

Report Prepared On: 04/29/13

**Structured Product Details**

<b>Name</b>	Single Observation ELKS linked to Halliburton Company
<b>Issue Size</b>	\$5.23 million
<b>Issue Price</b>	\$10
<b>Term</b>	6 Months
<b>Annualized Coupon</b>	7.10%
<b>Pricing Date</b>	November 29, 2012
<b>Issue Date</b>	December 4, 2012
<b>Valuation Date</b>	May 24, 2013
<b>Maturity Date</b>	May 30, 2013
<b>Issuer</b>	Citigroup
<b>CDS Rate</b>	25.72 bps
<b>Swap Rate</b>	0.51%
<b>Reference Asset</b>	Halliburton Company's stock
<b>Initial Level</b>	\$32.92
<b>Trigger Price</b>	\$26.34
<b>Conversion Price</b>	TBD
<b>Dividend Rate</b>	1.09%
<b>Implied Volatility Delta<sup>1</sup></b>	30.13% 0.37
<b>Fair Price at Issue</b>	\$9.82
<b>CUSIP</b>	17318Q384
<b>SEC Link</b>	<a href="http://www.sec.gov/Archives/edgar/data/831001/000095010312006491/dp34636_424b2-0318.htm">www.sec.gov/Archives/edgar/data/831001/000095010312006491/dp34636_424b2-0318.htm</a>

**Single Observation ELKS linked to Halliburton Company**

**Description**

Citigroup issued \$5.23 million of Single Observation ELKS linked to Halliburton Company on December 4, 2012 at \$10 per note.

These notes are Citigroup-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 6-month notes pay monthly coupons at an annualized rate of 7.10%. In addition to the monthly coupons, on May 30, 2013 investors will receive the market value of 0.30 share of Halliburton Company's stock if on May 24, 2013 Halliburton Company's stock closes below \$26.34 (80% of Halliburton Company's stock price on November 29, 2012). Otherwise, investors will receive the \$10 face value per note.

**Valuation**

This Citigroup single observation reverse convertible linked to Halliburton Company's stock can be valued as a combination of a note from Citigroup and a short European out-of-the-money cash-or-nothing binary put option, and a short European out-of-the-money put option on Halliburton Company's stock. For reasonable valuation inputs this note was worth \$9.82 per \$10 when it was issued on December 4, 2012 because investors were effectively being paid only \$0.31 for giving Citigroup options which were worth \$0.49.

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.

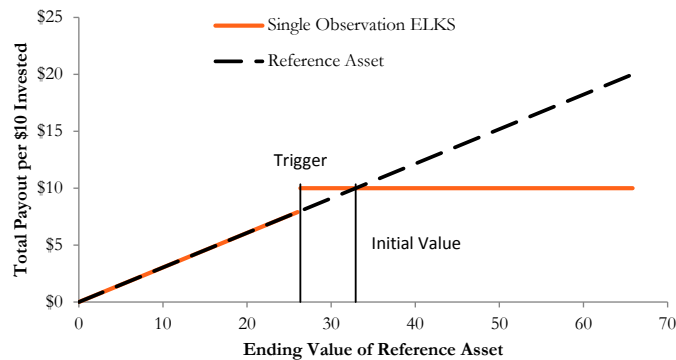
**Related Research**

**Research Papers:**  
[www.slcg.com/research.php](http://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.

**Mike Yan, Ph.D.,**  
 Senior Financial Economist, SLCG  
 (+1) 703.539.6780  
[MikeYan@slcg.com](mailto:MikeYan@slcg.com)

**Payoff Curve at Maturity**

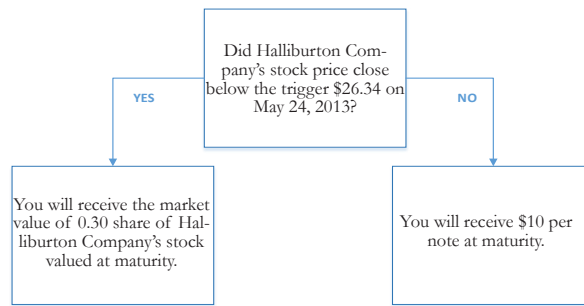


The payoff diagram shows the final payoff of this note given Halliburton Company's stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Halliburton Company's stock directly.

**Principal Payback Table**

Halliburton Company's Stock	Note Payoff
\$0.00	\$0.00
\$3.29	\$1.00
\$6.58	\$2.00
\$9.88	\$3.00
\$13.17	\$4.00
\$16.46	\$5.00
\$19.75	\$6.00
\$23.04	\$7.00
\$26.34	\$10.00
\$29.63	\$10.00
<b>\$32.92</b>	<b>\$10.00</b>
\$36.21	\$10.00
\$39.50	\$10.00
\$42.80	\$10.00
\$46.09	\$10.00
\$49.38	\$10.00

**Maturity Payoff Diagram**



*The contingent payoffs of this Single Observation ELKS.*

**Analysis**

This single observation reverse convertible's 7.10% coupon rate is higher than the yield Citigroup paid on its straight debt but, in addition to Citigroup's credit risk, investors bear the risk that they will receive shares of Halliburton Company'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 Citigroup and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. Citigroup 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 Citigroup's straight debt equals the value of the put option investors are giving to Citigroup. 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 Citigroup was suitable for the investor.

**Citigroup's Stock Price**



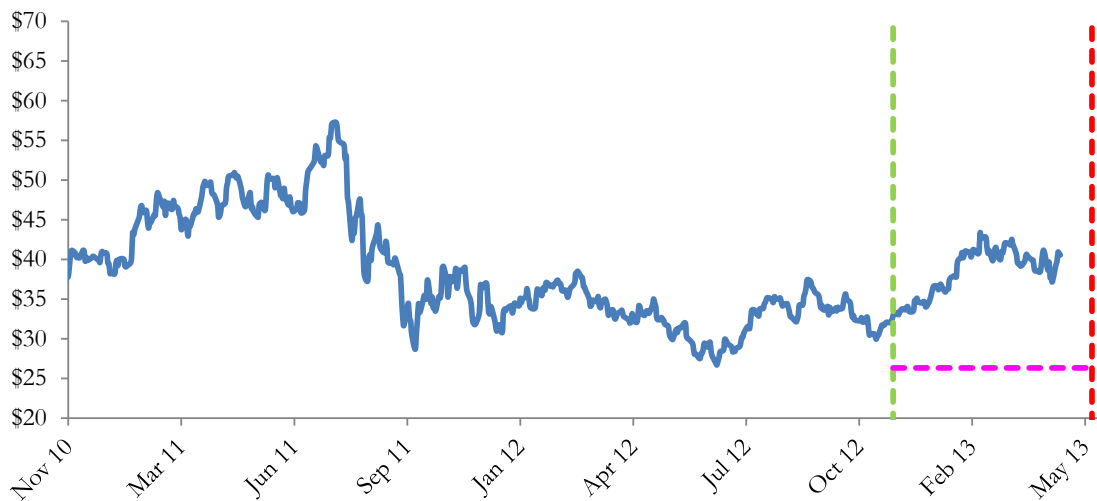
*The graph above shows the adjusted closing price of the issuer Citigroup for the past several years. The stock price of the issuer is an indication of the financial strength of Citigroup. The adjusted price shown above incorporates any stock split, reverse stock split, etc.*

### Citigroup's CDS Rate



Credit default swap (CDS) rates are the market price that investors require to bear credit risk of an issuer such as Citigroup. 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 Citigroup's debt, including outstanding Single Observation ELKS. Fluctuations in Citigroup's CDS rate impact the market value of the notes in the secondary market.

### Halliburton Company's Stock Price

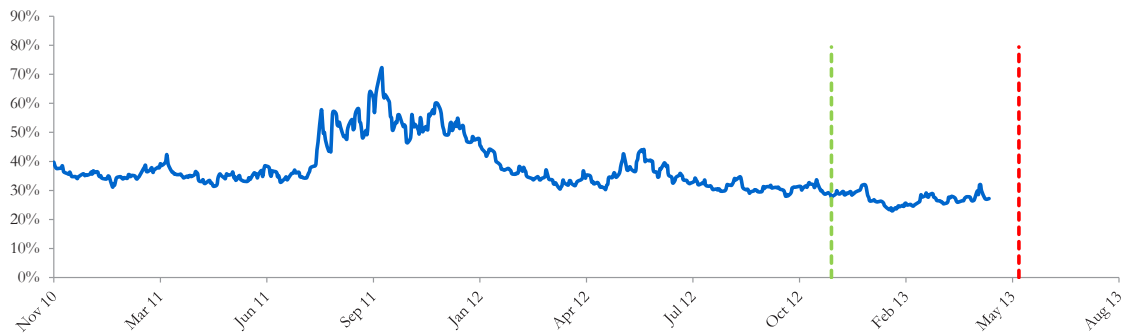


The graph above shows the historical levels of Halliburton Company's stock for the past several years. The final payoff of this note is determined by Halliburton Company's stock price at maturity. Higher fluctuations in Halliburton Company's stock price correspond to a greater uncertainty in the final payout of this Single Observation ELKS.

### Realized Payoff

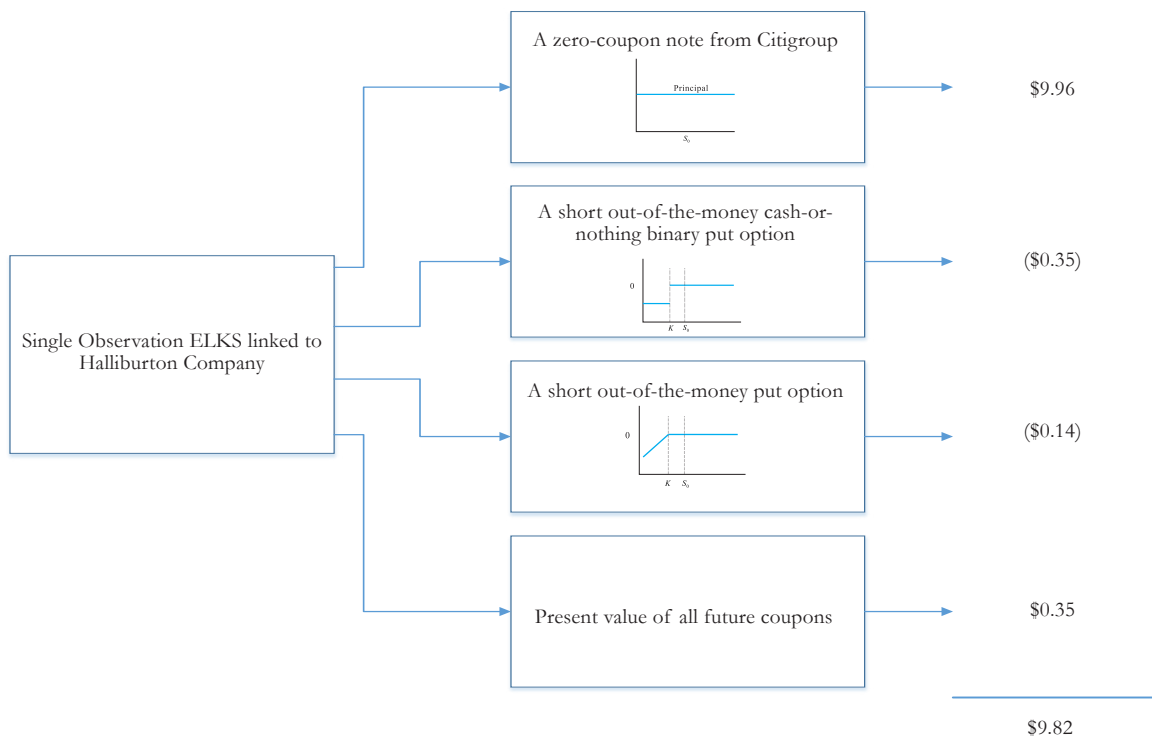
This product will mature on May 30, 2013.

## Reference Asset Halliburton Company's Stock's Implied Volatility



The annualized implied volatility of Halliburton Company's stock on November 29, 2012 was 30.13%, meaning that options contracts on Halliburton Company's stock were trading at prices that reflect an expected annual volatility of 30.13%. The higher the implied volatility, the larger the expected fluctuations of Halliburton Company's stock price and of the Note's market value during the life of the Notes.

## Decomposition of this Single Observation ELKS



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 Single Observation ELKS.

1. Delta measures the sensitivity of the price of the note to the Halliburton Company's stock price on November 29, 2012.
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 Halliburton Company's stock on November 29, 2012.
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.