## Global Investments \& Risk Management Best Practices, Innovations and Strategies

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OCTOBER 27-30, 2013 | LAS VEGAS
ORIGINAL $\rightarrow$ ESSENTIAL $\rightarrow$ UNBIASED $\rightarrow$ INFORMATION


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## WESTERN $1 / 1 / 0$ <br> moving money for better

## Panelist

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Western Union

## Global Corporations



## WESTERN 0 NTON

moving money for better

## 127 Years Old

Operates in 200+ Countries

Over 3,500 Products
Over 500 Brands
Worldwide

# Investment Considerations, Risks and Liquidity Needs 

Methods for Evaluating Risk

## Understanding the Yield Curve

Analyzing Opportunities to Extend Duration
Using Technology to Manage Risks \& Investments

Summary / Key Takeaways

## Investment Considerations \& Approach



- Liquidity needs
- Investment horizon - acquisition plans, capital spending
- Cash flow considerations - frequency/magnitude of position changes

```
2. Formulate Investment
Objectives and Establish Guidelines
```

- Risk / return objectives and tolerance
- Benchmark selection / guideline parameters
- Accounting and tax considerations
- Manager selection
- Seek to:

3. Construct Optimal

Portfolio Allocation

- Maximize returns given risk tolerance
- Diversify risks
- Hedge unwanted risk
- Sector allocation
- Security selection
- Yield curve structure
- Daily risk management

Developing a successful investment strategy requires thoughtful consideration of cash flow planning, investment objectives and risk tolerances

## Investment Risk

## RISK TOLERANCE CONSIDERATIONS:

- Tradeoffs of yield versus volatility
- Potential for negative returns
- Effect of interest rate moves


## DESCRIPTIONS OF CERTAIN INVESTMENT RISKS:

Interest Rate Risk - the risk that an investment's value will change due to changes in the absolute level of interest rates or the shape of the yield curve; risk rises with increasing duration. Reinvestment risk is a competing risk to interest rate risk.

Credit Risk - adverse changes of a security's value from actual or perceived deterioration in credit quality. Types of risks factors evaluated under credit risk include: profitability, leverage, quality of assets, capital, liquidity, corporate governance, legal risk, and event risk.

Liquidity Risk - risk that a security may not have a ready and deep market into which it may be sold without a substantial discount to price.

> Pursuing incremental yield requires a willingness to assume measured risks

## GLOBAL INVESTMENTS \& RISK MANAGEMENT BEST PRACTICES, INNOVATIONS AND STRATEGIES

 Investment Types
## Bank Deposits

CAPITAL PRESERVATION


HIGH


HIGH


Time Deposits



HIGH


Repurchase Agreement


Treasury/Agencies


Money Market Funds


HIGH


HIGH
Low


## Investment Types

CAPITAL PRESERVATION

## Bond Funds

VARIES DEPENDENING UPON FUND'S PROFILE

Separately Managed Accounts

CUSTOMIZABLE TO INVESTMENT POLICY, RISK TOLERANCE, AND RETURN OBJECTIVES

## Identifying Liquidity Characteristics

- Many companies rely solely on money market investments despite the fact that immediate liquidity needs are only a portion of cash balances
- Consider creating 2 to 3 distinct "pools" of cash to improve returns while meeting liquidity needs

Traditional Corporate Cash Portfolio
Money Market Investments


Investment "Pools"


Time

## GLOBAL INVESTMENTS \& RISK MANAGEMENT BEST PRACTICES, INNOVATIONS AND STRATEGIES

## Identifying Liquidity Characteristics

## Sample Investment Pool Characteristics

|  | Liquid Cash | Core Cash | Strategic Cash |
| :--- | :---: | :---: | :---: |
| Investment horizon | 0 to 6 months | 6 months or longer | 1 year + |
| Typical portfolio duration | 60 Days | 6 months to 1 Year | 2 Years |
| Cash Flow Volatility | High | Low | Very Low |
| Objective | Preservation of <br> capital and <br> immediate liquidity | Enhanced returns with <br> minimal principal risk | Risk constrained total <br> return |
| Strategy | Money Market <br> investments | Curve and Credit |  <br> credit exposure + <br> manager skill |
| Return Expectation | Low | Improved | Highest |

Consider incorporating "best practices" for investment management matching liquidity considerations, investment horizons, and risk tolerances

Investment Considerations,
Risks and Liquidity Needs

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## Ratings Considerations

Comparative Default Rates for Municipal \& Corporate Debt

(15-Year Cumulative Default Rates) For municipal defaults, S\&P’s study period was January 1986 to January 2010. For corporate defaults, S\&P's study period was January 1981 to December 2010.

## What is CDS?

## The ability to buy or sell insurance against default

A swap designed to transfer the credit exposure of fixed income products between parties whereby the purchaser of the swap makes payments to the seller up until the maturity date of a contract, in return, the seller agrees to pay off a third party debt if this party defaults on the loan. A CDS is considered insurance against non-payment.

- CDS Spread is the amount over LIBOR that a counterparty charges for credit protection
- The higher the spread, the higher the credit risk of the underlying asset
- Benefits and considerations of using CDS in your analysis
- Real time, market based information (unlike credit ratings)
- Ability to see trends and compare (and ease of use)
- Liquidity / Technicals
- A word of caution


## Probability of Default

Using a CDS spread, it is possible to calculate a probability of default of the underlying asset for a specific period of time.

1 Year Probability of Default $=\frac{\frac{1 \text { Year CDS }}{10,000}}{1-\text { Recovery Rate. }}$

5 Year Probability of Default ${ }^{1}=\left[1-e^{x}\right]$
Where $x$ is calculated as:

$$
x=\frac{\frac{5 \text { Year CDS }}{10,000}}{1-\text { Recovery Rate }}
$$

${ }^{1}$ Where "e" is the mathematical constant 2.71828 (base of the natural log)

JP Morgan (CDS of 91) - 7\% Probability of default within 5 years

| JPMCC CDS USD SR 5Y | 91.438 | +1.105 | $88.211 / 94.665$ |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| At 16:57 | Op 90.993 | Hi 93.473 | Lo 88.853 | Prev 90.333 | CBIN |

JPMCC CDS USD SR 95) Save As 90) Actions - 97) Edit $\rightarrow$ 98) Table



Citibank (CDS of 103) - 8\% Probability of default within 5 years


Puerto Rico (CDS of 589) - 39\% Probability of default within 5 years



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## Venezuela (CDS of 988) - 56\% Probability of default within 5 years



## 2008 Headline Name CDS Spreads

2008 5-YEAR CREDIT DEFAULT SWAP (CDS) PRICING


January 31, 2008
July 31, 2008

## What is Tier 1 Capital?

- A comparison between a banking firm's core equity capital and total risk-weighted assets. A firm's core equity capital is known as its Tier 1 capital and is the measure of a bank's financial strength based on the sum of its equity capital and disclosed reserves, and sometimes non-redeemable, non-cumulative preferred stock. A firm's risk-weighted assets include all assets that the firm holds that are systematically weighted for credit risk.
- Benefits and considerations of using Tier 1 capital in your analysis
- Helps determine if a bank in well capitalized ( $6 \%$ or higher to be well capitalized)
- Provides the ability to compare different banks

Tier 1 Ratio $=\frac{\text { Common Stock }+ \text { Non }- \text { Redeemable Common Stock }+ \text { Retained Earnings }+ \text { Disclosed Reserves }}{\text { Total Assets }}$

## What are Non-Performing Assets?

- A classification used by financial institutions that refer to loans that are in jeopardy of default. Once the borrower has failed to make interest or principal payments for 90 days the loan is considered to be a non-performing asset
- Benefits and considerations of using Non-Performing Assets in your analysis
- Only as good as the most recent financials
- May be late to the game

$$
\text { Non }- \text { Performing Assets to Total Assets }=\frac{\text { Non }- \text { Performing Assets }}{\text { Total Assets }}
$$

# Investment Considerations, Risks and Liquidity Needs 

Methods for Evaluating Risk

## Understanding the Yield Curve

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Summary / Key Takeaways

## Understanding rate risk when extending maturities to pick-up yield

Interest Rate Risk is the risk an investment declines in value due to an increase in interest rates - is it worth extending duration?

- How severe is the move?
- How long does it take?
- Are maturities affected differently?
- How much is priced in?
- What does the curve tell you?
- What is the volatility of rates and how big a standard deviation move would it take to regret the trade?
- Do you get paid over time for extending duration?


## Yield Curve Tells a Story...

- The current yield curve tells a story of which direction rates are expected to go
- An upward sloping curve says that rates are expected to rise
- A downward (or inverted) yield curve says that rates are expected to decline
- Forward rate (or yield) curves take it a step further. They tell the story of how much and when rates will move over a certain period of time (i.e., 1, 2, 3 years)
- These calculations are interpolated based on the current yield curve.
- You can use the forward rate curves to calculate what is "priced in"
- Priced in means that if you own a maturing security over x number of years versus holding cash you would be indifferent
- A key concept to understand is that in a rising rate environment, you can be indifferent because you still earn income and roll down by owning a maturing security


## Current Yield Curve



Time

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## Investment Options - Putting it Simply

## OPTION 1

- Buy a 1 year maturity
- 1 year bond yield is $0.25 \%$

```
- Income
0.25\%
- Principal
0.00\%
- Return in 1 year
0.25\%
```


## OPTION 2

- Buy a 2 year maturity and sell in 1 year
- 2 year bond yield is $0.60 \%$
- In order to have Option 1 and Option 2 equal each other (or, break even), the 2 year maturity must lose $-0.35 \%$ in principal value because it's income is $0.60 \%$.

```
- Income
0.60\%
- Principal
-0.35\%
- Return in 1 year 0.25\%
```

- Since a 2 year maturity, one year forward, is a 1 year maturity, how much do rates need to rise in order to lose 0.35\% of principal? For a 1 year maturity security, that is $0.35 \%$ ( 1 year duration $\times 35 \mathrm{bps}=0.35 \%$ ) therefore, 1 year securities will need to yield $0.95 \%(0.60 \%+0.35 \%)$.
- Current 1 year security is $0.25 \%$ and the breakeven rate is $0.95 \%$, the market is pricing in a 70 bps rise.
- If rates rise more than 70 bps for 1 year securities, an investor is better off in Option 1. If rates rise less, an investor is better off in Option 2.


## GLOBAL INVESTMENTS \& RISK MANAGEMENT BEST PRACTICES, INNOVATIONS AND STRATEGIES

Expected Yield Curves (forwards) "breakevens"


## Investment Considerations, Risks and Liquidity Needs

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Summary / Key Takeaways

Wells Fargo Ultra Short Bond Fund Overview (as of June 2013)
Fund Characteristics:

| 30-day SEC yield | 1.12\% |
| :---: | :---: |
| Sharpe Ratio | 2.71 |
| Average Return | 0.40\% |
| Portfolio turnover | 64.89\% |
| Effective Duration | 0.44 years |
| Number of Holdings | 334 |
| FUND MANAGERS |  |
| Name Years of invest | experience |
| Jay N. Mueller, CFA | 29 |
| Thomas M. Price, CFA | 22 |
| D. James Newton II, CFA, CPA | 14 |
| Christopher Y. Kauffman, CFA | 15 |



Portfolio composition (\%)

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## Historical Performance




Cumulative Distribution of Returns

Assets by Share Class



## Risk/Reward Trade Off - SADIX

| MPT Statistics |  |
| :--- | :---: |
| Compared to Lipper Inst. MF Index |  |
| SADIX |  |
| Alpha | $0.2 \%$ |
| Correlation | -0.01 |
| R-Squared | 0.00 |
| Beta | -0.02 |
| Excess Return | $0.6 \%$ |
| Sharpe | 2.7 |

Sponsor

| 5yr CDS | S\&P | Outlook |  |
| :--- | :---: | :---: | :---: |
| Wells Fargo | 71 | A+ | Negative |
| United States | 41 | AA + | Negative |
| JPMorgan | 81 | A | Negative |
| Ford Motor | 165 | BB + | Positive |
| Bank of America | 117 | A- | Negative |
| Fiat Industrial | 244 | BB+ | Stable |
| General Electric | 69 | AA + | Stable |
| Citigroup | 111 | A- | Negative |
| Morgan Stanley | 138 | A- | Negative |
| Nordea Bank | 76 | AA- | Negative |
| Svenska Handelsbanken | 68 | AA- | Negative |
| Porshe Automobil | 61 | -- | -- |
| Deutsche Bank | 99 | A+ | Negative |
| Time Warner | 54 | BBB | Stable |
| Dominion Resources | 36 | A- | Stable |
| Daimler | 97 | A- | Stable |
| Weighted Average: | 85 |  |  |

## Risk/Reward Trade Off - SADIX Continued



## Maturity Risk - Return

## 1994-2012 Rolling 12-Month Returns At Each Quarter-End



Source: Bloomberg

## Total Return for One Year Holding Periods



BofA ML US 6-Month Treasury Bill Index

BofA ML 1-Year US Treasury Note Index

BofA ML 1-3 Year US Treasury Index

BofA ML 1-5 Year US Treasury Index

BofA ML 1-10 Year US Treasury Index
*The 1994-2012 period includes one negative return period for the 1-3 Year Index, two negative return periods for the 1-5 Year Index, and five negative return periods for the 1-10 Year Index. Source: Bloomberg

Investment Considerations,
Risks and Liquidity Needs
Methods for Evaluating Risk
Understanding the Yield Curve

## Analyzing Opportunity to Extend Duration

## Using Technology to Manage Risks \& Investments

Summary / Key Takeaways

## Optimize with Integration

Consolidate trading to small number of platforms

- Invest all Money Market Funds through one platform
- ICD portal
- Numerous bank portals
- Place time deposit trades electronically
- Bloomberg RFQ


## Bloomberg RFQ



## Optimize with Integration

Integrate trading platforms to Treasury Workstation

- Eliminates extra work
- Reduces data entry allowing more time for analysis of exposures
- Simplifies reporting
- If everything is in one place, less work


## Optimize with Integration



kyriba


SUNGARD

Systems

SALMON
4 SOFTWARE

## Elements to Managing Counterparty Risk

1. Avoid concentrating funds with too few counterparties
2. Evaluate the relative financial strength of selected counterparties
3. Understand the exposures that your counterparty may have
a. Bank may have a large exposure to a specific countrylcounterparty

Risk Analysis Tool

| Bank I <br> Criteria Weighting | Moody's | S\&P | Fitch | $\begin{gathered} 30 \text { CDS } \\ \text { AVG } \end{gathered}$ | CDS from Avg | T1 Capital Ratio | NPA/Total Assets | Wt/Avg Score | Change in Stock Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 10\% | 10\% | 10\% | 25\% |  | 25\% | 20\% | 100\% |  |
| Bank 1 | 7 | 8 | 6 | 1 | ok | 1 | 9 | 5.38 | 0.02 |
| Bank 2 | 10 | 10 | 10 | 10 | ok | 10 | 10 | 5.00 | 0.10 |
| Bank 3 | 3 | 4 | 4 | 1 | ok | 10 | 1 | 5.00 | 0.55 |
| Bank 4 | 10 | 10 | 9 | 7 | ok | 2 | 10 | 7.90 | 0.20 |
| Bank 5 | 7 | 7 | 6 | 1 | ok | 5 | 5 | 5.05 | 0.01 |
| Bank 6 | 4 | 10 | 4 | 1 | ok | 9 | 3 | 4.70 | 0.02 |
| Bank 7 | 9 | 10 | 10 | 10 | ok | 9 | 6 | 5.18 | 0.08 |
| Bank 8 | 10 | 10 | 10 | 3 | ok | 10 | 10 | 6.00 | 5.00 |
| Bank 9 | 5 | 10 | 4 | 10 | Fail | 6 | 2 | 3.38 | 0.03 |
| Bank 10 | 5 | 10 | 4 | 10 | Fail | 2 | 1 | 2.08 | 0.01 |

## Risk Management Analysis - Portfolio View



## Risk Management Analysis - Country Exposure

## Country Distribution

| $\mathrm{F}=$ |  |  |  |
| :---: | :---: | :---: | :---: |
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| wimem | wrom | woxal | b2m |
| мmantens |  |  |  |



## Risk Management Analysis - Fund Holdings



| FUND HOLDINGS (TOP 25 HOLDINGS LISTED) |  |  |  | \% OF FUND AUM | \% OF <br> FUND HOLDINGS | WAM |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SPONSOR | TICKER | AMOUNT | \% OF MY PORTFOLIO |  |  |  |
| TOP 25 HOLDINGS |  | \$878,444,500 | 87.84\% |  | 1.17266\% | 455 |
| United States of America | 3352 Z US | \$234,406,006 | 23.44\% |  | 0.31292\% | 139 |
| Prime SMA | PSMA | \$49,421,394 | 4.94\% | 32.94760\% | 21.58350\% | 647 |
| Treasury MMF1 | TMMF1 | \$46,602,017 | 4.66\% | 66.57431\% | 0.44447\% | 76 |
| Govt SMA | GSMA | \$41,779,426 | 4.18\% | 34.81619\% | 18.14231\% | 535 |
| FDIC Insured Brokered CDs | FDICBCD | \$40,000,000 | 4.00\% | 100.00000\% | 211.43467\% | 156 |
| Govt MMF1 | GMMF1 | \$36,351,327 | 3.64\% | 60.58554\% | 0.23500\% | 100 |
| Prime MMF2 | PMMF2 | \$14,078,724 | 1.41\% | 20.11246\% | 0.08096\% | 161 |
| Govt SDBF | GSDBF | \$6,173,118 | 0.62\% | 12.34624\% | 0.44149\% | 3,931 |
| Barclays PLC | BARC LN | \$101,544,377 | 10.15\% |  | 0.13555\% | 38 |
| Time Deposit 2 | TD1 | \$100,000,000 | 10.00\% | 100.00000\% | 100.00000\% | 51 |
| Prime MMF1 | PMMF1 | \$1,544,377 | 0.15\% | 4.41250\% | 0.18929\% | 1 |
| REPO | REPO | \$94,070,364 | 9.41\% |  | 0.12558\% | 7 |
| Prime MMF3 | PMMF3 | \$25,251,332 | 2.53\% | 36.07333\% | 0.11363\% | 11 |
| Treasury MMF1 | TMMF1 | \$23,397,983 | 2.34\% | 33.42569\% | 0.22316\% | 5 |
| Prime MMF2 | PMMF2 | \$23,052,360 | 2.31\% | 32.93194\% | 0.13256\% | 9 |
| Govt MMF1 | GMMF1 | \$22,368,689 | 2.24\% | 37.28115\% | 0.14460\% | 1 |
| Bank of America Corp | BAC US | \$80,641,143 | 8.06\% |  | 0.10765\% | 1,202 |
| Bank Deposit 1 | BD1 | \$75,000,000 | 7.50\% | 100.00000\% | 100.00000\% | 0 |
| Prime SMA | PSMA | \$3,275,429 | 0.33\% | 2.18362\% | 1.43046\% | 87 |
| Prime MMF1 | PMMF1 | \$1,501,477 | 0.15\% | 4.28994\% | 0.18404\% | 1 |
| Govt SDBF | GSDBF | \$864,237 | 0.09\% | 1.72847\% | 0.06181\% | 6,901 |
| MUNI | MUNI | \$71,830,251 | 7.18\% |  | 0.09589\% | 2,502 |

## Risk Management Analysis - CDS Spreads

| ${ }_{\text {REPORT DATE: }}^{\mathrm{I} / 9 / 2 / 201}$ | FUND Holdings | CREDIT DEFAULT SWAP SUMMARY (AS OF 9/47/2013) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SPONSOR | $\begin{aligned} & \text { 5-YR } \\ & \text { CDS } \end{aligned}$ | CHANGE |  |  |  |  |  |  |  |  |  |
|  |  |  | 1 WEEK | NOMINAL | \% CHG | T/W | 52 WK HI | nominal | \% CHG | 52 WK Lo | NOMINAL | \% CHG |
| masver | United States of America | 22 | 22 | 0 | 0.87\% | w | 48 | -26 | -53.77\% | 19 | 3 | 17.23\% |
| rep Rave Newas! | Barclays PLC | 120 | 120 | 0 | 0.22\% | w | 198 | -78 | -39.25\% | 111 | 9 | 7.71\% |
| - M M 0 \% | REPO |  |  |  |  |  |  |  |  |  |  |  |
|  | Bank of America Corp | 103 | 107 | -4 | -3.85\% | T | 197 | -94 | -47.78\% | 85 | 18 | 20.79\% |
| Yayer mex | MUNI |  |  |  |  |  |  |  |  |  |  |  |
|  | JPMorgan Chase \& Co | 84 | 87 | -3 | -3.89\% | T | 134 | -51 | -37.64\% | 70 | 14 | 19.68\% |
|  | Wells Fargo \& Co | 62 | 64 | -2 | -3.45\% | T | 94 | -32 | -34.30\% | 60 | 2 | 3.80\% |
| \% | Deutsche Bank AG | 98 | 102 | -4 | -3.75\% | T | 168 | -70 | -41.56\% | 81 | 17 | 21.11\% |
|  | Berkshire Hathaway Inc | 77 | 83 | -6 | -7.58\% | T | 147 | -70 | -47.45\% | 64 | 13 | 20.28\% |
|  | Coca-Cola Corthe | 32 | 32 | 0 | -1.03\% | T | 51 | -19 | -37.27\% | 28 | 3 | 11.33\% |
|  | Toyota Motor Corp | 34 | 35 | -2 | -5.11\% | T | 90 | -57 | -62.87\% | 27 | 7 | 24.48\% |
|  | Caterpillar Inc | 77 | 81 | -4 | -5.19\% | T | 98 | -21 | -21.48\% | 62 | 15 | 24.99\% |
|  | PepsiCo Inc | 47 | 48 | -1 | -2.07\% | T | 55 | -9 | -15.53\% | 41 | 6 | 14.65\% |
|  | International Business Machines Corp | 41 | 39 | 2 | 4.99\% | w | 47 | -6 | -12.39\% | 23 | 18 | 75.70\% |
|  | Cisco Systems Inc | 43 | 43 | 0 | 0.27\% | w | 82 | -39 | -47.66\% | 30 | 13 | 44.25\% |
|  | Johnson \& Johnson | 21 | 24 | -2 | -10.34\% | T | 35 | -14 | -40.00\% | 19 | 2 | 9.53\% |
|  | WEIGHTED AVERAGE | 63 |  |  |  |  |  |  |  |  |  |  |

## Risk Management Analysis - Stock Performance

|  |  |  |  |  |  | FUND HOLDINGS (TOP 25 HOLDINGS LISTED) |  | STOCK SUMMARY (AS OF 9/17/2013) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | SPONSOR | BLOOMBERG TICKER | CURRENTSTOCK | CHANGE |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 1 WK | \% CHG | 52 WK HIGH | \% CHG | 52 WK LOW | \% CHG |
| REPORT DATE: 9/19/2013 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | United States of America | 3352 Z US |  |  |  |  |  |  |  |
| Eemroso |  |  |  |  |  | Barclays PLC | BARC LN | 299 | 306 | -2.21\% | 338 | -11.59\% | 212 | 41.17\% |
| enestuer | Koncorea | \% | (0ay |  |  | REPO | REPO |  |  |  |  |  |  |  |
|  | ${ }_{\text {coseme }}$ | maxo | * | " ${ }^{\circ}$ | - 0 - ${ }^{00}$ | Bank of America Corp | BAC US | 15 | 15 | -0.41\% | 15 | -3.19\% | 9 | 67.24\% |
| - | yoname | \$10x13 | ${ }^{5}$ | - | -0 00 | MUNI | MUNI |  |  |  |  |  |  |  |
| torimmac |  | S11xa | H00 | 31 | or | Royal Bank of Canada | RY CN | 66 | 66 | 0.33\% | 67 | -1.01\% | 55 | 21.67\% |
|  | ${ }_{\text {sen }}^{\text {suca }}$ | 2acosa | Sx\% | $\times \infty$ | * | JPMorgan Chase \& Co | JPM US | 53 | 54 | -1.08\% | 57 | -6.75\% | 39 | 36.72\% |
| axco smer | rexect | Taxal | st | $4{ }^{20}$ | oss or | Federal Home Loan Banks | 17992 US |  |  |  |  |  |  |  |
|  | susmel | 50x00 | $\pm$ | m | orl | Wells Fargo \& Co | WFC US | 43 | 42 | 0.94\% | 45 | -4.32\% | 31 | 37.12\% |
| - | ${ }_{\text {a }}^{20080}$ | \%hent | wisem | 3 0 <br> $\square$  | - 2000 | US Bancorp/MN | USB US | 38 | 37 | 2.21\% | 38 | -1.19\% | 31 | 21.19\% |
|  | now | -xan | \%1720 | $\cdots$ | - om ${ }^{\text {a }}$ | General Electric Co | GE US | 24 | 24 | 2.43\% | 25 | -2.00\% | 20 | 23.05\% |
|  | $\max _{\operatorname{mox}}$ | saxio | sous | 40 | - on or | Toronto-Dominion Bank/The | TD CN | 91 | 91 | 0.88\% | 92 | -0.89\% | 78 | 17.14\% |
| mancom toms |  |  |  |  |  | Deutsche Bank AG | DBK GR | 36 | 35 | 2.36\% | 39 | -8.29\% | 29 | 21.31\% |
| wsinniome cosh castimicas. uc |  |  |  |  |  | Federal Farm Credit Banks | 17982 US |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Berkshire Hathaway Inc | BRKIA US | 173299 | 170489 | 1.65\% | 178900 | -3.13\% | 125950 | 37.59\% |
|  |  |  |  |  |  | Coca-Cola Corthe | KO US | 39 | 39 | 0.41\% | 43 | -10.68\% | 36 | 9.02\% |
|  |  |  |  |  |  | Bank of Nova Scotia | BNS CN | 60 | 60 | -0.42\% | 62 | -3.38\% | 52 | 14.24\% |
|  |  |  |  |  |  | Toyota Motor Corp | 7203 JP | 6240 | 6260 | -0.32\% | 6800 | -8.24\% | 2873 | 117.19\% |
|  |  |  |  |  |  | Bank of New York Mellon Corp/The | BK US | 31 | 31 | 0.54\% | 32 | -2.81\% | 22 | 40.28\% |
|  <br>  <br>  thervase ctrive |  |  |  |  |  | Caterpillar Inc | CAT US | 87 | 87 | 0.53\% | 100 | -12.67\% | 79 | 9.54\% |
|  |  |  |  |  |  | PepsiCo Inc | PEP US | 82 | 79 | 2.81\% | 87 | -6.20\% | 67 | 21.18\% |
|  |  |  |  |  |  | Bank of Montreal | BMO CN | 68 | 67 | 1.06\% | 68 | -0.52\% | 57 | 18.96\% |
|  |  |  |  |  |  | International Business Machines Corp | IBM US | 192 | 187 | 2.98\% | 216 | -11.00\% | 181 | 6.11\% |
|  |  |  |  |  |  | Cisco Systems Inc | cscous | 24 | 24 | 0.89\% | 26 | -7.99\% | 17 | 46.10\% |
|  |  |  |  |  |  | Johnson \& Johnson | JNJ US | 89 | 89 | 0.60\% | 94 | -5.68\% | 68 | 31.36\% |
|  |  |  |  |  |  | AVERAGE |  | 7235.02 |  | 0.65\% |  | -4.46\% |  | 25.53\% |

## Risk Management Analysis - Sector Allocation



## Additional Transparency Tools - Separate Accounts



## What If Scenarios

## Model what can happen in different circumstances

- Default scenarios
- Spread widening scenarios
- Rate shock scenarios / forward curve analysis
- Duration risk - to extend or not
- Money Fund risk analysis
- Credit risk in the fund portfolio
- Interest rate risk
- Risk from heavy investor redemption
- What happens if I change my fund lineup


## GLOBAL INVESTMENTS \& RISK MANAGEMENT BEST PRACTICES, INNOVATIONS AND STRATEGIES

## What are the implications on your liquidity planning of a failure of the U.S.

 Government to increase the debt ceiling and a potential technical default/payment delay resulting from such inaction?- The chances of such an event are low but are not zero and while the full implications including unintended consequences can't be fully known it is important to have a plan to successfully navigate such a scenario
- We may face this issue multiple times
- The payment delay from a default will be temporary and would impact near term maturities and interest payments (no cross-default)
- Money market funds have run stress tests showing even a severe rate shock should not result in a loss of principle, nevertheless they maintained excess liquidity
- Prime funds vs. Treasury / Government Funds
- A sound approach is to stay diversified, keep cash liquid in bank accounts and high quality funds with strong bank sponsors and to continue to monitor counterparty strength / underlying exposures
- Dislocations can also create opportunities


## Dislocation in T-Bills

GRAB


Australia 61297778600 Brazil 551130484500 Europe 442073307500 Eermany 49699204 1210 Hong Kong 85229776000 Japan 81332018900 Singapore 6562121000 U.S. 12123182000 Copur ight 2013 Eloomberg Finance L.P.

Investment Considerations, Risks and Liquidity Needs

Methods for Evaluating Risk
Understanding the Yield Curve
Analyzing Opportunity to Extend Duration
Using Technology to Manage Risks \& Investments

Summary I Key Takeaways

## Credit Review Process

- Importance of a dedicated team of independent fixed income credit analysts
- Internal vs. external resources
- Intensive credit focus on both quantitative and qualitative factors



## global investments \& RISk management best practices, innovations and strategies

## Disciplined Approach to Security Selection

Utilize a rigorous relative value assessment and a disciplined research process drive security selection with a focus on the factors unique to each sector when evaluating securities for investment.


## Key Takeaways

- Understand liquidity requirements and consider dividing your cash into 2-3 pools / tiers
- Pursuing incremental returns requires assuming measured risks
- Understanding the risks you are assuming is key
- Discussed multiple tools to assist you (CDS, Ratio Analysis, Non-performing assets)
- Make active decisions about the risk you want to assume
- Yield curve Analysis can help you make better decisions on extending duration
- Scenario analysis can be a useful tool for managing risk and investments
- Rate shocks, forward curve analysis
- Changes in holdings
- Utilize the power of technology to bring it all together and save time
- Aggregate exposures
- Analyze trends
- Manage risk, not data (manage your time)


## Thank You!

## Moderator

Scott Fox
SVP, Business
Development
ICD

Panelist
Jeff Knapp
Senior Treasury
Analyst
Coca-Cola

## Panelist

## Devin Parker

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