

Report Prepared On: 08/02/13

**Structured Product Details**

Name PLUS linked to S&P 500 Index

Issue Size \$3.08 million  
 Issue Price \$10  
 Term 12 Months  
 Annualized Coupon 0.00%

Pricing Date November 23, 2011  
 Issue Date November 29, 2011  
 Valuation Date November 30, 2012  
 Maturity Date December 5, 2012

Issuer Citigroup  
 CDS Rate 242.48 bps  
 Swap Rate 1.03%

Reference Asset the S&P 500 Index

Initial Level 1,161.79  
 Dividend Rate 2.24%  
 Implied Volatility 29.77%  
 Delta<sup>1</sup> 0.63

Fair Price at Issue \$8.97  
 Realized Return 15.14%

CUSIP 17317U394  
 SEC Link [www.sec.gov/Archives/edgar/data/831001/000095010311005002/dp27474\\_424b2-0156.htm](http://www.sec.gov/Archives/edgar/data/831001/000095010311005002/dp27474_424b2-0156.htm)

**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.

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**PLUS linked to S&P 500 Index**

**Description**

Citigroup issued \$3.08 million of PLUS linked to S&P 500 Index on November 29, 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 the S&P 500 Index.

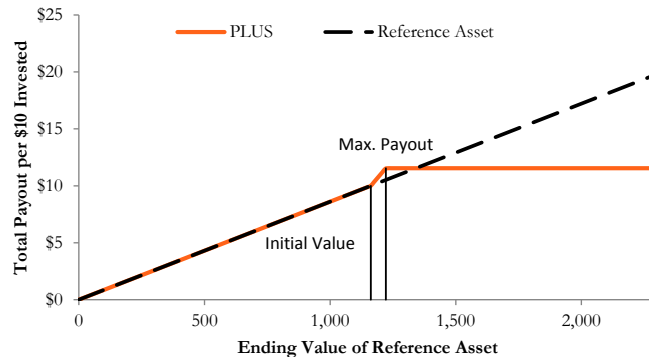
If on November 30, 2012 the S&P 500 Index level is higher than 1,161.79, but lower than 1,221.62, the notes pay a return equal to the percentage increase in the S&P 500 Index multiplied by 3.0, up to a cap of 15.45%. If on November 30, 2012 the refe is below 1,161.79 but not below 1161.79, investors receive \$10 face value per note. If the S&P 500 Index level on November 30, 2012 is lower than 1161.79, investors receive face value per note reduced by the amount the reference asset is below 1161.79 as a percent of the initial level, 1,161.79.

**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 \$8.97 when it was issued on November 29, 2011 because the value of the options investors gave Citigroup plus the interest investors would have received on Citigroup's straight debt was worth \$1.03 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**

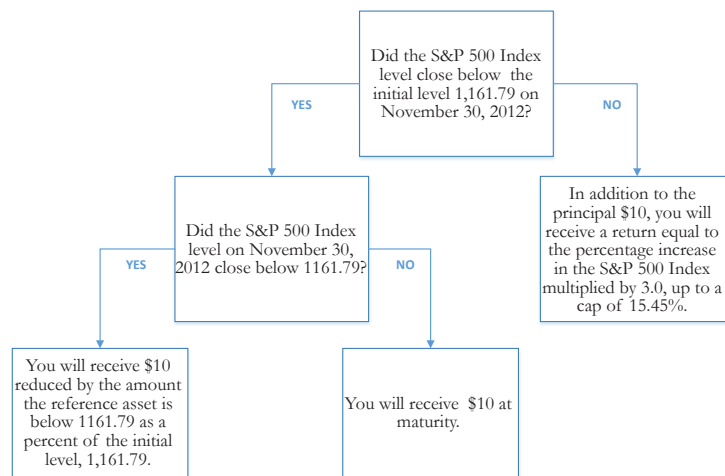


The payoff diagram shows the final payoff of this note given the S&P 500 Index level (horizontal axis). For comparison, the dashed line shows the payoff if you invested in the S&P 500 Index directly.

### Principal Payback Table

The S&P 500 Index	Note Payoff
0.00	\$0.00
116.18	\$1.00
232.36	\$2.00
348.54	\$3.00
464.72	\$4.00
580.90	\$5.00
697.07	\$6.00
813.25	\$7.00
929.43	\$8.00
1,045.61	\$9.00
<b>1,161.79</b>	<b>\$10.00</b>
1,277.97	\$11.55
1,394.15	\$11.55
1,510.33	\$11.55
1,626.51	\$11.55
1,742.69	\$11.55

### Maturity Payoff Diagram

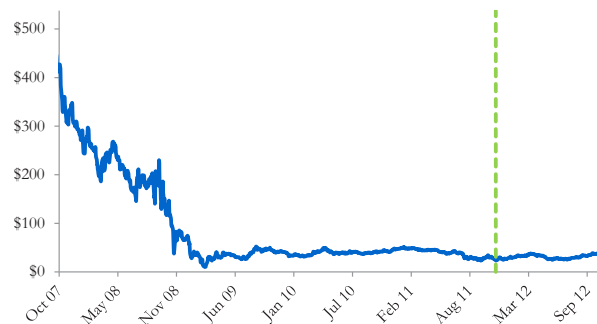


The contingent payoffs of this PLUS.

### Analysis

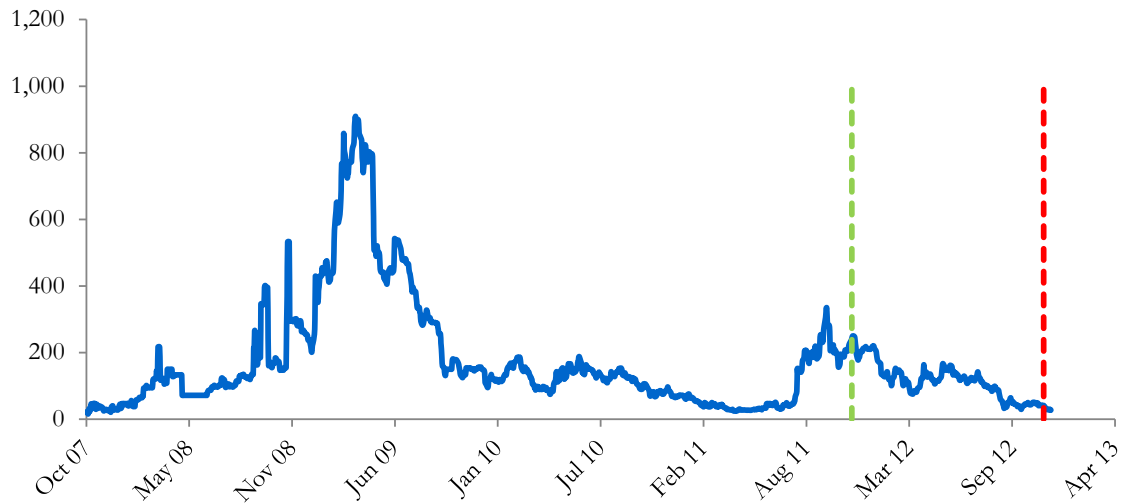
This PLUS pays investors the increase in the S&P 500 Index multiplied by 3.0 capped at 15.45%, but if the S&P 500 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the S&P 500 Index. In addition, investors bear the credit risk of Citigroup. Investors purchasing this PLUS 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 PLUS 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



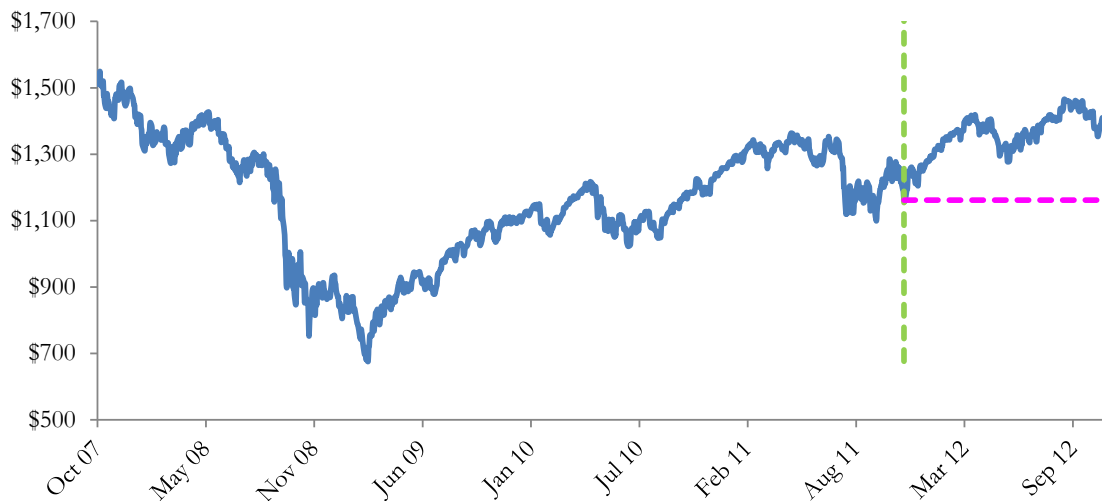
The graph above shows the adjusted closing price of the issuer Citigroup for the past several years. The stock price of the issuer is an indication of the financial strength of Citigroup. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

### 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 PLUS. Fluctuations in Citigroup'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 PLUS.

### Realized Payoff

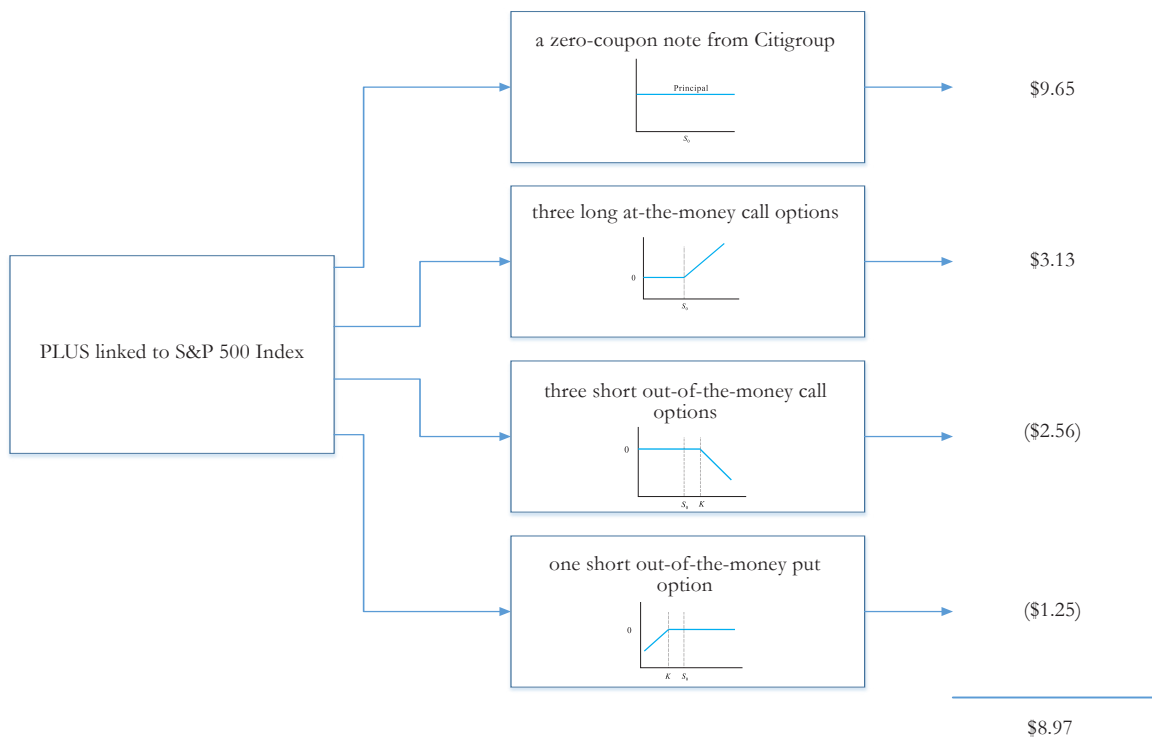
This note matured on December 5, 2012 and investors received \$11.55 per note.

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



The annualized implied volatility of the S&P 500 Index on November 23, 2011 was 29.77%, meaning that options contracts on the S&P 500 Index were trading at prices that reflect an expected annual volatility of 29.77%. 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 PLUS



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 PLUS.

1. Delta measures the sensitivity of the price of the note to the the S&P 500 Index level on November 23, 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 the S&P 500 Index on November 23, 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.