

# Structured Product Details

Name I	PLUS linked to NASDAQ-100 Index	
Issue Size	\$3.00 million	
Issue Price	\$10	
Term	25 Months	
Annualized Coup	on 0.00%	
Pricing Date	March 14, 2008	
Issue Date	March 24, 2008	
Valuation Date	March 29, 2010	
Maturity Date	March 31, 2010	
Issuer	Morgan Stanley	
CDS Rate	326.06 bps	
Swap Rate	2.37%	
Reference Asset	the NASDAQ-100 Index	
Initial Level	1,713.83	
Dividend Rate	0.55%	
Implied Volatil	25.77%	
Delta <sup>1</sup>	0.72	
Fair Price at Issue	e \$8.91	
Realized Return	13.38%	
CUSIP SEC Link	61747W299 www.sec.gov/Archives/edgar/ data/895421/000095010308000715/ dp09164_424b2-ps565a.htm	

# Structured Products Research Report

Report Prepared On: 08/02/13

# PLUS linked to NASDAQ-100 Index

# Description

Morgan Stanley issued \$3.00 million of PLUS linked to NASDAQ-100 Index on March 24, 2008 at \$10 per note.

These notes are Morgan Stanley-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 NASDAQ-100 Index.

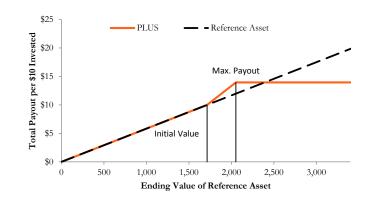
If on March 29, 2010 the NASDAQ-100 Index level is higher than 1,713.83, but lower than 2,052.31, the notes pay a return equal to the percentage increase in the NAS-DAQ-100 Index multiplied by 2.0, up to a cap of 39.50%. If on March 29, 2010 the refe is below 1,713.83 but not below 1713.83, investors receive \$10 face value per note. If the NASDAQ-100 Index level on March 29, 2010 is lower than 1713.83, investors receive face value per note reduced by the amount the reference asset is below 1713.83 as a percent of the initial level, 1,713.83.

# Valuation

This product can be valued as a combination of a note from Morgan Stanley, one short out-of-the-money put option, two long at-the-money call options, and two short out-of-the-money call options. For reasonable valuation inputs this note was worth \$8.91 when it was issued on March 24, 2008 because the value of the options investors gave Morgan Stanley plus the interest investors would have received on Morgan Stanley's straight debt was worth \$1.09 more than the options investors received from Morgan Stanley.

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 NASDAQ-100 Index level (horizontal axis). For comparison, the dashed line shows the payoff if you invested in the NASDAQ-100 Index directly.

## **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.

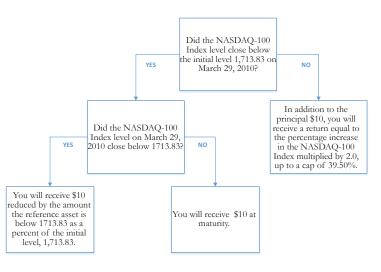
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## Principal Payback Table

The NASDAQ-100 Index	Note Payoff
0.00	\$0.00
171.38	\$1.00
342.77	\$2.00
514.15	\$3.00
685.53	\$4.00
856.92	\$5.00
1,028.30	\$6.00
1,199.68	\$7.00
1,371.06	\$8.00
1,542.45	\$9.00
1,713.83	\$10.00
1,885.21	\$12.00
2,056.60	\$13.95
2,227.98	\$13.95
2,399.36	\$13.95
2,570.75	\$13.95

#### Maturity Payoff Diagram

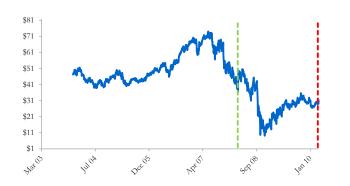


The contingent payoffs of this PLUS.

# Analysis

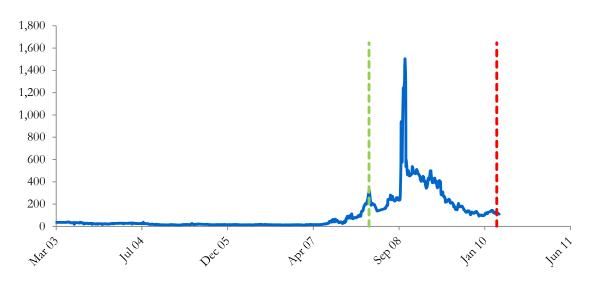
This PLUS pays investors the increase in the NASDAQ-100 Index multiplied by 2.0 capped at 39.50%, but if the NASDAQ-100 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the NASDAQ-100 Index. In addition, investors bear the credit risk of Morgan Stanley. Investors purchasing this PLUS effectively sell at-the-money put and out-of-the-money call options to Morgan Stanley, buy at-the-money call options, and a zero-coupon note from Morgan Stanley. This PLUS is fairly priced if and only if the market value of the options investors received from Morgan Stanley equals the market value of the options investors gave Morgan Stanley plus the interest investors would have received on Morgan Stanley's straight debt.

#### Morgan Stanley's Stock Price

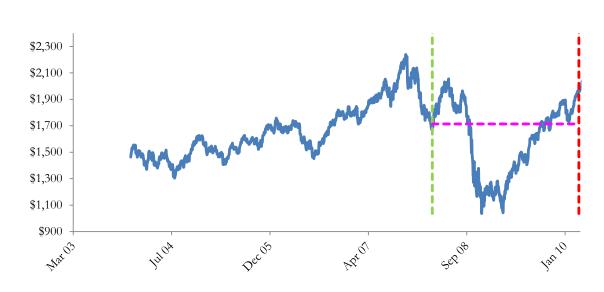


The graph above shows the adjusted closing price of the issuer Morgan Stanley for the past several years. The stock price of the issuer is an indication of the financial strength of Morgan Stanley. The adjusted price shown above incorporates any stock split, reverse stock split, etc.





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



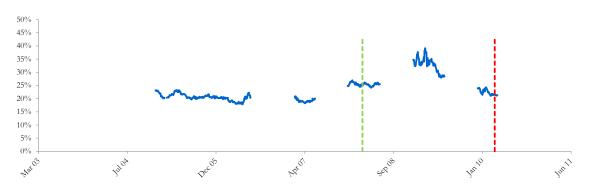
## The NASDAQ-100 Index Level

The graph above shows the historical levels of the NASDAQ-100 Index for the past several years. The final payoff of this note is determined by the NASDAQ-100 Index level at maturity. Higher fluctuations in the NASDAQ-100 Index level correspond to a greater uncertainty in the final payout of this PLUS.

## **Realized Payoff**

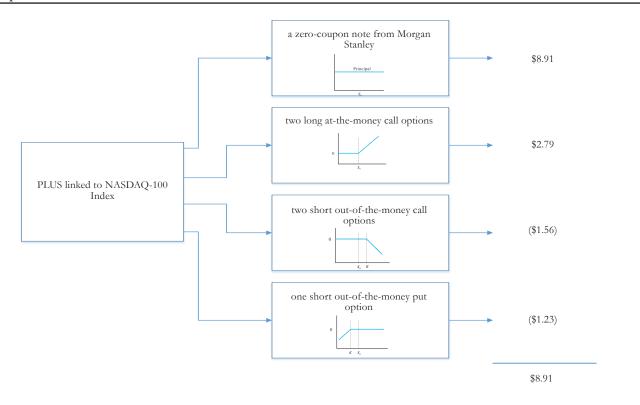
This note matured on March 31, 2010 and investors received \$12.89 per note.

## Reference Asset The NASDAQ-100 Index's Implied Volatility



The annualized implied volatility of the NASDAQ-100 Index on March 14, 2008 was 25.77%, meaning that options contracts on the NASDAQ-100 Index were trading at prices that reflect an expected annual volatility of 25.77%. The higher the implied volatility, the larger the expected fluctuations of the NASDAQ-100 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 NASDAQ-100 Index level on March 14, 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.
  3. Fair price evaluation is based on the Black-Scholes model of the the NASDAQ-100 Index on March 14, 2008.
  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.

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