

# JPMORGAN CHASE & CO.

## Structured Investments

## \$ 5.25%\* per annum Auto Callable Yield Notes due July 7, 2014 Linked to the Lesser Performing of the Vanguard Total Stock Market Index Fund ETF and the S&P 500® Index

### General

- The notes are designed for investors who seek a higher interest rate than the current yield on a conventional debt security with the same maturity issued by us. Investors should be willing to forgo the potential to participate in the appreciation of either the Vanguard Total Stock Market Index Fund ETF or the S&P 500® Index and to forgo dividend payments. Investors should be willing to assume the risk that they will receive less interest if the notes are automatically called and the risk that, if the notes are not automatically called, they may lose some or all of their principal at maturity.
- The notes will pay at least 5.25%\* per annum interest over the term of the notes, assuming no automatic call, payable at a rate of at least 0.43750%\* per month. **However, the notes do not guarantee any return of principal at maturity. Instead, if the notes are not automatically called, the payment at maturity will be based on the performance of the Lesser Performing Underlying and whether the closing level or closing price, as applicable, of either Underlying is less than its Starting Underlying Level by more than the applicable Buffer Amount on any day during the Monitoring Period, as described below. Any payment on the notes is subject to the credit risk of JPMorgan Chase & Co.**
- The notes will be automatically called if the closing level or closing price, as applicable, of each Underlying on the relevant Call Date is greater than or equal to the applicable Starting Underlying Level. If the notes are automatically called, payment on the applicable Call Settlement Date for each \$1,000 principal amount note will be a cash payment of \$1,000, plus any accrued and unpaid interest, as described below.
- Unsecured and unsubordinated obligations of JPMorgan Chase & Co. maturing July 7, 2014\*\*
- The payment at maturity is **not** linked to a basket composed of the Underlyings. The payment at maturity is linked to the performance of each of the Underlyings individually, as described below.
- Minimum denominations of \$1,000 and integral multiples thereof
- The terms of the notes as set forth in "Key Terms" below, to the extent they differ from or conflict with those set forth in the accompanying product supplement no. 8-I, supersede the terms set forth in product supplement no. 8-I. In particular, notwithstanding anything to the contrary in product supplement no. 8-I, the notes will be automatically called if the closing level or closing price, as applicable, of each Underlying is greater than or equal to the applicable Starting Underlying Level. See "Key Terms — Automatic Call" below.**

### Key Terms

Underlyings:	The Vanguard Total Stock Market Index Fund ETF (the "Fund") and the S&P 500® Index (the "Index") (each an "Underlying," and collectively, the "Underlyings"). For additional information about the Fund, see Appendix A to this term sheet.
Interest Rate:	At least 5.25%* per annum over the term of the notes, assuming no automatic call, payable at a rate of at least 0.43750%* per month. * The actual Interest Rate will be determined on the Pricing Date and will not be less than 5.25% per annum.
Automatic Call:	If on any Call Date, the closing level or closing price, as applicable, of each Underlying is greater than or equal to the applicable Starting Underlying Level, the notes will be automatically called on that Call Date.
Payment if Called:	If the notes are automatically called, on the relevant Call Settlement Date, for each \$1,000 principal amount note, you will receive \$1,000 plus any accrued and unpaid interest to but excluding that Call Settlement Date.
Buffer Amount:	<b>With respect to each Underlying, an amount that represents 40.00% of its Starting Underlying Level (in the case of the Fund, subject to adjustments)</b>
Pricing Date:	On or about January 2, 2013
Settlement Date:	On or about January 7, 2013
Observation Date**:	July 1, 2014
Maturity Date**:	July 7, 2014
CUSIP:	48126DRX9
Monitoring Period:	The period from but excluding the Pricing Date to and including the Observation Date
Interest Payment Dates**:	Interest on the notes will be payable monthly in arrears on the 7 <sup>th</sup> calendar day of each month, up to and including the final monthly interest payment, which will be payable on the Maturity Date or the relevant Call Settlement Date, as applicable (each such day, an "Interest Payment Date"), commencing February 7, 2013. See "Selected Purchase Considerations — Monthly Interest Payments" in this term sheet for more information.
Payment at Maturity:	If the notes are not automatically called, the payment at maturity, in excess of any accrued and unpaid interest, will be based on whether a Trigger Event has occurred and the performance of the Lesser Performing Underlying. If the notes are not automatically called, for each \$1,000 principal amount note, you will receive \$1,000 plus any accrued and unpaid interest at maturity, unless: (a) the Ending Underlying Level of either Underlying is less than its Starting Underlying Level; and (b) a Trigger Event has occurred. If the notes are not automatically called and the conditions described in (a) and (b) are satisfied, at maturity you will lose 1% of the principal amount of your notes for every 1% that the Ending Underlying Level of the Lesser Performing Underlying is less than its Starting Underlying Level. Under these circumstances, your payment at maturity per \$1,000 principal amount note, in addition to any accrued and unpaid interest, will be calculated as follows: $\$1,000 + (\$1,000 \times \text{Lesser Performing Underlying Return})$ <i>You will lose some or all of your principal at maturity if the notes are not automatically called and the conditions described in (a) and (b) are both satisfied.</i>
Trigger Event:	A Trigger Event occurs if, on any day during the Monitoring Period, the closing level or closing price, as applicable, of either Underlying is less than its Starting Underlying Level by more than the applicable Buffer Amount.
Underlying Return:	With respect to each Underlying, the Underlying Return is calculated as follows: $\frac{\text{Ending Underlying Level} - \text{Starting Underlying Level}}{\text{Starting Underlying Level}}$
Call Dates**:	April 3, 2013 (first Call Date), July 2, 2013 (second Call Date), October 2, 2013 (third Call Date), January 2, 2014 (fourth Call Date) and April 2, 2014 (final Call Date)
Call Settlement Dates**:	With respect to each Call Date, the first Interest Payment Date occurring after that Call Date
Other Key Terms:	See "Additional Key Terms" on the next page.
** Subject to postponement as described under "Description of Notes — Payment at Maturity," "Description of Notes — Interest Payments" and "Description of Notes — Postponement of a Determination Date" in the accompanying product supplement no. 8-I.	

**Investing in the Auto Callable Yield Notes involves a number of risks. See "Risk Factors" beginning on page PS-10 of the accompanying product supplement no. 8-I, "Risk Factors" beginning on page US-1 of the accompanying underlying supplement 1-I and "Selected Risk Considerations" beginning on page TS-3 of this term sheet.** Neither the SEC nor any state securities commission has approved or disapproved of the notes or passed upon the accuracy or the adequacy of this term sheet or the accompanying product supplement, underlying supplement, prospectus supplement and prospectus. Any representation to the contrary is a criminal offense.

	Price to Public (1)	Fees and Commissions (2)	Proceeds to Us
Per note	\$	\$	\$
Total	\$	\$	\$

- The price to the public includes the estimated cost of hedging our obligations under the notes through one or more of our affiliates.
- If the notes priced today, J.P. Morgan Securities LLC, which we refer to as JPMS, acting as agent for JPMorgan Chase & Co., would receive a commission of approximately \$10.00 per \$1,000 principal amount note and would use a portion of that commission to allow selling concessions to other affiliated or unaffiliated dealers of approximately \$2.50 per \$1,000 principal amount note. This commission includes the projected profits that our affiliates expect to realize, some of which may be allowed to other unaffiliated dealers, for assuming risks inherent in hedging our obligations under the notes. The actual commission received by JPMS may be more or less than \$10.00 and will depend on market conditions on the Pricing Date. In no event will the commission received by JPMS, which includes concessions and other amounts that may be allowed to other dealers, exceed \$50.00 per \$1,000 principal amount note. See "Plan of Distribution (Conflicts of Interest)" beginning on page PS-48 of the accompanying product supplement no. 8-I.

*The notes are not bank deposits and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency, nor are they obligations of, or guaranteed by, a bank.*

J.P.Morgan

## Additional Terms Specific to the Notes

JPMorgan Chase & Co. has filed a registration statement (including a prospectus) with the Securities and Exchange Commission, or SEC, for the offering to which this term sheet relates. Before you invest, you should read the prospectus in that registration statement and the other documents relating to this offering that JPMorgan Chase & Co. has filed with the SEC for more complete information about JPMorgan Chase & Co. and this offering. You may get these documents without cost by visiting EDGAR on the SEC website at [www.sec.gov](http://www.sec.gov). Alternatively, JPMorgan Chase & Co., any agent or any dealer participating in this offering will arrange to send you the prospectus, the prospectus supplement, product supplement no. 8-I, underlying supplement no. 1-I and this term sheet if you so request by calling toll-free 866-535-9248.

You may revoke your offer to purchase the notes at any time prior to the time at which we accept such offer by notifying the applicable agent. We reserve the right to change the terms of, or reject any offer to purchase, the notes prior to their issuance. In the event of any changes to the terms of the notes, we will notify you and you will be asked to accept such changes in connection with your purchase. You may also choose to reject such changes in which case we may reject your offer to purchase.

You should read this term sheet together with the prospectus dated November 14, 2011, as supplemented by the prospectus supplement dated November 14, 2011 relating to our Series E medium-term notes of which these notes are a part, and the more detailed information contained in product supplement no. 8-I dated November 14, 2011 and underlying supplement no. 1-I dated November 14, 2011. **This term sheet, together with the documents listed below, contains the terms of the notes and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, fact sheets, brochures or other educational materials of ours.** You should carefully consider, among other things, the matters set forth in “Risk Factors” in the accompanying product supplement no. 8-I and “Risk Factors” in the accompanying underlying supplement no. 1-I, as the notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the notes.

You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

- Product supplement no. 8-I dated November 14, 2011:  
[http://www.sec.gov/Archives/edgar/data/19617/000089109211007604/e46186\\_424b2.pdf](http://www.sec.gov/Archives/edgar/data/19617/000089109211007604/e46186_424b2.pdf)
- Underlying supplement no. 1-I dated November 14, 2011:  
[http://www.sec.gov/Archives/edgar/data/19617/000089109211007615/e46154\\_424b2.pdf](http://www.sec.gov/Archives/edgar/data/19617/000089109211007615/e46154_424b2.pdf)
- Prospectus supplement dated November 14, 2011:  
[http://www.sec.gov/Archives/edgar/data/19617/000089109211007578/e46180\\_424b2.pdf](http://www.sec.gov/Archives/edgar/data/19617/000089109211007578/e46180_424b2.pdf)
- Prospectus dated November 14, 2011:  
[http://www.sec.gov/Archives/edgar/data/19617/000089109211007568/e46179\\_424b2.pdf](http://www.sec.gov/Archives/edgar/data/19617/000089109211007568/e46179_424b2.pdf)

Our Central Index Key, or CIK, on the SEC website is 19617. As used in this term sheet, the “Company,” “we,” “us” and “our” refer to JPMorgan Chase & Co.

## Additional Key Terms

Starting Underlying Level:	With respect to the Fund, the closing price of one share of the Fund on the Pricing Date, <i>divided</i> by the Share Adjustment Factor for the Fund (the “Initial Share Price”). With respect to the Index, the closing level of the Index on the Pricing Date (the “Initial Index Level”). We refer to each of the Initial Index Level for the Index and the Initial Share Price for the Fund as a “Starting Underlying Level.”
Ending Underlying Level:	With respect to the Fund, the closing price of one share of the Fund on the Observation Date (the “Final Share Price”). With respect to the Index, the closing level of the Index on the Observation Date (the “Ending Index Level”). We refer to each of the Ending Index Level for the Index and the Final Share Price for the Fund as an “Ending Underlying Level.”
Share Adjustment Factor:	With respect to the Fund, set equal to 1.0 on the Pricing Date and subject to adjustment under certain circumstances. See “General Terms of Notes — Anti-Dilution Adjustments” in the accompanying product supplement no. 8-I.
Lesser Performing Underlying:	The Underlying with the Lesser Performing Underlying Return
Lesser Performing Underlying Return:	The lower of the Underlying Return of the Vanguard Total Stock Market Index Fund ETF and the Underlying Return of the S&P 500® Index



## Selected Purchase Considerations

- **THE NOTES OFFER A HIGHER INTEREST RATE THAN THE YIELD ON DEBT SECURITIES OF COMPARABLE MATURITY ISSUED BY US** — The notes will pay interest at the Interest Rate specified on the cover of this term sheet, assuming no automatic call, which is higher than the yield currently available on debt securities of comparable maturity issued by us. **Because the notes are our unsecured and unsubordinated obligations, payment of any amount on the notes is subject to our ability to pay our obligations as they become due.**
- **MONTHLY INTEREST PAYMENTS** — The notes offer monthly interest payments as specified on the cover of this term sheet, assuming no automatic call. Interest will be payable monthly in arrears on the 7th calendar day of each month, up to and including the final monthly interest payment, which will be payable on the Maturity Date or the relevant Call Settlement Date, as applicable (each such day, an “Interest Payment Date”), commencing February 7, 2013. Interest will be payable to the holders of record at the close of business on the business day immediately preceding the applicable Interest Payment Date (which may be a Call Settlement Date). If an Interest Payment Date is not a business day, payment will be made on the next business day immediately following such day, but no additional interest will accrue as a result of the delayed payment. For example, the monthly Interest Payment Date for April 2013 is April 7, 2013, but because that day is not a business day, payment of interest with respect to that Interest Payment Date will be made on April 8, 2013, the next succeeding business day.
- **POTENTIAL EARLY EXIT AS A RESULT OF THE AUTOMATIC CALL FEATURE** — If the closing level or closing price, as applicable, of each Underlying is greater than or equal to the applicable Starting Underlying Level on any Call Date, your notes will be automatically called prior to the maturity date. Under these circumstances, on the relevant Call Settlement Date, for each \$1,000 principal amount note, you will receive \$1,000 *plus* accrued and unpaid interest to but excluding that Call Settlement Date.
- **THE NOTES DO NOT GUARANTEE THE RETURN OF YOUR PRINCIPAL IF THE NOTES ARE NOT AUTOMATICALLY CALLED** — If the notes are not automatically called, we will pay you your principal back at maturity only if a Trigger Event has not occurred or the Ending Underlying Level of each Underlying is not less than its Starting Underlying Level. A Trigger Event occurs if, on any day during the Monitoring Period, the closing level or closing price, as applicable, of either Underlying is less than its Starting Underlying Level by more than the applicable Buffer Amount. **However, if the notes are not automatically called, a Trigger Event has occurred and the Ending Underlying Level of either Underlying is less than its Starting Underlying Level, you could lose the entire principal amount of your notes.**
- **EXPOSURE TO EACH OF THE UNDERLYINGS** — The return on the notes is linked to the Lesser Performing Underlying, which will be either the Vanguard Total Stock Market Index Fund ETF or the S&P 500® Index.

The Vanguard Total Stock Market Index Fund ETF is an exchange-traded fund managed by The Vanguard Group (“Vanguard.”), the investment adviser to the Vanguard Total Stock Market Index Fund ETF. The Vanguard Total Stock Market Index Fund ETF trades on NYSE Arca, Inc. (the “NYSE Arca”) under the ticker symbol “VTI.” The Vanguard Total Stock Market Index Fund ETF seeks to track the performance of the MSCI US Broad Market Index, which we refer to as the Underlying Index, a benchmark index that measures the investment return of the overall stock market. The MSCI US Broad Market Index represents 99.5% or more of the total market capitalization of all the U.S. common stocks regularly traded on the New York Stock Exchange and the Nasdaq over-the-counter market. For additional information about the Fund and the Underlying Index, see the information set forth under “The Vanguard Total Stock Market Index Fund ETF” and “The MSCI US Broad Market Index” in Appendix A.

The S&P 500® Index consists of 500 component stocks selected to provide a performance benchmark for the U.S. equity markets. For additional information on the S&P 500® Index, see the information set forth under “Equity Index Descriptions — The S&P 500® Index” in the accompanying underlying supplement no. 1-I.

- **TAX TREATMENT AS A UNIT COMPRISING A PUT OPTION AND A DEPOSIT** — You should review carefully the section entitled “Material U.S. Federal Income Tax Consequences” in the accompanying product supplement no. 8-I. Based on the advice of Sidley Austin LLP, our special tax counsel, and on current market conditions, in determining our reporting responsibilities we intend to treat the notes for U.S. federal income tax purposes as units each comprising: (x) a Put Option written by you that is terminated if an Automatic Call occurs and that, if not terminated, in circumstances where the payment due at maturity is less than \$1,000 (excluding accrued and unpaid interest), requires you to pay us an amount equal to \$1,000 multiplied by the absolute value of the Lesser Performing Underlying Return and (y) a Deposit of \$1,000 per \$1,000 principal amount note to secure your potential obligation under the Put Option. By purchasing the notes, you agree (in the absence of an administrative determination or judicial ruling to the contrary) to follow this treatment and the allocation described in the following paragraph. However, there are other reasonable treatments that the Internal Revenue Service (the “IRS”) or a court may adopt, in which case the timing and character of any income or loss on the notes could be significantly and adversely affected. In addition, in 2007 Treasury and the IRS released a notice requesting comments on the U.S. federal income tax treatment of “prepaid forward contracts” and similar instruments. While it is not clear whether the notes would be viewed as similar to the typical prepaid forward contract described in the notice, it is possible that any Treasury regulations or other guidance promulgated after consideration of these issues could materially and adversely affect the tax consequences of an investment in the notes, possibly with retroactive effect. The notice focuses on a number of issues, the most relevant of which for holders of the notes are the character of income or loss (including whether the Put Premium might be currently included as ordinary income) and the degree, if any, to which income realized by Non-U.S. Holders should be subject to withholding tax.

We will determine the portion of each interest payment on the notes that we will allocate to interest on the Deposit and to Put Premium, respectively, and will provide that allocation in the pricing supplement for the notes. If the notes had priced on January 2, 2013, we would have allocated 14.29% of each interest payment to interest on the Deposit and 85.71% of each interest payment to Put Premium. The actual allocation that we will determine for the notes may differ from this hypothetical allocation, and will depend upon a variety of factors, including actual market conditions and our borrowing costs for debt instruments of comparable maturities on the Pricing Date. Assuming that the treatment of the notes as units each comprising a Put Option and a Deposit is respected, amounts treated as interest on the Deposit will be taxed as ordinary income, while the Put Premium will not be taken into account prior to sale or settlement, including a settlement following an Automatic Call.

### ***Non-U.S. Holders - Additional Tax Consideration***

Non-U.S. Holders should note that recently proposed Treasury regulations, if finalized in their current form, could impose a withholding tax at a rate of 30% (subject to reduction under an applicable income tax treaty) on amounts attributable to U.S.-source dividends (including, potentially, adjustments to account for extraordinary dividends) that are paid or “deemed paid” after December 31, 2013 under certain financial instruments, if certain other conditions are met. While significant aspects of the application of these proposed regulations to the notes are uncertain, if these proposed regulations were finalized depending upon their ultimate effective date, we (or other withholding agents) might determine that withholding is required with respect to notes held by a Non-U.S. Holder or that the Non-U.S. Holder must provide information to establish that withholding is not required. Non-U.S. Holders should consult their tax advisers regarding the potential application of these proposed regulations. If withholding is so required, we will not be required to pay any additional amounts with respect to amounts so withheld.

Both U.S. and Non-U.S. Holders should consult their tax advisers regarding all aspects of the U.S. federal income tax consequences of an investment in the notes, including possible alternative treatments and the issues presented by the 2007 notice. Purchasers who are not initial purchasers of notes at the issue price should also consult their tax advisers with respect to the tax consequences of an investment in the notes, including possible alternative treatments, as well as the allocation of the purchase price of the notes between the Deposit and the Put Option.

### **Selected Risk Considerations**

An investment in the notes involves significant risks. Investing in the notes is not equivalent to investing directly in either or both of the Underlyings or any of the equity securities included in the Index or held by the Fund. These risks are explained in more detail in the “Risk Factors” section of the accompanying product supplement no. 8-I dated November 14, 2011.

- **YOUR INVESTMENT IN THE NOTES MAY RESULT IN A LOSS** — The notes do not guarantee any return of principal. If the notes are not automatically called, we will pay you your principal back at maturity only if a Trigger Event has not occurred or the Ending Underlying Level of each Underlying is greater than or equal to its Starting Underlying Level. If the notes are not automatically called, a Trigger Event has occurred and the Ending Underlying Level of either Underlying is less than its Starting Underlying Level, you will lose 1% of your principal amount at maturity for every 1% that the Ending Underlying Level of the Lesser Performing Underlying is less than its Starting Underlying Level. **Accordingly, you could lose up to the entire principal amount of your notes.**
- **CREDIT RISK OF JPMORGAN CHASE & CO.** — The notes are subject to the credit risk of JPMorgan Chase & Co., and our credit ratings and credit spreads may adversely affect the market value of the notes. Investors are dependent on JPMorgan Chase & Co.’s ability to pay all amounts due on the notes, and therefore investors are subject to our credit risk and to changes in the market’s view of our creditworthiness. Any decline in our credit ratings or increase in the credit spreads charged by the market for taking our credit risk is likely to adversely affect the value of the notes. If we were to default on our payment obligations, you may not receive any amounts owed to you under the notes and you could lose your entire investment.  
Recent events affecting us have led to heightened regulatory scrutiny, may lead to additional regulatory or legal proceedings against us and may adversely affect our credit ratings and credit spreads and, as a result, the market value of the notes. See “Executive Overview — CIO Synthetic Credit Portfolio Update,” “Liquidity Risk Management — Credit Ratings,” and “Item 4. Controls and Procedures” in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2012 and “Part II. Other Information — Item 1A. Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2012.
- **POTENTIAL CONFLICTS** — We and our affiliates play a variety of roles in connection with the issuance of the notes, including acting as calculation agent and hedging our obligations under the notes. In performing these duties, our economic interests and the economic interests of the calculation agent and other affiliates of ours are potentially adverse to your interests as an investor in the notes. In addition, our business activities, including hedging and trading activities, could cause our economic interests to be adverse to yours and could adversely affect any payment on the notes and the value of the notes. It is possible that these hedging or trading activities of ours or our affiliates could result in substantial returns for us or our affiliates while the value of the notes declines. Please refer to “Risk Factors — Risks Relating to the Notes Generally” in the accompanying product supplement no. 8-I for additional information about these risks.  
In addition, we are currently one of the companies that make up the S&P 500® Index. We will not have any obligation to consider your interests as a holder of the notes in taking any corporate action that might affect the value of the S&P 500® Index and the notes.
- **YOUR RETURN ON THE NOTES IS LIMITED TO THE PRINCIPAL AMOUNT PLUS ACCRUED INTEREST REGARDLESS OF ANY APPRECIATION IN THE VALUE OF EITHER UNDERLYING** — If the notes are not automatically called, and a Trigger Event has not occurred, or the Ending Underlying Level of each Underlying is greater than or equal to its Starting Underlying Level, for each \$1,000 principal amount note, you will receive \$1,000 at maturity *plus* any accrued and unpaid interest, regardless of any appreciation in the value of either Underlying, which may be significant. If the notes are automatically called, for each \$1,000 principal amount note, you will receive \$1,000 on the relevant Call Settlement Date *plus* any accrued and unpaid interest, regardless of the appreciation in the value of either Underlying, which may be significant. Accordingly, the return on the notes may be significantly less than the return on a direct investment in either Underlying during the term of the notes.
- **YOU ARE EXPOSED TO THE RISK OF DECLINE IN THE CLOSING LEVEL OR CLOSING PRICE, AS APPLICABLE, OF EACH UNDERLYING** — Your return on the notes and your payment at maturity, if any, is not linked to a basket consisting of the Underlyings. If the notes are not automatically called, your payment at maturity is contingent upon the performance of each individual Underlying such that you will be equally exposed to the risks related to *both* of the Underlyings. Poor performance by either of the Underlyings over the term of the notes may negatively affect your payment at maturity and will not be offset or mitigated by positive performance by the other Underlying.



Accordingly, your investment is subject to the risk of decline in the closing level or closing price, as applicable, of each Underlying.

- **THE BENEFIT PROVIDED BY THE BUFFER AMOUNT MAY TERMINATE ON ANY DAY DURING THE TERM OF THE NOTES** — If, on any day during the Monitoring Period, the closing level or closing price, as applicable, of either Underlying is less than its Starting Underlying Level by more than the applicable Buffer Amount, a Trigger Event will occur, and you will be fully exposed to any depreciation in the Lesser Performing Underlying. We refer to this feature as a contingent buffer. Under these circumstances, and if the Ending Underlying Level of either Underlying is less than its Starting Underlying Level, you will lose 1% of the principal amount of your investment for every 1% that the Ending Underlying Level of the Lesser Performing Underlying is less than its Starting Underlying Level. You will be subject to this potential loss of principal even if the relevant Underlying subsequently recovers such that the closing level or closing price, as applicable, of that Underlying is less than its Starting Underlying Level by less than the applicable Buffer Amount. If these notes had a non-contingent buffer feature, under the same scenario, you would have received the full principal amount of your notes *plus* accrued and unpaid interest at maturity. As a result, your investment in the notes may not perform as well as an investment in a security with a return that includes a non-contingent buffer.
- **YOUR PAYMENT AT MATURITY MAY BE DETERMINED BY THE LESSER PERFORMING UNDERLYING** — If the notes are not automatically called and a Trigger Event occurs, you will lose some or all of your investment in the notes if the Ending Underlying Level of either Underlying is below its Starting Underlying Level. This will be true even if the Ending Underlying Level of the other Underlying is greater than or equal to its Starting Underlying Level. The two Underlyings' respective performances may not be correlated and, as a result, if the notes are not automatically called and a Trigger Event occurs, you may receive the principal amount of your notes at maturity only if there is a broad-based rise in the performance of U.S. equities across diverse markets during the term of the notes.
- **THE AUTOMATIC CALL FEATURE MAY FORCE A POTENTIAL EARLY EXIT** — If the notes are automatically called, the amount of interest payable on the notes will be less than the full amount of interest that would have been payable if the notes were held to maturity, and, for each \$1,000 principal amount note, you will receive \$1,000 *plus* accrued and unpaid interest to but excluding the relevant Call Settlement Date.
- **REINVESTMENT RISK** — If your notes are automatically called, the term of the notes may be reduced to as short as three months and you will not receive interest payments after the relevant Call Settlement Date. There is no guarantee that you would be able to reinvest the proceeds from an investment in the notes at a comparable return and/or with a comparable interest rate for a similar level of risk in the event the notes are automatically called prior to the Maturity Date.
- **NO AFFILIATION WITH THE FUND** — We are not affiliated with the Fund. We assume no responsibility for the adequacy of the information about the Fund and the Underlying Index contained in this term sheet. You should undertake your own investigation into the Fund and the Underlying Index. We are not responsible for the Fund's public disclosure of information, whether contained in SEC filings or otherwise.
- **CERTAIN BUILT-IN COSTS ARE LIKELY TO AFFECT ADVERSELY THE VALUE OF THE NOTES PRIOR TO MATURITY** — While the payment at maturity, if any, or upon an automatic call described in this term sheet is based on the full principal amount of your notes, the original issue price of the notes includes the agent's commission and the estimated cost of hedging our obligations under the notes. As a result, and as a general matter, the price, if any, at which JPMS will be willing to purchase notes from you in secondary market transactions, if at all, will likely be lower than the original issue price and any sale prior to the maturity date could result in a substantial loss to you. This secondary market price will also be affected by a number of factors aside from the agent's commission and hedging costs, including those referred to under "Many Economic and Market Factors Will Impact the Value of the Notes" below.

The notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your notes to maturity.
- **BUFFER AMOUNT APPLIES ONLY IF YOU HOLD THE NOTES TO MATURITY** — Assuming the notes are not automatically called, we will pay you your principal back at maturity only if the closing level or closing price, as applicable, of each Underlying is not less than its Starting Underlying Level by more than the applicable Buffer Amount on any day during the Monitoring Period or the Ending Underlying Level of each Underlying is greater than or equal to its Starting Underlying Level. If the notes are not automatically called and a Trigger Event has occurred, you will be fully exposed at maturity to any decline in the value of the Lesser Performing Underlying.
- **VOLATILITY RISK** — Greater expected volatility with respect to an Underlying indicates a greater likelihood as of the Pricing Date that the closing level or closing price, as applicable, of that Underlying could be less than its Starting Underlying Level by more than the applicable Buffer Amount on any day during the Monitoring Period. An Underlying's volatility, however, can change significantly over the term of the notes. The closing level or closing price, as applicable, of an Underlying could fall sharply on any day during the Monitoring Period, which could result in a significant loss of principal.
- **THERE ARE RISKS ASSOCIATED WITH THE FUND** — Although the Fund's shares are listed for trading on NYSE Arca and a number of similar products have been traded on NYSE Arca and other securities exchanges for varying periods of time, there is no assurance that an active trading market will continue for the shares of the Fund or that there will be liquidity in the trading market. The Fund is subject to management risk, which is the risk that the investment strategies of the Fund's investment adviser, the implementation of which is subject to a number of constraints, may not produce the intended results. These constraints could adversely affect the market price of the shares of the Fund, and consequently, the value of the notes.
- **DIFFERENCES BETWEEN THE FUND AND THE UNDERLYING INDEX** — The Fund does not fully replicate the Underlying Index and may hold securities not included in the Underlying Index, and its performance will reflect additional transaction costs and fees that are not included in the calculation of the Underlying Index, all of which may lead to a lack of correlation between the Fund and the Underlying Index. In addition,

corporate actions with respect to the sample of equity securities (such as mergers and spin-offs) may impact the variance between the Fund and the Underlying Index. Finally, because the shares of the Fund are traded on NYSE Arca and are subject to market supply and investor demand, the market value of one share of the Fund may differ from the net asset value per share of the Fund. For all of the foregoing reasons, the performance of the Fund may not correlate with the performance of the Underlying Index.

- **LACK OF LIQUIDITY** — The notes will not be listed on any securities exchange. JPMS intends to offer to purchase the notes in the secondary market but is not required to do so. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the notes easily. Because other dealers are not likely to make a secondary market for the notes, the price at which you may be able to trade your notes is likely to depend on the price, if any, at which JPMS is willing to buy the notes.
- **NO DIVIDEND PAYMENTS OR VOTING RIGHTS** — As a holder of the notes, you will not have voting rights or rights to receive cash dividends or other distributions or other rights that holders of shares of the Fund or the securities included in the Index or held by the Fund would have.
- **HEDGING AND TRADING IN THE UNDERLYINGS** — While the notes are outstanding, we or any of our affiliates may carry out hedging activities related to the notes, including instruments related to the Fund or the equity securities included in the Index or held by the Fund. We or our affiliates may also trade in the Fund or instruments related to the Fund or the equity securities included in the Index or held by the Fund from time to time. Any of these hedging or trading activities as of the Pricing Date and during the term of the notes could adversely affect the likelihood of an automatic call or our payment to you at maturity. It is possible that these hedging or trading activities could result in substantial returns for us or our affiliates while the value of the notes declines.
- **THE ANTI-DILUTION PROTECTION FOR THE FUND IS LIMITED** — The calculation agent will make adjustments to the Share Adjustment Factor for certain events affecting the shares of the Fund. However, the calculation agent will not make an adjustment in response to all events that could affect the shares of the Fund. If an event occurs that does not require the calculation agent to make an adjustment, the value of the notes may be materially and adversely affected.
- **MANY ECONOMIC AND MARKET FACTORS WILL IMPACT THE VALUE OF THE NOTES** — In addition to the level and price of the Underlyings on any day, the value of the notes will be impacted by a number of economic and market factors that may either offset or magnify each other, including:
  - whether a Trigger Event has occurred or is expected to occur;
  - the interest rate on the notes;
  - the actual and expected volatility of the Underlyings;
  - the time to maturity of the notes;
  - the likelihood of an automatic call being triggered;
  - the dividend rates on the Fund and the equity securities included in the Index or held by the Fund;
  - the expected positive or negative correlation between the Index and the Fund, or the expected absence of any such correlation;
  - interest and yield rates in the market generally;
  - a variety of economic, financial, political, regulatory and judicial events;
  - the occurrence of certain events to the Fund that may or may not require an adjustment to the Share Adjustment Factor; and
  - our creditworthiness, including actual or anticipated downgrades in our credit ratings.

## What Is the Total Return on the Notes at Maturity or Upon Automatic Call, Assuming a Range of Performances for the Lesser Performing Underlying?

The following table and examples illustrate the hypothetical total return on the notes at maturity or upon automatic call. The “note total return” as used in this term sheet is the number, expressed as a percentage, that results from comparing the payment at maturity or upon automatic call *plus* the interest payments received to and including the maturity date or the relevant Call Settlement Date, as applicable, per \$1,000 principal amount note to \$1,000. The table and examples below assume that the Lesser Performing Underlying is the S&P 500® Index and that the closing price of the Vanguard Total Stock Market Index Fund ETF on each Call Date is greater than or equal to its Starting Underlying Level. We make no representation or warranty as to which of the Underlyings will be the Lesser Performing Underlying for purposes of calculating your actual payment at maturity, if applicable, or as to what the closing level or closing price, as applicable, of either Underlying will be on any Call Date. In addition, the following table and examples assume a Starting Underlying Level for the Lesser Performing Underlying of 1,400 and an Interest Rate of 5.25% per annum over the term of the notes (assuming no automatic call) and reflect the Buffer Amount of 40.00% of the Starting Underlying Level of the Lesser Performing Underlying. Each hypothetical total return and total payment set forth below is for illustrative purposes only and may not be the actual total return or total payment applicable to a purchaser of the notes. The numbers appearing in the following table and examples have been rounded for ease of analysis.

Closing Level of the Lesser Performing Index	Lesser Performing Index Closing Level Appreciation / Depreciation at Relevant Call Date	Note Total Return at First Call Settlement Date	Note Total Return at Second Call Settlement Date	Note Total Return at Third Call Settlement Date	Note Total Return at Fourth Call Settlement Date	Note Total Return at Final Call Settlement Date	Note Total Return at Maturity Date if a Trigger Event Has Not Occurred (1)	Note Total Return at Maturity Date if a Trigger Event Has Occurred (1)
2,520.000	80.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
2,310.000	65.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
2,100.000	50.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,960.000	40.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,820.000	30.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,680.000	20.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,540.000	10.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,470.000	5.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
1,414.000	1.00%	1.3125%	2.6250%	3.9375%	5.2500%	6.5625%	7.8750%	7.8750%
<b>1,400.000</b>	<b>0.00%</b>	<b>1.3125%</b>	<b>2.6250%</b>	<b>3.9375%</b>	<b>5.2500%</b>	<b>6.5625%</b>	<b>7.8750%</b>	<b>7.8750%</b>
1,330.000	-5.00%	N/A	N/A	N/A	N/A	N/A	7.8750%	2.8750%
1,289.750	-7.875%	N/A	N/A	N/A	N/A	N/A	7.8750%	0.0000%
1,260.000	-10.00%	N/A	N/A	N/A	N/A	N/A	7.8750%	-2.1250%
1,120.000	-20.00%	N/A	N/A	N/A	N/A	N/A	7.8750%	-12.1250%
980.000	-30.00%	N/A	N/A	N/A	N/A	N/A	7.8750%	-22.1250%
840.000	-40.00%	N/A	N/A	N/A	N/A	N/A	7.8750%	-32.1250%
839.860	-40.01%	N/A	N/A	N/A	N/A	N/A	N/A	-32.1350%
700.000	-50.00%	N/A	N/A	N/A	N/A	N/A	N/A	-42.1250%
560.000	-60.00%	N/A	N/A	N/A	N/A	N/A	N/A	-52.1250%
420.000	-70.00%	N/A	N/A	N/A	N/A	N/A	N/A	-62.1250%
280.000	-80.00%	N/A	N/A	N/A	N/A	N/A	N/A	-72.1250%
140.000	-90.00%	N/A	N/A	N/A	N/A	N/A	N/A	-82.1250%
0.000	-100.00%	N/A	N/A	N/A	N/A	N/A	N/A	-92.1250%

(1) A Trigger Event occurs if the closing level or closing price, as applicable, of either Underlying is less than its Starting Underlying Level by more than 40.00% on any day during the Monitoring Period.

The following examples illustrate how a total payment set forth in the table above is calculated.

**Example 1: The level of the Lesser Performing Underlying increases from the Starting Underlying Level of 1,400 to a closing level of 1,414 on the first Call Date.** Because the closing level of each Underlying on the first Call Date is greater than the applicable Starting Underlying Level, the notes are automatically called, and the investor receives a total payment of \$1,013.125 per \$1,000 principal amount note, consisting of interest payments of \$13.125 per \$1,000 principal amount note and a payment upon automatic call of \$1,000 per \$1,000 principal amount note.

**Example 2: The level of the Lesser Performing Underlying decreases from the Starting Underlying Level of 1,400 to a closing level of 1,330 on the first Call Date and 1,316 on the second Call Date, 1,320 on the third Call Date and 1,270 on the fourth Call Date, and increases from the Starting Underlying Level of 1,400 to a closing level of 1,470 on the final Call Date.** Although the level of the Lesser Performing Underlying on the first four Call Dates (1,330, 1,316, 1,320 and 1,270) is less than the Starting Underlying Level of 1,400, because the closing level of each Underlying on the final Call Date is greater than the applicable Starting Underlying Level, the notes are automatically called, and the investor receives total payments of \$1,065.625 per \$1,000 principal amount note, consisting of interest payments of \$65.625 per \$1,000 principal amount note and a payment upon automatic call of \$1,000 per \$1,000 principal amount note.

**Example 3: The notes have not been automatically called prior to maturity and the level of the Lesser Performing Underlying increases from the Starting Underlying Level of 1,400 to an Ending Underlying Level of 1,470.** Because the notes have not been automatically called prior to maturity and the Ending Underlying Level of the Lesser Performing Underlying of 1,470 is greater than its Starting Underlying Level of 1,400, regardless of whether a Trigger Event has



occurred, the investor receives total payments of \$1,078.750 per \$1,000 principal amount note over the term of the notes, consisting of interest payments of \$78.750 per \$1,000 principal amount note over the term of the notes and a payment at maturity of \$1,000 per \$1,000 principal amount note. ***This represents the maximum total payment an investor may receive over the term of the notes.***

**Example 4: The notes have not been automatically called prior to maturity, a Trigger Event has not occurred and the level of the Lesser Performing Underlying decreases from the Starting Underlying Level of 1,400 to an Ending Underlying Level of 1,120.** Even though the Ending Underlying Level of the Lesser Performing Underlying of 1,120 is less than its Starting Underlying Level of 1,400, because the notes have not been automatically called prior to maturity and a Trigger Event has not occurred, the investor receives total payments of \$1,078.750 per \$1,000 principal amount note over the term of the notes, consisting of interest payments of \$78.750 per \$1,000 principal amount note over the term of the notes and a payment at maturity of \$1,000 per \$1,000 principal amount note. ***This represents the maximum total payment an investor may receive over the term of the notes.***

**Example 5: The notes have not been automatically called prior to maturity, a Trigger Event has occurred and the level of the Lesser Performing Underlying decreases from the Starting Underlying Level of 1,400 to an Ending Underlying Level of 700.** Because the notes have not been automatically called prior to maturity, a Trigger Event has occurred and the Ending Underlying Level of the Lesser Performing Underlying of 700 is less than its Starting Underlying Level of 1,400, the investor receives total payments of \$578.750 per \$1,000 principal amount note over the term of the notes, consisting of interest payments of \$78.750 per \$1,000 principal amount note over the term of the notes and a payment at maturity of \$500 per \$1,000 principal amount note, calculated as follows:

$$[\$1,000 + (\$1,000 \times -50\%)] + \$78.750 = \$578.750$$

**Example 6: The notes have not been automatically called prior to maturity, a Trigger Event has occurred and the level of the Lesser Performing Underlying decreases from the Starting Underlying Level of 1,400 to an Ending Underlying Level of 0.** Because the notes have not been automatically called prior to maturity, a Trigger Event has occurred and the Ending Underlying Level of the Lesser Performing Underlying of 0 is less than its Starting Underlying Level of 1,400, the investor receives total payments of \$78.750 per \$1,000 principal amount note over the term of the notes, consisting solely of interest payments of \$78.750 per \$1,000 principal amount note over the term of the notes, calculated as follows:

$$[\$1,000 + (\$1,000 \times -100\%)] + \$78.750 = \$78.750$$

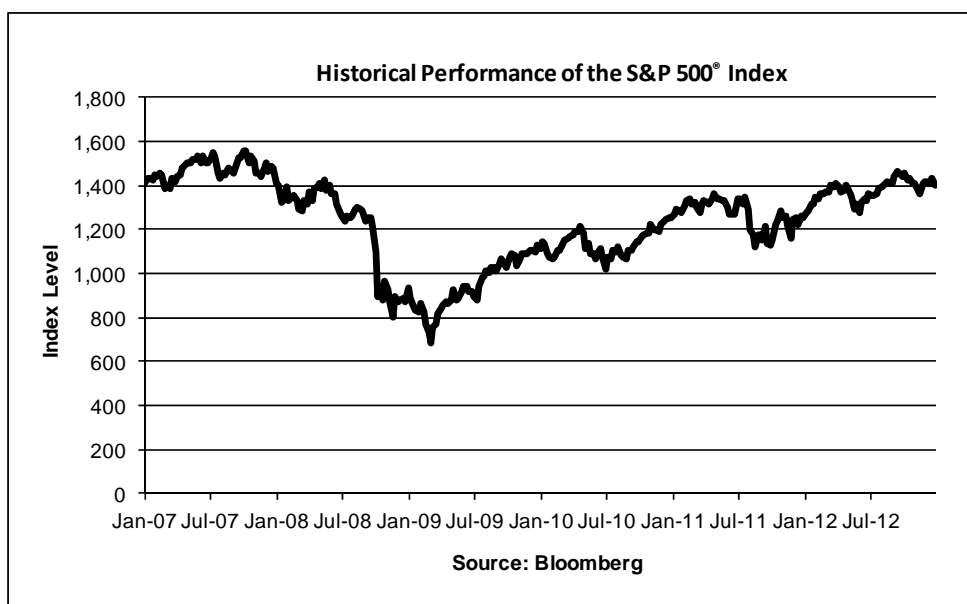
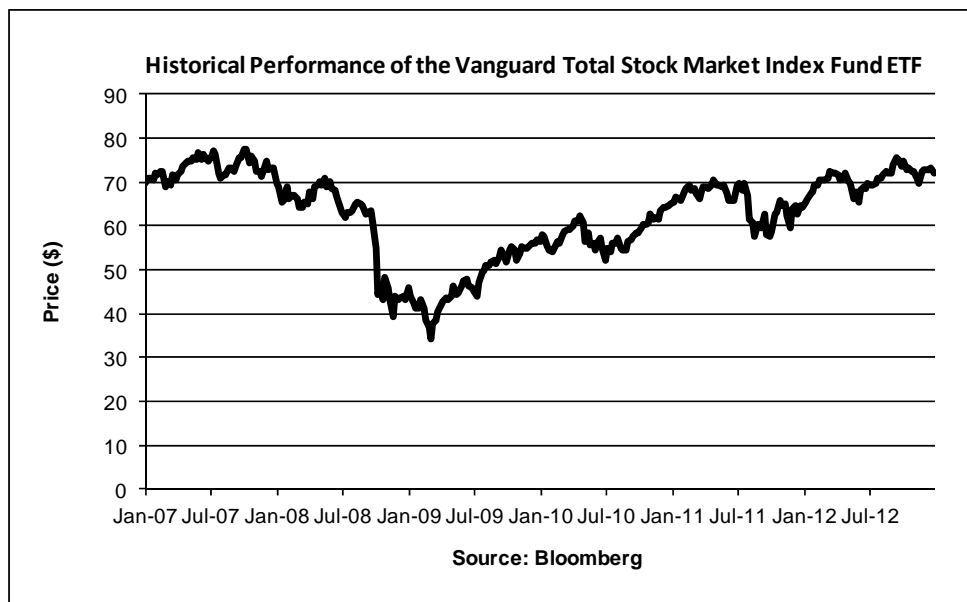
The hypothetical returns and hypothetical payments on the notes shown above do not reflect fees or expenses that would be associated with any sale in the secondary market. If these fees and expenses were included, the hypothetical returns and hypothetical payments shown above would likely be lower.



## Historical Information

The following graphs show the historical weekly performance of the Vanguard Total Stock Market Index Fund ETF and the S&P 500® Index from January 5, 2007 through December 28, 2012. The closing price of the Vanguard Total Stock Market Index Fund ETF on December 31, 2012 was \$73.29. The closing level of the S&P 500® Index on December 31, 2012 was 1,426.19.

We obtained the various closing levels and closing prices of the Underlyings below from Bloomberg Financial Markets, without independent verification. The historical levels and prices of each Underlying should not be taken as an indication of future performance, and no assurance can be given as to the closing level or closing price, as applicable, of either Underlying on the Pricing Date, any Call Date, the Observation Date or any day during the Monitoring Period. We cannot give you assurance that the performance of the Underlyings will result in the return of any of your initial investment. We make no representation as to the amount of dividends, if any, that the Fund or the equity securities held by the Fund will pay in the future. In any event, as an investor in the notes, you will not be entitled to receive dividends, if any, that may be payable on the Fund or the equity securities held by the Fund.



## The Vanguard Total Stock Market Index Fund ETF

We have derived all information contained in this term sheet regarding the Vanguard Total Stock Market Index Fund ETF (the “Fund”) from publicly available information. Such information reflects the policies of, and is subject to change by Vanguard Index Funds (the “Vanguard Trust”) and The Vanguard Group, Inc. (the “Vanguard”). The Fund is an investment portfolio of the Vanguard Trust. Vanguard is the investment adviser to the Fund. The Fund is an exchange-traded fund that trades on the NYSE Arca, Inc. under the ticker symbol “VTI.” We make no representations or warranty as to the accuracy or completeness of the information derived from these public sources.

The Vanguard Trust is a registered investment company that consists of numerous separate investment portfolios, including the Fund. Information provided to or filed with the SEC by Vanguard pursuant to the Securities Act of 1933, as amended, and the Investment Company Act of 1940, as amended, can be located by reference to SEC file numbers 002-56846 and 811-02652, respectively, through the SEC’s website at <http://www.sec.gov>. For additional information regarding Vanguard and the Fund, please see the prospectus of the fund, dated April 26, 2012 (as may be supplemented from time to time). In addition, information about Vanguard and the Fund may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents and the Vanguard website at [www.vanguard.com](http://www.vanguard.com). We make no representation or warranty as to the accuracy or completeness of such information. Information contained in the Vanguard website is not incorporated by reference in, and should not be considered a part of, this term sheet.

### *Investment Objective and Strategy*

The Fund seeks to replicate as closely as possible, before fees and expenses, the price and yield performance of the MSCI US Broad Market Index (the “Underlying Index”). See “— MSCI US Broad Market Index” below for more information about the Underlying Index. The Fund’s investment objective may be changed without shareholder approval.

As of November 30, 2012, the Fund’s three largest holdings were Apple Inc., Exxon Mobil Corporation and General Electric Co. and three largest sectors were Information Technology, Financials and Consumer Discretionary.

### *Indexing Investment Approach*

The Fund uses a “passive management” or indexing investment approach to attempt to approximate the investment performance of the Underlying Index. The Fund seeks to track the investment performance of the Underlying Index, which represents the universe of companies in the U.S. equity market, including large, mid, small and micro cap companies. The Underlying Index targets for inclusion 99.95% of capitalization or more of the total market capitalization of all the U.S. common stocks regularly traded on the New York Stock Exchange and the NASDAQ over-the-counter market.

### *Correlation*

The Underlying Index is a theoretical financial calculation, while the Fund is an actual investment portfolio. The performance of the Fund and the Underlying Index may vary somewhat due to operating expenses, transaction costs, and differences between the Fund’s portfolio and the Underlying Index resulting from legal restrictions that apply to the Fund but not to the Underlying Index or lack of liquidity.

### *Industry Concentration Policy*

Generally, the Fund holds a broadly diversified collection of securities and does not concentrate its investments in a particular industry or group of industries. Stock prices, however, tend to move in cycles with periods of rising prices and periods of falling prices. As such, the Fund may track the performance of the Underlying Index, which may at times, become focused in stocks of a particular sector, category or group of companies.

### *Holdings Information*

As of December 28, 2012, 99.969% of the Fund’s holdings consisted of equity securities and 0.031% consisted of bonds. The following tables summarize the Fund’s top holdings representing 16.3% of total net assets in individual companies as of November 30, 2012, 17.4% of total net assets in individual companies as of September 30, 2012 and the top holdings by sector of the Fund and the Underlying Index as of November 30, 2012.

#### **Top holdings in individual securities as of November 30, 2012**

##### **Company**

Apple Inc.

Exxon Mobil Corp

General Electric Co

Chevron Corp

International Business Machines Corporation

Microsoft Corp  
AT&T Inc.  
The Proctor and Gamble Co  
Johnson & Johnson  
Pfizer Inc.

#### Top holdings in individual securities as of September 30, 2012

<u>Company</u>	<u>Percentage of Total Holdings</u>
Apple Inc.	3.9%
Exxon Mobil Corp	2.7%
General Electric Co	1.5%
Chevron Corp	1.5%
International Business Machines Corporation	1.4%
Microsoft Corp	1.4%
AT&T Inc.	1.4%
Google Inc.	1.2%
The Proctor and Gamble Co	1.2%
Johnson & Johnson	1.2%

#### Top Holdings by Sector as of November 30, 2012

<u>Sector</u>	<u>Percentage of Total Holdings</u>
Consumer Discretionary	12.50%
Consumer Staples	9.80%
Energy	10.10%
Financials	15.90%
Health Care	11.90%
Industrials	11.00%
Information Technology	18.70%
Materials	3.90%
Telecommunication Services	2.70%
Utilities	3.50%

The information above was compiled from the Vanguard website. We make no representation or warranty as to the accuracy of the information above. Information contained in the Vanguard website is not incorporated by reference in, and should not be considered a part of, this term sheet.

#### ***Disclaimer***

The notes are not sponsored, endorsed, sold or promoted by Vanguard. Vanguard makes no representations or warranties to the owners of the notes or any member of the public regarding the advisability of investing in the notes. Vanguard has no obligation or liability in connection with the operation, marketing, trading or sale of the notes.

#### **The MSCI US Broad Market Index**

We have derived all information contained in this term sheet regarding the Underlying Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. Such information reflects the policies of, and is subject to change by, MSCI Inc. ("MSCI"). We make no representation or warranty as to the accuracy or completeness of such information. The Underlying Index was developed by MSCI and is maintained and published by MSCI. The Underlying Index is calculated by MSCI. MSCI has no obligation to continue to publish, and may discontinue the publication of, the Underlying Index.

The Underlying Index is reported by Bloomberg L.P. under the ticker symbol "MZUSB."

The Underlying Index represents the universe of companies in the U.S. equity market. The Underlying Index was launched on June 2, 2003 with a base index value of 1000 as of May 30, 2003.

#### ***Index Composition and Maintenance***

##### *The Index Universe*

MSCI includes in the eligible U.S. equity universe of all listed equity securities of U.S. incorporated companies listed on the New York Stock Exchange (the "NYSE"), the NYSE Arca Inc., NYSE AMEX and the NASDAQ Stock Market. Shares of non-U.S. incorporated companies, investment trusts (other than REITs), preferred REITs, mutual funds (other than



Business Development Companies), equity derivatives, limited partnerships and royalty trusts are generally not eligible for inclusion in the universe.

Some non-U.S. corporate companies trading in the U.S. may be considered for inclusion in the U.S. equity universe when appropriate. Such inclusion is usually based on a number of factors. Additionally, some U.S. corporate companies trading in the U.S. may be excluded from the U.S. equity universe. A comprehensive review of the total US equity universe is conducted to ensure a broad and fair representation of the full breadth of investment opportunities across the total U.S. equity universe.

The Underlying Index includes large, mid, small and micro cap segments, totaling 2,500 of the companies which cover more than 98% of U.S. equity universe. Specifically, the combination of the Investable Market Index and the Micro Cap Index compose the Underlying Index, which includes the companies in the top 99.95% of the U.S. equity universe ranked by full market capitalization.

#### *Investable Market Index*

The Investable Market Index is composed of three market capitalization segments and their corresponding indices: (1) large cap, (2) mid cap and (3) small cap. The large cap index consists of the 300 largest companies by full market capitalization, the mid cap index consists of the next 450 companies and the small cap index consists of the remaining 1,750 companies.

MSCI uses a fixed number of companies for defining the cut-off levels for the market capitalization segments as it is believed that a fixed number leads to better stability and lower turnover in the resulting market capitalization indices over time when compared with other factors used to define market capitalization. MSCI considers several factors to determine what levels of a fixed number of companies appropriately define the various market capitalization segments. They include:

- the absolute market capitalization level of the smallest company;
- the marginal contribution to the relevant index of the smallest company;
- the cumulative proportion of the market capitalization covered;
- the liquidity and trading characteristics of companies; and
- an analysis of the average size of portfolio holdings of variety of large, mid cap and small cap investment managers.

MSCI periodically reviews the factors above and the resulting market capitalization cut-off levels in order to ensure that they continue to appropriately define the various market capitalization segments. MSCI may need to change the number of companies in each segment in the event of a structural change that permanently alters the capitalization characteristics and make-up of the equity market.

Since companies and their securities are assigned to the appropriate market capitalization segments and indices based on their company full market capitalization, all securities from the same company are always classified in the same market capitalization segment and index. There may also be more securities than companies within each market capitalization segment.

#### *Micro Cap Index*

The Micro Cap Index composes micro cap companies with a market capitalization rank lower than the 2,500 companies in the investable market segment and included in the top 99.5% of the U.S. equity universe ranked by full market capitalization. The micro cap segment is estimated to cover around 1.5% of the market capitalization of the U.S. equity universe. The investment performance characteristics of this segment of the U.S. equity universe is represented and measured by a Micro Cap Index. The lower micro cap segment covers approximately the bottom 0.5% of the full market capitalization of the U.S. equity universe and is not represented in the Underlying Index.

#### ***Securities Selection***

After determining the securities eligible for Underlying Index, MSCI screens securities for investability using various factors. Each security of a company is screened and selected for index inclusion based on its own merits, i.e., different share classes within the same company are not assimilated. For a security to be included in the Underlying Index, it must pass all four of the following screens:

- liquidity;
- length of trading;
- company and security free float; and

- relative security free float-adjusted market capitalization.

**Liquidity** - All securities being considered for inclusion in the Underlying Index must have adequate liquidity. Adequate liquidity is measured in two dimensions. First, is the level of a stock price. The extreme level of a stock's price creates liquidity issues. Hence, securities trading above US\$5,000 will fail the liquidity screening. Second, is a relative liquidity screening using a direct relative liquidity measure known as the Annualized Traded Value Ratio ("ATVR"). A relative liquidity screening is conducted by ranking all securities in the U.S. equity universe in descending order of ATVR after excluding those securities that fail the liquidity screening.

ATVR of each security is calculated in a 3-step process. First, monthly median traded values are computed using the daily median traded value, multiplied by the number of days in the month that the security traded. The daily traded value of a security is equal to the number of shares traded during the day, multiplied by the closing price of that security. The daily median traded value is the median of the daily traded values in a given month. Second, the monthly median traded value ratio is obtained by dividing the monthly median traded value of a security by its full market capitalization at the end of the month. Third, the ATVR is obtained by taking the average of the monthly median traded value ratios of the previous 12 months, or the number of months for which this data is available, and multiplying it by the 12. Securities that belong in the top 99.4% of the cumulative security full market capitalization of the U.S. equity universe in descending order, are eligible for inclusion in the Investable Market Index.

**Length of Trading** – For new issuances of securities from small companies with a market capitalization of 750 and below, a seasoning period of at least three calendar months is required. IPOs and newly listed securities with a company whose market capitalization rank equal to or above 750, need not satisfy this condition.

**Company and Security Free Float** – Securities with a company Domestic Inclusion Factor ("DIF") of less than 0.10 and/or a security DIF less than 0.15 are generally not eligible for inclusion in the Underlying Index.

**Relative Security Free Float-Adjusted Market Capitalization** – Securities should have a free float-adjusted security market capitalization representing at least 10% of the company full market capitalization. If the free float-adjusted security market capitalization is less than 10%, the free float-adjusted market capitalization of the security must represent:

- 5 basis points to be considered for inclusion in the Underlying Index; or
- 2.5 basis points if an already existing index constituent and the full market capitalization and this portion of the company has not decreased; or
- 5 basis points if an already existing index constituent but has experienced a decrease in the free float-adjusted security market capitalization relative to the company full market capitalization.

For securities that are being considered for inclusion or are already in the Micro Cap Index, the liquidity and company and security free float screen does not apply. Instead, securities in the Micro Cap Index must have a full market capitalization of at least US\$20 million. Micro Cap Index constituents may remain in the Micro Cap Index, unless their company full market capitalization falls below US\$10 million.

## Index Calculation

The Underlying Index is calculated using the Laspeyres' concept of a weighted arithmetic average together with the concept of chain-linking. As a general principle, today's index level is obtained by applying the change in the market performance to the previous period index level.

$$PriceIndexLevelUSD_t = PriceIndexLevelUSD_{t-1} \times \frac{IndexAdjustedMarketCapUSD_t}{IndexInitialMarketCapUSD_t}$$

$$PriceIndexLevelLocal_t = PriceIndexLevelLocal_{t-1} \times \frac{IndexAdjustedMarketCapForLocal_t}{IndexInitialMarketCapUSD_t}$$

Where:

- $PriceIndexLevelUSD_{t-1}$  is the Price Index level in USD at time t-1.
- $IndexAdjustedMarketCapUSD_t$  is the Adjusted Market Capitalization of the index in USD at time t.
- $IndexInitialMarketCapUSD_t$  is the Initial Market Capitalization of the index in USD at time t.
- $PriceIndexLevelLocal_{t-1}$  is the Price Index level in local currency at time t-1.
- $IndexAdjustedMarketCapForLocal_t$  is the Adjusted Market Capitalization of the index in USD converted using FX rate as of t-1 and used for local currency index at time t.

Note: *IndexInitialMarketCapUSD* was previously called *IndexUnadjustedMarketCapPreviousUSD*

*Security Price Index Level*

$$SecurityPriceIndexLevel_t = SecurityPriceIndexLevel_{t-1} \times \frac{SecurityAdjustedMarketCapForLocal_t}{SecurityInitialMarketCapUSD_t}$$

*SecurityAdjustedMarketCapForLocal* =

$$\frac{EndOfDayNumberOfShares_{t-1} \times PricePerShare_t \times InclusionFactor_t \times PAF_t}{FXrate_{t-1}} \times \frac{ICI_t}{ICI_{t-1}}$$

*SecurityInitialMarketCapUSD* =

$$\frac{EndOfDayNumberOfShares_{t-1} \times PricePerShare_{t-1} \times InclusionFactor_t}{FXrate_{t-1}}$$

Where:

- *SecurityPriceIndexLevel<sub>t-1</sub>* is Security Price Index level at time t-1.
- *SecurityAdjustedMarketCapForLocal<sub>t</sub>* is the Adjusted Market Capitalization of security s in USD converted using FX rate as of t-1.
- *SecurityInitialMarketCapUSD<sub>t</sub>* is the Initial Market Capitalization of security s in USD at time t.
- *EndOfDayNumberOfShares<sub>t-1</sub>* is the number of shares of security s at the end of day t-1.
- *PricePerShare<sub>t</sub>* is the price per share of security s at time t.
- *PricePerShare<sub>t-1</sub>* is the price per share of security s at time t-1.
- *InclusionFactor<sub>t</sub>* is the inclusion factor of security s at time t. The inclusion factor can be one or the combination of the following factors: Foreign Inclusion Factor, Domestic Inclusion Factor Growth Inclusion Factor, Value Inclusion Factor, Index Inclusion Factor.
- *PAF<sub>t</sub>* is the Price Adjustment Factor of security s at time t.
- *FXrate<sub>t-1</sub>* is the FX rate of the price currency of security s vs USD at time t-1. It is the value of 1 USD in foreign currency.
- *ICI<sub>t</sub>* is the Internal Currency Index of price currency at time t. The ICI is different than 1 when a country changes the internal value of its currency (e.g., from Turkish Lira to New Turkish Lira – ICI = 1,000,000).
- *ICI<sub>t-1</sub>* is the Internal Currency Index of price currency at time t-1.

*Index Market Capitalization*

*IndexAdjustedMarketCapUSD* =

$$\sum_{s \in I_t} \frac{EndOfDayNumberOfShares_{t-1} \times PricePerShare_t \times InclusionFactor_t \times PAF_t}{FXrate_t}$$

*IndexAdjustedMarketCapForLocal* =

$$\sum_{s \in I_t} \frac{EndOfDayNumberOfShares_{t-1} \times PricePerShare_t \times InclusionFactor_t \times PAF_t}{FXrate_{t-1}} \times \frac{ICI_t}{ICI_{t-1}}$$

*IndexInitialMarketCapUSD* =



$$\sum_{s \in I_t} \frac{EndOfDayNumberOfShares_{t-1} \times PricePerShare_t \times InclusionFactor_t}{FXrate_{t-1}}$$

Where:

- $EndOfDayNumberOfShares_{t-1}$  is the number of shares of security  $s$  at the end of day  $t-1$ .
- $PricePerShare_t$  is the price per share of security  $s$  at time  $t$ .
- $PricePerShare_{t-1}$  is the price per share of security  $s$  at time  $t-1$ .
- $InclusionFactor_t$  is the inclusion factor of security  $s$  at time  $t$ . The inclusion factor can be one or the combination of the following factors: Foreign Inclusion Factor, Domestic Inclusion Factor Growth Inclusion Factor, Value Inclusion Factor, Index Inclusion Factor.
- $PAF_t$  is the Price Adjustment Factor of security  $s$  at time  $t$ .
- $FXrate_t$  is the FX rate of the price currency of security  $s$  vs USD at time  $t$ . It is the value of 1 USD in foreign currency.
- $FXrate_{t-1}$  is the FX rate of the price currency of security  $s$  vs USD at time  $t-1$ . It is the value of 1 USD in foreign currency.
- $ICI_t$  is the Internal Currency Index of price currency at time  $t$ . The ICI is different than 1 when a country changes the internal value of its currency (*e.g.*, from Turkish Lira to New Turkish Lira – ICI = 1,000,000).

$ICI_{t-1}$  is the Internal Currency Index of price currency at time  $t-1$ .

### **Review Schedule**

The Underlying Index is maintained by a fluid a review process. Overall, index maintenance is implemented by three broad categories of review:

1) Semi-Annual Review – These reviews are done at the end of May and November and market capitalization indices are partially reviewed at the end of February and August. These reviews are intended to ensure that the Underlying Index represents at least 99.5% of the U.S. equity universe. During the May semi-annual index reviews, the free float of all constituents and non-constituents is all systematically reassessed;

2) Quarterly Index Review – These reviews are aimed at promptly reflecting significant moves of securities within the Investable Market Index within the Underlying Index and other significant market events and their corresponding impact on DIFs; and

3) Ongoing Event-Related Changes- These changes are generally implemented in the indices as they occur. Ongoing event related changes include change as a result of mergers, acquisition, spin-offs, delisting, reorganizations and other similar corporate events.

### **Corporate Events**

Market capitalization of the securities in the Underlying Index may changes as a result of corporate events. Mergers, acquisitions, spin-offs, delistings, reorganizations are types of corporate events that may impact the market capitalization of securities underlying the Underlying Index.

In order to assess the impact of these corporate events, MSCI maintains a daily ranking of constituents in the Underlying Index in descending order of company full market capitalization, as well as a daily calculation of market capitalization weighted means and standard deviations for each of the 8 value and growth variables within each market capitalization index in the Investable Market Index. These rankings and calculations are based on the previous day's closing market capitalization.

The appropriate post-event market capitalization of a company and its securities, however, may be determined by comparing the company's post-event full market capitalization with the daily rankings. Once the appropriate market capitalization index has been determined, the securities are reviewed for style based on their z-scores and growth z-scores. This is calculated by using the latest available values of the eight variables and the daily calculation of market capitalization weighted means and standard deviation of their corresponding market capitalization indices.

Any corporate event that creates a security not previously included in the Underlying Index is subject to the Securities Selection criteria above.

### **Existing Index Constituents**

Changes in the existing constituents include their market capitalization, style characteristics and industry classification. These changes are reviewed simultaneously with the event, if the market capitalization is deemed significant. A significant market capitalization change is defined as an increase of 50% or greater, or a decrease of 33% or more in the company's pre-vent full market capitalization. If after review, the market capitalization remains the same after the corporate event, the style characteristics of the affected securities are not reviewed if any of the following criteria is met.

- when two constituents within the same market capitalization index are involved in mergers and acquisitions and their value inclusion factor ("VIF") are equal;
- decreases in market capitalization due to buybacks of shares;
- increases in market capitalization due to issuances of new shares in order to raise cash, unless it is intended for the payment of an acquisition in the very near term.

Changes in the industry classification resulting from corporate events are generally implemented simultaneously with the vent. Other changes in the industry classification are implemented at the end of the month.

The above does not apply to Micro Cap Index unless they are involved in a corporate event with an Investable Market Index constituent and the event is considered significant.

#### *Deletions of Existing Index Constituents*

MSCI will remove from the Underlying Index as soon as practicable, securities or companies that will be delisted, companies that file for bankruptcy and companies that file for protection from their creditors and/or are suspended for which a return to normal business activity and trading is unlikely in the near future. Where the primary exchange of such security is not available, MSCI will delete securities at an over the counter or equivalent market price when such price becomes available and is deemed relevant. If there is no over the counter or equivalent market price available, the company will be deleted at the smallest price of US\$0.01 at which a security can trade on a given exchange.

If the security is suspended, MSCI will carry forward the market price prior to the suspension during the suspension period.

#### *Non-Index Constituents*

In general, newly listed equity securities available to U.S. investors, including companies that change their country of incorporation to the U.S. are considered for inclusion in the U.S. Equity Indices at the time of the semi-annual review. IPOs and other newly listed securities must pass the Securities Selection criteria mentioned above.