

# Structured Product Details

Name	PLUS linked to Tempur-pedic International
Issue Size Issue Price Term Annualized Coup	\$405,000 \$1,000 12 Months 0.00%
Pricing Date Issue Date Valuation Date Maturity Date	February 15, 2013 February 21, 2013 February 28, 2014 March 5, 2014
Issuer CDS Rate Swap Rate	Goldman Sachs 32.81 bps 0.75%
Reference Asset Initial Level Dividend Rate Implied Volati Delta <sup>1</sup>	
Fair Price at Issu	<b>e</b> \$990.49
CUSIP SEC Link	38141GPA6 www.sec.gov/Archives/edgar/ data/886982/000110465913012297/a13- 4215_10424b2.htm

Structured Products Research Report

Report Prepared On: 07/30/13

# PLUS linked to Tempur-pedic International

# Description

Goldman Sachs issued \$405,000 of PLUS linked to Tempur-pedic International on February 21, 2013 at \$1,000 per note.

These notes are Goldman Sachs-branded PLUS securities that do not pay periodic coupons, but instead pay a single amount at maturity depending on Tempur-pedic International's stock price at maturity.

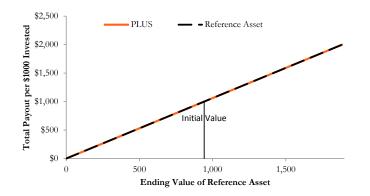
If Tempur-pedic International's stock price on February 28, 2014 is higher than \$942.41, the notes pay a return equal to the percentage increase in Tempur-pedic International's stock. If on February 28, 2014 Tempur-pedic International's stock price is below \$942.41, investors receive the face value 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 Goldman Sachs, a short at-themoney put option, and one long at-the-money call option. The short at-the-money put option exposes investors to any decline in Tempur-pedic International's stock. For reasonable valuation inputs this note was worth \$990.49 when it was issued on February 21, 2013 because the value of the put option investors gave Goldman Sachs plus the interest investors would have received on Goldman Sachs's straight debt was worth \$9.51 more than the call options investors received from Goldman Sachs.

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 Tempur-pedic International's stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Tempur-pedic International'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.

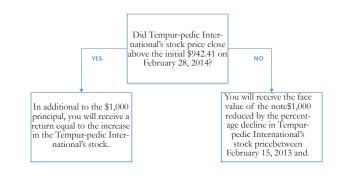
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### Principal Payback Table

Tempur-pedic Inter- national's Stock	Note Payoff
\$0.00	\$0.00
\$94.24	\$100.00
\$188.48	\$200.00
\$282.72	\$300.00
\$376.96	\$400.00
\$471.21	\$500.00
\$565.45	\$600.00
\$659.69	\$700.00
\$753.93	\$800.00
\$848.17	\$900.00
\$942.41	\$1,000.00
\$1,036.65	\$1,100.00
\$1,130.89	\$1,200.00
\$1,225.13	\$1,300.00
\$1,319.37	\$1,400.00
\$1,413.62	\$1,500.00

#### Maturity Payoff Diagram

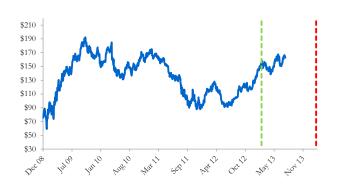


The contingent payoffs of this PLUS.

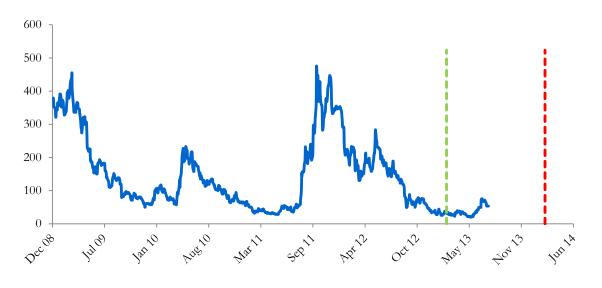
## Analysis

This PLUS pays investors the increase in Tempur-pedic International's stock, but if Tempur-pedic International's stock declines over the term of the note, investors will suffer losses equal to the percentage decline in Tempur-pedic International's stock. In addition, investors bear the credit risk of Goldman Sachs. Investors purchasing this PLUS effectively sell at-the-money put options to Goldman Sachs, buy at-the-money call options, and a zero-coupon note from Goldman Sachs. This PLUS is fairly priced if and only if the market value of the options investors received from Goldman Sachs equals the market value of the options investors gave Goldman Sachs plus the interest investors would have received on Goldman Sachs's straight debt.

#### Goldman Sachs's Stock Price

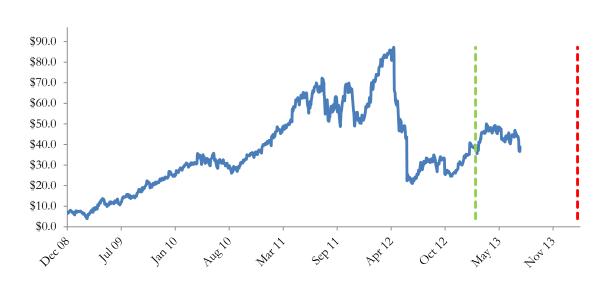


The graph above shows the adjusted closing price of the issuer Goldman Sachs for the past several years. The stock price of the issuer is an indication of the financial strength of Goldman Sachs. The adjusted price shown above incorporates any stock split, reverse stock split, etc.



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



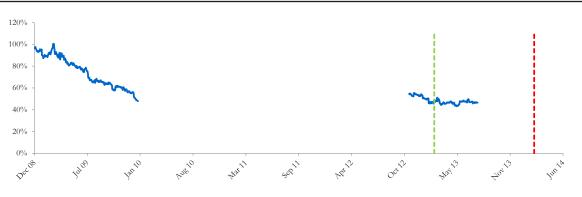


The graph above shows the historical levels of Tempur-pedic International's stock for the past several years. The final payoff of this note is determined by Tempur-pedic International's stock price at maturity. Higher fluctuations in Tempur-pedic International's stock price correspond to a greater uncertainty in the final payout of this PLUS.

### **Realized Payoff**

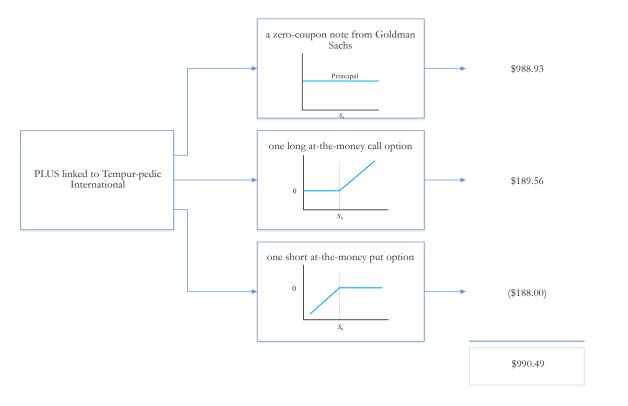
This product will mature on March 5, 2014.

### Reference Asset Tempur-pedic International's Stock's Implied Volatility



The annualized implied volatility of Tempur-pedic International's stock on February 15, 2013 was 47.43%, meaning that options contracts on Tempur-pedic International's stock were trading at prices that reflect an expected annual volatility of 47.43%. The higher the implied volatility, the larger the expected fluctuations of Tempur-pedic International's stock price 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 Tempur-pedic International's stock price on February 15, 2013.
  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 Tempur-pedic International's stock on February 15, 2013.
  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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