

**Structured Product Details** 

**Annualized Coupon** 

Trigger Yield Optimization Notes linked to Anadarko Petroleum

Issue Size \$2.80 million Issue Price \$72.94 Term 12 Months

11.90%

Pricing Date December 16, 2011 December 21, 2011 December 17, 2012 Issue Date Valuation Date Maturity Date December 21, 2012

**HSBC** Issuer CDS Rate 185.16 bps 1.11% Swap Rate

Reference Asset Anadarko Petroleum Corp.'s stock \$72.94 Initial Level Trigger Price \$51.06 Conversion Price \$72.94 0.49% Dividend Rate 45.76% Implied Volatility Delta1 0.37

\$69.79 Fair Price at Issue Realized Return 12.60%

CUSIP 40433K769 www.sec.gov/Archives/edgar/ data/83246/000114420411070801/ SEC Link v243579 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.

# Trigger Yield Optimization Notes linked to Anadarko Petroleum Corp.

# Description

Report Prepared On: 04/29/13

HSBC issued \$2.80 million of Trigger Yield Optimization Notes linked to Anadarko Petroleum Corp. on December 21, 2011 at \$72.94 per note.

These notes are HSBC-branded single observation reverse convertibles. Single observation reverse convertibles pay periodic interest coupons and at maturity convert into shares of the reference security if the price of the reference security at the notes' maturity is below the trigger price determined when the notes were issued.

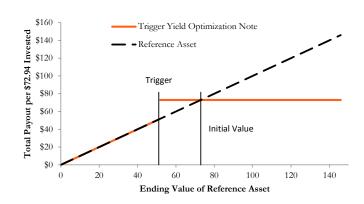
These 12-month notes pay monthly coupons at an annualized rate of 11.90%. In addition to the monthly coupons, on December 21, 2012 investors will receive the market value of one share of Anadarko Petroleum Corp.'s stock if on December 17, 2012 Anadarko Petroleum Corp.'s stock closes below \$51.06 (70% of Anadarko Petroleum Corp.'s stock price on December 16, 2011). Otherwise, investors will receive the \$72.94 face value per note.

### Valuation

This HSBC single observation reverse convertible linked to Anadarko Petroleum Corp.'s stock can be valued as a combination of a note from HSBC and a short European outof-the-money cash-or-nothing binary put option, and a short European out-of-the-money put option on Anadarko Petroleum Corp.'s stock. For reasonable valuation inputs this note was worth \$69.79 per \$72.94 when it was issued on December 21, 2011 because investors were effectively being paid only \$6.47 for giving HSBC options which were worth

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 Anadarko Petroleum Corp.'s stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Anadarko Petroleum Corp.'s stock directly.

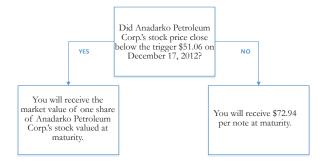
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#### Principal Payback Table

Anadarko Petro- leum Corp.'s Stock	Note Payoff
\$0.00	\$0.00
\$7.29	\$7.29
\$14.59	\$14.59
\$21.88	\$21.88
\$29.18	\$29.18
\$36.47	\$36.47
\$43.76	\$43.76
\$51.06	\$51.06
\$58.35	\$72.94
\$65.65	\$72.94
\$72.94	\$72.94
\$80.23	\$72.94
\$87.53	\$72.94
\$94.82	\$72.94
\$102.12	\$72.94
\$109.41	\$72.94

### Maturity Payoff Diagram



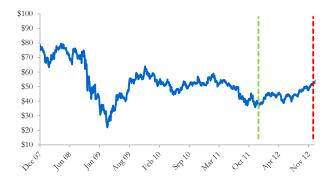
The contingent payoffs of this Trigger Yield Optimization Note.

# **Analysis**

This single observation reverse convertible's 11.90% coupon rate is higher than the yield HSBC paid on its straight debt but, in addition to HSBC's credit risk, investors bear the risk that they will receive shares of Anadarko Petroleum Corp.'s stock when those shares are worth substantially less than the face value of the note at maturity.

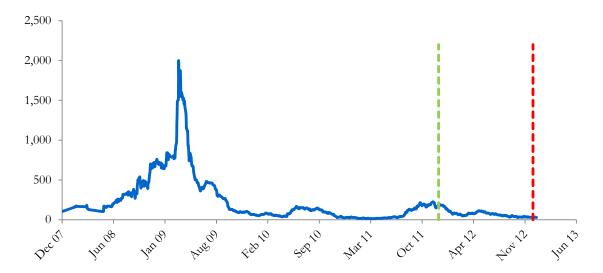
Investors purchasing these reverse convertibles effectively sell put options to HSBC and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. HSBC pays investors a "coupon" that is part payment for the put options and part interest on the investors' posted collateral. This reverse convertible is fairly priced if and only if the difference between the reverse convertible's "coupon rate" and interest paid on HSBC's straight debt equals the value of the put option investors are giving to HSBC. Whether this reverse convertible is suitable or not is identically equivalent to whether selling put options on the reference stock at the option premium being paid by HSBC was suitable for the investor.

# **HSBC's Stock Price**



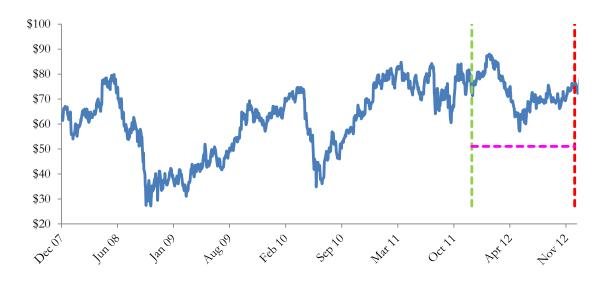
The graph above shows the adjusted closing price of the issuer HSBC for the past several years. The stock price of the issuer is an indication of the financial strength of HSBC. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## HSBC's CDS Rate



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

### Anadarko Petroleum Corp.'s Stock Price

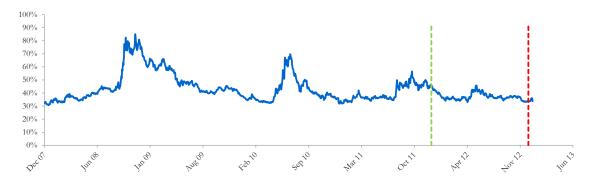


The graph above shows the historical levels of Anadarko Petroleum Corp.'s stock for the past several years. The final payoff of this note is determined by Anadarko Petroleum Corp.'s stock price at maturity. Higher fluctuations in Anadarko Petroleum Corp.'s stock price correspond to a greater uncertainty in the final payout of this Trigger Yield Optimization Note.

### Realized Payoff

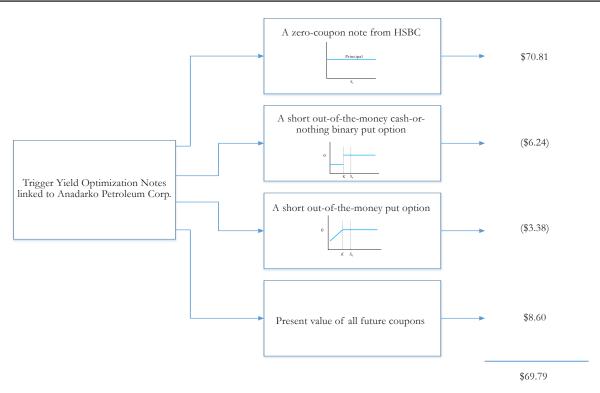
This note matured on December 21, 2012 and investors received \$72.94 per note.

## Reference Asset Anadarko Petroleum Corp.'s Stock's Implied Volatility



The annualized implied volatility of Anadarko Petroleum Corp.'s stock on December 16, 2011 was 45.76%, meaning that options contracts on Anadarko Petroleum Corp.'s stock were trading at prices that reflect an expected annual volatility of 45.76%. The higher the implied volatility, the larger the expected fluctuations of Anadarko Petroleum Corp.'s stock price and of the Note's market value during the life of the Notes.

# Decomposition of this Trigger Yield Optimization Note



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 Trigger Yield Optimization Note.

- 1. Delta measures the sensitivity of the price of the note to the Anadarko Petroleum Corp.'s stock price on December 16, 2011.

  2. 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.

  3. Fair price evaluation is based on the Black-Scholes model of the Anadarko Petroleum Corp.'s stock on December 16, 2011.

  4. Calculated payout at maturity is only an approximation, and may differ from actual payouts at maturity.

  5. Our evaluation does not include any transaction fees, broker commissions, or liquidity discounts on the notes.