# Structured Products Research Report

Report Prepared On: 11/19/14

#### Structured Product Details

Name PLUS linked to Tempur-pedic

International

 Pricing Date
 April 30, 2014

 Issue Date
 May 5, 2014

 Valuation Date
 May 29, 2015

 Maturity Date
 June 3, 2015

IssuerHSBCCDS Rate29.99 bpsSwap Rate0.55%

Reference Asset

Initial Level
Dividend Rate
Implied Volatility
Delta¹

Reference Asset

Tempur-pedic International's stock
\$1,162.44

0.00%
\$1,162.44

0.00%

1.37%
0.53

Fair Price at Issue \$8.73

CUSIP 40434C675 SEC Link www.sec.gov/Archives/edgar/ data/83246/000114420414027137/ v377137\_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.

# PLUS linked to Tempur-pedic International

## Description

HSBC issued \$5.18 million of PLUS linked to Tempur-pedic International on May 5, 2014 at \$10 per note.

These notes are HSBC-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.

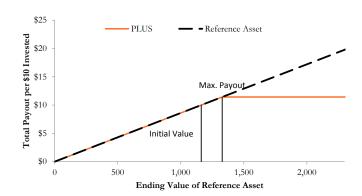
If Tempur-pedic International's stock price on May 29, 2015 is higher than \$1,162.44, but lower than \$1,328.67, the notes pay a return equal to the percentage increase in Tempurpedic International's stock. If on May 29, 2015 Tempur-pedic International's stock price is above the \$1,328.67, the notes pay the maximum payout of \$11.43. If on May 29, 2015 Tempur-pedic International's stock price is below \$1,162.44, 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 HSBC, a short at-the-money put option, one long at-the-money call option, and one short out-of-the-money call option. The short at-the-money put option exposes investors to any decline in Tempur-pedic International's stock. The one short out-of-the-money call option has the strike price of \$1,328.67, and limits the maximum return of the notes beyond the cap level. For reasonable valuation inputs this note was worth \$8.73 when it was issued on May 5, 2014 because the value of the options investors gave HSBC plus the interest investors would have received on HSBC's straight debt was worth \$1.27 more than the call options investors received from HSBC.

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



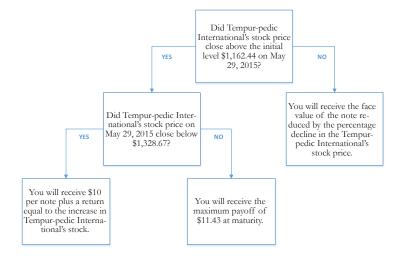
The payoff diagram shows the final payoff of this note given Tempur-pedic International's stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Tempur-pedic International's stock directly.

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#### Principal Payback Table

Tempur-pedic Inter- national's Stock	Note Payoff
\$0.00	\$0.00
\$116.24	\$1.00
\$232.49	\$2.00
\$348.73	\$3.00
\$464.98	\$4.00
\$581.22	\$5.00
\$697.46	\$6.00
\$813.71	\$7.00
\$929.95	\$8.00
\$1,046.20	\$9.00
\$1,162.44	\$10.00
\$1,278.68	\$11.00
\$1,394.93	\$11.43
\$1,511.17	\$11.43
\$1,627.42	\$11.43
\$1,743.66	\$11.43

#### Maturity Payoff Diagram

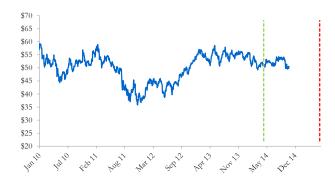


The contingent payoffs of this PLUS.

### **Analysis**

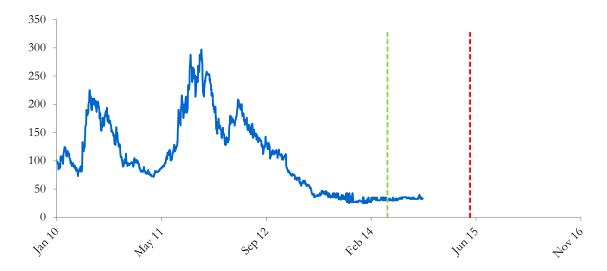
This PLUS pays investors the increase in Tempur-pedic International's stock capped at 14.30%, but if Tempur-pedic International's stock declines over the term of the note, investors will suffer losses equal to the percentage decline in Tempur-pedic International's stock. In addition, investors bear the credit risk of HSBC. Investors purchasing this PLUS effectively sell at-the-money put and out-of-the-money call options to HSBC, buy at-the-money call options, and a zero-coupon note from HSBC. This PLUS is fairly priced if and only if the market value of the options investors received from HSBC equals the market value of the options investors gave HSBC plus the interest investors would have received on HSBC's straight debt.

#### **HSBC's Stock Price**



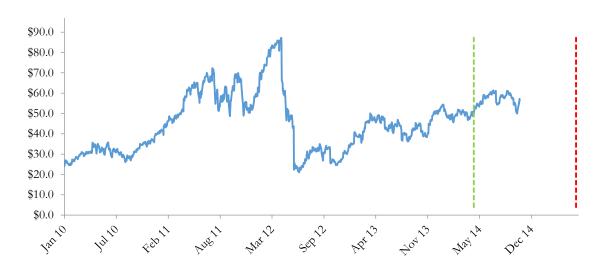
The graph above shows the adjusted closing price of the issuer HSBC for the past several years. The stock price of the issuer is an indication of the financial strength of HSBC. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

#### **HSBC's CDS Rate**



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

#### Tempur-pedic International's Stock Price

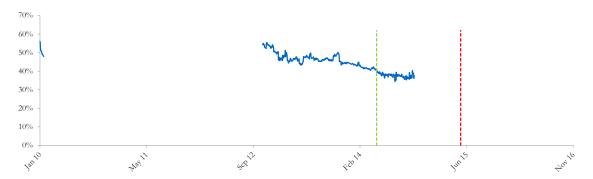


The graph above shows the historical levels of Tempur-pedic International's stock for the past several years. The final payoff of this note is determined by Tempur-pedic International's stock price at maturity. Higher fluctuations in Tempur-pedic International's stock price correspond to a greater uncertainty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

#### Realized Payoff

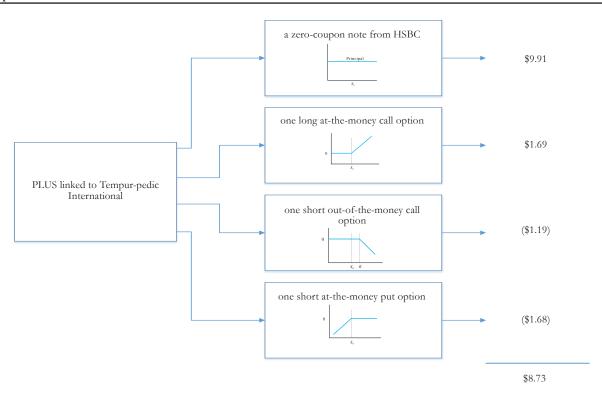
This product will mature on June 3, 2015.

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



The annualized implied volatility of Tempur-pedic International's stock on April 30, 2014 was 41.37%, meaning that options contracts on Tempur-pedic International's stock were trading at prices that reflect an expected annual volatility of 41.37%. 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 April 30, 2014.
   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 April 30, 2014.
   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.