

Winter is a time for preparation and recovery, and “crypto winter” is no exception. Our market notes will pause in August. We leave you with a summer reading list.

market notes: How to Spend this Summer’s Winter



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“Sunshine is delicious, rain is refreshing, wind braces us up, snow is exhilarating; there is really no such thing as bad weather, only different kinds of good weather.” John Ruskin’s curiosity and determination led to work from treatises to travel guides. To stretch so wide is uncomfortable, and discomfort is a reliable indicator of growth. Making the most of growth opportunities takes both preparation and recovery, the hallmarks of winter. And winter has settled on digital asset markets. Our notes will pause in August while we prepare and recover. We’re leaving you with homework – our team’s top ten winter reading. A look into the past, the present and the future.

The Past

1. **The Story of Great Western Railway (GWR).** The rails of the digital revolution are being built and the industrial revolution is a solid benchmark, far enough back in time that biases are removed. An engineering race between broad-gauge and narrow-gauge tracks spurred unprecedented speed of UK innovation and corporate consolidation. GWR, behind the engineering genius, bet on broad gauge. Regulation declared the narrow gauge the champion in 1846 and the last train on broad gauge ran in 1892. And what came of GWR, the champion of the broad gauge? They are the force behind over 9,000 miles of track – an extraordinary pivot.
2. **George Selgin: Money Free and Unfree.** Selgin walks us through the history of money and banking in a memorable manner. The views are unconventional. At the center is the principle of confirmation bias. The role of the central bank is to resolve the inherent instability of private banking, a principle repeated so often and seemingly affirmed by financial crisis. Yet, Selgin’s deeper look turns the issue on its head – central banks could be the source of instability. Digital assets were not built to replace the existing monetary system. But the technologies may prove productive in building a more resilient global financial system.
3. **Out of the Ether.** Immutable. Censorship-resistant. These are common observations in digital assets. But exceptions emerge. In 2016, “The DAO” was launched with \$150 million in ether in the Ethereum blockchain. That was a substantial 14% of ether supply at the time. The spirit was to bring decentralized capital together in the Ethereum blockchain. Until the hack. More than one-third of the capital was stolen from the DAO. Flawed engineering. At block 192,000, a hard fork was executed to turn back time, returning the funds to their rightful owners. Opponents stuck with the original, now called Ethereum Classic. Innovation is complicated.

The Present

4. **Crypto: How the Code Rebels Beat the Government Saving Privacy in the Digital Age.** The context of modern cryptography. The story anchors on Whitfield Diffie, a true contrarian. A kid who did not read books until he was ten and was convinced everything interesting in cryptography had been done, only to revisit the discipline later to thwart his computer science friends who took an interest in early “hacking.” In the process, he realized government agencies were comfortable treading over individual privacy. Diffie’s work on encryption maximized privacy without a loss of computing performance. Today, it is ordinary to surrender privacy for convenience, broadcasting our lives to the world. The choice to have any digital privacy at all originates from Diffie’s work. It is the core of today’s cryptographic solutions.
5. **Economics and Math of Token Engineering and DeFi: Fundamentals of Token Economics.** It’s all fun and games until you launch a token. This text is all about the author. An entrepreneur shares her knowledge

on design, incentives, and governance with detail through practical case studies. It is all about the alignment of incentives to generate the desired behavior. The soft-science of economics does not arrive at singular truths like the hard-science of physics. Design through matching theory, auction theory, allocation theory, and game theory are integrated to improve incentives and outcomes for participants in decentralized ecosystems. No beach read!

6. **A Great Blog, Please.** When in doubt, mute the Twitter feed and go back to first principles. “I've been working on a new electronic cash system that's fully peer-to-peer, with no trusted third party.” That Satoshi blogpost captured the imagination of computer scientists, who had long envisioned digital cash, but struggled to bring it to life. Blockchain's biggest challenge is its inefficiencies. The Satoshi blog observes “bitcoin itself cannot scale to have every single financial transaction in the world be broadcast to everyone and included in the blockchain. There needs to be a secondary level of payment systems which is...more efficient.” Layer two solutions are the present. Vitalik Buterin evaluates the issue of scale with humility and sincerity – it's going to take work to get to a million transactions per second.

The Future

7. **The Metaverse: And How It Will Revolutionize Everything (podcast).** Mathew Ball is a foremost thinker on the future of the Metaverse. It brings together all the elements of the digital ecosystem: networking, computing, virtual world engines, interoperability, hardware, digital payment rails, and, of course, the blockchain. This is our own team's summer book club pick, and we will be hosting our first CIO meeting in the metaverse next week for inspiration.
8. **Nuclear Fusion.** The future is bright, even in its darkest moment. Hate and fear are only short-term motivators. Love and optimism are enduring. Humanity is getting to Mars because too many well-resourced individuals and entities want to make it happen. Nuclear fusion will be tested in space within the next five years, and the techniques can reduce the travel time to Mars by 60%. It is not just the US versus China – Europe is doing plenty. The reading is a teaser into a path with peripheral relevance to digital – what happens to proof-of-work when the marginal cost of power is zero?
9. **The Moon is a Harsh Mistress.** Libertarianism fused into serious science fiction. No digital asset reading list is complete without a libertarian's guide to the galaxy.

The Bonus

10. **Blinkist.** You know how world leaders read hundreds of books a year? They get intelligent shortened versions, like the ones produced by Blinkist.

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