

## Structured Product Details

Name B	Buffered Bullish Enhanced Return Notes linked to S&P 500 Index	
Issue Size Issue Price Term Annualized Cor	\$244,000 \$1,000 30 Months 0.00%	
Pricing Date Issue Date Valuation Date Maturity Date	December 13, 2012 December 18, 2012 June 15, 2015 June 18, 2015	
Issuer CDS Rate Swap Rate	Bank of Montreal 129.05 bps 0.41%	
Reference Asse	t the S&P 500 Index	
Initial Level Dividend Ra Implied Vola Delta <sup>1</sup>		
Fair Price at Iss	sue \$963.85	
CUSIP SEC Link	06366RKD6 www.sec.gov/Archives/edgar/ data/927971/000121465912005508/ c1214122424b2.htm	

Report Prepared On: 08/02/13

# Buffered Bullish Enhanced Return Notes linked to S&P 500 Index

Structured Products Research Report

# Description

Bank of Montreal issued \$244,000 of Buffered Bullish Enhanced Return Notes linked to S&P 500 Index on December 18, 2012 at \$1,000 per note.

These notes are Bank of Montreal-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 S&P 500 Index.

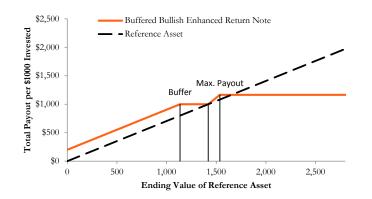
If on June 15, 2015 the S&P 500 Index level is higher than 1,419.45, but lower than 1,536.55, the notes pay a return equal to the percentage increase in the S&P 500 Index multiplied by 2.0, up to a cap of 16.50%. If on June 15, 2015 the refe is below 1,419.45 but not below 1135.56, investors receive \$1,000 face value per note. If the S&P 500 Index level on June 15, 2015 is lower than 1135.56, investors receive face value per note reduced by the amount the reference asset is below 1135.56 as a percent of the initial level, 1,419.45.

### Valuation

This product can be valued as a combination of a note from Bank of Montreal, 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 \$963.85 when it was issued on December 18, 2012 because the value of the options investors gave Bank of Montreal plus the interest investors would have received on Bank of Montreal's straight debt was worth \$36.15 more than the options investors received from Bank of Montreal.

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 S&P 500 Index level (borizontal axis). For comparison, the dashed line shows the payoff if you invested in the S&P 500 Index directly.

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### **Related Research**

#### **Research Papers:**

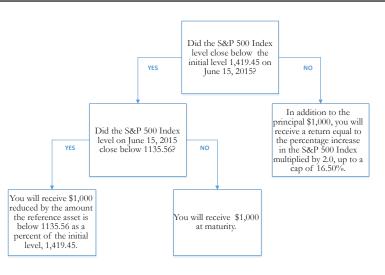
www.slcg.com/research.php

- "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.

### Principal Payback Table

The S&P 500 Index	Note Payoff
0.00	\$200.00
141.95	\$300.00
283.89	\$400.00
425.84	\$500.00
567.78	\$600.00
709.73	\$700.00
851.67	\$800.00
993.62	\$900.00
1,135.56	\$1,000.00
1,277.51	\$1,000.00
1,419.45	\$1,000.00
1,561.40	\$1,165.00
1,703.34	\$1,165.00
1,845.29	\$1,165.00
1,987.23	\$1,165.00
2,129.18	\$1,165.00

#### Maturity Payoff Diagram

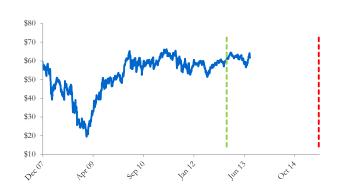


The contingent payoffs of this Buffered Bullish Enhanced Return Note.

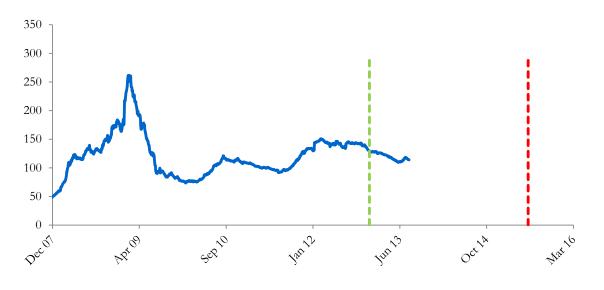
# Analysis

This Buffered Bullish Enhanced Return Note pays investors the increase in the S&P 500 Index multiplied by 2.0 capped at 16.50%, but if the S&P 500 Index declines over the term of the note, investors will suffer losses equal to the percentage decline in the S&P 500 Index. In addition, investors bear the credit risk of Bank of Montreal. Investors purchasing this Buffered Bullish Enhanced Return Note effectively sell at-the-money put and out-of-the-money call options to Bank of Montreal, buy at-the-money call options, and a zero-coupon note from Bank of Montreal. This Buffered Bullish Enhanced Return Note is fairly priced if and only if the market value of the options investors gave Bank of Montreal plus the interest investors would have received on Bank of Montreal's straight debt.

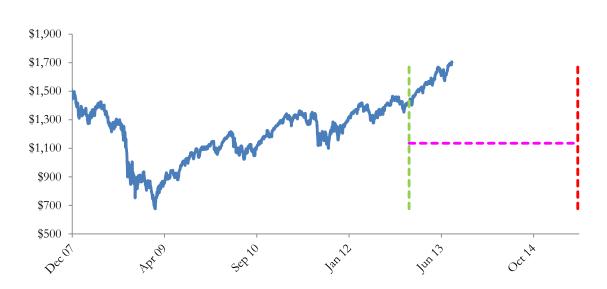
#### Bank of Montreal's Stock Price



The graph above shows the adjusted closing price of the issuer Bank of Montreal for the past several years. The stock price of the issuer is an indication of the financial strength of Bank of Montreal. 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 Bank of Montreal. 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 Bank of Montreal's debt, including outstanding Buffered Bullish Enhanced Return Note. Fluctuations in Bank of Montreal's CDS rate impact the market value of the notes in the secondary market.



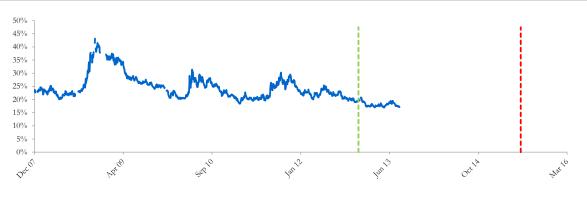
### The S&P 500 Index Level

The graph above shows the historical levels of the S&P 500 Index for the past several years. The final payoff of this note is determined by the S&P 500 Index level at maturity. Higher fluctuations in the S&P 500 Index level correspond to a greater uncertainty in the final payout of this Buffered Bullish Enhanced Return Note.

#### **Realized Payoff**

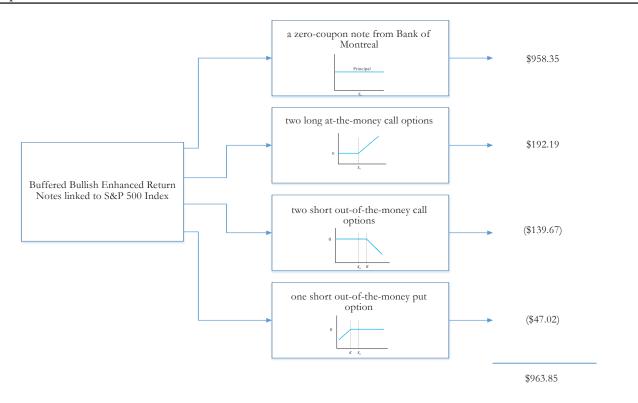
This product will mature on June 18, 2015.

#### Reference Asset The S&P 500 Index's Implied Volatility



The annualized implied volatility of the S&P 500 Index on December 13, 2012 was 19.85%, meaning that options contracts on the S&P 500 Index were trading at prices that reflect an expected annual volatility of 19.85%. The higher the implied volatility, the larger the expected fluctuations of the S&P 500 Index level and of the Note's market value during the life of the Notes.

#### Decomposition of this Buffered Bullish Enhanced Return Note



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 Buffered Bullish Enhanced Return Note.

- Delta measures the sensitivity of the price of the note to the the S&P 500 Index level on December 13, 2012.
  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 the S&P 500 Index on December 13, 2012.
  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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