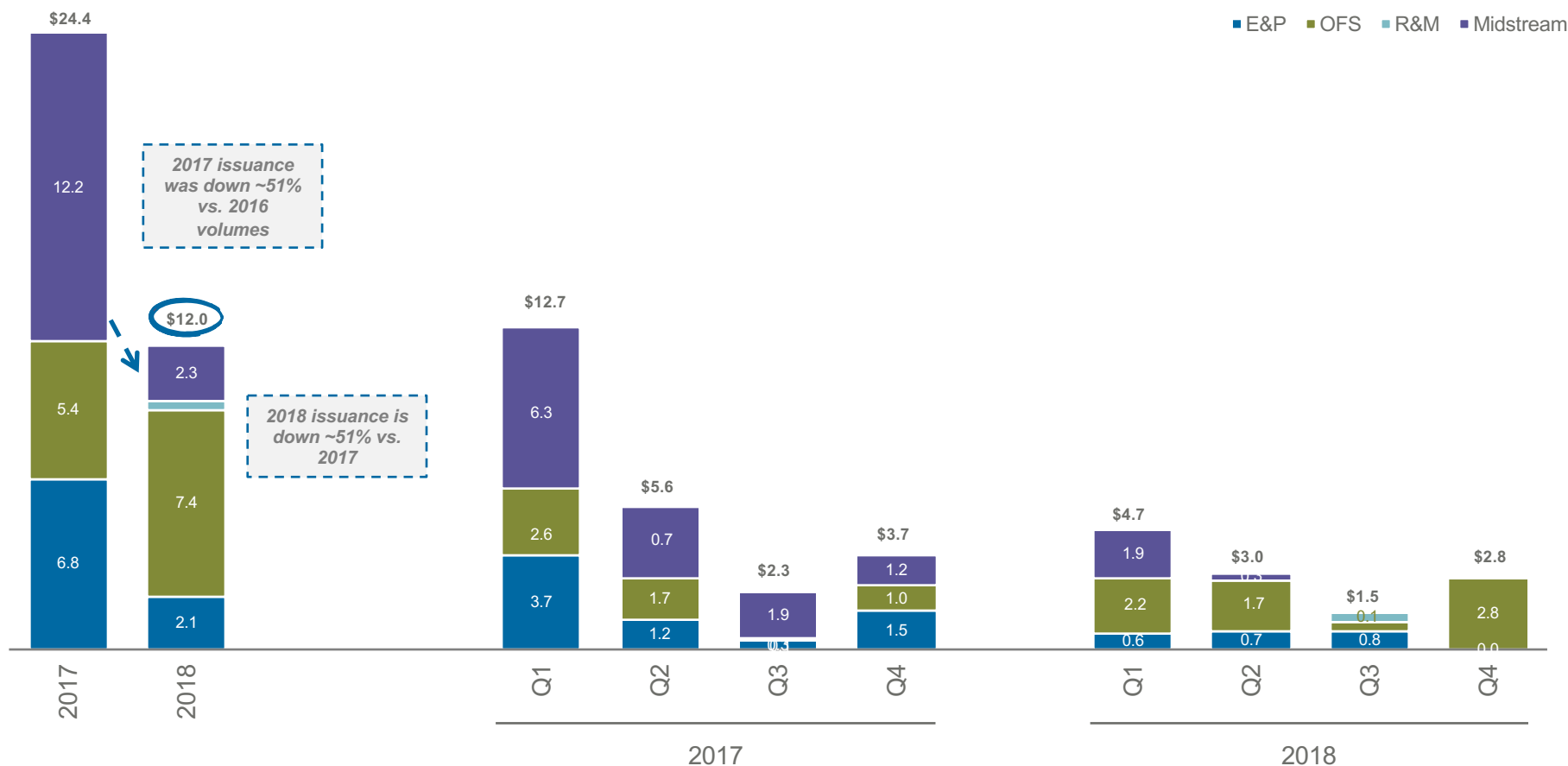


# IPAA Private Capital Conference

January 2019

# Oil & Gas new issuance volumes were muted in 2018 relative to historical levels

## O&G equity/equity-linked capital raised (\$bn)



**In total, 15 OFS, 11 E&P, 7 Midstream and 1 R&M equity offerings raised ~\$11.5bn in 2018**

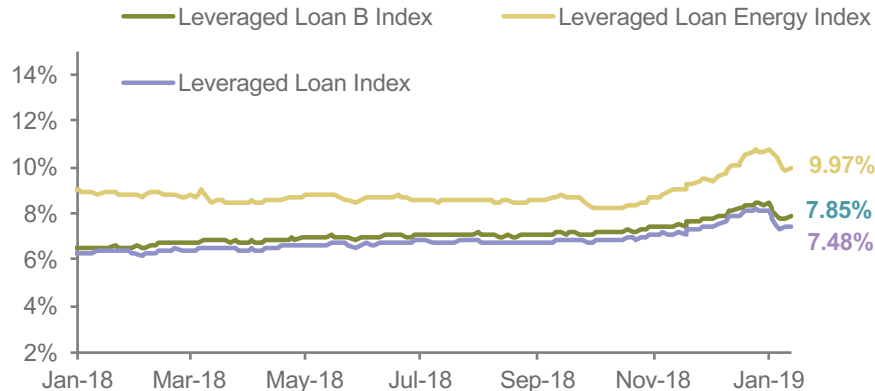
Source: Dealogic and FactSet as 01/18/19

# U.S. high yield energy trading performance

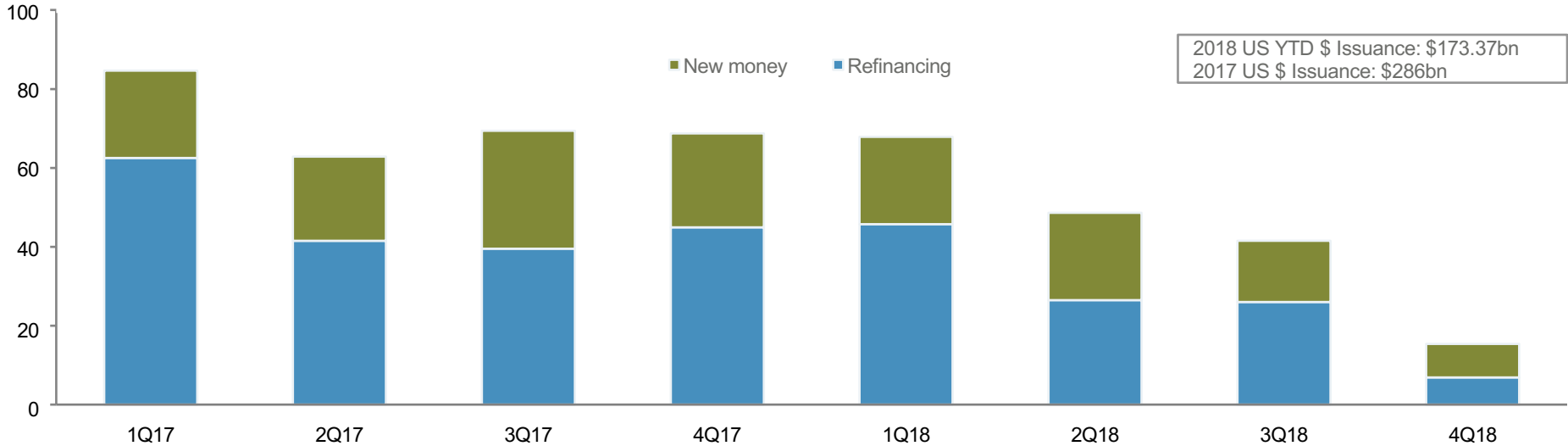
### Selected HY Indices (YTW)



### Institutional loan yields



### Monthly HY new issue volume (\$bn)



## 2019 views from a banker

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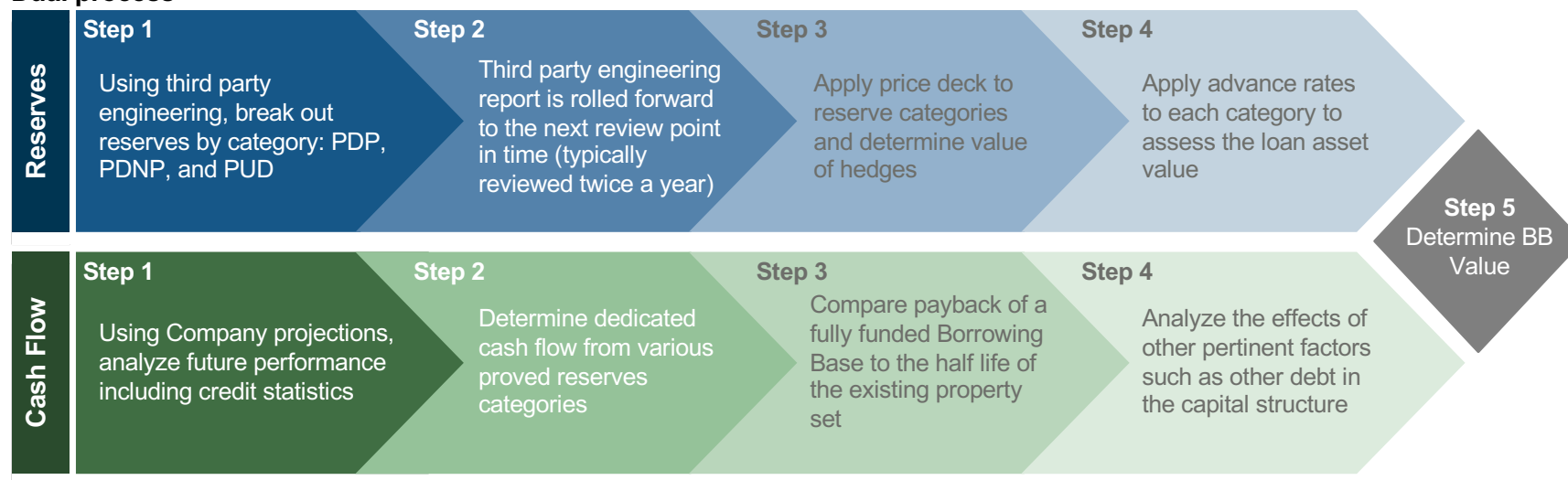
1. Equity investors are focused on free cash flows and higher returns...and they mean it
2. High yield markets will reopen with BB credits leading the way
3. Consolidation will continue, but it must be strategic
4. Private equity frustration will continue
  - How to exit/monetize (what to do with stranded portco)
5. Banks have capacity to lend but expect a “grind out” year in 2019

# Borrowing base determination process: Art vs Science

## Borrowing base analysis

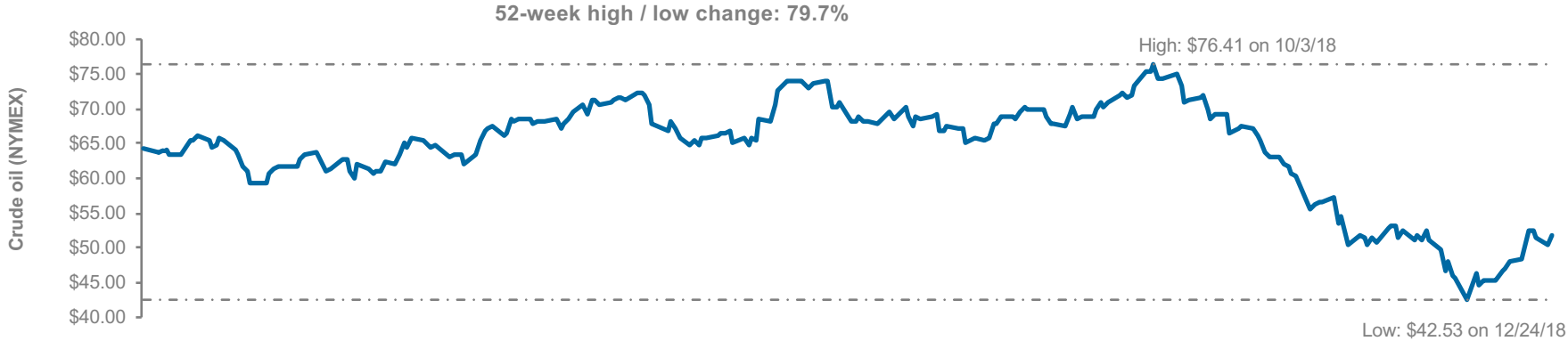
- J.P. Morgan determines the Borrowing Base using many factors, including an analysis of the reserves, cash flow, leverage and liquidity
  - **PDP reserves:** *Generally, the conforming Borrowing Base requires that PDP plus hedges contribute to at least 75% of the value*
  - **Bank price deck:** *J.P. Morgan sets its price deck at a minimum twice a year*
  - **Advance rates:** *Rates vary for each reserve category and are based upon the risk assessed by the J.P. Morgan engineer*
  - **Cash flow:** *Projected cash flow should be able to repay the Borrowing Base with cash flow from existing property within its half-life*
  - **Other debt:** *The initial engineered loan value is typically reduced by a percentage of other debt outstanding to determine Borrowing Base*
- Value given only to proven reserves
- Commodity hedging can typically help support a higher loan asset value and Borrowing Base due to certainty of cash flows
- Other factors considered when evaluating the reserves to determine the Borrowing Base include product mix, well and field diversity, geographic location, basis differentials, etc.

## Dual process

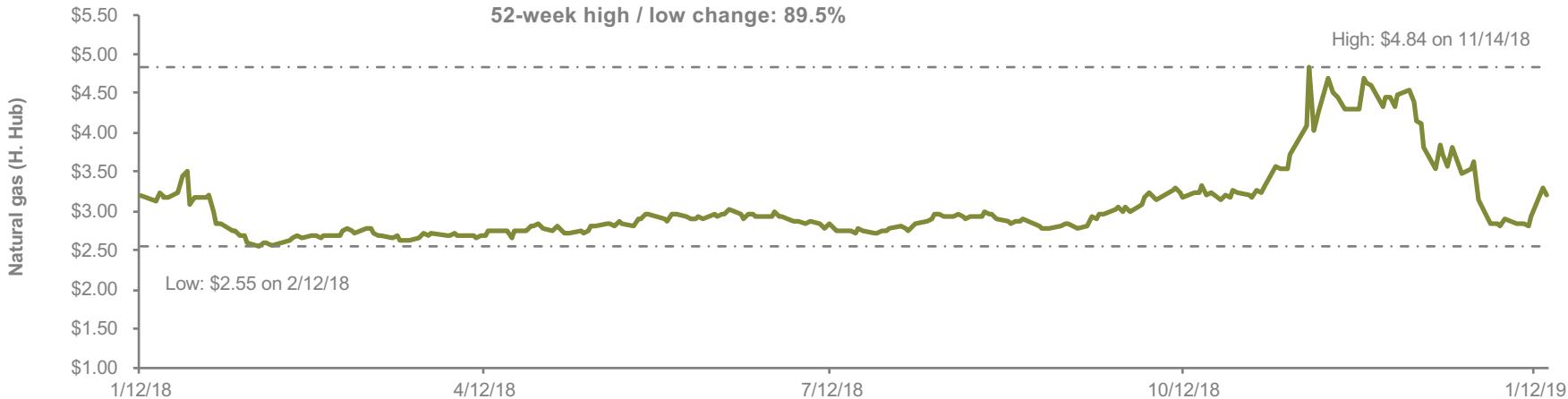


# Strip oil and gas pricing: increased volatility

## Crude oil prices: January 2018 – January 2019



## Natural gas prices: January 2018 – January 2019

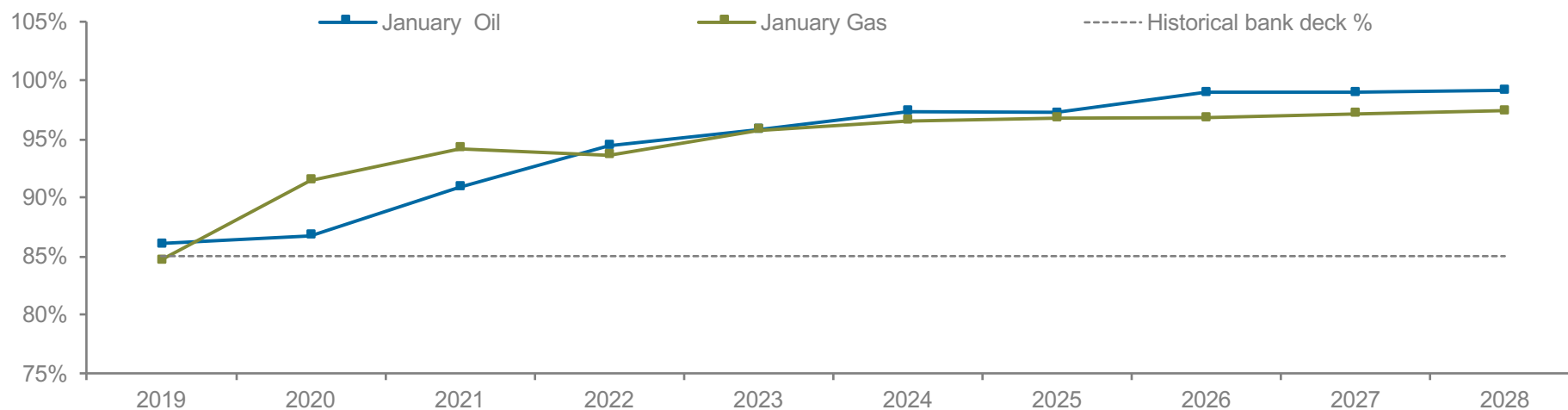


## Bank price decks are typically set at 80-90% of strip pricing

### Proxy bank price deck comparison

Year	Proxy Bank Deck Base case		January 15, 2019 Strip pricing		Bank as % of Strip pricing	
	Oil	Gas	Oil	Gas	Oil	Gas
2019	46.00	2.50	53.51	2.97	86.0%	84.2%
2020	47.00	2.50	54.20	2.73	86.7%	91.6%
2021	49.00	2.50	53.92	2.66	90.9%	94.0%
2022	51.00	2.50	54.01	2.67	94.4%	93.6%
2023	52.00	2.60	54.29	2.72	95.8%	95.6%
2024	53.00	2.70	54.46	2.80	97.3%	96.4%
2025	53.00	2.80	54.49	2.89	97.3%	96.9%
2026	54.00	2.90	55.55	3.00	97.2%	96.7%
2027	54.00	3.00	55.60	3.09	97.1%	97.1%
2028	54.00	3.10	55.60	3.18	97.1%	97.5%
Thereafter	54.00	3.20	55.60	3.28	97.1%	97.6%

### Bank deck vs. strip pricing



## An example of an asset loan value projection model

Data points for illustrative purposes: information not from a specific company

	PV9	Advance Ratio	Total	%	Max PDP Contribution	Maximum Value
PDP	\$150,000	65%	\$97,500	67%	75%	\$97,500
PDNP	\$100,000	35%	\$35,000	24%		
PUD	\$50,000	25%	\$12,500	9%	25%	\$32,500
ELV	\$300,000		\$145,000			\$130,000
	Value	Haircut				
Sub debt	\$100,000	25%				\$25,000
<b>Estimated borrowing base:</b>						<b>\$105,000</b>

### Commentary

- The Borrowing Base review process only focuses on Proved categories: PDP, PDNP & PUD (hedges are given the same advance rates as PDPs)
- Once the present value is calculated with a 9% discount rate (PV9), advance rates are given to each category (maximum advance rates allowed are 65%, 35%, 25% for PDP, PDNP and PUD, respectively)
- PDPs & Hedges must contribute at least 75% of the loan value
- Any additional subordinated debt will cause a haircut to the loan value
- Estimating the Borrowing Base value via this approach does not take into additional adjustments from JPM's engineering and credit team. These adjustments can result in a Borrowing Base that is lower than the calculated Borrowing Base value calculated by the model. Please see the next page for more clarity



# The updated RBL loan rating guidelines from the OCC are impacting credit ratings across bank portfolios even though the factors are not “bright lines”

*In the March 2016 Handbook for E&P lending, the OCC updated guidelines for examiners to use in rating the credit worthiness of borrowers and noted that the enumerated factors, such as the financial ratios, are not meant to be “bright lines’... Examiners must use judgement and reasonableness when making final regulatory rating decisions; each borrower is unique”*

Test	RBL Loan Rating <small>Sources: OCC Handbook March 2016 &amp; Haynes &amp; Boone LLC’s “New OCC Oil and Gas Loan Review Guidelines” published March 28, 2016</small>		
	Pass	Criticized Special Mention	Classified Substandard      Doubtful      Loss
Repayment of fully drawn RBL	< 60% Reserve Life	60% - 75% Reserve Life	> 75% Reserve Life
Repayment of Total Secured debt	< 75% Reserve Life	75% - 90% Reserve Life	> 90% Reserve Life
Funded Debt/EBITDAX	< 3.5X	3.5 – 4.0X	> 4.0X
Funded Debt/Capital	< 50%	50% - 60%	> 60%
Committed Debt/Total Reserves	< 65%	65 – 75%	> 75%
			<table border="1"> <tr> <td>Debt &lt; 100% Risked Reserves</td> <td>Incremental Debt Above Substandard &lt; 100% Unrisked Reserves</td> <td>Remaining Debt &gt; 100% Unrisked Reserves</td> </tr> </table>
Debt < 100% Risked Reserves	Incremental Debt Above Substandard < 100% Unrisked Reserves	Remaining Debt > 100% Unrisked Reserves	

### Typical Financial Covenants

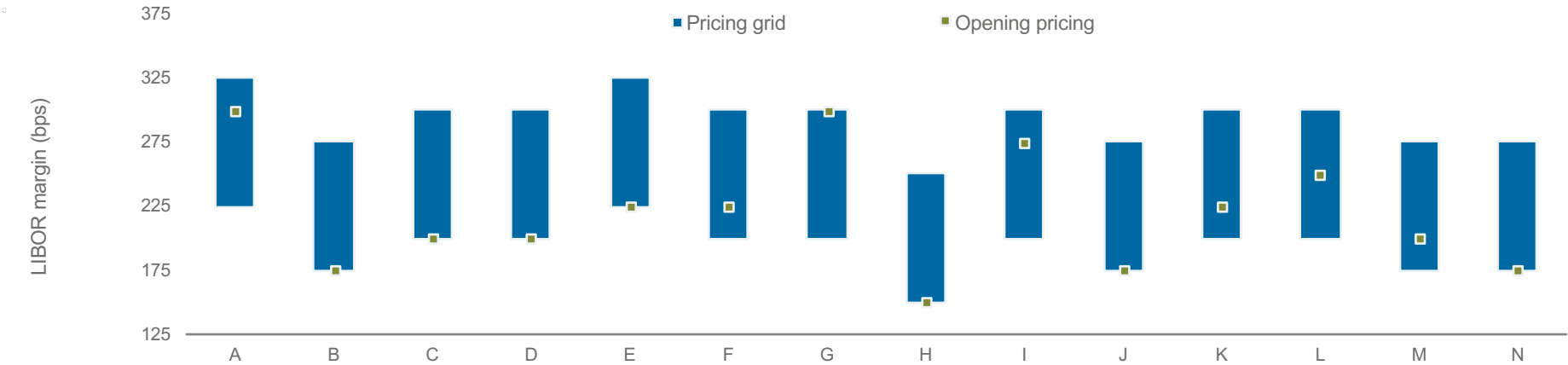
- Current Ratio ≥ 1.0x
- Leverage (Total Debt / EBITDAX) ≤ 4.0x

### Discussion Topics

- Preferred stock
- Holdco structures

# Current markets levels and pricing

## Recent RBL pricing



## RBL leverage levels

