



CBOE presentation – September 2016

Nicolas Vanhoutteghem

A good time to be long protection?

S&P 500 3-month at the money implied vol (last 10 years until end of august)



■ SPX 3m ATMF Implied Vol (LHS)

Series	Last	Min	Max	Avg	Z-Score	%-ile
SPX 3m ATMF Implied Vol	12.65	9.92	63.81	19.15	-0.83	14.36

- S&P 500 3m implied volatility at 13.6 vol on August 30th
- 15th percentile over past 10 years!

S&P 500 vol is lower, not necessarily cheaper

S&P 500 3-month at the money implied vol vs. 2-month realized vol (last 10 years until end of august)



■ SPX 3m ATM Implied Vol (LHS) ■ SPX 2m Realized Vol (LHS)

Series	Last	Min	Max	Avg	Z-Score	%-ile
SPX 3m ATM Implied Vol	12.65	9.92	63.81	19.15	-0.83	14.36
SPX 2m Realized Vol	6.44	6.44	78.87	17.29	-0.97	0.00

- 2 months realized vol at 6.5 – 6 vols below implied!
- Over 10-year period, implied 2 vol premium to realized
- How to be long vol while minimizing this cost of carry?

Structural inefficiencies create opportunities in vol products

Supply



Low yield environment creating large demand for yield enhancement through structured products

Demand



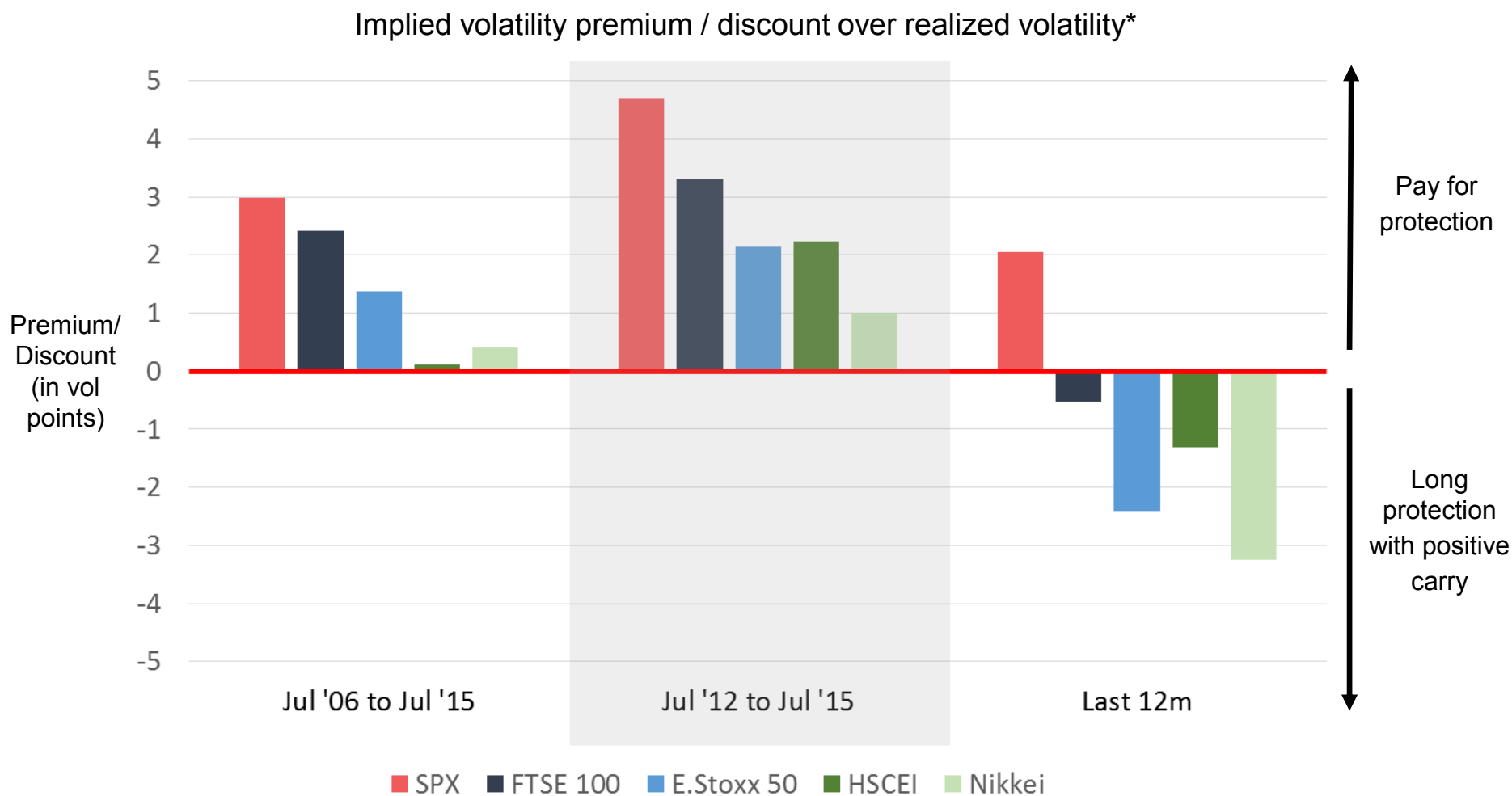
Regulations limiting ability of banks to take on inventory of derivative risk



Creating imbalances in supply and demand of volatility cheapening vols

BUT these effects differ massively across various regions and indices

Long vol can be a positive carry strategy



- Capture of this realized volatility through variance and vanilla structures hedged daily
- Intensive position management required

* Average over the period of difference between 9m implied vol and 3m realized vol
 Source: Morgan Stanley IRIS

What about VIX? Efficiency as a hedge in sell-offs has varied

VIX index since Jan 2015



Series	Last	Min	Max	Avg	Z-Score	%-ile
VIX Index Spot Price	15.37	11.34	40.74	16.53	-0.28	53.35

	Oct '14	Aug '15	Jan-Feb '16
--	---------	---------	-------------

▪ SPX peak to trough	-5.5%	-11.3%	-10.5%
▪ SPX 1m vol move	+ 8.3	+ 19.5	+ 11
▪ VIX move	+ 11	+ 28	+ 11.4

STRICTLY PRIVATE AND CONFIDENTIAL

Source: Bloomberg



What VIX strategy to pick? Long VIX future

Structure

- Long front-month VIX future

Cost of carry (nothing happens)

- VIX roll down
- 5y avg 1.5 vol points per month!
- today 3 vol points

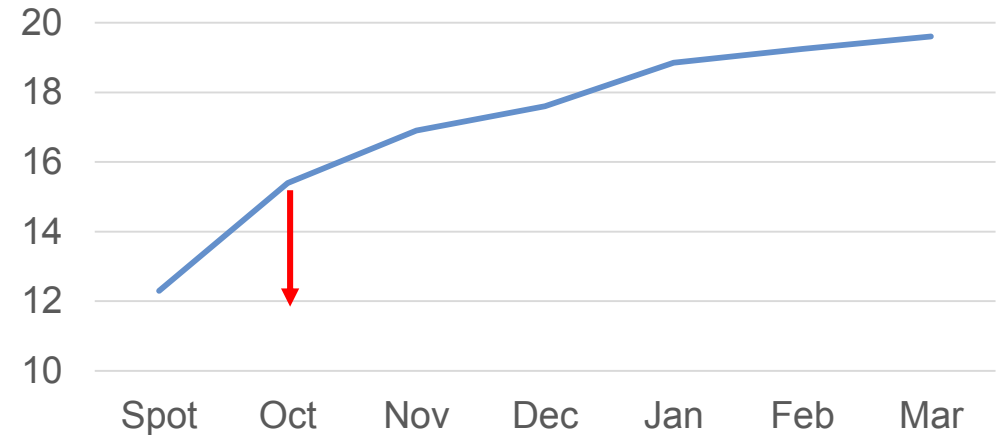
Payout profile

- Linear with VIX

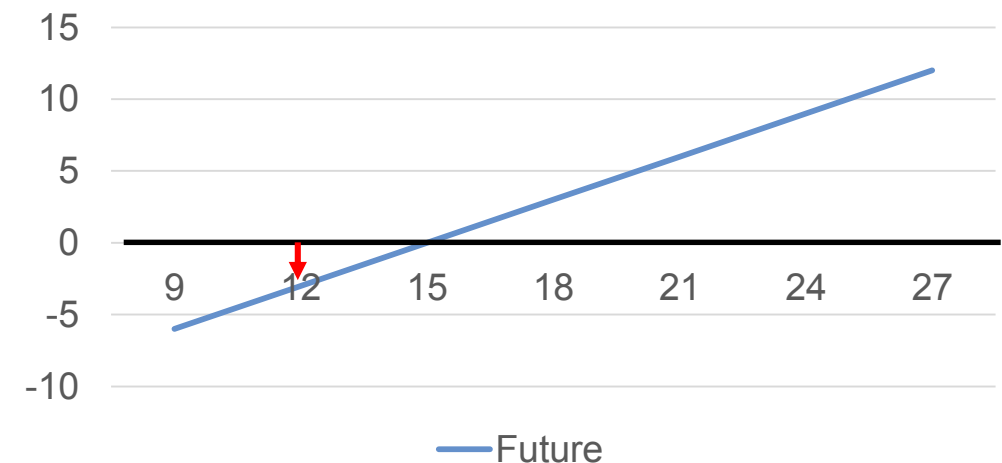
When to use

- When vol of vol is high or curve is flattish
- Use for easiest implementation

VIX futures structure



Payoff profile



What VIX strategy to pick? Long VIX call

Structure

- Long ATM 1 month VIX call

Cost of carry (nothing happens)

- Option premium
- 5y avg: 1.6 vol points
- today: 1.3 vol points

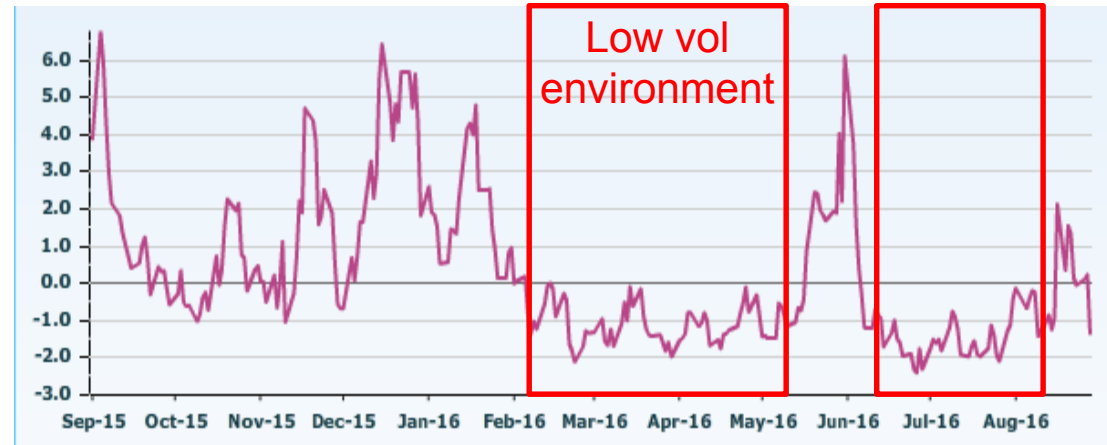
Payout profile

- Linear with VIX

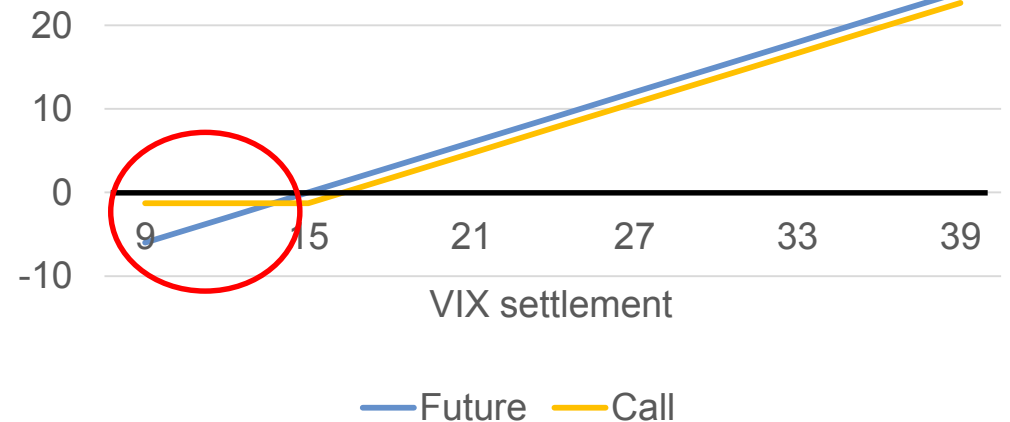
When to use

- When vol of vol is low – usually the case when VIX is low
- Compare call premium to future roll down

Price of 1m atm call – 1m future roll down



Payoff profile



What VIX strategy to pick? Short put vs. long call spread

Structure

- Short 1m 15 delta put (here 13)
- Long 1m 40 delta call (here 17)
- Short 1m 15 delta call (here 23)

Cost of carry (nothing happens)

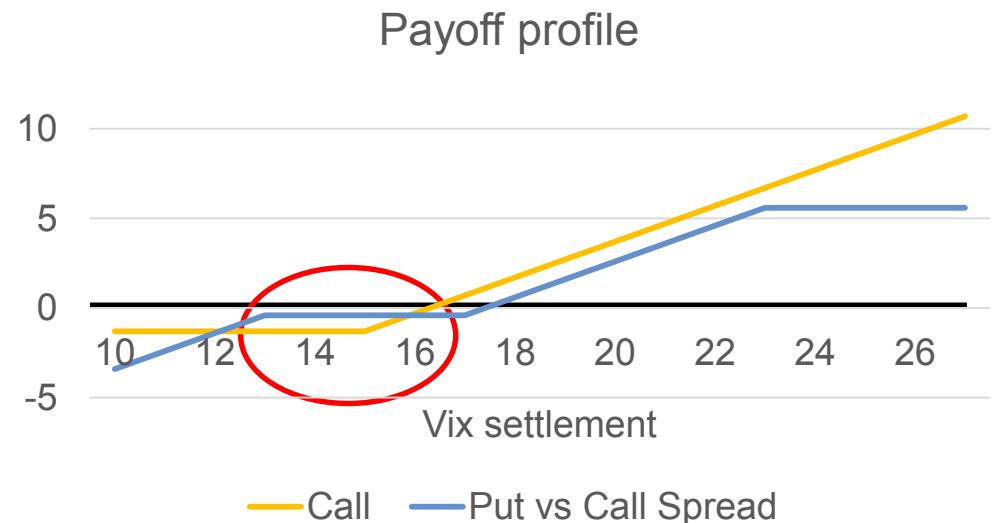
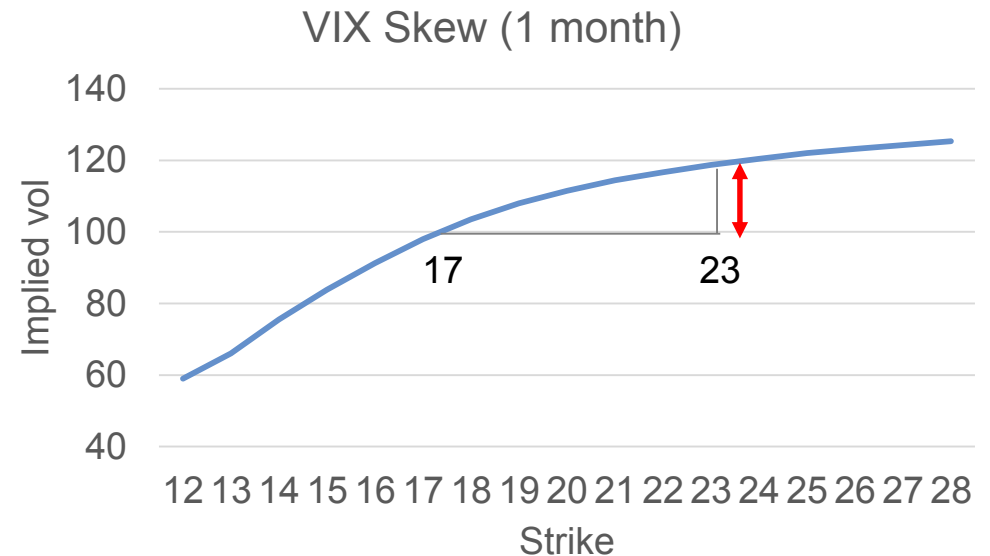
- Premium + VIX roll down effect on the put
- Premium worth 40c
- VIX roll down effect on the put: 1\$

Payout profile

- Protection between 17 and 23

When / How to use

- Best when vol is very low (selling 12 put) and skew on VIX is steep
- Buy back put if near zero



What VIX strategy to pick? Short call ratios

Structure

- Short 1x 1m 40d Call (here 17)
- Long 2.5x 1m 15d Call (here 22)

Cost of carry (nothing happens)

- You lose only premium
- cost 16-26c on average last 12m, now at 18c

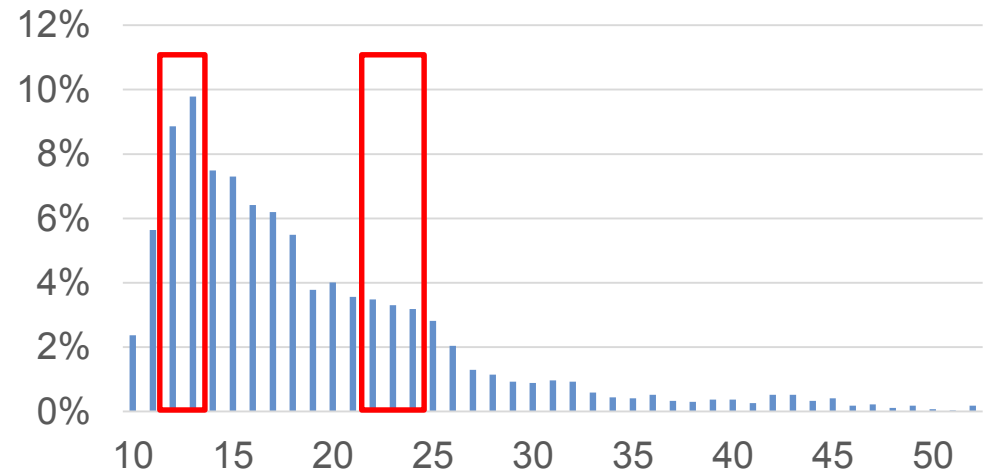
Payout profile

- Protection if vol explodes
- Path dependency with risk zone between 17 and 25

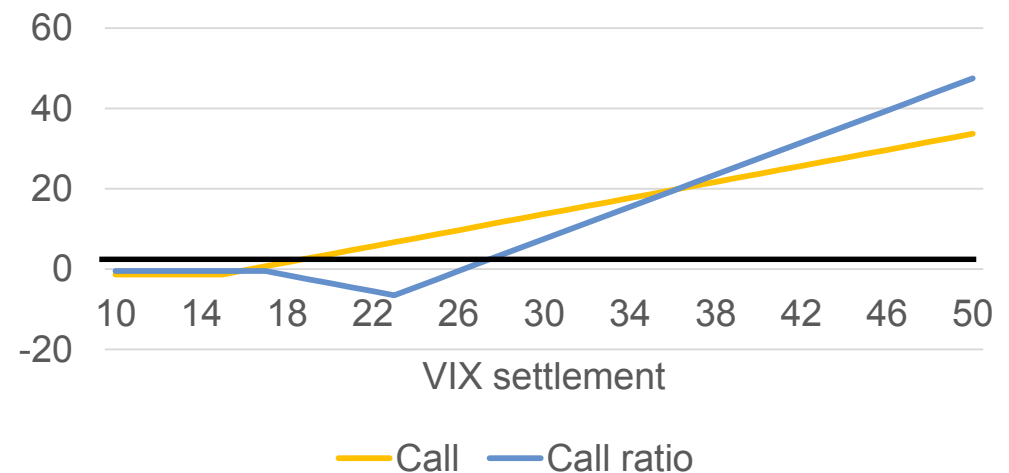
When / How to use

- Use for highly convex exposure – hedging for tail event
- Best profile when VIX upside skew is low
- Complex management

10 year VIX Histogram



Payoff profile



Recapping a few hedging strategies mentioned today

	Short Delta	Long Vol	Long Convexity
1 Long Put	✗	✗	
2 Long Put spread	✗		
3 Long hedged straddle		✗	
4 Long VIX calls		✗	
5 Short VIX call ratios			✗
6 Long Var vs. Vanilla			✗

Complexity of these hedges differ widely

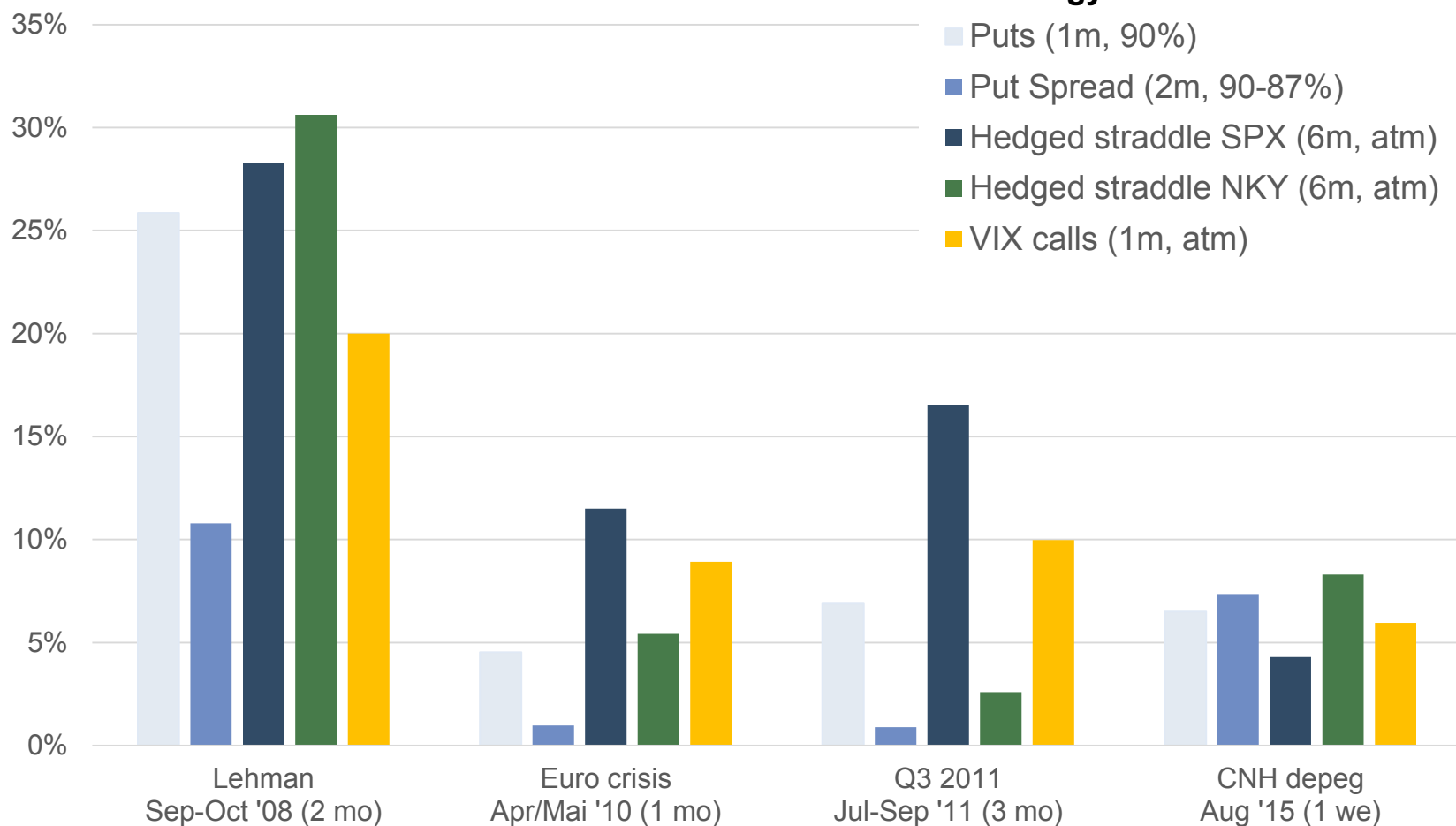
Strategy	Overall Complexity	Structuring		Management		
		Product	Strike/ mat	Hedging	Rebal	Liquidity*
Put	V. Low	V. Low	V. Low	V. Low	V. Low	V. Low
Put spreads	V. Low	V. Low	Low	V. Low	V. Low	V. Low
Hedged straddle	Medium	Low	Low	High	Medium	V. Low
Vix futures/ calls	Low	V. Low	Low	V. Low	Low	V. Low
VIX call ratios	Medium	Medium	Medium	Low	High	V. Low
Variance vs vanilla	High	High	High	V. High	V. High	Medium
Best of puts	High	High	High	Low	High	V. High

- Structuring and management of the trades require various level of monitoring and systems to manage
- Liquidity can be an issue on more complex structures

* Reversed scale. Low means low liquidity constraints

How do they perform?

Hedging strategy returns in % of capital over given period



Strategy

- Puts (1m, 90%)
- Put Spread (2m, 90-87%)
- Hedged straddle SPX (6m, atm)
- Hedged straddle NKY (6m, atm)
- VIX calls (1m, atm)

Cost of carry*

- 5.3%
- 5.1%
- 5.1%
- +10%**
- 5.2%

SPX move	-24.5%	-10.5%	-15.5%	-11.2%
VIX move	+39.2	+28.5	+27.1	+23.0

* Strategies sized to cost 5% of capital per year during 2013-14 period

** NKY straddles sized as SPX. Cost of carry measures in 2014 only would have been -1%

Source: Morgan Stanley IRIS, Argentière Capital analysis

Disclaimer

IMPORTANT INFORMATION

This presentation has been prepared by Argentière Capital AG solely for the purpose of providing background information to the person to whom it has been delivered. The information contained herein is strictly confidential and is only for the use of the person to whom it is sent and/or who attends any associated presentation. The information contained herein may not be reproduced, distributed or published by any recipient for any purpose without the prior written consent of Argentière Capital AG. Notwithstanding anything to the contrary herein, such person (and each employee, representative or other agent of such person) may disclose to any and all persons, without limitation of any kind, the tax treatment and tax structure of (i) the proposed fund (the "Fund") and (ii) any of its transactions, and all materials of any kind (including opinions or other tax analyses) that are provided to the recipient relating to such tax treatment and tax structure.

The distribution of this document may be restricted in certain jurisdictions. The information herein is for general guidance only, and it is the responsibility of any person or persons in possession of this document to inform themselves of, and to observe, all applicable laws and regulations of any relevant jurisdiction.

The summary description included herein and any other materials provided to you are intended only for information purposes and convenient reference and are not intended to be complete. This information is not intended to provide and should not be relied upon for accounting, legal or tax advice or investment recommendations. You should consult your tax, legal, accounting or other advisors about the issues discussed herein. Material terms of the Fund are subject to change. Any prospective investor will be provided with a copy of the Fund's offering memorandum and an opportunity to review the documentation relating to the offering. PROSPECTIVE INVESTORS SHOULD REVIEW THE OFFERING MEMORANDUM, INCLUDING THE RISK FACTORS IN THE OFFERING MEMORANDUM, BEFORE MAKING A DECISION TO INVEST. In addition, prospective investors should rely only on the offering memorandum in making a decision to invest, although certain descriptions contained herein may be more detailed than those contained in the offering memorandum. Past performance is no guarantee of future performance. Subscriptions may only be made on the terms of the offering memorandum and subject to completion of a subscription agreement.

This document is not intended as an offer or solicitation with respect to the purchase or sale of any security. This document is not intended for distribution to, or use by any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation. In particular this document is not intended for distribution in the United States or for the account of U.S. persons (as defined in Regulation S under the United States Securities Act of 1933, as amended (the "Securities Act")) except to persons who are "qualified purchasers" (as defined in the United States Investment Company Act of 1940, as amended (the "Company Act")) and "accredited investors" (as defined in Rule 501(a) under the Securities Act). Argentière Capital AG is currently registered with the SEC as an investment adviser under the US Investment Advisers Act of 1940, as amended. Additional information about Argentière Capital AG is available on the SEC's website at www.adviserinfo.sec.gov. Registration with the SEC or with any state securities authority does not imply a certain level of skill or training. The Fund is not, and will not be, registered under the Securities Act or the securities laws of any of the states of the United States and interests therein may not be offered, sold or delivered directly or indirectly into the United States, or to or for the account or benefit of any US person, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of such securities laws. The securities will be subject to restrictions on transferability and resale. The Fund will not be registered under the Company Act.

As of the date of this document Argentière Capital AG is not authorised or regulated by the UK Financial Conduct Authority ("FCA"). However, Argentière Capital AG has filed a notification with the FCA under Article 42 of the Alternative Investment Fund Managers Directive and is permitted to conduct private placement marketing in the UK. This document is being communicated by Argentière Capital AG and in the United Kingdom it is only being provided to those persons to whom it may lawfully be issued under The Financial Services and Markets Act 2000 (Financial Promotion) Order 2005.

Argentière Capital AG is licensed by the Swiss Financial Market Supervisory Authority ("FINMA") as asset manager of collective investment schemes pursuant to the Swiss Collective Investment Schemes Act, as amended on 28 September 2012 (the "CISA"). The Fund qualifies as a foreign collective investment scheme for the purposes of the CISA. The distribution of the shares or interests in the Fund to non-qualified investors has not been approved by the FINMA. Any offering of the shares or interests, and any other form of solicitation of investors in relation to the Fund (including by way of circulation of offering materials or information) in or from Switzerland, shall be made or directed only towards (i) supervised financial intermediaries such as banks, securities dealers, fund management companies, asset managers of collective investment schemes and central banks as per art. 10 para. 3 lit. (a) CISA, (ii) supervised insurance companies as per art. 10 para. 3 lit. (b) CISA or (iii) unregulated qualified investors as per art. 10 para. 3 lit. (c) and (d), para. 3^{bis} and/or para. 3^{ter} CISA ("Unregulated Qualified Investors"), all pursuant to the prerequisites laid out in the CISA and its implementing ordinances as well as any applicable FINMA guidelines and practice. Failure to comply with the above-mentioned requirements may constitute a breach of the CISA. In connection with the distribution of the shares in the Fund in or from Switzerland to prospective Unregulated Qualified Investors, the following information is provided in accordance with the requirements of the CISA:

1. Home jurisdiction of the Fund: Cayman Islands
2. Representative: The Fund's representative (*Vertreter - représentant*) in Switzerland is ARM Swiss Representatives SA, Route de Cité-Ouest 2, 1196 Gland, Switzerland (the "Swiss Representative").
3. Paying agent: The paying agent (*Zahlstelle - service de paiement*) in Switzerland is Banque Heritage SA Route de Chêne 61, Case Postale 6600, 1211 Geneva 6.
4. Location where the relevant documentation can be obtained: The relevant Fund documentation can be obtained free of charge from the Swiss Representative in Switzerland.
5. Place of performance and jurisdiction: The place of performance and jurisdiction with regard to the Shares distributed in and from Switzerland is the registered office of the Swiss Representative.
6. Payment of retrocessions: The Fund and its agents do not pay any retrocessions to third parties in relation to the distribution of the Shares of the Fund in or from Switzerland.
7. Payment of rebates: The Fund and its agents may, upon request, pay rebates directly to investors. The purpose of rebates is to reduce the fees or costs incurred by the investor in question. Rebates are permitted provided that i) they are paid from fees received by the Fund's agents and therefore do not represent an additional charge on the assets of the Fund; (ii) they are granted on the basis of objective criteria and (iii) all investors who meet these objective criteria and demand rebates are also granted these within the same timeframe and to the same extent. The objective criteria for the granting of rebates by the Fund and/or its agents are as follows: (i) the volume subscribed by the investor or the total volume they hold in the Fund or, where applicable, in the product range of the promoter; (ii) the amount of the fees generated by the investor; (iii) the investment behavior shown by the investor (e.g. expected investment period), (iv) the investor's willingness to provide support in the launch phase of the Fund and (v) characteristics of the investor as regards size and type. At the request of the investor, the Fund and/or its agents must disclose the amounts of such rebates free of charge.

No reliance may be placed for any purpose on the information and opinions contained in this document or their accuracy or completeness. No representation, warranty or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained in this document by any of Argentière Capital AG, its members, employees or affiliates and no liability is accepted by such persons for the accuracy or completeness of any such information or opinions, and nothing contained herein shall be relied upon as a promise or representation whether as to past or future performance. Opinions expressed herein may not be shared by all employees of Argentière Capital AG and are subject to change without notice.