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Mastering future market uncertainty with modern multi-asset investing

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Daniel Seiler heads the Multi Asset Boutique at Vontobel Asset Management. In this role, he oversees systematic and fundamental investment solutions, which are offered by the Vescore and Multi Asset brands respectively. He is responsible for the investment processes, driving innovation in product development and managing the investment teams.

Previously, from 2017 to 2018, he was Head of Vescore, the quantitative investing franchise of Vontobel Asset Management. Daniel Seiler became Chief Investment Officer at Vescore Solutions AG in 2009 and was instrumental in operating the company's portfolio and investment management division.

Prior to this, he ran the hedge fund platform of Swiss Capital Investment AG, where he oversaw the investment activities of various funds of hedge funds. Daniel Seiler started his career as an analyst in the field of sustainable investments.

Daniel Seiler's educational background includes a PhD (Dr. oec. HSG) and a Master's degree in Financial and Capital Markets Theory from the University of St. Gallen (lic. oec. HSG). In addition, he holds a Master's degree in Environmental Sciences from ETH Zurich (dipl. natw. ETH). "Investment management provides only one dependable way to survive through the uncertainty of the future: diversification."

Peter L. Bernstein Financial historian, economist and pedagogue

Mastering future market uncertainty with modern multi-asset investing

COVID-19 has just rung in the next round of low yields, which has prolonged the perilous balancing act between risk and return for multi-asset investors as they strive for the dual goal of steady returns and capital protection. Designed as all-weather, one-stop-shop investment solutions providing a smooth ride through market uncertainties, successful multi-asset portfolios master the art of correlation management with the aim of optimizing the trade-off between risk and return.

However, some multi-asset strategies are moving away from their invincible core allocation of equities and developed-market sovereign bonds for additional yield pick-up in the corporate, emerging market and other higher-yielding fixed income spaces. This asset allocation shift has come at the expense of diversification and, therefore, crisis resilience. As the needs of a post-COVID economy are likely to keep interest rates low for a significant amount of time, multi-asset strategies will continue to face the challenge of balancing yield and risk. This will continue to drive the need for strategies able to generate returns while applying enhanced risk control measures to manage volatility.

Traditional strategies holding on to static, capital-based allocation concepts that are often fraught with behavioral biases are likely to struggle¹, whereas modern multi-asset strategies following a systematic and risk-based approach to allocation can provide the solution. This is because these portfolios are able to combine equal risk contributions from all portfolio components with precise volatility targeting, while making tactical allocation adjustments based on unbiased market views, resulting in improved Sharpe ratios. Ultimately, they enable investors, despite challenging market regimes, to stick with what is probably the most convenient way of allocating capital: multi-asset investing.

Daniel Seiler, PhD Head of Multi Asset Vontobel Asset Management

To learn more, read our paper "Know yourself, conquer the markets: How knowing these 3 behavioral biases can lead to investment success".

The purpose and challenges of multi-asset investing

"Multi-asset investing derives its purpose from the 'widow portfolio' of the 1950s. This portfolio was designed as a steady income source for households that had lost their breadwinner."

Widows gave purpose to multi-asset investing in the 1950s

Multi-asset investing is an old and intuitive way to allocate capital. History shows that people split their wealth equally amongst various assets, well before investing developed as a scientific discipline. However, it was not until the 1950s that multi-asset investing was put to a specific purpose when the "widow portfolio" came on the scene. The widow portfolio was designed to ensure a sustainable livelihood for housewives, who, after their husbands' passing, had no income given that they were mostly excluded from the labor market. With that in mind, the widow portfolio divided the available asset base amongst safe and income-generating securities, such as stocks, bonds and others. Optimizing income at low levels of risk was paramount since entire households depended on the success of these strategies. A widow-proofed portfolio was a "plug-in" investment solution generating dependable amounts of cash.

Formalizing the concept of multi asset: diversification and risk-adjusted returns

Roughly at the same time as the widow portfolio emerged, Harry Markowitz intellectualized the concept of portfolio diversification and demonstrated the benefits of combining assets with low correlation in an effort to determine the most efficient portfolio from a risk-return perspective. He provided proof, that diversification adds value to portfolio management, since, if done right, it is able to maximize the return for a given level of risk. William Sharpe, Markowitz's student, formalized the concept of risk-adjusted returns by coming up with the Sharpe ratio which measures excess returns per unit of risk. Relying on the concept of volatility as an indicator for risk, the formula implies that adding diversification lowers portfolio volatility and therefore increases risk-adjusted returns.

 $\mathbf{R}_{p} - \mathbf{R}_{f}$ σ

According to Sharpe, all risky assets are linked to a single source of systematic risk, which means that they are all correlated to each other, albeit to varying degrees. As correlation determines the degree of diversification, Markowitz and Sharpe have been instrumental in defining multi-asset investing's axioms.

Multi asset's mission and invincible core

Rooted in everyday income needs and delineated by rigorous scientific frameworks, the core purpose of multi-asset investing is protecting capital by subduing volatility while generating steady returns through exposure to the widest possible spectrum of return-yielding opportunities. To be clear: multi-asset portfolios are not there to maximize returns. Therefore, any multi-asset manager's quest for success must optimize the trade-off between risk and return. The goal is to achieve the target return at the lowest possible level of risk in order to maximize the compounding effect on the capital deployed and to smooth the development of returns enabling steady asset growth.

Chart 1 maps out this quest by presenting the long-term levels of correlation of the main traditional asset classes to world equity markets versus their ability to provide excess returns. Strikingly, developed-market government bonds are the only asset class exhibiting negative correlation to global equities. While most other asset classes offer higher levels of return, they are positively correlated to equities and therefore cannot offer the same benefits of diversification.

Chart 1: Asset class correlations to world equities and excess returns





Past performance is not a reliable indicator of current or future performance. The correlation and excess returns over 1-month USD LIBOR for each asset class were calculated using monthly returns over the longest available periods for each asset class in order to increase the accuracy of correlations (all asset classes are hedged in USD). The time periods are: 03.1991 – 12.2019 for G7 government bonds, 12.1990 – 12.2019 for gold, 06.1998 – 12.2019 for investment-grade corporate bonds, 12.1997 – 12.2019 for high-yield corporate bonds for the US and Europe, 08.1978-12.2019 for G7 equity markets, 12.1994 – 12.2019 for global real estate equities. The blue line represents the linear fit between the correlation to world equities and excess returns.

Source: Vontobel Asset Management.



"Equities and government bonds represent the invincible core of any multi-asset portfolio."

Despite variations over time, the correlation between equities and government bonds has remained consistently low (see chart 2). While their correlation coefficient reached its peak at above 0.3 in the 70s, their correlation hovered around zero for most of the last century (see chart 2). Over the last two decades, their correlation even remained consistently negative. As proven diversifiers, equities and government bonds come closest to the holy grail of a perfect hedge, which has bestowed upon them the role of forming the core of any multi-asset portfolio. Adding other asset classes to the mix is tempting for return-enhancing reasons. While they can provide additional diversification, they do so only to a lesser extent. In addition, they bring significant complexity to the mix, which needs to be monitored and managed.



Chart 2: Correlations vary over time

The chart shows the correlation between US government bonds (represented by 10-year US Treasury constant maturity bonds) and US equities (represented by the S&P Composite as calculated by Professor Robert Shiller. This composite is based on data from 1871 until today using the S&P 500, the S&P 90 and the S&P 233 indices in addition to a collection of earlier data). The correlations are shown for twelve decades between 01.1900 – 01.2020 based on monthly returns.

Source: Vontobel Asset Management, http://www.econ.yale.edu/~shiller/data.htm.

Where are correlations headed?

The degree of correlation between bonds and equities is key for multi-asset investing. The lower the correlation, the better the conditions for managing the risk profile of a multi-asset portfolio. This means that the negative correlation of the last two decades was the perfect environment for portfolios composed of both asset classes. While these conditions might persist for some time, they are likely to have an expiry date, which is tied to the power of "central banking" to influence asset prices.

"Today's negative correlation between government bonds and equities are the natural result of the Central Bank Put."

Central banking as a discipline came to prominence through Paul Volcker and Alan Greenspan, who upgraded monetary policy to an artful practice of managing the economy and, by extension, equity markets. Should central banks lose their spell over the economy over the next years, inflation might rear its ugly head again. Since inflation has a negative effect on both asset classes, it pushes correlations back into positive territory, which poses a challenge to the correlation management skills of multiasset managers. This is because multi-asset portfolios would be faced with increased volatility levels threatening the investment goals of investors.

If history is any indication, correlations reached their maximum of 0.33 during the energy crisis of the 1970s just before inflation soared to 20% in the early 80s, unleashing strong headwinds for the economies of the developed world. Only after Paul Volcker became chairman of the U.S. Federal Reserve (Fed) in 1979 and broke with tradition by changing Fed policy from targeting interest rates to targeting the money supply, could inflation be tamed. Since then, keeping inflation under control has been one of the supreme goals of central banks. Volcker was followed by Alan Greenspan in 1987 who paved the way for the equity market becoming a dominant factor in setting monetary policy - even though he argued ferociously against it. Greenspan was adamant that central bankers stay away from the business of counteracting asset price bubbles while they were building up. Instead, he advocated tackling the market fallout once these bubbles had burst. However, with this recommendation, he unwittingly

opened the door to what has become known today as the so-called "Fed Put". This is a silent promise by the Fed's policy makers, and later by other central bankers, to adapt their policy paths to equity market developments in order to cushion the consequences of market shocks. By means of lowering interest rates and injecting liquidity into the system, central banks have been able to halt asset price declines and reverse market corrections. Since Greenspan, the Fed has not broken this promise. Much to investors' relief, the equity market's health was behind the rationale for counteracting the dot.com crisis of 2000, the Financial Crisis of 2008, the European sovereign debt crisis of 2010 and, most recently, the COVID-19 market fallout.

The negative correlations between bonds and equities are the natural result of the Central Bank Put which has followed the same pattern over the last two decades: when equities go down, central banks cut interest rates, which pushes up bond prices. In the future, equity markets are unlikely to loosen their grip on central bankers' minds any time soon and investors will not stop counting on central bank support. Therefore, correlations between bonds and equities will remain below zero - at least as long as central bankers have potent tools to act on asset price declines. However, given that central banks barely managed to raise interest rates above zero in the ten years since the Financial Crisis, they do not have much leeway left to tackle future crises unless they resort to unconventional measures of the same impact and magnitude on markets.



Paul A. Volcker, Fed Chairman (1979-1987)

Why 60/40?

Equities and bonds tend to counteract each other to varying degrees as shown in chart 2. When subjected to Sharpe-ratio maximization to determine their optimal weights within a portfolio, this behavior of the two asset classes demonstrated that allocating 60% of a portfolio to government bonds and 40% to equities maximizes risk-adjusted returns (see chart 3). This is why the famous 60/40 allocation ascended to become the cornerstone of any retail or institutional investment plan and gave rise to the classic balanced fund. Traditional balanced portfolios tend to take a long-term view on asset allocation and usually have fixed equity and bond weights, which in sum are capped at 100%.

"The hunt for yield has diluted multi asset's invincible core by bringing higher-yielding fixed income segments to the mix."

Low yields have made optimal diversification pricey

The recommendation arising from a historical analysis of correlations is clear: stick to developed-market government bonds and global equities. However, the low-yield environment has put multi-asset portfolios in a bit of a pickle considering that they have a dual promise of capital protection and steady returns to uphold. This is because today, optimal diversification has become expensive in terms of opportunity cost since investors must forgo yield potential in other fixed income spaces. While 10-year US government bonds yielded over 5% per annum between World War II until the end of 2019, currently they yield less than a third of that. In response, many investment managers have diluted multi asset's invincible core of equities and government bonds by throwing higher-yielding fixed income segments such as emerging market, corporate, or even high-yield bonds into the mix. Inevitably, these managers had to accept a weakening of their portfolios' crisis resilience for the additional yield pick-up. Since COVID-19 has just slashed global economic growth, conditions are unlikely to change, which exposes multi-asset portfolios to higher risks and weaker defense lines. This is especially true for portfolios that hold on to the traditional tenets of multiasset investing by maintaining capital-based allocations since they harbor significant risks due to equity bias and largely static allocations. These risks are likely to be amplified when going yield-hunting.



Chart 3: Risk and return statistics along the balanced allocation spectrum

Past performance is not a reliable indicator of current or future performance. The chart shows the return, the volatility as well as the Sharpe ratios of balanced portfolios consisting of US government bonds (represented by 10-year US Treasury constant maturity bonds) and US equities (represented by the S&P Composite as calculated by Robert Shiller, for a full description see chart 2) in relation to varying bond weights. The statistics are calculated based on monthly return data for the time period between 01.1945 – 01.2020, assuming monthly rebalancing.

Source: Vontobel Asset Management, www.econ.yale.edu/~shiller.

Sharpe Ratio



Modern Multi Asset as a solution

Traditional balanced portfolios have weaknesses

Multi-asset investing has embarked on an innovation journey that already started during the Financial Crisis, which laid bare the need for enhanced risk control, return targeting, and dynamic tactical allocation mechanisms optimizing the overall strategic allocation. This has given rise to a novel breed of multi-asset strategies that rely on systematic, risk-based asset allocation concepts backed by rigorous quantitative frameworks. Thanks to their characteristics, they are able to address two main weaknesses of traditional multi-asset strategies:

- a high time variability of volatility due to an inherent equity bias
- a lack of responsiveness to changing market conditions and correlations

Since the hunt for yield in more complex and risky market segments at the expense of diversification is likely to go on, modern multi-asset strategies will continue to increase in importance.

There is nothing balanced about a traditional balanced portfolio

Despite its name, the 60/40 bond-equity mix does not deserve the term "balanced portfolio". Even though bonds are overweight, the portfolio's risk profile has a strong equity tilt since equities contribute more than 50% to overall portfolio risk (see chart 4). The case is even more pronounced in places like the US and Australia where a 40/60 bond-equity mix, or even higher equity allocations, are more common. This preference for equities is partly based on the fact that, in the long-term, equities deliver higher real returns than bonds or cash. However, it is misled by the belief that a longer time horizon reduces the risk of an equity investment.² Here, equities account for almost 90% of portfolio risk. So, from a risk perspective, the so-called balanced portfolio on both sides of the Atlantic and Down Under is entirely out of whack.



Chart 4: Equity risks weigh heavier than bond risks in a portfolio

The chart shows the volatility and the risk attribution for portfolios with varying bond weights. Risk attribution is a methodology to decompose the total risk of a portfolio into smaller terms. Here, it shows the contribution of the equity and bond components to overall portfolios is. The portfolios are composed of US government bonds (represented by 10-year US Treasury constant maturity bonds) and US equities (represented by the S&P Composite as calculated by Robert Shiller, for a full description see chart 2). The data is calculated based on monthly returns for the time period between 01.1945 – 01.2020, assuming monthly rebalancing.

Source: Vontobel Asset Management, www.econ.yale.edu/~shiller.

² To read more on the subject, see P. Samuelson, "Risk and Uncertainty: A Fallacy of Large Numbers", Scientia, April / May 1963 for a discussion of time diversification.

This demonstrates that the façade of an equitable balance promising a smooth ride hides a portfolio with a marked equity bias, which exposes investors to high volatility levels. Looking at chart 5, which maps the absolute monthly returns of a supposedly balanced portfolio over the past 75 years, the return variability of this portfolio looks more like a rollercoaster ride than anything else. This is because the fixed asset class weights do not take into account the time-varying nature of risk. As a result, the risk contribution of the two portfolio components varies substantially, fueling wild swings in the portfolio's risk profile over time.

Now, if such a "balanced" portfolio ventures into riskier fixed income market segments for yield-enhancing purposes, leaving the safe harbor of government bonds behind, the risks inherent in its equity-biased nature are likely to be magnified. This is because the portfolio's bond component compromises on its traditional role of acting as a safe asset due to dilution with higher-yielding but less diversifying assets. This, however, might only become apparent when markets enter crisis mode. "From a risk perspective, the so-called balanced portfolio on both sides of the Atlantic and Down Under is entirely out of whack."



Past performance is not a reliable indicator of current or future performance. The chart shows the absolute monthly returns of a balanced portfolio consisting of 60 % US government bonds (10-year US Treasury constant maturity bonds) and 40 % US equities (S&P Composite, as calculated by Robert Shiller, for a full description see chart 2) for the time period of 01.1945 – 01.2020, assuming monthly rebalancing. The black line represents the 12-month average of absolute monthly returns.

Source: Vontobel Asset Management, www.econ.yale.edu/~shiller.



A smoother ride with Modern Multi Asset

By breaking with tradition, modern multi-asset strategies can mitigate the weaknesses of traditional multi-asset portfolios by smoothing returns, keeping risk under control, and still hitting attractive, equity-like return targets. Not only do they deviate from the old capital-based allocation model by employing a risk-based approach, but they also embrace leverage as a volatility-targeting tool by breaking through the traditional budget restriction ceiling of 100% allocations. In addition, they are able to dynamically navigate changing correlations and riskier market segments efficiently by being highly responsive to market movements and making unbiased, tactical allocation changes in tune with the prevailing market environment. In essence, there are two main types of modern multi-asset strategies, which are built on the same core principle of risk balancing. However, they take different views on directional bets on asset classes: risk-based and view-based allocation portfolios.

 In risk-based allocation portfolios, each asset class contributes equally to overall portfolio risk. The use of leverage allows for precise volatility and return targeting. Risk-based allocation portfolios take no views on markets.

Risk-based allocation portfolios

Risk-based portfolios, commonly known as risk-parity approaches, allocate risk budgets to portfolio components in a way that provides a constant risk level and makes sure that each asset class contributes equally to overall portfolio risk. Considering a portfolio composed of bonds and equities only, the equity allocation has to shrink to about a third in order to achieve equal risk contribution between the two asset classes since equities exhibit volatility levels that are twice as high as bonds. The Sharpe ratios of risk-balanced portfolios are higher than that of any other portfolio (see chart 3, ~70% bond allocation) and, more importantly, significantly higher than a pure equity investment. This means that investors get more return per unit of risk, which is mainly due to a lower volatility level. In order to target attractive long-term returns, moderate leverage is applied, while at the same time maintaining the improved Sharpe ratio. This is possible because leveraging a strategy gears up its excess return³ and volatility by the same factor so that the Sharpe ratio, which divides excess return by volatility, remains the same. In sum, risk parity portfolios make prudent use of leverage to generate attractive returns at subdued volatility levels achieving smooth return paths.

Despite its simplicity, the risk-parity concept relies on a few important assumptions. The first assumption is that risks inherent to all asset classes can be described by measures such as volatility. The second assumption is that the reward for one unit of risk is the same for all assets. This way the concept is able to solely focus on risk as an asset allocation determinant, which has the advantage of being exempt from the obligation to take market views in order to make allocation decisions.

However, not formulating an opinion on markets has the disadvantage of not being able to assess asset class characteristics comprehensively and make tactical portfolio adaptations in accordance with these views. Coming back to a leveraged balanced portfolio illustrates this point: applying leverage of two times to a portfolio consisting of one-third of equities and two-thirds of bonds will result in a portfolio with about four-thirds of bonds, simply based on the mechanics of leverage application. However, such an allocation might be considered at odds with prevailing market conditions, like now, when flat yield curves are near zero. The desire to resolve such contradictions motivated the evolution of the second main type of modern multi-asset portfolios: view-based allocation portfolios.

 View-based allocation portfolios take risk-parity as a starting point and deviate from their base allocation according to tactical allocation views. These views are derived from unbiased quantitative models and carefully balanced with risk management measures.

View-based allocation portfolios

View-based portfolios take the risk parity concept as a starting point and deviate from the base allocation according to market views. An early version of viewbased portfolios are traditional balanced portfolios with a judgment-based tactical asset allocation. While these types of strategies do deviate from their strategic asset allocation by over- or underweighting equities, they do not benefit from the flexibility offered by leverage and do not make full use of modern risk management techniques.

Modern view-based strategies rely on a strong analytical and systematic framework to formulate market views in order to make unbiased allocation decisions. Quantitative models analyze the economic environment for each asset class by assessing economic variables, which serves as a base for the weightings of the asset classes and tactical allocation moves within the asset classes. This way, modern multi-asset strategies avoid the pitfalls of a discipline that has predominantly relied on human judgment with the goal of making allocation changes that have a solid economic explanation free from behavioral biases.

These market views, however, must be carefully balanced within a rigorous risk management framework. In order to make this more tangible, let's consider the above mentioned leveraged balanced portfolio containing two-thirds of equities and four-thirds of bonds, assuming it is geared up to match equity volatility levels. Now, if the bond allocation is reduced by one third due to a negative market assessment for fixed income markets, the risk of the entire portfolio decreases, freeing up risk budget. How this newly available risk budget is used is determined by weighing risk management considerations and market views. For, simply using it to increase leverage in order to hit the target return level would result in an increased equity allocation, which could however conflict with market views on the asset class. Only systematic investment approaches with an unbiased and analytically sound take on the trade-off between risk management and market opinions can get this balance right. The good news is that they are getting help from the powerful tools of artificial intelligence (AI) that can improve the speed and accuracy of the many decisions that are involved in risk-opinionbalancing processes.

	Traditional Multi Asset	Modern Multi Asset	
Portfolio type	Balanced	Risk-based	View-based
Asset allocation	Static, tactical allocation changes possible	Dynamic, based on changes in volatility and correlation over time	Dynamic, based on market views and changes in volatility and correlation over time
Risk management	Volatility not managed, no use of leverage	Volatility targeting, dynamic use of leverage	Volatility targeting, dynamic use of leverage
Risk contribution of each asset class	Equity bias	Equal risk contributions from all asset classes	Depends on view-based allocation

Differences between traditional and modern multi-asset strategies at a glance

Source: Vontobel Asset Management

Artificial intelligence can improve the forecasting power of multi-asset strategies

Modern multi-asset strategies smooth the returns of traditional balanced portfolios by placing risk under firm control while targeting equity return levels. Thanks to their quantitative backbone and use of modern risk management tools, they are highly adept at navigating changing markets environments with bias-free directional bets as multi-asset strategies diversify into riskier market segments looking for additional returns.

COVID-19 and the extreme market movements it triggered emphasize the need to progress on the innovative push that has already been underway in multi-asset investing over the past decade. Enhanced risk control and precise return targeting will come even more to the forefront, placing the spotlight on strategies able to harness the power of technology, which will continue to drive the evolution of the multi-asset class. AI will play an important role as it enables investors to improve the predictive power of investment strategies by processing information faster than humans and detecting previously unnoticed data patterns. This makes for improved information capture in large data pools, which is the foundation of Al's potential to convert unstructured data into actionable inputs for successful investment strategies.⁴ Therefore, AI algorithms are well equipped to help improve not only the prediction of the future development of single asset classes and securities but also the determination of the optimal asset allocation mix at any given time. Asset allocations that are able to adapt themselves to constantly changing market conditions, free from the shortcomings of human judgment, feature among the most important factors determining the success of multi-asset strategies that are having to navigate ever more challenging environments.

Multi asset in a post-COVID world

Thanks to central banks' continuing preoccupation with asset prices as major determinants of monetary policy, there is no doubt that central banks will continue to support economies and stimulate growth after the pandemic. This means that interest rates will remain low and correlations between bonds and equities will remain negative, at least for the next two to three years. However, the longterm future development of markets depends heavily on central banking's lasting ability to stabilize the economy and influence asset prices.

There are two caveats. First, since interest rates have been slashed to lows last seen during the Financial Crisis and since central bank balance sheets keep ballooning due to direct asset purchases, central bankers could face serious limits soon, unless they venture into unknown territory by experimenting with new policy measures. Innovation is not something central bankers have shied away from in the past, so there is hope for unconventional solutions, like those implemented by Volcker and Greenspan. Second, inflation could derail central bankers, should it worm its way back into the economy due to the side effects of soaring government debt.⁵ This could result in challenges for multi-asset strategies last seen in the 1970s. In inflationary environments, assets tend to post sluggish returns and correlations tend to rise. Both factors raise the bar for multi-asset risk management. While strategies without enhanced risk controls might disappoint investors, modern multi-asset strategies are well equipped to retain a firm grip on risk while tapping the widest possible range of return sources thanks to their unbiased decision-making processes, systematic approach to volatility targeting and dynamic tactical asset allocation tools.

⁴ To learn more, please refer to our White Paper "Artificial Intelligence in investing".

⁵ To learn more about this topic, please refer to our White Paper "Modern Monetary Theory – how do we get down from the debt mountain".

"Modern multi-asset strategies are highly adept at navigating changing market environments with bias-free directional bets as multi-asset strategies diversify into riskier segments looking for additional returns."



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