

# 14th Seminar on Current Issues in Life Assurance (CILA)

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## Managing fixed income portfolio risk

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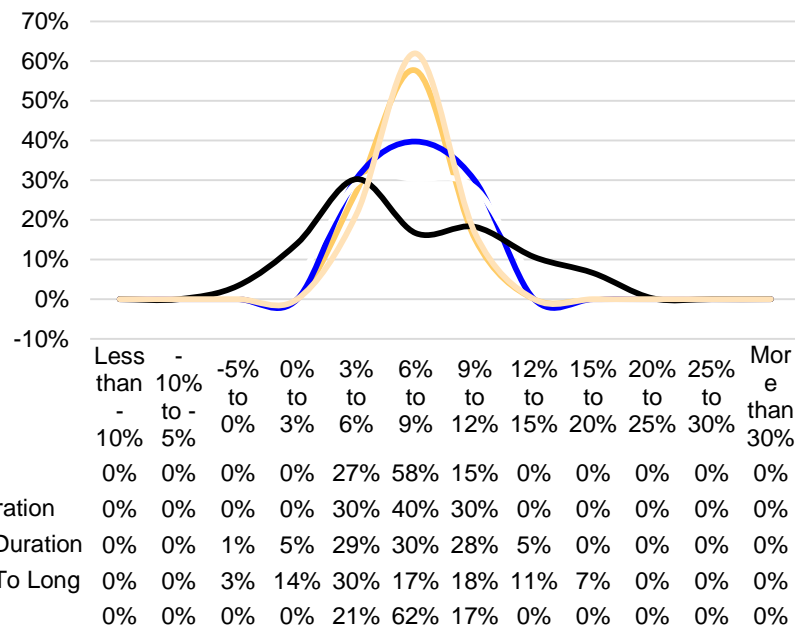
# Agenda

- Debt continues to be important investment avenue
- Nothing fixed about fixed-income portfolio
  - Credit risk needs to be priced in appropriately
  - Illiquidity risk as important as credit
  - Tactical interest rate calls imperative for duration strategy
  - Concentration accentuates risk
  - Re-investment risk
- HTM vs MTM valuation of securities

# Debt continues to remain important investment avenue

- Majority of the returns distribution lies within the perceivable return range

Parameter	Liquid	Short Duration	Medium Duration	Medium To Long	FD
Average returns	7.2%	7.6%	7.2%	7.2%	7.4%
Minimum returns	4.0%	3.8%	-0.7%	-2.0%	5.3%
Maximum returns	9.8%	11.9%	16.2%	22.8%	9.2%



Analysis based on 1 year rolling returns since April 2003

- Portfolios like EPFO, PPF which manage like HTM perspective have offered returns in the range of 8 – 9% in the past 15 years

# Nothing fixed about fixed-income portfolio

Risk	Meaning	Monitorables
<u>Credit</u>	<ul style="list-style-type: none"><li>• Default in payment of coupon and/or principal by issuer</li><li>• Lower the credit rating, higher the credit risk</li></ul>	<ul style="list-style-type: none"><li>• Track rating changes</li><li>• Review default and transition rates of rating agencies</li><li>• Independent review of credits</li></ul>
<u>Liquidity</u>	<ul style="list-style-type: none"><li>• Impact costs at liquidation</li><li>• Higher the illiquidity, higher the impact cost</li></ul>	<ul style="list-style-type: none"><li>• Review spreads and trading volume for fund portfolios</li><li>• Limits for illiquid investments</li></ul>
<u>Interest rates</u>	<ul style="list-style-type: none"><li>• Sensitivity to changes in interest rates</li><li>• Higher the duration, higher the risk</li></ul>	<ul style="list-style-type: none"><li>• Investments in longer maturity products, based on interest rate view</li></ul>

# Concentration accentuates risk

- Overexposure to a single issuer or sector impacts credit, interest rate and liquidity risks
- To take an example, a downgrade from AAA to AA of a security accounting 10% of the portfolio can shave off up to 57 basis points of investor returns compared with just 11 bps for a 2% exposure

Rating downgrade	Allocation in portfolio				
	2%	4%	6%	8%	10%
Downgrade from AAA to AA	-0.11%	-0.21%	-0.32%	-0.42%	-0.53%
Downgrade from AA to A	-0.15%	-0.29%	-0.44%	-0.59%	-0.74%
Downgrade from AAA to A	-0.25%	-0.50%	-0.76%	-1.01%	-1.26%

*Yield data for a bond with a duration of 6-8 years as on October 31, 2018 is considered for the analysis. Modified duration of 7 years has been assumed.*

# Impact of concentration

## Amtek Auto

Fund Name	% Exposure (as of June 2015)	% fall in NAV	Date
JLR Fund	16.59	-13.20%	20 Sep 2015

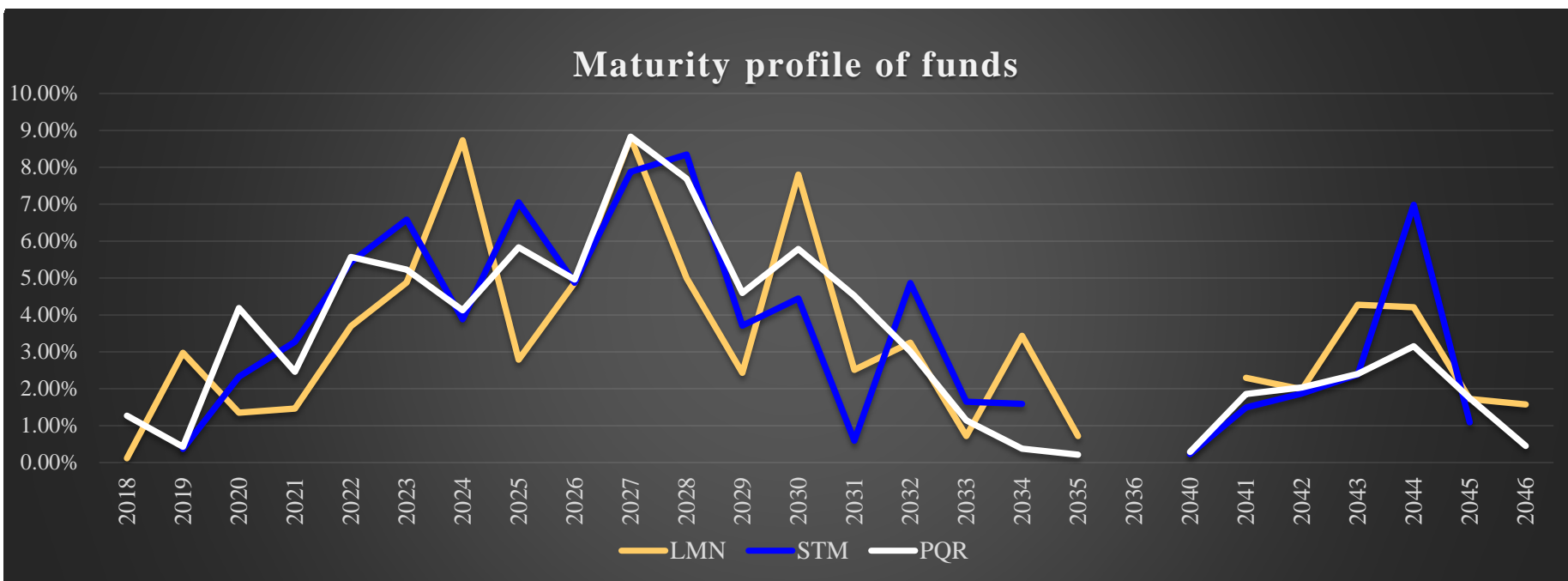
## IL&FS ( including subsidiaries)

Fund Name	% Exposure (as of Aug 2018)	% fall in NAV	Date
PQR Fund	9.81%	-8.1%	9 Sept to 24 Sept 2018
PMP Fund	7.59%	-5.28%	9 Sept to 24 Sept 2018
MTN Fund	9.87%	-6.24%	7 Sept to 26 Sept 2018

## Ballarpur Industries

Scheme Name (erstwhile name of the fund)	% Exposure (as of Aug 2018)	% fall in NAV	Date
TVX Fund	11.94%	-11.78%	22 Feb 2017

# Re-investment risk



- **49-52% of portfolio is maturing between year 2022 and 2030**
  - 52% of above portfolio will be maturing during the period
  - Large part of investment consists of Corporate bonds and SDL
  - Supply of corporate bonds beyond 10 years is limited

# HTM vs MTM valuation of securities

- **MTM valuation enables continuous update on risk building up in portfolio**
  - Gap between MTM and HTM valuation can create arbitrage among the investors
  - Exiting HTM investors may get higher valuation compared to MTM investors in case of downgrade or any negative news about the issuer
- **HTM may result in portfolio managers chasing high-yielding bonds, overlooking the associated credit quality and liquidity**
  - MTM ensures discipline in portfolio management
- **HTM implicitly conveys a guarantee that realised value will not fall below book value**
- **During global financial crisis of 2008, liquid funds faced heavy redemption pressure due to difference in MTM and amortised prices**
  - Subsequently, SEBI reduced maturity period for amortised price based valuations to 60 days
    - Amortised price allowed only when close to market price
  - Similar situation in 2013 avoided because of changes in valuation norms



# Thank you



# Default and Transition Rates – a measure credit risk in the portfolio

One-year average transition rates: between 2007 and 2017 – annual static pool

Ratings	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	97.92%	2.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	1.39%	94.96%	3.10%	0.54%	0.00%	0.00%	0.00%	0.00%
CRISIL A	0.03%	2.79%	91.91%	4.71%	0.33%	0.03%	0.03%	0.18%
CRISIL BBB	0.00%	0.00%	2.52%	90.54%	5.66%	0.20%	0.15%	0.93%
CRISIL BB	0.00%	0.00%	0.01%	3.97%	88.16%	4.00%	0.25%	3.61%
CRISIL B	0.00%	0.00%	0.01%	0.04%	7.85%	83.67%	0.51%	7.93%
CRISIL C	0.00%	0.00%	0.00%	0.00%	1.34%	20.45%	58.51%	19.70%

Average CDR for long term ratings (2007 -2017) – annual static pool

Rating category	One-year	Two-year	Three-year
CRISIL AAA	0.00%	0.00%	0.00%
CRISIL AA	0.00%	0.05%	0.12%
CRISIL A	0.18%	1.10%	2.07%
CRISIL BBB	0.93%	2.07%	3.91%
CRISIL BB	3.61%	7.47%	11.28%
CRISIL B	7.93%	15.49%	21.28%
CRISIL C	19.70%	33.99%	41.98%

# Risk and return do not share a perfect linear relationship

- Imperative to take cognizance of incremental return per unit of risk when moving down the credit curve

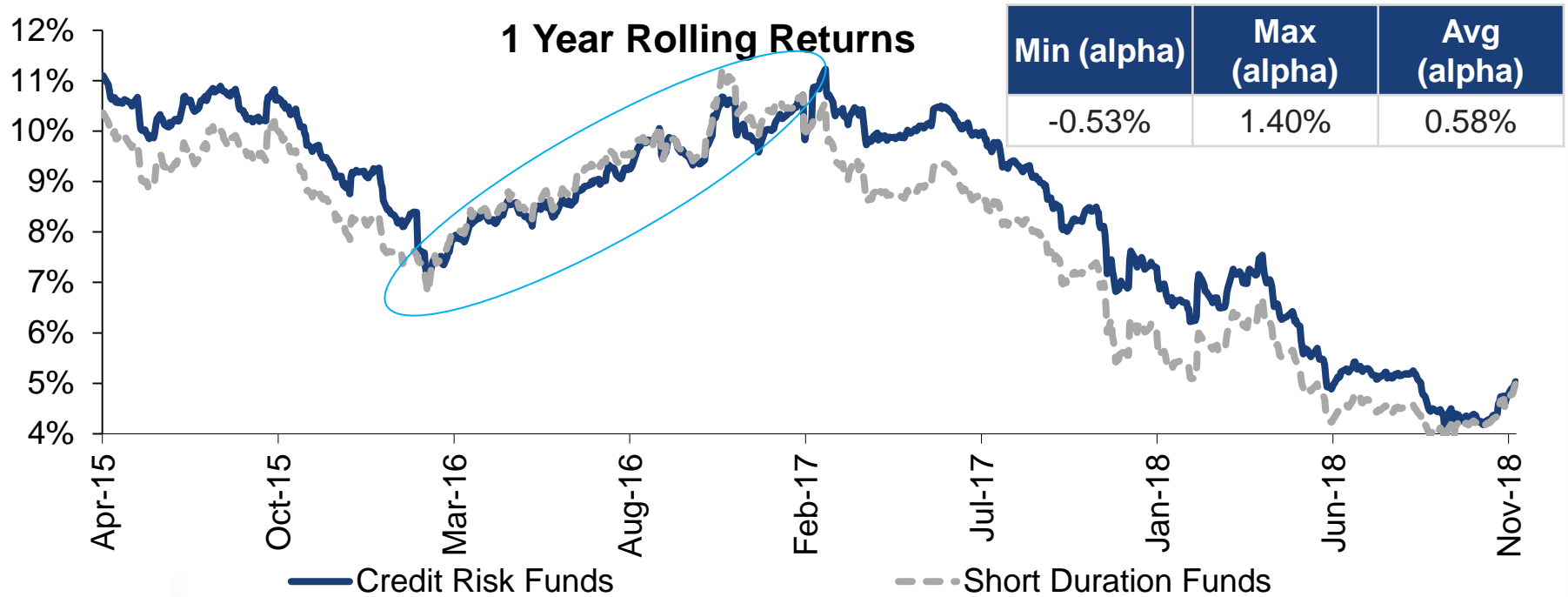
Rating category	Minimum spread*	Average spread*	Maximum spread*	CRISIL CDR <sup>^</sup> (3 years)
AAA	0.54%	1.61%	3.95%	0.00%
AA+	0.95%	2.25%	4.57%	0.12%
AA	1.03%	2.94%	4.28%	
AA-	0.96%	2.66%	9.37%	
A+	1.47%	3.53%	6.31%	2.07%
A	1.58%	3.64%	8.22%	
A-	1.89%	4.42%	8.02%	
BBB+	2.20%	5.18%	9.32%	3.91%
BBB	2.58%	6.58%	11.42%	
BBB-	4.70%	7.95%	11.18%	

\* Spreads over G-sec sourced from CRISIL Valuation for securities rated by various rating agencies

<sup>^</sup> CDR: Cumulative default rate for long term ratings (2007-2017) – monthly static pool

# Moving down the credit curve need not always result in superior performance (1/2)

- Credit opportunity funds have outpaced short duration funds 75% of the times



# Downgrades/Default in the debt portfolios

No. of issuers MF Industry invested in	1,715 issuers
No of defaults / downgrades	7 defaults / 73 downgrades
Worth of assets defaulted / downgraded	Rs 64,243 crore
%age of debt category AUM in MF Industry	<b>4.96%</b>

*Data from January 2018 to December 2018*

# Issuers with Negative Outlook on ratings in debt portfolios

Issuer Name	Exposure (In Crs.)	Rating
Adani Transmission Ltd.	2,561	AA+
Andhra Bank	2,773	AA
Bajaj Electricals Ltd.	198	A+
Bharti Telecom Ltd.	2,324	AA+
Birla Corporation Ltd.	121	AA
Can Fin Homes Ltd.	1,362	AAA
Canara Bank	3,591	AAA
Deepak Fertilisers & Petrochemicals Corp. Ltd.	249	AA-
Essel Lucknow Raebareli Toll Roads Ltd.	290	AAA (SO)
Forbes & Company Ltd.	42	A+
Forbes Technosys Ltd.	18	A+(SO)
Hazaribagh Ranchi Expressway Ltd.	188	AAA (SO)
HT Media Ltd.	768	AA+
IDBI Bank Ltd.	5	A
Jana Small Finance Bank Ltd.	237	BBB
Jharkand Road Projects Implementation Co Ltd.	791	AA(SO)
Jorbat Shillong Expressway Ltd.	277	AAA(SO)
Oriental Bank Of Commerce	2,587	A+
Punjab & Sind Bank	445	AA
Punjab National Bank	3,622	AA-
Rural Electrification Corporation Limited	30,209	AAA
Starlite Lighting Ltd.	132	A+(SO)
Syndicate Bank	1,645	AA
The Jammu & Kashmir Bank Ltd.	2,886	AA-
Union Bank Of India	5,496	AA+
United Bank of India	242	A+
UPL Ltd.	234	AA+
Vodafone Idea Ltd.	1,906	A+
Vodafone Mobile Services Ltd	3,536	A+
Yes Bank	4,165	AA

- The aggregate exposure of issuers with negative outlook (including under watch with developing implication) was Rs. 72,896 crores i.e. **5.63%** of mutual fund industry's debt AUM as of December 2018.

# Besides looking at ratings, what else can investors do?

- There is information in the public domain that can be useful:
  - Trends in financials
  - Information from equity markets
  - Spreads
  - Corporate actions/news

# Financials could signal 78% of the downgrades

## MF Debt Portfolio

### Period:

Sept-16 to Sept-18

885 companies

### Downgrades during evaluation period:

193 downgrades across 80 unique companies

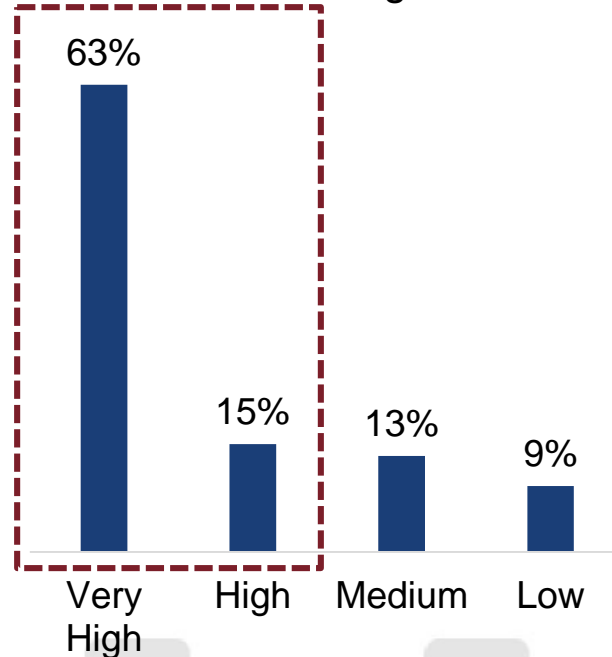
=> Downgrade Rate of 9%

### Cos. under FSM Coverage:

60% (by count & value)

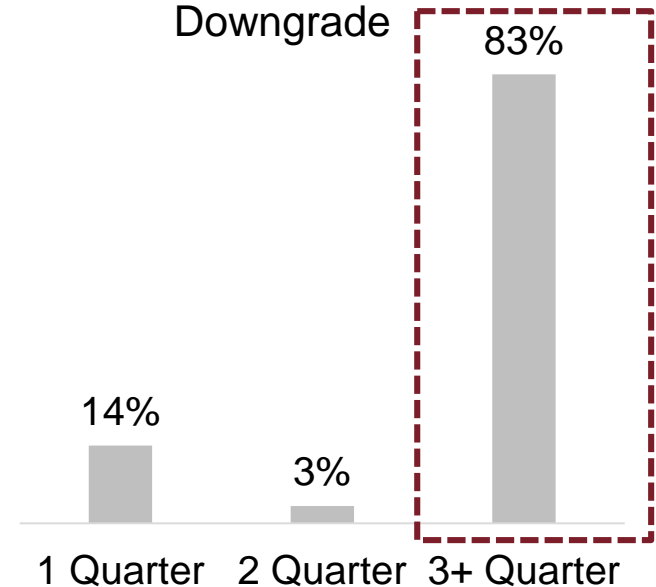
128 downgrades under FSM coverage  
→101 highlighted as High/ Very High in advance

FSM scores of downgrade cases



84 downgrades in listed cos →  
69 in High/ Very High Sensitivity for 3+ Quarters

Number of Quarters in High Sensitivity before Downgrade

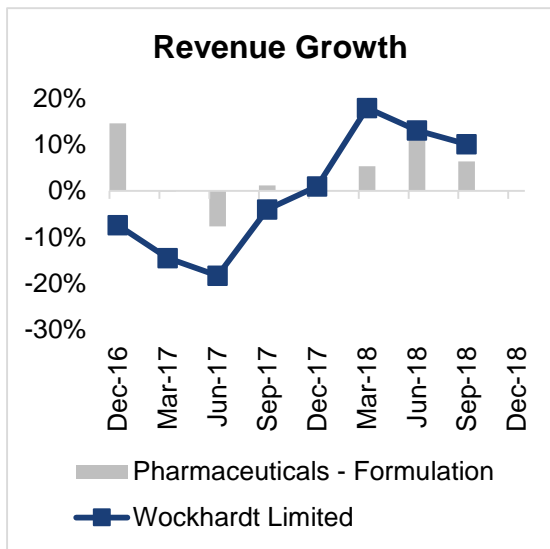




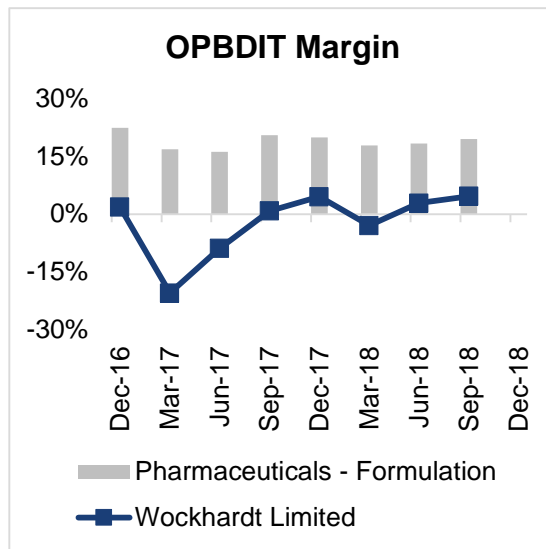
# Case 1: Stress builds up gradually, not suddenly (1/2)

## Wockhardt Limited

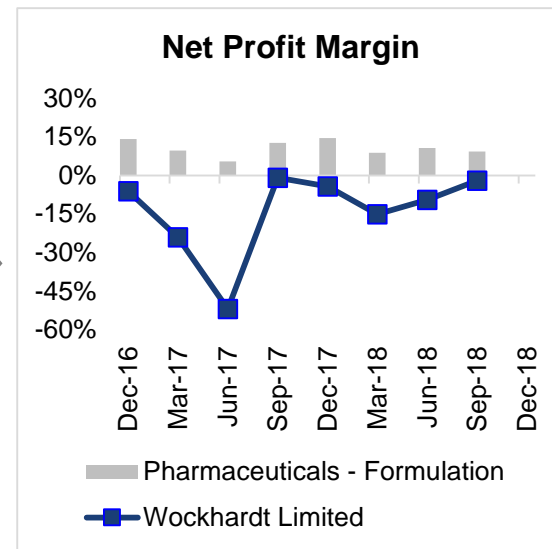
Revenue growth slipped since Dec-16, recovery in Mar-18



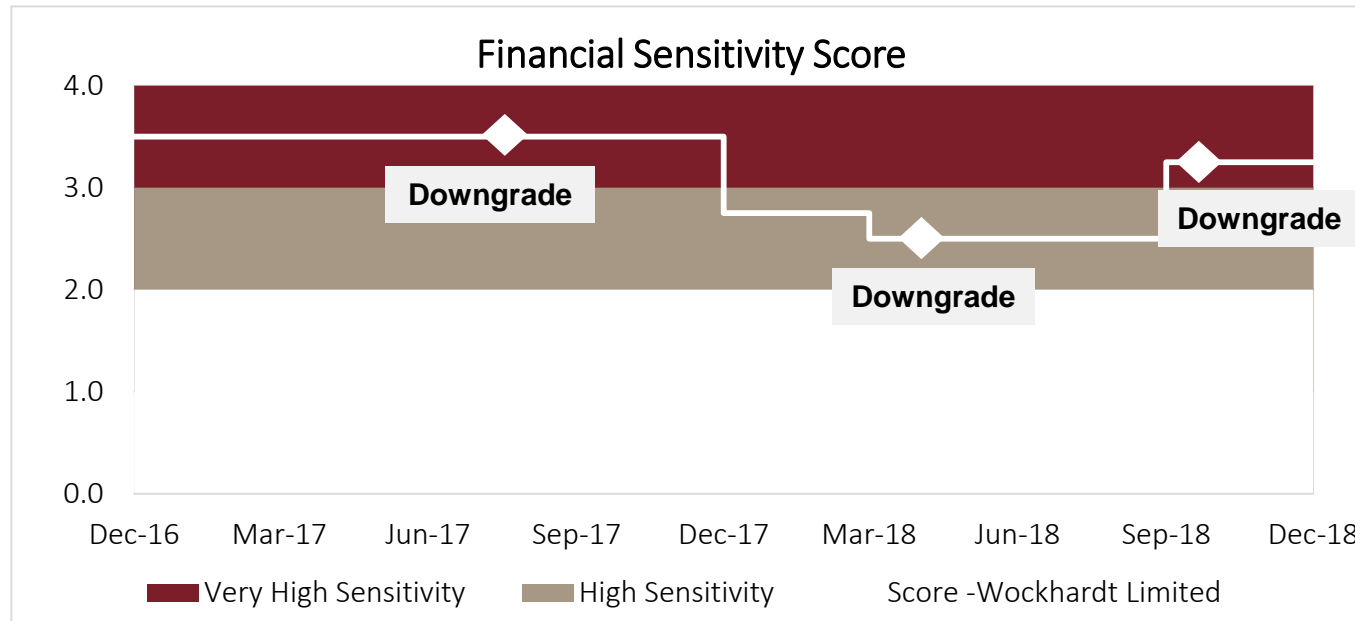
Low growth resulted in negative operating margins; below industry medians



Net margins negative while industry overall profitable



# Case 1: Stress builds up gradually, not suddenly (2/2)



In High / Very High sensitivity since Dec-16

Rated AA as of Dec'16

Underwent 3 consecutive downgrades (Jul-17, May-18, Oct-18)

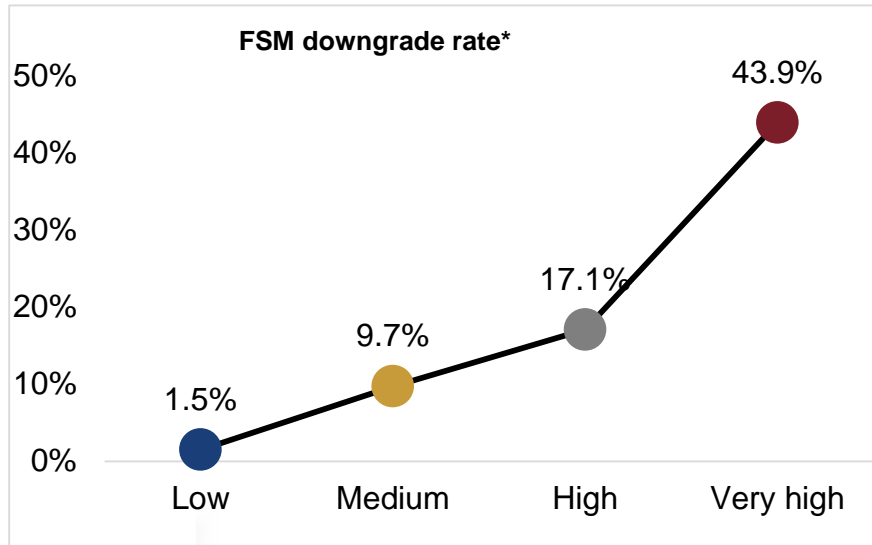
Current rating: BBB (below Investment Grade)

# Financials, coupled with equity market information can help further

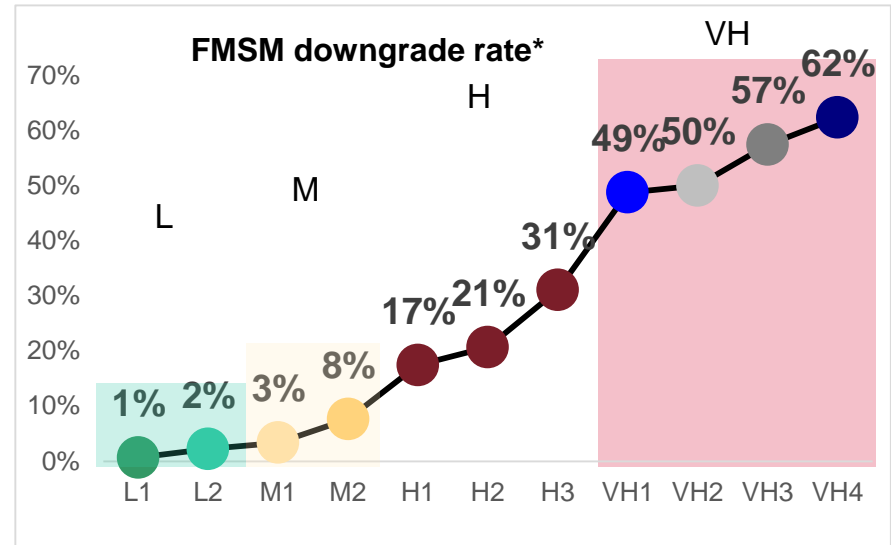


Combines FSM score with daily stock price movement and historical stock volatility, determines if financial stress is building up in the company

While FSM alone identifies financial stress well,



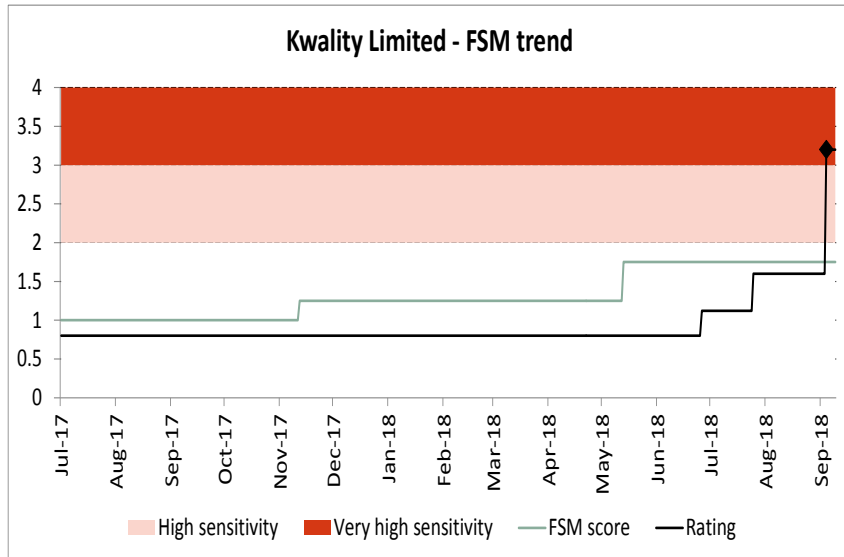
With FMSM, efficiency increases further



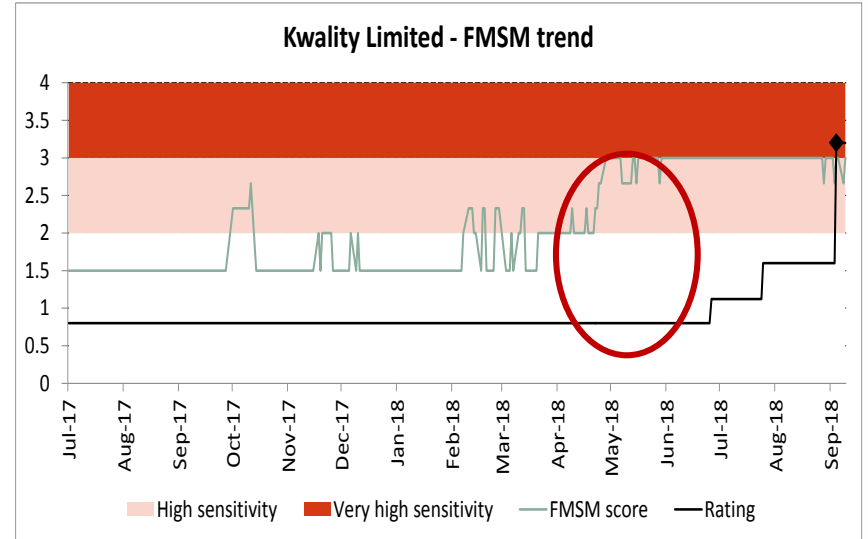
\*Pertain to the period Apr 2013 to September 2018

# Case 4: Kquality Limited

In low to medium sensitivity category based only on financials



Using both financial and market signals, stress can be identified as early as Apr-18



Rated A+ at beginning of FY2018

Had been downgraded 3 times to BBB- by July-18

Default in Sept-18

# Rise in spreads a signal, too

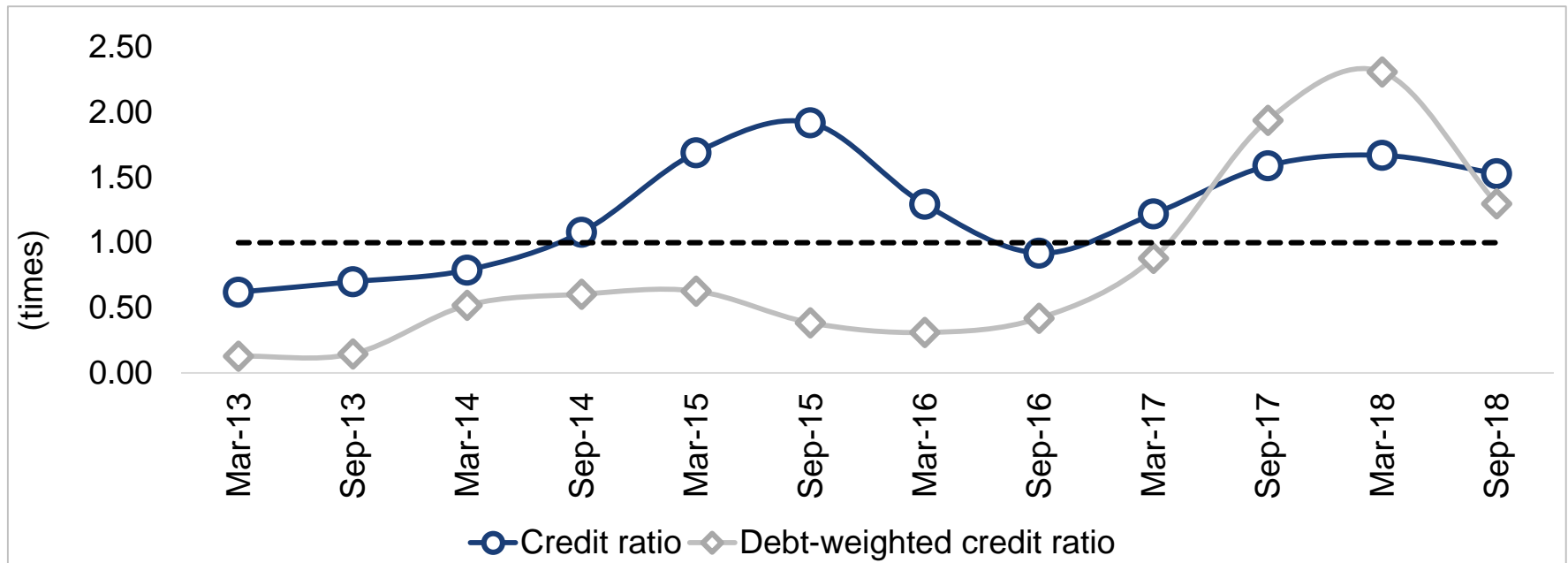
Issuer	Spread over benchmark	Rating action and date	Spread over benchmark after rating action
Vedanta Limited	<ul style="list-style-type: none"> <li>• 167bps (Aug'15)</li> <li>• 249bps (Dec'15)</li> </ul>	Jan 2016: Ind AA+ to AA	288 bps
SAIL Ltd.	<ul style="list-style-type: none"> <li>• -12bps (Jun'15)</li> <li>• 45bps (Mar'16)</li> <li>• 70bps (Apr'16)</li> <li>• 77bps (Jul'17)</li> </ul>	Mar 2016: AAA to AA+ Dec 2016: AA+ to AA Oct 2017: AA to AA-	85 bps (Oct'17)
Hindalco Industries Ltd	<ul style="list-style-type: none"> <li>• 82bps (May'15)</li> <li>• 100bps (Jun'15)</li> </ul>	Jul 2015: CRISIL AA to AA-	142 bps

# Qualitative information can also help

Issuer name	Concerns Raised	Rating Action	Date
Eros International	<ul style="list-style-type: none"> <li>Wells Fargo, in a report, alleged that Eros had seen a 'sudden spike' in hard-to-understand revenue booked from the United Arab Emirates.</li> </ul>	CARE A (downgraded from CARE AA-)	26-Nov-2015
Yes Bank	<ul style="list-style-type: none"> <li>Allegation of promoters tapping into mutual funds to fund investment companies.</li> </ul>	[ICRA]AA (downgraded from [ICRA]AA+)	28-Nov-2018
PC Jewellers	<ul style="list-style-type: none"> <li>Speculation that the company's promoters might have held back information on a business relationship with e-governance service provider Vakrangee,</li> <li>Vakrangee, according to reports came under Sebi's scanner for alleged price and volume manipulations of its own stock on BSE and NSE</li> </ul>	CRISIL BBB+ (downgraded from CRISIL A+)	01-Aug-2018
Infibeam Avenues	<ul style="list-style-type: none"> <li>A note circulated on social media alleged that the company gave an interest-free and unsecured loan to a subsidiary with negative net assets to be repaid over eight years.</li> <li>The note also mentioned that the company has re-classified its co-founder, who continues to hold a large chunk of shares, as non-promoter.</li> </ul>	[ICRA]A (downgraded from [ICRA]A+)	26-Nov-2018

# Credit ratio on a rolling 12 month basis remains above 1 time

- This indicates sustained improvement in credit quality.



- CRISIL's credit ratio and debt-weighted credit ratio stood at 1.53 times and 1.30 times, respectively, for 12 months rolling basis of fiscal 2019.
- There were 1258 upgrades and 821 downgrades for 12 months ending September 30<sup>th</sup>, 2018

Source: CRISIL

# Measure of Credit Risk

- **Credit Quality - Measures the probability of default by the issuer of a debt security in the portfolio**
  - Credit quality score for each rating category is a factor of default / migration statistics arising out of credit risk history maintained by CRISIL for each rating category.
  - Portfolio Credit quality score =  $\sum$  % to NAV of holding \* Credit quality score of each holding based on rating.



# Liquidity as material a risk as credit

- Liquidity declines significantly with every fall in rating
  - Percentage of liquid papers falls drastically from 82% in 'AAA' category to 9% in 'AA', and to null, after A rating bracket

Rating	Liquid	Semi-liquid	Illiquid
AAA	82%	14%	3%
AA+	40%	30%	30%
AA	9%	53%	37%
AA-	2%	29%	69%
A+	14%	16%	70%
A	0%	0%	100%
A-	0%	0%	100%

479 issuers forming part of mutual fund portfolios

Security class	Liquid	Semi Liquid	Illiquid
CD	93.3%	6.4%	0.2%
CP	62.6%	32.3%	5.1%

296 issuers forming part of mutual fund portfolio

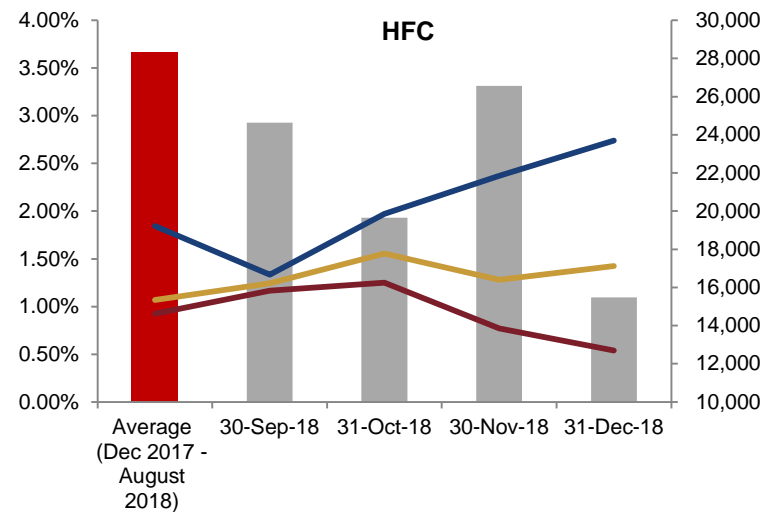
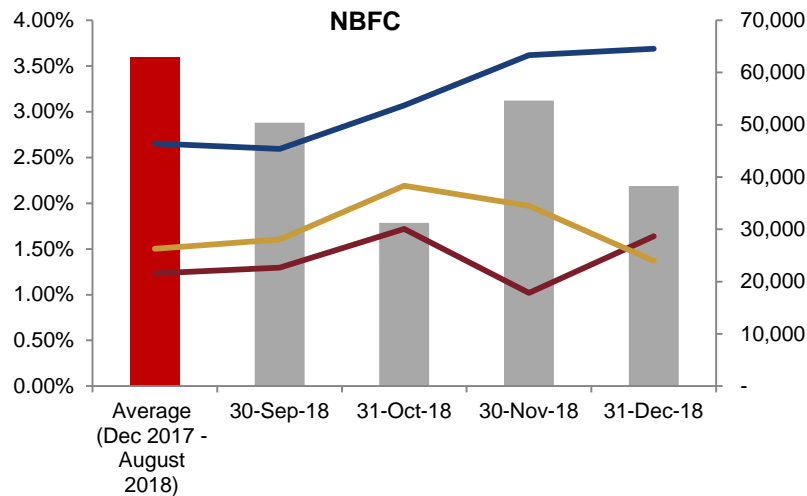
Data as of September 2018

# Case 5: Heavy redemptions can significantly dent portfolio quality

IL&FS - Default in Sep 2018			
	Aug-18	Sep-18	Oct-18
AUM (in Rs Crore)	2,119	789	387
Exposure to IL&FS	49	25	0
% of IL&FS in portfolio	2.33%	3.15%	0.00%
Portfolio Composition (% of Portfolio)			
CD	27.45	21.63	14.00
CP	72.66	78.01	85.54
Cash & Others	(0.11)	0.36	0.46

# Liquidity a theme of recent interest

- As can be seen, higher spreads coupled with negative sentiments in the market impacted the volume of primary issuances



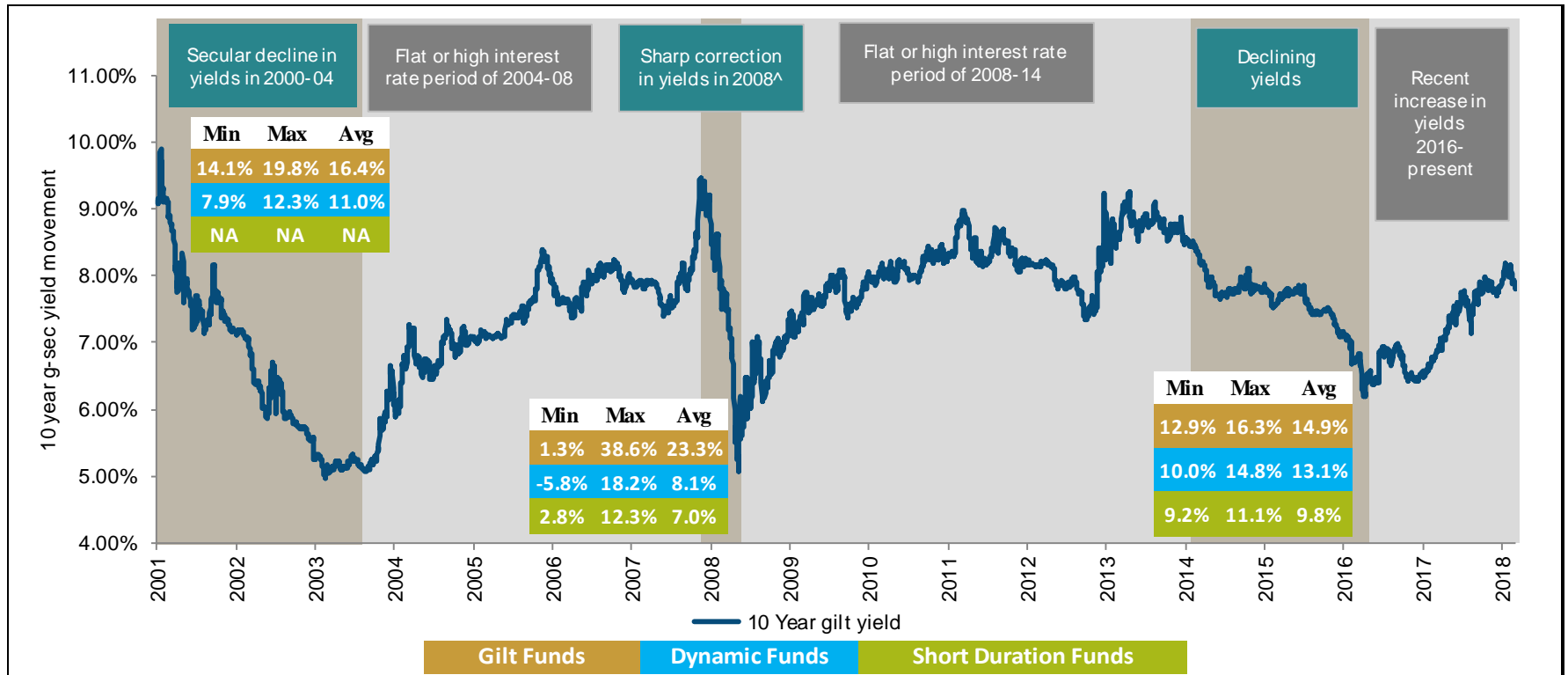
Issuance Amount (In Crs)
  Benchmark Spread over Tbill  
 A1+ Average spread over Tbill
  A1+ Max spread over Tbill

Issuance Amount (In Crs)
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# Measure of Liquidity Risk – Debt

- Corporate debt issuers are categorized in to below mentioned classifications based on spread and number of days traded in the past quarter.
  - Liquid
  - Semi-Liquid
  - Illiquid
- Weighted average liquidity score of the corporate debt portfolio is used to classify the portfolio as Liquid or Semi-Liquid or Illiquid as per cut-offs defined.

# Tactical interest rate calls imperative for long duration funds



^ Absolute returns

Returns for period more than one year are annualized

# Impossible seems to be ‘getting it right consistently’

- Active duration management – capturing the direction and quantum of the interest rate cycle
- Inactive duration management can reduce returns for investor

Dynamic (25 funds)	Point-to-point performance (ranks)		
Phase	Jun 2013 to Nov 2013	Dec 2013 to Nov 2016	Dec 2016 to Sep 2018
Scheme	Hardening of 160 bps	Easing of 280 bps	Hardening of 178 bps
Fund A	1	15	3
Fund B	5	7	17
Fund C	19	13	7

- Active duration management can add to the performance and incorrect duration management can adversely impact performance

Phase	Jun 2013 to Nov 2013		Dec 2013 to Nov 2016		Dec 2016 to Sep 2018	
	Hardening of 160 bps		Easing of 280 bps		Hardening of 178 bps	
Scheme	Point-to-point performance	Avg. Modified duration	Point-to-point performance	Avg. Modified duration	Point-to-point performance	Avg. Modified duration
Fund A	3.92	0.48	11.29	2.06	3.93	3.58
Fund B	-0.02	2.62	12.40	5.70	0.62	4.05
Fund C	-4.38	4.61	11.81	6.29	2.34	4.44