MONTHLY MARKET INSIGHTS

December - 2021

ESTIMATED RETURNS:

Dealer Flow: +0.25%

Long Vol: +1.08%

Vol Neutral: +0.30%

INDEX MOVES:

	Open	High	Low	Close
S&P 500	4567.00	4808.93 (12/30)	4495.12 (12/3)	4766.18
NASDAQ	15537.70	15901.50 (12/28)	14860.00 (12/20)	15645.00
DOW	34484.18	36679.09 (12/30)	34014.41 (12/1)	36338.30
RUSSELL	2198.91	2276.75 (12/8)	2107.68 (12/20)	2245.31
VIX	27.19	35.32 (12/3)	16.62 (12/30)	17.2

PERFORMANCE: The volatility we saw in the final week of November spilled over into the first three trading days of December with down moves of 3.06%, 1.97%, and 2.45% respectively. Although the market bottomed on December 3rd, the waters would remain testy for the market as a whole in the following weeks. We had an eventual rebound to the November high in the lead-up to the hotly anticipated Federal Open Markets Committee meeting in mid-December. The Fed confirmed that their balance sheet expansion program would end in March and noted that multiple rate hikes were on the table for 2022. While the initial reaction was positive, seeing a 1.6% rally post-meeting, the S&P saw a 3.01% decline over the next 3 days taking us near the lows of the 3rd. However, Santa decided to come a little early this year: the well-documented "Santa Rally", which historically takes place the week between Christmas and New Years, occurred between 12/21 and 12/27, resulting in a 4.88% gain in just 4 trading days. Despite the dovish Fed statements and the rapid spread of the Omicron variant across the world, the market ended the month close to all-time highs.

While the markets in general closed out 2021 with another year of stellar returns (S&P +26.89%, Nasdaq +21.39%, Dow Jones +18.73%), several of the warnings signs we noted under the hood in prior months, such as poor breadth (as shown in the following plot) and slowing momentum (notably weaker in the Nasdaq and Russell relative to SPX), continue to signal potential turbulence ahead.

Continuing some of the themes we saw in November, many large-cap individual names saw uncharacteristically large drops, with Netflix and Tesla down 6.14% and 7.68% respectively in December. We also experienced significant rotation as investors moved out of 'expensive' tech names and into laggards, resulting in 5.37% gains for the Dow, while the Nasdaq returned just .69% for the month.

Dealer Flow: The strategy returned +.25% for the month of December. We are pleased we were able to avoid getting chopped up in a month where risk remained high, yet vol remained very well supplied. The Christmas Rally was front-ran and what we thought was coal in our stocking was actually candy as the rally commenced while we were still positioned relatively conservatively. All in all, we stayed positive for the month and uncorrelated to the market which is the overall goal of the strategy.

Vol Neutral: Our Vol Neutral strategy returned +.30% for the month. The choppiness of the market coupled with a steady supply of vol made it a challenging month for arbitrage. Again, several of our indicators were signaling caution and we consequently maintained a more defensive position. As with our other strategies, Vol Neutral remained uncorrelated to the market.

Long Vol: Our Long Vol fund was positioned well for the volatility we saw in December. Despite the VIX steadily declining from 27.19 on December 1st to 17.22 on December 31st, Long Vol was able to generate +1.08% in part to the overall turbulence of the

month and our ability to take advantage of the volatility that arose after the Fed meeting.

OUTLOOK: As is customary on the turn of the calendar, we at Kai Volatility are taking stock of where we have been and looking forward to where we are going. When we opened the funds last year, we set out on a project not only to derive returns *from* insight for our investors, but also to continually return *to* insight. We feel immense gratitude to have the partnership that we do with our investors. The warm reception of the newsletter has been humbling and we're thrilled to be able to roll out new ways to share content in the new year. We have been hard at work preparing the first ever Kai Volatility forecast for the new year. We are releasing December and January newsletters back to back as a two part "Predictions for the New Year". This newsletter will have predictions for the near term for financial markets with a look to the volatility space. In the January newsletter, which we will release in two weeks, we will continue with broader macro predictions and positioning for the coming times.

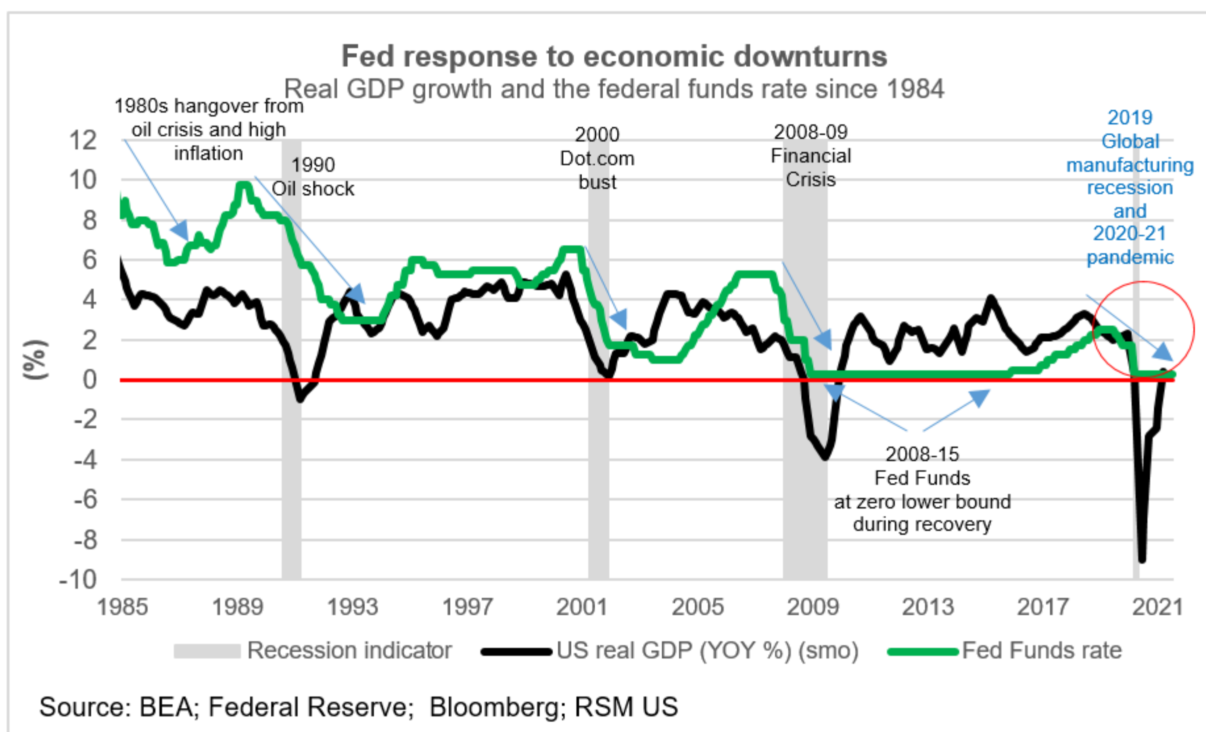
PREDICTIONS FOR THE NEW YEAR; PART 1: MARKETS

We are currently in a crucial window in which the shifting macroeconomic landscape will have profound implications for markets and volatility moving forward. An important policy shift is currently in play and understanding how this is affecting the supply of liquidity is crucial to comprehending the coming regime shift in market dynamics. We here at Kai are monitoring closely, understanding well that, like water for chocolate, the heat that moves the market is *liquidity* – in fact, the concept is so integral to what we do, the brand is on our door.

We have arrived at this juncture after a 40 year experiment in supply-side economics and monetary policy that has turned sour. It has been readily apparent for some time that market valuations are an aggregate of equity supply and demand. What continues to be misunderstood is that prices are in no way tied to the underlying economy and in fact, may be in direct competition for the funds that drive equity supply and demand. Monetary stimulus alone leads to asset inflation. Money flows to the holders of assets who are more likely to invest those dollars than spend them. Capital reinvestment has led to more efficient technologies and increased globalization which in turn has largely eliminated jobs, lowered wages, and decreased demand. A much lauded "trickle down

economics" has always been the boondoggle of supply-side policy. This is the age-old struggle between Capital and Labor; and Capital has been almost exclusively the recipient of all the stimulus of the last 40 years.

This is a tale as old as time. Historically, this socio-economic backdrop has tended to result in class grievances that precipitate a considerable amount of social unrest. However, throughout this period policy makers in the US have indemnified the masses with the promise of broad access to the financialized economy. Defined benefits plans, stock-options, and easily attainable credit towards the American Dream of owning a home have been the purported bootstraps of upward mobility. From this vantage, it seems only natural that we ended up with subprime mortgages, unprecedented household debt, gangrenous CDOs, and all the tinder for the Great Financial Crisis. In order to stave off a global financial meltdown, the Fed stepped in with lower rates and quantitative easing. Here we have our virtuous cycle of deflationary forces that has defined the regime of the last 4 decades. It has been an engine of substantial free-market economic growth, but not without its cost of debilitating inequality, the clarion call of our current moment.



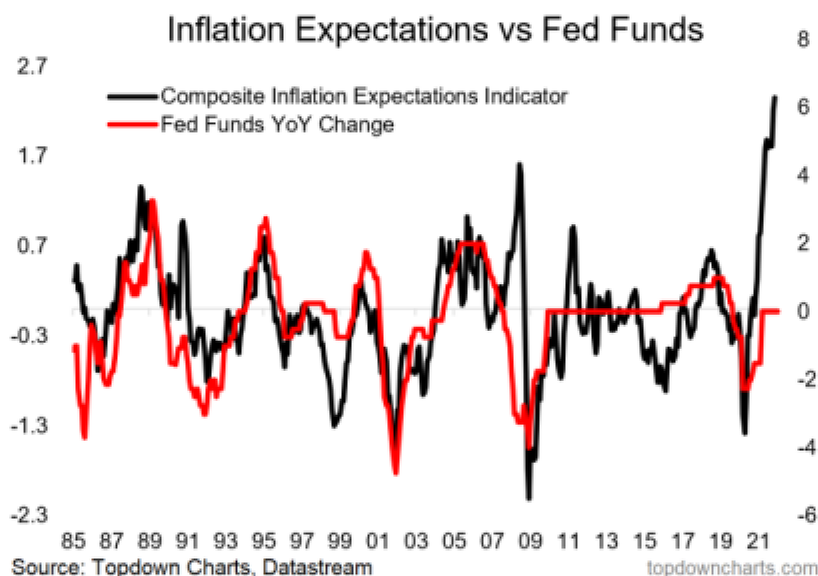
Source: BEA; Federal Reserve; Bloomberg; RSM US

The Covid pandemic has accelerated the effort to respond to growing inequality and policy makers have responded by enacting **unprecedented fiscal policy**. It is important to understand that this current policy not only dwarfs the Obama stimulus after the Great Financial Crisis by an order of magnitude, but also exceeds the size of the New Deal that filled a decade-sized hole in the economy: "The Great Depression". We have

already begun to witness the ramifications of this historic shift to fiscal and we foresee significant knock-on effects in the near term.

FISCAL POLICY WILL CONTINUE TO SECULARLY INCREASE INFLATIONARY PRESSURES

Over the course of the last year, wages for low income workers have climbed more than we have seen in the last decade – add labor shortages, lingering supply disruptions, and low inventories into the mix and, not surprisingly, we have an inflationary environment. It is also important to note that of the 10 to 12 trillion dollars in fiscal we have on the table, only a relatively small portion has been deployed. As more of this capital gets injected into the economy, as we anticipate in the spring, we will concurrently be led out of global shutdowns omicron variant- driven, herd-immunity, which will unleash a deluge of pent up demand. The Fed will be forced to continue to confront inflation, which has already become politically unpalatable and promises to be the predominating theme in the next year.



The CIE indicator shows that the concern over inflation today is higher than it has been in the past 40 years and the Fed is behind the curve. It is important to note, and somewhat telling, that the Fed falls behind *willingly*. Central bankers likely understand that we are at an unique juncture – the waters are murky and they run the risk of stepping into a liquidity trap of their own making.

MONETARY POLICY WILL CURB INFLATION ONLY BY MEANS OF A RECESSION

The Fed's mandate of price stability was engineered by congress in the context of an economy that was still constrained by domestic labor. This mandate is an artifact of a bygone era. It is time to wake up to the fact that the Fed has little to no power to control price inflation in today's economy, the fact that they are charged with price stability in the current economic climate is a political charade. For 40 years the Fed has lowered

rates and the result of this policy has been secular price deflation and asset inflation. Why do we now believe that reversing monetary policy, by now raising rates, the Fed will somehow have the same effect on prices? Yes, a policy error is in the works but the Fed has no political choice but to make it. It's counterintuitive, but sending money to "Planet Palo Alto" increases the supply of cheap goods. In other words, there is zero velocity to Fed dollars. With the move to fiscal policy, or 'helicopter money' in Bernanke terms, we are seeing increased direct demand and an overall supply side contraction. This will ultimately prove to be *stagflationary*. The answer to greater demand is greater supply — and, ironically, tightening liquidity conditions to large corporations will reduce the supply of goods at precisely the wrong time. The Fed policy of an accelerated taper is Kabuki theater: It's politically expedient, as inflation has become the new zeitgeist, but the Fed can only ultimately achieve its goal of price stability by slowing the economy into recession. And even then there's no guarantee of lower prices as it wields the wrong tools for the task at hand.

Fed Mandate Scorecard	Current	2015-2019 Average	2000-2019 Average
Maximum Employment			
Unemployment less Job Openings	-1.40%	0.26%	2.84%
Unemployed less Quits	2.30%	2.26%	4.07%
Unemployment Rate	4.80%	4.42%	5.88%
Stable Prices			
CPI	5.40%	1.55%	2.17%
PCE	4.30%	1.33%	1.86%
Moderate Long Term Interest Rates			
10yr UST Yield	1.37%	2.27%	3.43%
BBB Corp Yield	2.25%	3.84%	5.24%
B Corp Yield	4.49%	6.63%	8.58%
Fed Funds	0.08%	1.10%	1.78%

Real Investment Advice

The average measures of inflation over the period of 2015-2019 are lower than the averages of the 20 years period 2000 - 2019. Yet, interest rates were also meaningfully lower during 2015 - 2019 ("Current" in the chart are numbers taken in Q4 of 2021. 10yr UST Yield is 40 bps higher and the Fed Funds rate is still on the floor at 8 bps at the time of writing). We have had a very active Fed over the last 20 years and it has been unable to keep its price mandate.

QUANTITATIVE TIGHTENING WILL HAVE FOUR EFFECTS ON MARKETS & LEGACY INVESTMENT STRATEGIES WILL BE UNPREPARED

Unlike in 2018 when the Fed did an about-face, the central bank will be unable to walk back raising the federal funds rate in light of the current zeitgeist. For the first time in 40 years the Fed is in a box, stuck between a rock and a hard place. Inevitably, this will have a more direct effect on liquidity conditions than on inflation. As we have seen during past periods of tightening, the velocity of liquidity retraction is contingent on the reaction of capital markets rather than mere outcome of the Fed's directive. Reduced liquidity has four deleterious consequences for markets: (1) less demand for risk assets, (2) an unwinding of the TINA effect (TIA affectionately), (3) an unfavorable investment discount rate, and (4) most pertinent to what we do here at Kai, an increase of **volatility and risk premia**. All of these effects will reduce stability and demand for equities at the same time. What's more, as we discussed at length in the October newsletter, we are now in a burgeoning ***sumomarket***. Paired with these four destabilizing market effects, the amount of leverage embedded in today's market will increasingly magnify moves upon the reduction of liquidity. As we have belabored here and elsewhere, these mechanics will continue to yield a fat-tailed leptokurtic distribution of outcomes.

The entire investment landscape since 1979 has been awash in liquidity on account of an accommodative central bank. The firms that have succeeded through this period have done so on the back of "buy and hold", passive investments, and risk parity – strategies that will begin to show their obsolescence moving forward.

THE COMING LEPTOKURTIC DISTRIBUTION WILL LIKELY BE TWO-SIDED: MARKETS WILL LIKELY EXPERIENCE A BLOW-OFF TOP BEFORE A SECULAR DECLINE

Manifestly, we are in an important window of time for the market. Yet, even with considerable macro headwinds and valuations at historic highs, it takes time for liquidity to come out of the market. In the interim we forecast that there will be a blow-off top with several knock-on effects that will lead to an *eventual* secular decline. At the moment we still have record demand for stock buy-backs, generally positive flows dampening the selling, and a Fed that is *still* accommodative by historic standards. As the economy opens back up, consumer spending will be robust and earnings will be strong across the board. As we have seen in recent months, participants have been removing their positive bets in the market and rightfully so, given the coming headwinds. However, *reflexively* this creates the market conditions where we are *more likely to get a right tailed leptokurtic move in the short term* - our "blow-off top".

Given the conditions that volatility is oversupplied in a largely hedged derivatives market and participants are now *underinvested*, we can say with confidence calls to the upside are *undervalued* given how steep skew is to the downside. The decline has been "anticipated" and reflexively buttressed at the index-level in the near term. Let's be clear, there is an eventual terminus to this bull market, but the bubble could get considerably

worse in the coming months making way for a secular decline after a significant upside squeeze.

The market adage "blow-off top" accompanies market moves that are characterized by an even more violent move to the downside. The market mechanics that circumscribe this right tail, also explain how the eventual left tail manifests. As the top "blows off", participants will generally be squeezed out of their hedges and forced to buy. In addition, there is a "call squeeze" effect, as dealers will often be forced to sell downside convexity to cover the cost of the upside convexity and ultimately, considerable downside risk is created across the board. Thus, the conditions are laid for the bottom to finally fall out of the market. The fragility that was "anticipated" materializes precisely at the moment when participants are forced to abandon those very expectations.

HEDGES WILL UNDERPERFORM INTO THE EVENTUAL SECULAR DECLINE

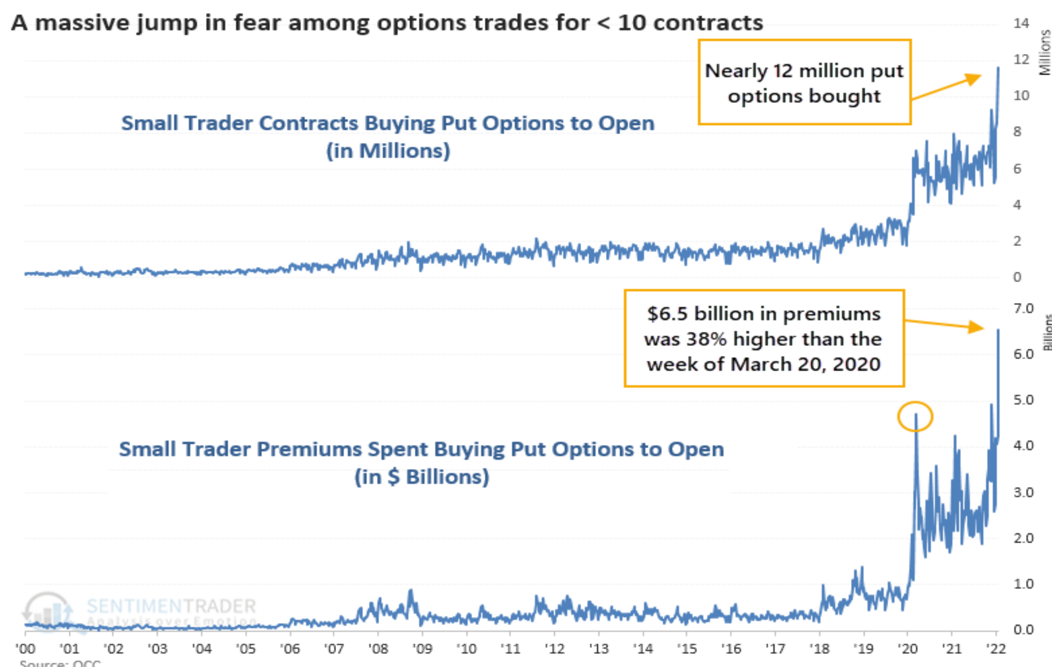
Given the headwinds in play, we believe this 2000 style reversal will be of secular importance. Once this decline is under way, we predict that another peculiarity will also rear its head: market memory. We here at Kai Volatility refer to this as the "Second Move Phenomenon". If a meaningful volatility event has recently transpired, skew and implied volatility demand tend to be high. Implied volatility sellers have been liquidated in the previous decline and buyers have been rewarded with profits and demand for their services. Market participants are thus overly hedged going into the second move, resulting in a suppression of implied volatility and skew along with a dampening of realized volatility. The market will eventually exhaust this "anticipation" as this second move takes place without meaningful implied or realized volatility. Participants will jettison fizzling hedges off their books, laying groundwork for the next volatility event – the market rhymes and cycles repeat.

There is an argument to be made that when hedges don't perform, equity liquidation can sometimes be exacerbated and the downtrend that takes hold can be even harder to reverse. This is due to a lack of downside "catharsis" and a dearth of supportive, concentrated Vanna/Charm flows that are helpful in achieving the necessary support for an impending rally.

RETAIL TRADERS' APPETITE FOR CONVEX BETS WILL REMAIN A NOTABLE FEATURE OF THE MARKET MOVING FORWARD

We anticipate that retail's desire for putting on convex bets will not wane over the coming year — and this does not necessarily just mean upside call buying. There is considerable disillusionment and cynicism amongst this lot, many of whom view the dim prospects that have marked their generation to be a direct result of former Wall Street sins. Gamma works both ways. If the likes of r/wallstreetbets were to close ranks and buy short dated OTM puts into a decline in the same direction as institutional flow,

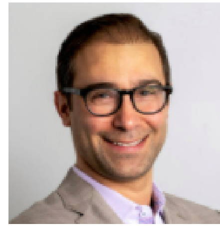
as opposed to against it, the additional foot-pounds of pressure on the market could be substantial. We have called for this now for several quarters and have already begun to see a sizable uptick in small lot (often interpreted as retail) put buying in recent months.



Irrespective of the actual underlying "causes" for what will certainly be a turbulent period for the market going forward, there will be yet another morality tale to weave out of yet another crisis born of Wall Street. Those who have been students of market mechanics for some time know well that the story is never that simple, but someone always has to pay the piper. For obvious reasons, it wasn't politically popular to punish retail traders when they were "short squeezing hedge funds" earlier in 2021. The backlash will likely be significantly more severe for retail when there is a sizable market contraction to account for. When congress and the media are looking to dole out demerits and point fingers, the blame often falls where it is most easily placed: on the "misguided" public. As a consequence, expect congressional action and further regulatory oversight of retail trading in derivative markets following the coming market decline.

February 1st represents the beginning of the Lunar New Year. It typically begins with the first new moon and spans the next 15 days—until the first full moon arrives. The year 2022 is the year of the Water Tiger, which is associated with initiative and action oriented traits. As we collectively come out of a difficult period marked by a global pandemic to meet the new challenges that lie ahead this year, we will need every ounce of bravery and strength that the Water Tiger represents. As the first full moon rises we look forward to bringing you Part 2 of Kai Volatility's "Predictions for the New Year,"

where we will cover our thoughts on what lies ahead for the broader macro-economic, political, and geopolitical landscape. Until then, Here's to action… Be water!



Cem Karsan
Managing Partner / CIO
Kai Volatility Advisors

As always, these longer-term macro views only represent a small portion of the factor inputs used in our models for predictive distributions for underlying market moves and implied volatility. Our models are focused on capturing daily moves and in the immortal words of Bruce Lee are always focused on not being dogmatic, instead being flexible,

"...formless, shapeless, like water."

CONTACT US: If you have any questions, concerns, or need any information please feel free to reach out to us at any time by contacting ir@KAIvolatility.com

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