# **Structured Products** Research Report

Report Prepared On: 02/02/13

### **Structured Product Details**

Name PLUS linked to S&P 500 Index

Issue Size	\$18.64 million
Issue Price	\$10
Term	13 Months
Annualized Coupon	0.00%
Pricing Date	June 28, 2012
Issue Date	July 3, 2012
Valuation Date	July 29, 2013
Maturity Date	August 1, 2013

Issuer	JPMorgan
CDS Rate	56.1 bps
Swap Rate	1.02%

Reference Asset	the S&P 500 Index
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Initial Level	1,329.04
Dividend Rate	2.12%
Implied Volatility	22.51%
Delta <sup>1</sup>	0.74

\$9.44 Fair Price at Issue

CUSIP 46637G546 www.sec.gov/Archives/edgar/ data/19617/000095010312003370/ SEC Link dp31452\_424b2-ps504.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.

## PLUS linked to S&P 500 Index

## Description

JPMorgan issued \$18.64 million of PLUS linked to S&P 500 Index on July 3, 2012 at \$10 per note.

These notes are JPMorgan-branded PLUS securities that do not pay periodic coupons, but instead pay a single amount at maturity depending on the S&P 500 Index level at maturity.

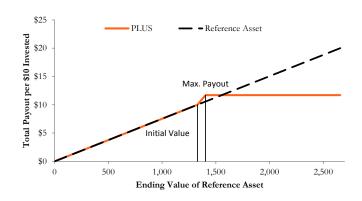
If the S&P 500 Index level on July 29, 2013 is higher than 1,329.04, but lower than 1,404.35, the notes pay a return equal to the percentage increase in the S&P 500 Index multiplied by 3.0. If on July 29, 2013 the S&P 500 Index level is above the 1,404.35, the notes pay the maximum payout of \$11.70. If on July 29, 2013 the S&P 500 Index level is below 1,329.04, investors receive the face value per note reduced by the percentage decline in the reference asset. The notes will pay nothing at maturity if the reference asset declines to zero.

## Valuation

This note can be valued as a combination of a note from JPMorgan, a short at-the-money put option, three long at-the-money call options, and three short out-of-the-money call options. The short at-the-money put option exposes investors to any decline in the S&P 500 Index. The three short out-of-the-money call options has the strike price of 1,404.35, and limits the maximum return of the notes beyond the cap level. For reasonable valuaof the options investors gave JPMorgan plus the interest investors would have received on JPMorgan's straight debt was worth \$0.56 more than the call options investors received from JPMorgan.

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



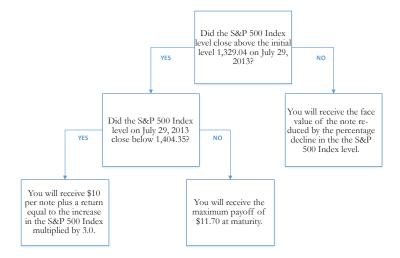
The payoff diagram shows the final payoff of this note given the S&P 500 Index level (horizontal axis). For comparison, the dashed line shows the payoff if you invested in the S&P 500 Index directly.

Tim Dulaney, Ph.D., Senior Financial Economist, SLCG (+1) 703.539.6777

TimDulaney@slcg.com

#### Maturity Payoff Diagram

The S&P 500 Index	Note Payoff
0.00	\$0.00
132.90	\$1.00
265.81	\$2.00
398.71	\$3.00
531.62	\$4.00
664.52	\$5.00
797.42	\$6.00
930.33	\$7.00
1,063.23	\$8.00
1,196.14	\$9.00
1,329.04	\$10.00
1,461.94	\$11.70
1,594.85	\$11.70
1,727.75	\$11.70
1,860.66	\$11.70
1,993.56	\$11.70

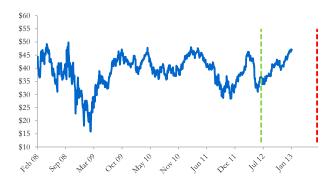


The contingent payoffs of this PLUS.

## **Analysis**

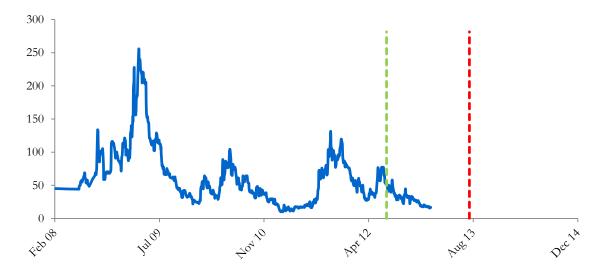
This PLUS pays investors the increase in the S&P 500 Index multiplied by 3.0 capped at 17.00%, but if the S&P 500 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the S&P 500 Index. In addition, investors bear the credit risk of JPMorgan. Investors purchasing this PLUS effectively sell at-the-money put and out-of-the-money call options to JPMorgan, buy at-the-money call options, and a zero-coupon note from JPMorgan. This PLUS is fairly priced if and only if the market value of the options investors received from JPMorgan equals the market value of the options investors gave JPMorgan plus the interest investors would have received on JPMorgan's straight debt.

### JPMorgan's Stock Price



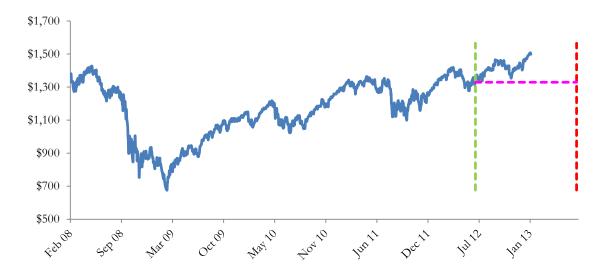
The graph above shows the adjusted closing price of the issuer JPMorgan for the past several years. The stock price of the issuer is an indication of the financial strength of JPMorgan. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

### JPMorgan's CDS Rate



Credit default swap (CDS) rates are the market price that investors require to bear credit risk of an issuer such as JPMorgan. 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 JPMorgan's debt, including outstanding PLUS. Fluctuations in JPMorgan'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.

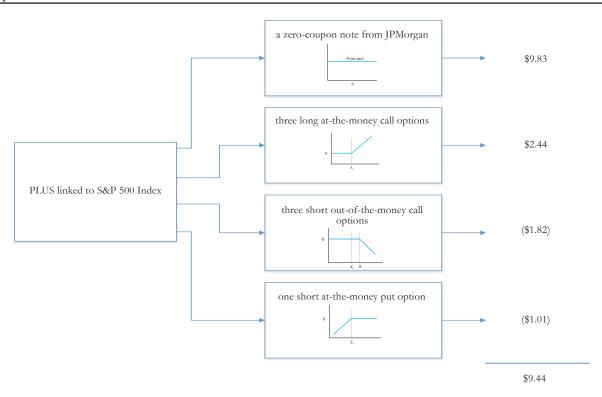
#### Realized Payoff

This product will mature on August 1, 2013.

## 60% 50% 40% 30% 20% 10% 0% MAIS Aug 13 Feb 08

The annualized implied volatility of the S&P 500 Index on June 28, 2012 was 22.51%, meaning that options contracts on the S&P 500 Index were trading at prices that reflect an expected annual volatility of 22.51%. 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.

- Delta measures the sensitivity of the price of the note to the the S&P 500 Index level on June 28, 2012.
  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.
  Fair price evaluation is based on the Black-Scholes model of the the S&P 500 Index on June 28, 2012.
  Calculated payout at maturity is only an approximation, and may differ from actual payouts at maturity.
  Our evaluation does not include any transaction fees, broker commissions, or liquidity discounts on the notes.