inform and educate the community on development progress seen here: <https://www.youtube.com/channel/UCJ9V5TfZh0ykubrXe866S-Q>

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Important links

Web

[Jprotocol.io](http://jprotocol.io)

Chat

t.me/joosprotocol

Tweet

twitter.com/joosprotocol

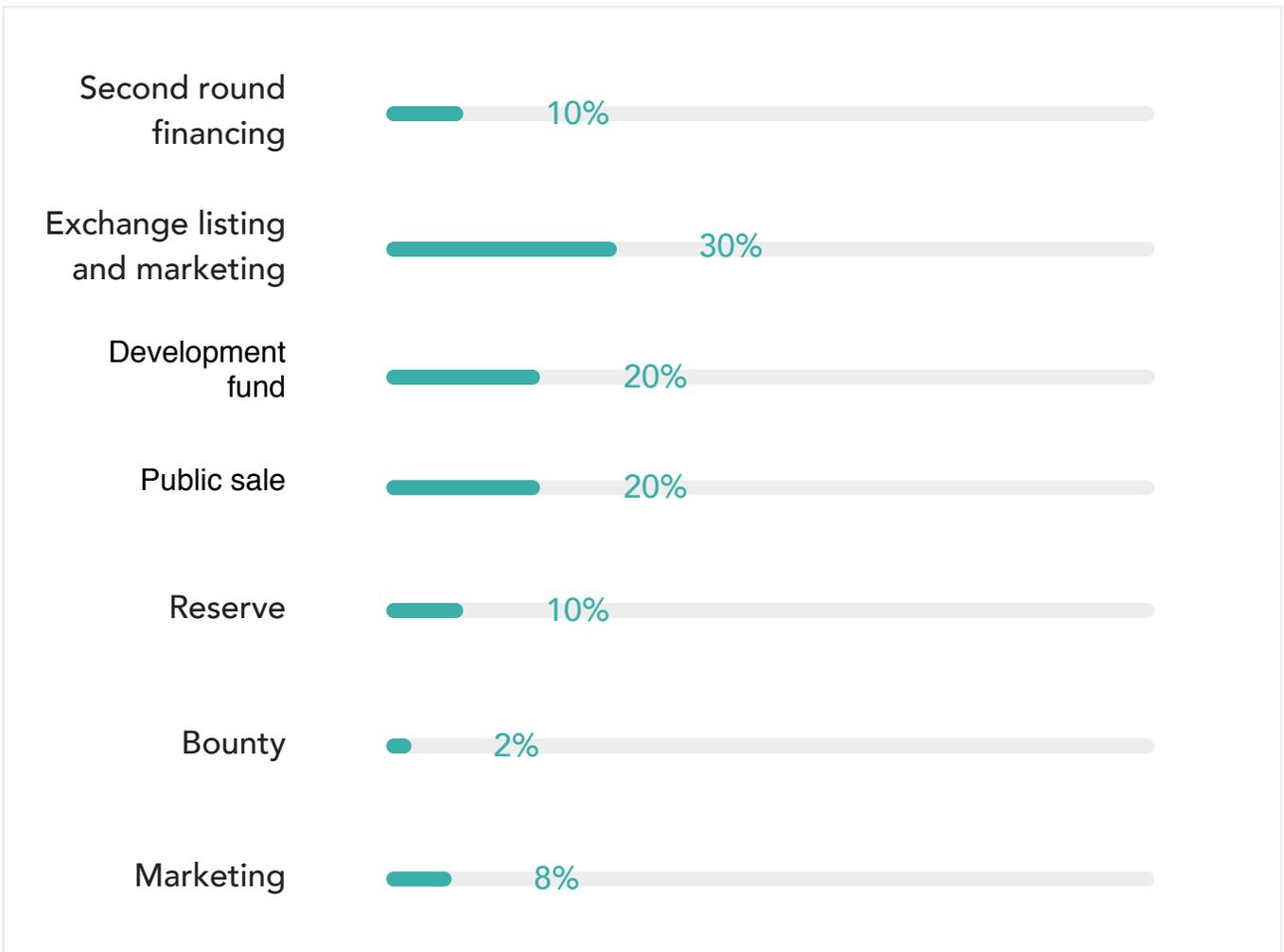
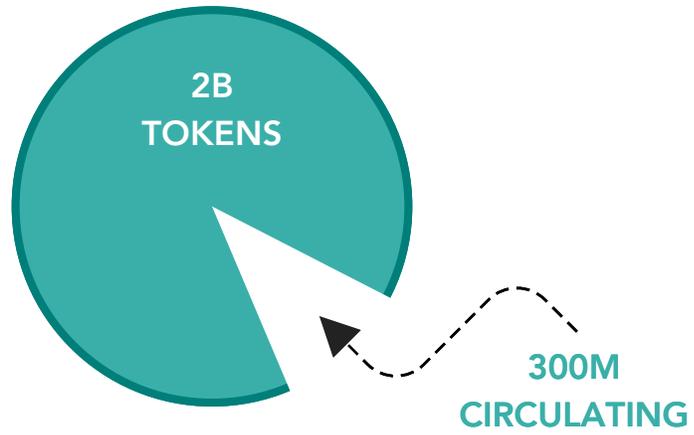
Read

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Watch

[www.youtube.com/channel/
UCJ9V5TfZh0ykubrXe866S-Q](https://www.youtube.com/channel/UCJ9V5TfZh0ykubrXe866S-Q)

Token Metrics and Distribution



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