

Structured Product Details

Name Return Enhanced Notes linked to S&P 500 Index

Pricing Date December 23, 2008
Issue Date December 29, 2008
Valuation Date January 26, 2010
Maturity Date January 29, 2010

IssuerJPMorganCDS Rate89.87 bpsSwap Rate2.05%

Reference Asset the S&P 500 Index

 $\begin{array}{lll} \textbf{Initial Level} & 863.16 \\ \textbf{Dividend Rate} & 3.26\% \\ \textbf{Implied Volatility} & 38.39\% \\ \textbf{Delta}^1 & 0.71 \\ \end{array}$ 

Fair Price at Issue \$912.04 Realized Return \$93.39%

CUSIP 48123LXU3
SEC Link www.scc.gov/Archives/edgar/
data/19617/000089109208006211/

ata/19617/000089109208006211/ e33997\_424b2.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.

Tim Dulaney, Ph.D.,

Senior Financial Economist, SLCG (+1) 703.539.6777 TimDulaney@slcg.com

# Return Enhanced Notes linked to S&P 500 Index

# Description

Report Prepared On: 08/02/13

JPMorgan issued \$2.41 million of Return Enhanced Notes linked to S&P 500 Index on December 29, 2008 at \$1,000 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.

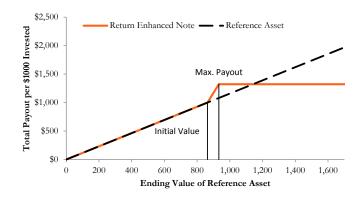
If the S&P 500 Index level on January 26, 2010 is higher than 863.16, but lower than 932.75, the notes pay a return equal to the percentage increase in the S&P 500 Index multiplied by 4.0. If on January 26, 2010 the S&P 500 Index level is above the 932.75, the notes pay the maximum payout of \$1,322.50. If on January 26, 2010 the S&P 500 Index level is below 863.16, 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, four long at-the-money call options, and four 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 four short out-of-the-money call options has the strike price of 932.75, and limits the maximum return of the notes beyond the cap level. For reasonable valuation inputs this note was worth \$912.04 when it was issued on December 29, 2008 because the value of the options investors gave JPMorgan plus the interest investors would have received on JPMorgan's straight debt was worth \$87.96 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

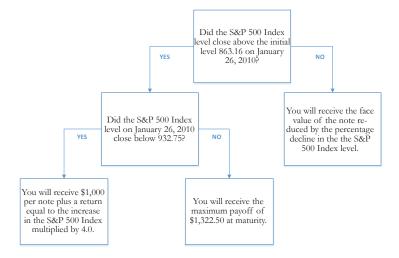


The payoff diagram shows the final payoff of this note given the S&P 500 Index level (horizontal axis). For comparison, the dashed line shows the payoff if you invested in the S&P 500 Index directly.

## Principal Payback Table

The S&P 500 Index	Note Payoff
0.00	\$0.00
86.32	\$100.00
172.63	\$200.00
258.95	\$300.00
345.26	\$400.00
431.58	\$500.00
517.90	\$600.00
604.21	\$700.00
690.53	\$800.00
776.84	\$900.00
863.16	\$1,000.00
949.48	\$1,322.50
1,035.79	\$1,322.50
1,122.11	\$1,322.50
1,208.42	\$1,322.50
1,294.74	\$1,322.50

## Maturity Payoff Diagram

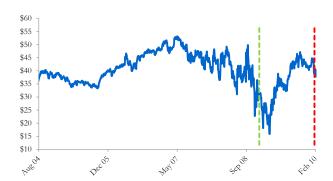


The contingent payoffs of this Return Enhanced Note.

# **Analysis**

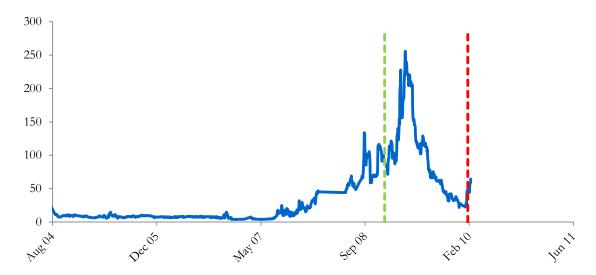
This Return Enhanced Note pays investors the increase in the S&P 500 Index multiplied by 4.0 capped at 32.25%, but if the S&P 500 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the S&P 500 Index. In addition, investors bear the credit risk of JPMorgan. Investors purchasing this Return Enhanced Note 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 Return Enhanced Note 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



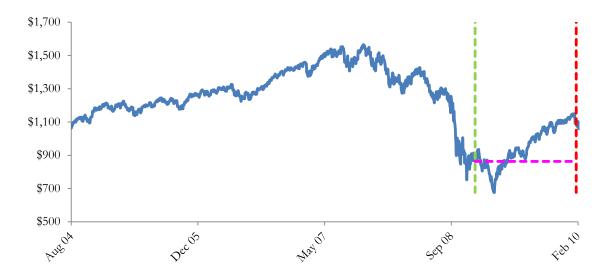
The graph above shows the adjusted closing price of the issuer JPMorgan for the past several years. The stock price of the issuer is an indication of the financial strength of JPMorgan. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## 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 Return Enhanced Note. Fluctuations in JPMorgan's CDS rate impact the market value of the notes in the secondary market.

## The S&P 500 Index Level

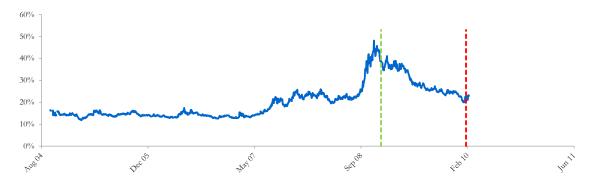


The graph above shows the historical levels of the S&P 500 Index for the past several years. The final payoff of this note is determined by the S&P 500 Index level at maturity. Higher fluctuations in the S&P 500 Index level correspond to a greater uncertainty in the final payout of this Return Enhanced Note.

## Realized Payoff

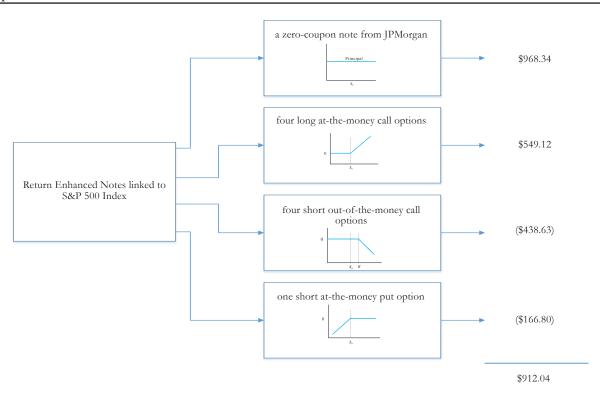
This note matured on January 29, 2010 and investors received \$1,322.50 per note.

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



The annualized implied volatility of the S&P 500 Index on December 23, 2008 was 38.39%, meaning that options contracts on the S&P 500 Index were trading at prices that reflect an expected annual volatility of 38.39%. 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 Return Enhanced Note



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 Return Enhanced Note.

- Delta measures the sensitivity of the price of the note to the the S&P 500 Index level on December 23, 2008.
   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 December 23, 2008.
   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.