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TRENDS & FORECASTING

COVID: The Excuse For Expanding Biosurveillance

By Nicholas West

As we have learned in the decades since 9/11, nearly all of the tools from the surveillance state have their origins in military applications. Given the right conditions among the civilian

population, these tools can trickle down into day-to-day life where they will reside and grow in power and frequency of use.

Most would agree that we all now live in varying degrees of a surveillance state. If you live in the U.S., for example, a recent study shows that you are likely to have been recorded up to 238 times per week by the array of government and private cameras strewn throughout modern society. If you are fortunate enough to live in a country without such widespread use of surveillance cameras, your internet activity is scoured and scrutinized by increasingly intelligent algorithms and location tracking which will now take a fair amount of work and inconvenience to avoid. Add in smart gadgets, modern vehicles, and all of the devices that can be found in the smart home, and there aren't many ways to fully opt-out of this element of the panopticon.

However, as grim as all of that sounds to privacy loving voluntaryists, the arrival of *biosurveillance* in the wake of the new 9/11-like transformative event COVID-19 could make all of the above pale in comparison. As we will see, these "new" technologies and programs were, once again, designed by the military and are now ready to be greatly accelerated into civilian society as the latest security solution to handle another invisible enemy.

The term *biosurveillance* entered the U.S. security lexicon through Homeland Security Presidential Directive 21 as part of a larger security package meant to address the "failures" of 9/11 and later anthrax attacks. As defined by the National Center for Biotechnology Information at the National Institutes of Health, it is comprehensive, yet vague enough to be problematic for proper

transparency and oversight. The following excerpt is long, but I believe it is essential to understand the infrastructure that has been developed over the last two decades with very little fanfare in order to see how this might play out under our current conditions. It also should help us navigate the daily news and identify key talking points that line up with these long-standing goals.

> [A]s "active data-gathering with appropriate analysis and interpretation of biosphere data that might relate to disease activity and threats to human or animal health—whether infectious, toxic, metabolic, or otherwise, and regardless of intentional or natural origin—in order to achieve early warning of health threats, early detection of health events, and overall situational awareness of disease activity" (White House, 2007). The biosurveillance process detects, monitors, and characterizes national security health threats, in human and animal populations, food, water, agriculture, and the environment. It involves the detection of disease outbreaks as well as the responsibility to "provide decision-makers and the public with accurate and timely information about how adverse impacts might be prevented, managed or mitigated" (Nuzzo, 2009). Many federal agencies and all 50 states are involved in biosurveillance activities, in addition to local governments and many public and private organizations. Each year, billions of dollars are spent on biosurveillance, including animal, human, and environmental surveillance, as well as health care management and technology and infrastructure

maintenance, activities which have implications for biosurveillance (Wagner et al., 2006)...

In 2004, HSPD-9 (Defense of United States Agriculture and Food) and HSPD-10 (Biodefense for the 21st Century) charged the Secretary of Homeland Security to “integrate all federal agency efforts” and to “create a new biological threat awareness capacity” that would detect biological attacks early. In 2004, the Department of Homeland Security (DHS) created the National Biosurveillance Integration System (NBIS), which was intended to be the nation’s “first system capable of providing comprehensive and integrated biosurveillance and situational awareness” (OIG, 2007), and designed to include a role for the pertinent federal agencies in building this integrated system.

In 2007 the Implementing Recommendations of the 9/11 Commission Act created the National Biosurveillance Integration Center (NBIC) within DHS to identify, integrate, and analyze data to detect biothreats and disseminate alerts...

HSPD-21, which was released a few months after passage of the act that created NBIC, charged the U.S. Department of Health and Human Services (HHS) with establishing “an operational national epidemiologic surveillance system for human health, with international connectivity where appropriate, that is predicated on state, regional, and community-level capabilities and creates a networked system to allow for two-way information flow between and among Federal, State, and local government public health

authorities and clinical health care providers." In response to this directive, the Centers for Disease Control and Prevention (CDC) established the Biosurveillance Coordination Unit (BCU) in 2008. BCU supports the National Biosurveillance Advisory Subcommittee (NBAS), established in 2008 by CDC per a mandate in HSPD-21 to create an advisory body to HHS on biosurveillance matters. In 2008, BCU released the *National Biosurveillance Strategy for Human Health*, and it subsequently revised the strategy and released an expanded version in 2010 (CDC, 2010). This strategy defined the scope and function of biosurveillance for human health to include

- all hazards, including biological, chemical, radiological, nuclear, and explosives, both intentional and natural;
- definitions established by urgency and the potential for multijurisdictional interest;
- urgent notifiable conditions and nonspecific and novel health events;
- ad hoc data gathering, analysis, and application of information;
- functions including case detection, event detection, signal validation, event characterization, notification and communication, and quality control and improvement; and
- support for rapid and efficient discharge of responsibilities for the International Health Regulations.

The strategy also named six priorities for national biosurveillance: electronic health information exchange, electronic laboratory information exchange, unstructured data, integrated biosurveillance information, global disease

detection and collaboration, and the future biosurveillance workforce...

In 2011, NBAS made further recommendations to build on its 2009 recommendations in the following areas:

1. **Governance:** Establish federal biosurveillance oversight (reiterating the 2009 recommendation).
2. **Information Exchange:** Support the implementation of the International Health Regulations; integrate human, animal, food, vector, and environmental surveillance systems; expand biosurveillance to include environmental aspects.
3. **Workforce:** Promote a sustainable interdisciplinary workforce with investments in expertise (especially in public health informatics; social and behavioral epidemiology; environmental, human, and animal health; vector biology; and disaster response).
4. **Research and Development:** Invest in research to develop and build on innovative technologies that will enhance the efficiency and sensitivity of biosurveillance; select the best approaches and scale them (NBAS, 2011).

Segments of the above description formed the basis of an article I wrote back in 2014 about Oak Ridge Labs' biosensor program which turned the Fort Bragg military base into a prototype American city filled with environmental sensors and A.I. to track nearly every facet of the natural environment using "nanobiometrics." Some of the seemingly outlandish applications tested nearly 15 years ago included:

- Nano sensors for use in agriculture that measure crops and environmental conditions.
- Bomb-sniffing plants using rewired DNA to detect explosives and biological agents.
- "Smart Dust" that wirelessly transmits data on temperature, light, and movement (this can also be used in currency to track cash).
- Nano-based RFID barcodes that can be embedded into any material for tracking of all products . . . and people.
- Nanosensors that can detect molecular changes indicating the presence of diseases.

The infamous Los Alamos National Laboratory announced its Biosurveillance Gateway in 2015, no doubt originating much longer ago than that.

However, many of these programs have seemed to languish in the background, and many of the web pages originally describing these programs are now unavailable. But biosurveillance is once again entering the mainstream news cycle with COVID as the vector.

When the history of these programs is understood, then we can see how this technology is being revealed in the chronology of current news reporting, and how it seems to be ready nearly overnight – because it's been there all along.

Very shortly after COVID was declared a pandemic, a report emerged in *Wired* that a Canadian artificial intelligence company BlueDot warned about a novel coronavirus on December 31st, many days before official government alerts were declared.

> After testing out several predictive programs, Khan launched BlueDot in 2014 and raised $9.4 million in venture capital funding. The company now has 40 employees—physicians and programmers who devise the disease surveillance analytic program, which uses natural-language processing and machine learning techniques to sift through news reports in 65 languages, along with airline data and reports of animal disease outbreaks. "What we have done is use natural language processing and machine learning to train this engine to recognize whether this is an outbreak of anthrax in Mongolia versus a reunion of the heavy metal band Anthrax," Kahn says.

Given the drastic government response to this alleged virus, will this type of intelligence be acted upon to lock down populations even quicker in the future? Would there be a standard threshold established to prompt draconian measures? This technology appears to have been accurate (for something) in hindsight, but has a true accuracy been independently verified, or are we at the whim of individual governments and policymakers to determine the outcome? These are just a few of the questions that spring to mind if we are to have any chance at transparency and accountability.

The CDC – one of the government agencies left behind by BlueDot – announced in April that it was upgrading its own predictive biosurveillance database. As reported by *Nextgov*:

> The system collects data from hospitals, local public health departments, pharmacies and more to give researchers and officials a view of how diseases spread across the country.

> As the coronavirus spreads across the U.S., the Centers for Disease Control and Prevention is renewing its partnership with Johns Hopkins University's Applied Physics Laboratory to pull data from hospitals across the country into the government's biosurveillance program...
>
> APL's ESSENCE is the "primary syndromic surveillance tool" for CDC's BioSense platform. It provides the raw data that is then filtered through BioSense's other applications, which include research, analytic and visualization tools.

Its data collection apparently ranges from the mundane to the quite personal:

> "What do you do when you're sick? Think about it," Wayne Loschen, an APL software engineer on the ESSENCE project, said during a talk in 2017. "Your kids might not go to school. You might go to the pharmacy and get some over-the-counter drugs. If it's really bad, you might end up in emergency rooms. … You might buy more orange juice. Maybe you'll buy more Kleenexes. The real fun one: You might flush your toilet a little more often."...

Meanwhile, since the COVID outbreak, there has been a flurry of reports surrounding biosensor technology and overall biosurveillance to be incorporated as a means of thwarting the next crisis.

Digital health company Profusa announced in March that its biosensor tech could help spot new infections weeks before symptoms begin to even show. Among the disturbing implications,

this technology is being tested *as an injectable* and as a wearable patch. From their press release:

> Profusa, a digital health company that is pioneering the next generation of personalized medicine, today announced the initiation of a study that will use the Company's minimally invasive injectable biosensor technology, the Lumee® Oxygen Platform, as a platform to potentially assist in the early detection of influenza outbreaks. The study is part of a collaboration with RTI International, a nonprofit research institute developing algorithms for illness detection, and research centers including Duke University and Imperial College London…
>
> Profusa's Lumee Patch, a wireless reader that adheres to the skin and collects and reports tissue oxygen levels sensed by the Lumee Oxygen sensor to a mobile device for real-time data visualization, will be used in the clinical study.

This builds upon the longstanding trends in precision medicine and predictive healthcare that I have previously written about, but this time it openly comes straight from the Department of Defense.

> "The potential significance of this new technology should not be underestimated, and Profusa is proud to be part of a joint effort funded by a DARPA, or Defense Advanced Research Projects Agency, award," said Sean Givens, head of government business for Profusa. "This is particularly exciting for Profusa as we look forward to leveraging learnings for future platform applications."

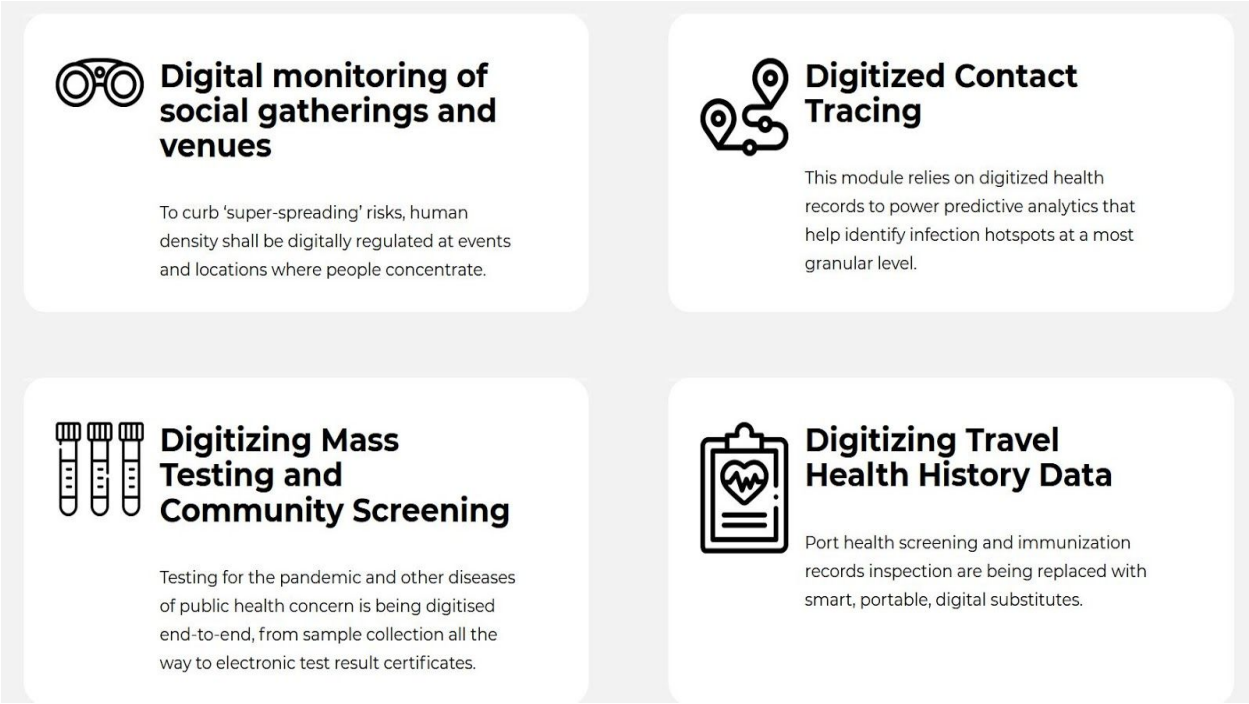
The head of Trump's Operation Warp Speed vaccine research program, Moncef Slaoui, has also been a key figure in big pharma's development of bioelectronic medicine, which is hardly reassuring.

While this aspect of biosurveillance might take quite a while to enter into healthcare systems, many countries are beginning to advance the first stages of comprehensive digital health tracing. China seems obvious, of course, but it is Africa that has most vocally embraced some of these new methods.

It was alarming to see two new reports last month, within a week of one another, that offer new details about where all of this is heading.

On September 14th, *Global Voices* offered praise for a program called PanaBIOS, as the "African Union turns to biosurveillance tech to curb COVID-19."

PanaBIOS touts its mission as *Reopening Economies and Societies with Technology*. Its four-point functionality is dystopian in the extreme:



The real key is that it is not only for use inside a given country, but forms a template for cross-border verification:

> It supports the emergence of standardized protocols to verify the health status of travelers across borders and thereby directly facilitates the reopening of regional borders, first to essential workers and goods, then to others if successful.

This is exactly what we in the independent press have been warning about: not only the invasion of privacy, but the rollout of conditional participation in society and a de facto social credit for compliance. Currently, the PanaBIOS system is in place throughout Ghana and is set to rollout to other parts of the Union.

The second news story from September 21st is also from Africa, as "Nigeria sets 5-year biometric enrollment target for whole population to national ID system."

Again, the privacy implications alone are enormous, but additional details show that this is a World Bank initiative that is far wider in scope than most people would imagine. My emphasis added:

> The private and financial sectors have been making progress with digital ID technology, and the **World Bank and others are financing the acceleration of the biometric national identity scheme**, which should allow further progress, but for now is holding things up. Data protection policy development remains on the sidelines.
>
> **Nigeria: Timeline for national registration completion revealed**
>
> The National Identity Management Commission (NIMC) needs between three and five years to complete registration of its citizens, This Day Live reports the commission director general, Aliyu Aziz, as saying. Elsewhere the piece suggests the target is 150 million people.
>
> Aziz also explained how collaboration with the Independent National Electoral Commission and National Orientation Agency would **allow voter validation** via the National Identity Number (NIN)...
>
> The article reported as part of Aziz's remarks on the day's theme of **'Identity for Health, Sustainable Development and Growth' that security agencies would be able to access the commission's database to identify people.**
>
> The NIMC has been able to harmonize 11 million out of 14 million **records supplied by the Central Bank of Nigeria**

> on Bank Verification Numbers, and the process will be **extended to incorporate the pension commission and immigration service**.
>
> Aziz also said that **all children will be registered at birth** and be linked to the NIN of one of their parents until the age of 16...
>
> **The (World) bank is financing the country's national identity registration efforts to the tune of $433 million.**

The next part of the report focuses again on Ghana:

> **Ghana: Ghana Card for universal health coverage by 2030**
>
> Ghana's biometric national ID credential, the Ghana Card, could be playing a significant role in helping the country reach universal health coverage....
>
> The chief executive, Dr. Lydia Dsane-Selby believes that the **digitization of the economy in general will also lead to greater tax revenues which will go to health.**

These examples mirror what is being introduced in the U.S. with the COVI-PASS (recently changed to Tento Health).

And just today, October 7th, it was announced that Heathrow Airport in England is beginning a trial for CommonPass to "let people travel the globe without risk of quarantine." Gee, thanks!

> The phone software is a digital health pass which can hold a certified COVID-19 test status or show someone has been

vaccinated in future in a way designed to satisfy various governments' different regulations…

It has been launched by non-profit trust Commons Project Foundation, **part of the World Economic Forum**, in the hope of it will end the days of flyers producing bits of paper, often in different languages.

This shows how the various technologies can form a new plug-and-play architecture once the overall system is in place. These programs will likely take various forms, and to varying degrees of intrusiveness, but it all comes from the same mission of creating “immunity passports” as the entry point, but clearly will embed strict conditions for work and travel, and will also comprise all facets of the electoral process, health, banking and taxes – starting at birth.

Finally, it is worth emphasizing that all of the above will be made much easier if widespread installation of 5G is achieved, both on land and from satellites. The Internet of Things is not only about smart gadgets and faster video streaming; it is precisely what enables the fast wireless connectivity that is needed for truly global biosurveillance down to the smallest environmental component. There is a growing global pushback against 5G for a multitude of reasons, so it's still not clear if it will be the sole source for this connectivity. However, U.S. police and Fusion Centers have begun exploring something called Wi-Fiber that might provide an alternative blanket surveillance option. For now, it is focused on better coverage for all of the public surveillance cameras, including thermal imaging, which is also becoming part of COVID temperature tracking.

Closing Thoughts

Realistically, if all of these plans were to come to full fruition, there would be very little that any of us could do to completely opt-out. If the environment itself becomes a means of surveillance and tracking, we will have arrived into a full-blown Skynet reality.

However, in the short term, we should be able to rely upon the government's large inability to effectively communicate with itself across the many programs, systems and faulty human operators that could seamlessly transition us to a world of widespread biosurveillance.

However, we need to exercise every freedom that remains in order to make it as difficult as possible for technocrats to connect the various pieces they have built. We can't voluntarily buy the

devices that track us; we must preserve bodily autonomy and refuse vaccine mandates; and we must take every step possible to reduce the likelihood that we will be easily contact traced or accessed via the various databases.

By remaining aware of long-term trends as they are developing, we can realize that every decision small and large can either contribute to a reality of someone else's choosing, or be in service to the reality we wish to create.

ENTREPRENEURSHIP

The Bitcoin Business Model

By Vin Armani

For the past several months, my articles here in *Counter Markets* have concerned the upcoming fork of the Bitcoin Cash network. The split has been precipitated by difference of opinion, primarily among the developer and evangelist community within that network in regards to addressing a commonly acknowledged problem.

In brief, that problem is the difficulty of the individuals who create and maintain network infrastructure (software, public APIs, explorers, wallets, etc.) in generating a sustainable income from their work within the network. Specifically, the developers of Bitcoin full node software, such as Bitcoin Core, Bitcoin ABC, and Bitcoin Satoshi Vision, have not found a viable revenue model that allows independence from outside influence when making decisions about the direction that should be taken with protocol development.

The developers of Bitcoin Core are supported by a hodgepodge of venture capital-backed firms (Blockstream, Chaincode) and academic grant organizations (such as MIT Media Lab, which notoriously took donations from Jeffrey Epstein). The developers of Bitcoin Satoshi Vision are salaried employees of nChain, a company wholly controlled by Craig Wright and Calvin Ayre. Bitcoin ABC has primarily been dependent on donations from major miners. It has been those miners that pushed ABC, for years, to adopt a funding model that gave ABC a portion of the reward for every new block. That funding model, manifested as the Infrastructure Funding Plan (IFP), has been the catalyst of the current schism in Bitcoin Cash.

In all of these cases, developers have not had complete independence of action because their paychecks depended upon the continued support of “special interests.” There has been no clear path to a revenue (read: business) model for those who provide Bitcoin infrastructure.

In this article, I want to share insights that I have gained over the last two years and give a vision for the business model of the next

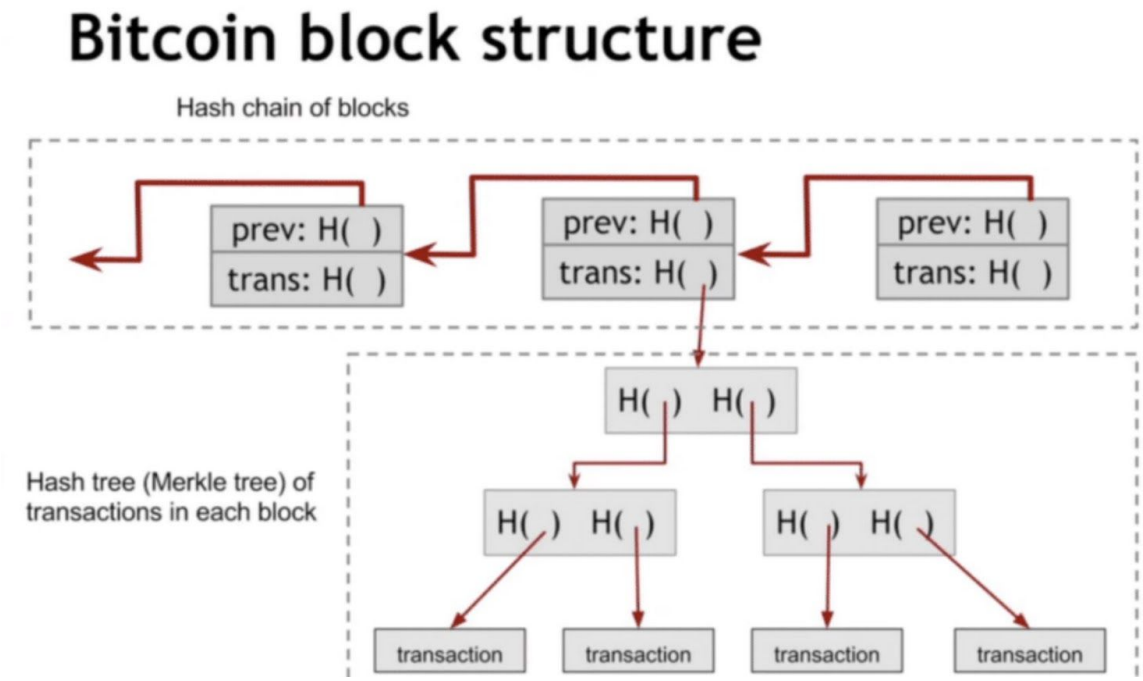
generation of builders in Bitcoin. In January of 2019, I wrote a series of articles for Coinvore.com. It was in those articles that I coined the term “Non-Custodial Financial Services” (NCFS). I defined a provider of these services as a business that leveraged Bitcoin’s unique transaction model to provide analogs to established financial services (such as payment processing), while never taking custody of user funds.

Because Bitcoin provides for multiple outputs in a transaction, the provider of a point-of-sale terminal, when properly leveraging existing Bitcoin protocols, can facilitate a sale where the customer pays the merchant directly while simultaneously sending a “fee” output to the payment processor. The power of this model is that the payment processor becomes exempt from a great many regulations that he would otherwise be subject to if he collected funds on behalf of the merchant and then transmitted those funds to the merchant after subtracting a processing fee – the standard model for traditional digital payment networks such as Visa or PayPal. The reduced regulatory burden means removal of barriers to entry and the ability for new businesses to enter the payment processing space and experiment. We are doing just these types of experiments here in Saipan.

Since I wrote those *Coinivore* articles, I have not only explored the NCFS model, but I have expanded its scope, branching out into tokenization and collaborative transactions. I have authored several protocols during this time and, in the process of leveraging those protocols in prototypes and products, the business model for Bitcoin infrastructure has become clear.

Bitcoin's ledger has a long history of being used to store information about more than just transactions consisting of the native unit of value (satoshis) being sent from one (or more) address(es) to another. I have written in previous issues about tokens, colored coins, and the storage of data on Bitcoin's ledger. My own work over the last two years has focused heavily on complex transaction types such as atomic swaps, escrow, and oracles. It is in facilitating these interesting transactions that we find Bitcoin's business model. In order for this business model to come fully into view, however, an understanding of the challenges presented by Bitcoin's native architecture and the limitations of a blockchain as a data store is required.

A blockchain is, in a very literal sense, a "chain of blocks." Those blocks are collections of transactions. Attached to every block is a section of data called a block header. This is the data that is "hashed" in the mining process. There is a really amazing piece of cryptography, called a Merkle Tree, that is leveraged in Bitcoin's consensus mechanism.



Instead of running a hashing algorithm on every transaction in a block, the transaction hashes ("transaction IDs") are hashed together in a Merkle Tree. The end product of this process is a Merkle Root, a single hash (human readable as a string of letters and numbers). Given just a Merkle Root and a transaction ID, we can tell whether or not that transaction is included in the block. So, if we know the ID of a transaction and we have a blockchain, we can find in which block the transaction resides. This is a very simplistic data verification scheme, however, and searching through a blockchain in this manner would be ridiculously slow. For this reason, as every block comes in, a Bitcoin node breaks apart and orders the blockchain data, placing it into a separate database.

If we want to imagine the process of a node freshly starting on the network and syncing, we can imagine an assembly line of blocks,

coming down the conveyor belt in chronological order (#1, #2, #3, #4…) and the node picking up the block, breaking it into its constituent components, storing the data it wants to find later in an easily accessible form, and then putting the block back together as it arrived and attaching it onto an ever-expanding chain of previous blocks.

The amount of data stored varies depending on the design of the node software. This data storage process is known as “indexing.” When people talk about “searching the blockchain” (such as when you do a search on an explorer website like Blockchair.com), they are actually describing a search of an indexed database of information that is on the blockchain, not a search of the blockchain itself. The blockchain is just an immutable record that can be indexed by anyone, anywhere by joining a Bitcoin network.

Bitcoin’s business model is all about indexing. Some of the folks building on the Bitcoin Satoshi Vision network have shown flashes of understanding that providing specific indexed data has a value

proposition. In fact, the developer who has made the greatest contributions toward indexing non-native-transaction data, Unwriter, was one of the developers who left Bitcoin Cash for SV at the time of The Hash War in November 2018. Unwriter is one of the coauthors of the Simple Ledger Protocol (SLP) token specification and his BitDB platform is the backbone of most of the existing token infrastructure on Bitcoin Cash.

A certain segment of BCH and BSV developers and entrepreneurs have focused on storing completely non-monetary data on-chain. From text messages to weather data, to cat videos, many different experiments have been tried. All of them require indexing infrastructure to provide a viable user experience. The problem with these experiments is that there are much less expensive and much more performant technologies to broadcast a text message (Twitter) or upload a video of your cat (YouTube, Instagram). You simply cannot reliably generate income by charging for a product or service that is less accessible and of lower quality than a ubiquitous, “free” alternative. However, without indexing infrastructure, entire classes of data that exist on the blockchain cannot be accessed.

With this background, we can begin to see where a possible revenue model for Bitcoin infrastructure might lie. Let’s take a look at our current assumptions:

1. Transactions which are not simply the sending of native Bitcoin value units (satoshis) from one address to another have value. We need look no further for evidence of this statement than USDT (Tether) – the number one cryptocurrency in the world by daily volume – which exists as

(colored coin) tokens on Bitcoin BTC (as Omni Protocol) and Bitcoin Cash (as Simple Ledger Protocol).

2. In order to utilize the types of transactions described in #1, users and businesses need to have access to indexing infrastructure. This indexing functionality is generally not present in the current offering of node software.
3. Existing applications for indexing infrastructure provide products and services that end users are not willing to pay for, primarily due to the lack of a unique value proposition for those applications.

Given these assumptions, we are presented with a clear path toward profit. Providers of indexed data and associated infrastructure (to deliver that data to users with low latency), must find classes of transactions that consumers will be willing to pay a premium to broadcast and search for.

What types of transactions are these and how can providers be sure that they can collect fees from users in a non-custodial manner?

The transactions, on a Bitcoin network, that are best suited to the above business model are collaborative transactions that use OP_RETURN-based tokens such as SLP or OMNI. In addition, if the collaboration is negotiated and executed between the collaborating parties using an on-chain protocol such as Signal, Watch, and Pay (SWaP), then the communication between parties also represents a set of transactions that a provider can charge to broadcast and deliver from an indexed database. For some background on collaborative transactions and SWaP Protocol, you can check out a presentation I did on these subjects

at last month's BCH DevCon. The reason that using tokens as the medium of exchange for these transactions offer additional revenue opportunities is that providers can offer their service in a pure token environment by leveraging Simple Ledger Postage Protocol.

Let's take a look at what this might look like in practice with a straightforward application: on-chain sports wagering on Bitcoin Cash. In this case, let's use the game between the Las Vegas Raiders and the Los Angeles Chargers set to take place on November 9th. The two bettors (Bob and Alice) involved will wager $50 each. The wagers will be made in the form of USDt (Tether) stablecoin SLP tokens on the Bitcoin Cash network. We will call the (revenue generating) service providing the indexed data to the wallet, the Provider.

1. Bob uses his wagering wallet (which supports the SWaP Protocol) to choose an on-chain oracle that will be used to determine the winner of the game. The oracle data is received from the Provider API.
2. Bob sends the Provider API a request to broadcast a signal (in the form of a set of BCH transactions) to the blockchain saying that he would like to bet 50 USDt on the Raiders to win the game. As part of that request, Bob sends a payment to the API of .25 USDT. The API makes this broadcast and indexes the data for fast retrieval.
3. Alice, using her wallet, requests all available wagers for the game from the Provider API. Seeing Bob's wager (she doesn't know it is from Bob of course), she selects it. Her wallet creates a partially signed transaction, representing the fully escrowed wager) and sends a request to the Provider

API to broadcast that partially signed transaction onto the blockchain so it can be agreed to by Bob. Within that transaction is a separate output of 1 USDT that goes to an address specified by the Provider API. An additional fee of .25 USDT is sent along with this request for the Provider API. The data is, again, indexed by the API for fast retrieval.

4. Bob's wallet has had an open channel to the Provider API, waiting for a wager to come in. The Provider API pings Bob's wallet and sends him Alice's half-signed transaction. Bob's wallet signs the transaction, completing the escrow, and sends the signed transaction to the Provider API which broadcasts it to the Bitcoin Cash network.
5. There is now 100 USDt in escrow, on the blockchain and, when the oracle broadcasts the signature at the end of the event, the winner can collect the wager.

In this scenario, the two parties have completed a fully peer-to-peer wager via the Bitcoin Cash blockchain. The Provider, demonstrably acting as an "Interactive Computer Service", is regulatorily exempt from the key US statutes (Wire Act and Unlawful Internet Gambling Act) that govern online wagering. The provider, in this case, made revenue of $2 in USDt off of this interaction, while spending perhaps 1 or 2 cents USD in server costs and the cost of raw BCH satoshis. Such an enterprise can scale massively using well-established infrastructure, such as Amazon Web Services (AWS). Although wagering is a canonical application of this technology, and works well as an example, there are any number of financial instruments and activities that can be translated into this model.

The entities that would be most capable of providing the infrastructure needed to earn revenue in the manner described above are those entities that are already providing infrastructure. Full node development teams, public API providers, block explorer maintainers, and wallet developers have all been fundamentally “giving away” their services. Those are the teams with the technical know-how to be the early movers in this new industrial sector. Industry participants will compete on user experience, with latency decreasing over time while user interfaces become more and more intuitive.

We are on the cusp of the next wave of innovation in Bitcoin. I truly believe this is the path. I’m walking down this path myself, as we speak. If you’ve made it to these words, you are now a first mover yourself. Welcome and hold onto your hat. It’s going to be a wild ride.

WEALTH

Boycotts and Buycotts: Change Through Commerce

By Jeff Paul

A truly free market is the purest form of direct democracy. Without politics, we can reshape the world in powerful ways through boycotts and buycotts in the free market. Every dollar or bitcoin we spend is a vote for something, or against something else.

Trending hashtags like #CancelNetflix or #buyGOYA indicates that people are rediscovering their agency to affect change through individual choices in commerce.

This strategy could be particularly effective as market choices decline due to government lockdowns of small businesses while subsidizing crony corporations.

Freedom = Choices

In the simplest terms, freedom = choices.

A common experience among immigrant survivors of communism or socialism is their awe at the selection at US supermarkets. We grew up here and the choices are still overwhelming! Imagine their response when they were accustomed to shortages of crucial staples.

On an official visit to the United States in 1989, Russian president Boris Yeltsin and his Soviet entourage visited Randall's Supermarket in Houston, Texas. Yeltsin couldn't believe what he saw and thought the grocery store had been staged to impress him. He was so blown away by the experience that he renounced communism.

Yeltsin, then 58, "roamed the aisles of Randall's nodding his head in amazement," wrote Asin. He told his fellow Russians in his entourage that if their people, who often must wait in line for most goods, saw the conditions of U.S. supermarkets, "there would be a revolution."

...

"Even the Politburo doesn't have this choice. Not even Mr. Gorbachev," he said. When he was told through his interpreter that there were thousands of items in the store for sale he didn't believe it. He had even thought that the store was staged, a show for him.

…

> In Yeltsin's own autobiography, he wrote about the experience at Randall's, which **shattered his view of communism**, according to pundits. Two years later, he left the Communist Party and began making reforms to turn the economic tide in Russia.
>
> "When I saw those shelves crammed with hundreds, thousands of cans, cartons and goods of every possible sort, for the first time I felt quite frankly sick with despair for the Soviet people," Yeltsin wrote. "That such a potentially super-rich country as ours has been brought to a state of such poverty! It is terrible to think of it."

Meanwhile, without any sense of irony, socialist US Senator Bernie Sanders infamously said, “You don't necessarily need a choice of 23 underarm spray deodorants or of 18 different pairs of sneakers when children are hungry in this country.”

Choices in the market are a reflection of freedom. As government takes more control of the economy, choices will decline. For instance, the response to the plandemic is resulting in fewer choices as countless small businesses go bankrupt.

With fewer choices, boycotts and buycotts could have an even larger impact than when customers are overwhelmed by variety.

Direct Democracy vs Free Market

Direct democracy is a form of government where all laws and policies are voted on by the public. The problem with direct

democracy is that it assumes the “majority” knows best how to govern (spend other people’s money to solve problems).

Those who believe they should get to vote on everything ought to be advocating an end to all regulations and for all government services to be privatized. A truly free market without taxes and subsidies provides the purest form of direct democracy as citizens can vote for the services they want by directly paying for them. This is the ultimate vision for voluntaryist society – of which agorism is the path.

Boycotts and Buycotts

Boycotts:

> A boycott is an act of nonviolent, voluntary and intentional abstention from using, buying, or dealing with a person, organization, or country as an expression of protest, usually for moral, social, political, or environmental reasons.

Governments understand the power of boycotts. The BDS movement to boycott products from Israel threatens the establishment so much that 32 states have banned companies from participating in the boycott. Although federal courts have ruled these laws as unconstitutional, the US Senate passed the Israel Anti-Boycott Act to allow such bans.

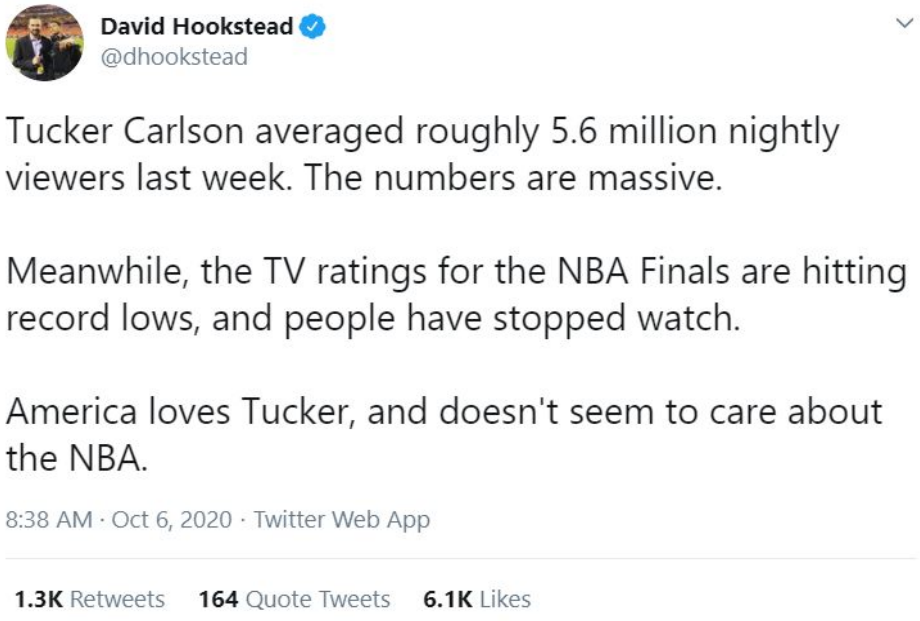
More recently, wildly popular streaming service Netflix is experiencing the power of boycotts. After releasing the controversial movie *Cuties* with prepubescent girls engaging in

sexually explicit scenes, subscribers from across the political spectrum called to #CancelNetflix.

As a result, Wells Fargo analyst Steven Cahall forecasts that "Netflix will lose 2 million U.S. and Canadian subscribers in the quarter ending Wednesday, compared with his previous estimate for a 500,000 gain."

Another example of a recent boycott is the NBA Finals. Even LeBron James and the LA Lakers can't boost TV ratings after the NBA went woke with their support for social justice issues. Pre-game ceremonies and custom messaging on jerseys representing political opinions turned off a lot of fans and has resulted in record-low ratings for the NBA Finals.

Meanwhile, the anti-woke Tucker Carlson's show on FOX News is breaking all cable news records with nearly as many **daily** viewers as the NBA Finals.



Carlson's show is an interesting case because, despite record high ratings, woke companies have boycotted advertising on his show. This boycott opened buycott opportunities for businesses like *My Pillow* to advertise to millions of loyal Carlson viewers.

Buycotts:

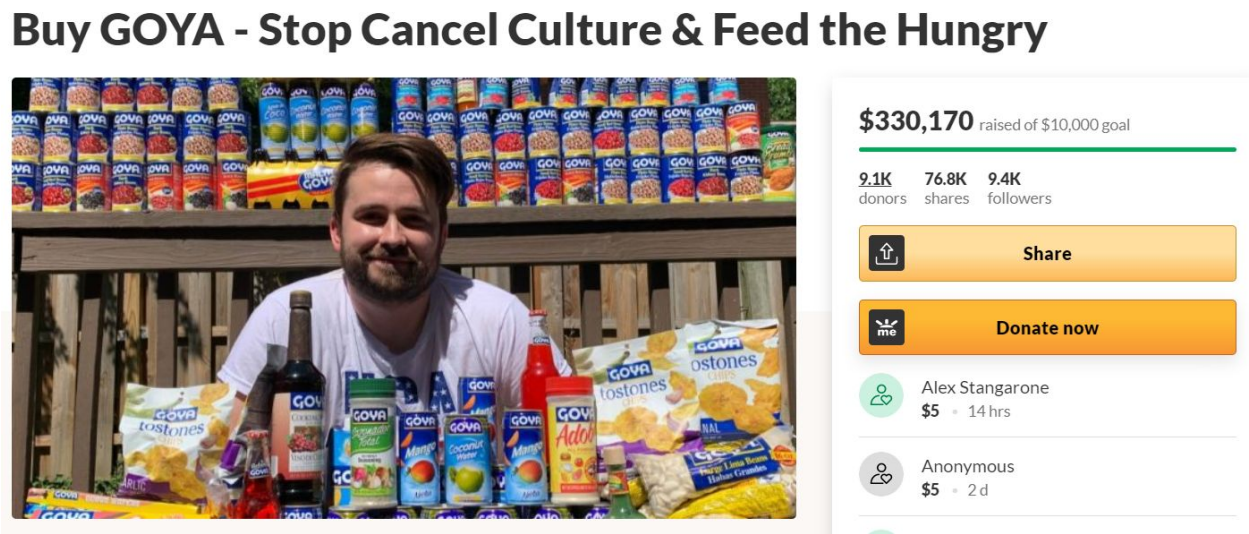
> A buycott is the opposite of a boycott: deliberately purchasing a company's or a country's products in support of their policies, or to counter a boycott.

Buycotts supporting local producers in the informal economy is one of the most powerful tools for agorists. Obviously, everything can't be purchased from local producers.

When the CEO of Goya Foods praised US President Donald Trump at a press conference this summer, it triggered the left.

Alexandria Ocasio-Cortez led calls to boycott Goya while Trump supporters took to social media to get the hashtag #BuyGOYA to trend.

The calls to boycott Goya on the left triggered a buycott where one activist raised over $300K on GoFundMe to buy and donate Goya products to food banks who were struggling to feed people during the pandemic lockdowns.



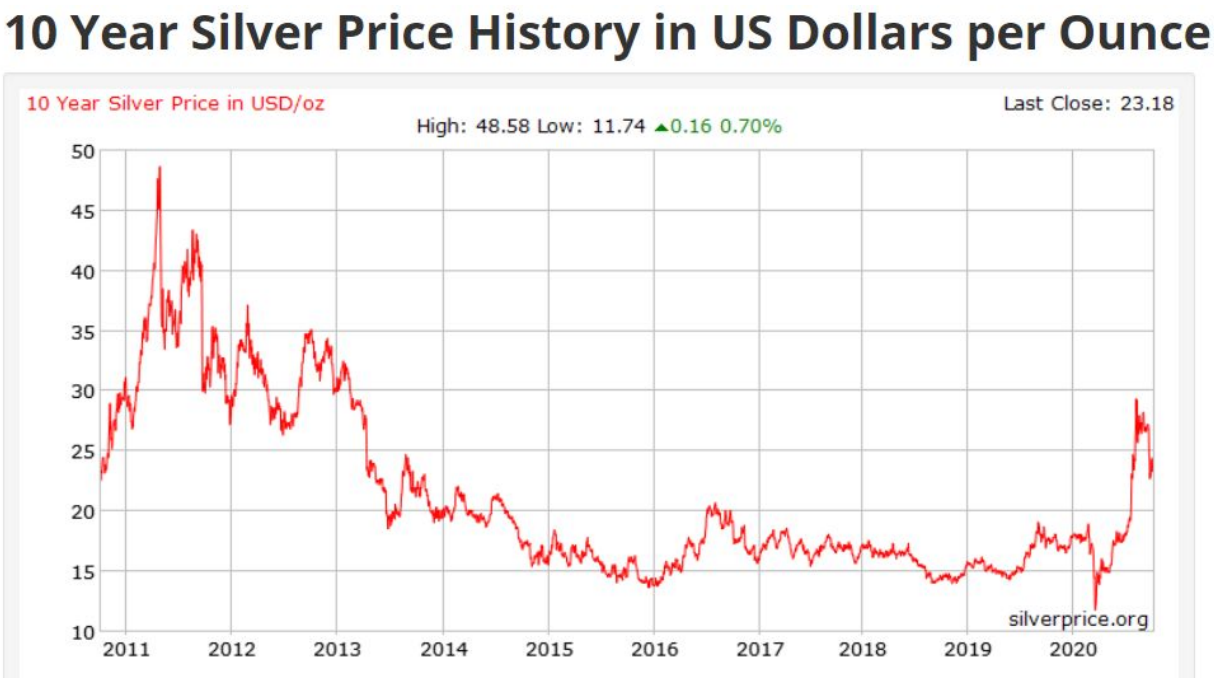
It's unclear whether the Goya buycott directly resulted in increased sales. Just prior to the CEO endorsing Trump, Goya reported that sales of canned beans were up 400% due to fears of the coronapocalypse. It seems that petty political bickering may have minimal impact compared to pandemic prepping.

In 2010, Max Keiser launched a campaign to buy silver to crash JP Morgan. He wrote, "The campaign to buy silver and force JP Morgan into bankruptcy could work because of the liabilities accrued by its short-selling."

> We (Keiser and others) posited that if 5% of the world's population each bought a one-ounce coin of silver, JP Morgan would be forced to cover their shorts – an estimated $1.5tn liability – against their market capital of $150bn, and the company would therefore go bankrupt.

The buycott went viral and the price of silver spiked to $48.58 in the first quarter of 2011. However, individual silver buyers were

no match for unlimited Fed bailouts of irresponsible investment banks. Trillions were printed to cover paper losses and boost securities and bonds. Because of that, the price of silver slowly declined before bottoming out earlier this year.



What Agorists Should Boycott and Buycott

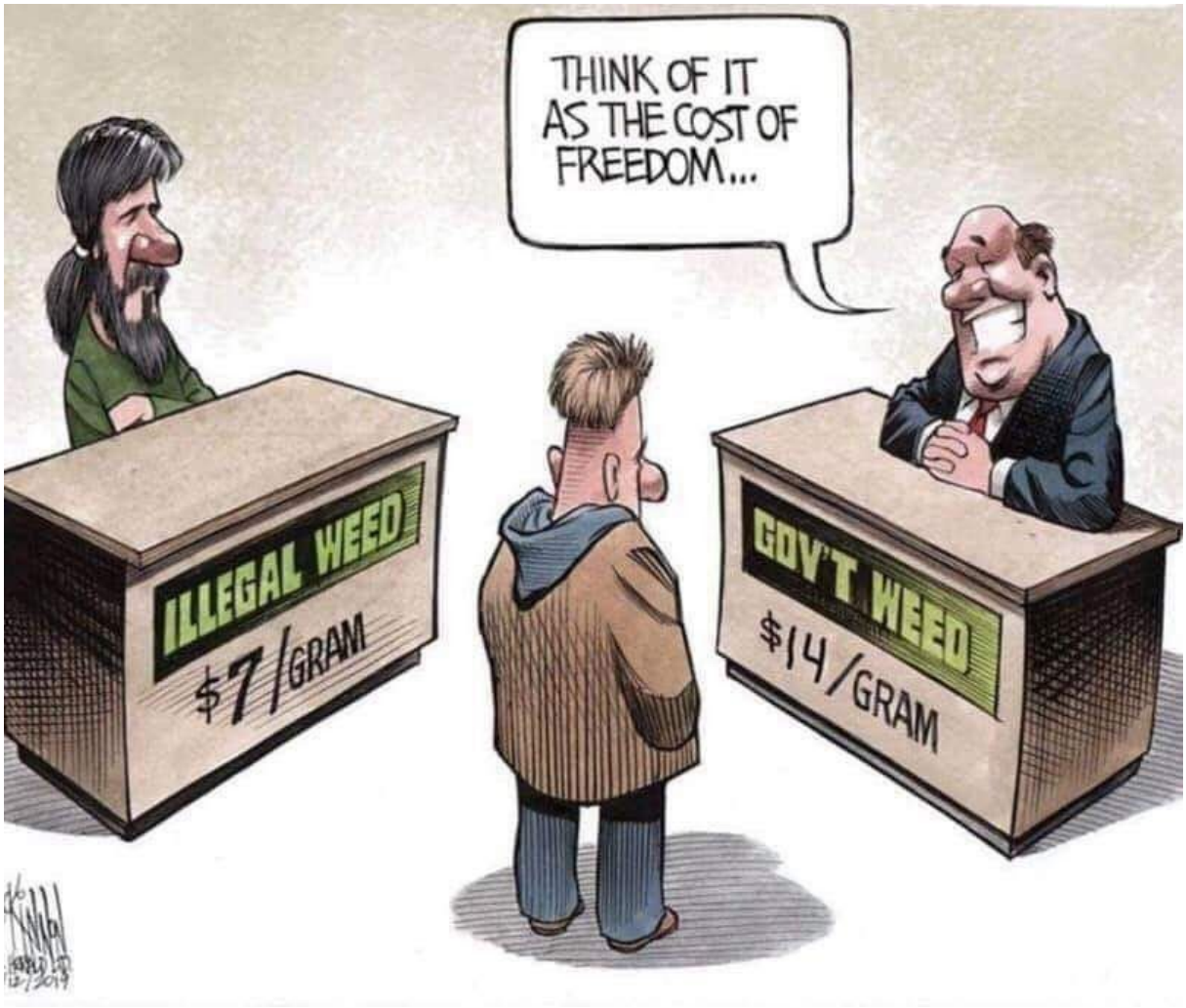
The above examples are mostly motivated by partisan political squabbling. Agorists are motivated to remove support from formal markets as much as possible to reduce revenue for the State. In order to get the things we desire, we produce what we can on our own and seek products and services in the informal economy.

It would be reasonable for agorists to boycott the most regulated, taxed and subsidized industries. Examples may include:

- Factory foods

- Fiat bank loans and investments
- CIA-funded social media
- Utility companies and fuel
- And anything with an additional sin tax like alcohol, tobacco, cannabis, firearms and ammo.

Besides sales and corporate taxes, firearms and ammo have a federal ATF tax of 10% and 11% respectively, plus many localities place additional taxes on guns, ammo, and permits. Cannabis is even worse. An estimated 65% of the retail cost of cannabis is taxes! And statists wonder why the black market is still thriving.



Agorists can avoid supporting those industries by:

- Producing their own food and buying locally.
- Seeking seller financing and investing in alternative investments like cryptocurrency and precious metals.
- Using independent digital tools that respect privacy like Brave browser, DuckDuckGo search, Minds.com and SoMee.social, and VPNs.
- Installing offgrid power, wood burning furnaces, and driving an electric car. (See previous article on Thomas Massie.)
- Fermenting your own alcohol, rolling your own smokes, growing your own cannabis, printing your own guns and reloading your own ammo.

The buycott for agorists should be to “buy local” or “buy used.” Not all corporations are bad, but they must comply with countless regulations and pay a host of taxes. Agorists can avoid paying corporate taxes by buying used products from private sellers at yard sales, Craigslist, Facebook Marketplace, OfferUp, eBay, etc. Almost everything that we could need or want can be found in the informal market.

BITCOIN & SILVER REPORTS

Bitcoin prices continued to consolidate, with the value bouncing between $10K and $11K for nearly the entire month of September. Typically when Bitcoin gets stuck in a narrow range, it leads to an explosive move out of the range shortly after. Cryptocurrency markets are fast moving, so while a 3-week consolidation period may be short for gold and silver, for Bitcoin it's actually a decently long time frame. There's no telling exactly when it will break out, or which way price will go, but chances are some increased volatility will be seen soon.

The good news is that the $10K support level has been tested multiple times, and has continued to hold each time. This is a widely watched psychological barrier, and a break above or below

tends to set the short-term tone for the market. The fact that Bitcoin has held this level repeatedly is encouraging.

The “decentralized finance” trend that we touched on last month is still well underway, and surprisingly hasn’t resulted in that much price volatility recently. There is a lot of fraud in the space, though. A lot of worthless projects are being launched where a single bad actor is able to run away with all the money. This has happened many times already, and will likely continue to happen.

The space isn’t all bad, though; there are many projects coming out that cut banks entirely out of the equation. Users are able to put up their cryptocurrency as collateral, and borrow USD at quite reasonable rates. In addition, anyone who wants to hold a US dollar-backed stablecoin can easily earn 8% interest from a well-regulated US-based financial firm. Granted, there’s no FDIC insurance, but bank accounts backing coins like USDC are insured, and audited daily to ensure that the 1:1 backing never fluctuates. Compared to the fraction of a percent that’s available in a conventional bank, it’s no surprise this movement has taken off.

While the bulk of this action takes place on the Ethereum platform, Bitcoin is being “locked up” as a collateral asset by many participants. As a result, we’re seeing less Bitcoin supply in the general market, which should lead to steeper price increases as demand picks up.

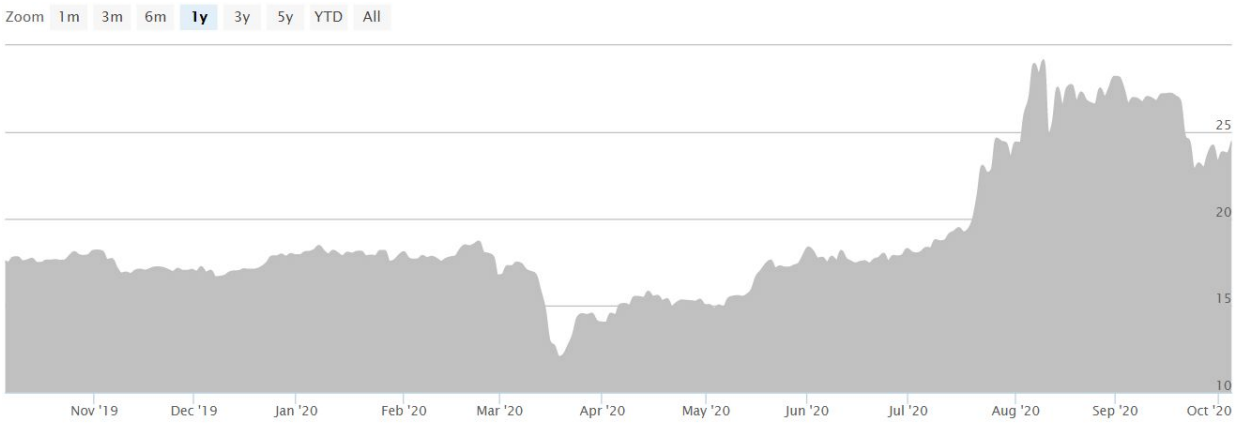
Long term it's still the same story here. We're still in the early innings of the crypto game, and mass user adoption is still well down the road. Once blockchain technology is mainstream, we'll see stocks around the world trading 24/7 on blockchains, real estate transactions taking place, voting, even your day-to-day purchases at the grocery store. As this space continues to grow and develop new efficiencies, Bitcoin is going to be the gateway that brings people in, and its finite supply is likely to lead to dramatic price increases in the future.

For anyone interested in earning 8.6% on a USD stablecoin, or 4% plus on Bitcoin, please visit this link and sign up.
https://countermarkets.com/crypto

As we mentioned above, this account is not FDIC Insured, so it's not a place to park your life savings, retirement, or anything like that. Despite that fact, BlockFi is still subject to a variety of regulations, meaning it's about as safe as it gets. BlockFi accounts use Gemini Trust Company, LLC, a New York trust company regulated by the New York State Department of Financial Services, as their primary custodian. Gemini is a fiduciary and subject to the capital reserve requirements, cybersecurity requirements, and banking compliance standards set forth by the New York State Department of Financial Services (NYSDFS) and the New York Banking Law. As a result, we feel pretty confident this is a safe location to earn a healthy interest rate on your USD Stablecoin or Bitcoin holdings.

For those of you who don't own any Bitcoin, we suggest using Coinbase to take your first position. Be careful with your position sizing; don't invest more than you're comfortable losing. Also expect major volatility, with possible price swings of 50% or more in a matter of days.

Silver Update



Silver prices pulled back some in September, which was expected as we mentioned in last month's issue. Given the 50% surge we saw in late July/August, there tends to be some profit taking among traders. Silver started off the month around $27, and held steady until mid-month. Prices then declined to about $23, then proceeded to bounce between $23 and $24, which is where we are today.

The 15% price drop in September would normally be a headline-grabbing story, but on the heels of that 50% jump we just saw, this price movement is just a normal pullback. Gold prices pulled back about 4% as well last month; silver just happens to be far more volatile, so when gold moves up or down 4%, it's common to see silver go 3-4x that amount.

The precious metals market as a whole is just consolidating and waiting for the next move after this recent run higher. Gold and silver both tend to be slow movers, and it will likely take another stimulus bill, or some quantitative easing, or some signs of an uptick in inflation to kickstart the next move higher. Gold is near a record high compared to every currency on earth, though, so to say it's being widely watched would be an understatement. Gold priced in euros, yen, pounds, yuan, etc. has been at a record high for months, and traders have been waiting to see if we'd see a record high in US Dollars as well. We have just seen that with the recent spike, and now prices are consolidating, seemingly setting up for another move higher.

While we can't be certain which way prices will go, the economic landscape hasn't looked this good for gold and silver in a long time. We have runaway money printing, comments from the Federal Reserve that there's little to no risk of overdoing it, we have interest rates near 0%, and we have an economy that needs to dig out of the coronavirus recession. As a result we're likely to see loose money policies for the foreseeable future, which should provide continued support for both gold and silver.

In the physical bullion market, premiums on silver coins are still about 25%, which is quite high by historical standards. At $24 per ounce, you're going to be paying just over $30 for a 1 ounce American Eagle. Typically, we see premiums of about $2 above spot, so this coin should run about $26. But if buyers are willing to pay these premiums above spot prices, you can't fault the retail vendors for taking the money. With premiums like these, it's

almost always better to be a seller than a buyer. If you are able to wait until premiums drop to the 7-15% range, we advise you to do so. For those of you that are unwilling to wait, and want to buy physical silver today, junk silver premiums are in the $3 per ounce range, about half the premium you'd pay on a 1-ounce coin.

Looking at the gold/silver ratio, last month it came in at 70, which wasn't that far off from the 20-year average. With the drop in silver prices we saw in September, that ratio has climbed back up to 80. It won't take much for us to get back to extreme levels here. When the ratio was at 85-90 we mentioned that we were at a historical extreme, meaning silver had rarely ever been that cheap relative to gold. The ratio briefly popped to above 100 before silver when on its 50% run. Sitting at 80, we're not quite at a historical extreme, but we're creeping back towards that area, meaning silver might be setting up for another explosive move.

If you don't have any physical bullion, but still want exposure to any price moves higher, look at PHYS or PSLV – both trade just as easily on any stock exchange.

Once silver premiums return to normal, we'd encourage you to shop from a trusted supplier at Money Metals Exchange.

SNEAK PEEK at next issue (November 2020)

TRENDS & FORECASTING

Retail Transformation Almost Complete as Contactless Store Redesign Begins

ENTREPRENEURSHIP

The Rise of The Armchair Agorist

WEALTH

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