### **Defensive index strategies – a walk through selected concepts**

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## A broad range of solutions available that enable investors to build defensive strategies

Selection





Different approaches available to build defensive index concepts.

Minimization of variance as measure for total risk is found to simultaneously increase returns

Methodology and performance

#### Methodology

- » Minimize risk of portfolio based upon underlying factor model
- » Unconstrained MV index:
  - » Quarterly rebalancing
  - » Turnover constraint (7.5%)
  - » 4.5%/8%/35% capping

#### » Constrained MV index:

- » Country/industry exposures: +/- 5 percentage points relative to benchmark
- » Factor exposures: +/- 0.25 std
- » Monthly rebalancing
- » Turnover constraint (5%)
- » 4.5%/8%/35% capping



# Minimization of variance is found to reduce total risk while increasing returns

#### **Risk-return profile**



## Risk control indices enable investors to achieve an ex ante defined risk level

Methodology and performance

#### Methodology

- » Ex ante definition of target risk
- » Reallocation between equity index (e.g. ESTOXX) and cash to achieve targeted risk level





#### Performance [12/2005 -03/2017]<sup>1)</sup>

The choice of the risk level determines future expected returns

#### **Risk-return profile**



## Protective put strategies aim at downside protection

#### Methodology and performance

#### Methodology

- » Combination of equity index with long position in put option on same index
- » Moneyness: 5% OTM (quarterly rebalancing)



#### Performance [12/2005 -03/2017]<sup>1)</sup>



### Protective put strategies reduce both, total and downside risk

#### **Risk-return profile**



## Buying volatility may also be used as instrument for downside protection

Methodology and performance

#### Methodology

STOXX

- » Combination of equity index with dynamic allocation to VSTOXX Short-Term Futures (TR) index
- » Dynamic allocation to volatility futures is based upon comparison of realized volatility and implied volatility

Daily Indicator	Volatility Regime	Equity Exposure	Volatility Exposure
RV < IV - 1%	Stable Volatility	97.5%	2.5%
	Regime		
IV - 1% ≤ RV ≤ IV + 1%	Unpredictable	90%	10%
	Volatility Regime		
RV > IV + 1%	Increasing Volatility	70%	30%
	Regime		



1) The performance of the Euro STOXX Index is measures as EUR Net Return. The Total Return version of the VSTOXX Short-Term Futures index is used.

#### IV

## The addition of long-volatility allocations reduces both, total and downside risk

#### **Risk-return profile**



## Conclusion: The choice of the optimal strategy is context and preference dependent

Summary

Minimum Variance	<ul> <li>Minimum variance strategies enable investors to reduce total risk by up to 40% while simultaneously reducing enhancing returns (low volatility premium)</li> <li>However, the achievable level of risk reduction is a function of the volatility regime of the risky asset class</li> </ul>
Risk Control	» By adding cash as separate asset class, investors are able to "escape" the equity implicit risk level while Risk control indices enable investors to actively set and hold an ex ante defined level of risk
Protective Put	<ul> <li>Protective put strategies target on downside protection</li> <li>However, the targeted level of protection is set relative to the conditions at the rolling dates</li> </ul>
Long volatility	» Long positions in volatility are also found to serve as implicitly downside risk protection as volatility tends to increase in bear market environments

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