

The Retired Investor

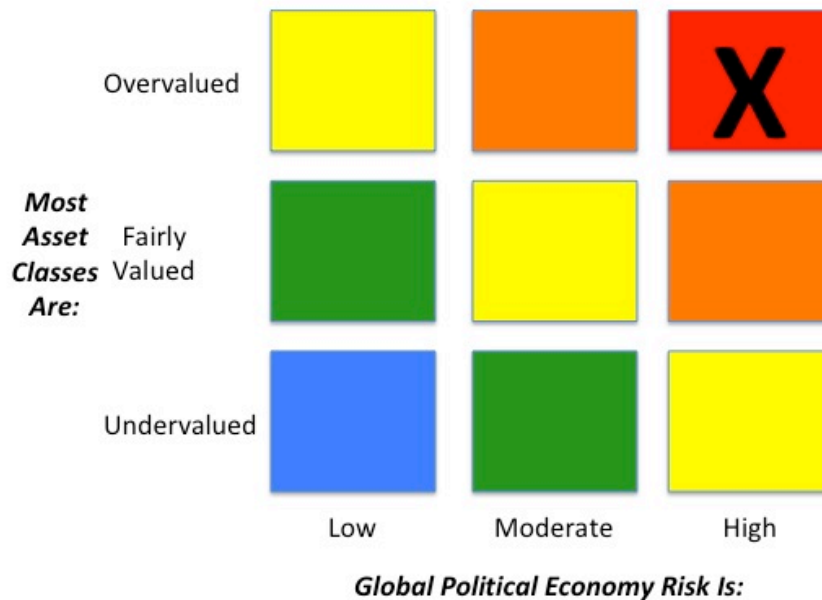
Invest Wisely...Get an Informed Second Opinion

August 2021

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Current Macro Forecast

August 2021



This Month's Global Macro Regime Forecasts

The dominant pieces of new information this month include the following:

- Further evidence that many countries are losing the race between vaccination and the spread of the Delta variant of SARS-CoV-2. As the BBC noted, "Americans are scared and angry as the pandemic worsens." This increases the probability of weakening demand, and decreases the probability the High Inflation regime, despite short term prices increases caused by continuing COVID-related supply chain problems. One of the most important of these is rising gasoline prices, which, as always, will weaken consumption demand growth.

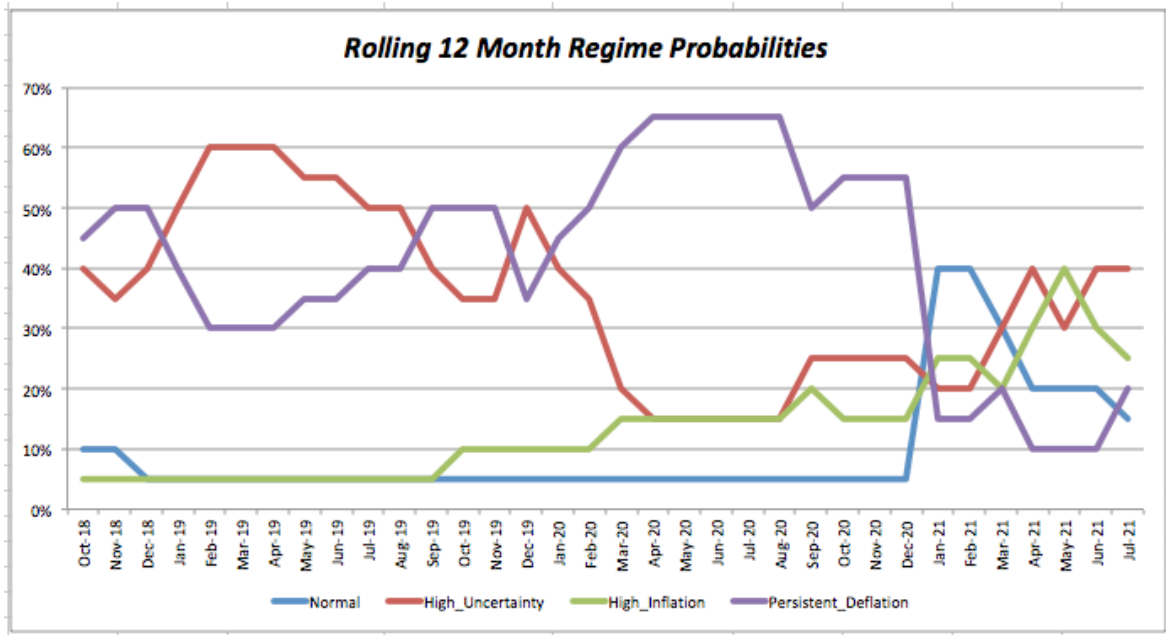
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- The Sixth Report by the Intergovernmental Panel on Climate Change concluded that the world is likely to temporarily reach 1.5C of warming within 20 years even in a best-case scenario of deep cuts in greenhouse gas emissions. Under the high emissions scenarios, carbon emissions triple, and global warming could reach 1.9C by 2040, and 3C by 2060. This raised the probability that the extremely complex climate system may be close to one of more critical thresholds/tipping points with uncertain consequences.
- China-US relations continued to worsen. The US accused China of masterminding worldwide cyber attacks. For the first time Russian troops participated in a Chinese military exercise. At the same time, China announced a five year plan to strengthen party control over the technology sector, which has up to now been one of the most dynamic in the nation's economy. Reducing growth potential in an economy with a rapidly aging population, and high debt levels increases the probability of a serious economic crisis at some point in the future.
- Evidence continues to accumulate that COVID related learning losses in developed nations' elementary and secondary education systems have been substantial (in emerging markets they have almost certainly been much worse). The failure of many of these systems to close previous learning gaps suggests that most COVID learning losses will not be recovered, absent significant structure change in the education sector which will almost certainly not occur. This increases the probability of lower productivity levels and economic growth in the future, which in turn will likely result in higher levels of social and political conflict.
- Finally, the psychological shock of the stunning collapse of Afghanistan government in the face of a Taliban offensive, will, as happened after the fall of Saigon in 1975, lead to a rise in uncertainty that will further retard economic growth.

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Updated Regime Probabilities

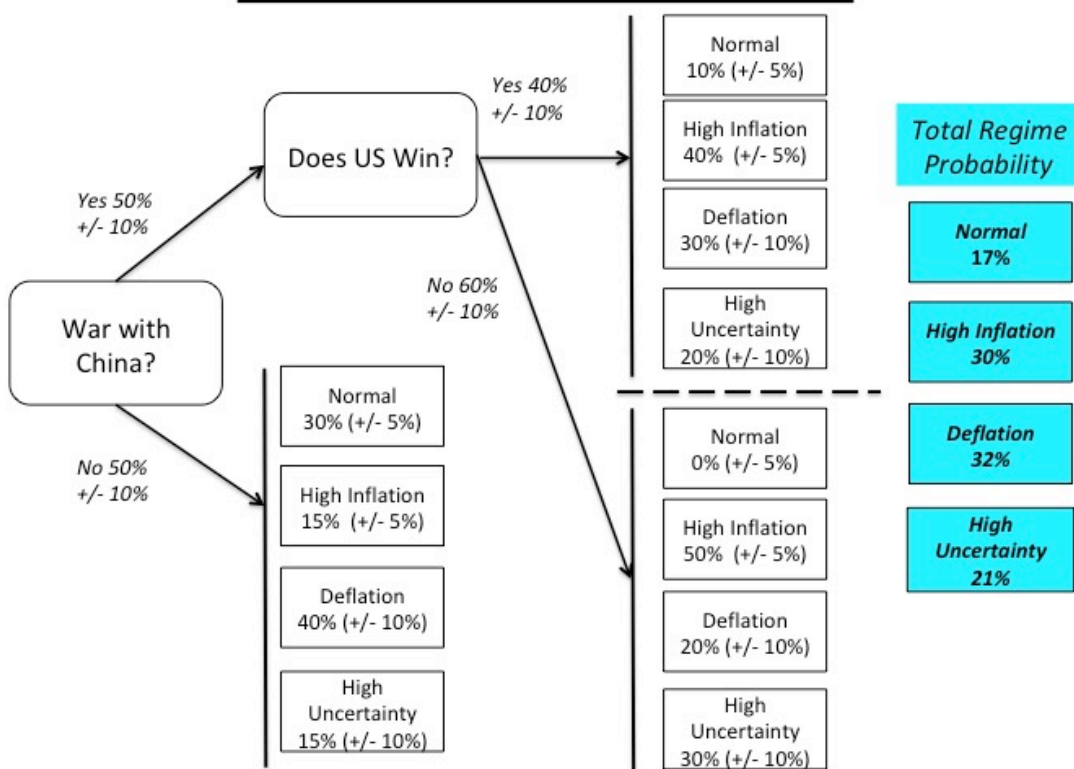
Based on our assessment of the inflation-related evidence, our updated 12-month forecast is Normal Regime, 15% probability (down 10%); High Uncertainty 40% (unchanged); High Inflation 25% (down 5%), and Deflation 20% (up 10%).



Our 36-month forecast logic and probabilities are shown below:

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36 Month Forecast Logic



We reiterate that uncertainty in the global macro system and asset class valuations are both very high today. Under these conditions, people rely more heavily on social learning and copying what others are doing than they do on their own private information and views.

This not only slows the diffusion of new information throughout social systems like economies and financial markets, but also causes these systems to coalesce around a small number of narratives. However, as tension increases on various fault lines in the global macro system, the dominant narrative grows increasingly fragile.

Under these conditions, rapid, non-linear changes are very likely to occur that are out of proportion to the apparent trigger that sets them off.

Recent Quantitative Indicators

Implications of the Most Recent Three Month Asset Class Returns

Our forecasting methodology also includes quantitative analyses of asset class valuations, market stress indicators, and 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 that the rolling three month returns reflect investors' views regarding the relative probability that a given macro regime will develop in the future.

Regime Indicators 31Jul21	3 Mos to Jul21	3 Mos to Apr21
Normal		
* High Yld Bonds (HYG)	1.46%	1.60%
* US Equity (VTI)	4.73%	12.26%
* For Dev MKT Equity (VEA)	3.13%	8.47%
* Emg Mkt Equity (VWO)	-3.00%	2.65%
-- Average	1.58%	6.24%
High Uncertainty		
* Short Term Gvt Bond (SHY)	0.05%	-0.06%
* For Govt Bond (BWX)	0.62%	-3.75%
* Gold (GLD)	2.51%	-4.03%
* Swiss Franc (FXF)	0.62%	-2.80%
-- Average	0.95%	-2.66%
High Inflation		
* Real Return Bonds (TIP)	4.42%	-0.55%
* Dom Comm Prop (VNQ)	8.01%	17.24%
* Gold (GLD)	2.51%	-4.03%
* Timber (WY)	-12.56%	24.85%
-- Average	0.60%	9.38%
Persistent Deflation		
* Long Term Govt Bonds (TLT)	8.27%	-8.44%
* Invest Grade Credit (LQD)	4.29%	-2.70%
* Foreign Govt Bonds (BWX)	0.62%	-3.75%
* Consumer Staples (VDC)	2.77%	9.40%
-- Average	3.99%	-1.37%

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We believe three-month market returns through the end of July are broadly in line with our current forecast.

On a 36-month horizon, our views diverge more with these rolling three month market returns.

Asset Class Valuation and Momentum Indicators (@31Jul21)

Note: The language we use to describe our estimated likelihood of asset class over or undervaluation is based on [US Intelligence Community Directive 203 on Analytic Standards](#), 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%

- See detailed current valuation analysis online for our methodologies

Asset Class	Valuation	1 Month Return (ETF)	Conclusion
US Real Return Govt Bond	Almost Certainly Overpriced*	2.66% TIP	Increasing Overvaluation
US Nominal Return Govt Bond	Fairly Priced *	1.88% GOVT	Fairly Valued
US Investment Grade Credit	Likely Overpriced*	1.42% LQD	Increasing Overvaluation

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US High Yield Credit	Almost Certainly Overpriced*	0.24% HYG	Increasing Overvaluation
US Commercial Property	Almost Certainly Overpriced*	4.42% VNQ	Increasing Overvaluation
US Equity	Almost Certainly Overpriced*	1.74% VTI	Increasing Overvaluation
Foreign Developed Mkt Equity	Likely Overpriced*	0.50% VEA	Increasing Overvaluation
Emerging Markets Equity	Almost Certainly Overpriced*	(5.89%) VWO	Decreasing Overvaluation
Timber	Fairly Priced*	(2.00%) WY	Fairly Valued

Market Stress Indicators (31Jul21)

<u>Market Stress Indicator</u>	<u>This Month (Last Month)</u>
Asset Class Returns Autocorrelation (this month versus last month). Higher autocorrelation is an indicator of more tightly coupled and fragile markets.	.23 versus .19 the previous month. This indicates an increasing but still 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 15 days last month the index was in the top quartile of daily values since 1985 (the 84 th percentile of all rolling 30-day periods), up from from 6 days the month before, indicating rising market stress.
AAA-10 Year Treasury Spread (month end). High/rising spread indicates concern over market liquidity.	1.27%, (50 th percentile) from 1.18% (47 th percentile) last month.

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Market Stress Indicator

This Month (Last Month)

BB Spread over 10 Yr Treasury (month end). High/rising spread indicate increasing credit risk.

2.33% (19th percentile) up slightly from 2.18% (14th percentile), last month, indicating a low level of stress. Given our Regime forecast, this is almost certainly inadequate compensation for the current risk of BB rated bonds.

USD Gold Price/oz (month end). Rising gold prices and “disaster premium” = more stress.

\$1,828, versus \$1,758 up 4% from the previous 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 88%, up from 83% the previous month. Given our forecast, this is likely too low.

Portfolio Allocation Implications of Our Forecast

We take two approaches to deriving the tactical asset allocation implications from our analyses (i.e., deviations from our “neutral” or base case model portfolio).

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 5% allocations to two 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

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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.

Three final notes: First, with respect to US fixed income, we include credit products (investment grade and high yield) in the same broad asset class as government debt, and will shift into the former when credit spreads 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.

Third, we continue to be deeply concerned by the distortion in asset class valuations that have been created by negative real interest rates on sovereign bonds, which are the foundation of most asset pricing models. In August, we decided to address this distortion by using in our asset class valuation models our estimate of the economically logical real yield on inflation protected US government bonds (TIPs). This brings our quantitative valuation conclusions much closer to those based on our qualitative analysis.

Asset Class	ETF	Neutral Weight	Systematic Weight	Subjective Weight	Comments on Subjective Weighting
Real Return Bonds	TIP	10%	0%	0%	<i>Almost Certainly Overpriced</i>
Government Bonds	GOVT	10%	5%	5%	<i>In fairly priced range; hedges equity crash</i>
IG Credit Spread	LQD	0%	10%	10%	<i>Now at bottom of Likely Overvalued range</i>
HY Credit Spread	HYG	0%	0%	0%	<i>Almost Certainly Overpriced; Credit spread doesn't reflect risk</i>
Foreign Govt Bonds	BWX	10%	0%	0%	<i>Still very likely overpriced; also EU sov debt crisis risk</i>
Domestic Property	VNQ	10%	0%	0%	<i>Almost certainly overpriced due to rising inflation fears</i>
Foreign Property	VNQI	10%	10%	15%	<i>Fairly priced; traditional European hedge against uncertainty</i>
US Equity	VTI	10%	0%	0%	<i>Almost certainly overpriced</i>
For Dev Mkt Equity	VEA	10%	5%	0%	<i>Likely overpriced</i>
Emg Mkt Equity	VWO	10%	0%	0%	<i>Almost certainly overpriced; worst of COVID is likely yet to come</i>
Timber	WY	10%	10%	15%	<i>Fairly Priced</i>
Uncorrel Alpha Strategies*		10%	10%	10%	<i>These allocations stay constant</i>
<i>* Equity Mkt Neutral and Global Macro</i>					
Cash	SHY	0%	25%	25%	<i>High uncertainty about further mkt declines; deflation hedge</i>
Gold	GLD	0%	25%	20%	<i>Hedge against inflation and political instability</i>
		100%	100%	100%	
			From Last Month		
At 30 July 2021		Increase		Decrease	

Forecast Pre-Mortem Analysis

One of the most important forecasting disciplines is to ask yourself why any forecast you make 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?

- Following the election of Joe Biden, the removal from office Xi Jinping could (but would not necessarily) lead to a reduction in the dangerously growing conflict between the US and China. The impact of this surprise seems uncertain. To the extent that reduced external threat reduces the perceived urgency of implementing structural reforms in the US, it would increase the probability of the High Inflation Regime. Yet at the same time, it could accelerate economic and political reforms in China, which would increase economic growth there, creating a more dangerous medium term situation for the United States.
- A supply side shock of some type, beyond the disruption of global supply chains caused by COVID-19, could produce a sudden shift to the High Inflation Regime. The most likely scenario is a reduction in oil supplies due to a prolonged kinetic conflict between Iran and Israel and the US to prevent production of a nuclear weapon by Iran. An unlikely but dangerous scenario could

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be major crop failures associated with the next solar cycle and/or accelerating climate change. McKinsey recently concluded that the probability of such a failure has increased due to changes in the environment, and now stands at about 10% over the next five years (*"Will the World's Breadbaskets Become Less Reliable?"*).

Combining this Forecast with Others and Extremizing 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 median forecast 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% rather 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%.

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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.

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: Should You Allocate Part of Your Portfolio to Infrastructure?

With fixed income returns at all-time lows, investors are asking themselves if they should shift a portion of their portfolio into infrastructure. This is a background brief to help you make that decision.

What is “Infrastructure”?

One thing you quickly learn when exploring this issue is that there is no common definition of “infrastructure”.

Infrastructure is defined as the basic physical and organizational structures needed for the operation of a society or enterprise. However, this apparently simple definition turns out to be quite expansive, with an increasingly blurred dividing line between “infrastructure” and other capital assets.

Traditional infrastructure subsectors include social infrastructure (schools, hospitals, etc.), and economic infrastructure, including utilities (gas, water/waste and electricity networks), transportation (toll roads, airports and seaports) and energy infrastructure (power generation and midstream assets, such as pipelines). More recently, various forms of digital infrastructure (e.g., data centers, cell towers, fiber optic networks) and logistics infrastructure (warehouses) have been added to this list.

Perhaps the most helpful definition divides infrastructure into “availability-based” assets, and demand-based assets. The former are typically ones where an investor builds an asset for a government or another project sponsor, which in turn contractually agrees to provide a stream of payments to the investor for as long as the asset remains available. Examples include schools and hospitals.

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In the case of demand-based assets, the government or project sponsor's contractual payments to the investor are linked to the utilization of the asset – e.g., a toll road or airport.

What is the Investment Case for Infrastructure?

The typical infrastructure narrative contains some or all of these elements:

- Infrastructure investments are capital intensive, long-lived “natural monopolies” or oligopolies in the provision of essential services;
- They therefore have relatively inelastic demand (e.g., demand fluctuations should be low);
- Their pricing and returns are therefore often regulated (and hence exposed to regulatory and political risks);
- Regulators will allow increases in pricing when inflation increases;
- Therefore real returns should be consistent over time, and have a low correlation with returns on most other asset classes, such as equities.

What Vehicles Are Used to Invest in Infrastructure?

Some large institutional investors directly invest in infrastructure projects.

Other institutional investors are limited partners in infrastructure funds that invest in multiple infrastructure projects in one or more sectors. This structure is very similar to private equity funds, which have a fixed life (e.g., a five year investment period and a five year realization period), where the fund manager receives a management fee and a carry (e.g., 20% of realized returns above a minimum threshold).

Retail investors can select from a wide range of infrastructure ETFs, which track an equally wide range of infrastructure indices. Rather than investing in infrastructure projects, these funds invest in companies that either operate and/or construct infrastructure assets.

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One important point to keep in mind about these funds is that because of the large size and broad diversity of the range of infrastructure assets, as well as the ambiguous definitions used to describe them, there is no such thing as a broad infrastructure index that includes all the assets in this sector. For this reason, infrastructure ETFs, and the indices on which they are based, are essentially active vehicles.

What are the Risks of Investing in Infrastructure?

As a young banker in South America in the 1980s, I learned first-hand about the risk of infrastructure assets. During the recession that followed the LDC Debt crisis, I saw a previously profitable electric utility forced into bankruptcy when political concerns led the government to block rate increases needed to keep up with accelerating inflation. I saw the same thing happen to a company that built a toll road, when the government refused to approve higher fees.

The typical infrastructure investing narrative extols the advantages of capital intensive natural monopolies whose pricing and returns are regulated by the government. Never forget that is a two-edged sword.

And did I mention expropriation and nationalization?

Does Infrastructure Provide Diversification Benefits?

A number of recent researchers have found that it does not, especially when it involves the purchase of public equities to track an "infrastructure index".

In "*Infrastructure: Real Assets and Real Returns*", Bird et al "test the defensive ability of publicly traded infrastructure investments during equity down markets, and no evidence of defensive characteristics."

In "*Infrastructure as an Asset Class*", Georg Inderst concludes that, "there is no proper financial theory to back the proposition of infrastructure as a separate asset class. Infrastructure assets are very

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heterogenous and empirical evidence suggests an alternative proposition that treats infrastructure simply as a sub-asset class, or particular sectors, within conventional financing vehicle (e.g., listed or private equity, or bonds) in which it is packaged.”

Finally, in “*Institutional Investors and Infrastructure Investing*” Andonov et al find that, “ Institutional investors expect infrastructure to deliver long-term stable returns. However, they gain exposure to infrastructure predominantly through finite-horizon closed private funds.

“The cash flows delivered by these infrastructure funds display similar volatility and cyclicalities as other private equity investments, and their performance similarly depends on quick deal exits.

“Despite weak risk-adjusted performance and failure to match the supposed characteristics of infrastructure assets, closed funds have received more commitments over time, particularly from public investors. Public institutional investors perform worse than private institutional investors. ESG preferences and regulations explain 25%–40% of their increased allocation to infrastructure and 30% of their underperformance.”

Conclusion

While some projects or even sub-categories of infrastructure assets may have these characteristics, infrastructure itself is not a separate asset class with risk exposures and return dynamics that are substantially different from those in other asset classes.

Unless you are a large institutional fund making direct investments in infrastructure projects, and have a differentiated advantage in managing the multiple risks they involve, investing in infrastructure assets (via either an ETF or private fund) in the belief doing so will produce superior risk-adjusted returns will very likely lead to disappointing results.

Appendix: Retired Investor Target Compound Real Return Portfolio Details 2006-2020

Australian Dollar Portfolio Analysis	12 Month Govt Bond Return (AUD)	Global Govt Bond (AUD)	Aus Prop Return AUD	Global Property (AUD)	Commodities Return (AUD)	Timber Return (AUD)	Australia Equity Return (AUD)	US Equity (AUD)	EAFE (AUD)	Emerging (AUD)	
7% Weights	20.00%	0.00%	10.00%	5.00%	10.00%	10.00%	25.00%	7.50%	7.50%	5.00%	100%
7% Wtd Return -- 2006-2020	0.12%	0.00%	0.25%	0.22%	-0.53%	0.57%	1.95%	0.65%	0.31%	0.42%	3.96%
5% Weights	15.00%	0.00%	20.00%	0.00%	10.00%	10.00%	30.00%	5.00%	5.00%	5.00%	100%
5% Wtd Return	0.09%	0.00%	0.49%	0.00%	-0.53%	0.57%	2.34%	0.43%	0.20%	0.42%	4.02%
4% Weights	10.00%	5.00%	20.00%	0.00%	10.00%	10.00%	30.00%	5.00%	5.00%	5.00%	100%
4% Wtd Return	0.06%	0.05%	0.49%	0.00%	-0.53%	0.57%	2.34%	0.43%	0.20%	0.42%	4.05%
3% Weights	25.00%	10.00%	20.00%	0.00%	10.00%	10.00%	15.00%	2.50%	2.50%	5.00%	100%
3% Wtd Return	0.15%	0.11%	0.49%	0.00%	-0.53%	0.57%	1.17%	0.22%	0.10%	0.42%	2.71%
Equal Weights	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	100%
EW Return	0.06%	0.11%	0.25%	0.44%	-0.53%	0.57%	0.78%	0.86%	0.41%	0.84%	3.79%

Canadian Dollar Portfolio Analysis	12 Month Govt Bond Return (CAD)	Global Govt Bond (CAD)	Canada Prop Return CAD	Global Property (CAD)	Commodities Return (CAD)	Timber Return (CAD)	Canada Equity Return (CAD)	US Equity (CAD)	EAFE (CAD)	Emerging (CAD)	
7% Weights	0.00%	5.00%	0.00%	0.00%	10.00%	10.00%	35.00%	15.00%	15.00%	10.00%	100%
7% Wtd Return	0.00%	0.03%	0.00%	0.00%	-0.23%	0.88%	2.58%	1.72%	1.03%	1.07%	7.08%
5% Weights	0.00%	10.00%	5.00%	0.00%	10.00%	10.00%	25.00%	15.00%	15.00%	10.00%	100%
5% Wtd Return	0.00%	0.05%	0.20%	0.00%	-0.23%	0.88%	1.84%	1.72%	1.03%	1.07%	6.58%
4% Weights	0.00%	15.00%	20.00%	0.00%	10.00%	10.00%	30.00%	5.00%	5.00%	5.00%	100%
4% Wtd Return	0.00%	0.08%	0.81%	0.00%	-0.23%	0.88%	2.21%	0.57%	0.34%	0.54%	5.21%
3% Weights	25.00%	5.00%	20.00%	20.00%	10.00%	10.00%	0.00%	0.00%	0.00%	10.00%	100%
3% Wtd Return	0.64%	0.03%	0.81%	1.74%	-0.23%	0.88%	0.00%	0.00%	0.00%	1.07%	4.94%
Equal Weights	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	100%
EW Return	0.23%	0.05%	0.37%	0.79%	-0.21%	0.80%	0.67%	1.04%	0.63%	0.97%	5.99%

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Euros	12 Month Govt Bond Return (EUR)	Global Govt Bond (EUR)	Eurozone Prop Return EUR	Global Property (EUR)	Commodities Return (EUR)	Timber Return (EUR)	Eurozone Equity Return (EUR)	US Equity (EUR)	EAFE (EUR)	Emerging (EUR)	
Portfolio Analysis											
7% Weights	5.00%	5.00%	0.00%	5.00%	10.00%	10.00%	45.00%	6.00%	4.00%	10.00%	100%
7% Wtd Return	0.05%	0.13%	0.00%	0.32%	-0.46%	0.70%	2.76%	0.66%	0.26%	0.98%	5.40%
5% Weights	5.00%	20.00%	20.00%	0.00%	10.00%	10.00%	20.00%	3.00%	2.00%	10.00%	100%
5% Wtd Return	0.05%	0.51%	0.83%	0.00%	-0.46%	0.70%	1.23%	0.33%	0.13%	0.98%	4.30%
4% Weights	15.00%	20.00%	20.00%	0.00%	10.00%	10.00%	10.00%	3.00%	2.00%	10.00%	100%
4% Wtd Return	0.16%	0.51%	0.83%	0.00%	-0.46%	0.70%	0.61%	0.33%	0.13%	0.98%	3.80%
3% Weights	25.00%	20.00%	20.00%	0.00%	10.00%	10.00%	5.00%	0.00%	0.00%	10.00%	100%
3% Wtd Return	0.27%	0.51%	0.83%	0.00%	-0.46%	0.70%	0.31%	0.00%	0.00%	0.98%	3.13%
Equal Weights	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	100%
EW Return	0.11%	0.26%	0.41%	0.64%	-0.46%	0.70%	0.61%	1.10%	0.65%	0.98%	5.01%

Portfolio Analysis: Swiss Francs	12 Month Govt Bond Return (CHF)	Global Govt Bond (CHF)	Switzerland Prop Return CHF	Global Property (CHF)	Commodities Return (CHF)	Timber Return (CHF)	Switzerland Equity Return (CHF)	US Equity (CHF)	EAFE (CHF)	Emerging (CHF)	
7% Weights	25.00%	0.00%	20.00%	0.00%	10.00%	10.00%	25.00%	0.00%	0.00%	10.00%	100%
7% Wtd Return	0.36%	0.00%	0.85%	0.00%	-0.53%	0.61%	1.94%	0.00%	0.00%	0.96%	4.18%
5% Weights	0.00%	0.00%	5.00%	0.00%	10.00%	10.00%	65.00%	0.00%	0.00%	10.00%	100%
5% Wtd Return	0.00%	0.00%	0.21%	0.00%	-0.53%	0.61%	5.04%	0.00%	0.00%	0.96%	6.29%
4% Weights	0.00%	0.00%	15.00%	0.00%	20.00%	0.00%	60.00%	0.00%	0.00%	5.00%	100%
4% Wtd Return	0.00%	0.00%	0.63%	0.00%	-1.06%	0.00%	4.65%	0.00%	0.00%	0.48%	4.70%
3% Weights	15.00%	0.00%	10.00%	0.00%	10.00%	10.00%	55.00%	0.00%	0.00%	0.00%	100%
3% Wtd Return	0.22%	0.00%	0.42%	0.00%	-0.53%	0.61%	4.26%	0.00%	0.00%	0.00%	4.98%
Equal Weights	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	100%
EW Return	0.14%	0.22%	0.42%	0.66%	-0.53%	0.61%	0.78%	1.10%	0.63%	0.96%	4.99%

The Retired Investor

UK Pounds	UK Linkers RRB	12 Month Govt Bond Return (GBP)	Global Govt Bond (GBP)	UK Prop Return GBP	Global Property (GBP)	Commodities Return (GBP)	Timber Return (GBP)	UK Equity Return (GBP)	US Equity (GBP)	EAFE (GBP)	Emerging (GBP)	
Portfolio Analysis												
7% Weights	0.00%	20.00%	5.00%	20.00%	0.00%	10.00%	10.00%	20.00%	3.00%	2.00%	10.00%	100%
7% Wtd Return	0.00%	0.19%	0.18%	0.17%	0.00%	-0.35%	0.85%	0.90%	0.33%	0.13%	0.96%	3.36%
5% Weights	0.00%	5.00%	20.00%	20.00%	0.00%	10.00%	10.00%	25.00%	0.00%	0.00%	10.00%	100%
5% Wtd Return	0.00%	0.05%	0.70%	0.17%	0.00%	-0.35%	0.85%	1.13%	0.00%	0.00%	0.96%	3.51%
4% Weights	0.00%	5.00%	20.00%	20.00%	0.00%	10.00%	10.00%	25.00%	0.00%	0.00%	10.00%	100%
4% Wtd Return	0.00%	0.05%	0.70%	0.17%	0.00%	-0.35%	0.85%	1.13%	0.00%	0.00%	0.96%	3.51%
3% Weights	0.00%	20.00%	20.00%	20.00%	0.00%	10.00%	10.00%	0.00%	6.00%	4.00%	10.00%	100%
3% Wtd Return	0.00%	0.19%	0.70%	0.17%	0.00%	-0.35%	0.85%	0.00%	0.66%	0.26%	0.96%	3.45%
Equal Weights	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	9.09%	100%
EW Return	0.28%	0.09%	0.32%	0.08%	0.62%	-0.32%	0.77%	0.41%	1.00%	0.59%	0.87%	4.71%

US Dollars	TIP Return	12 Month Govt Bond Return (USD)	NonUS Govt Bonds	US Prop Return (USD)	Global Property ex-US (USD)	Commodities Return (USD)	Timber Return (USD)	US Equity Return (USD)	EAFE (USD)	Emerging (USD)	
Portfolio Analysis											
7% Weights	0.00%	0.00%	5.00%	0.00%	15.00%	10.00%	10.00%	55.00%	5.00%	0.00%	100%
7% Wtd Return	0.00%	0.00%	0.08%	0.00%	0.24%	-0.47%	0.70%	4.58%	0.35%	0.00%	5.48%
5% Weights	5.00%	5.00%	15.00%	0.00%	5.00%	10.00%	10.00%	35.00%	10.00%	5.00%	100%
5% Wtd Return	0.13%	0.03%	0.25%	0.00%	0.08%	-0.47%	0.70%	2.91%	0.71%	0.21%	4.56%
4% Weights	0.00%	15.00%	20.00%	0.00%	0.00%	10.00%	10.00%	30.00%	10.00%	5.00%	100%
4% Wtd Return	0.00%	0.10%	0.34%	0.00%	0.00%	-0.47%	0.70%	2.50%	0.71%	0.21%	4.08%
3% Weights	10.00%	15.00%	15.00%	0.00%	0.00%	15.00%	5.00%	25.00%	10.00%	5.00%	100%
3% Wtd Return	0.27%	0.10%	0.25%	0.00%	0.00%	-0.71%	0.35%	2.08%	0.71%	0.21%	3.26%
Equal Weights	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	100%
EW Return	0.27%	0.07%	0.17%	0.53%	0.16%	-0.47%	0.70%	0.83%	0.71%	0.42%	3.38%