

# Structured Product Details

Name Return Optimization Securities
Partial Protection linked to S&P
500 Index

Pricing Date December 28, 2009
Issue Date December 31, 2009
Valuation Date June 24, 2011
Maturity Date June 30, 2011

IssuerUBSCDS Rate54.18 bpsSwap Rate1.18%

Reference Asset the S&P 500 Index

Initial Level 1,127.78
Dividend Rate 2.08%
Implied Volatility 22.98%
Delta<sup>1</sup> 0.51

**Fair Price at Issue** \$9.57 **Realized Return** \$1.17%

CUSIP 902661628 SEC Link www.sec.gov/Archives/edgar/ data/1114446/000139340109000688/ c170084\_690426-424b2.htm

## Related Research

#### Research Papers:

www.slcg.com/research.php

- "Are Structured Products Suitable for Retail Investors?" December 2006.
- "Structured Products in the Aftermath of Lehman Brothers," November 2009.
- 'What TiVo and JP Morgan Teach Us about Reverse Convertibles," June 2010.

# Return Optimization Securities Partial Protection linked to S&P 500 Index

# Description

Report Prepared On: 04/29/13

UBS issued \$3.19 million of Return Optimization Securities Partial Protection linked to S&P 500 Index on December 31, 2009 at \$10 per note.

These notes are UBS-branded Buffered PLUS securities that do not pay periodic coupons, but instead pay a single amount at maturity depending on the final level of the S&P 500 Index.

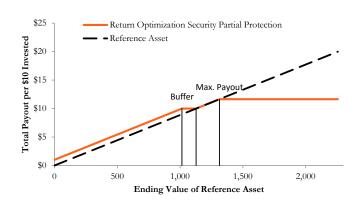
If on June 24, 2011 the S&P 500 Index level is higher than 1,127.78, but lower than 1,313.30, the notes pay a return equal to the percentage increase in the S&P 500 Index, up to a cap of 16.45%. If on June 24, 2011 the refe is below 1,127.78 but not below 1015, investors receive \$10 face value per note. If the S&P 500 Index level on June 24, 2011 is lower than 1015, investors receive face value per note reduced by the amount the reference asset is below 1015 as a percent of the initial level, 1,127.78.

### **Valuation**

This product can be valued as a combination of a note from UBS, one short out-of-themoney put option, one long at-the-money call option, and one short out-of-the-money call option. For reasonable valuation inputs this note was worth \$9.57 when it was issued on December 31, 2009 because the value of the options investors gave UBS plus the interest investors would have received on UBS's straight debt was worth \$0.43 more than the options investors received from UBS.

There is no active secondary market for most structured products. Structured products, including this note, therefore are much less liquid than simple stocks, bonds, notes and mutual funds. Investors are likely to receive less than the structured product's estimated market value if they try to sell the structured product prior to maturity. Our valuations do not incorporate this relative lack of liquidity and therefore should be considered an upper bound on the value of the structured product.

#### Payoff Curve at Maturity



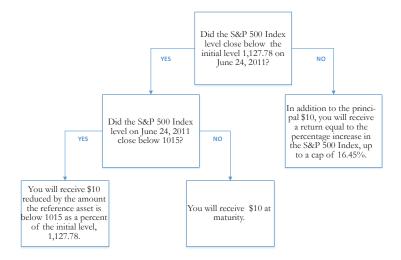
The payoff diagram shows the final payoff of this note given the S&P 500 Index level (borizontal axis). For comparison, the dashed line shows the payoff if you invested in the S&P 500 Index directly.

Tim Husson, Ph.D., Senior Financial Economist, SLCG (+1) 703.890.0743 TimHusson@slcg.com

#### Principal Payback Table

The S&P 500 Index	Note Payoff
0.00	\$1.00
112.78	\$2.00
225.56	\$3.00
338.33	\$4.00
451.11	\$5.00
563.89	\$6.00
676.67	\$7.00
789.45	\$8.00
902.22	\$9.00
1,015.00	\$10.00
1,127.78	\$10.00
1,240.56	\$11.00
1,353.34	\$11.65
1,466.11	\$11.65
1,578.89	\$11.65
1,691.67	\$11.65

#### Maturity Payoff Diagram

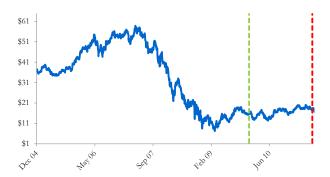


The contingent payoffs of this Return Optimization Security Partial Protection.

# **Analysis**

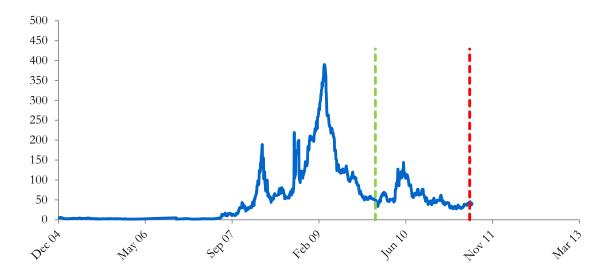
This Return Optimization Security Partial Protection pays investors the increase in the S&P 500 Index capped at 16.45%, but if the S&P 500 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the S&P 500 Index. In addition, investors bear the credit risk of UBS. Investors purchasing this Return Optimization Security Partial Protection effectively sell at-the-money put and out-of-themoney call options to UBS, buy at-the-money call options, and a zero-coupon note from UBS. This Return Optimization Security Partial Protection is fairly priced if and only if the market value of the options investors received from UBS equals the market value of the options investors gave UBS plus the interest investors would have received on UBS's straight debt.

# **UBS's Stock Price**



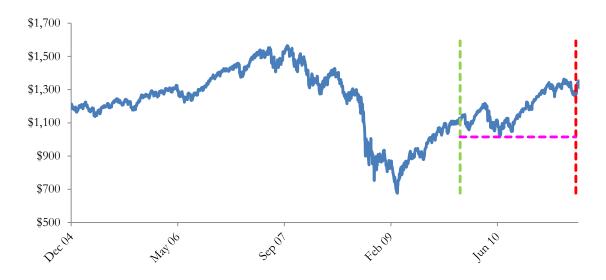
The graph above shows the adjusted closing price of the issuer UBS for the past several years. The stock price of the issuer is an indication of the financial strength of UBS. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## UBS's CDS Rate



Credit default swap (CDS) rates are the market price that investors require to bear credit risk of an issuer such as UBS. CDS rates are usually given in basis points (bps). One basis point equals 0.01%. Higher CDS rates reflect higher perceived credit risk, higher required yields, and therefore lower market value of UBS's debt, including outstanding Return Optimization Security Partial Protection. Fluctuations in UBS's CDS rate impact the market value of the notes in the secondary market.

#### The S&P 500 Index Level

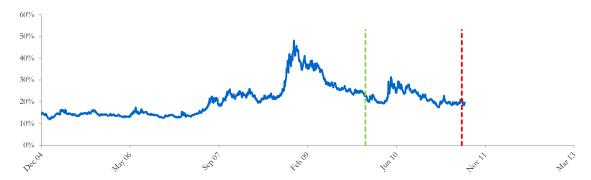


The graph above shows the historical levels of the S&P 500 Index for the past several years. The final payoff of this note is determined by the S&P 500 Index level at maturity. Higher fluctuations in the S&P 500 Index level correspond to a greater uncertainty in the final payout of this Return Optimization Security Partial Protection.

#### Realized Payoff

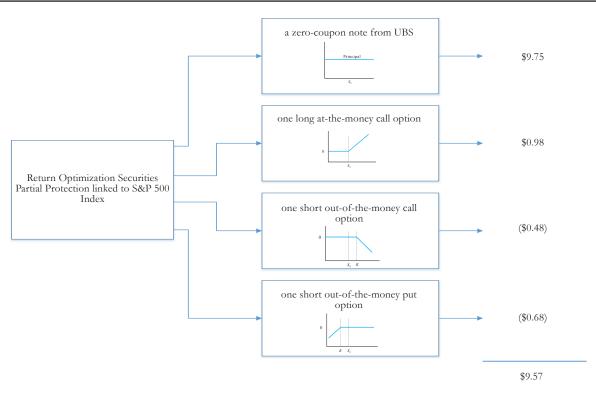
This note matured on June 30, 2011 and investors received \$11.25 per note.

#### Reference Asset The S&P 500 Index's Implied Volatility



The annualized implied volatility of the S&P 500 Index on December 28, 2009 was 22.98%, meaning that options contracts on the S&P 500 Index were trading at prices that reflect an expected annual volatility of 22.98%. The higher the implied volatility, the larger the expected fluctuations of the S&P 500 Index level and of the Note's market value during the life of the Notes.

#### Decomposition of this Return Optimization Security Partial Protection



This note can be decomposed into different components, and each component can be valued separately. The chart above shows the value of each component of this Return Optimization Security Partial Protection.

- Delta measures the sensitivity of the price of the note to the the S&P 500 Index level on December 28, 2009.
   CDS rates can be considered a measure of the probability that an issuer will default over a certain period of time and the likely loss given a default. The lower the CDS rate, the lower the default probability. CDS rate is given in basis points (1 basis point equals 0.01%), and is considered as a market premium, on top of the risk-free rate, that investors require to insure against a potential default.
   Fair price evaluation is based on the Black-Scholes model of the the S&P 500 Index on December 28, 2009.
   Calculated payout at maturity is only an approximation, and may differ from actual payouts at maturity.
   Our evaluation does not include any transaction fees, broker commissions, or liquidity discounts on the notes.