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Long Volatility: Value Trade Meets Protection

September 2022

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Executive summary

Situation

- Major markets still (historically) expensive (US equities, G10 govi bonds, credit, …)
- Still low volatility regime (long-term) across some major market segments

Implementation is key

- Because a passive / mechanic approach (e.g. holding put options or long VIX futures) would be very costly, it would only make sense with close-to-perfect timing…
- Fewer assumptions mean more robustness, so does multi-dimensional diversification

Approach

- Focus on inexpensive as well as carry-neutral (“zero bleed”) forms of protection
- Selective long volatility exposures and short credit exposures offer best risk-reward

Conclusion

- Long vol portfolio can offer both protection as well as an uncorrelated return of its own
- Inflation leads to higher volatility, through multiple channels

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Long vol – value trade in uncertain times

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No negative carry – how come?

Multi-dimensional diversification is key

Current environment for long vol

Questions & Answers

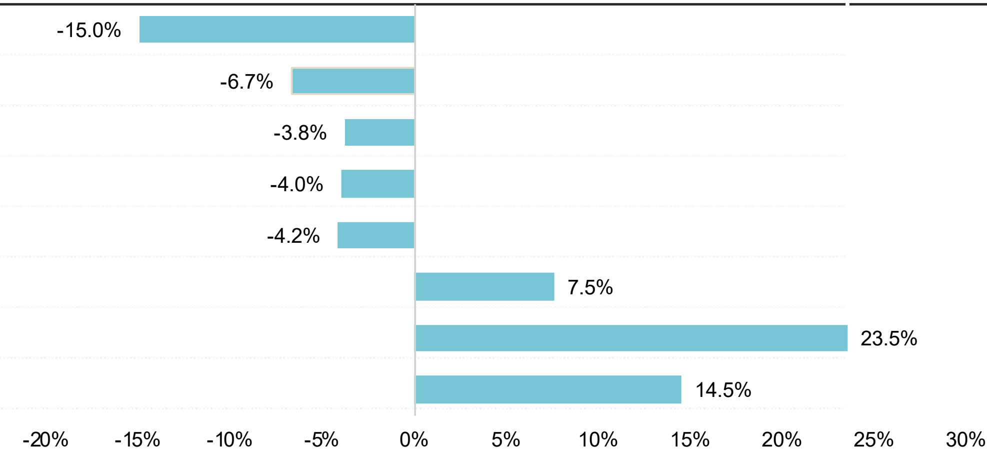
Longer-term macro context

We might be in a transition phase to a new macro regime – which usually brings (lots of) volatility

Since 1970s /80s: "Goldilock" trends	• Globalisation, technology, demography, capital outpacing labour, peace dividends, … • Low-flation enabled ever-lower interest rates – propelled further by asymmetric central banking • Ever increasing debt levels as "pain killers" & "stimulants" – enabled by fiat currencies
2008 aftermath: Accelerator	• "Unconventional" monetary policy morphing into a "new normal" (QE's, yield curve control, …) • Rapidly increasing central bank balance sheets and government debt levels • Asset valuations (mega-cap stocks, bonds, real estate, …) de-coupling from broader real economy
Covid 19 & geopolitics: Game changer	• Fiscal policy taking over from monetary policy • Accelerating trends from 2008, now turbo-charged with "green wave", "anti-inequality", war, … • Structural factors combined with supply bottlenecks leading to increased inflation
Conclusion	• Major central banks and policy makers trying to strike an ever more precarious balance… • Many long-term "goldilocks" trends likely to start reversing from here (= potential regime change) • Even without potential macro regime change, repeated volatility bursts can be harnessed

2022 so far – not many places to hide

	Year-to-date Return
MSCI World Index	-15.0%
Barclays Capital Global Agg TR (USD hedged)	-6.7%
Gold	-3.8%
VIXY (Passive Long Volatility)	-4.0%
HFRI Fund Weighted Composite Index	-4.2%
HFRI Macro (Total) Index	7.5%
Bloomberg Commodity Index	23.5%
Long Volatility	14.5%



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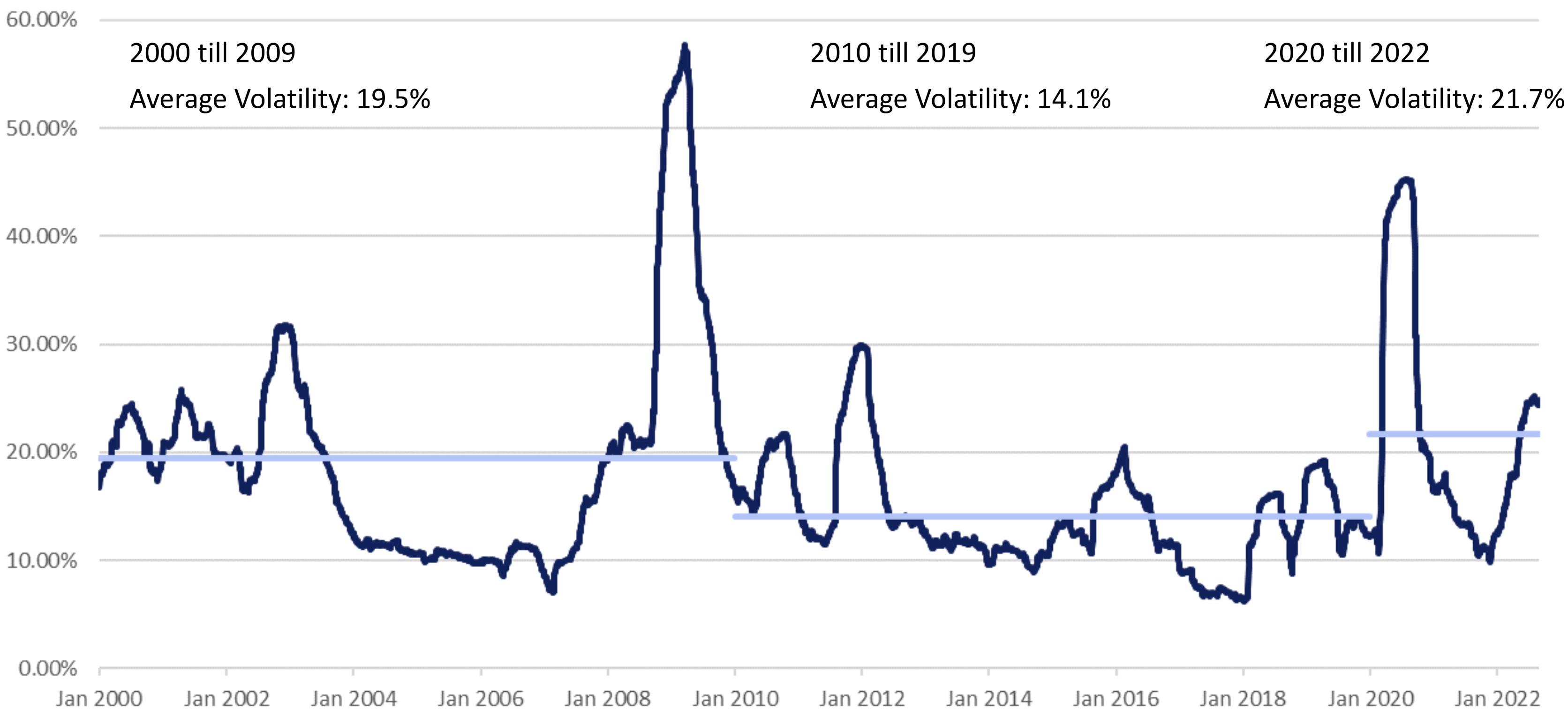
1 Source: Bloomberg, Progressive Capital as of 31.07.2022

Volatility is back

Historical 6-month rolling daily volatility of S&P 500 Index



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1 Source: Bloomberg, Progressive Capital

Various volatilities are still relatively low

Volatilities in many areas still low in historical context and in light of current risk environment

E.g. 5-year implied volatility of different FX-pairs:

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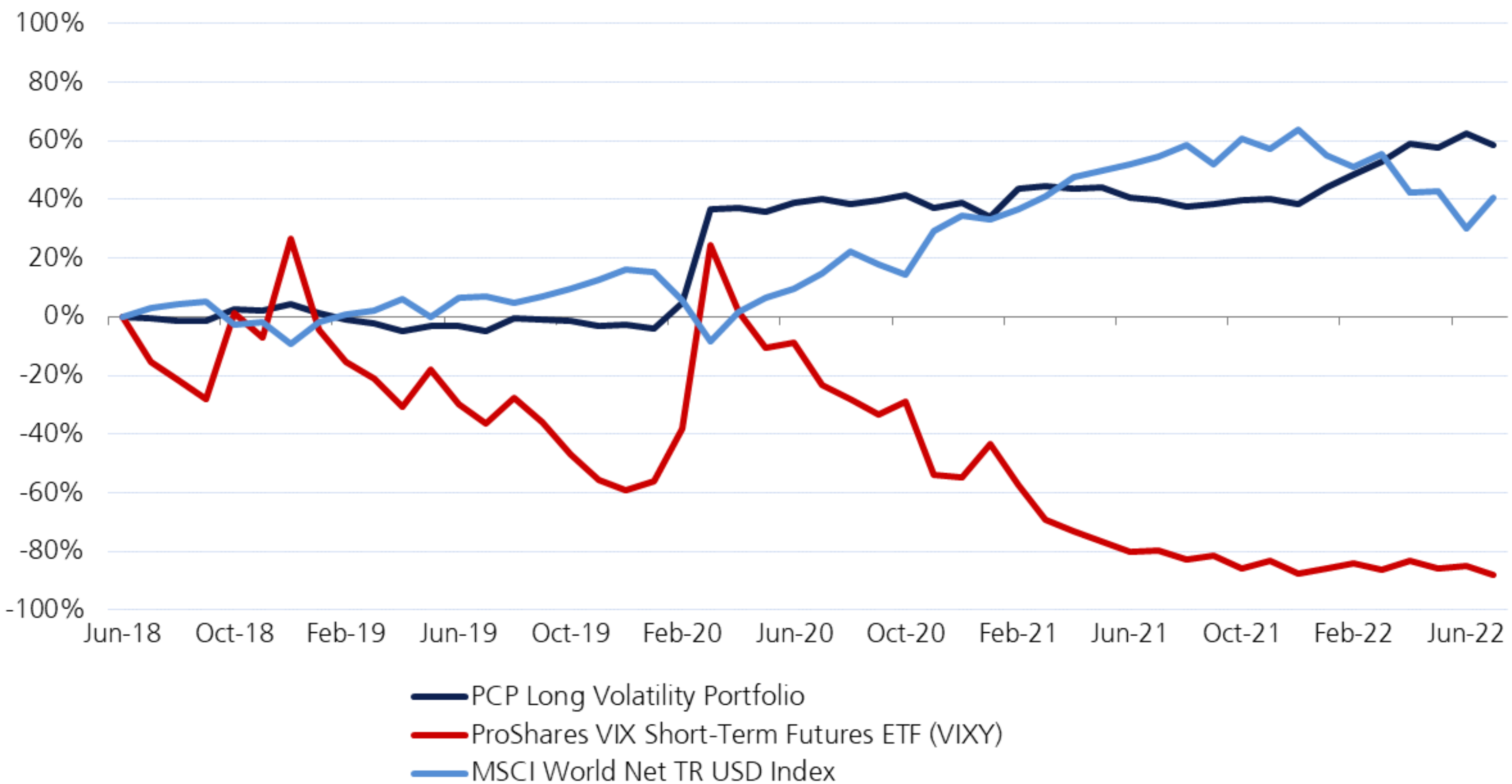
1 Source: Bloomberg

Long volatility - risk/return profile

Profile: Convexity embedded within value characteristics



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1 Performance from 1 July 2018 to 31 December 2021 of the PCP Long Volatility Portfolio is based on the hypothetical returns of the same portfolio of long volatility managers. These same long volatility managers have already been invested prior to 1 January 2022 as part of other portfolios managed by PCP.

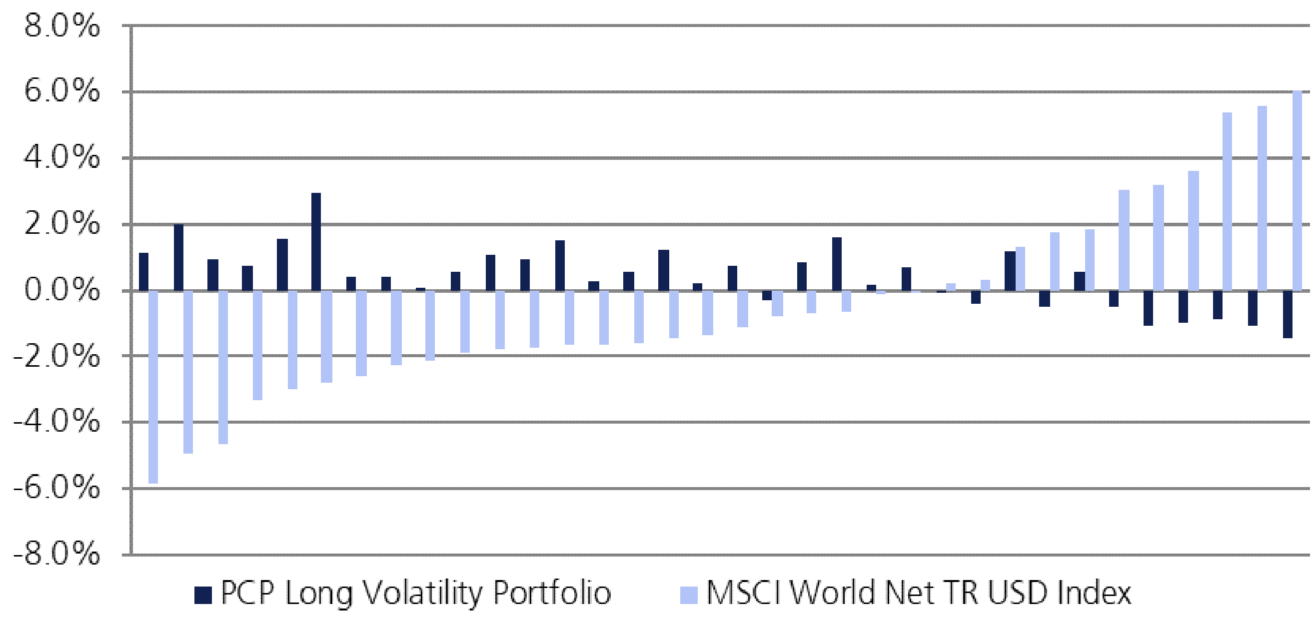
Past performance is not a reliable indicator of current or future performance. Source: Progressive Capital Partners Ltd, Bloomberg.

Diversification to equities

Average weekly returns:

- During negative equity weeks: +0.9%
- During positive equity weeks: -0.4%

Sorted weekly returns (2022)



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Past performance is not a reliable indicator of current or future performance. Source: Progressive Capital Partners Ltd, Bloomberg.

No negative carry – how come?

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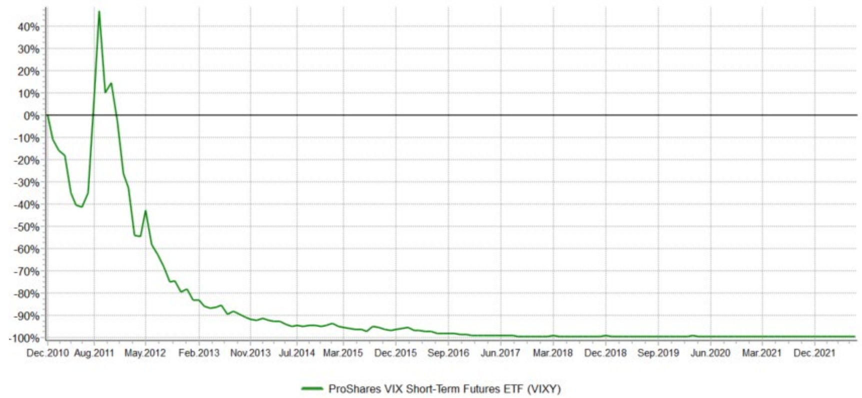
A passive/mechanic approach is costly

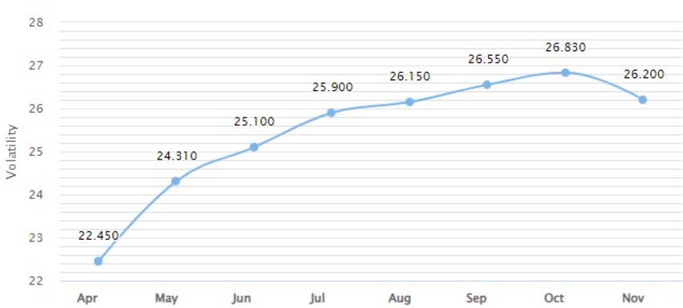
Cost of carry

- Passively holding a long volatility exposure is costly
- An example is the ProShares VIX Short-Term Futures ETF (VIXY) which passively invests in near term VIX futures contracts
- The high costs are due to the roll yield in the VIX futures term structure which generates a negative carry
- The annual negative carry is estimated to be around -55% p.a.

ProShares VIX Short-Term Futures ETF (VIXY)*



Typical VIX Future Term Structure*



ProShares VIX Short-Term Futures ETF (VIXY)*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022	15.23%	12.41%	-15.67%	24.50%	-15.22%	4.35%	-20.22%						-4.02%
2021	25.91%	-24.57%	-28.35%	-11.98%	-13.85%	-15.09%	2.87%	-15.83%	9.35%	-23.29%	18.35%	-26.71%	-72.40%
2020	7.56%	40.91%	101.33%	-18.09%	-12.13%	1.68%	-15.56%	-6.27%	-7.10%	6.47%	-35.25%	-2.35%	10.54%
2019	-24.50%	-11.42%	-6.97%	-12.07%	18.70%	-14.64%	-9.35%	14.02%	-11.75%	-16.70%	-16.67%	-8.27%	-67.81%
2018	7.13%	47.94%	6.70%	-12.31%	-10.98%	-0.13%	-15.20%	-7.50%	-8.35%	41.07%	-8.34%	36.09%	66.78%
2017	-23.89%	-5.07%	-14.26%	-5.01%	-10.15%	-5.43%	-12.32%	3.17%	-15.42%	-13.43%	-5.79%	-12.74%	-72.78%
2016	19.95%	2.94%	-29.04%	-4.97%	-19.10%	2.00%	-26.20%	-10.95%	-5.88%	0.32%	-18.23%	-8.52%	-68.10%
2015	16.96%	-25.13%	-7.45%	-14.52%	-13.00%	6.09%	-20.49%	67.67%	-4.53%	-26.64%	-0.32%	6.73%	-36.49%
2014	15.74%	-11.54%	-3.80%	-4.59%	-16.52%	-14.97%	10.67%	-11.02%	10.89%	-2.89%	-9.71%	15.20%	-26.43%
2013	-23.16%	-1.45%	-15.37%	-6.24%	1.08%	8.25%	-27.45%	13.04%	-13.96%	-12.27%	-12.08%	-6.24%	-66.46%
2012	-24.48%	-8.29%	-31.81%	-1.57%	26.22%	-27.28%	-10.21%	-15.44%	-21.68%	2.76%	-20.00%	7.66%	-77.54%
2011	-11.08%	-5.49%	-2.73%	-20.96%	-8.33%	-1.10%	10.58%	65.73%	36.81%	-25.26%	4.23%	-15.10%	-2.89%

* Source vixcentral.com as of 31.03.2022

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Approach

Starting point	<u>Many global markets still expensive in the long term context, also known as the "Everything Bubble":</u> • Equity valuations (especially US) are very high (except when compared to rates) • Credit (corporate) priced even more extreme, at times seemingly "underwritten" by Fed… • Interest rates are still (artificially) ultra-low, at around 5000-year lows and real rates materially negative
Challenges	<u>Some major challenges to all hedging / protection approaches:</u> • Timing / catalyst of sell-off • Sequence of markets selling off and markets most affected • Extent and duration of sell-off / bear market
Feasible, but deficient / risky solutions	<u>In order to avoid (materially) negative carry, many try different variations of the following:</u> • Timing of volatility exposures • Relative value volatility positions • Indirect, partly less liquid, "long volatility" implementation with e.g. equity volatility dispersion strategies etc.
A more direct & diversified approach	• **One target, multiple angles: Portfolio of complementary long volatility strategies across asset classes, styles, regions** • **Focusing on strategies with a carry-neutral approach** • **Strategy selection: Favouring intuitive common sense over heavily optimized, assumptions-based approaches** • **Implementation: "Strong craftsmen, not strong story tellers"… Plus: Meaningful alignment of interests** • **Most important: Long vol / protection can be a source of diversification plus return source in its own right going forward**

Overview long volatility strategies

The following long volatility strategies are in line with presented approach:

- Long implied (expected) volatilities across
  - Equity indices
  - Interest rates
  - Currencies

- Credit protection strategies (including CDS insurance) across
  - Corporate credits
  - Sovereign credits

- Long realized volatility by using active trading strategies
  - Across asset classes
  - With a short-bias to risky assets (equities, credit, …)
  - Both systematic (e.g. break-out models, volatility expansion models, etc.) or discretionary approaches

- Long dispersion and correlation strategies

- Long options exposures to precious metals, mainly gold

Multi-dimensional diversification is key

Long vol – value trade in uncertain times

No negative carry – how come?

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Questions & Answers

VIX is only one spot on the volatility landscape

VIX Index is frequently referenced in the media, however, the best risk-rewards might often be elsewhere

As everywhere, selectivity and implementation are key:

- Various medium-term (2-5 year maturity) volatilities can still be bought in the lowest quartiles of their own respective 10-year histories
- The past 10 years were predominantly a low-volatility regime, making valuations even more attractive from here
- Examples:
    - USDJPY 5-year at-the-money volatility still fairly low vs. its longer-term history, despite current turbulence i.e. despite realized volatility now picking up significantly due to monetary policy pressures, etc.
    - Lack of credit spread differentiation (pricing of tail risks) between cyclical and non-cyclical corporate credits

Source: Bloomberg

Portfolio composition – strategies 1-5

	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5
Main hedging scenario	Prolonged higher cross-asset volatilities	Combination of expensive equities down & inflation up	Larger equity, medium-to-large credit sell-offs	Larger equity, medium-to-large credit sell-offs	Realised volatility spikes (cross-asset)
Add-on hedging scenarios	Smaller participation in shorter-term spikes	-	Some participation in small credit sell-offs	Some participation in small credit sell-offs	Prolonged directional price trends
February - March 2020[1]	+39%	+28%	+71%	+50%	+9%
Target return in 2008-like sell-off[2]	+50%	+20-50%	+230%	+120%	+30%
Main risk(s)	International yield curve control, etc.	Expensive equities higher & inflation low	Lack of credit spread differentiation	Tight corporate credit spreads offer convexity	Low realised volatility levels
Estimated carry cost p.a.[3]	0% (by design)	Neutral to slightly positive (dividends)	0% (by design)	0% (by design)	0%
Expected max. downside[4]	-20%	-25%	-20%	-10%	-30%

1 For the time periods where the live historical performance of underlying strategies is not yet available the respective backtests are used.
2 Target returns are expected returns (not realised returns) for a stress period similar to the one in September to November 2008.
3 Estimated costs p.a. (excl. fees) mostly due to options time decay, assuming no meaningful dislocations and volatility levels remaining constant.
4 Estimated peak-to-trough loss in severely adverse market scenarios.
Past performance is not a reliable indicator of current or future performance. Source: Progressive Capital Partners Ltd, Hedge Fund Research (HFR), Bloomberg.

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Current environment for long vol

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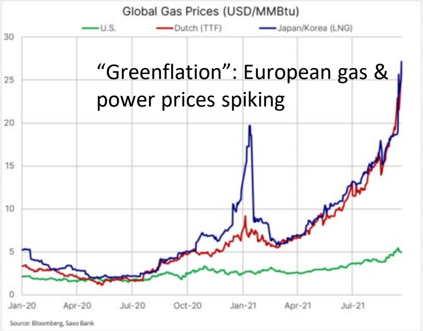
Now: Central banks trapped…

… between persistent inflationary pressures on one hand, and high asset valuations & debt on other hand:

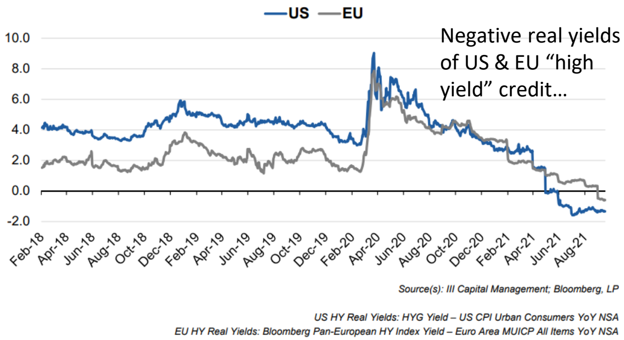
Various components of current inflation are likely not "transitory"…

1) **Wage pressures**
2) **"Greenflation"**
3) **Geopolitics**



High valuations = little cushion against risks:

1) **Still record-low real yields**
2) **Still low implied volatility e.g. in FX**



Take-aways

- **Persistently high inflation severely limit central bankers' room for manoeuvre – and now force their hands…**
- **Risk of either falling into a deflationary abyss and/or losing inflation anchor increasingly high**

Questions & Answers

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Appendix

Portfolio key metrics

	PCP Long Volatility Portfolio[1]	VIXY ETF	MSCI World
Number of underlying strategies	8	1	-
February-March 2020 return[1]	+40%	+183%	-21%
Target return in 2008-like stress scenario2	+50% to +100%	+150%	-33%
Estimated carry cost p.a.[3]	0% p.a.	-55% p.a.	-
Expected maximum downside top-to-bottom, 1.0 correlation[4]	-18%	-95%	-50%
Weighted manager fees[5]	1.0% & 17%	0.85%	-

1 In USD, the above table reflects a backtest of theoretical portfolio "PCP Long Volatility Portfolio".
2 Target returns are expected returns (not realised returns) for a stress period similar to the one in September to November 2008 in terms of the equity sell-off and volatility.
3 Estimated costs p.a. (excl. fees) mostly due to options time decay, assuming no meaningful dislocations and volatility levels remaining constant.
4 Estimated peak-to-trough loss in severely adverse market scenarios, assuming that all underlying strategies are simultaneously incurring their expected maximum drawdowns.
5 Several fees are specific (reduced) for Progressive Capital and its clients due to its status as an early investor and active negotiations. Gross of Progressive Capital fees.

Past performance is not a reliable indicator of current or future performance. Source: Progressive Capital Partners Ltd, Hedge Fund Research (HFR), Bloomberg, Managers.

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Strategic allocation and portfolio construction

Inputs

Client situation
Understanding the specific client's requirements

Goal setting
Analysis of the purpose of hedge funds in the client's portfolio (risk reduction, return enhancement)

Risk profile
Understanding the client's risk profile (measurement, characteristics, sensitivities)

Constraints
Understanding constraints of clients (liquidity, leverage, etc.)

Risk and return drivers
Understanding risk and return drivers of hedge fund strategies

Strategic Allocation

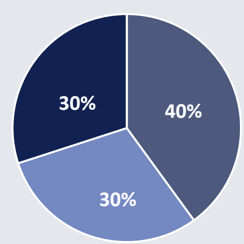
Qualitative Assessment

Quantitative Analysis

Simulations

Strategic Allocation

Risk-adjusted weights



Portfolio Construction & Implementation

Implementation of strategic allocation with hedge funds

Best-in-class hedge funds	Bottom-up hedge fund considerations
Limited downside-risk contributions	Diversity of alpha sources
No unwanted risks (beta, concentration, liquidity mismatch etc.)	Cost efficient implementation

Fund selection

Sourcing	Due Diligence	Committee	Monitoring
Pro-active approach to sourcing talent Established relationships with top tier managers Industry networks of team members	Qualitative Quantitative Operational *Outsourced to Castle Hall Alternatives* Legal **Detailed Due Diligence Reports** • Investment Proposal Report • Investment Due Diligence Report • Operational Due Diligence Report	7 experienced professionals including CIO Deputy CIO CRO/COO Unanimous decision making	Fund specific monitoring items Regular onsite visits & calls Fund specific exit triggers Standard & customised reporting **Quarterly Investment Committee reviews of all approved funds** • Visit reports • Quarterly update reports
~10'000 SHFs in databases	2 – 4 months* Length of a typical full due diligence process	10-20 Meetings per year	~500 Monitoring interactions per year

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* Does not include "observation periods" of varying lengths

Due diligence (DD) process

Quantitative Investment DD
Standard as well as proprietary analytics

Risk-Return Analytics
Regimes, alpha isolation, higher moments, drawdowns, tails

Attribution
Markets & factors, higher-order, regimes, variability

Exposures
Historical & current, thematic clusters, correlations, stress tests, "Greeks"

Qualitative Investment DD
In-depth assessment of manager & fund

People & Organisation
Track record, background, personality, team

Strategy & Processes
Competitive edge, repeatability, refinement, focus

Terms & Liquidity
Fee negotiations, incentives, asset-liability profile

Operational DD
Outsourced to Castle Hall Alternatives

Verification of assets
Valuation process
Cash & wire controls

Legal DD

Offering Memorandum
Agreements
Written Resolutions

Detailed Due Diligence Reports

2 – 4 months in total *

- Investment Proposal Report
- Investment Due Diligence Report
- Operational Due Diligence Report

* Does not include "observation periods" of varying lengths

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Curriculum vitae

Daniel Germann, M.A. HSG
Portfolio Manager

Daniel joined Progressive Capital Partners in December 2019. Before that, he worked at Vontobel Asset Management. Within the Vontobel Alternatives & Multi Manager Solutions team he focused on Global Macro and Systematic strategies. As a member of the Alternative Investment Committee he worked both on discretionary and advisory alternative investment mandates.

Prior to Vontobel, from 2013 to 2016, he worked as a Senior Fund Analyst at Raiffeisen Switzerland Cooperative and its subsidiary Notenstein La Roche Private Bank in Zurich, covering CTAs and Global Macro as well as Global Fixed Income funds. Responsibilities included manager selection and monitoring of the funds covered on behalf of Raiffeisen as well as Notenstein La Roche Private Bank.

From 2007 to 2013, he worked as Hedge Fund Analyst at SwissAnalytics in Zurich, analyzing and monitoring hedge funds on behalf of institutional investors.

Daniel holds a Master of Arts degree in Banking and Finance from the University of St. Gallen (HSG).

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Curriculum vitae

Daniel Irion, M.Sc., CFA
Portfolio Manager

Daniel joined Progressive Capital Partners in December 2019 after having worked for Vontobel Asset Management. Within the Vontobel Alternatives & Multi Manager Solutions team he focused on Quantitative and Systematic strategies. As a member of the Alternative Investment Committee he worked both on discretionary and advisory alternative investment mandates.

Prior to joining Vontobel, Daniel was fund and quantitative analyst at Rothschild Bank AG from 2011 to 2017. In his most recent role as fund analyst, he analysed and monitored hedge funds as well as long-only funds and was responsible of generating investment ideas and peer group analysis. Prior, as quantitative analyst, he developed strategic asset allocation models and conducted analysis on hedging, derivatives and risk factors.

Daniel holds a Master’s degree in Mathematical Finance from the University of Konstanz. He is a CFA charterholder.

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Get in touch

Relationship Management Team

clientrelations@progressivecapital.com

Thomas Messerschmid	+41 41 561 40 90
Othmar Gubelmann	+41 41 561 40 89

Progressive Capital Partners Ltd

Haldenstrasse 3
6340 Baar
Switzerland

www.progressivecapital.com

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