

Report Prepared On: 01/29/13

**Structured Product Details**

<b>Name</b>	Reverse Exchangeable Notes linked to Arch Coal, Inc.
<b>Issue Size</b>	\$160,000
<b>Issue Price</b>	\$1,000
<b>Term</b>	3 Months
<b>Annualized Coupon</b>	23.60%
<b>Pricing Date</b>	November 4, 2011
<b>Issue Date</b>	November 9, 2011
<b>Valuation Date</b>	February 6, 2012
<b>Maturity Date</b>	February 9, 2012
<b>Issuer</b>	Bank of Montreal
<b>CDS Rate</b>	115.55 bps
<b>Swap Rate</b>	0.44%
<b>Reference Asset</b>	Arch Coal, Inc.'s stock
<b>Initial Level</b>	\$18.12
<b>Trigger Price</b>	\$11.78
<b>Conversion Price</b>	\$18.12
<b>Dividend Rate</b>	2.29%
<b>Implied Volatility</b>	63.97%
<b>Delta<sup>1</sup></b>	0.41
<b>Fair Price at Issue</b>	\$973.89
<b>Realized Return</b>	26.09%
<b>CUSIP</b>	06366QH34
<b>SEC Link</b>	<a href="http://www.sec.gov/Archives/edgar/data/927971/000121465911003783/d117110424b2.htm">www.sec.gov/Archives/edgar/data/927971/000121465911003783/d117110424b2.htm</a>

**Reverse Exchangeable Notes linked to Arch Coal, Inc.**

**Description**

Bank of Montreal issued \$160,000 of Reverse Exchangeable Notes linked to Arch Coal, Inc. on November 9, 2011 at \$1,000 per note.

These notes are Bank of Montreal-branded reverse convertibles. Reverse convertibles pay periodic interest coupons and at maturity convert into shares of the reference security if the price of the reference stock at the notes' maturity is below its price when the notes were issued and had closed below a specified "trigger" during the term of the notes.

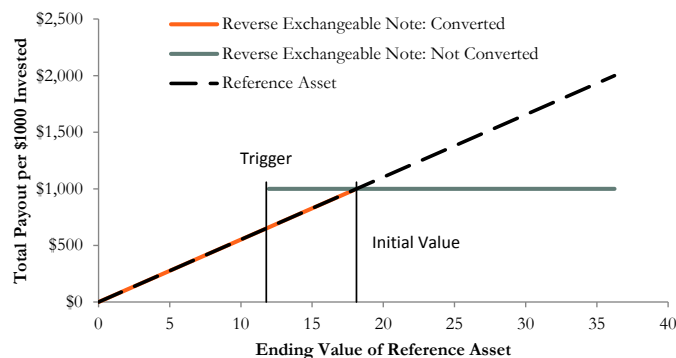
These 3-month notes pay monthly coupons at an annualized rate of 23.60%. In addition to the monthly coupons, at maturity on February 9, 2012 investors will receive the market value of 55.19 shares of Arch Coal, Inc.'s stock if on February 6, 2012 Arch Coal, Inc.'s stock price closes below \$18.12 (Arch Coal, Inc.'s stock price on November 4, 2011) and had ever closed at or below \$11.78 during the term of the notes. Otherwise, investors will receive the \$1,000 face value per note.

**Valuation**

This Bank of Montreal reverse convertible linked to Arch Coal, Inc.'s stock can be valued as a combination of a note from Bank of Montreal and a short down-and-in, at-the-money put option on Arch Coal, Inc.'s stock. For reasonable valuation inputs this note was worth \$973.89 per \$1,000 when it was issued on November 9, 2011 because investors were effectively being paid only \$54.78 for giving Bank of Montreal an option which was worth \$80.89.

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 Arch Coal, Inc.'s stock price (horizontal axis). For comparison, the dashed line shows the payoff if you invested in Arch Coal, Inc.'s stock directly.

**Related Research**

**Research Papers:**

[www.slcg.com/research.php](http://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.

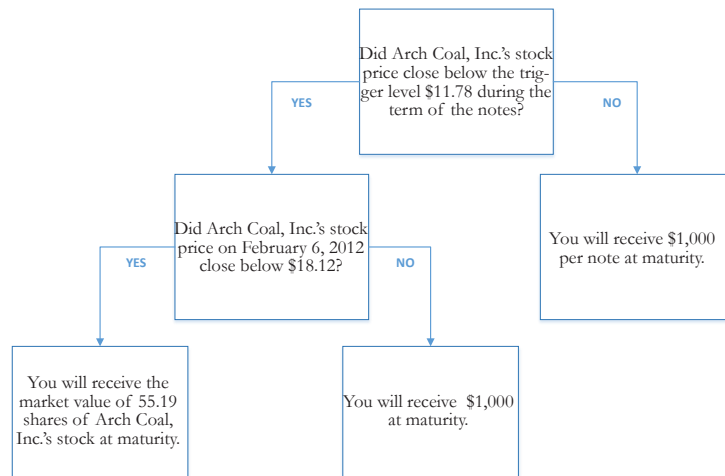
**Geng Deng, Ph.D., FRM**

Director, SLCG  
 (+1) 703.890.0741  
[GengDeng@slcg.com](mailto:GengDeng@slcg.com)

**Principal Payback Table**

Arch Coal, Inc.'s Stock	Converted Note Payoff	Non-Converted Note Payoff
\$0.00	\$0.00	
\$1.81	\$100.00	
\$3.62	\$200.00	
\$5.44	\$300.00	
\$7.25	\$400.00	
\$9.06	\$500.00	
\$10.87	\$600.00	
\$12.68	\$700.00	\$1,000.00
\$14.50	\$800.00	\$1,000.00
\$16.31	\$900.00	\$1,000.00
<b>\$18.12</b>	<b>\$1,000.00</b>	<b>\$1,000.00</b>
\$19.93	\$1,000.00	\$1,000.00
\$21.74	\$1,000.00	\$1,000.00
\$23.56	\$1,000.00	\$1,000.00
\$25.37	\$1,000.00	\$1,000.00
\$27.18	\$1,000.00	\$1,000.00

**Maturity Payoff Diagram**



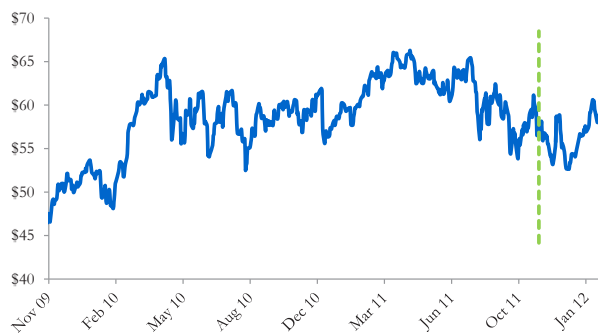
*The contingent payoffs of this Reverse Exchangeable Note.*

**Analysis**

This reverse convertible's 23.60% coupon rate is higher than the yield Bank of Montreal paid on its straight debt but, in addition to Bank of Montreal's credit risk, investors bear the risk that they will receive shares of Arch Coal, Inc.'s stock when they are worth substantially less than the face value of the note at maturity.

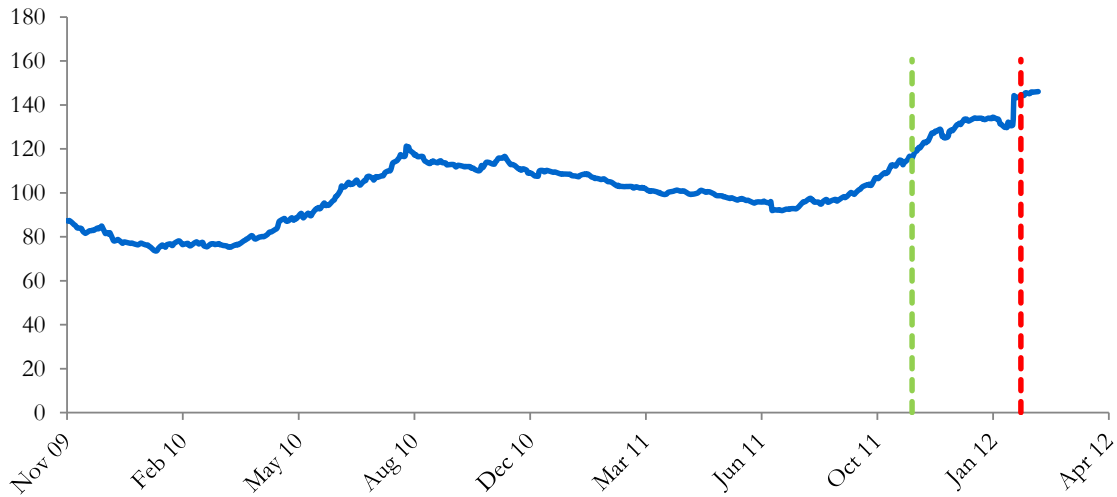
Investors purchasing reverse convertibles effectively sell put options to Bank of Montreal and post the note's issue price as collateral to secure satisfaction of the investors' obligations under the option contracts. Bank of Montreal pays investors a "coupon" that is part payment for the put options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

**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.*

### Bank of Montreal's CDS Rate



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, higher required yields, and therefore lower market value of Bank of Montreal's debt, including outstanding Reverse Exchangeable Note. Fluctuations in Bank of Montreal's CDS rate impact the market value of the notes in the secondary market.

### Arch Coal, Inc.'s Stock Price



The graph above shows the historical levels of Arch Coal, Inc.'s stock for the past several years. The final payoff of this note is determined by Arch Coal, Inc.'s stock price at maturity. Higher fluctuations in Arch Coal, Inc.'s stock price correspond to a greater uncertainty in the final payout of this Reverse Exchangeable Note.

### Realized Payoff

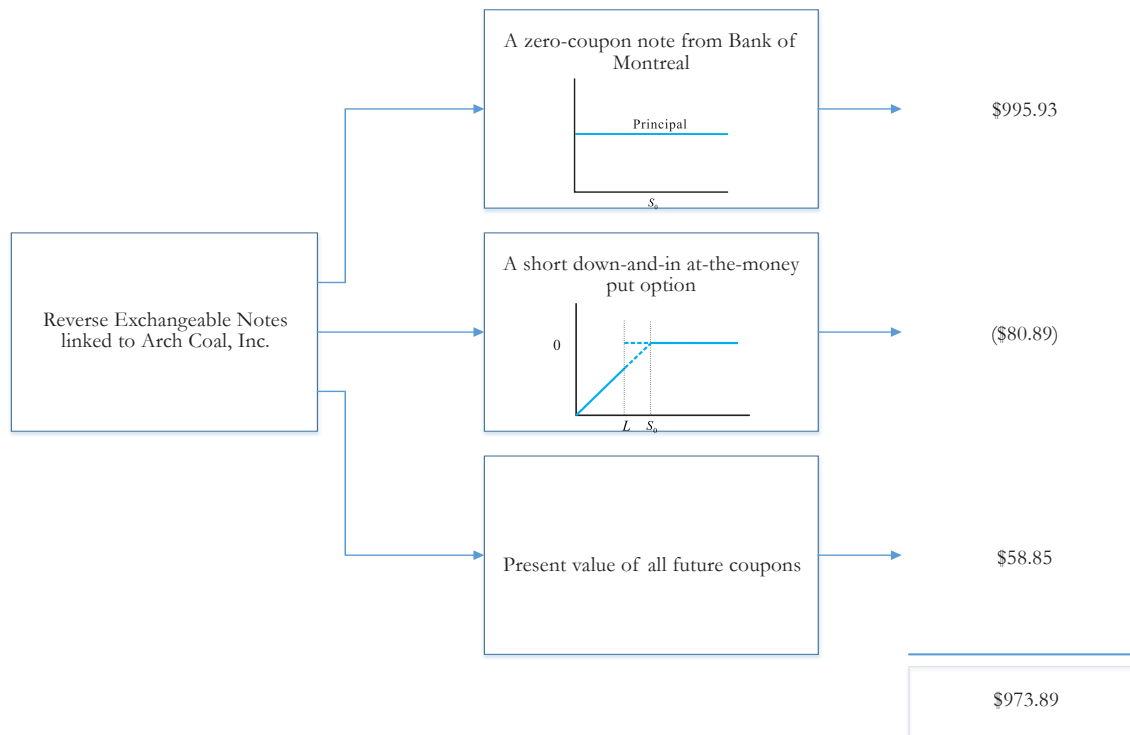
This note matured on February 9, 2012 and investors received \$1,000.00 per note.

## Reference Asset Arch Coal, Inc.'s Stock's Implied Volatility



The annualized implied volatility of Arch Coal, Inc.'s stock on November 4, 2011 was 63.97%, meaning that options contracts on Arch Coal, Inc.'s stock were trading at prices that reflect an expected annual volatility of 63.97%. The higher the implied volatility, the larger the expected fluctuations of Arch Coal, Inc.'s stock price and of the Note's market value during the life of the Notes.

## Decomposition of this Reverse Exchangeable 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 Reverse Exchangeable Note.

1. Delta measures the sensitivity of the price of the note to the Arch Coal, Inc.'s stock price on November 4, 2011.
2. 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.
3. Fair price evaluation is based on the Black-Scholes model of the Arch Coal, Inc.'s stock on November 4, 2011.
4. Calculated payout at maturity is only an approximation, and may differ from actual payouts at maturity.
5. Our evaluation does not include any transaction fees, broker commissions, or liquidity discounts on the notes.