Truly Nonpartisan Deficit Management via Proof-of-Stake Voting for Bondholders

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Abstract

What if the financiers of public debt had a say in how governments spent their loans? Persistent fiscal deficits in many democracies have eroded long-term economic stability and increased the risk of default-driven debt crises. Existing constitutional and institutional checks, such as independent central banks, separation of powers, and "nonpartisan" fiscal watchdogs, can be weakened by political polarization or single-party dominance, especially when populist leaders promise short-term payouts to their base.

This paper thus proposes a novel constitutional mechanism inspired by governance experiments in the blockchain sector. The "Bondholder's House" is an unelected, non-partisan body empowered to veto deficit-financed budgets unless overridden by a legislative supermajority. Voting rights in this chamber would be proportional to staked holdings of government bonds, weighted by stake size, maturity, and lock-up period, ensuring that those with greater exposure to a government's long-term fiscal health have more influence in approving or vetoing deficit spending. This proposal could stabilize deficit spending by populist administrations, counterbalance short-term

electoral politics with the interests of long-term, low-risk investors, and offer a bailout mechanism for governments facing debt crises with enforcible reform conditions.

Proof-of-Stake systems on the blockchain, where voting power scales with a participant's financial stake, already demonstrate the empirical viability of this proposal. Case studies of Ethereum, EOS, and Steem illustrate both the potential and pitfalls of stake-based governance, including scalability gains, enhanced security incentives, and risks of wealth concentration or collusion between large stakers. By incorporating safeguards—such as prohibiting the sale or delegation of voting rights, restricting participation to citizens, and limiting scope strictly to deficit control—the Bondholder's House could align fiscal decision-making with long-term economic stability without undermining core democratic principles.

1 Introduction

Recent studies have identified a concerning rise in populism within democratic governments across the world (Guriev and Papaioannou, 2020; Rodríguez-Pose, 2020). Such movements often engage in unsustainable deficit spending to deliver short-term rewards to their base (Shmuel, 2025; Elsässer and Röth, 2024). Even in non-populist democracies, political instability has been shown to raise interest rates on central bank–issued bonds, compounding deficits by increasing borrowing costs (Tunçer and Weller, 2022). Together, these dynamics create fiscal vulnerabilities that can erode long-term growth and institutional trust. This makes it critical for democratic governments and central banks to explore new mechanisms that can restrain politicized deficit spending and prevent inflationary debt monetization—while preserving maximal democratic control over lawmaking and appropriations.

A key enabler of unsustainable national budgets is the gradual erosion of constitutionally-enshrined checks and balances due to political polarization and periods of single-party control of multiple branches of government (Goldgeier and Saunders, 2018). Thus, democracies have long employed non-democratic institutions as apolitical checks on democratically elected

leaders, as with the US Supreme Court, UK House of Lords, US Congressional Budget Office, and independent central banks globally (Hamilton, 1788; Bagehot, 1867; Congressional Budget and Impoundment Control Act, 1974; Kydland and Prescott, 1977). One recent similar proposal envisions bondholders as a "separate and coequal branch of government," in which individuals funding the government through treasury bonds receive influence over fiscal decisions proportional to the value of their holdings, and thus to their risk exposure from default or debt monetization (Jones, 2020).

This proposal is not as exotic as it sounds; a similar system has already been implemented and validated in the world of cryptocurrency, under the name of Proof of Stake (PoS) (Nguyen et al., 2019). In this system, voting rights are assigned to coin holders in proportion to the quantity of coins they hold, under the reasoning that large holders have more to lose by making bad or uninformed votes that cause a loss of confidence in the coins, and thus their opinions should be weighted more. Thus, cryptocurrency has become a natural experiment for stake-based voting rights. In this paper, I will outline the origins and motivation behind PoS, examine empirical evidence of its strengths and vulnerabilities, and propose a narrowly scoped real-world governing body that applies its lessons while leveraging the unique benefits of centralized national governance.

2 Digital Finance and the Blockchain

The idea of cryptographically secured digital finance is almost as old as the internet itself (Chaum, 1983). The core problem with digital finance is a familiar one: forgery. For physical currency, anti-forgery measures have been developed over centuries to make it difficult for criminals to insert counterfeit notes into the national economy at scale. However, because digital data is so easy to replicate and transfer, an individual could simply copy a "digital dollar" in their possession and spend it twice. This is known as the "double spend" problem.

The traditional solution to double spending has been to prevent the individual from

directly possessing the digital dollar, instead centralizing digital finance in well-regulated banking institutions that governments can hold accountable for negligence or criminal activity. Rather than verifying the authenticity of digital currency, the primary challenge becomes verifying the identity of account holders and effectively managing disputes due to fraud. Although identity verification through Know-Your-Customer (KYC) schemes and cryptographic security (Parate et al., 2023; Kiljan et al., 2016) have seen significant improvements in recent years, rising identity theft, consumer preferences for convenience over security, and the cascading effects of a financial sector data breach (Sando, 2024; Weir et al., 2009; Eisenbach et al., 2020) raise meaningful questions about the security and long-term sustainability of this arrangement. Additionally, this centralization grants financial institutions discretionary control over access to funds and payment rails, which has, in some cases, led to the restriction of transactions even for legal activities (Webber and Franco, 2024).

In the aftermath of the 2008 financial crisis, Satoshi Nakamoto created Bitcoin to address concerns with centralized banking. Bitcoin is a digital currency that individuals retain direct ownership of, with cryptographic anti-forgery measures that do not require a trusted authority to validate transactions. The idea is premised on cryptographic "puzzles" that are difficult to solve but easy to validate. Transactions are aggregated into "blocks", and forgery is detected by decentralized validators ("miners"). In Bitcoin's original formulation, the cost for this forgery detection is computationally expensive cryptographic puzzle solving (known as Proof-of-Work), and miners who pay this cost are rewarded with newly-minted Bitcoins. The only way for a malicious actor to fool the network of honest nodes is to assemble a majority of the network's mining power behind a forged block–the so-called "51% attack". This would require an enormous capital investment, and even if a single entity gained control over sufficient mining power, they would profit more by mining honestly and capturing validation rewards, rather than destroying the chain's integrity and rendering their hardware investment useless (Nakamoto, 2008; Aponte-Novoa et al., 2021).

Bitcoin's distributed Proof-of-Work (PoW) offers an elegant solution to several problems

with distributed systems, including double spending (Nakamoto, 2008). However, it falls victim to the blockchain trilemma: out of security, scalability, and decentralization, optimizing two usually comes at a cost to the third (Mssassi and Abou El Kalam, 2025). Bitcoin prioritizes security and decentralization at the cost of scalability, and this is visible in the extreme electricity usage of over 100 TWh by miners solving cryptographic puzzles in 2023 (Cambridge Centre for Alternative Finance, 2024) and the rising transaction fees associated with validating an ever-growing blockchain (Charles River Associates, 2024). And in recent years, both Bitcoin's security guarantees and the decentralization of its mining have been criticized (Bahack, 2013; Sattath, 2020; Arnosti and Weinberg, 2018).

It was from this backdrop that the alternative system of Proof-of-Stake (PoS) emerged. PoS allows holders of a digital currency to "stake" their holdings, rendering them illiquid but granting them voting rights on block validation decisions proportional to the size of their stake (King and Nadal, 2012). The idea is based in game theory: wealthy currency holders would have more to lose if the protocol were compromised, and should thus have a greater say in block validation decisions (Nguyen et al., 2019). A 51% attack is still possible, but similar to Bitcoin, it would be incredibly expensive and self-defeating for a majority stakeholder to destroy the value of their own holdings by manipulating the blockchain. The system is also more resistant to technological developments such as quantum computing, since the blockchain is secured by an assumption of selfish, rational actors rather than pure cryptography. On paper, PoS offers a strong security guarantee and far more scalability than PoW systems (Kiayias et al., 2017), at the cost of increased centralization of voting power in the hands of wealthy coin holders, an effect which already existed implicitly in Bitcoin (Arnosti and Weinberg, 2018).

Although PoS emerged as an imperfect solution to fair voting in a landscape struggling with decentralized identity verification (Dunphy, 2022), it is still useful to consider the potential applications of this idea in the real world. Its core innovation is allowing voters to express the magnitude of their interest in decisions in addition to the direction of their

opinion. Thus we must examine how PoS has performed empirically on the blockchain to understand how it might be best incorporated into real-world governance structures.

3 No Free Lunch: Practical Challenges with PoS

Ethereum, an alternative blockchain featuring self-enforcing "smart contracts," was proposed in 2013 and formally launched in 2015. These smart contracts allowed users to bind funds to certain conditions embedded onto the blockchain ledger, such that transactions would be automatically executed if those conditions were met. This enabled applications such as decentralized lending, peer-to-peer currency swaps, and digital currencies pegged to real-world assets (stablecoins). Collectively, this set of applications became known as decentralized finance (DeFi). Ethereum transitioned from PoW to PoS in 2022, slashing electricity costs, accelerating DeFi adoption, and beginning a large-scale experiment in the viability of the PoS model (Zouari et al., 2025; Vogelsteller and Buterin, 2015; Cambridge Centre for Alternative Finance, 2024).

The ERC-20 standard created a smart contract specification for alternate currencies traded on the Ethereum blockchain, known as "tokens" (Vogelsteller and Buterin, 2015). These tokens included pegged stablecoins, but also DeFi projects extending the PoS idea into voting rights in Decentralized Autonomous Organizations (DAOs). These organizations serve a number of functions, for example as a decentralized governance structure for a company, but all share some on-chain voting system for governance (Zouari et al., 2025). On paper, this allows a semi-democratic form of governance without needing a centralized authority to verify the identities of voters.

However, researchers have found extensive wealth concentration effects and low voter participation in such PoS "governance tokens" (Barbereau et al., 2023; Grandjean et al., 2023). Even with fair initial token distributions, DAO governance can easily devolve into oligarchy due to the voting rights being directly tradable (Fernandez et al., 2022). The

blockchain trilemma can explain this situation: scalability has been achieved at the expense of decentralization. The experience of these DAOs raise questions about the potential for similarly extensive concentration of wealth and voting power in real-world application of PoS.

The problem can partially be ascribed to Delegated Proof-of-Stake (DPoS), a related governance system in which stakers elect a limited number of delegates with their stakes, who can then validate blocks. In the EOS blockchain which implements DPoS independently of Ethereum, researchers have discovered abnormal voting patterns among the top validators, suggesting collusion between delegates may be at play (Liu et al., 2022). In a more extreme case, the Steem blockchain was victim to a hostile takeover orchestrated by the founder of TRON, a rival cryptocurrency. By buying up voting rights with external capital, he was able to oust the original delegates and forcefully integrate Steem's decentralized applications (such as Steemit, a decentralized version of Reddit) into the TRON ecosystem (Li et al., 2024). The blockchain trilemma can be invoked again: the cost for scalability is paid in security, as the assumption that actors are rational and selfish may not always hold, or may be skewed by external capital. Once again, these outcomes experienced in the cryptocurrency world highlight risks associated with real-world PoS, specifically of allowing stakers to delegate their votes to other parties.

But the vulnerability of DPoS to collusion among delegates also exists among standard PoS, due to the emergence of liquid staking providers. Liquid staking on Ethereum is a system where users can send their coins to a staking provider who returns to them a liquid staking token, allowing the user to continue transacting with their staked coins. Liquid staking providers may additionally offer a higher yield or lower barrier to entry than traditional staking. One consequence is that users can transfer their voting rights to these staking providers, creating highly centralized validators even on standard PoS. This system has become pervasive on the Ethereum blockchain, and has raised concerns about its true level of decentralization (Gogol et al., 2024).

However, we do not see the same extremes of wealth concentration of DAOs and DeFi tokens on the Ethereum network itself; the distribution of Ethereum coins over wallet addresses much more closely mirrors the wealth distribution of traditional economies, and actually exhibits a trend of decreasing centralization over time (Celig et al., 2025). One possible factor is that liquid staking providers do increase access to staking rewards by allowing small holders to contribute to a successful pool, even if they may not meet the threshold of 32 ETH for traditional staking. Another is the strong incentive for these providers to remain honest, as their entire business model is premised on the integrity of the Ethereum blockchain. Thirdly, despite the prevalence of PoS governance models for DAO tokens, Ethereum itself uses an off-chain governance system focused on community feedback. Staking is used narrowly to support the integrity of the blockchain via transaction validation; large holders do not have the opportunity to rewrite the rules of the protocol simply by being large holders. The blockchain trilemma still holds, as this shift to off-chain governance is a compromise in decentralization, albeit with a more ethical centralized governance structure.

This is an outcome one might consider favorable for a real-world implementation of PoS. Despite centralization of governance decisions in an off-chain system, if that system makes decisions ethically and with regard to the interests of all users, the theoretical benefits of PoS can be realized without the risks of wealth concentration, collusion between elites, or hostile takeovers. Existing democracies in the real world are already large centralized institutions capable of operating free and fair elections and somewhat accurately representing the interests of their citizenry; integrating PoS underneath these existing frameworks could offer the advantages of improved long-term fiscal stability, without compromising on core democratic principles. In this approach, decentralization is ethically compromised to maximize the security and stability of a nation's financial system.

4 A Bondholder's House for Fiscal Responsibility

My proposal is inspired by that of Jones (2020): the Bondholder's House, an unelected, non-partisan government body providing a narrow, constitutionally-enforced check on elected leaders' power to set national budgets. The bond market already functions as a natural check on irresponsible spending via market-determined interest rates representing investor confidence in the government, effectively raising the costs of borrowing if investors lose trust that the debt will be repaid (Jones, 2020). A Bondholder's House would formalize this effect, giving citizens a chance to block poor fiscal decisions preemptively rather than simply reacting to them in the market. Citizens can gain voting power in the Bondholder's House by purchasing and staking treasury bonds, rendering them illiquid and locking the future returns of those citizens to the long-term fiscal responsibility of the national government. Voting power would be proportional to the size of the stake, the maturity period of the bond, and the duration of the lockup period during which the bondholder can not withdraw their stake. Liquid staking or the selling/delegation of voting rights would be strictly prohibited, in the same way we already regulate democratic vote purchasing, to avoid the worst observed effects of DPoS systems.

This Bondholder's House would provide a calm, anti-deficit, anti-inflationary pressure on elected leaders by aligning the interests of wealthy bondholders with maintaining long-term economic stability. Rather than a "coequal branch of government" like in Jones' proposal, its mandate would be narrow to avoid risks identified through analysis of blockchain PoS. If elected leaders pass a national budget which requires deficit spending, bondholders could veto the proposal if they believe the spending to be irresponsible. The veto could be overridden by a supermajority vote of elected leaders, or by simply revising the budget to not run a deficit. This would be the only power of this body, allowing elected leaders to retain control over the vast majority of governance.

A Bondholder's House would be a non-partisan institution by default, as it is completely disconnected from electoral politics. Similar to Ethereum's current governance structure, the

wealth concentration effects could be minimized by limiting the power of the PoS body and retaining an ethical democratic structure for legislative and executive functions. Because of the relative ease of verifying identities in the centralized world, systems like quadratic voting (Lalley and Weyl, 2018) or log-weighted voting (Motepalli and Jacobsen, 2025) could further minimize the concentration of influence in the hands of the wealthy. A Steem-style hostile takeover of the bond market by a foreign power could be prevented by allowing only verified citizens of a nation vote in its Bondholder's House. And if these voting rights prove to be a sufficient incentive for private entities to invest in the long-term prosperity of their nation, significantly more capital could become available to a government in the short term and at much lower interest rates. Thus a Bondholder's House could also be instituted as an alternative to debt default, mirroring real-world structures for helping debtors recover.

Ultimately, this proposal entails a deliberate reduction in democratic control over one narrow area of governance in favor of granting greater influence to those with substantial financial stakes in the nation's fiscal health. While this may be considered elitist, the reality is that a fiscal debt crisis would be devastating to all citizens, especially those without savings to cushion against economic downturns. During Greece's sovereign debt crisis, austerity measures and economic contraction drove unemployment toward 25% and pushed up to 36% of Greeks into poverty, while public services were drastically cut (Yang, 2024). Managing such risks requires sustained macroeconomic attention and expertise that cannot reasonably be expected of every voter, many of whom are already stretched thin meeting daily needs. By aligning the incentives of the most financially invested citizens with the long-term fiscal health of the nation, the Bondholder's House would indirectly safeguard the well-being of those most vulnerable to the consequences of fiscal mismanagement.

5 Conclusion

In this paper, I documented the conditions which gave rise to PoS governance, analyzed empirical evidence on the successes and failures of PoS in the real world, and proposed a PoS-inspired Bondholder's House as a non-partisan check on the power of populist governments. Like any proposed policy change, it is unlikely to be adopted in the near term and is likely filled with unforeseen negative consequences; my intent is to prompt discussion about rising deficits, demonstrate that creative solutions can be found to modern fiscal problems, and encourage further sharing of knowledge between the worlds of cryptocurrency and macroeconomics/public policy. Cryptocurrency acts like a fast-iteration laboratory where macroeconomic policy and governance structures can be tested empirically in free-market natural experiments. Economists and policy experts could learn much through cryptocurrency studies, and cryptocurrency enthusiasts could draw from the large body of literature in economics and public policy to develop more successful decentralized projects.

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