



The General Theory of Portfolio Construction

Charles Gave



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**By
Charles Gave**

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*For all my colleagues at Gavekal-IS, most specifically Didier Darcet.
This book would not have been possible without their help.*

Foreword

Popular wisdom states that you can't teach an old dog new tricks. This is usually true, but I would venture that my dad, Charles, is a living exception. And this book is a testimony to that. Let me explain.

I started working with my dad in 2000. He was 57 years old and I was 26. He had already had a successful career. Along with four partners, he had created a money management firm that deployed capital along macro themes. The firm's assets under management had grown to US\$10bn when Alliance Capital (now Alliance Bernstein) bought the firm in 1995. My dad stayed on for a few years and then retired. By then, he had taken his share of knocks. While he had been well positioned for the 1987 crash and again the 1989 pullback and the 1990 Japanese implosion, as well as the 1995 Japanese equity market rebound, he had failed to get out of Japan by 1996. The 1997 Asian Crisis also left some scars. In fact, by the late 1990s, it could be said that he was battered and bruised.

But at least, having sold his firm, he was wealthy enough not to have to worry about his financial future. And this is where he did something that left me very impressed. He decided to teach himself computers and start again from scratch. At 57, when most of his friends were heading for the golf course or the marina, he bought himself a personal computer, loaded up on books and went to work. He discovered a financial software startup called Ecowin, in which he would end up investing and taking a board seat. Using Ecowin, he went to work building new models, looking for new financial relationships and trying to make sense of the chaos around him.

The more he dug in, the more he found.

He would send his findings, via email, to his old colleagues at Alliance Capital, to his friends who still worked in the financial industry, and to myself, at the time a junior equity research analyst at Paribas.

At the time, I told him that if he sent out his findings for free, no one would read them. People only took seriously what they paid for. And the more they paid, the more likely you would be able to engage them in productive conversations. This is how we started. Two men and a dog, working out of my London apartment living room.

Within a year, we were joined by Anatole Kaletsky, who was doing broadly the same thing but by himself (he did not have a dog and his children were still in school). The idea behind teaming up with Anatole was a simple one: Anatole's beliefs and process could not have been more different than Charles's. Where Charles was a hard-core monetarist (he had carried on a lifelong correspondence with Milton Friedman who wrote the preface to Charles's first book), Anatole was a Keynesian true believer (Anatole's own uncle is often credited for doing much of the legwork for John Maynard Keynes's *General Theory*). This divergence in economic beliefs was reflected in very different political views and investment processes. But this is what made teaming up with Anatole so valuable: the idea was that if we all came to the same conclusion while looking at the world through very different lenses, then we were probably on the right track. Meanwhile, if we came to different conclusions, then there could be a lot of value in the debate.

Gavekal was born.

But Gavekal only really took off when China did.

By 2002, China had joined the WTO and it seemed obvious that the country would have a big impact on the global economy. I wanted to get a front-row seat to the action. I moved to Hong Kong and opened a small office there. By 2004, Charles had seen enough and had decided to join me. He and my mother had lived in London since 1981. But, now in their early sixties, they signed up for a new adventure. The first thing he did upon moving to Hong Kong was set off our building's fire alarm by smoking his cigar in the office.

In mainland China, Charles's smoking was not as frowned upon as in Hong Kong. Nonetheless, even though China was an exciting story, Charles never quite caught the "China bug", at least not like I did. There was the hurdle of the language, of course, and the fact that, until very recently, travelling around China was often chaotic, polluted and challenging.

By 2014, my parents had decided to move back to Paris. But Charles was not returning to hang up his boots. Quite the contrary. He would be more active than ever.

Beyond purchasing a very quaint office building with a nice courtyard in which he could smoke, a few steps away from the Place Victor Hugo (a somewhat better selling author!), Charles went back to his other love (aside from my mother): research on portfolio construction. In this task, he was helped by Didier Darcet, Michael du Jeu and Yann Ageon. He also started a think-tank with my sister Emmanuelle, l'Institut des Libertés, launched a very successful YouTube channel (I am guessing that, at this point, Charles must be one of the oldest YouTubers out there!), took over a small French media group with titles covering politics (Causeur), energy (Transitions & Energies), and geopolitics (Conflicts) and wrote a number of French bestsellers.

He stayed busy; and he stayed young.

Which brings us to today and Charles's latest book, *The General Theory of Portfolio Construction*.

I edited this book (like a lot of his work over the years). My Gavekal colleagues Simon Pritchard and Tomas A. Wiik also reviewed the draft. And hand on heart, I can safely say that this is Charles's best work yet. At 81 years young, Charles has put together what I believe to be one of the best pieces we have ever produced at Gavekal.

I hope that the reader will agree. And if so, that they will order copies for friends and family. They can also always reach out to Charles with questions or comments at charles@gavekal.com, though Charles isn't always very fast at answering emails. For questions, I can also be reached at louis@gavekal.com.

In the meantime, thank you for purchasing this book and taking the time to read it.

Louis-Vincent Gave

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**Part One: Four notions
that must be accounted for to
build a portfolio with a
decent real return and
limited downside risk**

Asking for indulgence

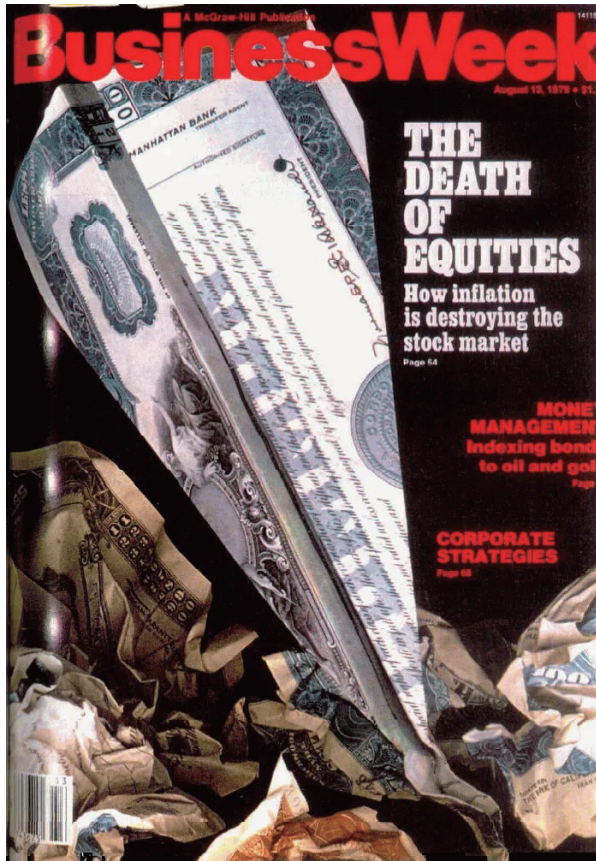
I am 81 years young.

I started working in January 1971 at a French merchant bank and was assigned to cover financial markets. At the time, I knew about as much about these strange beasts as I did female psychology. Some 54 years later, my wife of 58 years would argue that not much has changed; at least on one of those two fronts. For the other, the reader will have to be the judge.

The following pages is a compendium of what financial markets have taught me over the years. Not that markets have been my only teachers. Through these pages, I will quote various practitioners, economists and philosophers. As I do, I like to think that I am akin to a dwarf standing on the shoulders of giants, being able to see just a little bit further thanks to the work that others have done.

It is sometimes said that the career of a man is determined by what he goes through in his first year. If this is true, I was blessed. As noted above I started out at the Banque de Suez in January 1971. By August 1971, President Richard Nixon had broken the link between the US dollar and gold. The fixed exchange rate system which had been in place since the 1944 Bretton Woods agreement collapsed. Financial markets became “agitated” and no one could figure out what the heck was happening, nor did anyone dare forecast what was going to happen.

From their peak in November 1968 to a low in November 1974, US equity markets lost -50% in real terms. They would not bottom until November 1982, three full years after this iconic 1979 *BusinessWeek* magazine cover, by which time they had lost two thirds of their value.



US equities plunged hard in real terms from 1968 to 1982

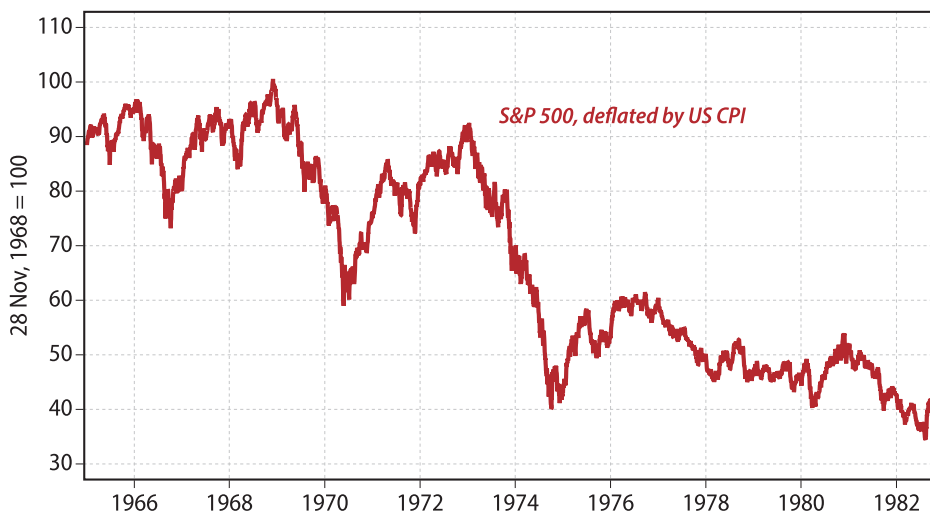


Chart 1

Gavekal Research/Macrobond

My first few years were, thus, very formative.

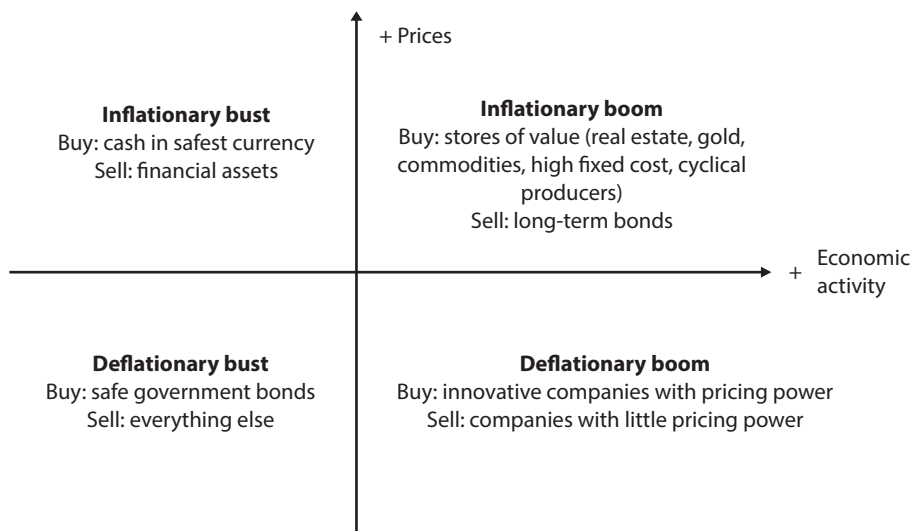
Since then, my goal has been to try to capture as much as I can from the upside in financial markets without ever being caught in a bear market as bad as the one which seemed to end in November 1974, but ultimately dragged on until late 1982.

Initially, I thought this could be done through tactical asset allocation. Over time, I concluded that efficient portfolio construction was the easier path. Since then, I have devoted time and effort to defining a simple portfolio construction processes that will ensure stable and steady returns with controlled downside.

This has meant drifting away from my past efforts of trying to understand where the economy might be and then forecast where it may be headed. It has also meant reducing the amount of time worrying about asset class valuations. With a lot of my time thus freed up, I have been able to concentrate on the task at hand: building a portfolio that should do reasonably well whatever happens in the world.

- In this quest, my first contribution to the general knowledge needed to construct a proper portfolio was that the financial cycle had to follow the economic cycle, and thus would go through four phases: (i) deflationary boom, (ii) inflationary boom, (iii) inflationary bust and (iv) deflationary bust. I first published the Four Quadrants diagram in 1978 and have used it ever since.

The Four Quadrants framework



- My second conviction, reached around the same time, was that a **modern economy can be thought of simply as energy transformed**. As such, most expansions did not occur because central banks or governments did something smart, although recessions could easily occur when policymakers did something stupid. Most of the fluctuations in the economic cycle could be explained by shifts in energy prices. Cheap and plentiful energy made for booms, while scarce and expensive energy made for busts. Of course, policymakers in general and central bankers in particular would strive to convince us that they were ultimately responsible for the arrival of events that they did not understand (when such events were favorable). However, I am now too old and cynical to believe in such nonsense. In fact, the older I have gotten, the more

disinterested I have become in discussing what central banks are up to. Instead, I increasingly just want my portfolio to do well whatever central bankers, or other government officials, decide to throw at me.

- The third idea came from Nassim Nicholas Taleb, who identified the nature of the three assets that one can have in a portfolio: the fragile, the robust and the antifragile. When Taleb first mentioned it, the notion of antifragility felt both so obvious and so elegant that I was both excited about this new notion and disappointed that I had not come up with the idea. Having a part of the portfolio that thrives when all else falls apart is, of course, the very bedrock of smart diversification.
- Finally, the fourth idea was found in Harry Browne's book *Fail-Safe Investing*, first published in 1999. The book was given to me by a client, to whom I remain grateful since Browne presents the compelling idea of a Permanent Portfolio. His book convinced me that we have always had the tools needed to achieve a very reasonable real return in a chosen local currency, with very little volatility.

Having most likely passed the half-way mark in my career, I believe that the time has come to integrate these four sets of ideas into a ***General Theory of Portfolio Construction***. My goal is to show how one could deliver reasonably high real returns that have subdued volatility, whatever happens in the real world.

Some basic Gavekal concepts

None of the below will come as a surprise to faithful Gavekal readers. Nonetheless, for the reader less familiar with the work published under the Gavekal banner over the past 25 years, I will make a few simple points:

Point #1: gold is the ultimate reserve of value and thus does not change in price. An ounce of gold is worth an ounce of gold, and that is that. Currencies fluctuate against gold, as do bonds, equity markets and other commodities. It makes more sense to use gold as a standard of value, or unit of account, than a US dollar (let alone other currencies) that over time constantly depreciates. Consider US real estate: looking back over decades, it seems that when the US median house costs less than 200 ounces of gold, US real estate can be thought of as decently cheap, just as when the median house costs more than 400 ounces of gold, houses look pricey. Meanwhile, in US dollar nominal terms, it seems that house prices mostly go up over the long term, but the reality is that the US dollar is going down.

US home prices in gold terms reveal the dollar's weakening

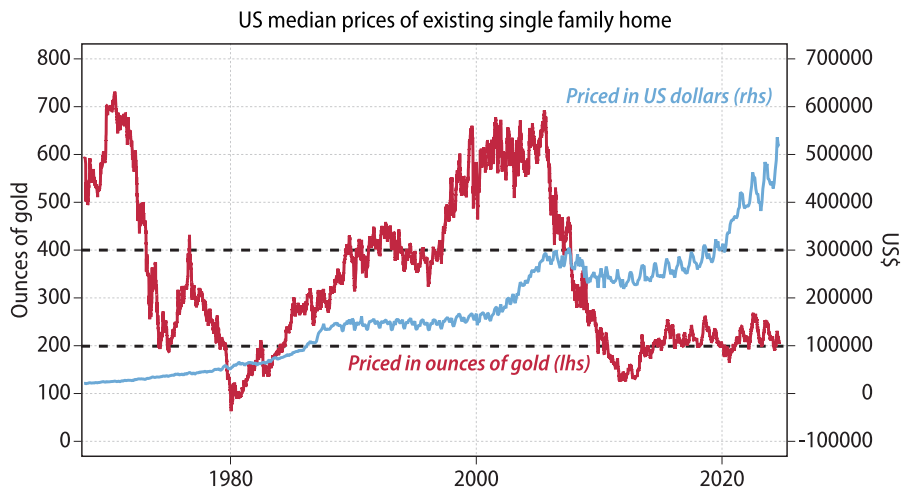


Chart 2

Gavekal Research/Macrobond

Point #2: gold is unique in the financial system, as it offers neither bankruptcy risk nor a counterparty risk. Gold is genuinely the ultimate riskless asset. To some extent, gold is an expression of “past wealth” transmitted down through the generations.

Point #3: in financial markets, one can buy, sell or own one of two types of assets: “real assets” or “contracts”. Equities, gold, real estate, art and vintage Ferraris are “real assets”. Government bonds, insurance policies, bank deposits and cash are “contracts”.

Point #4: “real assets” have value either because they will generate future cash flows (at Gavekal, we call such assets “tools”) or because they are rare (we call such assets “jewels”). Valuing “tools” is a lot easier (discount future cash flows by a risk-free rate) than valuing “jewels” (what is the right price for a bottle of Pétrus or a Vincent van Gogh painting?). In this booklet, I will use equity markets as a proxy for “tools” and gold as a proxy for “jewels”.

Point #5: of course, the future is unknowable with any measure of certainty. This is what makes the valuation of “tools” both exciting and volatile. Occasionally, the creators of future value, the “tools”, are very expensive versus old profits stored in gold. At other times the future is very cheap versus those tools.

Point #6: when it comes to “tools” there is a permanent risk of bankruptcy, but there is no counterparty risk.

Point #7: “contracts” typically come with counterparty risk that can fluctuate from low enough to be meaningless (government bonds issued in a currency the borrowing country can print at will), to very high (Argentina’s foreign debt).

Point #8: strange as it may seem, the contracts have a price, but no intrinsic value, and the real assets have a value, but no objective price. As Warren Buffett says: “Price is what you pay. Value is what you get”.

Point #9: real estate is somewhat tricky as it is both a tool (it generates future cash flows) and can incorporate a premium, or not, for scarcity. The price per square foot of a mansion on top of Victoria Peak in Hong Kong is worth multiples of the price per square foot of a studio apartment in Kowloon’s Sham Shui Po. In this booklet, I will broadly ignore real estate as an asset class.

Point #10: economic growth can be the result of new inventions and discoveries. At Gavekal, we call this “Schumpeterian growth”. Alternatively, growth can be the result of a smarter organization of existing resources. For example, a country can embrace free trade or deregulate its labor market. At Gavekal, we call this “Ricardian growth”.

Point #11: investors frequently have different definitions for what constitutes a “bear market”. For me, a bear market is a period in which equities underperform gold. Indeed, it strikes me that for “capitalism to work” in the long run, equities must outperform gold. If equities do not outperform gold, why would anyone take the risk of investing in businesses? Like the bad servant from the Parable of the Talents (Matthew 25:14-30),

burying one's money (buying gold) makes more sense. With that in mind, if the stock market price index outperforms gold, I consider us to be in a bull market. Meanwhile, if gold outperforms equities (unshaded areas in the next chart), I would call this a bear market.

In true bull markets, equities outperform gold

Shaded blue: stock prices outperform gold

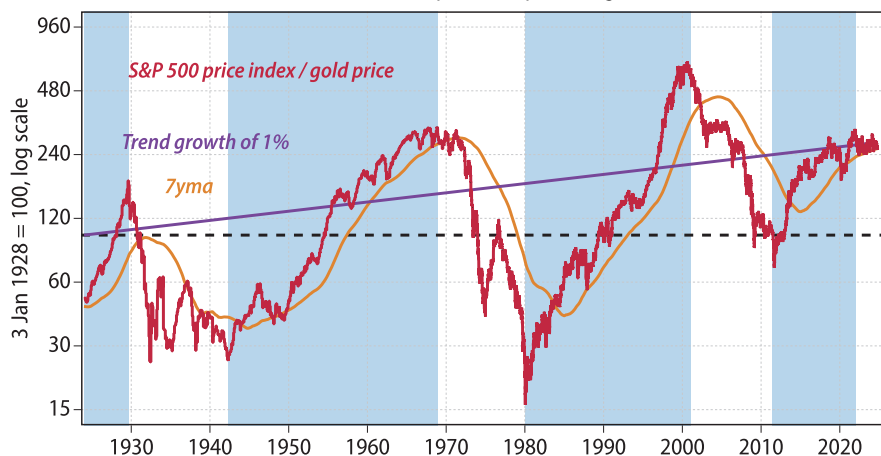


Chart 3

Gavekal Research/Macrobond

Point #12: equity bear markets happen, but the true destroyer of portfolios and careers is what I call an *Ursus magnus*. This is broadly defined as the stock market falling -40% or more in real terms. In the US, since 1920, we have had four major equity bull markets. The first took place in 1921-29. The second in 1941-69. The third in 1980-2000. And the last one started in 2012 and may have peaked in 2021 (at least, since then, gold has outperformed equities). Each one of the first three bull markets ended with an *Ursus magnus*. But is that sample statistically meaningful enough to reach any firm conclusions?

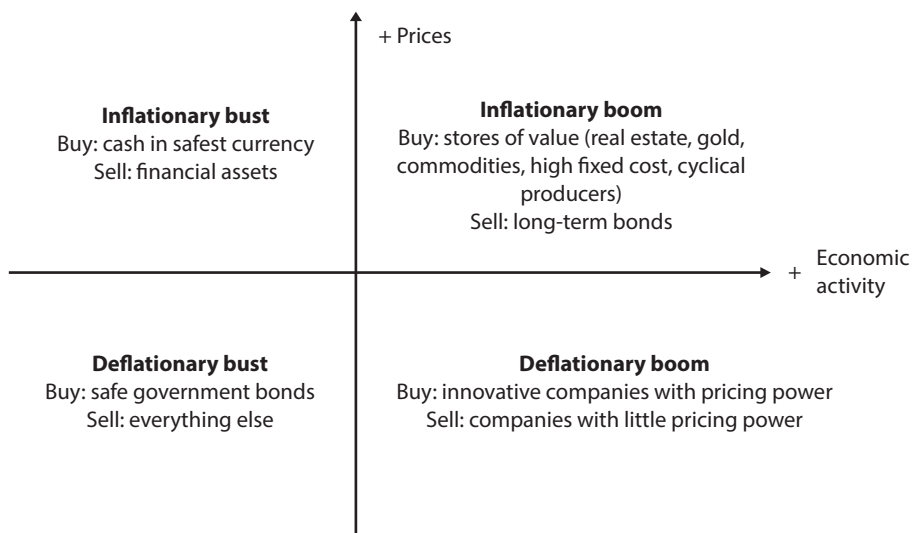
The Four Quadrants

The Four Quadrants framework, which I have used since 1978, implies that any money manager will have to operate in four different environments during his or her career (provided the career is long enough!). The four environments are as follows:

- **The deflationary boom:** this is the natural state of capitalism. After all, most entrepreneurs and chief executives wake up every day wondering how to produce more with less. When entrepreneurs solve that equation, an economy experiences “creative destruction” and what we call in our research “Schumpeterian growth”. At such times, the asset of choice is long-duration equities, i.e. growth stocks. Value managers underperform. Government and corporate bonds do well, as does real estate. Basically, any “long-duration” asset thrives.
- **The inflationary boom:** this occurs during wars, or in any other period when the weight of government within an economy expands rapidly. A telltale sign is thus a rapid rise in government spending as a share of GDP. In such periods, investors should seek out scarcity assets, with the most obvious being gold, although commodities more broadly usually outperform. Value managers also do well, as do emerging market managers. In an inflationary boom, bonds typically struggle.

- **The inflationary bust:** this situation is sometimes known as stagflation. It is a miserable period for investors, as very few assets do well. Long-duration assets do especially poorly. Even bonds collapse. At such times, one should own cash, and usually energy since the way the broader economy is often pushed into stagflation is through a spike in energy prices.
- **The deflationary bust:** both prices and sales volumes fall. Repaying the principal of the debt becomes impossible. The only assets that rise are long-dated government bonds.

The Four Quadrants framework



The above split brings me to an important observation: **on the left side of the Four Quadrants (the “bust” phases), one wants to own “contracts”.** **On the right side (the “boom” phases), one wants to own “real assets”.** In good theory, the role of the money manager is thus to use the contracts on the left to buy the assets on the right at a price which, in the view of the money manager, will be lower than its value.

The “contracts” are used to estimate the time value of money necessary to price the (long-duration) efficiency assets on the right side of the Four Quadrants. The contracts are most of the time expressed in a currency

which is the country in question's legal tender—and the currency itself is a contract. This currency is needed to exchange the goods and services produced by the efficiency system (the means of exchange) while also acting as a standard of value.

But this is not all.

The time value of money expressed on the left side of the Four Quadrants can be either too high, at the right price, or too low (see *Stagnation or Bust?*, my 2016 booklet on Knut Wicksell's work). The time value of money has a big impact on the value of long-duration "real assets" on the right, but also on the price of gold. As everybody knows, if the real rate on contracts (short and long) is high enough, the price of gold does not go up. It may even fall.

The impact of that constant arbitrage between the left and the right side of the Four Quadrants is thus key when it comes to portfolio construction (more on that later).

But all this introduces a new caveat: as mentioned in the previous chapter, "contracts" always involve a counterparty risk. Buying a contract, or being a lender, implies a high certainty that the counterparty will not default on his or her obligations. It also implies that the currency in which the contracts are priced will not move rapidly towards zero. When the odds of either event increase, the only option left for investors is either gold or "real assets". Recent examples include Turkey, Venezuela, Argentina and Zimbabwe.

All of this brings us to our more recent past, in which gold and "real assets" have been outperforming US long bonds rather massively. Does this mean that the markets remain unconvinced that we are back in a non-inflationary period?

Experience has taught me one thing: I would rather trust the markets than official statistics.

Boom or bust? Determining where we stand

The two axes in our usual Four Quadrants are delimited by:

- 1) The horizontal axis where the economy is supposed to grow, or not.
- 2) The vertical axis which is supposed to measure whether prices are accelerating, or not.

This leads to the four states in the Four Quadrants: deflationary boom, inflationary boom, inflationary bust and deflationary bust.

For decades I have tried to find a tool, or a series of tools, which would allow me to know precisely in which quadrant the economy was presently situated and where it was heading. To do this, I could use official economic data (usually published late, and prone to large revisions), or market prices (susceptible to irrational exuberance, panics, fear and greed). At best, one comes out with an “impressionist painting”, a vague picture of where one might be. At worst, one ends up with some neo-modernist expressionist atrocity, in which the understanding is in the eye of the beholder.

But then I remembered that **the economy is nothing but energy transformed**. This means that energy is the input, while the output is goods and services sporting a higher value than the input.

Roughly 80% of the energy consumed in the world comes from fossil fuels such as coal, oil and natural gas.

Hydrocarbons still dominate the global energy mix

World primary energy consumption

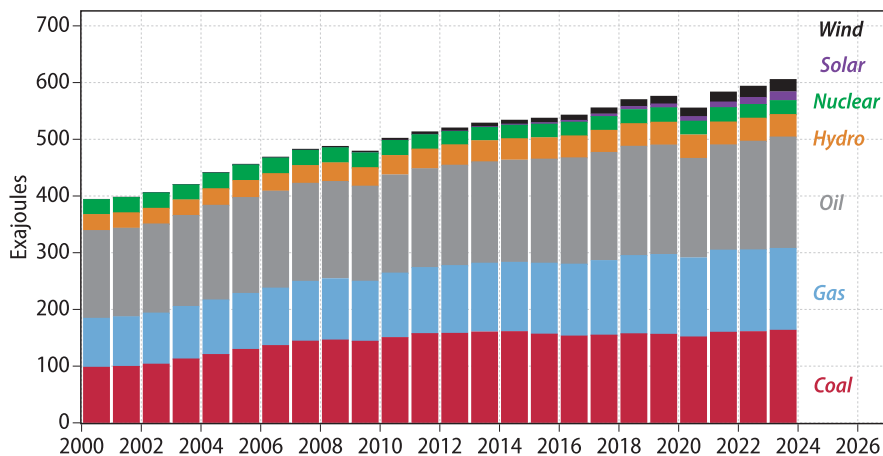


Chart 4

Gavekal Research/Macrobond

Needless to say, these various energy sources have different costs. For example, the upfront cost of setting up a nuclear plant is massive, while the marginal running cost is fairly low. The upfront cost of a coal power plant is modest, but the price of coal can be volatile and the various externalities of burning coal must be reckoned with (e.g. carbon credits). With that in mind, and adopting John Maynard Keynes’s dictum that “it is better to be approximately right rather than precisely wrong”, I will simply use the WTI oil price as a proxy for “energy costs”, for the simple reason that I have prices for oil dating back to 1900.

The price of WTI in gold makes a decent proxy for energy costs

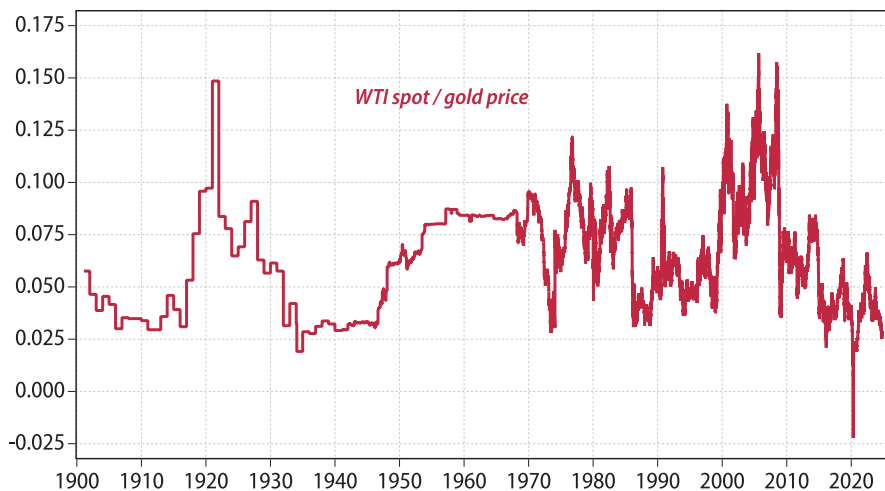


Chart 5

Gavekal Research/Macrobond

The output achieved from this energy input amounts to the private sector's value-added within the economic system. Variations in the market value of this production can be approximated using moves in the stock market.

From there, **I assume that as long as stock market valuations rise faster than the WTI price, energy is being transformed productively and, thus, economic growth should naturally follow.** These periods are shaded green in the next chart. On the flip side, if the WTI price goes up faster than the S&P 500 (non-shaded areas in the chart), there is a high chance that the economy will stop growing and stock market returns will be miserable.

So, my first proposal for the Four Quadrants is to replace the name “economic activity” on the horizontal line with “energy efficiency”. Here are the results for the energy efficiency axis. If the graph is shaded green, it means that we must be on the right side of the Four Quadrants, either in a deflationary boom (bottom right) or in an inflationary boom (top right). When the chart is left unshaded, it means that we are either in an inflationary bust, or in a deflationary bust.

We are in either a deflationary or inflationary boom

Shaded green: Right hand side of the Four Quadrants, energy transformed profitably in a deflationary or inflationary boom | Grey: US recessions

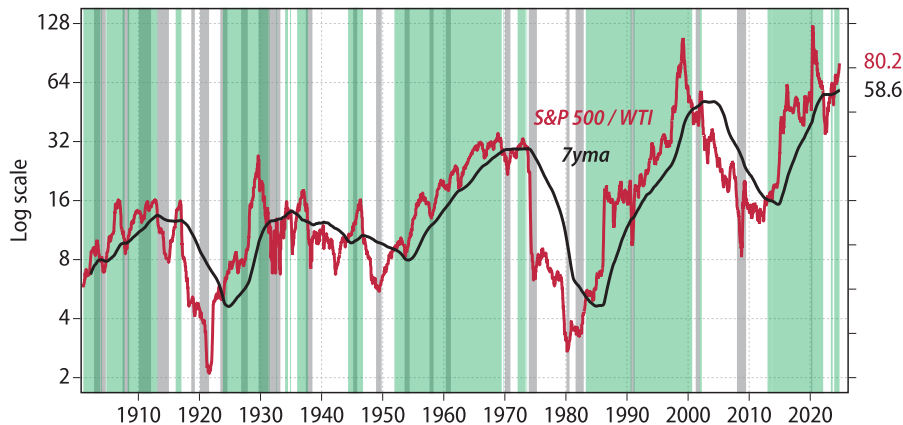


Chart 6

Gavekal Research/Macrobond

The rule to determine whether we are on the right or on the left of the Four Quadrants is thus simple:

- +1 if the ratio of the S&P 500 against the WTI oil price is above its seven-year moving average (chart shaded green).
- -1 if the ratio of the S&P 500 against the WTI oil price is below its seven-year moving average (chart area is unshaded).

At the time of writing in October 2024 the ratio is above its seven-year moving average, and thus at this point we are on the right side of the Four Quadrants.

Inflation or deflation? Dealing with the monetary illusion

For years, I spent much time and grey matter trying to figure out ways to model future inflation. Sometimes the Phillips Curve—showing the relationship between employment and inflation—worked; sometimes it did not. Sometimes rising energy prices impacted inflation; sometimes they did not. Sometimes big increases in budget deficits meant much higher inflation; at other times (Japan in the 1990s and 2000s), they did not. And so, like any person failing at a task, I did the only sane thing: I moved the goalposts. It struck me that what mattered was not so much whether price changes were accelerating, or not. Instead, what mattered was whether the bond market was protecting me against rising prices. **Specifically, were long-dated US treasuries a proper store of value?**

To answer this question, I use gold as a standard of value and compute a ratio between the total return of a 10-year constant-duration Treasury bond and the price of an ounce of gold stated in US dollars. Then the answer is easy: if the ratio is above its seven-year moving average, the bond market has been a proper store of value, and we must be somewhere in the bottom two quadrants. If the return of the bond market is lower than that offered by gold, the currency is being debased, and we must be somewhere in the upper two quadrants.

Is the currency being debased?

Shaded red: Bottom of the Four Quadrants, bonds are a proper store of value | Grey: US recessions

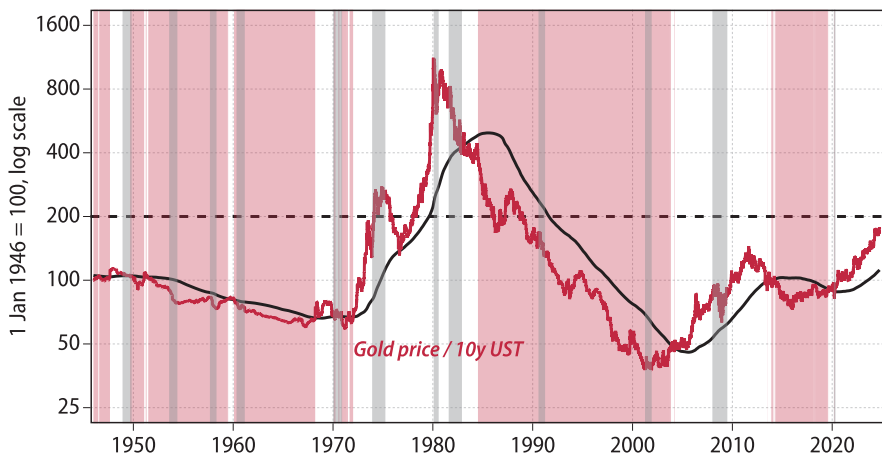
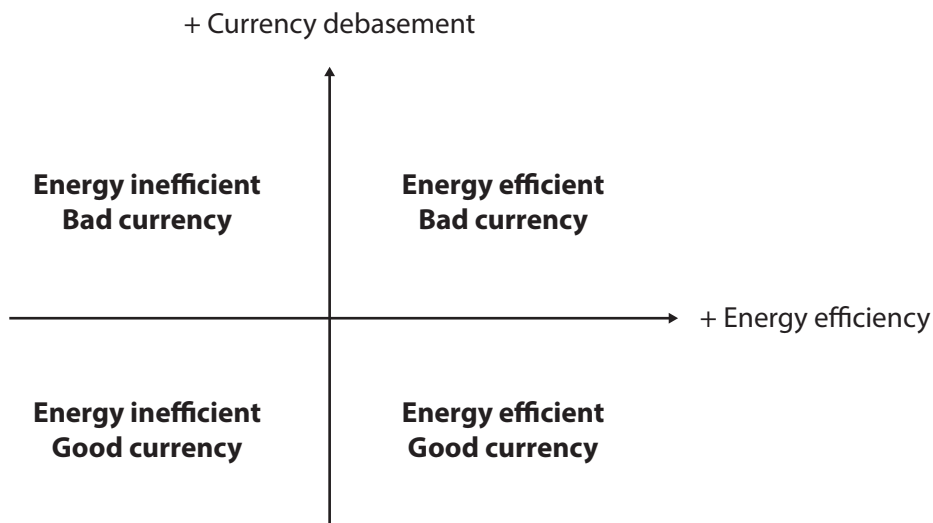


Chart 7

Gavekal Research/Macrobond

As the reader can see, we have had long periods during which the US bond market was a proper store of value, followed by long periods when gold was a better store of value. Here again, the decision rule is +1 if the bond market outperforms gold, -1 otherwise.

Hence, for the first time since establishing the Four Quadrants framework, I propose to change the names of the axes. The horizontal axis will now measure if the economy is, at the time, energy efficient or energy inefficient. The vertical axis shows if the currency is acting as a store of value and is thus labeled as being either a “good currency” or a “bad currency”.



We still find ourselves with four investment scenarios:

- 1) Energy efficient/good currency (+2): bottom right of the Four Quadrants equates to a deflationary boom in which capitalism thrives.
- 2) Energy inefficient/bad currency (-2): top left of the Four Quadrants equates to an inflationary bust.
- 3) Energy efficient, bad currency (0): top right of the Four Quadrants equates to an inflationary boom.
- 4) Energy inefficient, good currency (0): bottom left of the Four Quadrants equates to a deflationary bust in which making money is very challenging.

Next consider the following chart, which combines the S&P 500/gold ratio and the readings of my updated Four Quadrants framework.

Favorable and unfavorable quadrants over the last century

When Four Quadrants reading at +2: good currency & energy efficient;
when reading at -2: bad currency & energy inefficient | shaded grey: US recessions

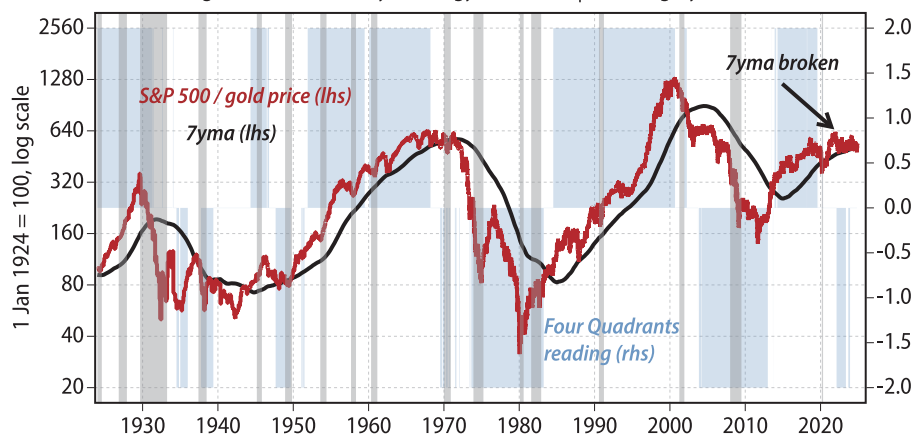


Chart 8 Gavekal Research/Macrobond

Why value the S&P 500 in gold terms? For a very simple reason, well understood by economists of the past: the so-called monetary illusion, shown in the next chart.

The gains in the US stock market and gold are a monetary illusion

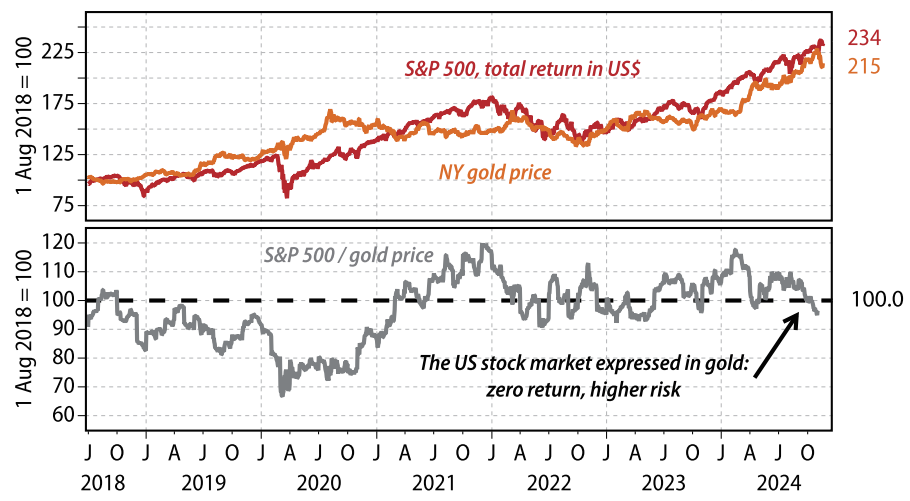


Chart 9 Gavekal Research/Macrobond

Since 2018, total returns on the S&P 500 and gold have been essentially the same. Or to put it perhaps less kindly: since 2018, neither gold nor US stocks have risen. Instead, the gains posted simply represent US dollar currency debasement; the gains in both assets are just a monetary illusion. Hence, I would make the following comments.

- 1) All true US bull markets, as defined by the S&P 500 rising in gold terms, have taken place when the economy was in the bottom right quadrant.
- 2) All *Ursus magnus* variety bear markets—the big destroyers of capital—have taken place when the economy has been in the upper left quadrant, or the old inflationary bust.
- 3) When the economy is in the upper right or lower left quadrants, nothing too dramatic tends to happen.
- 4) In a true US bull market, setbacks in the S&P 500, such as those caused by a US recession, should be bought by smart investors.
- 5) When the economy is in the upper left quadrant, any rally should be sold.
- 6) Today we are in the top right quadrant, where gold is supposed to outpace an indifferent US stock market. This has been the case since late 2022.
- 7) The seven-year moving average of the S&P 500/gold ratio has been broken (as opposed to the S&P 500/oil-price ratio) and in the past this has never been a good omen.
- 8) Such a breakdown in the S&P 500/gold ratio has often preceded the breakdown of the S&P 500/oil-price ratio **by a few months**.

This new way of mapping the Four Quadrants seems to give better signals, at least for financial markets. However, the changes in the status of the US dollar that have taken place in the last few years may lead to some fundamental changes in the US economy's behavior within the Four Quadrants.

I will try to discuss these in the next chapter.

The end of the US dollar monopoly

To a certain extent, the only countries in the world in which one could invest according to the Four Quadrants were the US, and perhaps Germany between 1974 to 2012. All other countries had to accept three realities:

- The US controlled the cost of time and “owned” the risk-free asset. The US was thus in charge of issuing the only generally accepted reserve of value in the world.
- The US also controlled the availability of energy for third-party countries through the dollar’s monopoly role in the settlement of oil transactions.
- The US controlled the flow of goods through the Swift international payment system. This meant the US could curb any country’s access to the world of trade should the Treasury Department decide to cut a given country’s access to the US dollar.

This left the rest of the world split between two sets of countries.

- 1) **Countries that had already developed their domestic bond markets**, mostly in the OECD. In such countries, one could run a Permanent Portfolio as defined by Harry Browne (more on that later). Still, money managers there knew perfectly well that the cost of time of the country in which they were operating (long-term interest rates) was going to be fixed not by their own central bank in accordance with the needs of the country in question, but by the Federal Reserve. Investors also knew that their own domestic bond market would never become antifragile, especially if the country was an energy importer. Such countries had

on one side the “real assets”, and on the “contracts” side, a substitute of US assets. Using the local bond market or local cash worked, but the diversification effect was not very useful, except if their own exchange rate was rising structurally (Switzerland) or falling structurally (Italy).

- 2) **Countries that had not yet developed a proper domestic bond market** and which had to pay for their energy imports in US dollars. This includes most countries in Asia, Latin America and others in the emerging-market grouping. In such countries, local asset managers never had the opportunity to even try to run a domestic Permanent Portfolio since the only “contracts” on offer were really US treasuries.

This situation lasted from 1946 to August 1971; and then inflation really took off in the US. This first inflation crisis in the US (which had started much earlier than August 1971, with President Lyndon B. Johnson’s “guns and butter” policies) led to Germany seizing the privilege of fixing the “price of time”.

US treasuries vs. German bunds: the privilege of pricing time

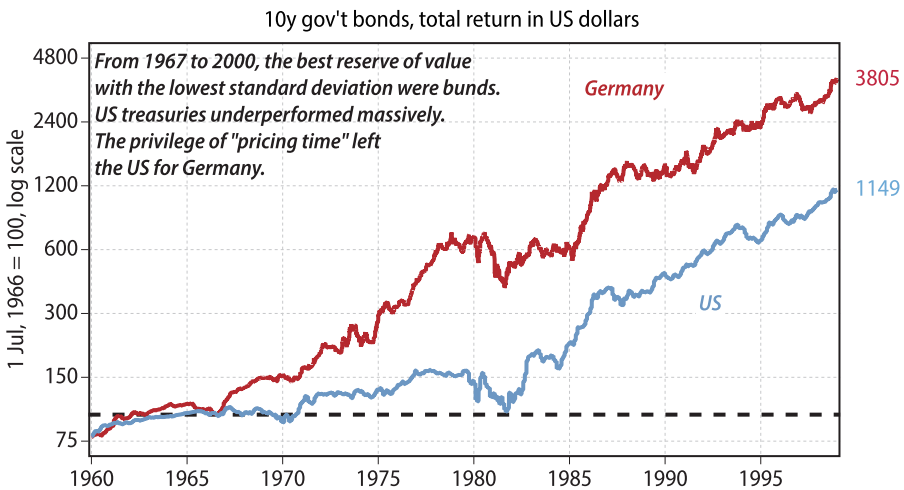


Chart 10

Gavekal Research/Macrobond

Between 1967 and 2000, the Fed lost the ability to control the price of time. That role went to the Bundesbank, and Buba discharged this responsibility ruthlessly (see the epic fights between Jim Baker and Karl Otto Pöhl, or between Pöhl and Helmut Kohl). German real rates remained stubbornly positive. This helped unleash two decades of low inflation and solid growth around the world. With a truly independent central bank at the helm, most of the world enjoyed an unfolding “deflationary boom”.

Not that the US liked it; but aside from jawboning Buba on the Sunday morning show *Meet the Press* and thereby setting off the 1987 stock market crash, there was little the US Treasury (or the German Chancellery) could do, as the Bundesbank was constitutionally independent. And given Germany’s own history, most Germans were (rightly) very attached to this independence.

Perhaps this helps explain the US support for the European Union and the creation of the euro? At first glance, the French idea to create a rival to the US dollar might have seemed anathema to the power elite in Washington D.C., especially those in the US Treasury. But also consider the fact that the euro offered a chance to emasculate the Bundesbank once and for all. This officially took place in July 2012, with Mario Draghi wielding the knife. When the European Central Bank president promised to do “whatever it takes” to save the euro, at that very moment, the German bund stopped being a competitive reserve of value. Europe went back to being a vassal of the United States.

The bund has ceased to be a competitive reserve of value

10y gov't bonds, total return in US dollars

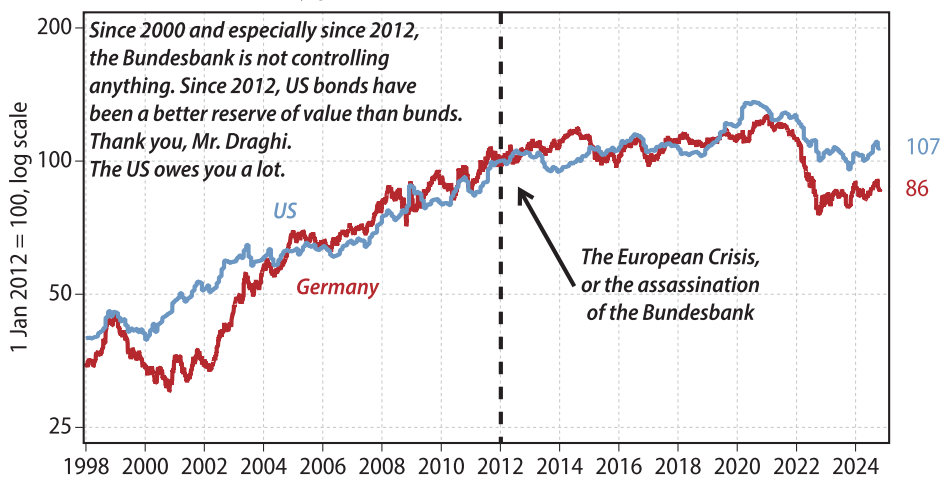


Chart 11

Gavekal Research/Macrobond

But nature abhors a vacuum. As the US was busy defeating an ally, in Asia a rival to the US dollar and the Treasury bond market was emerging: the renminbi and the Chinese government bond market.

Coyly, and instead of challenging the US head-on in existing markets, China attempted to increase its presence across the fast growing but small markets of Southeast Asia, Central Asia and Africa. These were all markets that the US Treasury did not really care about. When, upon arriving in power, Xi Jinping started to talk about the Silk Road, BRICS, the Asia Infrastructure Investment Bank, and using Hong Kong as a platform to issue renminbi debt and lend to Africa, most commentators dismissed the rhetoric. China wants to own trade with Kazakhstan and Kenya? With Uzbekistan and Uganda? Have it! This will not even move the needle. But a decade later, China's trade with Asean is larger than its trade with the US, while China's trade with emerging-market economies is now greater than its trade with developed economies.

Concretely, this means that the threat of tariffs, and even sanctions, is no longer the Damocles' sword that it was a few years ago.

For over a decade, Louis and I have argued that the People's Bank of China wanted to become the new Bundesbank. This was the underlying theme of our various books: *Too Different for Comfort* (2012), *Clash of Empires* (2019) and *Avoiding the Punch* (2021). This seems to now be unfolding. In a market move that is reminiscent of the deutschmark in 1974, returns on long-dated Chinese government bonds broke rank with the US dollar in 2020.

Chinese gov't bonds have outperformed their US and German peers

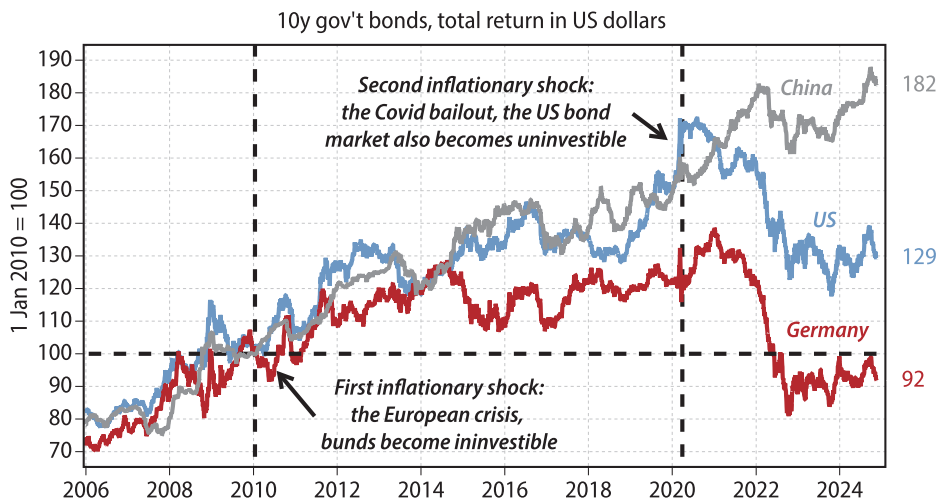


Chart 12

Gavekal Research/Macrobond

This divergence between CGB and treasury returns is ironic since, around that time, Western investors started to parrot in unison the idea that China was “uninvestible”. But meanwhile, at least when it came to bonds (which, lest we forget are supposed to be the reserve of value against which other assets are measured), it was really OECD bond markets in general, and the US Treasury market in particular, that had become “uninvestible”. So were Western investors projecting their own issues onto the Middle Kingdom?

Either way, since 2021 the cost of capital in China has become fully independent from what the Fed does or does not do. This is exceptional for any country, let alone an “emerging market”. How often have we seen a strong US dollar (as between 2021 and early 2024) and a massive outperformance of an emerging-market government bond market? This

should lead to a profound change, which is just beginning, in the holdings of central bank reserves, away from the euro and the dollar and towards reserves in gold and renminbi.

A portfolio consisting of CGBs and gold has performed handsomely

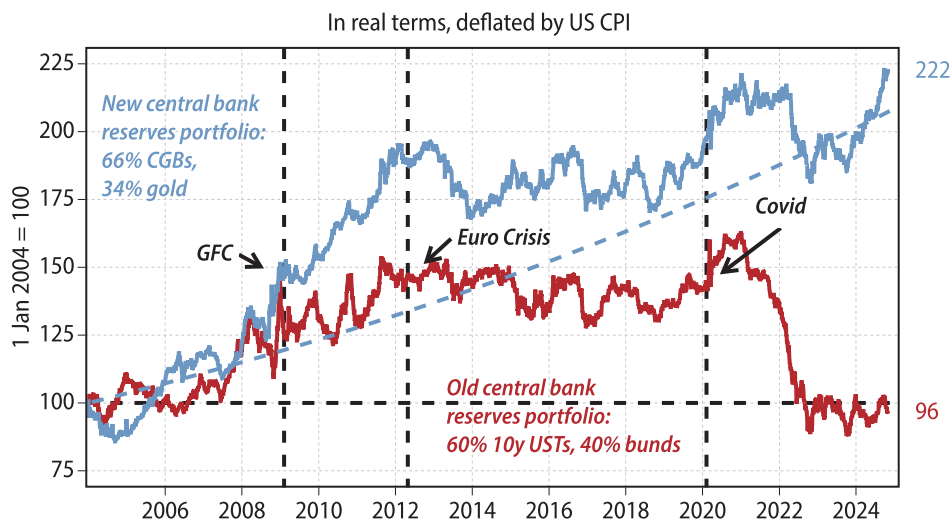


Chart 13

Gavekal Research/Macrobond

The old system was simple: the real economies in Asia, Latin America and across emerging markets operated using local currencies. One used the renminbi, Indian rupee, South African rand, or Malaysian ringgit to pay for restaurants, cigarettes and chewing gum. But the “price of time”, the exchange rate, and the value of the local “contracts” were more than less controlled by the US since a country’s foreign exchange reserves had to be invested in the US dollar.

This led to a profoundly centralized world, and hence when the US caught a cold, the rest of the world got pneumonia. Moreover, each time the US dollar rose, emerging markets would struggle. This is now over. We are rapidly moving to a fully decentralized world.

This should make for a less fragile world, a less political world and probably a less efficient world, with foreign exchange reserves having to be held in the currencies of the countries with which one is trading.

It should mean there is no longer only one financial cycle determined by the Federal Reserve, but almost as many cycles as there are countries. If so, then investing outside of the US will provide genuine diversification.

As always, deficit countries will finance shortfalls on their budgets, external accounts, or both either by (i) issuing bonds to their own citizens, (ii) issuing bonds to foreigners, (iii) using gold or excess dollars accumulated in the past, or (iv) selling productive assets to foreigners.

In simple terms, we are going to have a simultaneous explosion of bilateral financial activities and a contraction in the international financial system.

With the US having lost control of the “cost of time”, with oil getting priced in the currency of the buyer or the seller, and with bilateral systems of payments between countries appearing at the same time, the left side of the Four Quadrants will become playable for all countries, except for the US and the eurozone since a diminishing number will want to buy contracts there anymore. In other words, in today’s world we do not have enough new contracts in Korean won, Chilean pesos or Indian rupees and far too many old contracts issued in euros or US dollars.

This means that the prices of US dollar and euro-denominated contracts will have to fall quite a lot compared to the prices of the others.

The economy is energy transformed

The goal of any economic system is simple: take some inputs and transform these into an output that will have a higher monetary value than the sum cost of the inputs, with the difference being called profits.

If the reader accepts the idea that all products are simply energy transformed at one time or another into something different and more valuable, I can make the following statements.

- The past production systems have led to realized profits. Some of these profits have been transformed into consumption, some into savings and these savings have been invested either in new production facilities, or in gold.
- So gold is basically a part of the profits made in the past to be used opportunistically.

And, as a result, gold itself is nothing but energy transformed.

- The system of production of efficiency assets that exists today is priced according to the current level of profits, to which it is customary to attach a multiple. The result is called a price-to-earnings ratio.
- But since both gold and the current production system are just energy transformed, one should expect the values of the production system, gold and energy to converge over time.

I assume the value of the production system to be the value of the stock market, the price of gold to be equivalent to the value of past energy stored profitably in the relevant country and the price of energy to be the price of a barrel of oil. Hence, using the main market benchmarks for the US economy, I should get the following identities.

- $\text{Gold} - \text{WTI} * \text{constant} = 0$
- $\text{S\&P 500} - \text{WTI} * \text{constant} = 0$
- $\text{The S\&P 500} - \text{gold} * \text{constant} = 0$, with perhaps a slight upward bias due to increases in the energy productivity of the production system

These identities—in an imperfect world where arbitrages take time to play out—will not be true all the time, but the ratio of the respective values should ultimately revert to the mean.

But I should add here that the divergences from the mean, always followed by reversals to the mean, should explain most of the variations that one asset, for example the S&P 500, or gold, may have with the other two. And it is in these divergences and convergences to the mean that a chance to make money “without working” usually appears.

For example, today, the price for the energy used in the production system is cheap versus gold and very cheap versus the stock market. This may be due to the emergence of new and cheaper forms of energy, but I doubt this when considering the next chart.

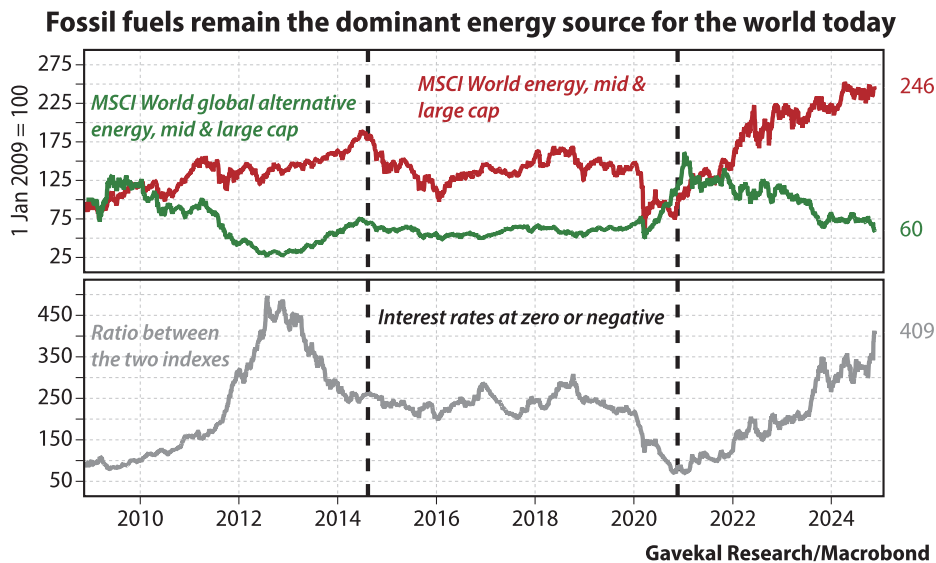


Chart 14

More probably, the constant bad press that fossil fuels attract has led to a temporary underpricing of such energy versus the stock market and gold. Meanwhile, fossil energy still makes up more than 80% of the energy consumed in the world. The eventual return to the mean of the cost of fossil energy relative to the other two would imply that considerable amounts of money will be made, or lost, on this change in relative prices in the coming years.

The profitable energy producers will see their share prices rise, while the energy consumers will see their share prices plummet. This is what the next chart seems to suggest, for as of the time of writing, energy is abnormally cheap relative to gold.

Energy is abnormally cheap in gold terms

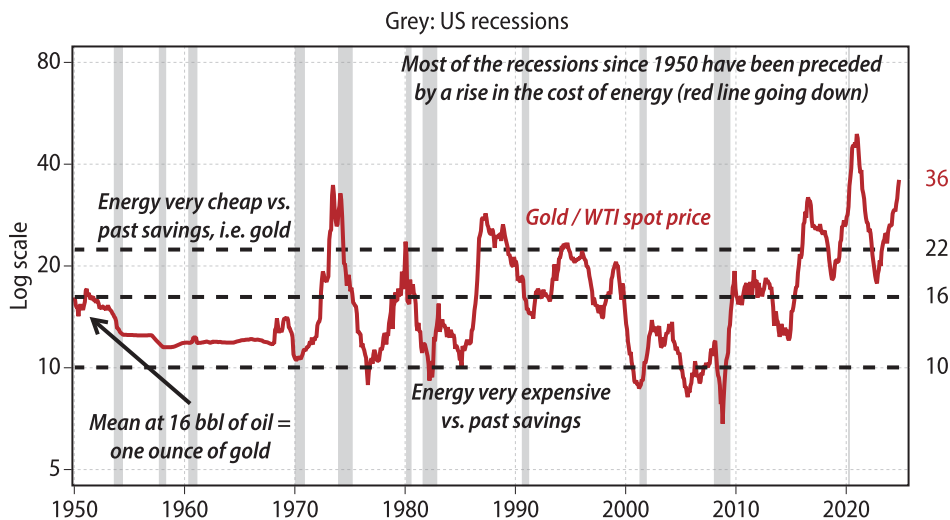


Chart 15

Gavekal Research/Macrobond

Most US recessions since 1950 have taken place with the red line (gold/WTI spot price) going down before the contraction started. At times when this line has been falling significantly because the WTI price is outperforming gold, it usually means that the odds of a recession are on the rise. As of the time of writing, there seems to be no recession in sight.

Let us move now to the second identity, the S&P 500 versus WTI.

The stock market has a clear uptrend versus the price of energy of 1.3% a year. This is most likely due to the economy enjoying a structural rise in energy productivity.

Both gold and stocks are expensive compared with energy prices

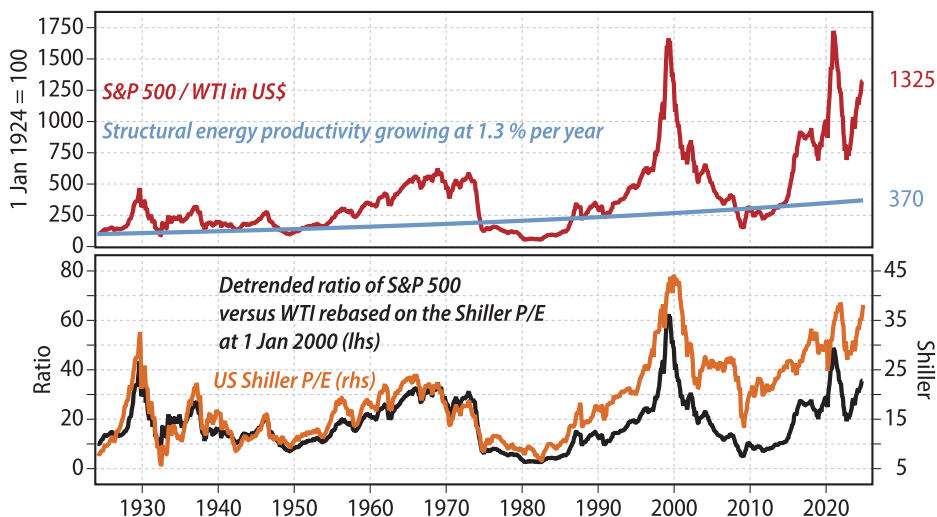


Chart 16

Gavekal Research/Macrobond

If I detrend the ratio in the bottom panel, I find that the black line (the detrended ratio between the S&P 500 and the price of a barrel of oil) is very similar to the yellow line, which is nothing but the cyclically adjusted price-to-earnings ratio of the market (CAPE, or Shiller P/E ratio).

The P/E ratio almost always falls in a recession. The ratio tends to be at a cyclical high just before a recession, and then falls abruptly when the downturn materializes.

The “normal” range for the P/E ratio from 1924 to 1990 moved from seven times earnings (cheap) to 25x earnings, or above (expensive). However, since the fall of the Berlin Wall in 1989 (heralding the victory of financial capitalism over scientific socialism), the range has moved from 18x earnings at the bottom to a peak of above 40x earnings. This probably reflects the belief that the inflation dragon has been slain. But is this the case for sure?

As the reader can see, if the ratio of the S&P 500 to WTI goes down, so does the Shiller P/E ratio. This means that the duration of the stock market is very sensitive to the price of the energy input divided by the value of the efficiency-production system. In simple terms, a move down in the

ratio means that **the marginal return of the transformation of energy into products is falling, and this is never good news for the owners of equities.** So, today, I know that both gold and the stock market are **expensive versus energy prices, which makes them both potentially vulnerable to a sudden increase in the price of oil.**

This takes me to my third identity: gold versus the S&P 500. This last ratio simply shows the relative level of efficiency values versus scarcity values.

The S&P 500 appears overvalued compared with gold

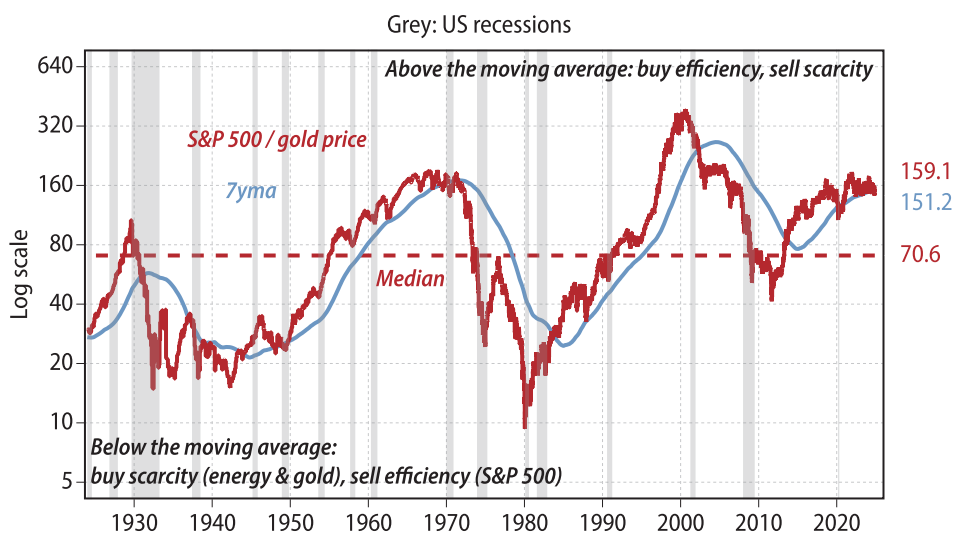


Chart 17

Gavekal Research/Macrobond

At the time of writing the S&P 500 seems to be overvalued versus gold, which is itself overvalued versus the price of oil. If this ratio were to break its seven-year moving average on the downside (presently, we are right on that average), one could say that a bear market in equities has probably started. In the past, breaking the moving average led to the S&P 500 returning to the mean rather quickly, and then undershooting quite substantially afterwards. And this, in turn, would imply that a recession had started, or was about to start.

This reality is even more clearly shown in the next chart.

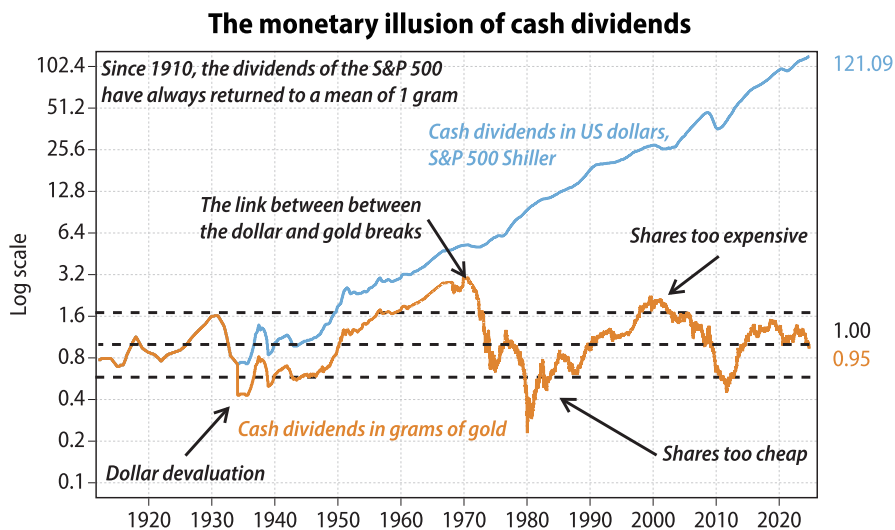


Chart 18

Gavekal Research/Macrobond

Since 1910, the S&P 500 dividend expressed in gold has always returned one gram of gold per unit of GDP. This seems to suggest that the owner of gold is willing to move their capital from gold into “efficient capital” provided they get a perpetual dividend equal to one gram of gold.

Since 2012, the big winners of the transformation of energy into value have been the shareholders of energy users, followed by owners of gold (past energy). Meanwhile, the producers of future energy received very little. This was likely a direct effect of the shale oil revolution (see Louis’s 2012 book *Too Different For Comfort*). But it is also a reflection of the fact that the energy cycle is at the time same much longer than, and totally independent from, the economic cycle.

Most people seem to believe that if economic growth declines, the price of oil will fall. This is true most of the time, except if the world faces a structural shortage of fossil fuels as occurred in the 1970s.

The energy cycle seems to last 30 years, with excess exploration and production leading to energy being cheap, leading to a lack of exploration, leading in turn to a shortage with prices rising, leading to excess production.

To use an Old Testament analogy, as far as energy is concerned, the world usually enjoys 20 years of “fat cows”, duly followed by 10 years of “lean cows”. In fact, structural energy shortages always follow a long period of underinvestment by the energy producing sectors simply because the return on invested capital has been too low.

Thus, a major concern must be that we could soon enter a structural period of shortages in energy which will be independent from the normal economic cycle. At such times, the price of energy has generally gone up vertically, even if the economy was in a recession. In fact, the rise in oil prices has acted to create recessions. This is what the following chart attempts to show. In the 1970s, oil prices went up while economies were falling apart.

In the 1970s, oil prices shot up and economies tanked

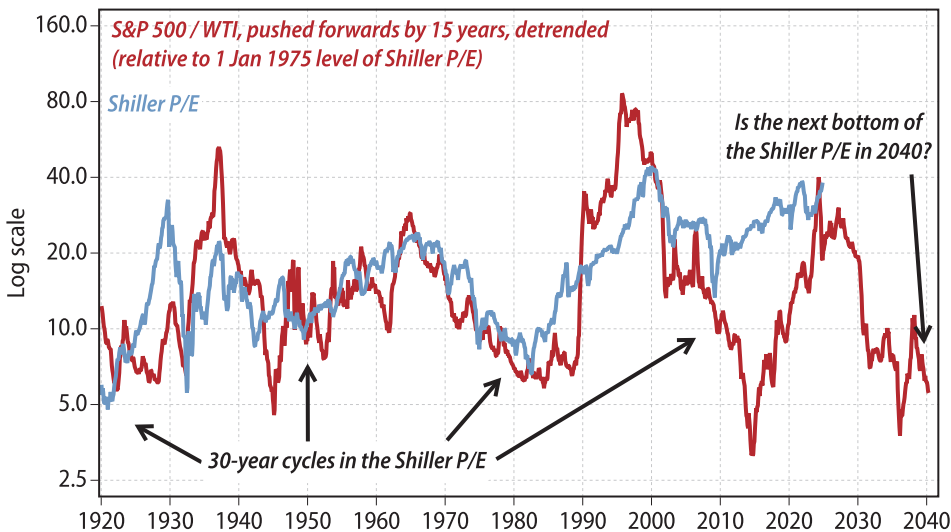


Chart 19

Gavekal Research/Macrobond

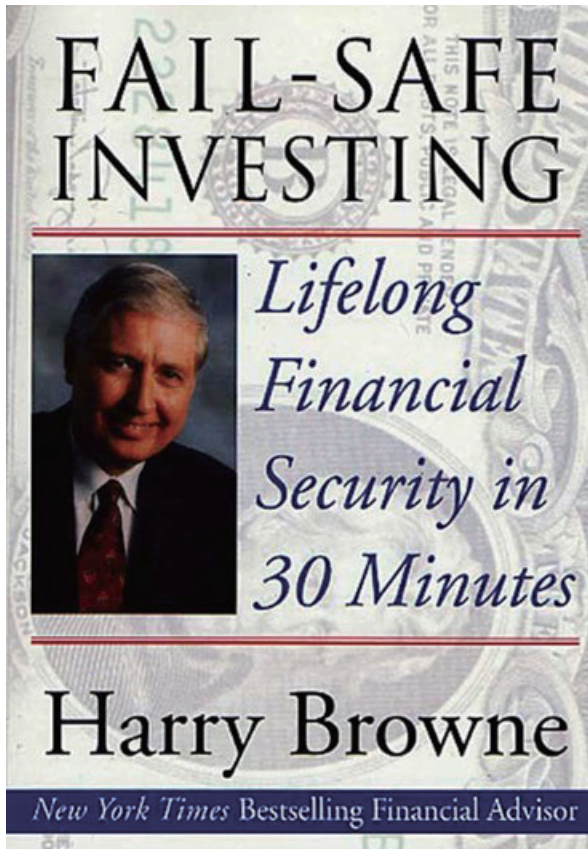
There seems to exist a 28 to 30-year energy cycle. In the downswings, energy becomes more costly **regardless of the underlying economic activity**. During the upswings P/E ratios expand structurally, and then contract during a downswing.

If this analysis is correct, and if no new source of energy is brought on stream that can address the shortage, a new structural downswing could soon be seen in the S&P-500-to-WTI ratio. This development would likely be accompanied by a strong contraction in P/E ratios.

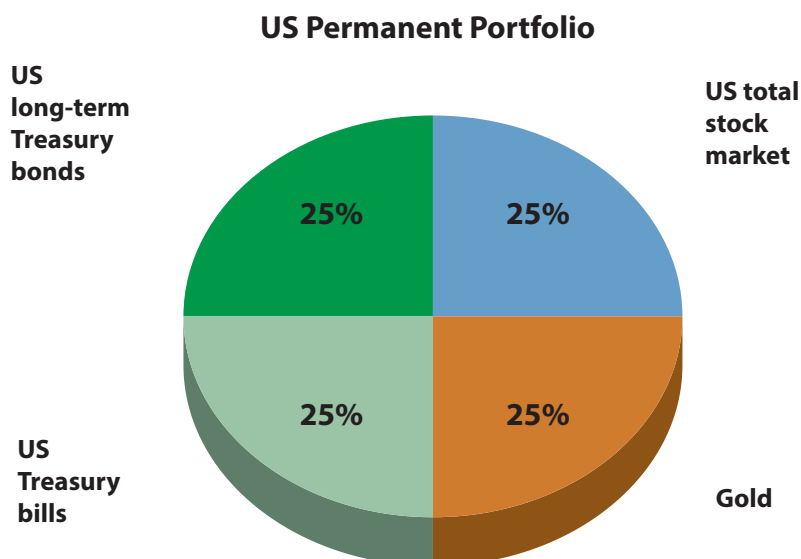
In such difficult periods, investors should have a portfolio concentrated in existing producers of energy, rather than one focused on consumers of energy. And in these periods, the subsidies to inefficient energy producers will most likely disappear.

The Browne portfolio

Some 25 years ago, the former Libertarian candidate for US president, Harry Browne, published a book entitled *Fail-Safe Investing* in which he presented the idea of the Permanent Portfolio.



Browne’s theory was simple. Since nobody can make a proper economic forecast, and since even fewer people understand anything about financial markets, the solution to achieving a decent portfolio return is to invest a fourth of one’s money in each of the four fundamental assets needed for diversification purposes: for US investors, this meant (i) cash, (ii) 10-year Treasury bonds, (iii) the S&P 500 and (iv) gold. The only real management task in this strategy is to undertake periodic rebalancing to maintain 25% weightings.



The results are interesting: in all the countries where we tested the Permanent Portfolio, similar results were achieved. Portfolios grew by 4-5% a year in real terms, and with very low volatility (see next page). Let us first show the results for the US since 1970 which should be called “**from chaos to order**”. The real return of the US Permanent Portfolio is around 4%, with only small deviations from this structural growth rate and very low volatility.

The US Permanent Portfolio has a structural growth rate of 4%

Rebalanced quarterly | Grey: US recessions | 1 Jan 1970 = 100 | in real terms

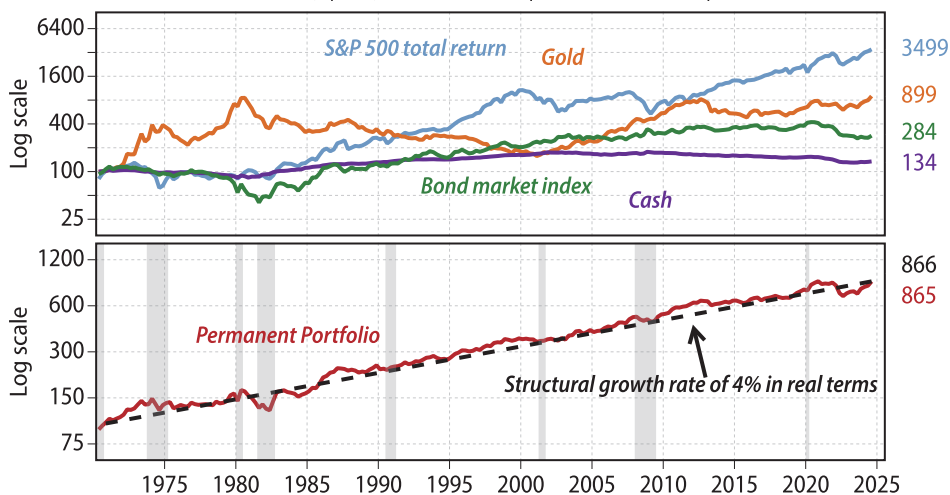


Chart 20

Gavekal Research/Macrobond

Let us now look at the Permanent Portfolio for Japan.

The Japanese Permanent Portfolio grew despite the stock market slump

Real terms | Shaded grey: Japanese recessions

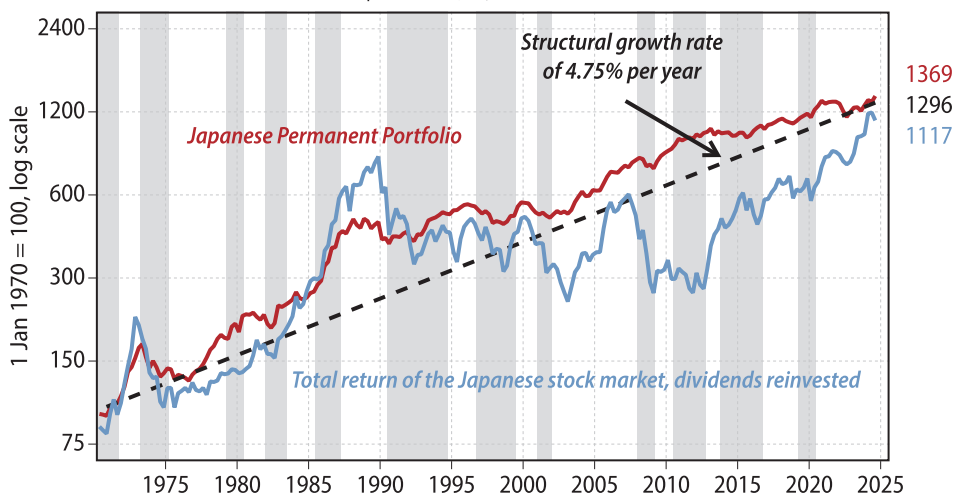


Chart 21

Gavekal Research/Macrobond

Fascinating! Since 1970, the Japanese Permanent Portfolio has returned 4.75% a year in yen terms, thus outperforming the US Permanent Portfolio despite Japan's stock market being a disaster for a little over two decades.

As Japan shows, to return 4% real, **we do not need to have a performing stock market!**

Still, the most attractive characteristic of Browne's Permanent Portfolio is that the volatility of returns is far lower than in the local stock market and even the bond market.

The US Permanent Portfolio has less volatility than the S&P 500...

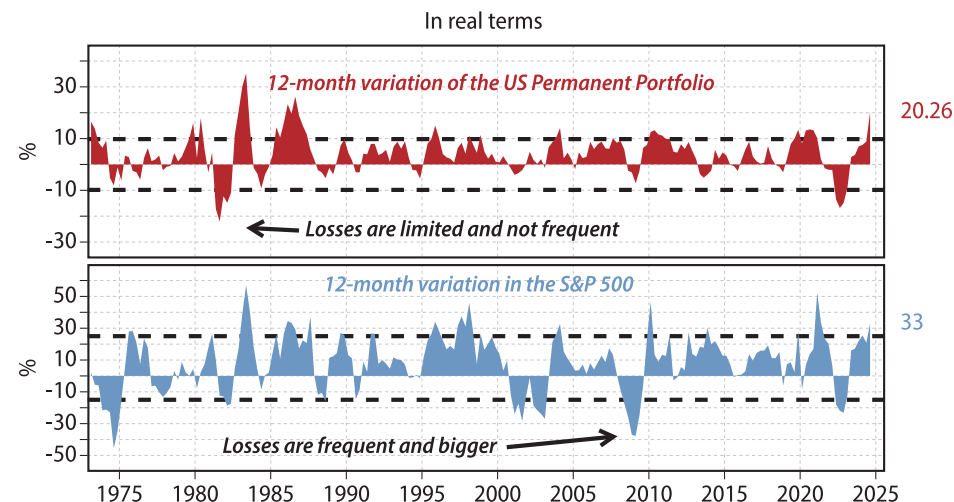


Chart 22

Gavekal Research/Macrobond

...or the US bond market

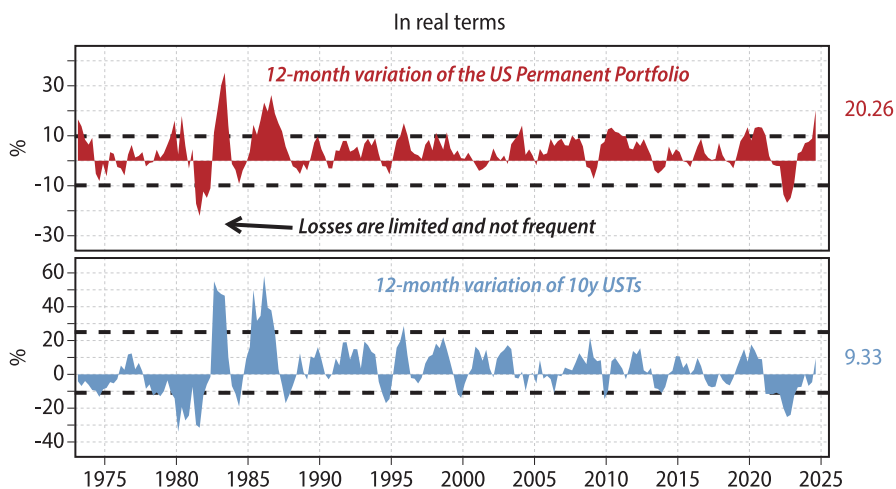


Chart 23

Gavekal Research/Macrobond

More importantly, since 1971 and the end of the Bretton Woods arrangements, the US bond market has not only been more volatile but has greatly underperformed the Permanent Portfolio. This raises the obvious question: how is Browne's Permanent Portfolio achieving these results?

The answer lies in the Four Quadrants.

As mentioned above, in a capitalist system the typical state should be a deflationary boom (bottom right quadrant) that sees volumes rise and prices fall. At such times, corporate sales rise faster than prices decline and equity markets thrive. Bonds in real terms go up since prices are falling, cash goes up and gold underperforms. Hence, in such periods, three out of the four assets in Browne's portfolio have a real positive return.

However, every now and then, governments become too big a part of the overall economic pie, resulting in an inflationary boom. At such times, the prices and volume of production rise together. This scenario is typical of war times. In this scenario, gold and equity markets rise, cash does very little and bonds go down. Two up, one flat, one down. The Browne portfolio does well enough.

Let us now move to the inflationary bust, also known as stagflation. Prices rise while volumes fall. Gold rises, cash registers small but positive returns, and bonds and shares take a beating. Two up, two down. This is the most dangerous scenario by far. It is when Browne's Permanent Portfolio usually suffers a drawdown, although such losses should not be large enough to do permanent damage.

Finally, we finish with the deflationary bust, when volumes and prices go down at the same time. In such cases, government bonds rise in value, as does cash. Shares take a beating and gold is typically fairly stable. So two up, one flat and one down. Browne's Permanent Portfolio does fine.

Putting it all together, in three out of four scenarios, we have one asset doing well, two doing alright, and one doing badly. So, in three out of four scenarios the portfolio goes up. It is only in the inflationary bust that the portfolio suffers. Unfortunately, inflationary busts tend to be violent. Fortunately, they tend not to last too long.

Bringing it all together, Harry Browne's Permanent Portfolio is **a synthetic tool** which allows the investor to have a decent real return of around 4% a year. It promises low volatility using an efficient diversification between asset classes and **without having to move outside of one's country**. Obviously, the Permanent Portfolio cannot be operated if the end investor does not have access to gold (increasingly the case for insurance companies, pension funds and endowments) or if gold cannot be allowed to make up 25% of a portfolio.

That caveat aside, the Permanent Portfolio is easy to maintain, cheap to operate and is certainly an excellent substitute for the classical 60-40 equity-bond portfolio which reigned supreme from 1983 to 2021.

This is how the Permanent Portfolio stacks up against the S&P 500:

- Annualized return for the Permanent Portfolio: 4.1% real.
- Annualized return for the S&P 500: 6.8% (with dividends reinvested).
- Maximum drawdown for the Permanent Portfolio: -26.4%.
- Maximum drawdown for the S&P 500: -54.7%.
- Annualized monthly volatility for the Permanent Portfolio: 7.5%.
- Annualized monthly volatility for the S&P 500: 15.7%.

All of which brings us to the next task at hand: how can we improve on the above? I will tackle this in Part II.

Part Two: Improving Browne's Permanent Portfolio

Playing the exclusion game— bonds versus gold

The remarkable thing about Harry Browne's idea is that he clearly identified a preferred asset for each state shown in the Four Quadrants, without ever mentioning its existence. Either he did not conceptualize this framework, or he perhaps concluded that there was no way an investor could determine which quadrant they were in at any given point in time.

And this is where I diverge with Browne. I may not know where I am, but I believe that I can have a pretty good idea of where I am not. Or in other words, while knowing which assets to own is a challenge, knowing which not to own is perhaps easier.

For example, when it comes to antifragile assets, **it makes little sense to own both long-dated bonds and gold at the same time** as one almost never makes money at the same time in bonds and in gold. Bonds and gold are mutually exclusive.

In the Four Quadrants, the asset of choice if I am in a deflationary bust (bottom left) is a government bond. Gold is the asset of choice if I am in an inflationary boom. The two assets of choice are thus symmetrically positioned in the Four Quadrants. They are therefore mutually exclusive in a portfolio at any moment. Either one owns bonds, or one owns gold.

The question then becomes what rule should I follow to move from bonds to gold and back?

The rule I propose is simple: I let the markets dictate whether gold or bonds should be owned through a very simple technique, shown in the next chart.

We are in a gold-buying period

Shaded blue: 10y UST / gold > 7y moving average

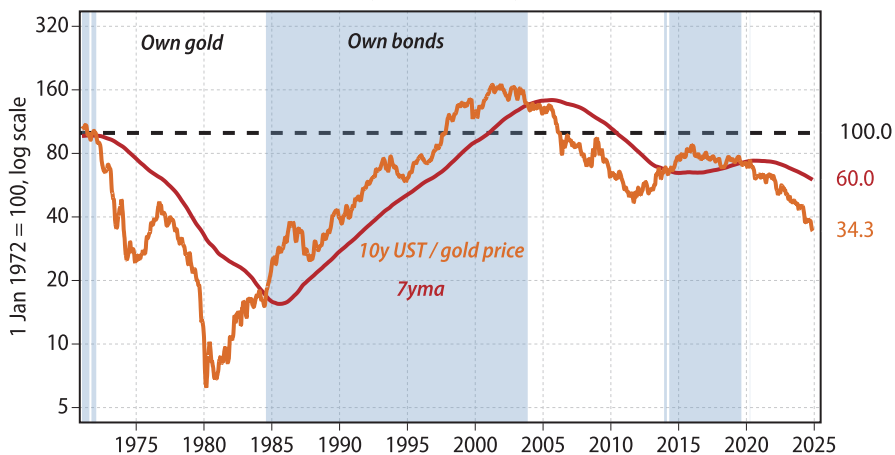


Chart 24

Gavekal Research/Macrobond

If the ratio between the total return of a constant-duration 10-year US Treasury bond and the price of gold is above its seven-year moving average, I stay in US government bonds. If it is not, then I move into gold.

The periods when one should own bonds, or alternatively gold, are very long, and there is almost no short-term arbitraging between the two assets. Simply put, if I know that I am somewhere in the bottom two quadrants, I do not need gold. Similarly, if I am in the upper two quadrants, I should not own bonds.

Since August 1971 when direct convertibility of US dollars for gold was ended, the decision rule tells us the following:

- There have been three periods in which to own gold: (i) August 1971 to June 1984, (ii) February 2004 to September 2013 and (iii) April 2020 until the time of writing.
- Since the end of Bretton Woods, there have been two periods in which to own US treasuries: (i) December 1983 to April 2004, and (ii) December 2013 to April 2020.

From there, I propose to compare the performance of a portfolio that stays in the four assets at all times compared to a portfolio that moves from four assets to three assets—switching from bonds to gold according to the signals given by the seven-year moving average of the ratio between bonds and gold. We have already seen that Browne’s portfolio delivered a 4% real return rather consistently. Let us now try to determine what kind of performance would have been achieved by the investor **moving opportunistically from bonds to gold, and from gold to bonds, according to signals given by the seven-year moving average**. The results are shown in the next chart.

Strategically switching between gold and bonds offers better returns

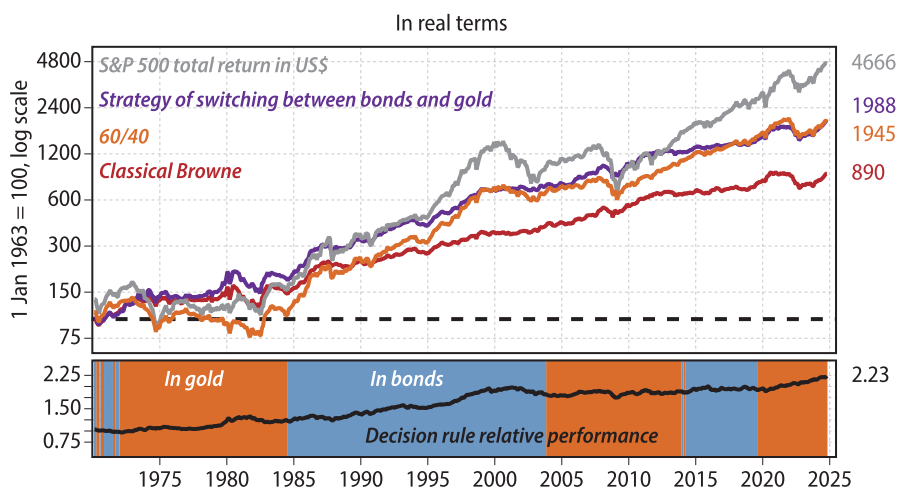


Chart 25

Gavekal Research/Macrobond

Here are the data for the three-asset portfolio since the start of 1970.

- Annualized rate of return of 5.5% for the Gavekal three-asset portfolio versus 4.1% for Browne’s four-asset Permanent Portfolio.
- Maximum drawdown of -27% versus a maximum drawdown of -26.4% for Browne’s portfolio.
- Annualized monthly volatility of 8.5% versus 7.4% for Browne’s portfolio.

The performance of the Gavekal three-asset portfolio improves over the performance of the classical Browne four-asset portfolio by 1.4% a year, to reach an average annual real return of 5.5%, which is considerable. The volatilities of the two portfolios are similar, and so are the drawdowns. It thus seems that moving from four assets to three assets is a good idea, based on a simple relative performance rule.

More fundamentally, and to stay with the concepts developed by Nassim Taleb, what I like about the three-asset portfolio is that we have:

- 1/3 in a robust asset, cash.
- 1/3 in a fragile asset, equities.
- 1/3 in an antifragile asset, either gold or US treasuries.

This leads me to have two thirds of my money in real (gold) or efficiency (S&P 500) assets when the currency is being debased (gold going up), or more exactly when the market believes that the currency is being debased, and only a third in “contracts” that rely on the survival of the currency. This compares to having 50% of my assets at risk in a classical four-asset Browne portfolio.

And if the currency becomes credible once again (as it did when Paul Volcker took over the Federal Reserve in 1979), gold will start underperforming and the portfolio will automatically shift into government bonds. I would then expect “contracts” to do at least as well as, or better than, the scarcity or efficiency assets represented on the right side of the Four Quadrants.

The net result is that the three-asset portfolio allows me to have a better return than Browne’s four-asset portfolio **by eliminating the asset that does not stand a chance. Meanwhile, the maximum drawdowns and the volatility are similar.** Most importantly, the three-asset portfolio reduces the risks of being in “contracts” if either the currency starts to head towards zero, or if the government defaults on its debt.

Playing the exclusion game— equities versus cash

As reviewed above, bonds and gold, being symmetrically positioned in the Four Quadrants, should be mutually exclusive in a portfolio. Could the same be true for shares (bottom right, deflationary boom) and cash (top left, inflationary bust)? This is what the next chart shows.

There have been several periods when shares underperformed cash

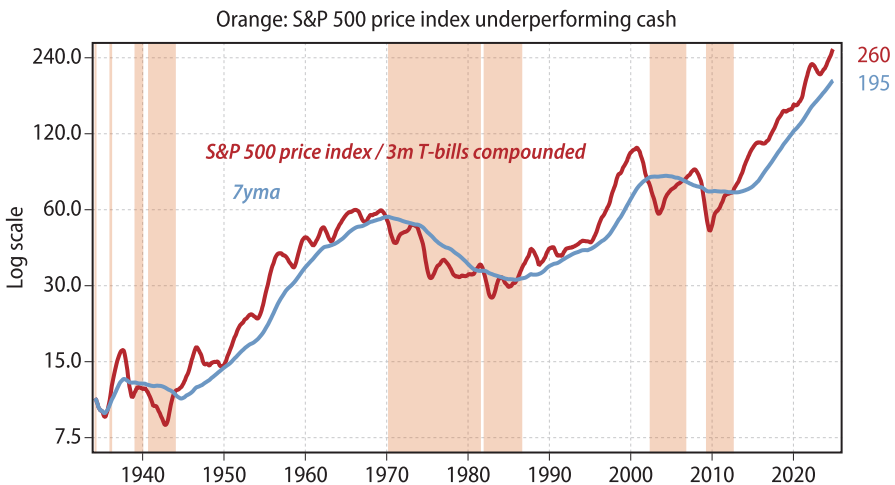


Chart 26

Gavekal Research/Macrobond

Since the 1930s, there have been three or four periods when shares underperformed cash. Let me now compute what would have been the performance of a portfolio that moved from shares to cash according to the same seven-year moving average decision rule.

A strategy of switching between shares and cash only helps marginally

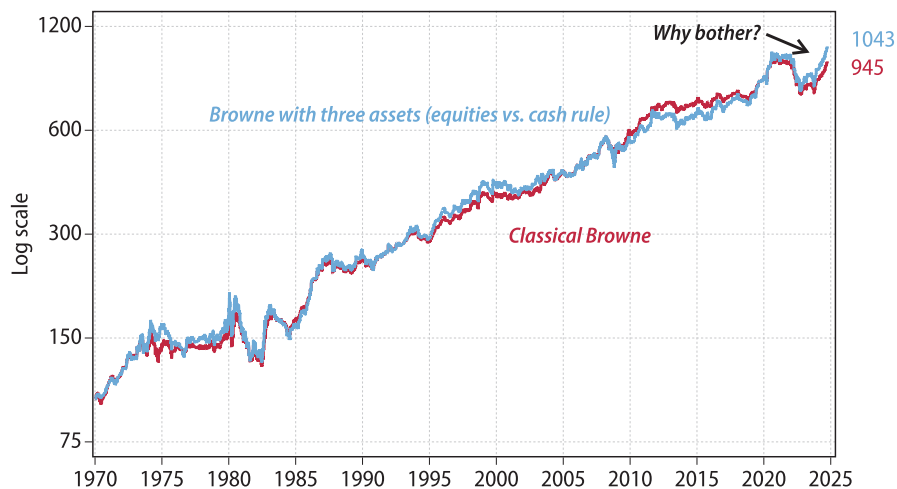


Chart 27

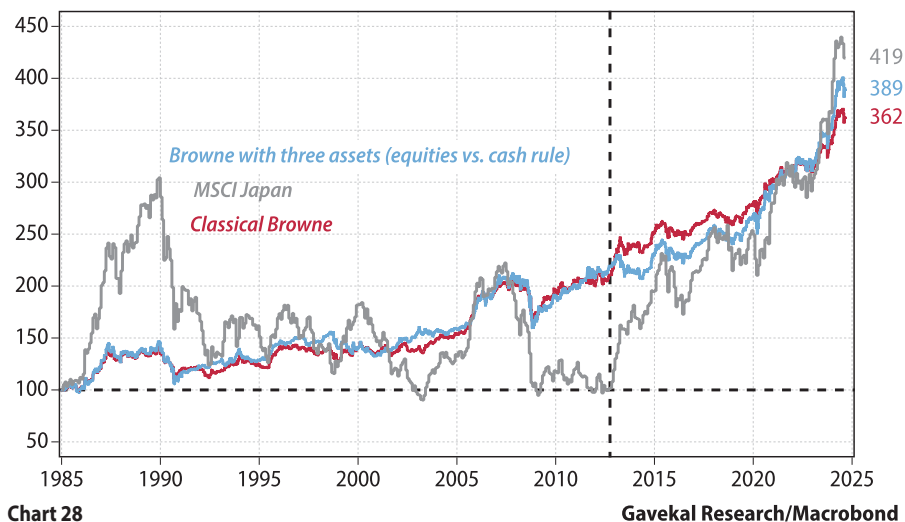
Gavekal Research/Macrobond

The results are very similar to the classical Browne Permanent Portfolio. This raises an obvious question: why has the equities vs. cash rule not had much effect?

The answer must be that the disappointing result could be due to the US not having had a proper bear market in nominal terms since 1973-74. To be sure, the US did suffer a proper bear market in 2008-09, but it was over very quickly.

So instead of the US, consider Japan, which had a proper bubble in the 1980s followed by a true *Ursus magnus*. It may not have been the most vicious bust I have seen in my career, but it was definitely the longest.

The three-asset portfolio did better because of higher equity exposure



From the start of 1985 to October 2012 the MSCI Japan index (dividends reinvested) returned precisely zero in real terms. Over the same period, the Browne Permanent Portfolio, and the three-asset portfolio—choosing between cash and equities—more than doubled, for a real return of around 3% a year. Still, from 1990 to 2012, the Browne Permanent Portfolio and the three-asset cash-equity choice portfolio had very similar returns.

However, since 2012, the three-asset portfolio has done better (by 7% or so) than the Browne Permanent Portfolio simply because it had more equities (33% instead of 25%) and more gold (33% instead of 25%) and perhaps more bonds (again, 33% instead of 25%).

So, all in all, it seems that this second rule of exclusion has some unexpected merits: it does not protect against the big bear markets better than the classical Permanent Portfolio, but this rule allows the portfolio to emerge from a bear market stronger and more quickly.

Adding energy into the mix

As elegant as it is, Browne's Permanent Portfolio has a hidden flaw: it is not really hedged against a massive increase in the price of energy. This is why the Permanent Portfolio still shed a quarter of its value in the 1970s oil shocks.

This would be fine if the weight of energy names in the broader equity category was high, and stable over time. But this is clearly not the case. Today, roughly 4% of the S&P 500 is made up of energy names compared to 30% in 1980! Back then, the market was fully hedged against a possible rise in the price of black gold, which of course did not occur. Instead, the price of oil collapsed in 1985.

Today, with such a low weighting in energy, the US equity market is uniquely vulnerable to a big rise in oil prices. This is a risk that mindful investors should aim to mitigate.

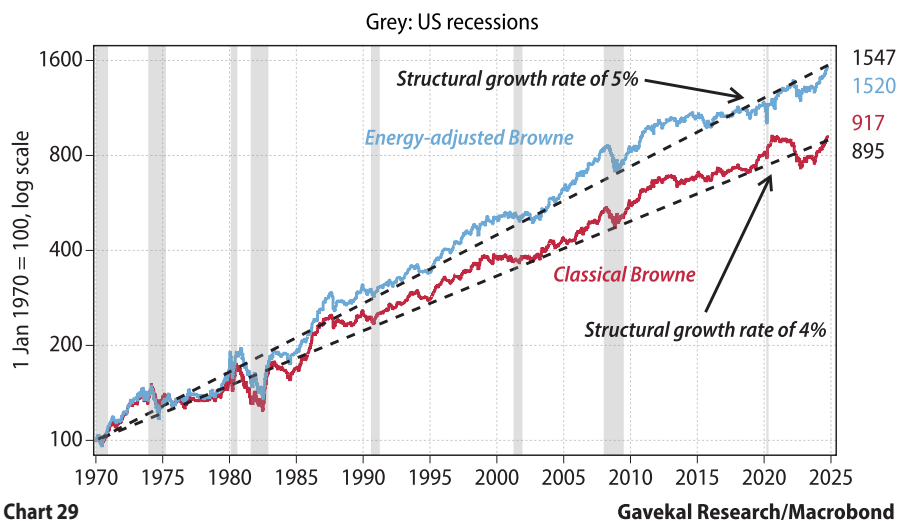
In the past, when oil prices rose faster than the stock market, the S&P 500 declined and the rebalancing from cash, gold and even bonds led to more oil producers being bought in the portfolio since oil shares represented a large part of the overall equity universe. But as just noted, this is no longer the case. Energy names are a small fraction of overall equity indexes. Thus, if oil prices were to rise suddenly, the stock market would go down and the rebalancing would lead to more Nvidia, Microsoft or Amazon being bought, all big consumers of energy. Very little would go to ExxonMobil, BP or Petrobras.

In order to maintain a kind of energy neutrality in the portfolio, I propose to create a fifth “bucket” made up of the index of energy producers (XLE.US). In so doing, I will guarantee that I always have at least 20% of the equity part of the portfolio in energy, plus whatever energy shares represent in the S&P 500.

In this simulation, I thus move from four assets to five assets.

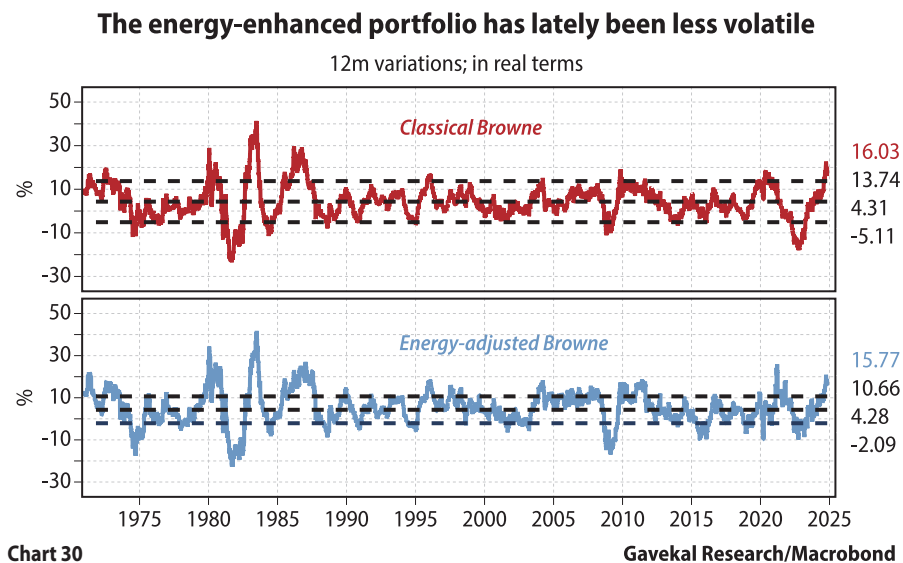
Logically, by introducing a higher percentage of equities I should achieve perhaps a higher return, and certainly a higher volatility of those returns.

Moving from four assets to five creates greater returns



As expected, with a bigger holding of equities, the five-asset portfolio generates higher returns. The energy-enhanced portfolio returns 5% a year instead of 4% for Browne’s Permanent Portfolio. It is a better return than just adding another 20% in the S&P 500. In that case, the portfolio return only rose by an additional 0.5pp a year. This shows that trying to build an energy-neutral portfolio raises the return more than just adding more equities.

The next question must be: does adding an energy pocket increase the volatility of the energy-enhanced portfolio versus the classical Browne Permanent Portfolio?



Interestingly, looking at the 12-month rate of change of both portfolios, it seems that the energy-enhanced portfolio is less prone to violent downturns than Browne's Permanent Portfolio. In 1974, the drawdown was bigger in the energy-enhanced portfolio, in 2009 it was the same and in 2022 it was smaller. Trying to neutralize the effects of oil movements on the Browne Permanent Portfolio thus seems to be a good idea.

But perhaps this can also be optimized further?

In the energy-neutral portfolio with the S&P 500, I can now move from five assets to four assets by moving from gold to bonds and bonds to gold, as I did in a previous chapter, in order not to stay invested in an asset that has no chance of going up.

I propose to call this new animal the Browne dynamic.

And here are the results of these maneuvers.

- Inflation since 1970: 4% per year.
- Annual return: 10.1%, or 6.1% real. We are getting very close to the structural returns on equities, but with far, far lower volatility.
- Volatility: 10% a year.
- Maximum drawdown: -38%.

The work which I have done on building a portfolio for the US can be replicated in no time at all for almost any other market in the world.

The basic idea is always to start with the classical Browne portfolio in each country and then—after understanding the structures of the local economy and stock market—introduce new variables or indexes to test if these changes raise the return without increasing the volatility too much—or to do the arbitraging between bonds and gold.

For example, in the UK, the main indexes are overweighted toward financials and energy, which have very little to do with the UK economy. The solution might be to build a UK Browne portfolio using the mid-size company index rather than the all-shares index.

In the US, a manager could decide to replace the S&P market capitalization-weighted index with the S&P equally-weighted index and discover that it does not change the results at all.

Or the manager could choose to only have a “Schumpeterian” portfolio in the US by replacing the S&P 500 with the PHLX Semiconductor index. Looking back to 1991, this would hugely raise the portfolio’s real return to 6.1% a year but volatility would rise by 50% along with the maximum drawdowns versus the classical Browne portfolio. In this case the tradeoff between return and risk is quite visible, and it is for the client to make the decision.

As we all know, 80% of the performance in a portfolio is achieved through its construction and 20% by the assets deployed. Perhaps even more important are the assets that were not put in the portfolio.

Some managers manage their positions against an equity index, others against a bond index, others still against the average achieved by their peers or against some sort of 60-40% mix.

I hope that the reader has understood that my goal is to introduce a framework which will help managers build what I dare to call an **antifragile portfolio**, taking as a starting point the local Browne classical Permanent Portfolio.

I have tried to show in this research that, for those people, the benchmark to beat should be 4% real, with fairly low volatility. And I have also tried to show that beating 4% real is doable.

More research needs to be done, with the biggest challenge being to build an internationally applicable Browne portfolio. I am not sure it is doable, but I certainly will try. My goal remains to help our readers achieve this result.

The aim of every investor is to maximize returns for a given level of risk. Some look to achieve this seemingly simple goal through individual stock selection. This takes both skills and time. Others look to achieve this through tactical asset allocation. This takes intestinal fortitude and discipline. In this book, Charles argues for a third path: efficient, yet simple, portfolio construction.

In less than a hundred pages, and drawing upon his more than fifty years of experience in financial markets, Charles shows how to integrate four key macro investing concepts into a general theory of portfolio construction.

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