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Exclusive Adam Smith Webinar



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Improving the Management of Cash Portfolio Risk – Treasury Today 2014



Overview:

- ❑ Pfizer's portfolio

- ❑ Financial risk management policies

- ❑ Monitoring risk at:
 - ❑ Individual security level
 - ❑ Portfolio level

- ❑ Adam Smith Awards submission - Pfizer's Value at Risk analysis

Pfizer Profile

NEARLY

\$52

BILLION

Revenue in 2013

56

manufacturing sites worldwide (as of 4Q'13)

150

countries in which Pfizer sells products

10

products with sales >\$1 billion in 2013

250+

R&D partner institutions

NEARLY

\$18

BILLION

of Cash Flow from Operations in 2013

Returned

\$53

BILLION

to shareholders through dividends and share repurchases in 2011-2013

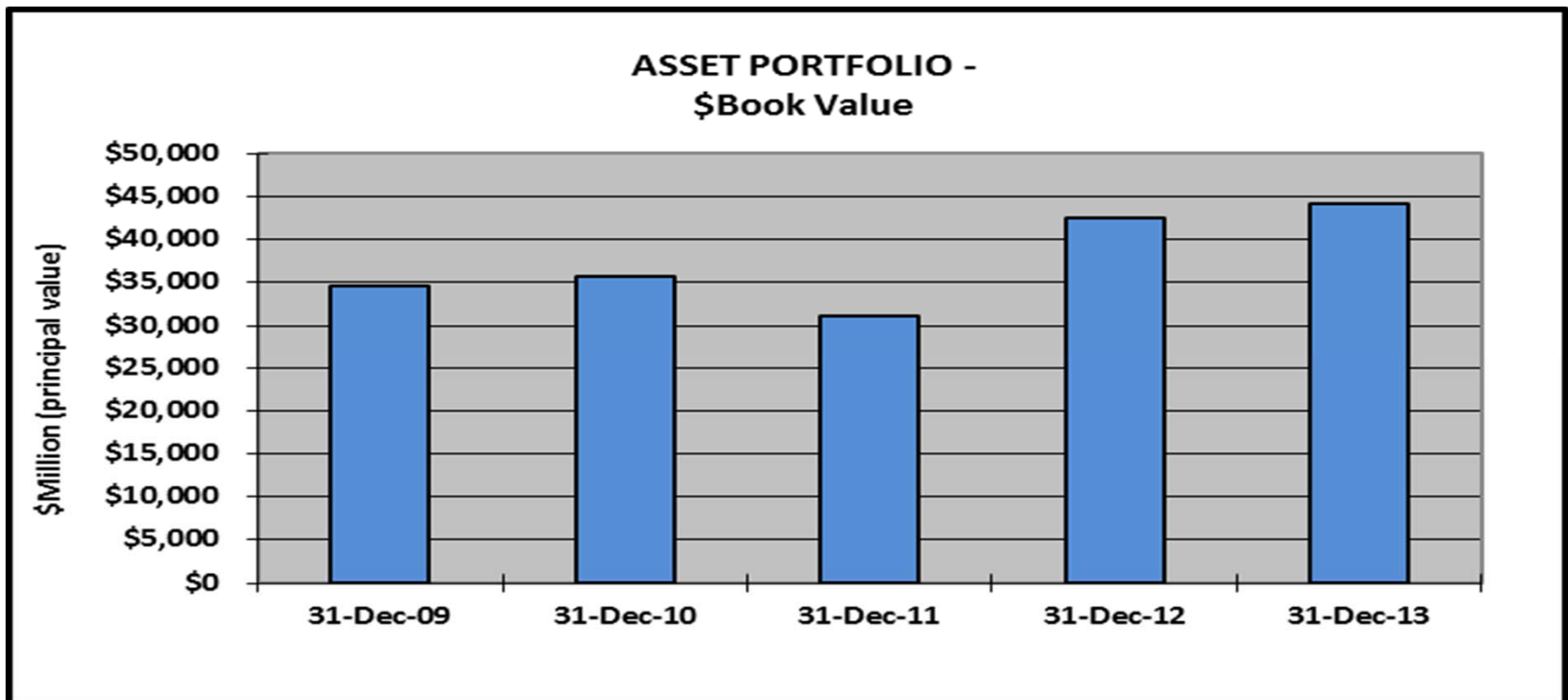
Approximately

78,600

colleagues around the globe (as of 3/31/2014)

Pfizer's Investment Portfolio

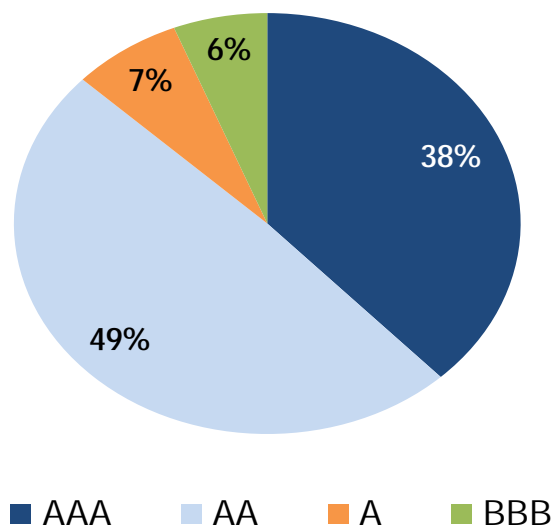
- ❑ Significant growth in cash balances over time.
- ❑ Portfolio consists of long and short term debt securities.
- ❑ Sovereign, Supranational, Local/Regional Governments and Investment Grade Structured & Corporate Debt.



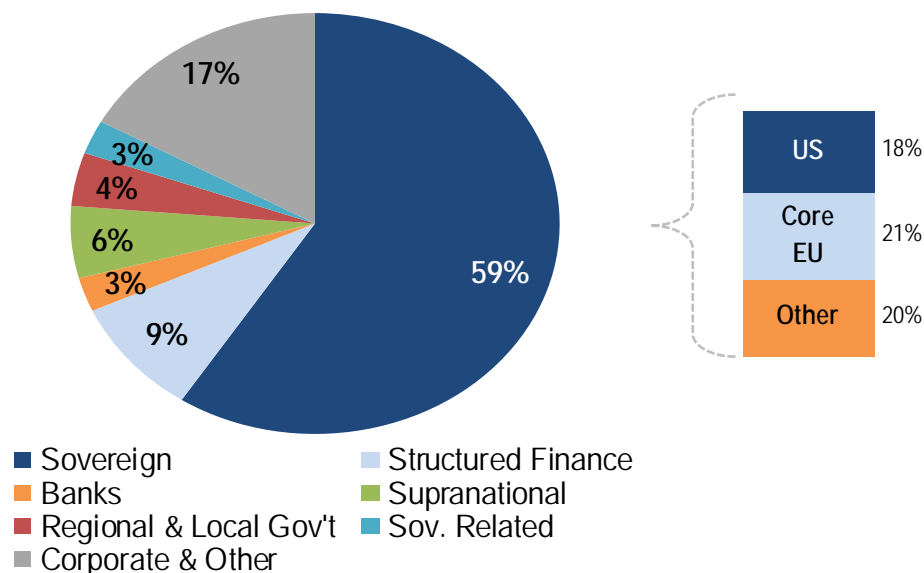
Pfizer - Portfolio Risk Management

Pfizer's Cash Portfolio Credit Rating Profile

Credit Rating Breakdown



Asset Class Diversification



Summary

- Capital preservation is paramount.
- Almost 90% of the portfolio comprises securities rated AAA or AA.
- Significant exposure to US & Core EU sovereign guaranteed assets.

*Numbers might not sum due to rounding

Ways to Manage Portfolio Risk

- ❑ **Manage exposure by setting limits as a percentage of total portfolio.**
 - ❑ To a single counterparty, country, sector, rating category

- ❑ **Setting limit amounts.**
 - ❑ Based on credit rating / internal credit analysis

- ❑ **Maturity restriction.**
 - ❑ Based on credit rating / internal credit analysis

Monitoring Individual Positions

- ❑ **Monitor individual portfolio positions via corporate results, rating agencies, sell side equity analyst reports and through economic releases for performance/credit deterioration.**

- ❑ **Market data for individual portfolio positions for event risk.**
 - ❑ Use in house proprietary indicator system for active positions as an early warning system. Uses key market data to highlight portfolio positions of interest from a risk perspective

- ❑ **Identify higher relative risk positions in the portfolio for special treatment.**

Portfolio Level Risk Can Be Monitored Through - Value at Risk (VaR)

- ❑ VaR is used as an estimate of the level of financial risk within a portfolio over a set time period and at a set level of statistical significance.
- ❑ Provides a value of minimum downside expected loss and its probability.
- ❑ When estimating VaR for a portfolio, the correlations of the returns on the individual assets is considered. The overall VaR of a portfolio is not just the simple sum of the VaR of sub portfolios.
- ❑ By analyzing the trend in VaR over multiple periods a trend VaR can be viewed and an analysis performed to see the positions contributing most to VaR.

❑ Pfizer's Previous VaR Methodology - Credit Default Swap (CDS)

- ❑ A CDS is essentially an insurance contract against credit events.
- ❑ The CDS covers risk associated with credit events only and as a result the current premium required to cover such events should be a market view of credit risk associated with the issuer of the underlying bond.
- ❑ Observations of Pfizer's CDS approach:
 - Not all issuers have a quoted CDS
 - A large amount of manual interaction
 - Lack of liquidity in CDS can limit accuracy
 - Limited support

❑ Evaluation of VaR Tools to Replace CDS Approach

- ❑ Credit Metrics, Moody's Credit Edge, Credit Suisse's Portfolio Risk Plus and Bank of America's Lighthouse.
- ❑ Over a 3 month period 4 colleagues met with vendors repeatedly, gained an understanding of the analytics, and tested using a sample portfolio.
- ❑ Summarized and debated the findings before making a final decision.

❑ Reasons for the selection of Lighthouse

- ❑ Credit Option Adjusted Spread (COAS) approach which uses issuer's market and financial data to assess risk.
- ❑ Web based - BofA manage data.
- ❑ High level of support provided.

❑ What are COAS and Lighthouse?

- ❑ The COAS model and the Lighthouse Portfolio Analytics system are Bank of America Merrill Lynch's proprietary analytical tools, developed and maintained by BofA Merrill Lynch Global Research.
- ❑ The BofAML Credit Option Adjusted Spread (COAS) model uses the empirically established strong relationship between credit spread and equity volatility to estimate a forward looking measure of credit risk for corporate bond issuers.
- ❑ The BofAML Lighthouse Portfolio Analytics system leverages the issuer-based COAS model to evaluate portfolio-level credit risk and attributes that risk to each investment in the portfolio.

- ❑ **What data is used in the calculation of risk?**
 - ❑ Incorporates current market information including an issuer's equity price, equity option implied volatility, outstanding debt and market credit spread to determine an "equity-implied" COAS Credit Risk.
 - ❑ COAS Risk is the expected 3m holding period loss due to changes in credit spread and/or default.
 - ❑ Links the credit market to the equity market and option market through an innovative application of the classical Merton (1974) model.

❑ How Lighthouse works in practice

- ❑ Specific file format to be followed.
- ❑ Data including CUSIP/ISIN, principal value of position and maturity required.
- ❑ File upload via FTP.
- ❑ Lighthouse generates a risk report which can also be downloaded in excel.

❑ Customizing Lighthouse to meet Pfizer's needs

- ❑ Lighthouse is based on equity market factors therefore Sovereign positions are not supported. In addition short term securities are not supported such as CP & ECP.

❑ Solutions

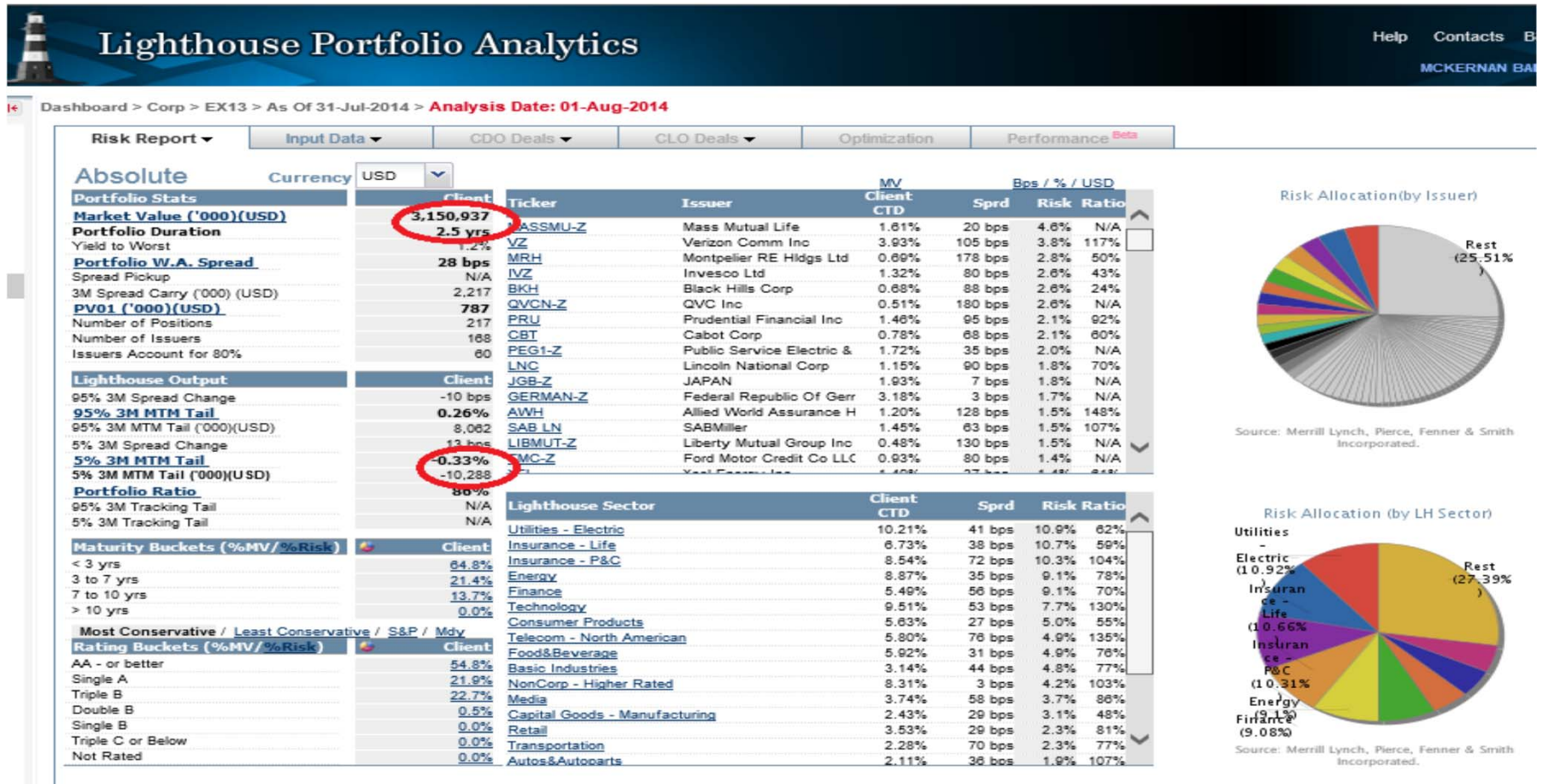
- ❑ Sovereign position risk is assessed using CDS where liquidity is strong. The exposure to a single sovereign issuer is input as a single entry so a money weighted average maturity of each sovereign is calculated and uploaded along with principal value.
- ❑ Short term security exposure is summed and a BofA High Grade (AAA-A) short term corporate credit index is used as a proxy.

- ❑ **Value at Risk (VaR) – How it Lighthouse looks analyzing a sample* portfolio of \$3.15bn.**
 - ❑ Consisting of:
 - ❑ Sovereign exposure through Germany \$500m, US \$500m, Japan \$300m & Singapore \$200m for total sovereign exposure of \$1.5bn.
 - ❑ Corporate bond exposure of c.\$1.65bn.

*The portfolio above is a sample and does not represent any element of Pfizer's investment portfolio

Pfizer - Portfolio Risk Management

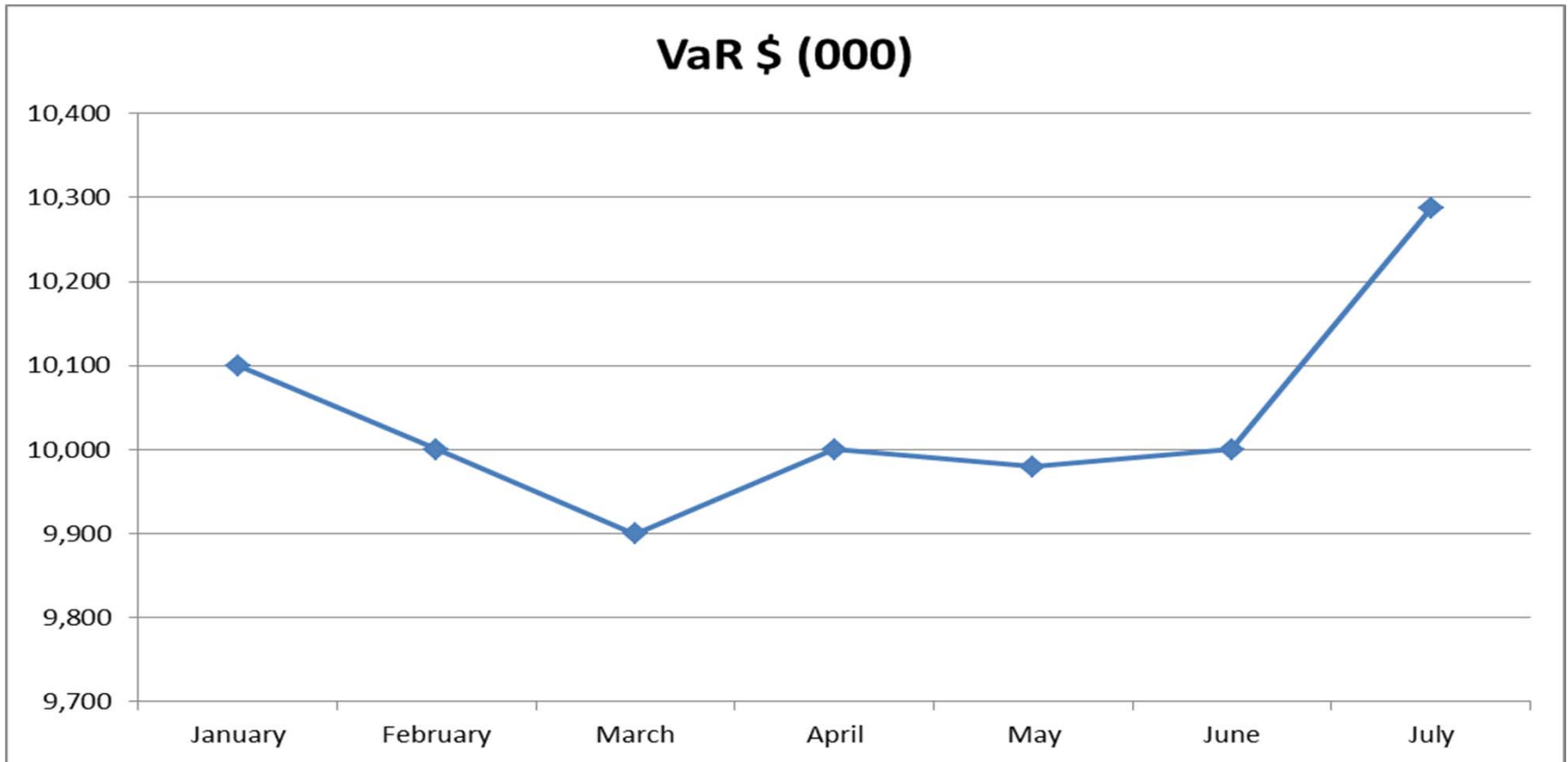
Risk Report



Picture source: Bank of America Merrill Lynch

From the risk report we can extract the data and perform our own analysis.

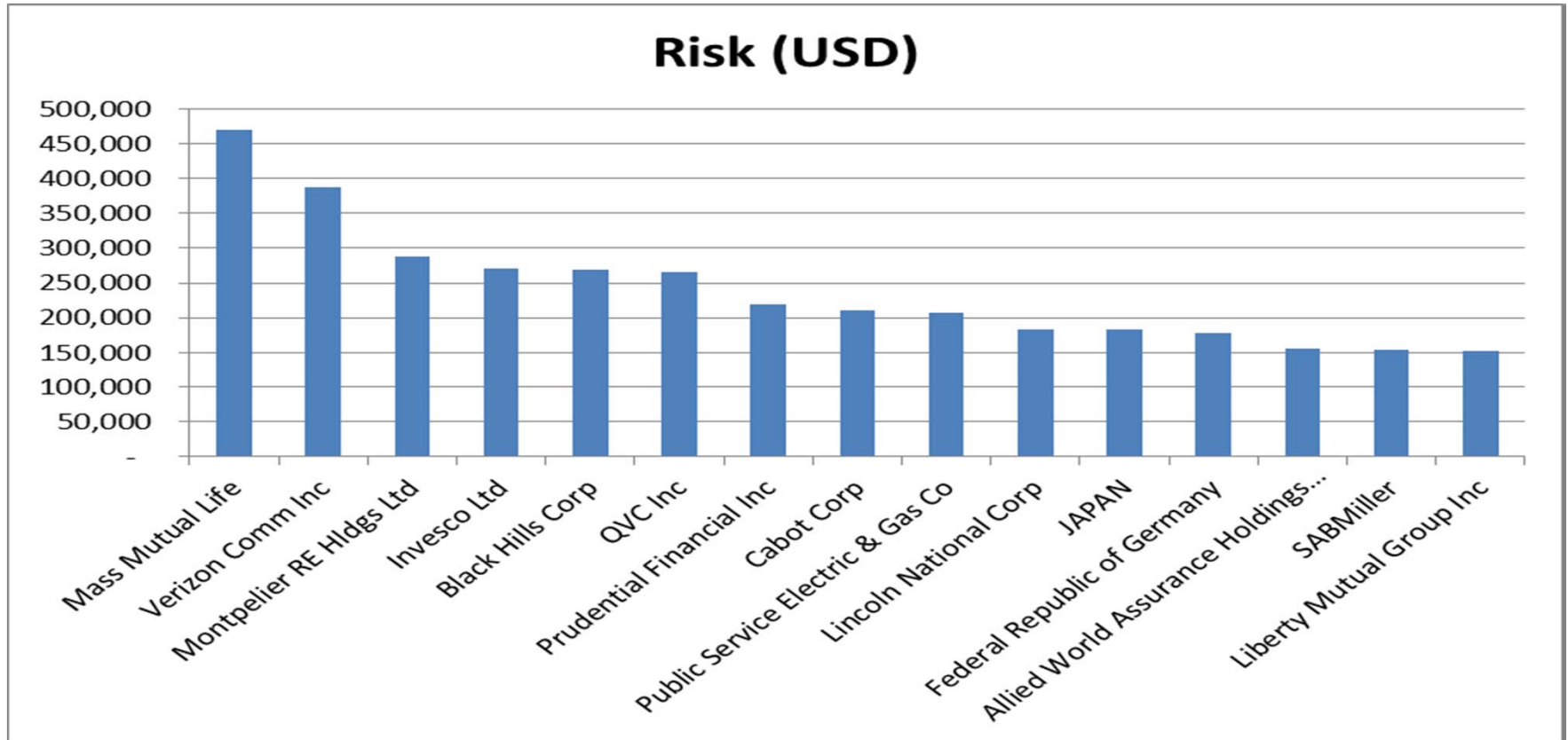
VaR Trend Over Time



July value source: Bank of America Merrill Lynch

□ An example, for illustrative purposes only, of how the VaR trend for the sample portfolio could look over time.

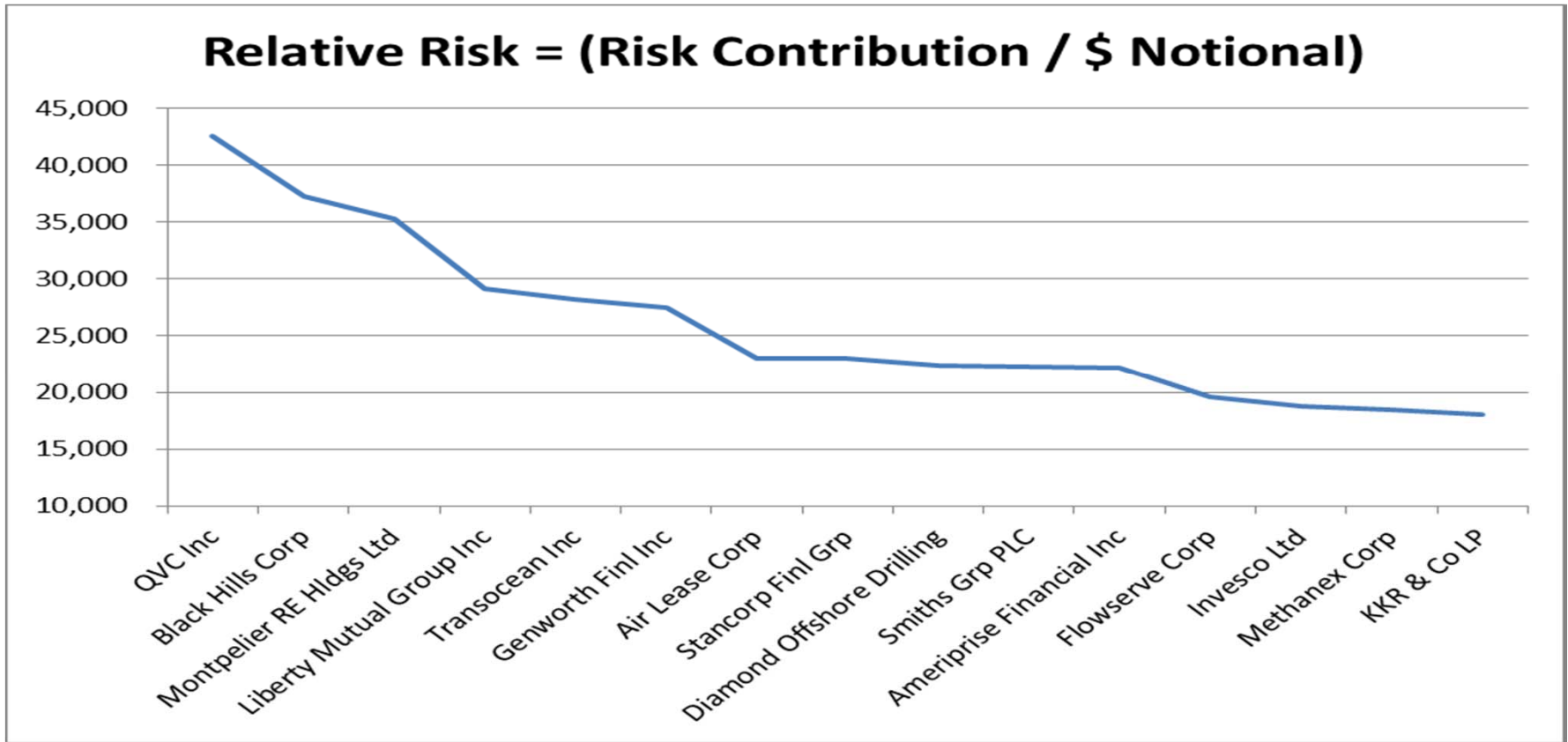
Largest VaR Contributors



Data source: Bank of America Merrill Lynch. Value as of date 1st August 2014.

- Mass Mutual Life contributes \$470k to portfolio VaR.
- Verizon contributes \$387k to portfolio VaR.

Riskiest Positions



Data source: Bank of America Merrill Lynch. Value as of date 1st August 2014.

□ This graph represents the risk contribution of a position relative to the size of the exposure of that position. This allows us to highlight the positions which Lighthouse calculates to have the highest relative risk within the portfolio.

❑ How is the output of the analysis used?

- ❑ Gives a better understanding of the impact on risk of portfolio movements and the influence of market factors from month to month.
- ❑ Ensure comfort with positions contributing most to VaR.
- ❑ Typically the positions with the highest relative risk in the portfolio are externally managed.
 - ❑ Triggers internal review of the position
 - ❑ Used as a discussion point with external managers
 - ❑ Understand why the position has high relative risk

- ❑ **Benefits to Pfizer of using this new approach to VaR?**
 - ❑ Using more accurate market data to assess the risk of individual positions in the portfolio.
 - ❑ Strong model analytics
 - ❑ Web based - Bank of America maintains the database of data including up to date market data.
 - ❑ Quicker to run VaR analysis due to less manual interaction with data.
 - ❑ Better product support.



treasurytoday Question Time



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