

## Structured Product Details

Name Single Observation ELSK Based Upon the Common Stock of Bank of America Corporation

Issue Size\$13.29 millionIssue Price\$10Term6 MonthsAnnualized Coupon9.50%

Pricing Date March 29, 2012
Issue Date April 3, 2012
Valuation Date September 21, 2012
Maturity Date September 26, 2012

 Issuer
 Citigroup

 CDS Rate
 66.03 bps

 Swap Rate
 0.71%

Reference Asset

Initial Level
Conversion Price
Trigger Price
Dividend Rate
Implied Volatility
Delta¹
Bank of America Corporation's stock
\$9.53
\$9.53
Conversion Price
\$9.53
\$7.62
\$0.42%
\$4.41%
\$0.41

Fair Price at Issue \$9.48 Realized Return 9.89%

CUSIP 17317U113
SEC Link www.sec.gov/Archives/edgar/
data/831001/000095010312001680/
dp29644\_424b2-0207.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.

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# Single Observation ELSK Based Upon the Common Stock of Bank of America Corporation

## Description

Report Prepared On: 10/26/12

Citigroup issued \$13.29 million of Single Observation ELSK Based Upon the Common Stock of Bank of America Corporation on April 3, 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.

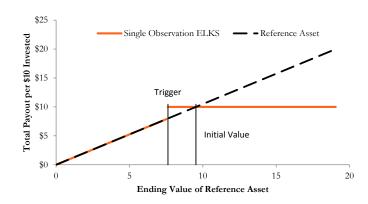
These 6-month notes pay monthly coupons at an annualized rate of 9.50%. In addition to the monthly coupons, on September 26, 2012 investors will receive the market value of 1.05 shares of Bank of America Corporation's stock if on September 21, 2012 Bank of America Corporation's stock closes below \$7.62 (80% of Bank of America Corporation's stock price on March 29, 2012). Otherwise, investors will receive the \$10 face value per note.

### **Valuation**

This Citigroup single observation reverse convertible linked to Bank of America Corporation's stock can be valued as a combination of a note from Citigroup and a short European out-of-the-money cash-or-nothing put option, and a short European out-of-the-money put option on Bank of America Corporation's stock. For reasonable valuation inputs this note was worth \$9.48 per \$10 when it was issued on April 3, 2012 because investors were effectively being paid only \$0.39 for giving Citigroup options which were worth \$0.90.

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

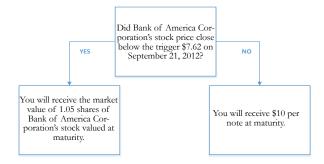


The payoff diagram shows the final payoff of this note given Bank of America Corporation's stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Bank of America Corporation's stock directly.

#### Principal Payback Table

Bank of America Corporation's Stock	Note Payoff
\$0.00	\$0.00
\$0.95	\$1.00
\$1.91	\$2.00
\$2.86	\$3.00
\$3.81	\$4.00
\$4.77	\$5.00
\$5.72	\$6.00
\$6.67	\$7.00
\$7.62	\$10.00
\$8.58	\$10.00
\$9.53	\$10.00
\$10.48	\$10.00
\$11.44	\$10.00
\$12.39	\$10.00
\$13.34	\$10.00
\$14.30	\$10.00

#### Maturity Payoff Diagram



The contingent payoffs of this Single Observation ELKS.

## **Analysis**

This single observation reverse convertible's 9.50% 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 Bank of America Corporation's stock when those shares are worth substantially less than the face value of the note at maturity.

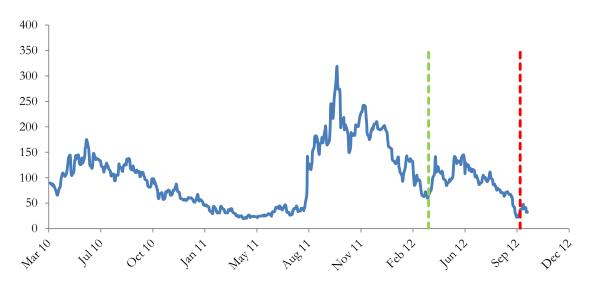
Investors purchasing these reverse convertibles effectively sell put options to Citigroup and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. Citigroup pays investors a "coupon" that is part payment for the put options and part 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



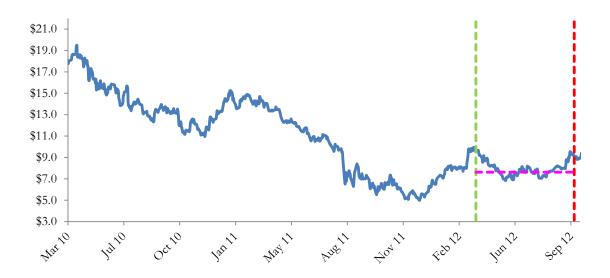
The graph above shows the adjusted closing price of the issuer Citigroup for the past several years. The stock price of the issuer is an indication of the sinancial strength of Citigroup. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## 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.

#### Bank of America Corporation's Stock Price

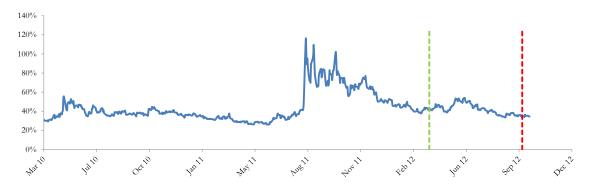


The graph above shows the historical levels of Bank of America Corporation's stock for the past several years. The final payoff of this note is determined by Bank of America Corporation's stock price at maturity. Higher fluctuations in Bank of America Corporation's stock price correspond to a greater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

#### Realized Payoff

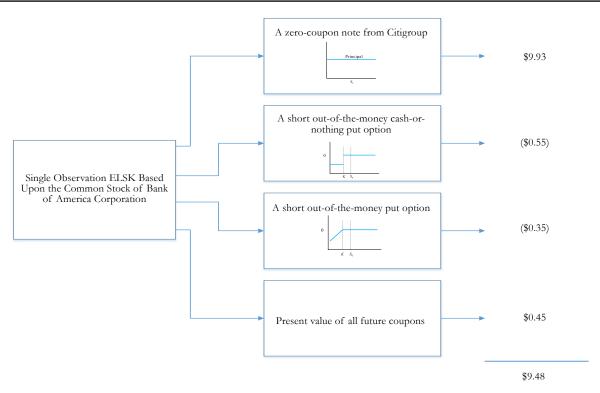
This note matured on September 26, 2012 and investors received \$10.00 per note.

#### Reference Asset Bank of America Corporation's Stock's Implied Volatility



The annualized implied volatility of Bank of America Corporation's stock on March 29, 2012 was 43.41%, meaning that options contracts on Bank of America Corporation's stock were trading at prices that reflect an expected annual volatility of 43.41%. The higher the implied volatility, the larger the expected fluctuations of Bank of America Corporation'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 Bank of America Corporation's stock price on March 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 Bank of America Corporation's stock on March 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.