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January 2020

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Current Macro Forecast

This month we raised the probability of the High Uncertainty regime over the next 12 months, and reduced the probability of the Persistent Deflation regime. There was no change to our 36-month forecast probabilities.

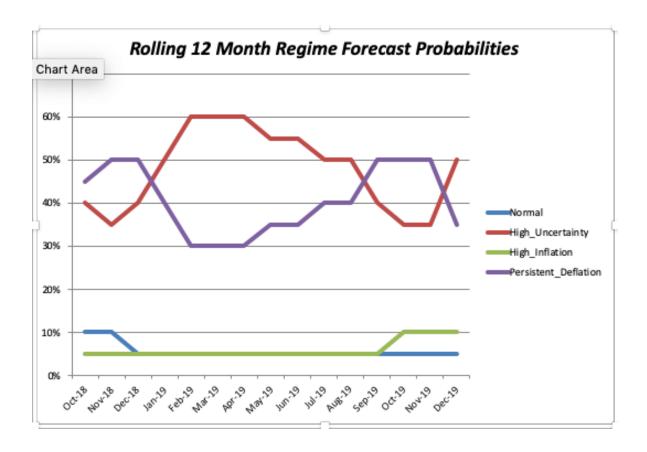
We conclude that 36 months from now we are most likely to be in the Persistent Deflation regime because of multiple factors weighing on aggregate demand, including population aging, weak productivity growth, high levels of both inequality and debt, and the threat of job displacement as increasingly capable automation and artificial intelligence technologies are deployed. At the same time, supply capacity in many sectors has increased (e.g., because of automation). In the United States, increases in the Consumer Price Index have been driven by rising prices for healthcare, education, and housing – not goods and other services. However, the drivers of price increases in all three of these sectors are weakening.

At this time, we view the High Inflation scenario as less likely than Persistent Deflation. An increase in US inflation caused by investor abandonment of US assets presupposes that other markets are deep and liquid enough to absorb large inflows, and are perceived as less risky than the United States. Both of these are very unlikely at this time. That said, a collapse in investor confidence in all fiat currencies (perhaps as a result of substantial and prolonged central bank money creation to finance increasing government fiscal deficits) would certainly lead to an increase in the price of gold and other hard assets (e.g., property and timber). However, absent a major change in relative exchange rates, it would not automatically drive up inflation. What could do this would be a sharp reduction in the supply of goods and services, either because of an external shock (e.g., as happened in the case of the 1973 oil price shock) or an internal shock (e.g., as we have seen in developing countries that mandated increased worker wages while raising taxes on companies to the point they were forced to close down).

Over the next 12 months, we conclude that the High Uncertainty Regime is likely to prevail, with central banks increasing money supply in an effort to avoid a fall into prolonged Japan-style deflation (and in the US, to avoid charges that the Federal Reserve was trying to influence the outcome of the November election by raising interest rates and triggering an economic downturn).

Finally, with equity valuation metrics at or near record highs, while spreads on low quality credits are at or near record lows (especially after a ten year expansion) we believe the least likely outcome is a return to the Normal Regime, over either the next 12 or 36 months.

Regime Probability Forecast	12 Months From Now	36 Months From Now
High Uncertainty Regime	50%	10%
Normal Regime	5%	5%
High Inflation Regime	10%	25%
Persistent Deflation Regime	35%	60%



Portfolio Allocation Implications of Our Forecasts

We take two approaches to deriving the tactical asset allocation implications from our analyses. The first takes a systematic approach, and is based on relative asset class valuations. Our starting point is our "neutral" model portfolio, which is equally weighted across nine broad asset classes, and also includes a 10% allocation to alpha strategies (equity market neutral and global macro) that are designed to have a low correlation to returns on broad asset classes. Based on asset class valuations, we systematically vary the asset class weights (but not the active strategy weight), increasing from 10% to 15% when an asset class is likely undervalued, and 15% when it is very likely undervalued. In the case of overvaluations, we go to 5% and then into cash, if there are no undervalued asset classes with room for an increase. In effect, this replicates the systematic rebalancing strategy we used for 15 years in our previous model portfolios.

The second tactical approach is based on our subjective view not only of current asset class valuations, but also of the implications of the broader macro trends and uncertainties that we analyze each month. Importantly, this subjective view reflects our primary goal of avoiding large downside losses, rather than seeking large upside gains.

Two final notes: First, with respect to US fixed income, we include credit products (investment grade and high yield) in the same asset class as government debt, and will shift into the former when their valuations become attractive. Second, we regard gold not as a separate asset class to be held long-term, but rather as a complement to cash, into which we shift in periods of substantial overvaluation across multiple asset classes.

Here are our tactical asset allocation views for January:

Asset Class	ETF	Neutral Weight	Sysematic Weight	Subjective Weight
Real Return Bonds	TIP	10%	5%	5%
Government Bonds	GOVT	10%	5%	10%
IG Credit Spread	LQD	0%	0%	0%
HY Credit Spread	HYG	0%	0%	0%
Foreign Govt Bonds	BWX	10%	0%	0%
Domestic Property	VNQ	10%	15%	10%
Foreign Property	VNQI	10%	15%	15%
US Equity	VTI	10%	5%	0%
For Dev Mkt Equity	VEA	10%	20%	5%
Emg Mkt Equity	VWO	10%	0%	0%
Timber	WY	10%	20%	15%
Uncorrel Alpha Strategies*		10%	10%	10%
* Equity Mkt Neutral and				
Global Macro				
Cash		0%	5%	20%
Gold		0%	0%	10%
		100%	100%	100%

Forecast Logic

Recent Quantitative Indicators

Implications of the Most Recent Three Month Asset Class Returns

Our quantitative forecast methodology focuses on the level and change in three-month returns, over the most recent and previous three-month periods, for those asset classes, which should perform best under different regimes (in this sense, our regimes can be regarded as macro factors). We assume that relatively higher returns are associated with more widely held investor beliefs in the probability that a given macro regimes will develop in the future.

Regime Indicators 31Dec19	3 Mos to Dec19	3Mos to Sep19
Normal		
* High Yld Bonds (HYG)	2.45%	1.28%
* US Equity (VTI)	8.94%	1.07%
* For Dev MKT Equity (VEA)	8.33%	-0.85%
* Emg Mkt Equity (VWO)	11.85%	-4.12%
Average	7.89%	-0.65%
High Uncertainty		
* Short Term Gvt Bond (SHY)	0.42%	0.58%
* For Govt Bond (BWX)	0.76%	-0.48%
* Gold (GLD)	2.90%	4.26%
* Swiss Franc (FXF)	2.76%	-2.41%
Average	1.71%	0.49%
High Inflation		
* Real Return Bonds (TIP)	0.61%	1.51%
* Dom Comm Prop (VNQ)	0.54%	7.53%
* Gold (GLD)	2.90%	4.26%
* Timber (WY)	10.25%	6.45%
Average	3.58%	4.94%
Persistent Deflation		
* Long Term Govt Bonds (TLT)	-4.64%	8.32%
* Invest Grade Credit (LQD)	1.45%	3.35%
* Foreign Govt Bonds (BWX)	0.76%	-0.48%
* Consumer Staples (VDC)	3.64%	5.98%
Average	0.30%	4.29%

Over the last three months, there has been a relative strengthening of investors' belief that the normal times regime lies ahead.

Asset Class Valuation and Momentum Indicators (@31Dec19)

Note: The language we use to describe our estimated likelihood of asset class over or undervaluation is based on <u>US Intelligence Community</u> <u>Directive 203 on Analytic Standards</u>, which includes the following table:

almost no chance	very unlikely	unlikely	roughly even chance	likely	very likely	almost certain(ly)
remote	highly improbable	improbable (improbably)	roughly even odds	probable (probably)	highly probable	nearly certain
01-05%	05-20%	20-45%	45-55%	55-80%	80-95%	95-99%

Asset Class	Valuation	1 Month Return (ETF)	Conclusion
US Real Return	Likely	0.35% TIP	Increasing
Govt Bond	Overvalued*		Overvaluation
US Nominal Return Govt Bond	Likely Overvalued*	(0.57)% GOVT	Decreasing Overvaluation
US Investment	Likely	0.47% LQD	Increasing
Grade Credit	Overvalued*		Overvaluation
US High Yield	Almost Certainly	0.53% HYG	Increasing
Credit	Overvalued*		Overvaluation
US Commercial	Likely	0.73% VNQ	Decreasing
Property	Undervalued*		Undervaluation
US Equity	Likely Overvalued*	2.80% VTI	Increasing Overvaluation

Asset Class	Valuation	1 Month Return (ETF)	Conclusion
Foreign Developed Equity	Very Likely Undervalued*	3.56% VEA	Decreasing Undervaluation
Emerging Markets Equity	Very Likely Overvalued*	7.06% VWO	Increasing Overvaluation
Timber	Almost Certainly Undervalued*	3.49% WY	Decreasing Undervaluation

^{*} See detailed current valuation analysis online for our methodologies

Market Stress Indicators (@31Dec19)

Market Stress Indicator	This Month (Last Month)
Asset Class Returns Autocorrelation (this month versus last month). Higher autocorrelation is an indicator of higher market stress.	.12 vs .12 last month. This indicates a low level of market stress.
Economic Policy Uncertainty Index (how many days over the last 30 was index in top quartile of values since 1985?)	On 12 days last month the index was in the top quartile of daily values since 1985 (the 76th percentile of all rolling 30-day periods). This is a substantial increase from 2 last month.
AAA-10 Year Treasury Spread (month end). High/rising spread indicates concern over market liquidity.	1.12% (43rd percentile since 1983), vs 1.30% at the end of Dec18.
BB Spread over 10 Yr Treasury (month end). High/rising spread indicate increasing credit risk.	2.02%, (11th percentile) down from 2.38% last month and 3.60% at the end of Dec18. Extremely low after ten years without a recession.

Market Stress Indicator

This Month (Last Month)

USD Gold Price/oz (month end). Rising gold prices = more stress. \$1,523 vs \$1,456, up 4.6% from last month. At the end of 2017, we estimated the "disaster premium" in the gold price was 47% (see our methodology in the Appendix). At the end of last month it was 65%.

New Qualitative Evidence

Based on our qualitative analysis of accumulated and new evidence, we are considerably more pessimistic about the future than those investors whose trades have driven the returns on different asset classes. We continue to believe that three years from now the most likely outcome is that the global macro system will be in the persistent deflation regime.

In our forecasting approach, technology and environmental developments tend to precede economic and national security changes, which in turn precede social and political trends and events, whose effects then become visible in financial markets. As covered in more detail in this month's Evidence File (see below), here are the most important new indicators and surprises that influenced this month's changes to our regime probability forecasts:

Technology:

- The latest release of the Artificial Intelligence Index shows that, based on multiple metrics, the rate at which AI is developing continues to accelerate.
- There were also two very interesting new papers describing how agent-based modeling had been combined with deep learning methods to produce quite stunning new insights about the behavior of complex adaptive systems, including financial markets. This suggests that more knowledge workers than

previously thought could be exposed to "technology substitution" risk sooner than expected.

Environment:

- New research highlighted the grid control and storage challenges involved in a fast transition to solar power generation. Another paper made it clear that widespread deployment of cost-effective decarbonization technologies seems far off.
- These are some of the reasons why another paper concluded that "the world is on a path to warm to around 3 degrees Celsius above pre-industrial levels by 2100.

Economy:

- France saw a worsening of strikes over President Macron's proposed changes to public sector pensions that would reduce their underfunding. This could well be a preview of what will happen in other countries when they try to address the same problem.
- An article in the Financial Times noted that in Germany, business leaders and politicians are warning that "the pervasive lack of skilled labor poses a mounting risk to the country's economy." Improved education and training are clearly critical to meeting the equally critical challenge of increasing productivity growth when demographic changes are causing the size of the labor force to shrink in many countries. Yet in most nations, the education sector continues to resist needed reforms, which does not bode well for future economic growth.
- Central banks have been applying more monetary stimulus to the economy. In the US, president Trump will likely keep pressure on the Fed to continue this stimulus through the November election.

National Security:

• Along with a further tightening of economic sanctions, the United States' assassination of Quasem Soleimani, a senior officer in the

Iranian Revolutionary Guards Corps and architect of its use of proxy forces throughout the Middle East sharply increased uncertainty about how Iran will respond. At the same time, the Iranian regime's attempted coverup of its downing of a Ukranian airliner further inflamed domestic opposition to its 40 year long rule

 There were more articles and papers describing rising problems in China, which increases uncertainty about the durability of Xi Jinping's hold on power and what could happen if he feels in imminent danger of losing it (e.g., more aggressive external action).

Society:

- There was more evidence about the United States' increasing regional inequalities, and the rising frustration among many voters with the state of the economy, despite the apparently low unemployment rate (while the reported U3 measure of unemployment was at 3.5% in December, the broader and much less reported U6 measure was at 6.7%).
- In his article "The Real Class War", American Affairs founder Julius Krein convincingly argued that status conflicts and resentment within the top 10% of US incomes (particularly between those dependent on labor income versus those whose income is based on capital returns) are having a much larger impact on US society and politics than most people realize, including providing the impetus for the "woke progressive" movement among affluent whites.

Politics:

 A number of new articles have argued that even if economic inequality is better addressed, cultural gaps between elites and the masses (like woke progressives' focus on identity politics and restricting speech not deemed politically correct) will prove more durable and continue to sustain high levels of political polarization (and populism) in the years ahead.

The New America foundation published a report on "Building U.S. Resilience to Political Violence." The very fact that a respected think tank felt the need to do this is an important indicator of the state of political tensions in the US even before president Trump's impeachment trial and the first primaries of the 2020 election begin.

Financial Markets:

- Multiple articles predict a decade of low returns in the 2020s, and question how long the high valuations in many asset classes can last.
- As levels of uncertainty rise and are expected to remain elevated for a significant period of time, fund flows into global macro strategies are increasing.

Combining this Forecast with Others and Extremizing the Result Should Increase Your Predictive Accuracy

Research has found that three steps can improve forecast accuracy. The first is seeking forecasts based on different forecasting methodologies, or prepared by forecasters with significantly different backgrounds (as a proxy for different mental models and information). The second is combining those forecasts (using a simple average if few are included, or the median if many are). The final step, which significantly improved the performance of the Good Judgment Project team in the IARPA forecasting tournament, is to "extremize" the average (mean) or forecast median by moving it closer to 0% or 100%.

Forecasts for binary events (e.g., the probability an event will or will not happen within a given time frame) are most useful to decision makers when they are closer to 0% or 100% than the uninformative "coin toss" 50%. As described by Baron et al in "Two Reasons to Make Aggregated Probability Forecasts More Extreme", forecasters will often shrink their

probability estimates towards 50% to take into account their subjective belief about the extent of potentially useful information that they are missing.

When you average multiple forecasters' estimates, you are including more information, which should increase forecast confidence and push the mean estimate closer to 0% or 100%. However, this doesn't happen when you use simple averaging. For this reason, forecast accuracy is increased when you employ a structured "extremizing" technique to move the mean estimate closer to 0% or 100%.

You can download an extremizing model from our website to use when combining the forecasts you use in your decision process.

The extremizing factors in our model are those that the Good Judgment Project found maximized the accuracy of combined forecasts. Note that the extremizing factor is lower when average forecaster expertise is higher. This is based on the assumption that a group of expert forecasters will incorporate more of the full amount of potentially useful information than will novice forecasters.

Forecast Pre-Mortem Analysis

One of the most important forecasting disciplines is to ask yourself why your forecast could be wrong. Dr. Gary Klein's research has shown that a very powerful and insightful way to do this is via a "pre-mortem analysis." This method asks you to assume that it is a point in the future, and your forecast has been proven wrong (or your strategy or company has failed). You are then asked to look backward from this imagined point in the future, to explain why you failed, what you missed, and what you could have done differently to avoid your fate.

The pre-mortem method takes advantage of the fact that humans reason much more concretely and in more detail when explaining the past than they do when trying to forecast the future.

So let us assume that it is one year from now, and our current forecast has turned out to be wrong.

How did this happen? What developments did we fail to anticipate?

- The leaders of the world's three major powers Xi Jinping, Donald Trump, and Vladimir Putin are all facing weakening economies and declining political popularity. History teaches us that this can lead to increased "foreign adventurism" to distract the public from worsening domestic conditions, as a nation rallies around its leader in a period of heightened external conflict. Should a "kinetic" conflict develop between China and the United States, or between Russia and one or more European countries (e.g., due to a Russian incursion into the Baltics), it would generate a very sharp increase in uncertainty that would likely cause an equally sharp economic slowdown which, given high debt levels, would speed the arrival of the Persistent Deflation Regime.
- A supply side shock of some type could produce a sudden increase in inflation – the most likely scenario being a reduction in oil supplies due to a prolonged kinetic conflict between Iran and the US that produced an extended disruption in global oil supplies. A less likely cause could be major crop failures (e.g., due to a surprising acceleration in global temperature changes).
- Another route to the high inflation regime (repeatedly noted by Bridgewater's Ray Dalio) would be a sudden loss of confidence in the US dollar relative to other currencies (driving up import prices), perhaps because of deficit monetization and policy paralysis as a severe downturn continues. However, this would also require that there was relatively more confidence in another currency, with the Euro being the most likely candidate. This currently seems unlikely, given both the Eurozone's economic and political situation, and the prospect of an intensifying conflict between the West and China. However, if confidence collapsed in

all major currencies, a sharp increase in inflation would lead to a dramatic rise in the price of gold.

 While we believe it is still unlikely, it is becoming easier envision a scenario in which both Xi Jinping and Donald Trump leave their current roles, and are replaced by leaders who are more committed to lessening the intensifying conflict between China and other nations. This would likely provide a strong boost to confidence (and thus lead to an equally strong reduction in uncertainty). However, a reduction in perceived external threats might also intensify already substantial internal divisions and conflicts in China and the United States, which could, ironically, also lead to increased policy paralysis and thus to the deflation regime.

If you have any questions about anything we have written in this issue, please don't hesitate to get in touch, at contact@indexinvestor.com.

Feature Article: Global Macro Risk Dynamics in the 2020s and Beyond

As I learned during the four years I spent as part of the <u>Good Judgment Project</u>, forecasting the behavior of complex adaptive systems like the global political economy and financial markets is actually not, as it often seems, an exercise in futility.

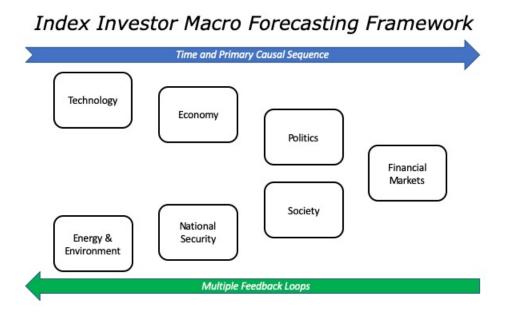
To be sure, it is extremely challenging, with the accuracy of even the best performers not much better than chance, particularly as the breadth of forecasting questions widens and the time horizon lengthens. Yet even a slight advantage in forecast accuracy can produce substantial benefits (e.g., see, "How Much Can Firms Know?" By Ormerod and Roswell, or "The Fundamental Law of Active Management", by Grinold and Kahn).

It is with these lessons in mind that <u>The Index Investor</u> has prepared this forecast of critical global macro risk dynamics in the decade that lies ahead. Our goal is not to give readers yet another point forecast for one or more outcomes in either 2020 or later in the decade. There are plenty of those already.

Rather, our goal is to describe a methodology for thinking about the critical drivers and dynamics that will produce those outcomes, and thus a means for gaining a forecasting edge by being better able to identify and apply the high value information signals that are too often missed in the noise of the daily data overload we all confront.

Specifically, as we have often described in <u>The Index Investor</u>, our approach to global macro forecasting assumes that the changes we eventually observe in asset class valuations and returns are the end result of a roughly chronological process. At the earliest stage there are changes in technology and in the area of energy and the environment. These have a significant impact on changes in the economy and national security, which in turn affect change in the social and political spheres. In taking this approach, our goal is to better capture the roles

of time and speed, and to make second and third order consequences more visible.



This chronological approach also contains multiple feedback loops, which drive the emergence of non-linearities and discontinuities that are usually hard to predict. However, by making explicit both causal drivers and time, it becomes easier to understand some, if certainly not all of the ways they could occur.

Before looking forward to the 2020s, let's begin our forecasting exercise by looking back at the 2010s, specifically at key trends in each issue area that are almost certain to in some way affect outcomes in the decade ahead. As such exercises can easily generate long lists that become cognitively overwhelming, I'll limit myself to just one driving trend in each area that I consider to have been the most important:

 Technology: In the 2010s, we became a hyperconnected society, due to the rise of mobile, cloud, and social media technologies. Among many other effects, this made social learning and social copying much easier, which in turn made the population of public and investor opinions both much less diverse (particularly when

uncertainty is high) and subject to much faster change than in the past.

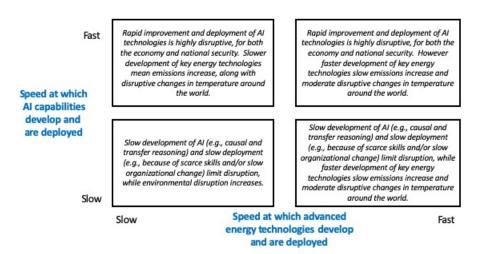
- **Environment**: While people may argue about the underlying causes, the data show the global ecosystem was becoming warmer, at an accelerating rate.
- **Economy**: As evidenced by falling risk-free interest rates, aggregate demand remained weak in the aftermath of 2008's global financial crisis, and continued to substantially depend on strong monetary policy stimulus and rising levels of debt.
- **National Security**: Cyber (and its disruptive progeny, speed and autonomy) emerged as a critical domain for strategy, as well as offensive and defensive operations and tactics.
- **Society**: In many nations, populations became older on average, as both birth and death rates decreased. Given historically low rates of productivity improvement, this put downward pressure on demand growth and upward pressure on government costs.
- Politics: In many countries, centrist parties weakened as growing frustration (particularly among the middle class) with the inability (or perceived unwillingness) of government to address problems that have significantly worsened their quality of life drove more voters to more populist leaders and political parties at different ideological extremes.

In the 2020s, these trends will interact with the outcomes of critical uncertainties in different issue areas. These complex interactions will produce the emergent outcomes we will observe in financial markets.

To make this forecasting problem tractable, our process begins by focusing on the interaction of two critical uncertainties in each issue area, as shown in the following six charts:

Technology: The two uncertainties driving these scenarios are: (1) The speed at which artificial intelligence capabilities (possibly enhanced by quantum computing technologies) develop and are deployed (e.g., their deployment will increase the speed at which many activities and processes are carried out, and may also, depending on the rate at which education systems improve, require fewer human workers), and (2) The speed at which advanced energy technologies (e.g., batteries and other energy storage, grid control, solar, and carbon capture) are developed and reach a level of cost effectiveness that allows them to be effectively deployed at scale without sharply increasing consumer energy prices.

Technology Scenarios



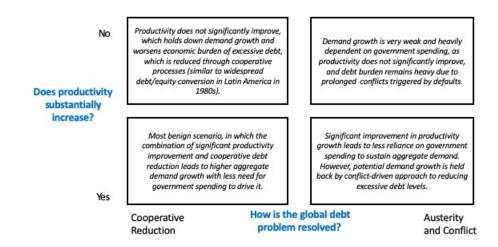
Environment: The two uncertainties driving these scenarios are: (1) Whether food supplies are significantly affected by climate change, and (2) Whether infectious disease prevalence and severity are significantly affected by climate change.

Environmental Scenarios

Faster than expected changes in global Faster than expected changes in global Yes temperatures significantly disrupts traditional temperatures significantly disrupts traditional food supply, including production, supply food supply, including production, supply chains, and/or relative consumer pricing, chains, and/or relative consumer pricing. causing increased government spending to Changes in climate and/or food supply cause mitigate consequences. However, there is no significant increase in global disease Are food significant increase in global disease prevalence and severity. Substantial increase in supplies prevalence and severity. govt spending to mitigate consequences. significantly affected by climate Benign scenarios, with no negative impact on No negative impact on food supplies. However, change? food supply or disease. No increase in increase in global disease prevalence and government spending to mitigate severity, which forces increased government consequences, leaving more budget room for spending and other actions in this area (e.g., spending (e.g., on R&D) to support faster travel bans which depress economic demand). emissions reduction No Yes No Are disease prevalence and severity significantly affected by climate change?

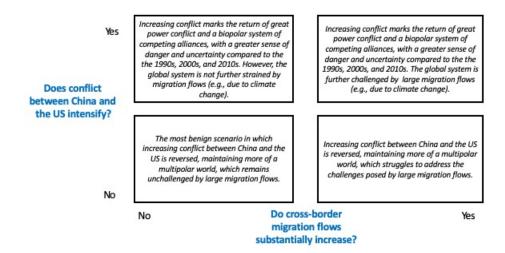
Economy: The two uncertainties driving these scenarios are: (1) Whether and to what extent average productivity increases, and (2) How the global debt problem (including governments' off balance sheet liabilities for future pension and healthcare costs) is resolved.

Economic Scenarios



National Security: The two uncertainties driving these scenarios are: (2) Whether the China-US conflict intensifies, and (2) Whether cross-border migration flows substantially increase.

National Security Scenarios



Society: The two uncertainties driving these scenarios are: (1) Whether income, wealth, generational, and regional inequalities decrease or increase, and (2) Whether the level of individual alienation fragmentation of social bonds and cohesion decreases or increases.

Social Scenarios

Increase

Decrease

Inequalities (income, wealth, generational, regional) Destructive inequalities worsen, but some of their most damaging effects are moderated by reduced alienation, in increased sense of common purpose and strengthened social bonds created (e.g., due to great leadership or perception of a common existential threat).

Destructive inequalities are reduced, as is individual alienation, while a sense of common purpose and social bonds are restored (e.g., due to great leadership or perception of a common existential threat). Destructive inequalities worsen, and their damaging effects further increase individual alienation, undermine common purpose, and erode social bonds.

Individual alienation continues to increase, and for many a sense of common purpose and social bonds continue to erode, either because inequality is insufficiently reduced or because other causes remain unaddressed.

Decrease

Individual alienation and fragmentation of social bonds Increase

Politics: The two uncertainties driving these scenarios are (1) Whether political polarization increases or decreases, and (2) Whether national capacity for taking collective action to address critical issues increases or decreases.

Political Scenarios

Increases

The political center continues to weaken and the populist extremes continue to strengthen. However, political capacity for collective action (and the perceived legitimacy of political and government institutions) increases due to exceptional political leadership or shared fear of an existential threat.

The political center further erodes and the populist extremes continue to strengthen as the perceived legitimacy of political and government institutions, and national capacity for collective action both further weaken.

Polarization

Centrist political parties of both the left and right strengthen and the appeal of populist political extremes weakens. The perceived legitimacy of political and government institutions improves, and national capacity for collective action increases (e.g., due to political leadership and/or common perception of an existential threat).

Centrist political parties of both the left and right strengthen and the appeal of populist political extremes weakens. However, ineffective government response to existential threats reduces the perceived legitimacy of political and government institutions and capacity for collective action.

Increases

National capacity for collective action to address critical issues Decreases

Decreases

As you can see, these scenarios are consistently presented, so that the most benign outcome is in the lower left quadrant, and the most challenging is in the upper right quadrant.

Even after using this approach to reduce the dimensionality and complexity of our global macro forecasting challenge, we are still left with a seemingly unwieldy $4,096~(4^6)$ scenarios, if we assume all combinations could occur. However, that is very likely not the case, because developments early in our chronological causal chain tend to drive or constrain developments later on.

For this reason, we use these scenarios as tools for reasoning both forward and backward in time to better understand the dynamics that could produce different financial market outcomes, and to identify potential sources of future non-linearities and discontinuities.

This method also makes it much easier to gain an edge by developing early warning indicators and more efficiently sifting through the daily data deluge to identify high value information that is much more likely to be observed (or not observed) if a particular outcome for a critical uncertainty is developing.

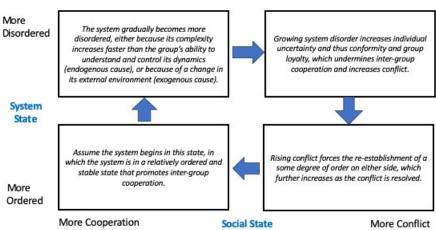
Both individually and in combination, these scenarios make it painfully clear that very substantial challenges lie ahead in the 2020s, which will create far higher levels of individual and collective uncertainty than a majority of people alive today have ever experienced.

Yet in the course of history, we have been here many times before.

Beneath the drivers and uncertainties in different issue areas, our reading of history and complex adaptive systems theory suggests that there are even deeper dynamics at work, which are driven by interacting degrees of system order/disorder and social cooperation/conflict.

The chart below sums up our understanding of these dynamics:

The Macro System's Deep Dynamics



It is often observed that looking chronological periods of ten years are a poor way to capture the essence of different historical epochs. Yet that is just what we usually do, which leads to insights that are roughly correct but not as accurate as they could be.

For example, it is often said that the 60s really began with John F. Kennedy's assassination in November 1963, and ended with Richard Nixon's resignation in August 1974 (or when the US suspended the exchange of US dollars for gold at a fixed exchange rate in August 1971 – take your pick). To cite a second example, the period from 1910 to 1919 clearly included two very different historical periods, one leading up to August 1914, and the other by World War 1 and its aftermath.

The limitation of decadal analyses is equally when applying my macro system's deep dynamic model. However, even with that caveat you can still see how the growing disorder and conflict of the 1930s gave way to the more ordered by still conflict ridden 1940s (which produced the collapse of Germany and Japan, and of democracy in Eastern Europe and China), which in turn evolved into the relatively more ordered and cooperative 1950s.

These then gave way to the increasingly disordered, but still cooperative 1960s, and then the disordered and relatively conflict ridden 1970s. The system became more ordered again as conflict intensified in 1980s, which ended with the fall of the Berlin Wall and dissolution of the Soviet Union. This was followed by the more ordered and cooperative 1990s.

Yet once again disorder increased during the 2000s, and in the just ended 2010s it grew worse and cooperation gave way to much higher levels of domestic and international conflict.

Assuming my model of macro dynamics has some predictive validity, in the 2020s I expect that conflict will increase in the 2020s. However, that should also drive the system into a more ordered state (e.g., due to heightened fear of new existential threats, such as an aggressive China, or Chinese-Russian alliance, and/or the worsening effects of continued global warming).

If the dynamic cycle continues function, then, roughly speaking, in the 2030s the global macro system will once again be characterized by relatively high levels of order and cooperation.

However, happy outcomes in history are far from ordained. The challenges our leaders and institutions will face in the 2020s will very likely test them to their limits, and possibly beyond them.

We are moving into a very dangerous decade for investors, for whom prudence should be the order of the day, with a primary focus on avoiding deep losses rather than realizing large gains.

Years ago I took a class taught by Henry Kissinger right after he left government. I still have a handout he had us read, of an interview he gave to the New York Times in 1974. It says in part,

"I think of myself as a historian more than a statesman. As a historian, you have to be conscious of the fact that every civilization that has ever existed has ultimately collapsed. History

is a tale of efforts that failed, of aspirations that weren't realized, of wishes that were fulfilled and then turned out to be different from what one expected. So as a historian, one has to live with a sense of inevitable tragedy. [But] as a statesman one has to act on the assumption that problems must be solved."