

# Structured Product Details

Leena Siza

Name ELKS linked to Wells Fargo & Co.

\$54.00 million

Issue Price\$10Term6 MonthsAnnualized Coupon7.00%Pricing DateFebruary 22, 2011Issue DateFebruary 25, 2011Valuation DateAugust 22, 2011Maturity DateAugust 22, 2011IssuerMorgan StanleyCDS Rate38.98 bpsSwap Rate0.46%Reference AssetWells Fargo & Co.'s stockInitial Level\$31.38Conversion Price\$22.89Trigger Price\$25.10Dividend Rate0.64%Implied Volatility31.95%Delta'0.45Fair Price at Issue\$9.58Realized Return-42.39%CUSIP61759G299SEC Link\$21351_424b2-ps662.htm	Issue Size	\$54.00 million
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# Structured Products Research Report

Report Prepared On: 10/25/12

# ELKS linked to Wells Fargo & Co.

# Description

Morgan Stanley issued \$54.00 million of ELKS linked to Wells Fargo & Co. on February 25, 2011 at \$10 per note.

These notes are Morgan Stanley-branded reverse convertibles. These notes pay periodic interest coupons and at maturity convert into shares of Wells Fargo & Co.'s stock, if the closing price of Wells Fargo & Co.'s stock was ever below \$25.10 during the term of the notes. Similar securities are issued by other companies under different brand names.

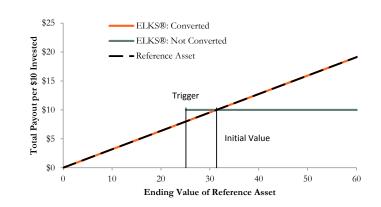
These 6-month notes pay monthly coupons at an annualized rate of 7.00%. In addition to the monthly coupons, at maturity on August 25, 2011 investors will receive the market value of 0.32 share of Wells Fargo & Co.'s stock if during the term of the notes Wells Fargo & Co.'s stock ever closed at or below \$25.10-80% of Wells Fargo & Co.'s stock's \$31.38 closing price on February 22, 2011. Otherwise, investors will receive the \$10 face value per note. In either case, investors receive the final coupon payment at maturity.

# Valuation

This Morgan Stanley ELKS linked to Wells Fargo & Co. can be valued as a combination of a note from Morgan Stanley, a short down-and-in at-the-money put option, and a long down-and-in at-the-money call option on Wells Fargo & Co.'s stock. For reasonable valuation inputs this note was worth \$9.58 per \$10 when issued on February 25, 2011 because investors were effectively being paid only \$0.31 for giving Citigroup options which were worth \$0.73.

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 Wells Fargo  $\mathcal{O}$  Co.'s stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Wells Fargo  $\mathcal{O}$  Co.'s stock 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.

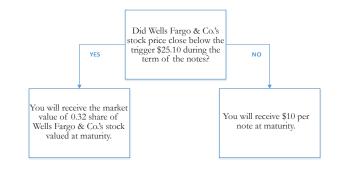
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### Principal Payback Table

'ells Fargo & Co.'s Stock	Converted Note Payoff	Non-Con- verted Note Payoff
\$0.00	\$0.00	
\$3.14	\$1.00	
\$6.28	\$2.00	
\$9.41	\$3.00	
\$12.55	\$4.00	
\$15.69	\$5.00	
\$18.83	\$6.00	
\$21.97	\$7.00	
\$25.10	\$8.00	\$10.00
\$28.24	\$9.00	\$10.00
\$31.38	\$10.00	\$10.00
\$34.52	\$11.00	\$10.00
\$37.66	\$12.00	\$10.00
\$40.79	\$13.00	\$10.00
\$43.93	\$14.00	\$10.00
\$47.07	\$15.00	\$10.00

### Maturity Payoff Diagram



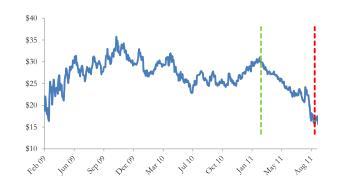
The contingent payoffs of this ELKS.

# Analysis

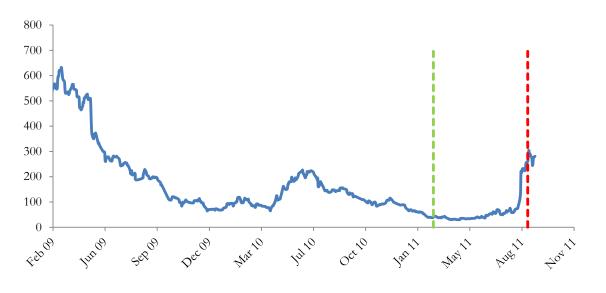
The 7.00% annualized coupon rate is higher than the yield Morgan Stanley paid on its straight debt but, in addition to Morgan Stanley's credit risk, investors bear the risk that, at maturity, they will receive shares of Wells Fargo & Co.'s stock at precisely the time when these shares are worth substantially less than the face value of the note.

Investors purchasing ELKS effectively sell down-and-in put options to Morgan Stanley, buy down-and-in call option, and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. Investors are compensated by Morgan Stanley through "coupon" payments that represent partial payment for the premium difference of put and call options as well as interest on the investors' posted collateral. This ELKS is fairly priced if and only if the excess of the reverse convertible's "coupon rate" above the interest Morgan Stanley pays on its straight debt equals the net value of the put and call options investors are exchanging with Morgan Stanley. Whether the purchase of this ELKS is suitable or not is identically equivalent to whether selling put options on the reference asset at the option premium being paid by the brokerage firm was suitable for the investor in question.

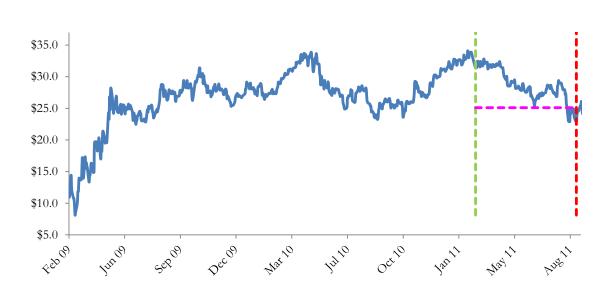
#### Morgan Stanley's Stock Price



The graph above shows the adjucted 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, bigher required yields, and therefore lower market value of Morgan Stanley's debt, including outstanding ELKS. Fluctuations in Morgan Stanley's CDS rate impact the market value of the notes in the secondary market.



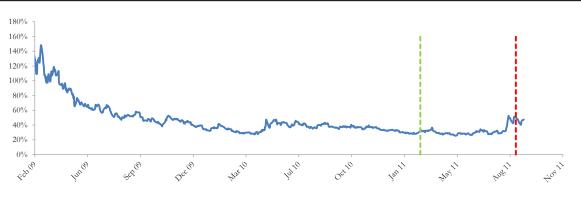
### Wells Fargo & Co.'s Stock Price

The graph above shows the historical levels of Wells Furgo & Co.'s stock for the past several years. The final payoff of this note is determined by Wells Furgo & Co.'s stock price at maturity. Higher fluctuations in Wells Fargo & Co.'s stock price correspond to a greater uncertainty in the final payout of this ELKS.

### **Realized Payoff**

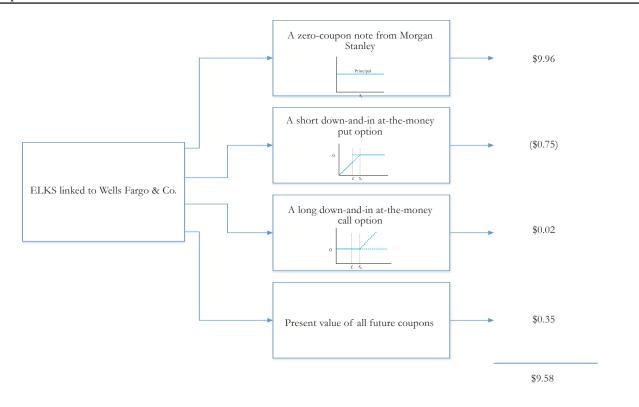
This note matured on August 25, 2011 and investors received \$7.29 per note (or equal to the value of 0.32 share of Wells Fargo & Co. stock's closing price on August 22, 2011).

## Reference Asset Wells Fargo & Co.'s Stock's Implied Volatility



The annualized implied volatility of Wells Fargo & Co.'s stock on February 22, 2011 was 31.95%, meaning that options contracts on Wells Fargo & Co.'s stock were trading at prices that reflect an expected annual volatility of 31.95%. The higher the implied volatility, the larger the expected fluctuations of Wells Fargo & Co.'s stock price and of the Note's market value during the life of the Notes.

#### Decomposition of this ELKS



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 ELKS.

- Delta measures the sensitivity of the price of the note to the Wells Fargo & Co's stock price on February 22, 2011.
  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 Wells Fargo & Co's stock on February 22, 2011.
  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.

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