VIGOR Stablecoin Summary

vig.ai

VIGOR stablecoin, VIG token
t.me/VIGORstablecoin
https://github.com/VIGORstablecoin

The VIGOR stablecoin project core theme is that crypto-backed stablecoins are fundamentally concerned with jump-to-zero price risk and volatility risk. Our stablecoin platform enables the separation and transfer of those risks. **VIGOR** is the stablecoin ("cash" instrument) created on our platform; it is a crypto-backed stablecoin on the EOS blockchain that tracks the US dollar. Our platform in a broader context is a decentralized autonomous smart contract prime broker that enables users to:
A. borrow stablecoin against EOS native tokens and
B. borrow EOS native tokens against stablecoin collateral.
The project utility token is called **VIG**. Our technical whitepaper: https://vig.ai/VIGOR.pdf

VIGOR Stablecoin
The VIGOR stablecoin system enables separating and transferring volatility risk of collateral and price jump risk from borrowers to insurers. The system is the crypto version of borrowing and lending but lenders are called insurers. Borrowers lock up tokens as collateral and borrow stablecoins. The collateral is price risky so excess collateral is required along with buying loan insurance (vaguely similar to homeowners paying PMI private mortgage insurance on a home loan). The insurers lock up crypto tokens as collateral that capitalize an insurance pool. Borrowers pay an insurance premium (VIG tokens) into the system. The insurers earn and bailout any loans that become undercollateralized. When a bailout is triggered the borrower's collateral and debt is assigned pro-rata (according to contribution to solvency) to the insurers which recaps the debt. A cut of the VIG premium is stored in the final reserve which acts as an insurer of last resort. Storing VIG in the reserve over time has the effect of shrinking the free float of VIG making it more scarce.

Market price discovery and on-chain risk & compliance
The cost or price of the loan insurance adjusts based on how risky the system is relative to a target; this is market price discovery without the need for trading or an order book. The risk model considers levels of overcollateralization, debt and insurance assets. It is fully on-chain and follows regulatory standards for insurance businesses; we call this on-chain risk and compliance. It is an insurance industry risk-based capital model where insured loan rates adjust to drive solvency of the system to a target. The amount of the price adjustment is determined by a pricing model similar to equity default swaps that considers volatility and price jump risk. If vRAM becomes available we will be able to implement more robust risk, stress tests, and pricing models on chain. Note that Bitshares uses a limit order book for price discovery and requires trading. While that provides efficient pricing we think this is too cumbersome and will dampen scale. Also note that Maker platform has no price discovery, occasionally the loan rate is arbitrarily reset by voters (basically a few whales). This is an example of inefficient pricing which leads to a need to apply overly conservative leverage limits and high penalties for liquidation, again limiting scale. Our platform is in between these two extremes with respect to price discovery unlocking scalability.

DAPP network and DSP
On-chain risk and pricing is both data intensive and calculation heavy. As the DAPP network (liquidapps.io) offers vRAM and vCPU we use that stack extensively.

Oracle
VIGOR requires price data feeds for valuing collateral tokens. The delphioracle by eosTitan (https://github.com/eostitan/delphioracle) is fed by EOS block producers and will be our source of reference pricing. BP's feed the oracle with pricing, the oracle notifies our contract that new prices are available, and our contract takes action by updating our entire contract.

Risk Premia
How much should it cost a user to borrow stablecoin against crypos? We use a risk premia (RP) approach to account for the risks embedded in such a proposition:

R = risk free rate + credit RP + volatility RP + price jump RP + liquidity RP + maturity RP

Risk free rate: consider covered interest parity and cross currency swap spreads
Credit RP: borrowers build a credit score which is based on the amount and timeliness of VIG paid-in to cover payments due over time.

Volatility RP: collateral prices may follow a random walk, a diffusion process
Price jump RP: the price diffusion process may include price jumps to zero (we look to quantitative financial models of jump-diffusion CEV models for equity default swaps, as specified in our whitepaper)
Liquidity RP: our bailout model is frictionless, insurers post collateral ahead of time.
Maturity RP: we offer a constant maturity product that rolls every minute.

Considering the embedded risk premia our contract calculates both a model price R and model risk (solvency) which is offered to users of the platform. User activity in turn drives price discovery as the model price is adjusted to drive solvency to a target set by custodians.

Structured product and scalability
Borrowers and insurers are not linked one-to-one. A structured product is employed to socialize losses across all insurers and may be tranched for insurers to choose their desired risk level relative to their premium income. This design allows for highly leveraged borrowing, a necessary feature for the VIGOR stablecoin to scale (onboarding more user types such as short term traders seeking high leverage). We believe that makerdao clones will not scale because they do not measure risk and have arbitrary pricing leading to the need to apply overly conservative leverage limits.

Final Reserve
There are three levels of backing for stablecoin loans. Borrowers overcollateralize their loans protecting against normal volatility. Insurers post tokens as insurance assets which provide further backing against price jump risk. The final reserve provides a third layer of backing in case the insurers go bust, and is more formally described as the buffer that covers stress losses or model risk (underestimating risk).

Low Friction Bailouts
Our bailout mechanism is very low friction, there is no trading or auctions required. The insurers escrow their tokens ahead of time and are available to recap bad debt. In contrast, makerdao bailouts are high friction. In the event of a black swan, their system must auction MKR into distressed markets, precisely when there will be no buyers.

Truly Multicollateral

By default we are building VIGOR as multicollateral (in a more meaningful way than MakerDao who is really just allowing to have separate single-collateral backed loans, for each loan you can choose a different collateral type, they didn't design for portfolio risk).

We will actually consider a portfolio of collateral backing a single loan, it's the difference between Reg-t margin requirements and Portfolio Margin requirements used by brokers.

VIG Token

1. Users pay insurance premiums denominated in VIG tokens to borrow VIGOR stablecoins while insurers earn premiums in exchange for taking bailout risk.
2. A cut of VIG premiums is stored in the final reserve to be used if a black swan wipes out the insurers. The VIG token free float will shrink making it more scarce.
3. VIG provides users access to use the system as a borrower or insurer where they can obtain voting power and the ability to build a crypto credit score. Borrowers must post VIG tokens ahead of time before taking a loan. If their VIG balance drops to zero they get late payment warnings followed by collection (a bailout along with return of any excess collateral). Good credit is rewarded by reduced loan insurance premiums.
4. DAC custodians will need to escrow VIG tokens as collateral which will be confiscated if they are found to be bad actors. Note VIG tokens do not have voting rights.

Voting and Crypto Credit Score

The users of the system are the voters, both borrowers and lenders. This is unique in that borrowers are given a seat at the table to delegate their concerns to elected custodians. This is a revolutionary alternative to traditional lending where lenders have all the power and heavy handed regulation is used to protect borrowers. Users will be chosen at random when they try to transact on the system, giving them voting rights for a period if they meet minimum criteria such as a minimum amount of VIG premiums paid/earned in the past and a minimum debt/insurance asset amount.

Governance and the DAC

VIG.ai is the decentralized autonomous community (DAC) that is building this stablecoin platform. That link is a user interface that can be hosted by anyone anywhere, which interacts with the DAC contracts on the EOS blockchain. The DAC controls the keys to all of the smart contracts that compose the stablecoin platform. This project decentralizes financial services on the EOS dApp layer where perhaps Block.one cannot as they focus on the base layer EOSIO and are a US company having raised a large amount of funds. VIGOR is governed as a DAC launched on the EOS mainnet. It has up to twenty one custodians from our community which control multisig permissions to the smart contracts. Genesis custodians can claim pay each period, we may pay genesis custodians in VIG tokens…. maybe 50% of supply over 6 months or whatever, or can pay in EOS. Our airdrop may be 30% to the DAC, 7.5% to our telegram

community, 7.5% to the wider EOS community and 5% to eosDAC community. There could be a token sale if the DAC decides it wants that, after our dapp is mainnet. The fate of the DAC will be at the mercy of the genesis custodians and community to finish building and launch the VIGOR smart contracts and UI. Genesis custodians will be replaced by elected custodians over time. Custodians will fund their efforts (development, maintenance, marketing, integrations, liquidity provision, infrastructure etc) using a spending rate against the DAC corpus that is set such that the purchasing power of the portfolio valued in the primary cost currency is maintained on a 3 year trailing average.

FAQ

Is there an MVP?

Devs are working on it. We invite devs to help us. t.me/VIGORdev
We attended EOS world expo April 13 with a demo, and continue to extend it.

At what points does the system issue stable coins

stablecoins are issued by the contract when a loan is taken.This happens when the borrowers lock up tokens as collateral.The tokens can either be EOS or a portfolio of crypto tokens supported by the system.

Can a borrower get their crypto back

Borrowers can get their crypto back by paying off their debt with stablecoins which are then retired.

What do I need in order to secure/ get a loan in stablecoins

For a borrower to receive a stable coin loan, the borrower needs to lock in their crypto collateral and deposit the appropriate amount of VIG tokens, calculated as a percentage of stable coin debt to be used as premiums to insure the loan collateral.
The system requires that your collateral contains some VIG so it can take premiums every period.

What happens when the value of my collateral falls below the amount I borrowed in stable coins

when your collateral drops below the value of the loan issued, the loan will enter bail out. At this point the insurers take over and recap the undercollateralized loan to ensure system health.

Am I only allowed to lock my EOS as collateral or can I also add other assets in my portfolio

The system will allow for a portfolio to work as collateral backing a single loan.

What additional crypto assets can i include in my portfolio for as collateral

Many EOS native tokens, chosen by users. In order to guarantee system health, custodians would have the multisig permissions to add and remove collateral types, they are elected delegates and will make proposals and debate to push their proposals through.

What's the main differentiators between VIGOR and MakerDAO?

VIGOR improves on what we think are shortcomings to legacy MakerDAO:

0. On Makerdaos's system borrowers are slaves with no voice ruled by MKR whales, and the role of insurers/governor is entangled into one, same as traditional lenders. On VIGOR we have two user types both with voting rights. Borrowers pay a premium to take stablecoin loans against collateral and another type of user, insurers, also post collateral to back those loans to earn the premium. Both of our user groups have voting rights and delegate their desires to custodians. Like the idea of bank run by both borrower and lender? That's the VIGOR model.

1. VIGOR will extend into letting users borrow EOS tokens against stablecoin collateral (for short selling). Makerdao system cannot do that.

2. Makerdao does not measure risk, and pricing is arbitrarily chosen which leads them to set overly conservative leverage limits. This limits scale since their only user base is low leverage hodlers. We recognize that stablecoins are about price jump risk (default risk) and the need to transfer/insure against jumps. Projects that ignore jump to default risk are playing a dangerous game. We designed our smart contracts with clearly defined on-chain risk and pricing based on equity default swaps and Solvency II risk based capital requirements. Our market determined price discovery unlocks the ability

to set higher more efficient leverage limits and onboarding short term traders who want higher leverage.

3. MKR governance is intractable. Voter participation is near zero (expect for whales who dominate and push their agendas thru easily). MKR voters are supposed to vote on risk and pricing, which is laughable because MKR holders are not necessarily skilled in those areas, and agreeing on complex model/price is impossible. VIGOR governance is more tractable because risk and pricing is built-in (on-chain) and voters simply delegate their interests to elected DAC custodians who are experts or can hire experts.

4. Makerdao bailouts are high friction. They must auction collateral and MKR into distressed markets, precisely when there will be no buyers. VIGOR bailout mechanism is low friction. Backers post collateral ahead of time, and is ready to recap loans. Also with maker it is unclear if there is a reserve available during a black swan (rumor is that founders will pony up to save the day), we explicitly have a reserve that backs the backers.

5. Makerdao MKR holders have no idea what their risk/return profile looks like. The VIGOR system is run like an insurance business with a solvency measure used by regulators in the insurance world (Solvency II), the risk and pricing is explicitly specified in the whitepaper (equity default swaps) and calculated on-chain for unprecedented transparency. VIGOR may tranche the insurers into junior (takes first loss) and senior for better user experience. Performance measures are also on chain such as RAROC (risk adjusted return on capital)

6. Our platform is multicollateral, but Makerdao is fake-mulitcollateral. Makerdao is really just allowing to have separate single-collateral backed loans, for each loan you can choose a different collateral type, they didn't design for portfolio risk). VIGOR considers the user total portfolio of collateral backing a single loan.

Is the VIGOR platform like Bitshares/BitUSD?

bitUSD is based on having an exchange, with an order book for traders of exotic CFD's (contracts for difference), each side putting up collateral and placing bid or ask. The exotic feature enables the long side (bitUSD holder) to be fungible by defining a set of heuristics where the long is allowed to settle their position at any time with whoever happens to be the least collateralized at that time at a trusted settlement price, along with some margin call features)

Bitshares uses a limit order book for price discovery and requires trading. While that provides efficient pricing we think this is too cumbersome and will dampen scale. Also note that Maker platform has no price discovery, occasionally the loan rate is arbitrarily reset by voters (basically a few whales). This is an example of inefficient pricing which leads to a need to apply overly conservative leverage limits and high penalties for liquidation, again limiting scale. Our platform is in between these two extremes with respect to price discovery and scale.

Our VIGOR stablecoin platform has no order book or trading (but still has a market determined price discovery mechanism). The platform is something like borrowing cash against a house and paying mortgage insurance (pmi) with simple advertised adjustable rates for borrowers to pay on their individual loans and insurers to earn on the pool of loans. It centers on a credit default swap variant (equity default swap), a structured product, and an insurance industry risk-based capital model where insured loan rates adjust to drive solvency of the system to a target. If a user wants a stablecoin loan, they post collateral tokens and are required to insure them by paying a periodic premium to buy the protection leg of an equity default swap (eds). Premiums from a basket of these eds flow to the insurers who are sellers of a single eds written on that same basket of collateral, which is funded meaning that insurers have escrowed tokens ahead of time to be available to cover bailouts, and physically settled meaning insurers take possession of the impaired collateral and debt in the event of default (loan becomes undercollateralized), recapping the loan. The insurers are further backed by a reserve that grows over time as it absorbs a cut of all premiums.

How does VIGOR compare to Dan's "High Liquidity Price Pegged Token Algorithm" (https://medium.com/@bytemaster/high-liquidity-price-pegged-token-algorithm-d86d71188162) ?

> Dan's idea is different than the VIGOR platform. I understand it's like pretending that EOS is an ETF share of a basket composed of a safe asset USD and a very risky asset MMS. In Dan's framework, the pricing relationship between the ETF share (aka ETF NAV) and the basket (aka ETF market price) is supported by "arbitrage" traders trading on a limit order book, for example selling EOS to buy a basket of USD and MMS when EOS is expensive and vice versa (and the basket weights rebalancing as the market maker deals USD). One problem is that MMS doesn't exist or have a market value outside of this construct, it's a plug figure so there can be no true arbitrage.

If Dan's framework facilitates a global short position in USD (incentivised by trading fees paid) where P&L accrues to MMS holders when collateral prices move, then our framework facilitates a global short put option to insure the borrowers collateral (incentivised by insurance premiums paid) where profit accrues to the borrower as collateral prices rise (unlimited) and losses accrue to the borrower as collateral prices fall (but only to a limit, a floor beyond which losses accrue to insurers, and ultimately governance token holders if insurers are wiped out).

There isn’t enough incentive for stablecoin to be minted in the first place in Dan’s framework, for example who would want to trade EOS for a mix of MMS and USD.

In our framework the origin of cash money is credit, stablecoin is minted by people wanting to borrow cash against their EOS holdings, to monetize their crypto, there is endless demand for credit, and hence the creation of VIGOR stablecoin. Borrowing stablecoin against ur crypto hedges ur downside crypto exposure, and enables opportunity to sell the stablecoin proceeds for other assets to take leverage. Can you monetize your EOS using Dan’s algorithm? Nope. For example if you own EOS can you borrow stablecoin using your EOS as collateral and without selling your EOS? No.

Dan’s algo seems to have arbitrary risk requirements i.e. setting a fixed target amount of overcollateralization where everyone will simple agree is enough for “solvency” is an arbitrary risk specification. And further there is no definition of what is meant by solvency. Undefined risk leads to overly conservative limits, ultimately limiting user scale. In the VIGOR framework it is clear that volatility risk and price jump risk are being transferred using collateralization along with equity default swaps and a structured product at a price that drives solvency to a target where solvency is clearly defined as sufficient insurance capitalization per solvency ii. This will allow VIGOR to have efficient leverage limits enabling scale

In Dan’s algo price stability is driven by trading against an order book which we think is too granular/cumbersome for users which limits scalability. In VIGOR price discovery is simpler yet fully market driven. The user is simply presented with the

current rate for loan insurance which adjusts over time based on the system balance between debt and insurance assets, and a pricing model that considers the amount of overcollateralization on each loan.

Dan's algo depends on trading. Liquidity dries up during distressed markets / black swans, so I think he is underestimating liquidity risk. In VIGOR we have low friction bailouts which means the insurers have escrowed collateral ahead of time to recap loans; they simply become owners of the debt and remaining distressed collateral, no trading is required during distressed markets. Also our platform extends to epic features such as lending EOS (borrowing EOS against stablecoin, for selling short), and building a crypto credit score. VIGOR innovates on chain insurance, risk and pricing. This PEX algorithm joins the long list of projects that are ignoramus with respect to price jump risk.

Is there a token sale for investors?

Maybe, if our dapp goes live on mainnet, we may want to sell tokens for users to access the system, and pay the premiums, it is a utility token. Investors can also join the DAC as genesis custodians. We want people who are really interested in the project to be genesis custodians, having a variety of skills for example devs, lawyers, marketers, and one category could be people with capital. Custodians can optionally claim pay each period. The DAC has launched at *vig.ai* and it is be up to the custodians to build and deploy, each custodian doing what they do best to help the project succeed based on free will of each custodian. If you are a person with capital you may consider that you want to be a genesis custodian to help with capital intensive operations. join our gov channel, t.me/VIGORgov Our books are public:

https://bloks.io/account/dacholding11

https://bloks.io/account/eosusd.com

When Airdrop?

We want to drop 5% to 10% to our telegram community, send me (@AndrewPBryan) your EOS account to get added to the snapshot. The timing is unknown. It may be 1:1 with current EOS holdings with a cap and a floor.

Appendix

Preview of item 2. borrowing cryptol against stablecoin collateral (“securities” lending)

The borrower posts stablecoin collateral k1 and draws debt -k2 creating stablecoin k2. lender posts collateral tokens s into pool. k2 is swapped for s, borrower initiates long put p and short call c against the pool, and buys upside token even swap (TES) protection from the pool. The insurance pool now has k2 - p + c = synthetic long s, and is selling protection on the upside TES. The borrower holds k1 + s + (- k2 + p - c) = k1 + s + synthetic short s and is a buyer of protection on an upside TES. Borrower can now withdraw s and sell it on the market, expecting price to fall and buy it back cheaper, transfer it back to the contract, initiate settlement by exercising the put p against the pool, call c is worthless, TES is worthless, swap s for k2, wipe debt -k2, withdraw k1.

The borrower will not actually want to withdraw more than say 90% of s, leaving 10% as overcollateralization for the upside TES, because if the price of s rises too much then the upside TES will trigger bailout.

The final reserve would need to participate in liquidity provision. For example lenders put EOS collateral tokens into the pool and make them available for locate. If they all get located, and one lender wants to leave, they cannot. they must wait for either a sufficient amount of borrowers to unwind against the pool, or new lenders to come along and put in collateral into the pool for locate, or finally they could instantly unwind against the reserve (either borrow stablecoin against the reserve or the reserve lends

EOS tokens, and the reserve could hand off to the pool when tokens become available). All transactions against the reserve would need to be accounted for so it can be applied pro-rata to all insurers for the appropriate period when they eventually leave. This argument applies also for the case that borrowers want to leave, at a time when there are no new borrowers. seem like this idea would require at genesis to seed the reserve with some EOS native tokens

The functionality to allow borrowing collateral against stablecoin will be EPIC.

Let's review the facts

VIGOR stablecoin project at *vig.ai*

We are a "stablecoinery":
1. borrow VIGOR stablecoin against your crypto
2. earn VIG on your cryptos while helping support stability

We decentralize as much as possible: we are trying to run as a DAC where users get to run the platform; they delegate their preferences by electing custodians who govern using multisig proposals. We will run as a decentralized financial service on the dApp layer while B1 focuses on eosio base layer.

The lending platform is simple to use: no trading or auctions or order books yet there is market based priced discovery. Loan prices adjust based on supply/demand for borrowing and insuring loans.

Coming soon: Borrow EOS against VIGOR stablecoin (yes for short sellers)

Diversify: Use lots of different EOS native tokens to back loans for better loan premiums.

Bailouts are inevitable but easy: all the insurers earn as a community but in return must also share in keeping the system afloat and let's us all enjoy a stablecoin on the EOS ecosystem, good for everyone.

Borrowers have a voice and are not slaves: we give borrowers and insurers equal vote power to elect custodians. huzzah

Leverage for short term traders: come and get it. Want downside protection against your bag, we got that too: take a VIGOR loan and hodl it.

Earn on your EOS: put cash to work like your grandaddy says, he's old but smart.

Airdrop coming soon: gimme ur EOS account to be on our epic snapshot.

Token sale? No way, man. We invite genesis custodians to join us building this as a community. Plan to drop like 2% or 3% ? to each custodian over time and let it ride, no strings (take it from me). Join us now, were trying like hell to get an MVP demo onto testnet.

rock and roll will never die

Legal outtakes ?

[Note: *The following is an initial attempt to preserve the substance of what has been proposed but pivot away from legacy constructs borrowed from traditional financial markets. Can we frame the economic outcomes, motivations and incentives in a fresh way that is flexible enough to capture use cases and ecosystem advances we may not be able to foresee or fully appreciate today? I am a U.S. derivatives and commodities trading and regulatory attorney (New York licensed). I hope that after gaining a strong understanding of the technical components here, I can help with language, defining terms, as well as interpreting the applicability of relevant U.S. regulation.*
For your consideration: Vigor is a decentralized autonomous and open risk management marketplace that provides participants with tools to limit or gain exposure to the volatility and price of crypto assets. Access to the Vigor marketplace is available to any holder of VIG, a virtual commodity native to the EOS blockchain. The price of VIG floats freely based on available supply and the demand among crypto market participants to access the marketplace. VIGOR is a virtual cash instrument generated within the Vigor marketplace, the value of which is dynamically managed by the VIGOR DAC. VIGOR has utility as a stable store of value and is transferable outside of the marketplace across the EOS network, and may be transferable to other public blockchains via atomic swaps or other solutions. Vigor marketplace participants can assume one or more of the following roles: (1) liquidity provider (referred to below as lender or insurer); (2) taker (referred to below as borrower); and (3) risk manager (referred to below as custodian). Consider also replacing “insurance pool” with something like “Risk Absorbing Buffer” or “Systemic Safety Pool”. Instead of “Premiums”, I would refer to certain costs as simply “Fees.” “Bailout” could be better described as “System Repair”... I believe what we want to create with Vigor is not at all like prime brokerage, insurance, etc. Those functions and products have very specific legal meanings and regulatory frameworks that apply. We are building something new and in order for it to be truly open to all, the system must be distinguished from the legacy financial system in important ways.]