

JPMORGAN STRUCTURED INVESTMENTS SOLUTION SERIES

Volume 3.0 - An Introduction to
Reverse Exchangeables



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JPMorgan Structured Investments Solution Series

Volume 3.0 - An Introduction to Reverse Exchangeables

With over \$1.5 billion of Reverse Exchangeables¹ printed in the first half of 2006 alone, JPMorgan has taken the opportunity to devote the third installment of our Solution Series to Reverse Exchangeables.

¹www.structuredproducts.org

Reverse Exchangeables have been among the most widely distributed Structured Investments in recent years. Reverse Exchangeables are popular due to the fixed coupons, relatively short dated maturities and high levels of contingent protection. Reverse Exchangeables can be an attractive investment in a low return environment relative to a traditional bond or equity investment. Reverse Exchangeables offer a higher coupon than a traditional corporate bond but they also offer contingent protection versus buying a stock outright.

What follows is a summary of key features that will be discussed in depth:

- Reverse Exchangeables offer relatively high fixed coupons compared to traditional bond issuance, or dividends on a common stock.
- The investor will receive the coupon payments during the life of the note, regardless of the performance of the underlying stock.
- Reverse Exchangeables traditionally contain ‘a contingent buffer,’ which protects the investor against a

decrease in the underlying stock, up to a pre-determined amount.

- This buffer goes away (i.e. knocks out) if the stock ever closes below the protection amount during the life of the note.
- An investor should be comfortable holding the underlying stock if the contingent buffer knocks out.

Introduction

Reverse Exchangeable offerings can be seen as a hybrid between owning a short dated bond and buying an equity outright. The investment pays a coupon over the life of the investment that is traditionally higher than the comparable yield of a debt instrument issued by the Issuer or the dividend yield of the underlying stock.

Because the maximum return on the note is the coupon received, the investor should be willing to forego any upside on the underlying stock in exchange for the fixed coupon payment and contingent protection against loss.

Traditionally, Reverse Exchangeables have a contingent return of their principal at maturity as long as the underlying stock did not decrease by more than the

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protection amount. This is generally referred to as a contingent buffer, or contingent protection. If the stock decreases by more than the protection amount during the life of the note, the investor will receive back shares of stock at maturity provided that the stock does not recover to its initial level. Due to this feature, which we refer to as “physical stock settlement”, the investor should be comfortable holding the underlying stock if the contingent protection knocks-out. If the stock decreased to zero at maturity, the investor would lose their full principal, although the investor would still have received the coupon paid over the life of the note, regardless of the performance of the underlying stock.

Why consider investing in Reverse Exchangeables?

In a low return environment Reverse Exchangeables can be used to potentially add a higher yield to a portfolio, although they may not be suitable for all investors because of the lack of principal protection. An investor in the underlying must have an appetite for such risk and will generally hold a view that the stock is range bound in the short term.

Thus, an investor should believe that:

- If the underlying stock appreciates, it will likely appreciate by less than the yield of the coupon;
- The stock fundamentally is a medium to long-term hold, and in the interim the investor wishes to benefit from the coupon; and

- The coupon will likely offset any loss of principal due to any stock depreciation that may occur.

The stock may appreciate but will return less than offered by the Coupon:

The maximum that an investor can receive at maturity is 100% of principal plus any unpaid and accrued coupon. It follows therefore that the investor cannot participate in any upside in the underlying because their return is fixed at the level of the coupon.

Nonetheless, an investor may well hold the view that the underlying is set to appreciate but that a Reverse Exchangeable remains preferable because the investor feels that the coupon offers a return greater than any likely appreciation.

Short term gain, long term view:

If an investor has a bullish medium to long term view of the stock but a neutral view in the short term, then Reverse Exchangeables can provide a potential entry point to the market.

Should the instrument mature at a level whereby the investor receives cash they can at this point purchase the stock or roll into a new Structured Investment. The investor will also possess a certain level of comfort with regards to the possibility of receiving the stock because he could participate in any future upside, consistent with his medium to long term bullish view. Short term the Reverse Exchangeable has allowed the investor to collect the fixed coupon.

Product Description:

Key Components:

In its most common form a Reverse Exchangeable is typically a short term instrument linked to a stock underlying that pays a Coupon during the life of the note, typically one year. At maturity the investor will receive any accrued and unpaid interest in addition to either 100% of their principal or a predetermined number of shares in the underlying stock. The coupon represents a fixed payment and it is not affected by the performance of the underlying.

1. Coupon:

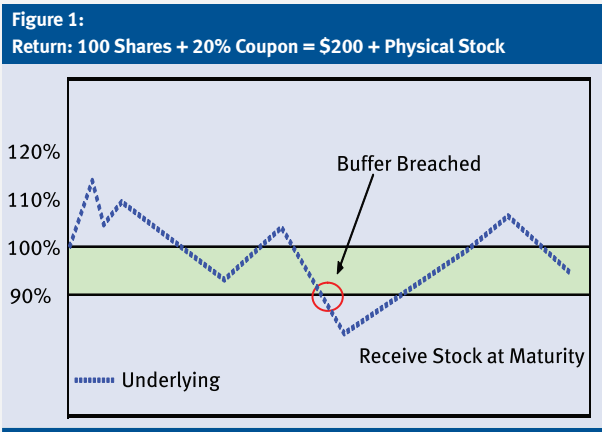
A Reverse Exchangeable can be tailored to pay the coupon at a frequency dictated by the investor. For example, it can be paid in full at the end (known as a ‘Bullet’) or in equal installments periodically throughout the life of the instrument. It is worth reiterating that once fixed at inception the coupon itself is not dependent upon the performance of the underlying.

The rate of the coupon is dependent primarily upon the volatility of the underlying and the amount, if any, of protection that the investor wishes to incorporate. Typically the coupons far exceed Money Market instruments with rates of 10%-20% per annum common on instruments with a Buffer.

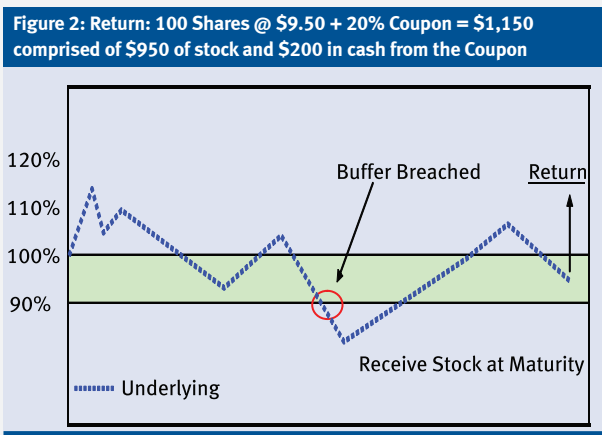
2. Contingent Buffer:

The vast majority of Reverse Exchangeables incorporate a Contingent Buffer. This protects the investor at maturity from a downturn in the stocks value provided that during the life of the instrument the underlying has never breached the buffer. Once breached, the buffer ‘knocks out’ and the calculation at maturity reverts back to the initial level as the defining factor. In essence, the instrument behaves as if no buffer existed.

The below hypothetical example (fig. 1) depicts a Reverse Exchangeable that contains a Contingent Buffer of 10%. If the Barrier is not breached then at maturity the client will receive 100% of their principal plus any unpaid and accrued interest. However, the breaching of this buffer combined with the failure of the stock to recover back above its initial level at maturity will result in the investor receiving physical shares.



Continuing with this hypothetical example and applying the Coupon to the final determination it becomes evident that this negative return on the physical stock cannot be seen in isolation. By including a Coupon of 20% we can see that the overall trade results in a gain for the investor because a portion of the coupon offsets the loss on principal and a portion produces a positive return (fig. 2). This example utilizes an initial price of \$10 per share.



3. Payment at Maturity:

There are two scenarios that can occur at maturity in addition to the payment of the fixed coupon. One, the investor receives 100% of their principal in cash should the underlying finish above a predetermined level, or two the investor receives an amount of physical shares should the underlying finish below this aforementioned level (fig. 3).

The number of shares is determined by dividing the stock price at inception by the initial investment. For example, if the underlying has an initial price of \$10 and a client invests \$1,000 then the potential physical return is fixed at 100 shares.

4. Lack of Principal Protection:

It is important to reiterate that Reverse Exchangeables are not principal protected instruments. However in a falling market the Reverse Exchangeable will always outperform the referenced underlying by virtue of the coupon.

Returning to our example of a Reverse Exchangeable that pays a 20% Coupon, if we combine this with a Reference Underlying that has depreciated to only 60% of its initial value then we can clearly see that while the Reverse Exchangeable has produced a negative return of 20% an equivalent purchase of the underlying would have resulted in a loss of 40%. The return profile of a Reverse Exchangeable with a 20% Coupon can be seen in (fig. 4).

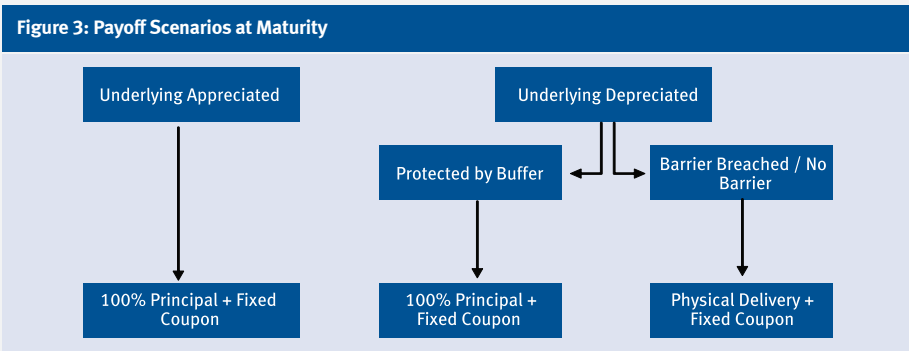
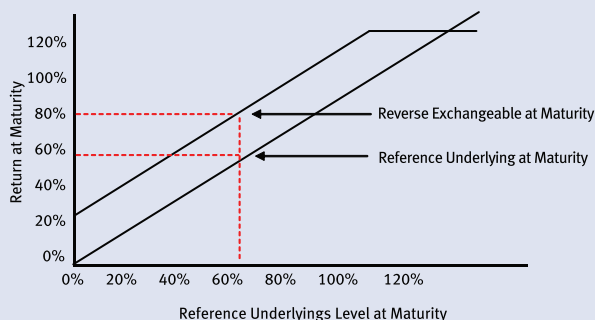


Figure 4: Return Profile



Frequently asked questions

Can Reverse Exchangeables reference a non-equity underlying?

Reverse Exchangeables can be tailored to provide that same return profile as previously discussed on a range of asset classes. One

Typical investors should be comfortable with accepting downside risk in return for a fixed coupon. In addition, investors should be comfortable with the notion that they may be delivered physical shares in the underlying at maturity.

difference to note is the possibility that whereas an equity product may feature the capacity to physically deliver at maturity, for many other asset classes only cash redemption is possible.

5. Dividends

If applicable, the holder of the Reverse Exchangeable has no ownership rights to any dividends paid by the underlying reference stock during the term of the structure. However, the projected dividend yield of the reference asset is incorporated into the value of the options that comprise the individual components of a Reverse Exchangeable. This in turn is reflected in the level of the Coupon at inception allowing the investor to derive an indirect benefit. Everything else remaining equal, the higher the dividend yield of a reference asset at inception the higher the level of the Coupon.

Can Reverse Exchangeables reference multiple underlyings?

We are now able to offer Reverse Exchangeables that are linked to a basket of underlyings. For example, a product can be tailored to offer exposure to the components of the Dow Jones, excluding JPMorgan. The return at maturity is then calculated on the worst performing of the assets in relation to the initial level. By expanding the instrument to incorporate a basket we have been able to offer a Reverse Exchangeable with a 50% contingent buffer on the downside and a coupon of 20% per annum.

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Certain Risk Considerations:

ANY INVESTMENT IN REVERSE EXCHANGEABLES MAY RESULT IN A LOSS – The notes do not guarantee any return of principal. Under certain circumstances, you will receive at maturity a predetermined number of shares of the applicable underlying stock. The market value of those shares will most likely be less than the principal amount invested and may be zero.

YOUR RETURN ON A REVERSE EXCHANGEABLE IS LIMITED TO THE PRINCIPAL AMOUNT PLUS ACCRUED INTEREST – For each \$1,000 principal amount note, your maximum return at maturity is \$1,000 plus any accrued and unpaid interest, regardless of any appreciation in the value of the applicable underlying stock, which may be significant. Accordingly, the return on a reverse exchangeable may be significantly less than the return on a direct investment in the applicable underlying stock.

YOUR CONTINGENT BUFFER MAY TERMINATE ON ANY DAY DURING THE TERM OF THE REVERSE EXCHANGEABLES – If on any day during the term of the notes the closing price of the underlying stock declines below the contingent buffer, you will at maturity be fully exposed to any depreciation in that reference stock. You will be subject to this potential loss of principal even if the price of the applicable underlying stock subsequently recovers to an amount in excess of the contingent buffer at maturity.

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