

# Finance For Hockey

## Smart Beta Fixed Income – Dutch Focus

1 June 2015

Foort Hamelink, PhD – Head of Multi-Asset Portfolio Construction



# Contents

---

- ▣ Institutional investors are faced with 3 issues when investing in bonds
- ▣ The implications of market cap based portfolio construction
- ▣ Fixed income smart beta
- ▣ Our smart beta corporate bond solution for Dutch institutional investors
  - Corporate bonds smart beta: fundamental
  - Corporate bond smart beta: fundamental + required reserves adjustment
- ▣ Appendix
  - Corporate bonds market cap exposure and bottom up issuer allocation - more detail
  - Smart beta sovereigns
  - Smart beta emerging market debt
  - Smart beta BBB-BB
  - Portfolio performance
  - Our team
  - Dutch FTK details



## Institutional investors are faced with 3 issues when investing in bonds

---

- From an asset only perspective:
  - Market weighted indices attribute a higher weighting to companies and governments with more debt. This causes a concentration of risk
  - Yields are historically low
  - The liquidity in bond markets is limited which causes strong price movements
- From a balance sheet perspective:
  - In the new FTK and in Solvency II the credit rating of a corporate bond determines the required coverage ratio (S5, surcharge for credit risk) or capital required. The lower this rating, the higher the required reserve. This has become more prominent with low solvency levels
- From a management and cost perspective:
  - The current low yield environment makes management fees even more important in generating ultimate returns
  - The (beta) exposure in (credit) bonds is often more important than the potential additional return (alpha) from active management
  - A more passive way of managing the portfolio limits transaction costs which matches the limited liquidity in the bond market



## The implications of market cap based portfolio construction

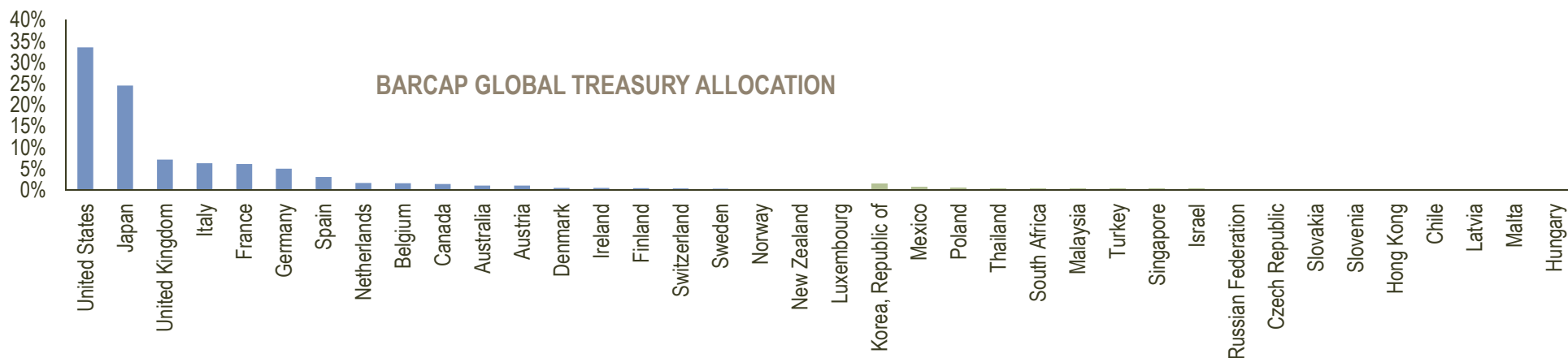
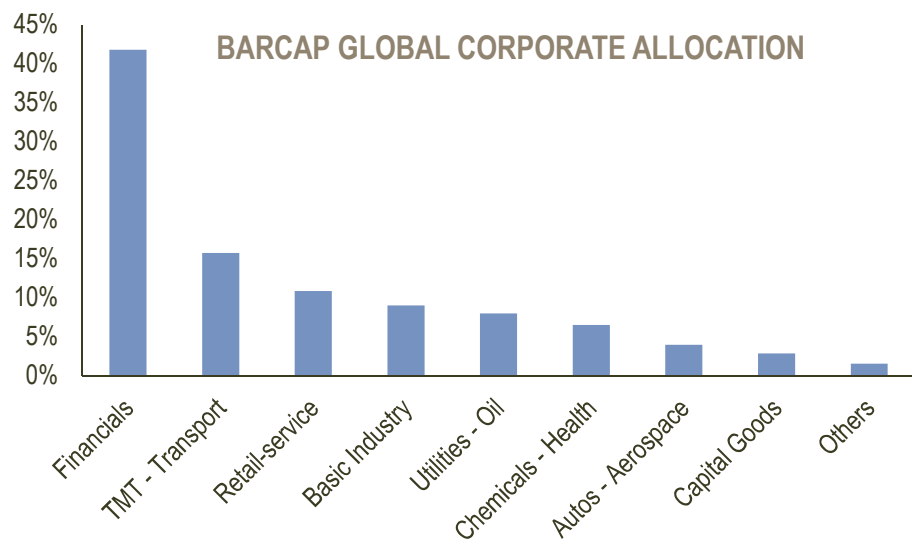


# The implications of market cap based portfolio construction

---

- ▣ **Amount of outstanding debt**
  - The more debt, the bigger the weight
  
- ▣ **Price**
  - The higher the price, the bigger the weight
  
- ▣ **Issuer quality**
  - Only dependent on rating agencies
  
- ▣ **Other features**
  - Some market cap indices have diversification and liquidity caps which are arbitrary

# The implications of market cap based portfolio construction

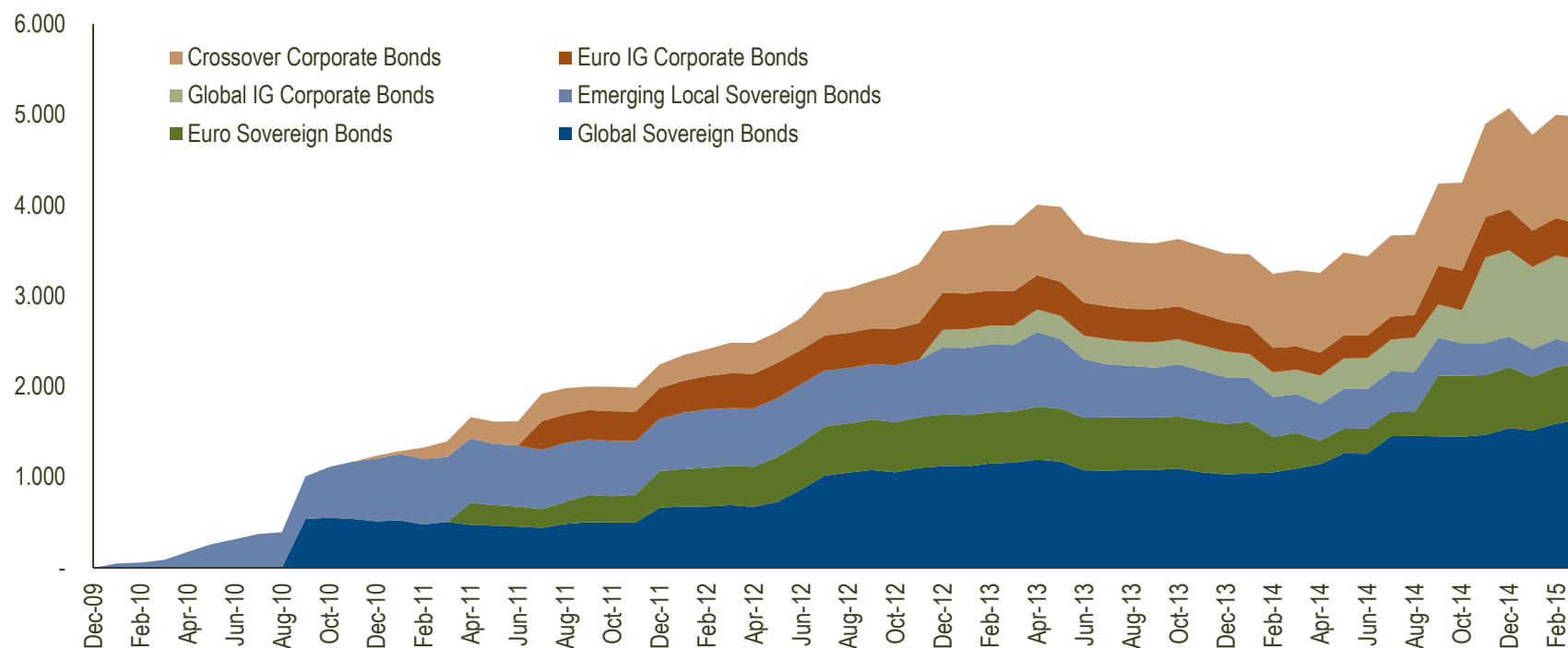




## Fixed income smart beta

# Lombard Odier & Smart Beta Fixed Income

- Total assets under management USD 47 billion
- Of which USD 5.1 billion in smart beta fixed income
- Lombard Odier was one of the first movers into smart beta fixed income
- Today there are six smart beta fixed income strategies
- Lombard Odier and ETF Securities have launched 3 smart beta fixed income ETFs (Euro and Global Corporate and Global Sovereigns). Euro sovereigns and local EMD ETFs will be launched this month.



Source Lombard Odier, 31 March 2015.



# Our fundamentally weighted approach – ability to repay instead of capacity to borrow

## LOMBARD ODIER FUNDAMENTALLY WEIGHTED APPROACH

### Fundamental factors

#### ▣ **Indebtedness**

- The higher the debt burden, the lower the weight



#### ▣ **Size**

- Higher revenues translate to a higher weight



#### ▣ **Issuer dynamics**

- Sovereign: social imbalances
- Corporates: cash, capital and asset quality



### Adjustment factors

#### ▣ **Yield**

- The higher the yield, the higher the weight



#### ▣ **Liquidity**

- Issuers with low liquidity will receive a lower weight



## MARKET CAP APPROACH

#### ▣ **Amount of outstanding debt**

- The more debt, the bigger the weight



#### ▣ **Price**

- A higher price creates a higher weight




#### ▣ **Issuer eligibility**

- Usually relying heavily on rating agencies

#### ▣ **Other features**

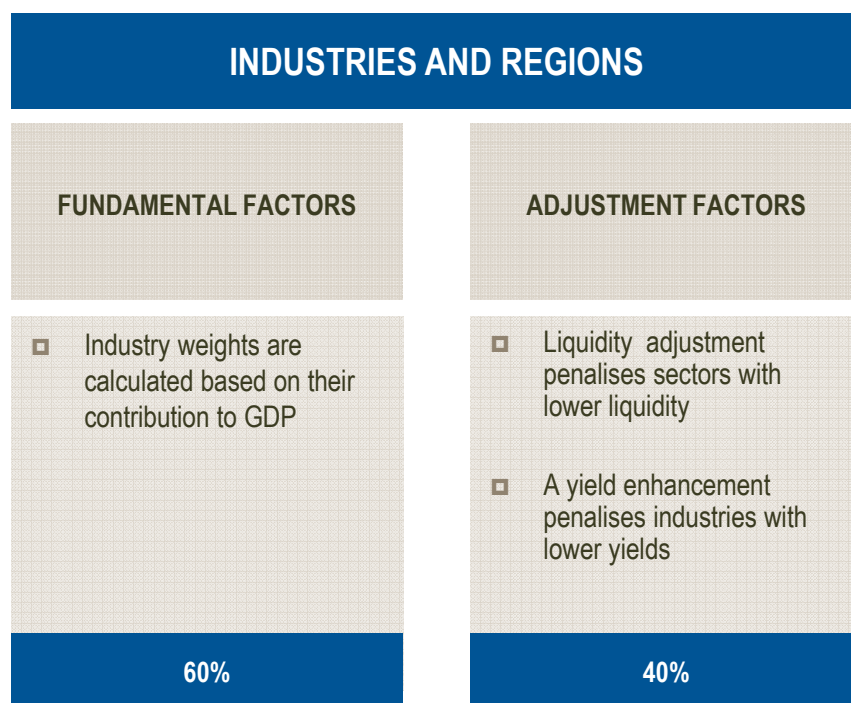
- Diversification and liquidity with capped allocations



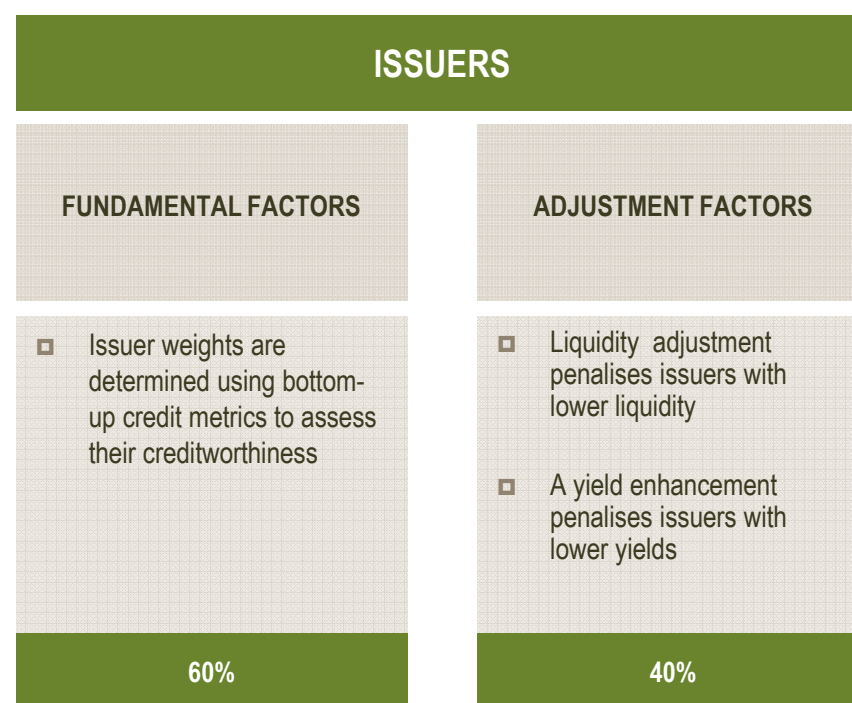
Our smart beta corporate bond solution for Dutch institutional investors

# The fundamental benchmark in corporate bonds

## TOP-DOWN



## BOTTOM-UP

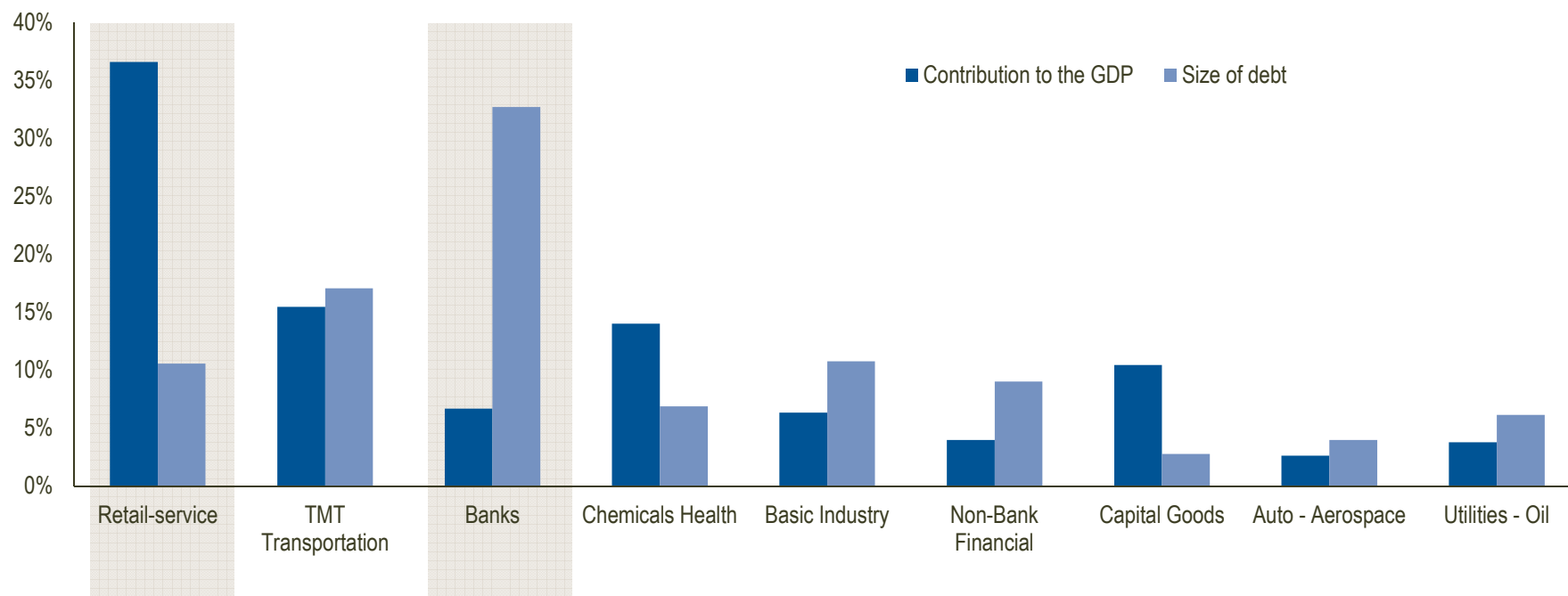


For illustrative purposes only. Holdings and/or allocations are subject to change.

# Market cap sector weights are not related to sector contributions to the economy

- Highly-leveraged sectors such as the banking sector have high allocations that are not in line with their real added value to the economy
- The exact opposite is true for the retail-service sector

## SECTOR CONTRIBUTION TO THE GDP VS SIZE OF DEBT

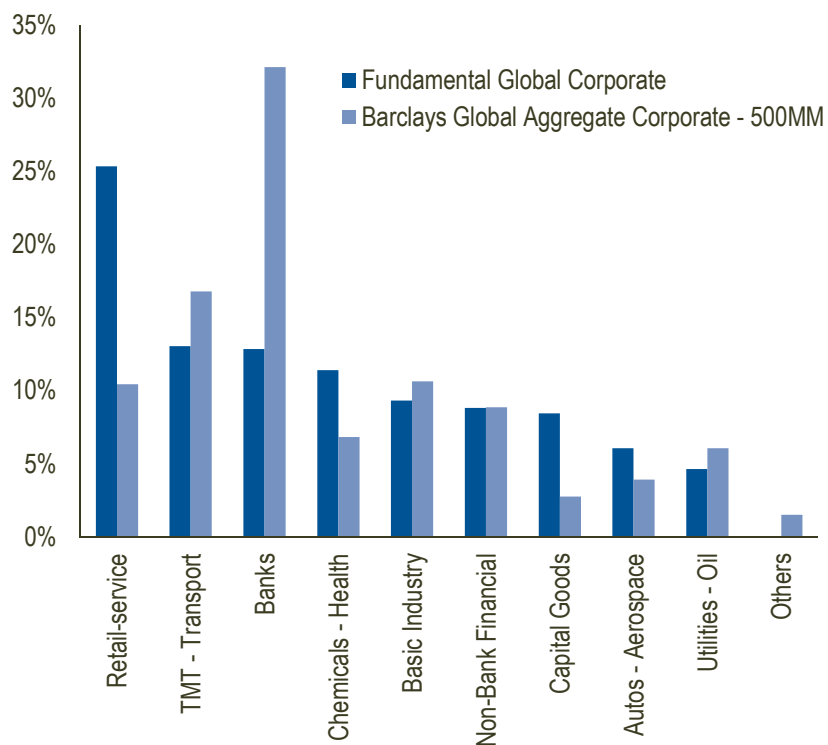


Source: Lombard Odier and Barclays – per end of November 2014

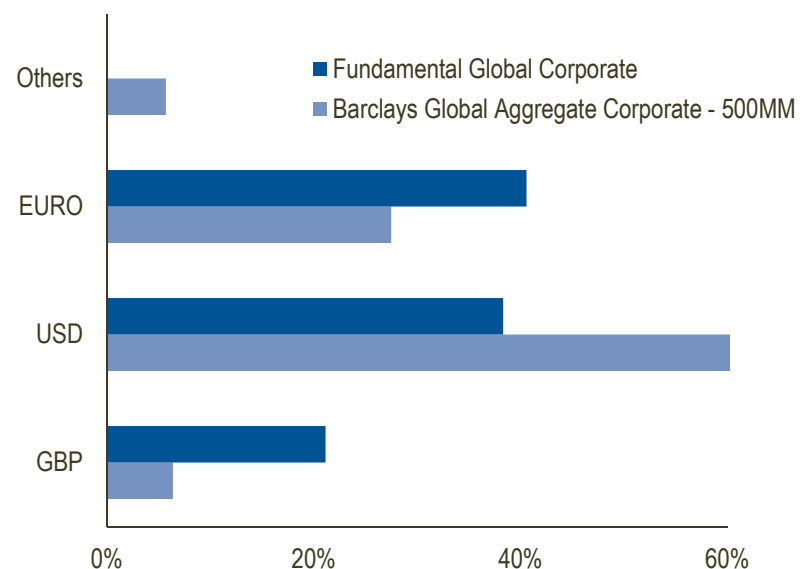
## Top-down: sector and region allocation

- Reflecting sectors' economic importance implies limited exposure to financials and a larger exposure to consumer products and chemicals

**FUNDAMENTAL VS MARKET CAP SECTOR WEIGHTING**

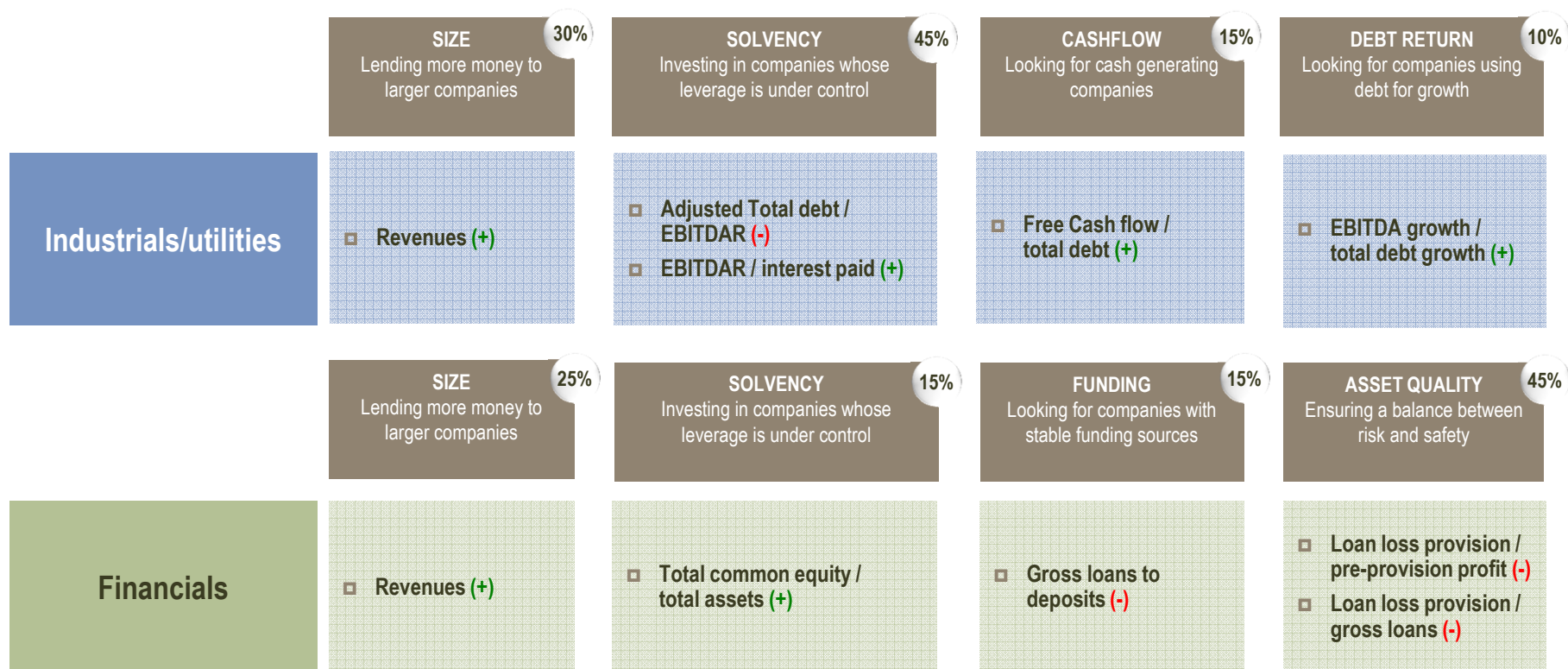


**FUNDAMENTAL VS MARKET CAP REGIONAL WEIGHTING**



**Source:** Lombard Odier, December 2014. Holdings and/or allocations are subject to change.

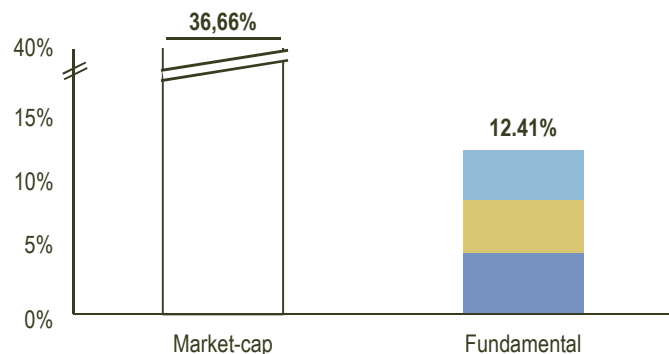
## Bottom-up: issuer allocation



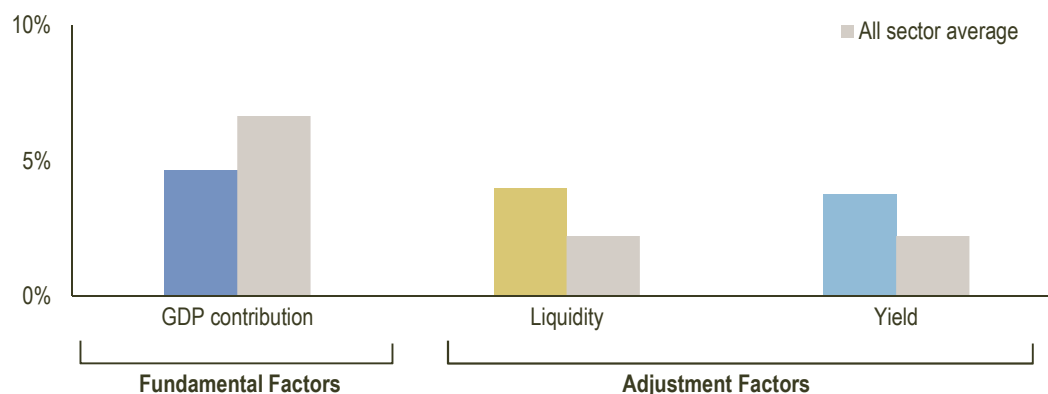
Source: S&P Capital IQ.

## Top down example – the banking sector

### MARKET CAP VS FUNDAMENTAL WEIGHT



### FUNDAMENTAL WEIGHT BREAKDOWN VS ALL SECTOR AVERAGE



**Our fundamentally weighted strategy has an underweight relative to market cap for the banking sector. The banking sector debt level is not in line with its contribution to the GDP**

### FUNDAMENTAL FACTORS ALLOCATION



**GDP contribution:** the sector is one of the smaller contributors to GDP in the universe

### ADJUSTMENT FACTORS ALLOCATION



**Liquidity:** the banking sector is one of the most liquid one



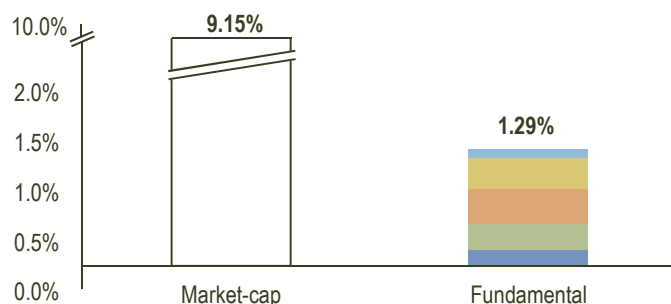
**Yield:** the banking issuers show attractive yields

**Source:** Barclays, Lombard Odier. December 2014.

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or securities. It should not be assumed that the recommendations made in the future will be profitable or will equal the performance of the securities discussed in this document.

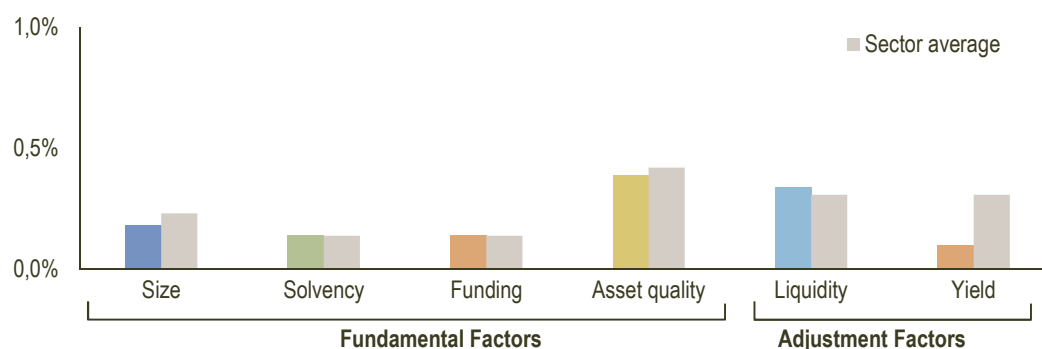
## Bottom up example – Rabobank

### MARKET CAP VS FUNDAMENTAL WEIGHT



**Our fundamental strategy underweights Rabobank due to its size, average solvency and expensive valuation**

### FUNDAMENTAL WEIGHT BREAKDOWN VS BANKING SECTOR AVERAGE



### FUNDAMENTAL FACTORS ALLOCATION

- ↓ **Size:** the revenues generated by Rabobank are below the sector's average
- = **Solvency:** its solvency is in line with the sector's average
- = **Funding:** its funding position is in line with the sector's average
- ↓ **Asset quality:** its level of provisions is slightly higher compared to peers

### ADJUSTMENT FACTORS ALLOCATION

- ↑ **Liquidity:** the issuer has a good liquidity
- ↓ **Yield:** with a spread of around 60 bps, the issuer is relatively expensive for the sector (average spread: 80bps)

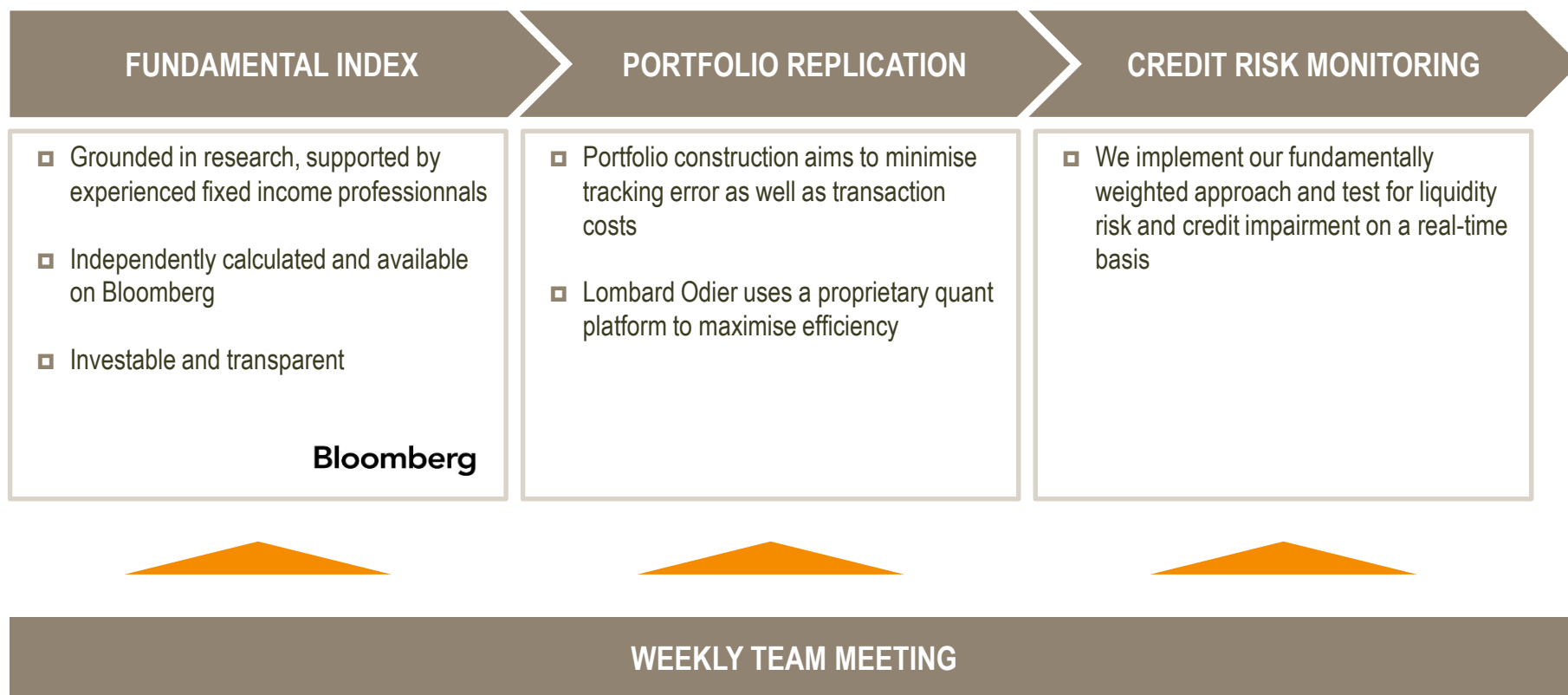
**Source:** Barclays, Lombard Odier December 2014.

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or securities. It should not be assumed that the recommendations made in the future will be profitable or will equal the performance of the securities discussed in this document.





## Lombard Odier investment process for fundamental credit



# Investment process – replication process

1

## REPLICATION MONITORING

### Cash management

- ▣ Cashflow monitoring and management
- ▣ Corporate action analysis

### Systematic risk

Sector and maturity buckets exposure analysis:

- ▣ Weights
- ▣ Duration
- ▣ DTS

### Idiosyncratic risk

- ▣ Issuers exposures analysis:
- ▣ Weights per name
- ▣ Duration times spread (DTS) per name

2

## REPLICATION ADJUSTMENT

### Liquidity screening

Discarding bonds with a temporary or permanently poorer liquidity

### Replication trades

Improving the replication quality at a better price

### Credit specialists' feedback

Liquidity and technical analysis

3

## TRADING

### Market trades

Trades are managed and executed through our dedicated execution desk

FINAL PORTFOLIO

# Replication process – replication monitoring

CASH MANAGEMENT			
Criterion	Value	Reference	Difference
Nombre de titres	362	730	-368
Market value (EUR)	475'832'838	475'832'837	2
Bonds	97.07%	100.00%	-2.93%
Duration	4.16	4.16	-0.01
Yield	2.23%	2.22%	0.01%
Nombre d'émetteurs	233	258	
DTS	6.81	6.83	

SYSTEMATIC RISK									
	EUR	b1-3	c3-5	d5-7	e7-10	f10-15	g15+	NA	Total
AUTO_AE...	0.72	-5.12	3.77	-0.18	4.22	-2.45	NA	0.95	
BANKING	-1.86	2.69	0.42	-2.78	1.15		-0.16	-0.55	
BASIC_IN...	1.31	-1.02	0.58	-1.59				-0.71	
CAPITAL...	1.33	-3.71	-1.80	4.54				0.37	
CHEMICA...	-1.19	3.08	-5.25	4.71				1.35	
FINANCIA...	-2.85	-2.06	4.30	4.27	0.20			3.86	
OTHER	1.33	-0.81	-0.29	-1.91				-1.68	
RETAIL_S...	-1.05	3.33	0.45	-13.34					
TMT_TRA...	1.19	1.82	-3.55	3.01					
UTILITES...	0.63	0.31	-4.66	5.18					
NA	NA								
Total	NA	-0.44	-1.48	-6.01	1.90				

IDIOSYNCRATIC RISK									
	EUR	b1-3	c3-5	d5-7	e7-10	f10-15	g15+	NA	Total
AUTO_AE...	-0.14%	-0.89%	0.21%	-0.14%	0.21%	-0.14%	0.21%	0.21%	
BANKING	-1.29%	1.11%	-0.06%	-0.04%	0.21%	-0.14%	0.21%	0.21%	
BASIC_IN...	0.18%	-0.04%	-0.02%	-0.17%	0.21%	-0.14%	0.21%	0.21%	
CAPITAL...	0.17%	-0.13%	-0.69%	0.47%	0.21%	-0.14%	0.21%	0.21%	
CHEMICA...	-0.84%	0.75%	-0.77%	0.44%	0.21%	-0.14%	0.21%	0.21%	
FINANCIA...	-0.65%	-0.55%	0.28%	0.22%	0.21%	-0.14%	0.21%	0.21%	
OTHER	0.28%	-0.25%	-0.05%	-0.17%	0.21%	-0.14%	0.21%	0.21%	
RETAIL_S...	-0.93%	0.97%	0.77%	-0.34%	0.21%	-0.14%	0.21%	0.21%	
NA	NA								
Total	NA	-0.44	-1.48	-6.01	1.90				

IDIOSYNCRATIC RISK									
	EUR	b1-3	c3-5	d5-7	e7-10	f10-15	g15+	NA	Total
AUTO_AE...	-0.14%	-0.89%	0.21%	-0.14%	0.21%	-0.14%	0.21%	0.21%	
BANKING	-1.29%	1.11%	-0.06%	-0.04%	0.21%	-0.14%	0.21%	0.21%	
BASIC_IN...	0.18%	-0.04%	-0.02%	-0.17%	0.21%	-0.14%	0.21%	0.21%	
CAPITAL...	0.17%	-0.13%	-0.69%	0.47%	0.21%	-0.14%	0.21%	0.21%	
CHEMICA...	-0.84%	0.75%	-0.77%	0.44%	0.21%	-0.14%	0.21%	0.21%	
FINANCIA...	-0.65%	-0.55%	0.28%	0.22%	0.21%	-0.14%	0.21%	0.21%	
OTHER	0.28%	-0.25%	-0.05%	-0.17%	0.21%	-0.14%	0.21%	0.21%	
RETAIL_S...	-0.93%	0.97%	0.77%	-0.34%	0.21%	-0.14%	0.21%	0.21%	
NA	NA								
Total	NA	-0.44	-1.48	-6.01	1.90				


- Cash construction + Portfolio characteristics

- Exposures per sector and maturity buckets in bps of DTS/duration/weights

- Exposures per sector and maturity buckets in bps of DTS/duration/weights

Source: Lombard Odier For illustrative purposes only.





## Investing in corporates from a balance sheet perspective

Smart Beta - incorporating regulatory capital requirements



## Incorporating regulatory capital requirements

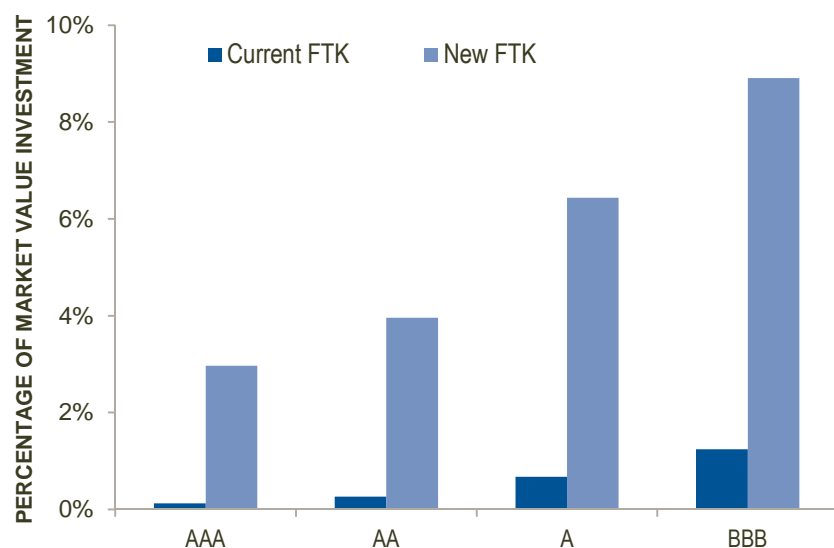
---

- Due to low solvency the regulatory capital requirements have become a crucial factor for institutional investors
- The required reserves now directly impact the investor's investment decisions
  - Example: decreasing the rates hedge mostly implies risk reduction elsewhere
- Investors now have two targets
  - Maximise return per unit of solvency risk
  - Maximise return per unit of required reserves
- For corporates the portfolio constituents has a direct impact on the required reserves
  - The lower the rating, the higher the required reserve. The impact of rating increases with duration
- A smart corporate bond strategy would seek to maximise the two targets without changing the duration and DV01 profile

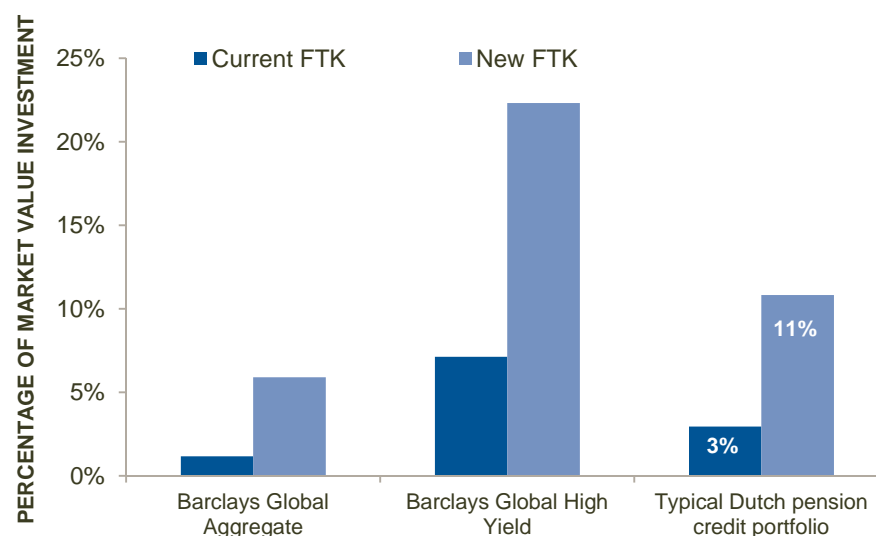
# Increased capital requirements for credit portfolios under the new FTK

- Credit required reserve charges are increasingly important under the new FTK:
  - **Higher required reserves:** absolute credit spread stresses vs. initial stress equal to 40% of the credit spread
  - **The low yield environment:** dragged coverage ratios down putting an increased number of schemes in recovery plans

REQUIRED RESERVES FOR 5Y DURATION BOND



REQUIRED RESERVES FOR A TYPICAL DUTCH PENSION PORTFOLIO\*

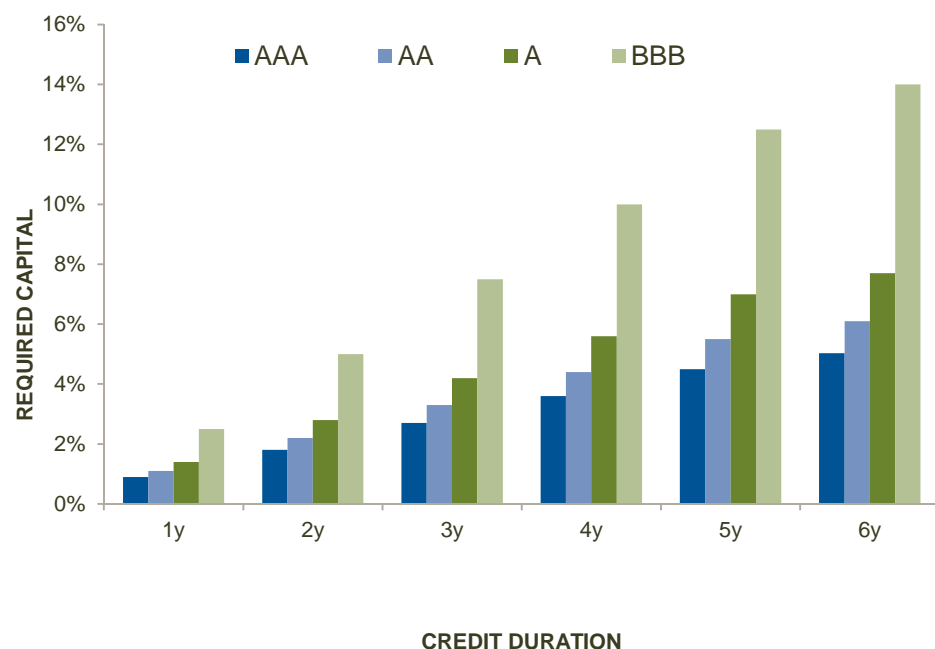


\* The typical Dutch pension credit portfolio is proxied with a 70%/30% allocation to Barclays Global Aggregate and Barclays Global High Yield benchmark indices

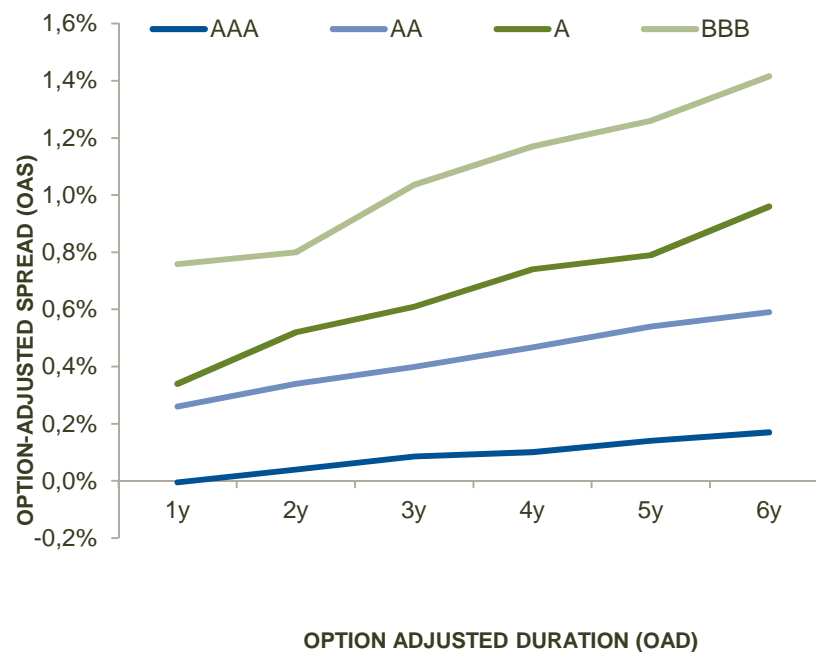
# The impact of rating and duration on required capital and portfolio yield

- Seeking only for minimization of the required capital would lead to holding low duration and high quality rated corporate bonds only
- Seeking only for yield and return maximalisation would lead to holding high duration and low quality rated corporate bonds only (steep curves & higher spreads)

REQUIRED CAPITAL AS A FUNCTION OF RATING AND DURATION

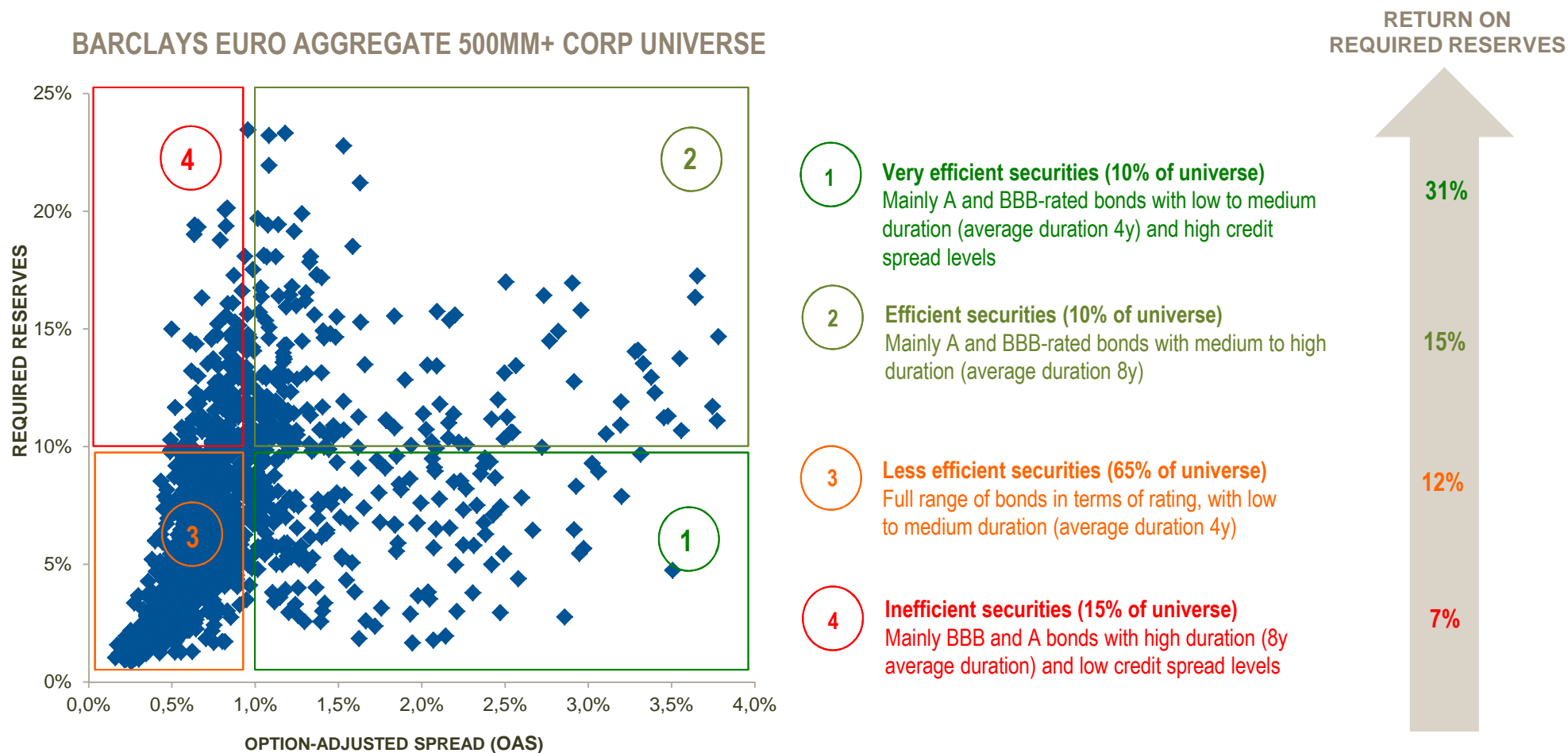


CREDIT CURVES





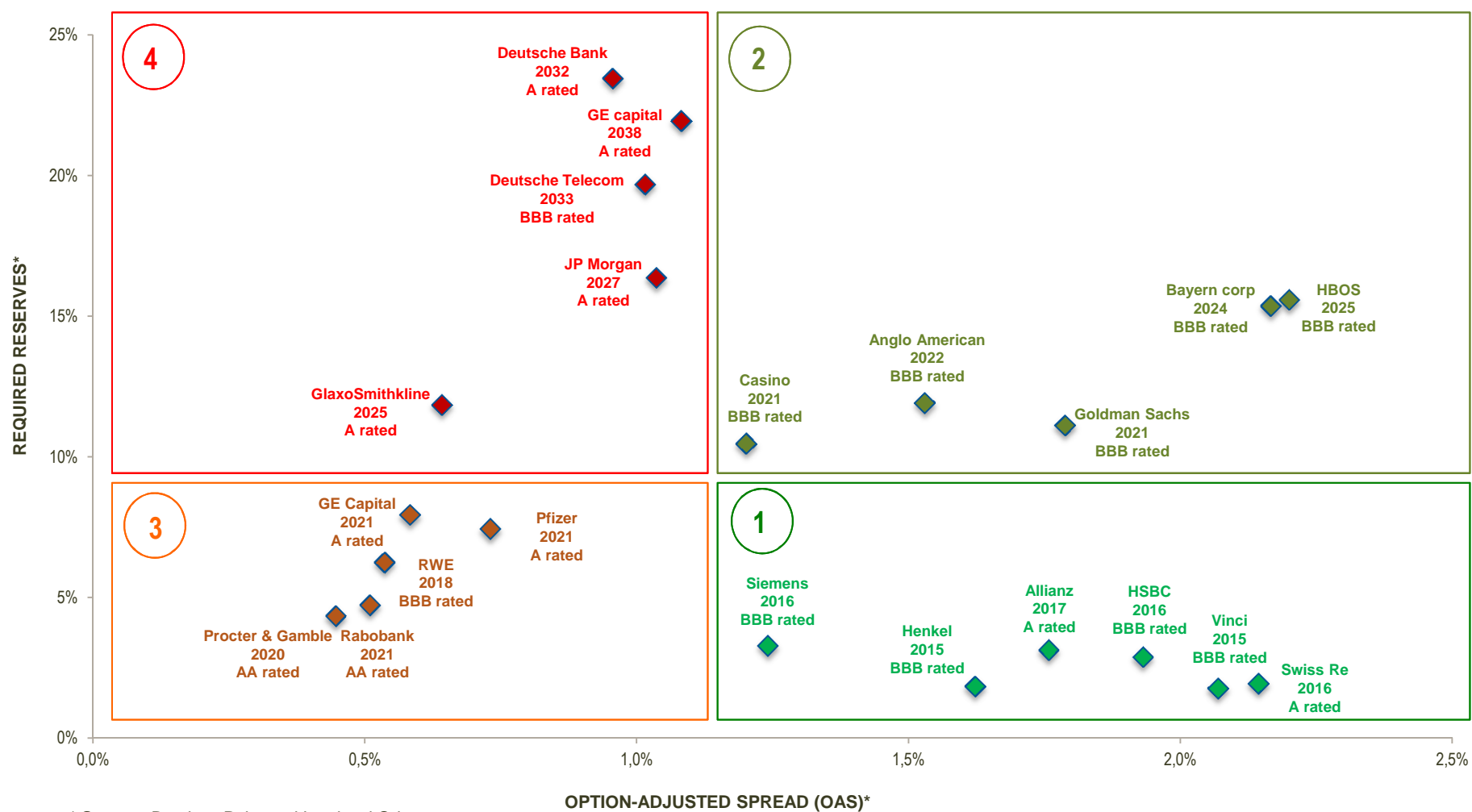
# Seeking for high return on required reserves



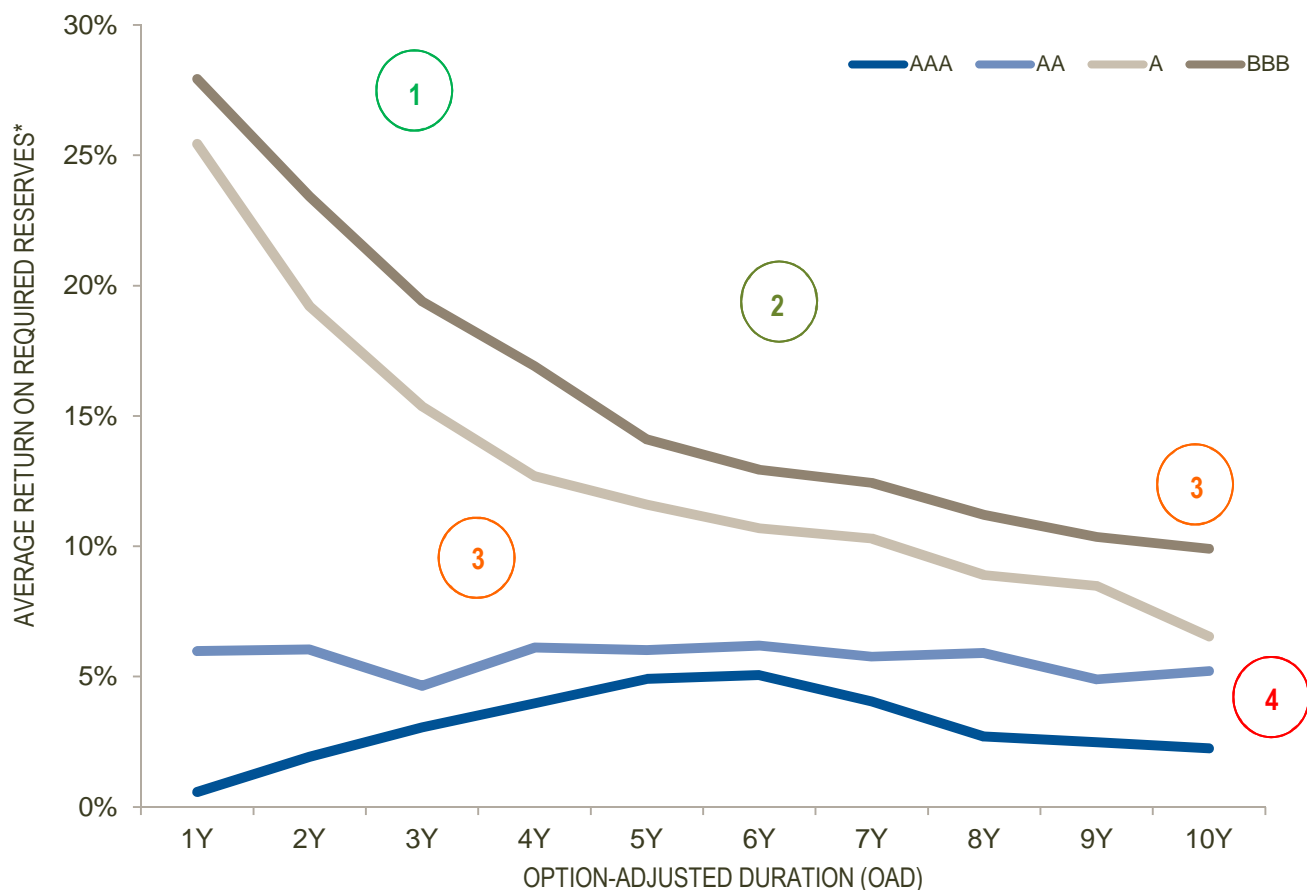
\* **Source:** Barclays Point and Lombard Odier

\*\* The return on required capital is defined as the ratio between the credit spread (OAS) and the credit capital charge (\$5)

# Required reserves efficiency and typical bond issuers



## Average return on required reserves within the market cap universe



Example: for BBB bonds increasing the duration will boost both yield and required reserves. Since the impact on required reserves is bigger than the impact on yield the average return on required reserves decreases. That is why the BBB curve as displayed here is downward sloping

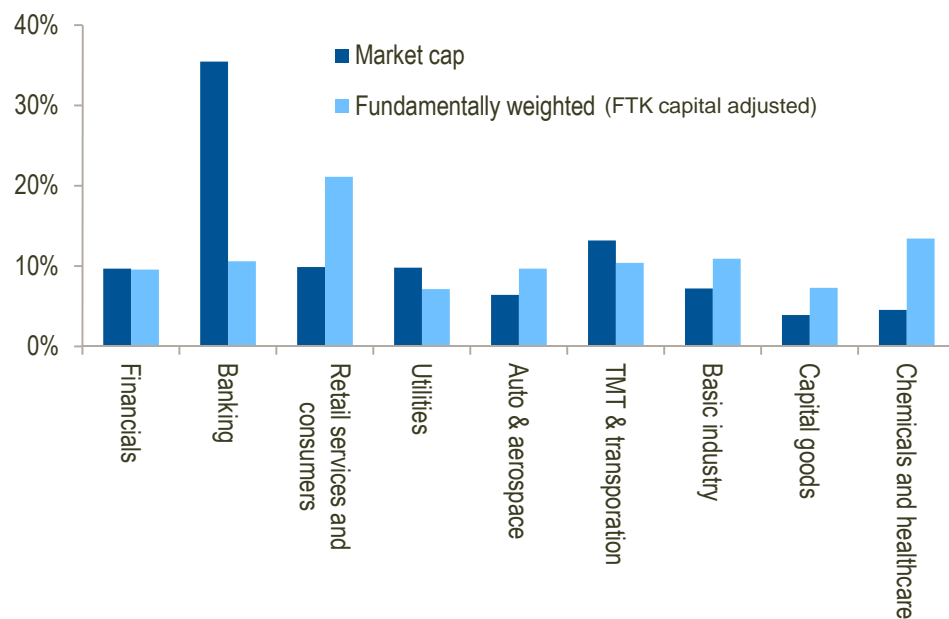
\* The return on required reserves is defined as the ratio between the credit spread (OAS) and the credit capital charge (S5)

Source Lombard Odier and Barclays Point – This analysis is based on the Barclays Global Aggregate 500MM market cap benchmark

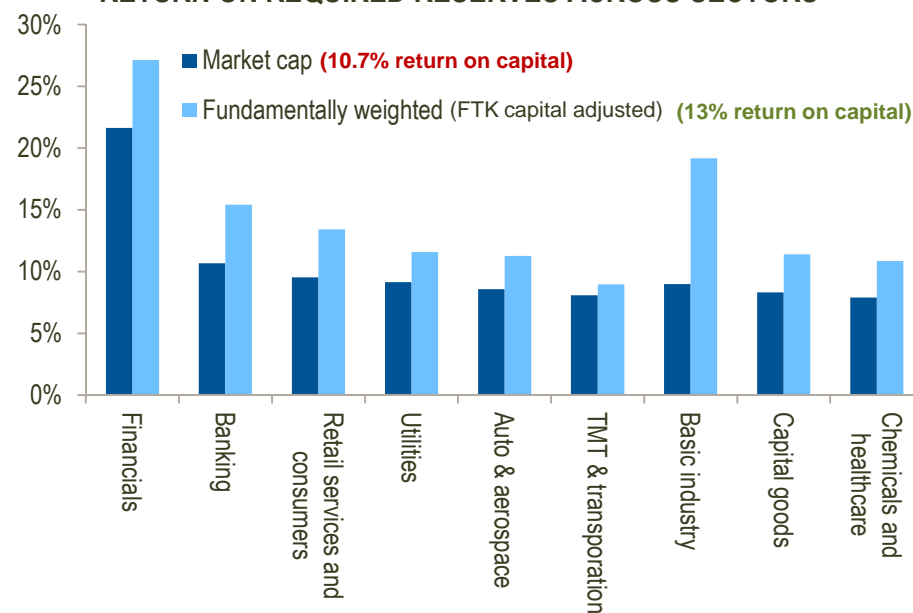
# Higher return on required reserves at sector and portfolio levels

- Adding the required reserves adjustment increases the return on required reserves on both sector and total portfolio level

**CAPITAL ALLOCATION ACROSS SECTORS**



**RETURN ON REQUIRED RESERVES ACROSS SECTORS**



\* **Source:** Lombard Odier for illustration purposes only. Per end of November 2014

# Performance and risk characteristics corporate bonds

## As per ultimate 2014 based on 5 year analysis (Jan 2010 – Dec 2014)

	SUMMARY STATISTICS*	MARKET CAP	FUNDAMENTALLY WEIGHTED	FUNDAMENTALLY WEIGHTED + REQUIRED RESERVES ADJUSTMENT
TRADITIONAL FRAMEWORK	Duration	4.5y	4.4y	4.1y
	Yield to maturity	1.1%	1.1%	1.0%
	Asset swap spread	70bp	68bp	79bp
	Average return	5.7%	5.4%	5.9%
	Volatility	3.9%	3.2%	3.8%
	Sharpe ratio	1.46x	1.70x	1.55x
BALANCE SHEET FRAMEWORK	Solvency risk*	2.0%	1.4%	1.8%
	Average return / solvency risk ratio	2.9x	3.9x	3.3x
	Required reserves*	6.5%	6.4%	6.1%
	Average return on required reserves*	10.7%	10.7%	13%

### ▣ Moving from market cap to fundamentally weighted

- Increases the sharpe ratio
- increases the average return / solvency risk ratio

### ▣ Moving from market cap to fundamentally weighted + required reserves adjustment

- Increases the sharpe ratio
- increases the average return / solvency risk ratio
- increases the average return on required reserves
- Reduces the required reserves (reduced portfolio duration)

\* **Source** Lombard Odier – For illustration purposes only - Please see Appendix for more details related to solvency risk calculations. The required capital corresponds to the new required buffers (S5) under FTK. The return on required capital is defined as the ratio between the credit spread (OAS) and the credit capital charge (S5)

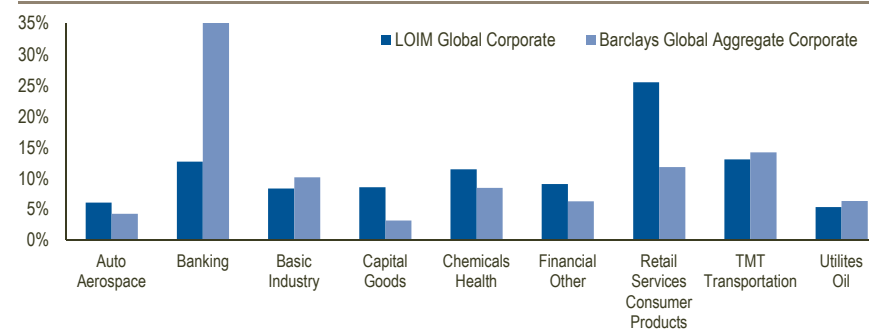
# Lombard Odier Global Corporate fundamentally weighted approach

Bloomberg code: LOFGUIGH <Index> as per 31 March 2015

## OVERVIEW

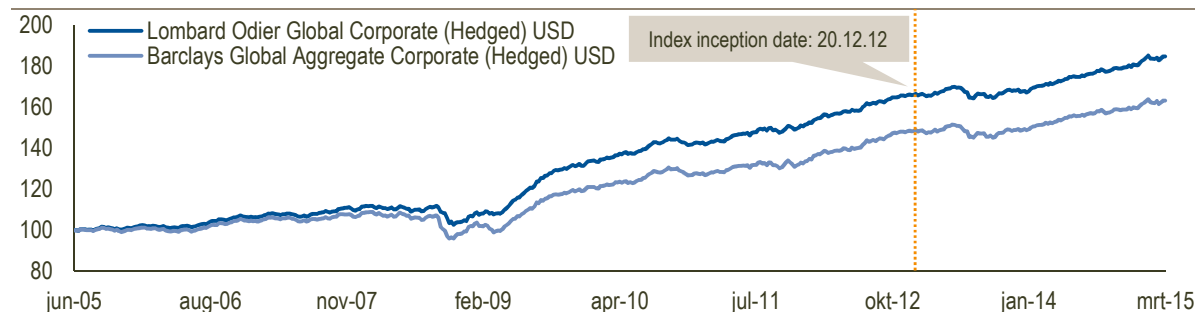
- The strategy is constructed based on our proprietary fundamentally weighted methodology. It focuses on corporation's creditworthiness instead of the market capitalisation of its debt.
- Diversification is achieved at region, sector and issuer level based on a broad set of fundamental factors. Fundamental allocation is adjusted based on liquidity and yield factors.
- A long-only strategy with exposure to the investment grade universe. The systematic, rule-based approach aims to achieve higher sharpe ratio relative to widely used market capitalisation index.

## STRATEGY OUTLINE



For illustrative purposes only. Allocations are subject to change.

## STRATEGY PERFORMANCE



31 March 2015 Perf. statistics	ANNUALISED (Since 03 June 2005)	
	Lombard Odier index	Market cap index <sup>2</sup>
Return	6.46%	5.13%
Volatility	3.41%	4.07%
Sharpe ratio	1.33	0.79
Max. Drawdown	-8.32%	-11.91%
Excess return	1.33%	
Tracking error	1.38%	

	Index inception date: 20.12.12									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 YTD
Lombard Odier index	4.32%	3.82%	-3.03%	22.80%	8.44%	6.33%	9.91%	0.40%	7.86%	2.43%
Market cap index <sup>2</sup>	3.54%	2.66%	-4.89%	16.79%	7.18%	4.62%	11.52%	-0.17%	7.24%	2.39%
Excess return	0.78%	1.16%	1.86%	6.01%	1.26%	1.71%	-1.62%	0.56%	0.62%	0.04%

**Note:** Prior to index inception we have simulated the data back to Jun-05 using the current rules-based methodology. There is no guarantee the methodology in place would have been in place throughout the period shown prior to the inception of the index in December 2012. As a result the performance could differ from that shown above. Past performance is not a guarantee of future results.

<sup>1</sup> Performance gross of fees in USD. Return compounded weekly.

<sup>2</sup> Barclays Global Aggregate Corporate (Hedged) USD.

**Source:** Bloomberg/Lombard Odier.

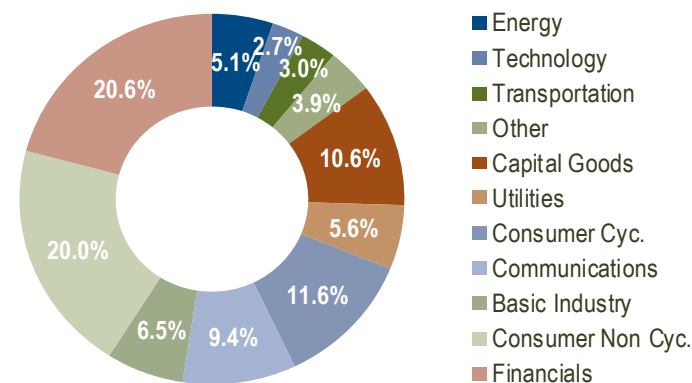
# Portfolio characteristics as at 30 April 2015 – highly diversified

(30.04.2015)

CHARACTERISTICS	PORTFOLIO	FFI BENCHMARK*
Positions	725	4926
Issuers	499	912
Coupon (%)	4.23	4.06
Yield to Maturity (%)	2.63	2.21
Spread (bps)	150	122
Duration (Yr)	6.37	5.88
Average rating	A-/BBB+	A-/BBB+

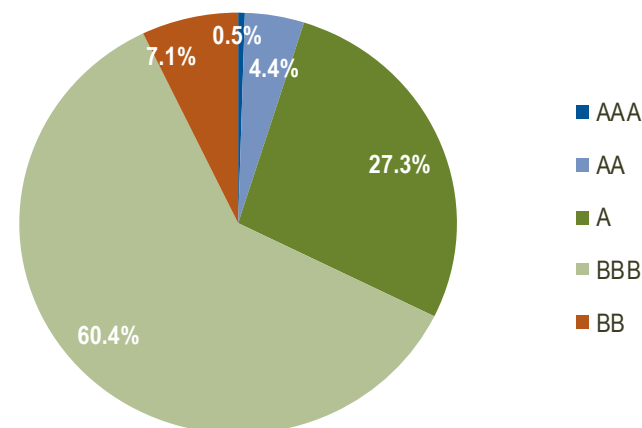
Source: LOIM as of (30.04.2015)

## INDUSTRY BREAKDOWN



TOP 10 ISSUERS IN THE FUND	S&P RATING	MV (%)
BOUYGUES	BBB	1.19
ROYAL BANK OF SCOTLAND	BB	0.52
FRANCE TELECOM	BBB-	0.51
ASML HOLDING NV	NR	0.50
TOTAL SA	A	0.50
UNION ELECTRIC FENOSA SA	NR	0.48
FIRSTGROUP PLC	BBB-	0.48
PROSEGUR CIA DE SEGURIDAD S	BBB	0.45
PEPSICO INC	A-	0.42
WILLOW NO.2 FOR ZURICH I	A	0.40

## RATING BREAKDOWN



\* Fundamental Benchmark

Source: LOIM/Bardays Point Allocations and holdings are subject to change as of (30.04.2015)



# Appendix

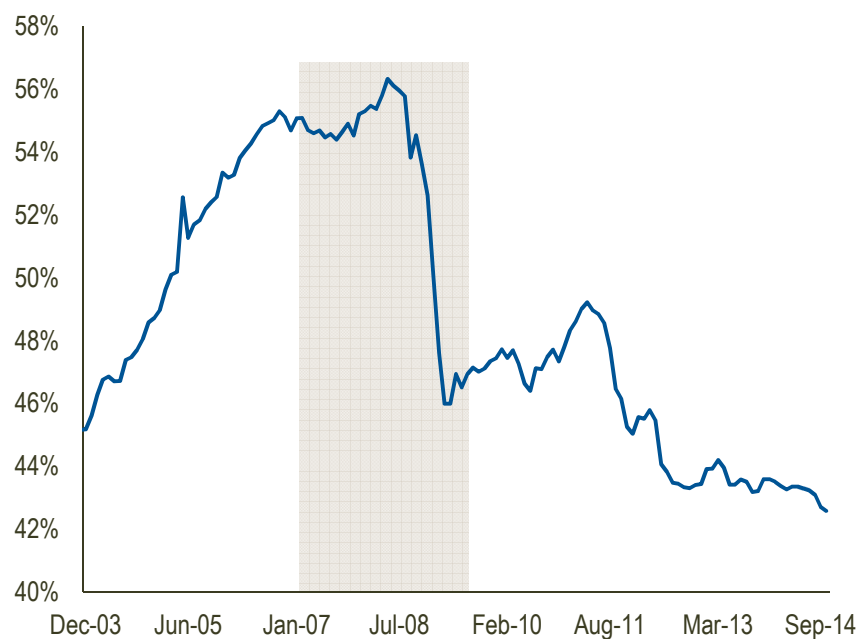
Corporate bonds market cap exposure and bottom up issuer allocation - more detail



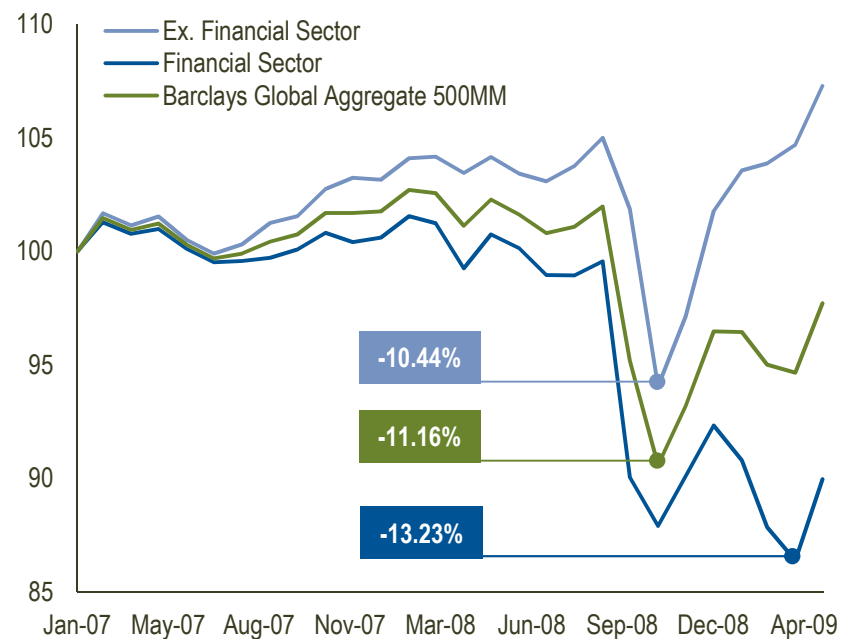
# Global corporate performance

- Market cap indices were over-exposed to the financial sector up until the 2008 crisis and suffered the largest drawdowns
- Nevertheless, as the crisis came to an end and the sector became healthier, market cap indices were under-exposed

## FINANCIAL SECTOR SHARE IN BARCLAYS GLOBAL CORPORATE INDEX



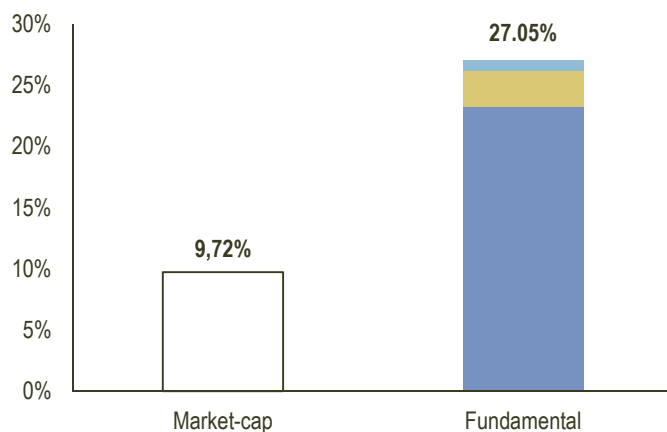
## CUMULATIVE PERFORMANCE BY SECTOR



**Sources:** Lombard Odier, Barclays Point. Past performance is not a guarantee of future results.

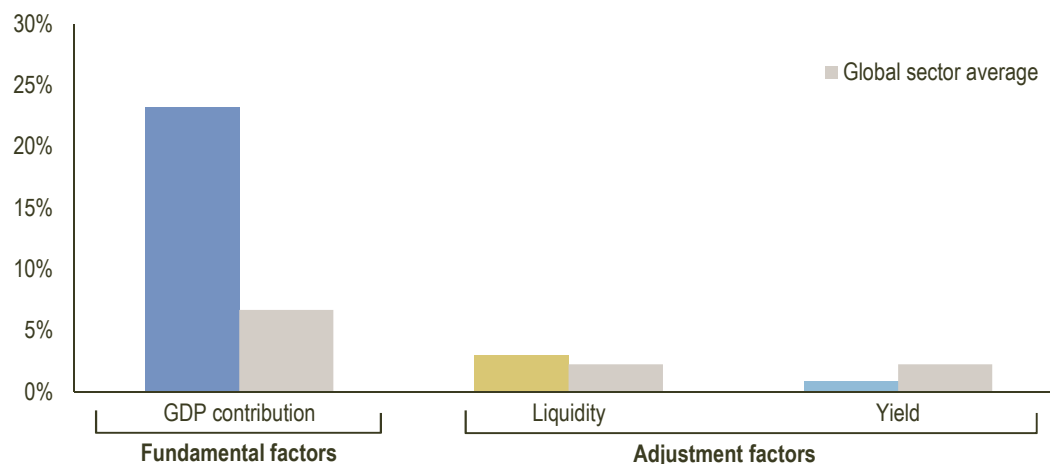
## Top down example – the retail-service sector

### MARKET CAP VS FUNDAMENTAL WEIGHT



**Our fundamentally strategy has an overweight relative to market cap for the retail-service sector due to its high contribution to the GDP**

### FUNDAMENTAL WEIGHT BREAKDOWN VS ALL SECTOR AVERAGE



### FUNDAMENTAL FACTORS ALLOCATION

- ↑ **GDP contribution:** the retail-service sector is the largest contributor to the GDP

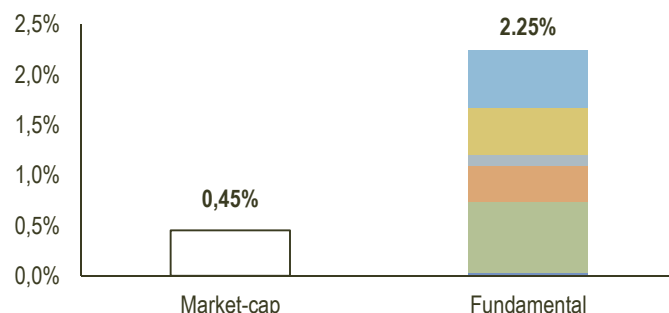
### ADJUSTMENT FACTORS ALLOCATION

- ↑ **Liquidity:** the sector's liquidity is relatively better than the other sectors
- ↓ **Yield:** the average yield of the sector makes it relatively expensive compared to other sectors

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or securities. It should not be assumed that the recommendations made in the future will be profitable or will equal the performance of the securities discussed in this document. Per end of November 2014.

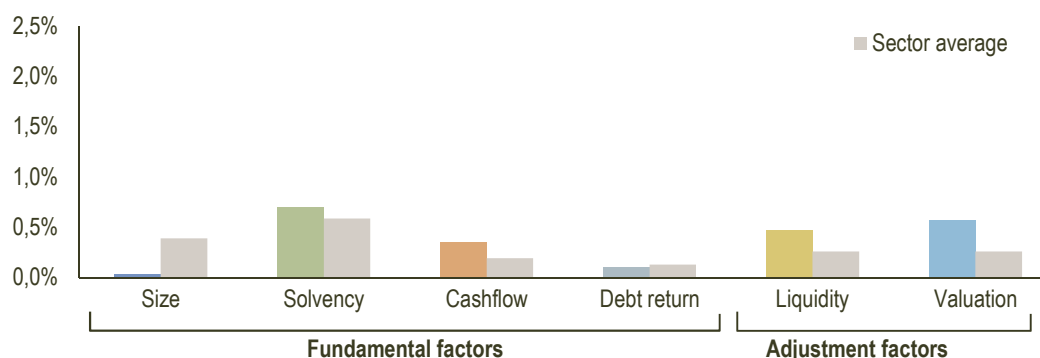
## Bottom up example – Experian

### MARKET CAP VS FUNDAMENTAL WEIGHT



**Our fundamental strategy overweights Experian due to its good solvency and attractive yield**

### FUNDAMENTAL WEIGHT BREAKDOWN VS RETAIL SECTOR AVERAGE



### FUNDAMENTAL FACTORS ALLOCATION

- ↓ **Size:** Experian is a small company compared to peers
- ↑ **Indebtedness:** with low leverage and high interest coverage, Experian is significantly above the sector average
- ↑ **Cashflow:** its cash level compared to its level of debt is one of the best in the sector
- ↓ **Capitalisation:** the issuer's capitalisation is in line with the sector average

### ADJUSTMENT FACTORS ALLOCATION

- ↑ **Liquidity:** the issuer has good liquidity
- ↑ **Yield:** with a yield in excess of 100 bps (5yr maturity), this issuer is relatively attractive.

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or securities. It should not be assumed that the recommendations made in the future will be profitable or will equal the performance of the securities discussed in this document. Per end of November 2014



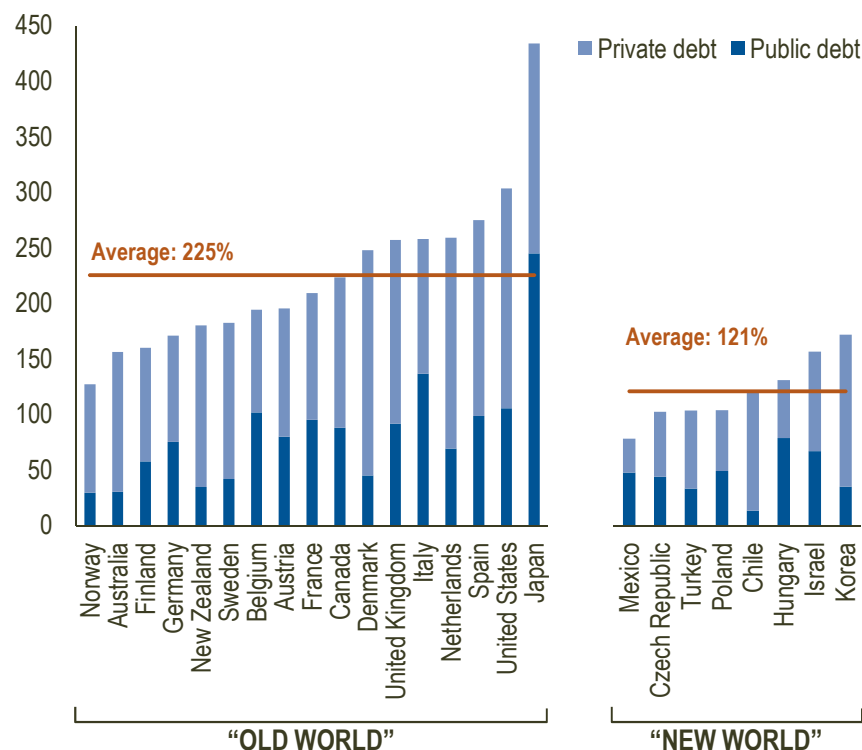
# Appendix

## Smart beta sovereigns

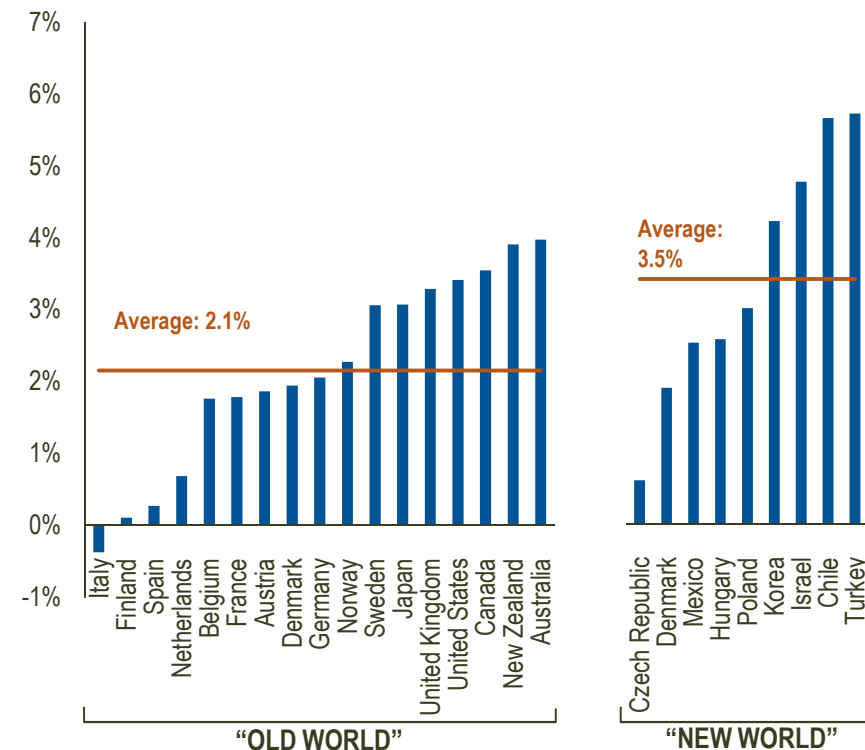
# The global picture: high debt and limited growth

- Many OECD countries are now facing a significant debt problem, with the exception of EM and Nordic countries
- The “old world” countries (except the Nordics) are now struggling to generate enough economic growth to repay their debts

**TOTAL DEBT TO GDP PER COUNTRY (2014)**



**NOMINAL GDP GROWTH PER COUNTRY (2013)**



Sources: OECD / Lombard Odier.

# The fundamental benchmark in sovereign bonds

## FUNDAMENTAL FACTORS ALLOCATION



30%



### SOLVENCY

Investing in healthier issuers

- ▣ Govt.debt / GDP
- ▣ Private debt / GDP
- ▣ Net external debt / GDP
- ▣ Budget deficit / GDP
- ▣ Current account / GDP

Source: IMF

18%



### SIZE

Favouring larger countries

- ▣ GDP (PPP adjusted)

Source: IMF

12%



### SOCIAL IMBALANCES

Looking for social stability

- ▣ Old age dependency ratio
- ▣ Misery index
- ▣ Political stability

Sources: United Nations, IMF, World Bank

## ADJUSTMENT FACTORS ALLOCATION



20%



### LIQUIDITY

Favouring the most liquid countries

- ▣ Average bid offer spread

20%



### YIELD

Favouring countries with attractive yields

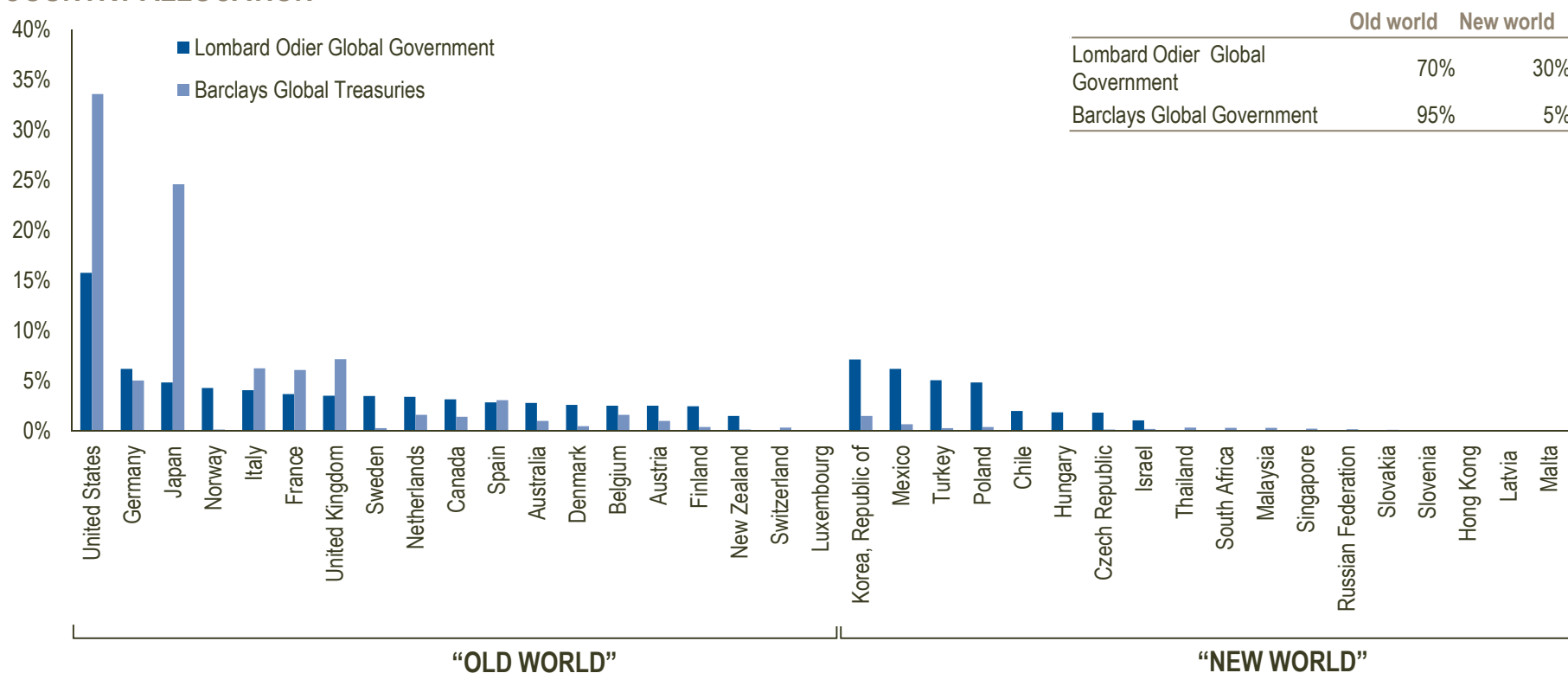
- ▣ Yield to worst

For illustrative purposes only. Allocations are subject to change.

# The global government bond allocation

- The fundamental approach leads to a more diversified exposure to government bonds within the OECD universe

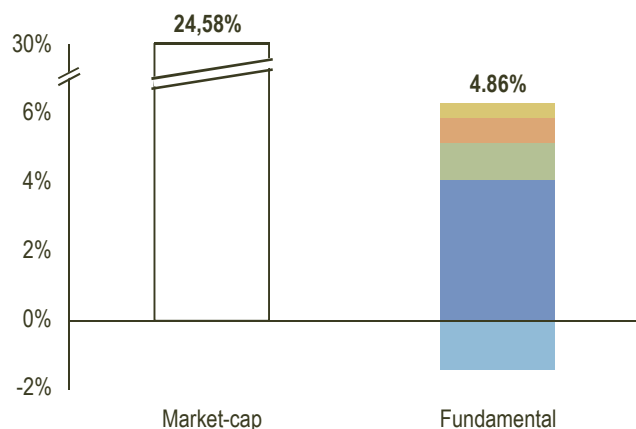
## COUNTRY ALLOCATION



Source: Barclays, Lombard Odier, November 2014, OECD countries. Holdings and/or allocations are subject to change.

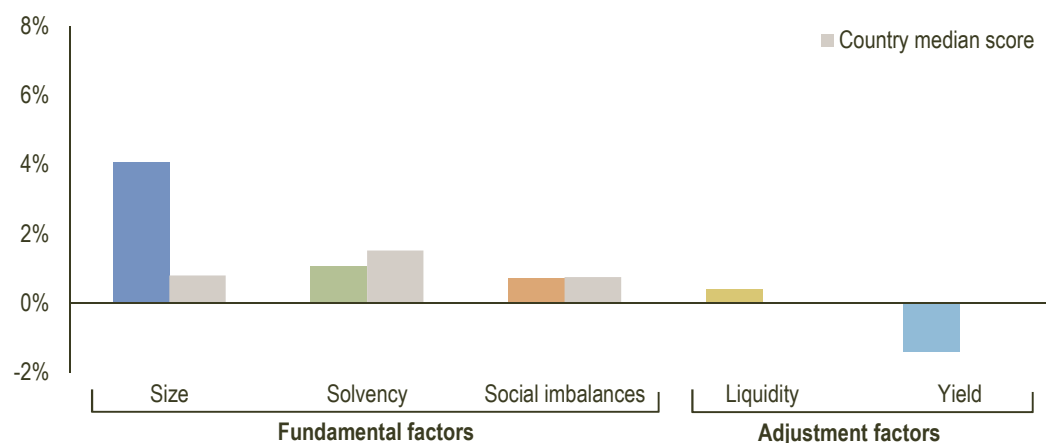
# Sovereign allocation: Japan

## MARKET CAP VS FUNDAMENTAL WEIGHT



**Despite the size of Japan's economy, our fundamental strategy reduces its allocation to the country relative to market cap due its low credit quality and unattractive valuation**

## FUNDAMENTAL WEIGHT BREAKDOWN VS COUNTRY MEDIAN SCORE



### FUNDAMENTAL FACTORS ALLOCATION

- ⬆️ **Size:** in terms of GDP, Japan is the third-largest economy in the world.
- ⬇️ **Solvency:** its public debt represents more than 200% of its annual GDP
- ⚖️ **Social imbalances:** its high old-age dependency ratio is one of the highest in the universe

### ADJUSTMENT FACTORS ALLOCATION

- ⬆️ **Liquidity:** Japanese bonds have a decent liquidity
- ⬇️ **Valuation:** Japanese bonds are the most expensive bonds in the universe

Source: OECD, IMF, October 2014.

Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or securities. It should not be assumed that the recommendations made in the future will be profitable or will equal the performance of the securities discussed in this document. Please see important information on case studies at the end of the document

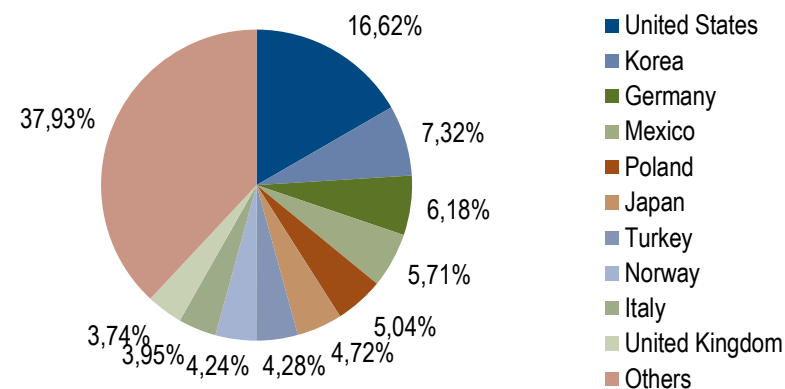


# Portfolio characteristics as at 30 April 2015

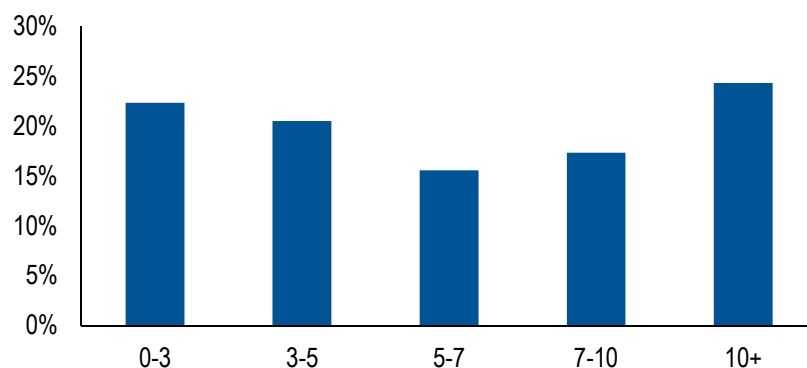
## PORTFOLIO STATISTICS

	FUND	BARCLAYS
Modified Duration (yrs)	6.79	7.30
Yield to Maturity (%)	1.74%	0.97%
Average Maturity (yrs)	8.71	9.11
Average rating (S&P)	AA	AA

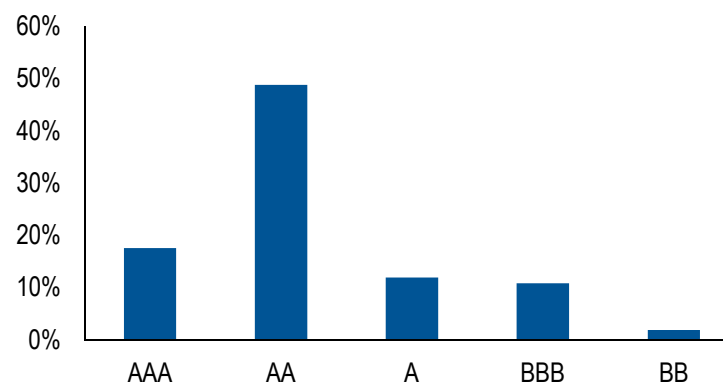
## COUNTRY BREAKDOWN



## MATURITY BREAKDOWN



## RATING BREAKDOWN



Source: LOIM

For illustrative purposes only. Holdings and/or allocations are subject to change.



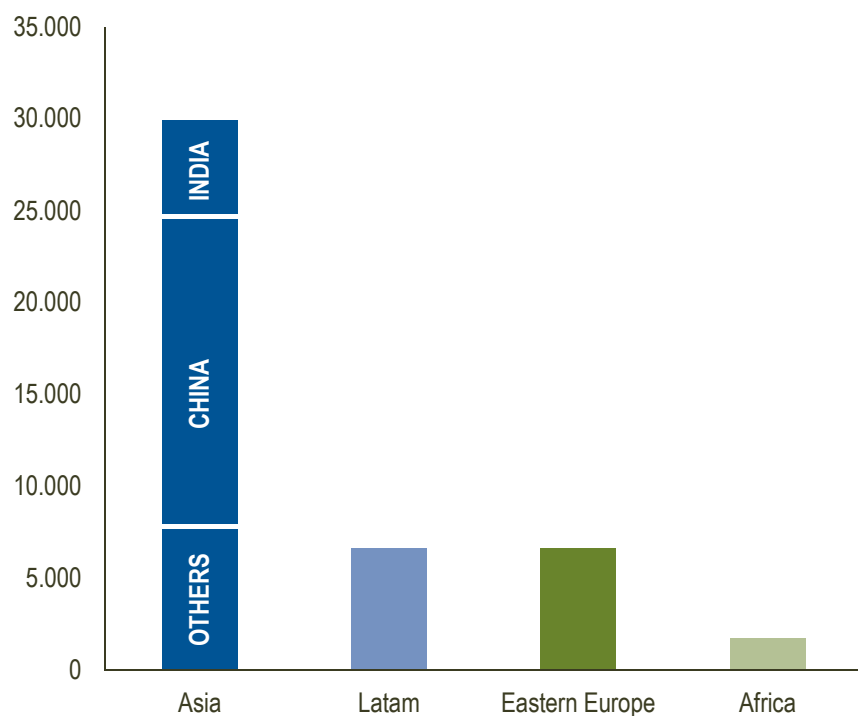
# Appendix

## Smart beta emerging market debt

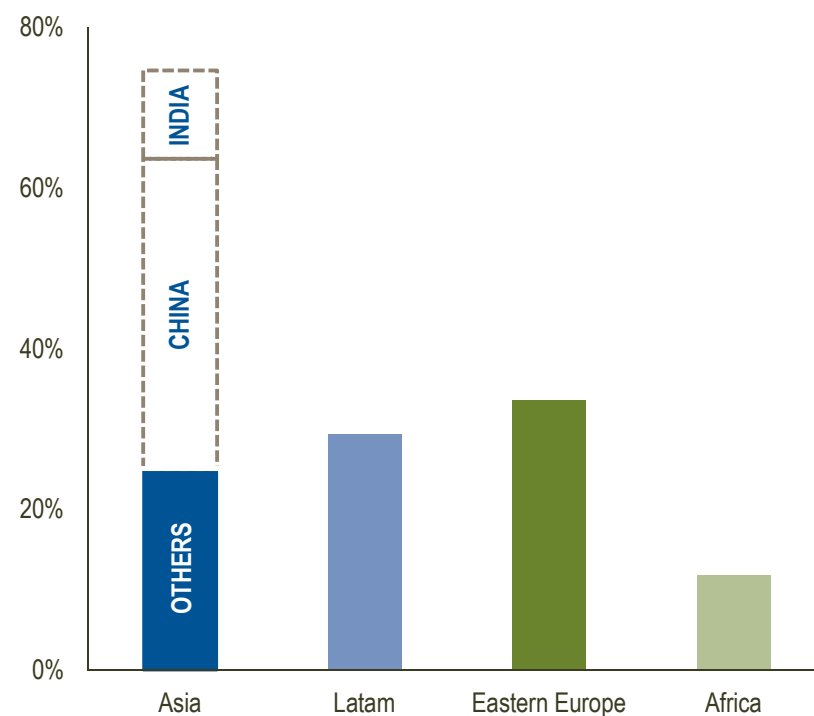
## Market cap benchmarks ignore the two largest EM countries

- China and India account for more than 50% of emerging market GDP
- Nevertheless, they are not represented in market-cap indices due to stringent investability criteria

GDP (PPP) BY REGION (2014)



MARKET-CAP WEIGHTING BY REGION

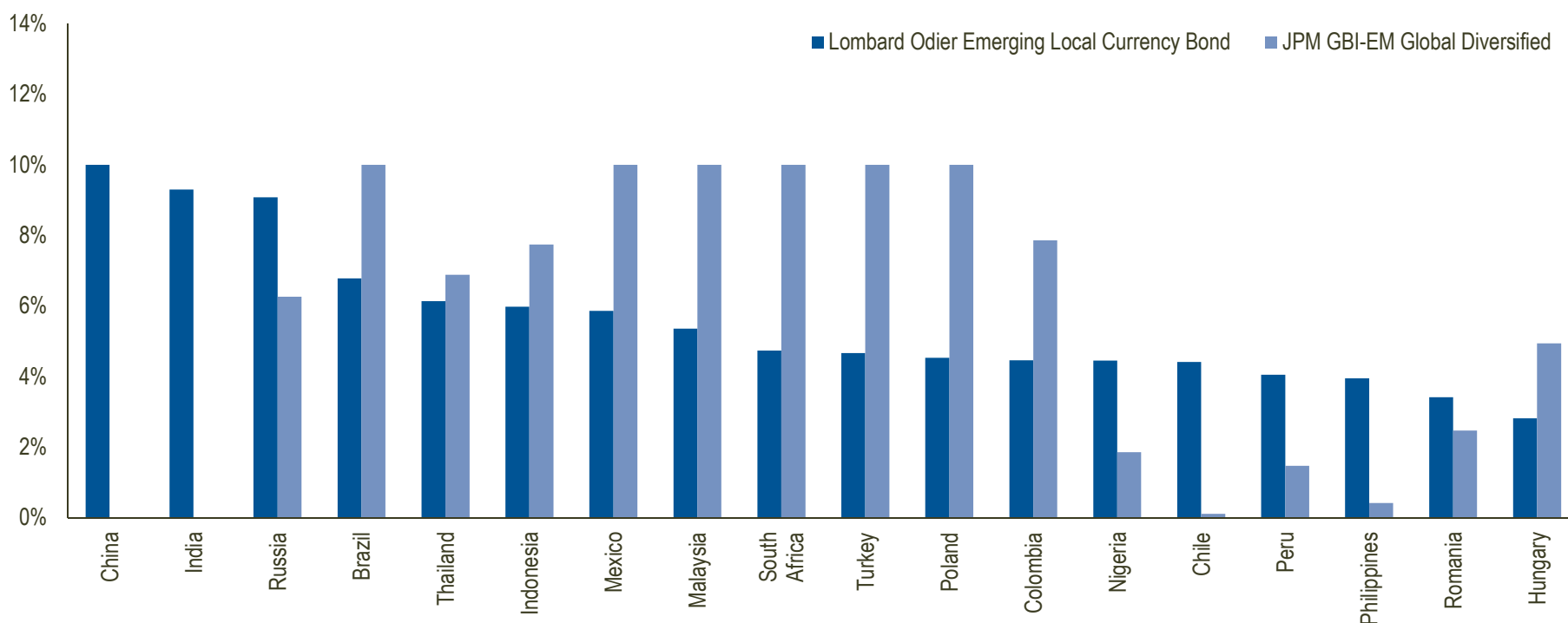


Sources: Lombard Odier, IMF. November 2014.

## The emerging government bond allocation

- Our fundamentally weighted approach provides greater diversification compared to the JPM market cap benchmark
- India and China are our largest exposures

### COUNTRY ALLOCATION



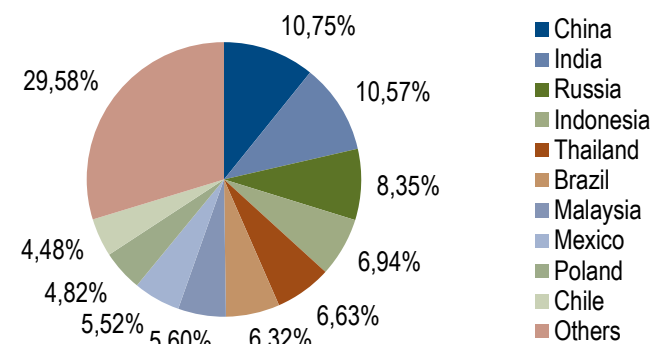
Source: Lombard Odier, November 2014. Holdings and/or allocations are subject to change.

# Portfolio characteristics as at 30 April 2015

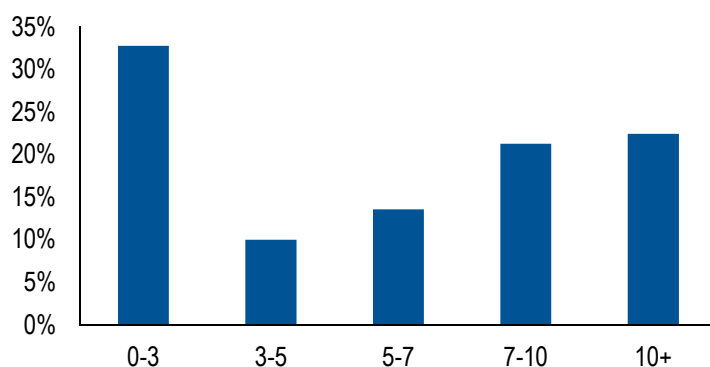
## PORTFOLIO STATISTICS

	FUND	JPM GBI-EM
Modified Duration (yrs)	4.96	4.88
Yield to Maturity (%)	6.22%	6.37%
Average Maturity (yrs)	7.09	7.16
Average rating (S&P)	A-	BBB+

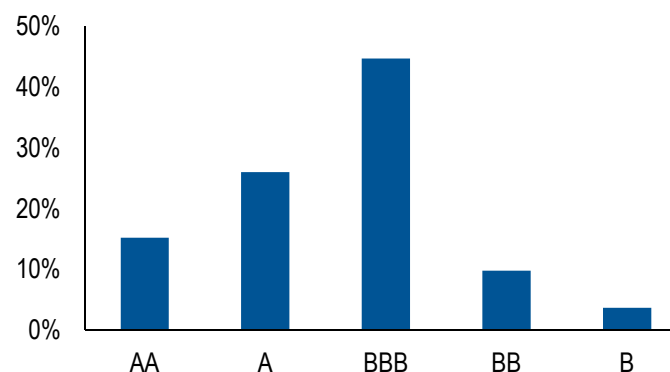
## COUNTRY BREAKDOWN



## MATURITY BREAKDOWN



## RATING BREAKDOWN



Source: LOIM

For illustrative purposes only. Holdings and/or allocations are subject to change.



# Appendix

Smart beta BBB-BB

# The strategy aims at capturing the best of Euro Investment Grade and Euro High Yield

## EURO INVESTMENT GRADE



## EURO BBB-BB



## EURO HIGH YIELD



CHARACTERISTICS	INVESTMENT GRADE
Yield to Worst (%)	0.918
Duration (OAD)	5.05
Rating	A2/A3
Market Value (EUR)	1'391 bn

CHARACTERISTICS	BBB-BB
Yield to Worst (%)	1.563
Duration (OAD)	4.70
Rating	BAA2/BAA3
Market Value (EUR)	782 bn

CHARACTERISTICS	HIGH YIELD
Yield to Worst (%)	3.81
Duration (OAD)	3.56
Rating	BA2/BA3
Market Value (EUR)	288 bn



As of June 30<sup>th</sup>, 2014. European High Yield (Euro) Barclays, Euro-Aggregate 500 MM Corporates, Barclays Euro Aggregate BBB+BB, POINT.

## Global 5Bs – an attractive risk and return profile

The Global BBB-BB segment vs. Global Investment Grade & Global High Yield indices on a currency hedged basis displays an attractive risk/return profile.

JUNE 2005- JUNE 2014	INVESTMENT GRADE	BBB-BB	HIGH YIELD
Return ann.	5.08%	6.86%	7.46%
Volatility	7.74%	6.42%	9.01%
Risk / Return ratio	0.66	1.08	0.83
VaR Monthly 99%	-7.97%	-4.71%	-6.69%
Max Drawdown	-18.91%	-15.63%	-24.36%

**Source:** Lombard Odier.

These performance results are backtested based on an analysis of past market data with the benefit of hindsight, do not reflect the performance of any LOIM product and are being shown for informational purposes only.



# Portfolio characteristics

(30.04.2015)

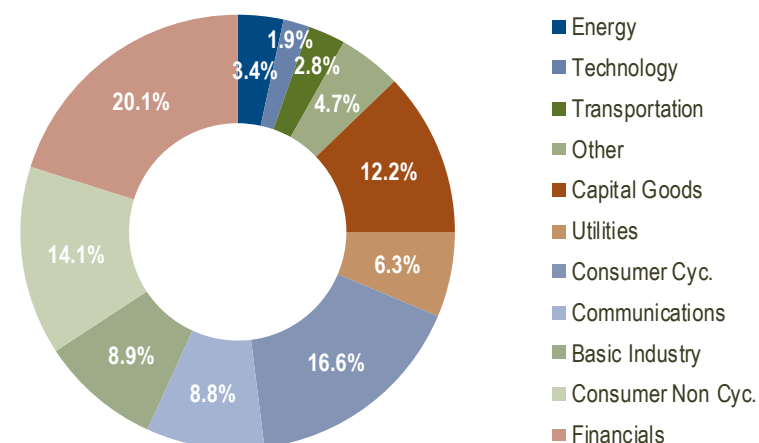
CHARACTERISTICS	PORTFOLIO	FFI BENCHMARK
Positions	854	-
Issuers	558	926
Coupon (%)	4.68	5.03
Yield to Maturity (%)	3.28	3.04
Spread (bps)	220	200
Duration (Yr)	5.36	4.82
Average rating	BBB/BBB-	BBB/BBB-

Source: LOIM as of (30.04.2015)

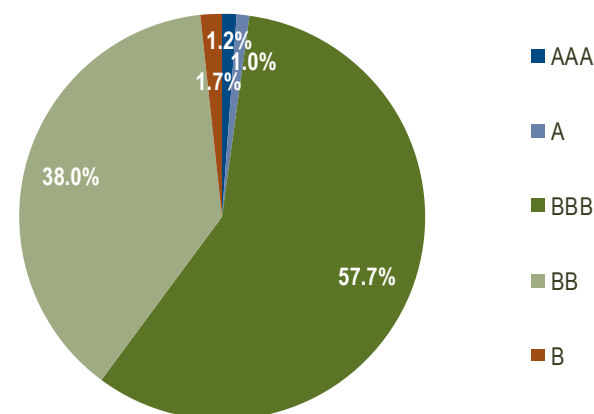
TOP 10 ISSUERS IN THE FUND	S&P RATING	MV (%)
BOUYGUES	BBB	0.74
SIEMENS	BBB+	0.72
TRAVIS PERKINS PLC	BB+	0.70
UPM-KYMMENE CORP	BB+	0.54
ASML HOLDING NV	NR	0.54
UNION ELECTRICA FENOSA SA	NR	0.44
BAYER CORP	BBB	0.41
TEREOS FINANCE GROUP I	BB+	0.39
PHOENIX PIB DUTCH HOLDING B	BB	0.39
WILLOW NO.2 FOR ZURICH I	A	0.39

Source: Lombard Odier, January 2015  
So For illustrative purposes only. Holdings and/or allocations are subject to change.

## INDUSTRY BREAKDOWN



## RATING BREAKDOWN





# Appendix

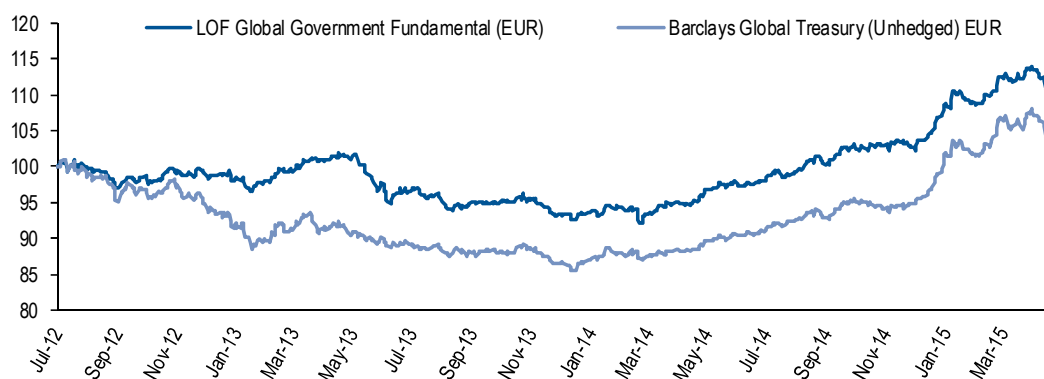
## Portfolio performance

# Global Government Fundamental (EUR)

## LOF GLOBAL GOVERNMENT FUNDAMENTAL (EUR)\*\* - CUMULATED PERFORMANCES

Fund inception date: 16-7-2012

Data as of: 30-4-2015



CLASS IA EUR	Annualised			
	ITD		1Y	
Perf Statistics	Fund*	Bench***	Fund*	Bench***
Return	3,36%	1,16%	15,47%	16,75%
Volatility	6,1%	7,5%	6,9%	8,4%
Sharpe Ratio	0,5	0,1	2,2	2,0
Alpha Statistics				
Excess Return	2,20%		-1,28%	
Tracking Error	3,4%		2,6%	
Information Ratio	0,6		2,3	

Source: LOIM

## LOF GLOBAL GOVERNMENT FUNDAMENTAL (EUR)\*\* - MONTHLY PERFORMANCES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Fund*	Bench***	Excess Return
2012								-1,05%	-0,53%	-0,35%	0,78%	0,12%	-0,72%	-6,45%	5,44%
2013	-2,08%	2,41%	1,70%	0,48%	-2,23%	-2,76%	-0,54%	-0,98%	0,39%	0,86%	-1,24%	-1,77%	-5,65%	-8,44%	2,13%
2014	2,10%	-0,75%	0,72%	0,46%	2,82%	0,08%	1,34%	2,19%	1,18%	1,06%	0,53%	1,03%	13,47%	12,97%	-0,16%
2015	5,73%	-0,49%	2,62%	-2,69%									5,08%	6,74%	-1,89%

Past performance is not a guarantee of future results

Source: LOIM

\* Dividend accumulated institutional client share class, gross of TER (management fee and other costs) under the assumption that this was 0,53% and gross of T-costs under the assumption that this was 0,125% in EUR

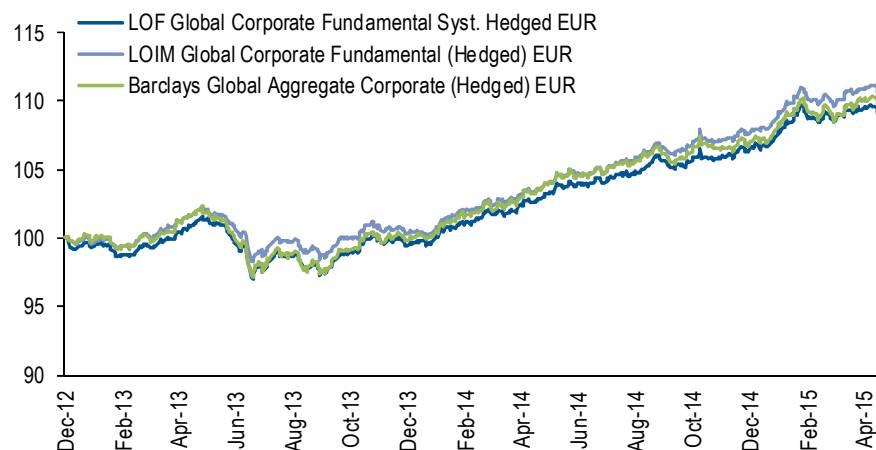
\*\* Fund performance

\*\*\* Barclays Global Treasury (Unhedged) EUR

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

# Global Corporate Fundamental (Hedged) USD

**LO FUNDS - GLOBAL CORPORATE FUNDAMENTAL, SYST. HDG, (EUR)\*\*\* - CUMULATED PERFORMANCES** Fund inception date: 7-12-2012 Data as of: 30-4-2015



Perf. Stat.	Annualised					
	ITD (Since Fund Inception)			1Y		
	Fund	FFI Bench*	MC Bench**	Fund	FFI Bench*	MC Bench**
Return	3,60%	4,08%	3,62%	4,91%	5,65%	4,84%
Volatility	3,5%	3,3%	3,6%	3,10%	2,89%	3,17%
Sharpe Ratio	1,0	1,2	1,0	1,5	1,9	1,5

**LO FUNDS - GLOBAL CORPORATE FUNDAMENTAL, SYST. HDG, (EUR)\*\*\* - MONTHLY PERFORMANCES**

CLASS IA EUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Fund	FFI Bench*	MC Bench**
2013	-0,83%	0,80%	0,58%	1,56%	-1,01%	-2,44%	1,01%	-0,52%	0,82%	1,41%	-0,09%	-0,30%	0,95%	0,23%	-0,08%
2014	1,57%	0,91%	0,18%	1,08%	1,10%	0,34%	0,29%	1,47%	-0,62%	0,59%	0,96%	0,44%	8,56%	8,18%	7,45%
2015	2,54%	-0,52%	0,30%	-0,67%									1,30%	1,59%	1,51%

Past performance is not a guarantee of future results

Source: LOIM

\* Dividend accumulated institutional client share class, gross of TER (management fee and other costs) under the assumption that this was 0.75% and gross of T-costs under the assumption that this was 0.25% in EUR

\* LOIM Global Corporate Fundamental (Hedged) EUR

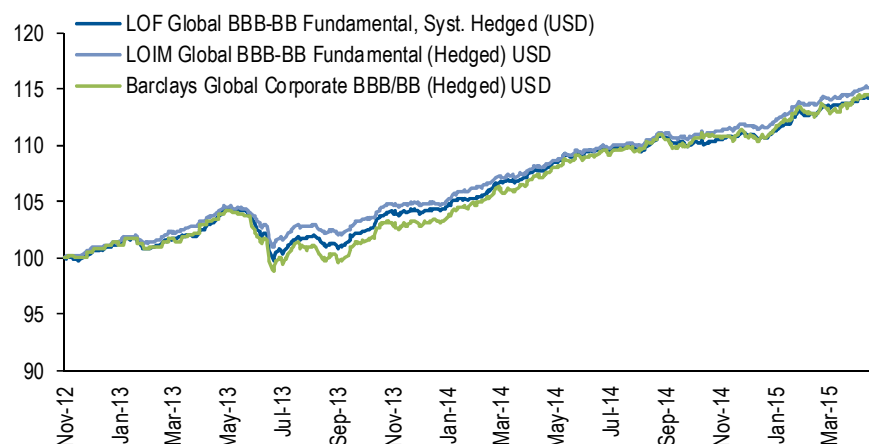
\*\* Barclays Global Aggregate Corporate (Hedged) EUR

\*\*\* Fund performance

# Global BBB-BB Fundamental (Hedged) USD

## LOF GLOBAL BBB-BB FUNDAMENTAL, SYST. HEDGED (USD)\*\*\* - CUMULATED PERFORMANCES

Fund inception date: 5-11-2012 Data as of: 30-4-2015



Perf. Stat.	Annualised					
	ITD (Since Fund Inception)			1Y		
	Fund	FFI Bench*	MC Bench**	Fund	FFI Bench*	MC Bench**
Return	5,26%	5,61%	5,22%	4,92%	5,59%	5,33%
Volatility	3,3%	2,7%	3,6%	2,31%	1,99%	2,87%
Sharpe Ratio	1,5	2,0	1,4	2,0	2,7	1,8

## LOF GLOBAL BBB-BB FUNDAMENTAL, SYST. HEDGED (USD)\*\*\* - MONTHLY PERFORMANCES

CLASS IA USD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Fund	FFI Bench*	MC Bench**
2012												0,92%			
2013	-0,16%	0,78%	0,49%	2,15%	-0,37%	-2,83%	1,30%	-0,37%	0,95%	1,94%	0,27%	0,11%	4,25%	3,38%	1,88%
2014	1,02%	1,36%	0,53%	1,22%	1,08%	0,51%	0,09%	1,08%	-0,82%	0,61%	0,78%	-0,02%	7,61%	6,81%	7,58%
2015	1,88%	0,49%	0,32%	-0,04%									2,58%	2,36%	2,18%

Past performance is not a guarantee of future results

Source: LOIM

\* Dividend accumulated institutional client share class, gross of TER (management fee and other costs) under the assumption that this was 0.85% and gross of T-costs under the assumption that this was 0.25% in USD

\*\* LOIM Global BBB-BB Fundamental (Hedged) USD

\*\*\* Barclays Global Corporate BBB/BB (Hedged) USD

\*\*\* Fund performance



# Appendix

Our team

# Fundamental fixed income team

**SB**

**KEVIN CORRIGAN**  
Head of fundamental fixed income  
26 years experience

**Leslie Sita**  
Product Specialist  
7 years experience

## CREDIT RISK MONITORING

**Kevin Corrigan**  
26 years experience

**Salman Ahmed**  
13 years experience

**Edwin Buikstra**  
20 years experience

**Vikki Lindstrom**  
18 years experience

**Ashton Parker**  
14 years experience

**Denise Yung**  
4 years experience

## BETA PORTFOLIO CONSTRUCTION

### GLOBAL SOVEREIGN

**Jérôme Collet**  
9 years experience

### EMERGING SOVEREIGN

**Sara Razmpa**  
3 years experience

### GLOBAL CORPORATE

**Jérôme Collet**  
9 years experience

### INFLATION-LINKED

**Jérôme Collet**  
9 years experience

### LDI

**Edwin Buikstra**  
20 years experience

As at 31 March 2015.



# Appendix

## Dutch FTK details





## Measuring Solvency risk of credit portfolio

---

- All the Solvency analysis is performed on the basis of a typical Dutch pension liability profile with ~22y duration under DNB MtM discounting
- The liability benchmark is defined as the combination of:
  - The cash portfolio which NAV is matching the present value of liabilities under DNB MtM discounting
  - A swap portfolio (2s,5s,10s,15s,20s,25s,30s,40s, and 50s) which is matching the duration profile of liabilities under DNB MtM discounting
- The historical performance of the liability benchmark is derived using Barclays Bellwether swap indices
- For each credit portfolio:
  - The notional is calibrated to match the market value of the portfolio with the present value of liabilities under DNB MtM discounting
  - A swap overlay is derived to reach a 100% hedging ratio (by buckets) vs. the liability benchmark
  - The Solvency risk is derived as the annualised volatility of the difference between the credit portfolio returns (incorporating the swap overlay returns) with the liability benchmark returns
- All the analysis is performed based on weekly data between December 2010 and November 2014

## Return on FTK capital as a new factor for Dutch pension funds

- Dutch pension funds could build a fundamental credit portfolio while seeking capital efficiency by taking into account the return on capital factor within the portfolio construction
- The return on FTK capital is defined as follows:

Measure of the additional pickup achieved relative to risk-free assets (which FTK capital required is nil)

$$\text{Return on FTK capital} = \frac{\text{Credit spread}}{\text{FTK capital required (S5)}}$$

Required buffers which depend on the duration and rating of the bond

# Disclaimer

This document is issued by Lombard Odier Asset Management (Europe) Limited, a private limited company incorporated in England and Wales with registered number 07099556, having its registered office at Queensberry House, 3 Old Burlington Street, London, United Kingdom, W1S 3AB, authorised and regulated by the Financial Conduct Authority (the "FCA") and entered on the FCA register with registration number 515393.

Lombard Odier Investment Managers ("LOIM") is a trade name.

The fund mentioned in this document (hereinafter the "Fund") is a Luxembourg investment company with variable capital (SICAV). The Fund is authorised and regulated by the Luxembourg Supervisory Authority of the Financial Sector (CSSF) as a UCITS within the meaning of EU Directive 2009/65/EC, as amended. The management company of the Fund is Lombard Odier Funds (Europe) S.A. (hereinafter the "Management Company"), a Luxembourg based public limited company (SA), having its registered office at 5, Allée Scheffer, L-2520 Luxembourg, authorized and regulated by the CSSF as a Management Company within the meaning of EU Directive 2009/65/EC, as amended. The Fund is only registered for public offering in certain jurisdictions. This document is not a recommendation to subscribe to and does not constitute an offer to sell or a solicitation or an offer to buy the Fund's shares nor shall there be any sale of the Fund's shares in any jurisdiction in which such offer, solicitation or sale would be unlawful. Consequently, the offering of the Fund's shares may be restricted in certain jurisdictions. Prospective investors must inform themselves of, and observe, such restrictions, including legal, tax, foreign exchange or other restrictions in their relevant jurisdictions. Neither this document nor any part of it shall form the basis of, or be relied on in connection with, any contract to purchase or subscription for the Fund's shares. Any such acquisition may only be made on the basis of the official documents of the Fund each in their final form. The articles of association, the prospectus, the Key Investor Information Document, the subscription form and the most recent annual and semi-annual reports are the only official offering documents of the Fund's shares (the "Offering Documents"). They are available on <http://funds.lombardodier.com> or can be requested free of charge at the registered office of the Fund or of the Management Company, from the distributors of the Fund or from the local representatives as mentioned below. Austria. Supervisory Authority: Finanzmarktaufsicht (FMA), Representative: Erste Bank der österreichischen Sparkassen AG, Graben 21, A-1010 Wien - Belgium. Supervisory Authority: Autorité des services et marchés financiers (FSMA), Representative: CACEIS Belgium S.A., Avenue du Port 86C, b320, 1000 Brussels - France. Supervisory Authority: Autorité des marchés financiers (AMF), Representative: CACEIS Bank, place Valhubert 1-3, F-75013 Paris - Germany. Supervisory Authority: Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), Representative: DekaBank Deutsche Girozentrale, Mainzer Landstraße 16, D-60325 Frankfurt am Main - Italy. Supervisory Authority: Banca d'Italia (BOI), Paying Agents: Société Générale Securities Services S.p.A., Via Benigno Crespi, 19/A - MAC 2, 20159 Milano, State Street Bank S.p.A. Via Ferrante Aporti, 10, 20125 Milano, Banca Sella Holding S.p.A., Piazza Gaudenzio Sella, 1, 13900 Biella, Allfunds Bank S.A., filiale italiana Via Santa Margherita 7, 20121 Milano, - Liechtenstein. Supervisory Authority: Finanzmarktaufsicht Liechtenstein ("FMA"), Representative: Verwaltungs- und Privat-Bank Aktiengesellschaft, Aeulestrasse 6, LI-9490 Vaduz - Netherlands. Supervisory Authority: Autoriteit Financiële Markten (AFM), Representative: Lombard Odier Darier Hentsch & Cie (Nederland) N.V., Weteringschans 109, 1017 SB Amsterdam (telephone: +31 20 522 0 522) - Spain. Supervisory Authority: Comisión Nacional del Mercado de Valores (CNMV), Representative: Allfunds Bank S.A. C/Nuria, 57 Madrid - Switzerland. Supervisory Authority: FINMA (Autorité fédérale de surveillance des marchés financiers), Representative: Lombard Odier Asset Management (Switzerland) SA,

6 av. des Morgines, 1213 Petit-Lancy; Paying agent: Lombard Odier Darier Hentsch & Cie, 11 rue de la Corraterie, CH-1204 Geneva. UK. Supervisory Authority: Financial Conduct Authority (FCA), Representative: Lombard Odier Asset Management (Europe) Limited, Queensberry House, 3 Old Burlington Street, London W1S3AB, which has approved this document for

issuance in the UK to professional clients or eligible counterparties and is authorised and regulated. Emerging markets securities may be less liquid and more volatile and are subject to a number of additional risks, including but not limited to currency fluctuations and political instability.

by the FCA. NOTICE TO RESIDENTS OF THE UNITED KINGDOM The Fund is a Recognised Scheme in the United Kingdom under the Financial Services & Markets Act 2000. Potential investors in the United Kingdom are advised that none of the protections afforded by the United Kingdom regulatory system will apply to an investment in LO Funds and that compensation will not generally be available under the Financial Services Compensation Scheme. This document does not itself constitute an offer to provide discretionary or non-discretionary investment management or advisory services, otherwise than pursuant to an agreement in compliance with applicable laws, rules and regulations. Representative: Lombard Odier Asset Management (Europe) Limited, Queensberry House, 3 Old Burlington Street, London W1S3AB, which has approved this document for issuance in the UK to professional clients or eligible counterparties and is authorised and regulated by the Financial Conduct Authority. An investment in the Fund is not suitable for all investors. Making an investment in a Fund is speculative. There can be no assurance that the Fund's investment objective will be achieved or that there will be a return on capital. Past or estimated performance is not necessarily indicative of future results and no assurance can be made that profits will be achieved or that substantial losses will not be incurred. This document does not contain personalized recommendations or advice and is not intended to substitute any professional advice on investment in financial products. Before making an investment in the Fund, an investor should read the entire Offering Documents, and in particular the risk factors pertaining to an investment in the Fund, consider carefully the suitability of such investment to his/her particular circumstances and, where necessary, obtain independent professional advice in respect of risks, as well as any legal, regulatory, credit, tax, and accounting consequences. This document is the property of LOIM and is addressed to its recipient exclusively for their personal use. It may not be reproduced (in whole or in part), transmitted, modified, or used for any other purpose without the prior written permission of LOIM. It is not intended for distribution, publication, or use in any jurisdiction where such distribution, publication, or use would be unlawful. This document contains the opinions of LOIM, as at the date of issue. The information and analysis contained herein are based on sources believed to be reliable. However, LOIM does not guarantee the timeliness, accuracy, or completeness of the information contained in this document, nor does it accept any liability for any loss or damage resulting from its use. All information and opinions as well as the prices indicated may change without notice. The contents of this document are intended for persons who are sophisticated investment professionals and who are either authorised or regulated to operate in the financial markets or persons who have been vetted by LOIM as having the expertise, experience and knowledge of the investment matters set out in this document and in respect of whom LOIM has received an assurance that they are capable of making their own investment decisions and understanding the risks involved in making investments of the type included in this document or other persons that LOIM has expressly confirmed as being appropriate recipients of this document. If you are not a person falling within the above categories you are kindly asked to either return this document to LOIM or to destroy it and are expressly warned that you must not rely upon its contents or have regard to any of the matters set out in this document in relation to investment matters and must not transmit this document to any other person. Neither this document nor any copy thereof may be sent, taken into, or distributed in the United States of America, any of its territories or possessions or areas subject to its jurisdiction, or to or for the benefit of a United States Person. For this purpose, the term "United States Person" shall mean any citizen, national or resident of the United States of America, partnership organized or existing in any state, territory or possession of the United States of America, a corporation organized under the laws of the United States or of any state, territory or possession thereof, or any estate or trust that is subject to United States Federal income tax regardless of the source of its income. © 2014 Lombard Odier Investment Managers – all rights reserved