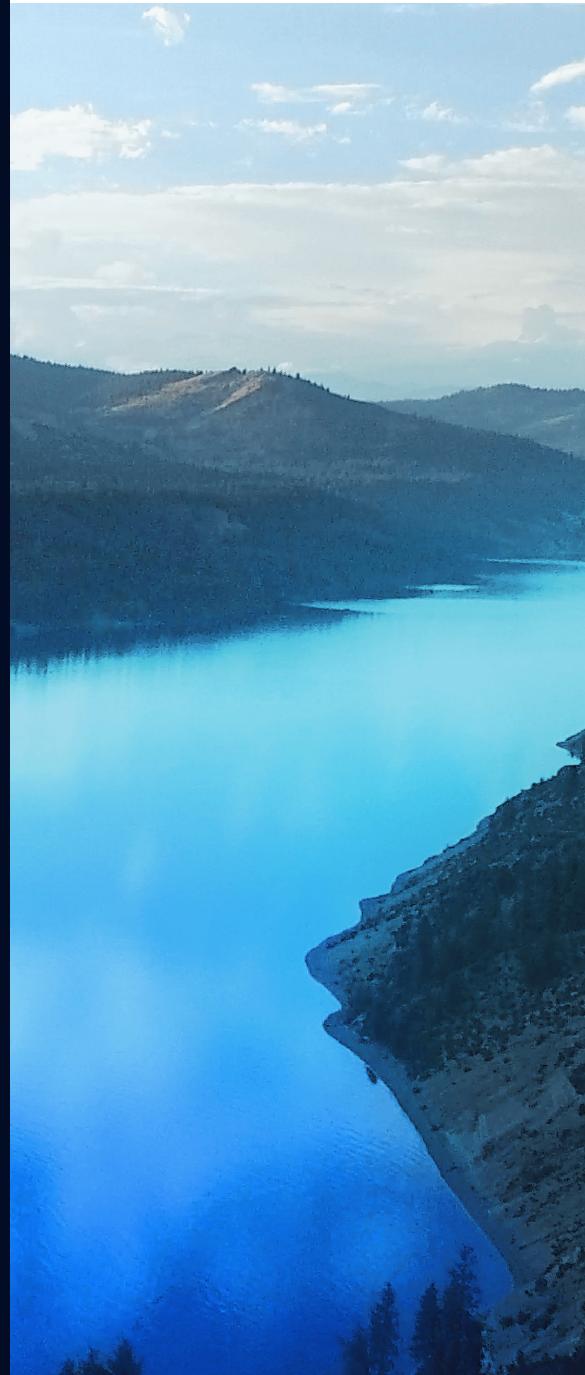


The Case for Quantum Change



SEPTEMBER 2021

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Change is the great constant in human existence. And yet, for reasons we will perhaps never fully understand, we seek its opposite - stability - a state that does not exist. In fact, stability is the one thing we cannot have no matter how hard we strive to secure it. All we can hope to attain is the illusion, so we conjure it, and shelter within. Even still, change finds us, we cannot escape. The passing of another day in a short human life. The gentle shift from summer's green leaves to September's hint of yellows, reds. Then one day we find ourselves suddenly old. Engulfed in autumn's peak.

Some change is undeniable, quantum, jarring. At least we perceive it so. An earthquake shocks, a raging forest fire too. While the forces that lead to such events are imperceptible, their outcome is inevitable, time uncertain. Silent subterranean pressures. Drying tinder. An invisible rise in atmospheric CO₂, a warming ocean, the ferocious hurricane. Persistent forces quietly at work, compounding. These dynamics are not limited to the natural world. The intentions of individuals and human culture unleash the same grinding force. It is as much a part of us as we are a part of nature, which is to say, inseparable. Perhaps someday we will break free from the pattern of our origin; so far, there is scant evidence to suggest it.

Each of us, at our core is a mystery; to those around us, to ourselves. Yet nearly all our behaviors are predictable, exploitable. The success of nearly every organization relies on harnessing the power of predicting behaviors. Governments, religions, militaries, corporations, central banks, universities, etc. These organizations maintain control by understanding how to manipulate us at scale. Having attained power, they are unwilling to relinquish it. Established organizations therefore actively oppose substantial change. It is their existential threat.

Those with the courage and conviction to execute on innovative ideas change the world. They are ridiculed at first, dismissed, sometimes persecuted. Socrates. Galileo. A few break barriers, and are afterwards celebrated, sometimes enriched. Einstein. Edison. Even though the rest of us operate at lower altitudes, we too are sublime enigmas, each in our own way. So, although our behaviors are nearly always predictable, they are not entirely. And that is why, when connecting millions or billions of such creatures, we can often model the near future with reasonable accuracy but must recognize that the more distant horizon is highly uncertain.

And this leads me to investing.

There are many investor types. At one end of the spectrum are those who identify tiny anomalies in the prices of various securities and bet they will revert to mean. Such investing requires relatively little imagination, and therefore, enormous leverage is required to generate meaningful returns. At the other extreme are early-stage venture investors who are skilled at recognizing a changing world. They themselves do not generally conceive of that different future; rather, they see it through the eyes of visionaries who do, and then provide modest sums of capital to build it. Their unlevered returns can be enormous. More artistically minded people are often drawn to this investing style.

Between those poles are countless others. Each bet on outcomes they see as probable relative to what is priced into markets. The biggest obstacle to an investor's success is in overcoming their own biases, weaknesses, shortcomings. That's no small task. The fact that most human behavior is predictable extends to our market interactions. The central tendency of most creatures is to follow - traveling in packs, herds, flocks, schools, tribes. This is why most successful investors tend to be deeply introspective. Their study of human nature helps them step outside of themselves. Iconoclast, they learn to lean against the crowd when risks rise wildly relative to rewards, or the inverse. They jump on macro mega-trends as the world begins to change while the herd resists.

But major transitions rarely happen. So, most investors bet heavily on tomorrow closely resembling today. Simple statistics point to this as the optimal path. It is especially true at the end of major cycles, when the rewards for predicting a continuation of the status quo have persisted for so long that they appear structural, perpetual. Returns for those bets compress through time, requiring investors to explicitly and implicitly leverage their portfolios to sustain performance. When the world changes, they are devastated. Great fortunes are made and lost in the transitions from one cycle to the next as a result. While we often view such episodes as isolated events, they are phases within a cycle, parts of a process, connecting what had come before to what inevitably follows.

And this takes us to the profound shifts now underway.

Investors tend to look at last year's market collapse as a Black Swan. But it should be viewed as the final phase in a process that started in the late 1980s. An epic earthquake, decades in making. By early 2020, it was evident that monetary easing combined with central bank bond buying was no longer sufficient to spur the real economy on its own. To be sure, rate cuts and quantitative easing could lift asset prices if applied aggressively, but this in turn amplified inequality which contributed to the underlying conditions that afflicted the real economy. The Fed itself was crying out for politicians to engage in aggressive fiscal expansion.

The central bank's well intended efforts to meet its dual mandate meant it did whatever was necessary to support stable prices and maximum sustainable employment. This had the unintended consequence of relieving politicians of making hard policy choices. The Fed stood ready to offset any and every economic interruption, leaving politicians under little pressure to act in the long-term best interest of the nation. With de minimis political costs of inaction, very little good happened. Special interests feasted. Leadership withered. The body politic followed, frayed.

The problem was not confined to the United States. It had become a global phenomenon. Decades of U.S. dollar dominance as the global reserve currency forced every developed nation to adopt the Fed's general approach to monetary policy. Failure to do so resulted in currency appreciation, which in turn hurt international trade. In a world fixated on ever-expanding globalization, such a consequence was universally viewed as unacceptable. So, over the decades, global monetary policy converged with Fed policy.

The world thereby entered 2020 with a level of global policy homogeneity unlike any previously experienced. That policy no longer worked. The pandemic provided the most potent catalyst imaginable to catapult developed economies into an entirely new policy paradigm. Had it not been COVID-19, it would surely have been something else. The pandemic allowed even the most dysfunctional global governments and warring political tribes to coalesce around a common economic policy at a scale that will change how the world operates for decades.

By requiring governments to borrow and spend previously unimaginable sums to offset the economic depressionary forces, the pandemic restored politicians to power. Central banks played their part, accommodating the unprecedented borrowing. But it is not central bankers who spend money. It is elected politicians. And after decades of increasing political dysfunction, a wide range of societal, infrastructure, environmental and geopolitical problems had grown to the point that nearly everyone recognized them as such, even as they may have disagreed about how to address them. The pandemic pushed our politicians back into action.

Unlike global bankers, who came to closely resemble one another as their policy frameworks coalesced around the Fed playbook, politicians are a varied species. How each approaches borrowing and spending can differ wildly even within a single country. The way they approach lists of long-neglected priorities naturally varies. What sectors will win and lose, what commodities will rise and fall, what taxes will come and go, regulations too, all such things are now in play. And nations differ. So, what had been a paradigm of unprecedented policy homogeneity, is in a year unrecognizable. Policy is now becoming increasingly heterogeneous.

Were this the only transition now underway in our always evolving world, it would mark the most important change that has occurred in half a century. It has already resulted in the world's largest economy borrowing roughly 15% of GDP for two years running, with the Fed buying nearly all that debt. The subterranean forces that produced such a shock are manifold and have only just begun to surface. Into this cauldron comes something earthshaking that was conceived as a response to these same forces. It manifested in 2009 and is so utterly revolutionary as to be initially incomprehensible to almost everyone.

BLOCKCHAIN TECHNOLOGY.

In twelve short years, the blockchain ecosystem has grown to include 6,000+ protocols with a market capitalization over \$2 trillion. Many are built to replace something incumbent institutions presently do; only faster, cheaper, and more securely. Some protocols are built to do things we previously considered impossible. Still others do things not previously imagined. Many pioneers have generated the kind of wealth only amassed in periods of great disruption, transition. They are not cashing out; they have only just started. They see a world very different from what has been. They have a revolutionary mindset, a broadening view of what is possible, and the wealth to bring their dreams to life. They are not afraid to fail. Many will of course. But not all. Their spirit is extraordinary, the ambition breathtaking.

The most revolutionary aspect of these technologies is that they allow for fully decentralized power. In their purest form, they are built to operate without central control. They allow the planet's 7.9 billion people, connected through the cloud, to interact, exchange value, information, property rights, encrypted data, and do things we have only started to imagine, securely, without a centralized authority. Such change presents an existential threat to every organization operating with a centralized control model, which is nearly every single institution.

Some incumbents will attempt to co-opt these systems, harnessing their efficiencies, while distorting the protocols to achieve centralized control. Such is the vast power of these technologies that this path holds the potential to lead the world toward a dystopian future. Beijing appears to be pursuing this path, reflected in the implementation of its central bank digital currency. Perhaps the West will take a different path, one that reflects its values and the source of its strength, providing the space for a Cambrian explosion of these new private technologies. Allowing them to flourish - all within a sensible regulatory framework - bringing with them innovations and efficiencies that we are only beginning to glimpse. Such a path holds the potential to produce another Renaissance. Where this all ultimately leads is impossible to say.

And this brings me to investment strategies for the decade ahead.

The most important thing to internalize when constructing portfolios for the coming years is that we have entered the most uncertain period of our lifetimes. It is even possible we are at the dawn of the period of greatest change for the past few centuries. This is almost inconceivable, considering the bruising pace of transformation we are living through now. Our natural inclination, our human bias, is to deny this possibility. But as investors, it is our job to step outside ourselves and survey the landscape objectively. A fair accounting of the range of potential outcomes when looking out over the coming decade or two spans from dystopia to Renaissance. It would be unsurprising, with so much uncertainty, for sentiment to swing from expectations for one such extreme toward the other, multiple times.

Prices move over the longer-term to reflect fundamentals. The big moves happen because the future is materially different from the present. When that gap is not properly recognized and therefore not priced into today's market, a large trend becomes inevitable. Of course, nothing is truly predetermined, and so sometimes price trends, once

underway, can themselves distort the future. Such dynamics can either temper trends or amplify them reflexively. The latter can extend to such wild extremes that prices then reverse with equal force and severity.

Given the change ahead, and the reluctance of people to accept it, let alone recognize it, one should expect large moves in prices. Trends. Such an environment will reward the artistically minded, the venture investors, and those prepared to break with what is now seen, after decades of growing policy homogeneity, as investing orthodoxy. It should come as no surprise that at the outset of such an environment, investors in digital assets and the companies that are focused on these new technologies have produced extraordinary returns. That trend has only just begun.

There will be enormous trends in other assets as well. Volatility markets will naturally present exceptional opportunities. Talented discretionary investors with unconstrained mandates, open minds and disciplined risk management should produce tremendous returns. An exceptional way to systematically capitalize on such an environment at scale is by deploying capital to trend-following strategies (CTAs). By removing the emotion and bias that handicap discretionary traders, and by spreading bets across many individual markets representing all the major asset classes, systematic trend-following strategies can profit in bull markets, bear markets. Renaissance. Dystopia. Extreme outcomes in either direction. The strategies are agnostic to the outcome, passionless, open minded, adaptable.

Systematic trend following has arguably just had its worst decade in the past century. The decade coincided with peak policy homogeneity, with central bankers expending extraordinary efforts to produce stability. Now trend strategies are generally shunned by investors, even as the world is transforming. Unsurprisingly, such strategies had their best decade of the last century in the tumultuous 1970s, producing tremendous returns in a period when inflation devastated most investment portfolios. After decades of low and stable prices, a return to a higher inflation regime appears not only likely, but it is a stated policy goal. None of this is to suggest we are headed for a repeat of the 1970s, or any other historical period for that matter. Systematic trend-following profits from great change, and it need not be a repeat of some previous regime.

We are at a truly unique moment in human history, headed as always, into the unknown but with an unusually wide range of possible outcomes. This is a time of existential risk for those unwilling to adapt, and a time of extraordinary opportunity for those of us prepared to embrace quantum change. In periods of such profound transition, it is the case that the investment strategies that profited most handsomely in the old regime, suffer in the new. And as with all natural phenomena, those that struggled, have their day in the sun.

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