

# Structured Product Details

Name	Yield Optimization Notes with Contingent Protection linked to MGM Resorts International	
Issue Size Issue Price Term Annualized Cou	\$1.50 million \$14.73 12 Months 14.25%	
Pricing Date Issue Date Valuation Date Maturity Date	December 22, 2010 December 28, 2010 December 22, 2011 December 29, 2011	
Issuer CDS Rate Swap Rate	Deutsche Bank 46.53 bps 0.78%	
Reference Asse Initial Level Trigger Price Conversion I Dividend Ra Implied Vola Delta <sup>1</sup>	tional's stock \$14.73 \$9.57 Price \$9.48 te 0.00%	
Fair Price at Iss Realized Retur		
CUSIP SEC Link data/1	25154P634 www.sec.gov/Archives/edgar/ 159508/000119312510288190/d424b2.htm	

Structured Products Research Report

Report Prepared On: 04/29/13

# Yield Optimization Notes with Contingent Protection linked to MGM Resorts International

# Description

Deutsche Bank issued \$1.50 million of Yield Optimization Notes with Contingent Protection linked to MGM Resorts International on December 28, 2010 at \$14.73 per note.

These notes are Deutsche Bank-branded single observation reverse convertibles. Single observation reverse convertibles pay periodic interest coupons and at maturity convert into shares of the reference security if the price of the reference security at the notes' maturity is below the trigger price determined when the notes were issued.

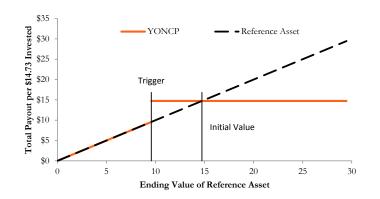
These 12-month notes pay monthly coupons at an annualized rate of 14.25%. In addition to the monthly coupons, on December 29, 2011 investors will receive the market value of one share of MGM Resorts International's stock if on December 22, 2011 MGM Resorts International's stock closes below \$9.57 (65% of MGM Resorts International's stock price on December 22, 2010). Otherwise, investors will receive the \$14.73 face value per note.

# Valuation

This Deutsche Bank single observation reverse convertible linked to MGM Resorts International's stock can be valued as a combination of a note from Deutsche Bank and a short European out-of-the-money cash-or-nothing binary put option, and a short European out-of-the-money put option on MGM Resorts International's stock. For reasonable valuation inputs this note was worth \$14.20 per \$14.73 when it was issued on December 28, 2010 because investors were effectively being paid only \$1.90 for giving Deutsche Bank options which were worth \$2.43.

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 MGM Resorts International's stock price (hortzontal axis). For comparison, the dashed line shows the payoff if you invested in MGM Resorts 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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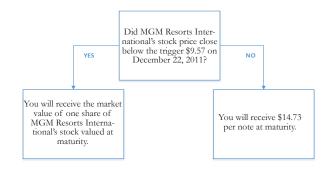
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### Principal Payback Table

MGM Resorts Inter- national's Stock	Note Payoff
\$0.00	\$0.00
\$1.47	\$1.47
\$2.95	\$2.95
\$4.42	\$4.42
\$5.89	\$5.89
\$7.37	\$7.37
\$8.84	\$8.84
\$10.31	\$14.73
\$11.78	\$14.73
\$13.26	\$14.73
\$14.73	\$14.73
\$16.20	\$14.73
\$17.68	\$14.73
\$19.15	\$14.73
\$20.62	\$14.73
\$22.10	\$14.73

### Maturity Payoff Diagram



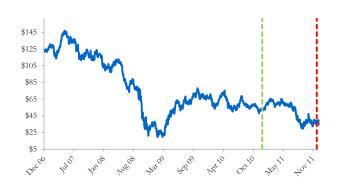
The contingent payoffs of this Yield Optimization Note with Contingent Protection.

# Analysis

This single observation reverse convertible's 14.25% coupon rate is higher than the yield Deutsche Bank paid on its straight debt but, in addition to Deutsche Bank's credit risk, investors bear the risk that they will receive shares of MGM Resorts International's stock when those shares are worth substantially less than the face value of the note at maturity.

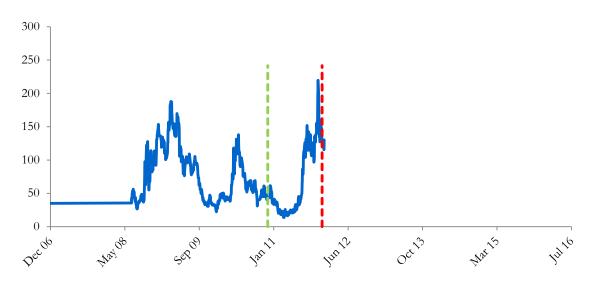
Investors purchasing these reverse convertibles effectively sell put options to Deutsche Bank and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. Deutsche Bank pays investors a "coupon" that is part payment for the put options and part interest on the investors' posted collateral. This reverse convertible is fairly priced if and only if the difference between the reverse convertible's "coupon rate" and interest paid on Deutsche Bank's straight debt equals the value of the put option investors are giving to Deutsche Bank. Whether this reverse convertible is suitable or not is identically equivalent to whether selling put options on the reference stock at the option premium being paid by Deutsche Bank was suitable for the investor.

#### Deutsche Bank's Stock Price

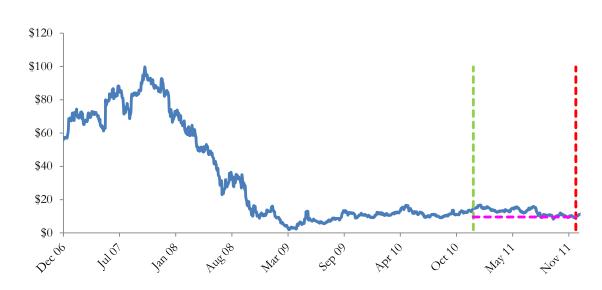


The graph above shows the adjusted closing price of the issuer Deutsche Bank for the past several years. The stock price of the issuer is an indication of the financial strength of Deutsche Bank. The adjusted price shown above incorporates any stock split, reverse stock split, etc.

## Deutsche Bank's CDS Rate



Credit default swap (CDS) rates are the market price that investors require to bear credit risk of an issuer such as Deutsche Bank. 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 Deutsche Bank's debt, including outstanding Yield Optimization Note with Contingent Protection. Fluctuations in Deutsche Bank's CDS rate impact the market value of the notes in the secondary market.

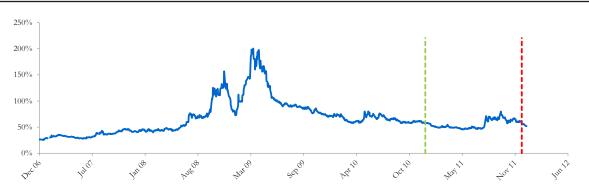


#### MGM Resorts International's Stock Price

The graph above shows the historical levels of MGM Resorts International's stock for the past several years. The final payoff of this note is determined by MGM Resorts International's stock price correspond to a greater uncertainty in the final payout of this Yield Optimization Note with Contingent Protection.

## **Realized Payoff**

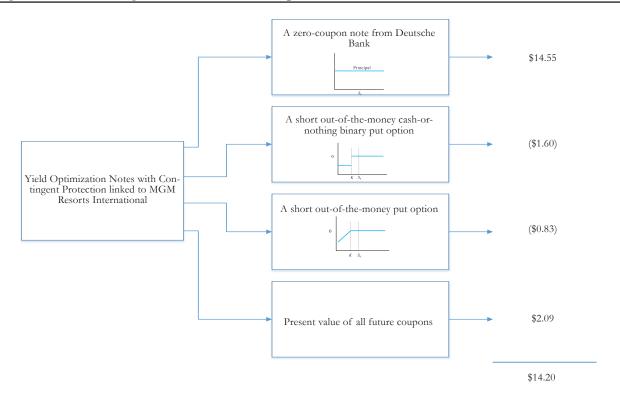
This note matured on December 29, 2011 and investors received \$9.48 per note (or equal to the value of one share of MGM Resorts International stock's closing price on December 22, 2011).



### Reference Asset MGM Resorts International's Stock's Implied Volatility

The annualized implied volatility of MGM Resorts International's stock on December 22, 2010 was 56.63%, meaning that options contracts on MGM Resorts International's stock were trading at prices that reflect an expected annual volatility of 56.63%. The higher the implied volatility, the larger the expected fluctuations of MGM Resorts International's stock price and of the Note's market value during the life of the Notes.

### Decomposition of this Yield Optimization Note with Contingent Protection



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 Yield Optimization Note with Contingent Protection.

Delta measures the sensitivity of the price of the note to the MGM Resorts International's stock price on December 22, 2010.
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 MGM Resorts International's stock on December 22, 2010.
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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