

Structured Product Details

Name Buffered Return Optimization
Securities linked to the the iShares

MSCI Emerging Markets Index Fund

 Issue Size
 \$87.66 million

 Issue Price
 \$10

 Term
 24 Months

 Annualized Coupon
 0.00%

Pricing Date November 15, 2011
Issue Date November 18, 2011
Valuation Date November 15, 2013
Maturity Date November 21, 2013

IssuerCitigroupCDS Rate222.71 bpsSwap Rate0.71%

Reference Asset

Initial Level
Dividend Rate
Implied Volatility
Delta¹

Shares MSCI Emerging
Markets Index Fund
\$40.48
2.07%
34.08%
0.59

Fair Price at Issue \$9.22

CUSIP 17317U485 SEC Link www.sec.gov/Archives/edgar/ data/831001/00095010311004822/ dp27272\_424b2-mtndg0142.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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# Buffered Return Optimization Securities linked to the the iShares MSCI Emerging Markets Index Fund

# Description

Report Prepared On: 02/01/13

Citigroup issued \$87.66 million of Buffered Return Optimization Securities linked to the the iShares MSCI Emerging Markets Index Fund on November 18, 2011 at \$10 per note.

These notes are Citigroup-branded Buffered PLUS securities that do not pay periodic coupons, but instead pay a single amount at maturity depending on the final level of iShares MSCI Emerging Markets Index Fund.

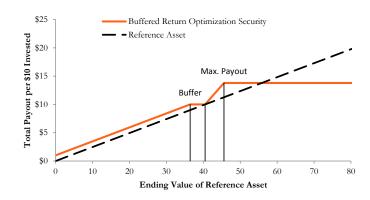
If on November 15, 2013 iShares MSCI Emerging Markets Index Fund's share price is higher than \$40.48, but lower than \$45.60, the notes pay a return equal to the percentage increase in iShares MSCI Emerging Markets Index Fund multiplied by 3.0, up to a cap of 37.92%. If on November 15, 2013 the refe is below \$40.48 but not below \$36.43, investors receive \$10 face value per note. If iShares MSCI Emerging Markets Index Fund's share price on November 15, 2013 is lower than \$36.43, investors receive face value per note reduced by the amount the reference asset is below \$36.43 as a percent of the initial level, \$40.48.

## Valuation

This product can be valued as a combination of a note from Citigroup, one short out-of-the-money put option, three long at-the-money call options, and three short out-of-the-money call options. For reasonable valuation inputs this note was worth \$9.22 when it was issued on November 18, 2011 because the value of the options investors gave Citigroup plus the interest investors would have received on Citigroup's straight debt was worth \$0.78 more than the options investors received from Citigroup.

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

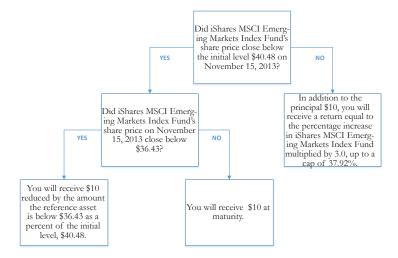


The payoff diagram shows the final payoff of this note given iSbares MSCI Emerging Markets Index Fund's share price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in iSbares MSCI Emerging Markets Index Fund directly.

## Principal Payback Table

iShares MSCI Emerging Markets Index Fund	Note Payoff
\$0.00	\$1.00
\$4.05	\$2.00
\$8.10	\$3.00
\$12.14	\$4.00
\$16.19	\$5.00
\$20.24	\$6.00
\$24.29	\$7.00
\$28.34	\$8.00
\$32.38	\$9.00
\$36.43	\$10.00
\$40.48	\$10.00
\$44.53	\$13.00
\$48.58	\$13.79
\$52.62	\$13.79
\$56.67	\$13.79
\$60.72	\$13.79

## Maturity Payoff Diagram

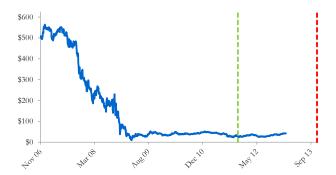


The contingent payoffs of this Buffered Return Optimization Security.

# **Analysis**

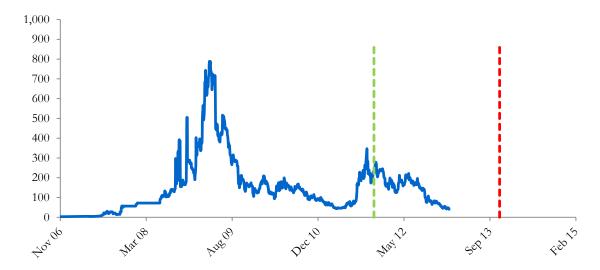
This Buffered Return Optimization Security pays investors the increase in iShares MSCI Emerging Markets Index Fund multiplied by 3.0 capped at 37.92%, but if iShares MSCI Emerging Markets Index Fund declines over the term of the note, investors will suffer losses equal to the percentage decline in iShares MSCI Emerging Markets Index Fund. In addition, investors bear the credit risk of Citigroup. Investors purchasing this Buffered Return Optimization Security effectively sell at-the-money put and out-of-the-money call options to Citigroup, buy at-the-money call options, and a zero-coupon note from Citigroup. This Buffered Return Optimization Security is fairly priced if and only if the market value of the options investors received from Citigroup equals the market value of the options investors gave Citigroup plus the interest investors would have received on Citigroup's straight debt.

## Citigroup's Stock Price



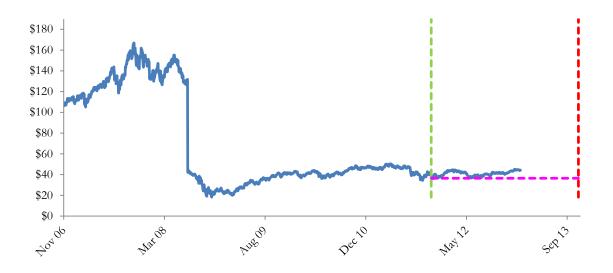
The graph above shows the adjusted closing price of the issuer Citigroup for the past several years. The stock price of the issuer is an indication of the financial strength of Citigroup. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## 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 Buffered Return Optimization Security. Fluctuations in Citigroup's CDS rate impact the market value of the notes in the secondary market.

## iShares MSCI Emerging Markets Index Fund's Share Price

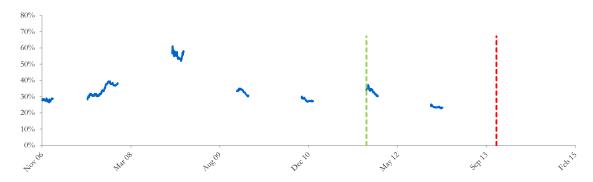


The graph above shows the historical levels of iShares MSCI Emerging Markets Index Fund for the past several years. The final payoff of this note is determined by iShares MSCI Emerging Markets Index Fund's share price at maturity. Higher fluctuations in iShares MSCI Emerging Markets Index Fund's share price correspond to a greater uncertainty in the final payout of this Buffered Return Optimization Security.

## Realized Payoff

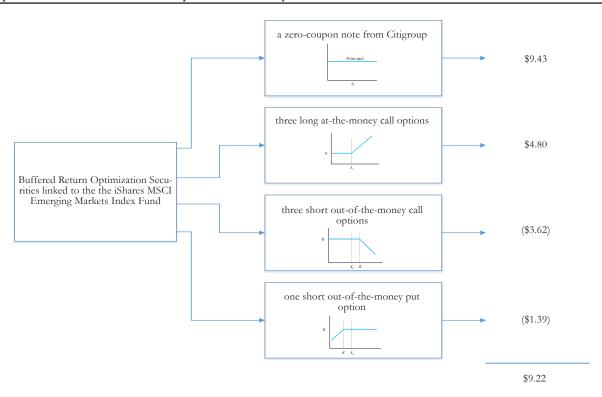
This product will mature on November 21, 2013.

## Reference Asset iShares MSCI Emerging Markets Index Fund's Implied Volatility



The annualized implied volatility of iShares MSCI Emerging Markets Index Fund on November 15, 2011 was 34.08%, meaning that options contracts on iShares MSCI Emerging Markets Index Fund were trading at prices that reflect an expected annual volatility of 34.08%. The higher the implied volatility, the larger the expected fluctuations of iShares MSCI Emerging Markets Index Fund's share price and of the Note's market value during the life of the Notes.

#### Decomposition of this Buffered Return Optimization Security



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 Buffered Return Optimization Security.

- 1. Delta measures the sensitivity of the price of the note to the iShares MSCI Emerging Markets Index Fund's share price on November 15, 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 iShares MSCI Emerging Markets Index Fund on November 15, 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.