Marine Money Week – New York

TUESDAY 16TH JUNE 2015

Funds Providing Shipping Loans: Risk vs Return for Lenders and the Economics for Borrowers

by

R. Philip Bailey

THEISEN securities

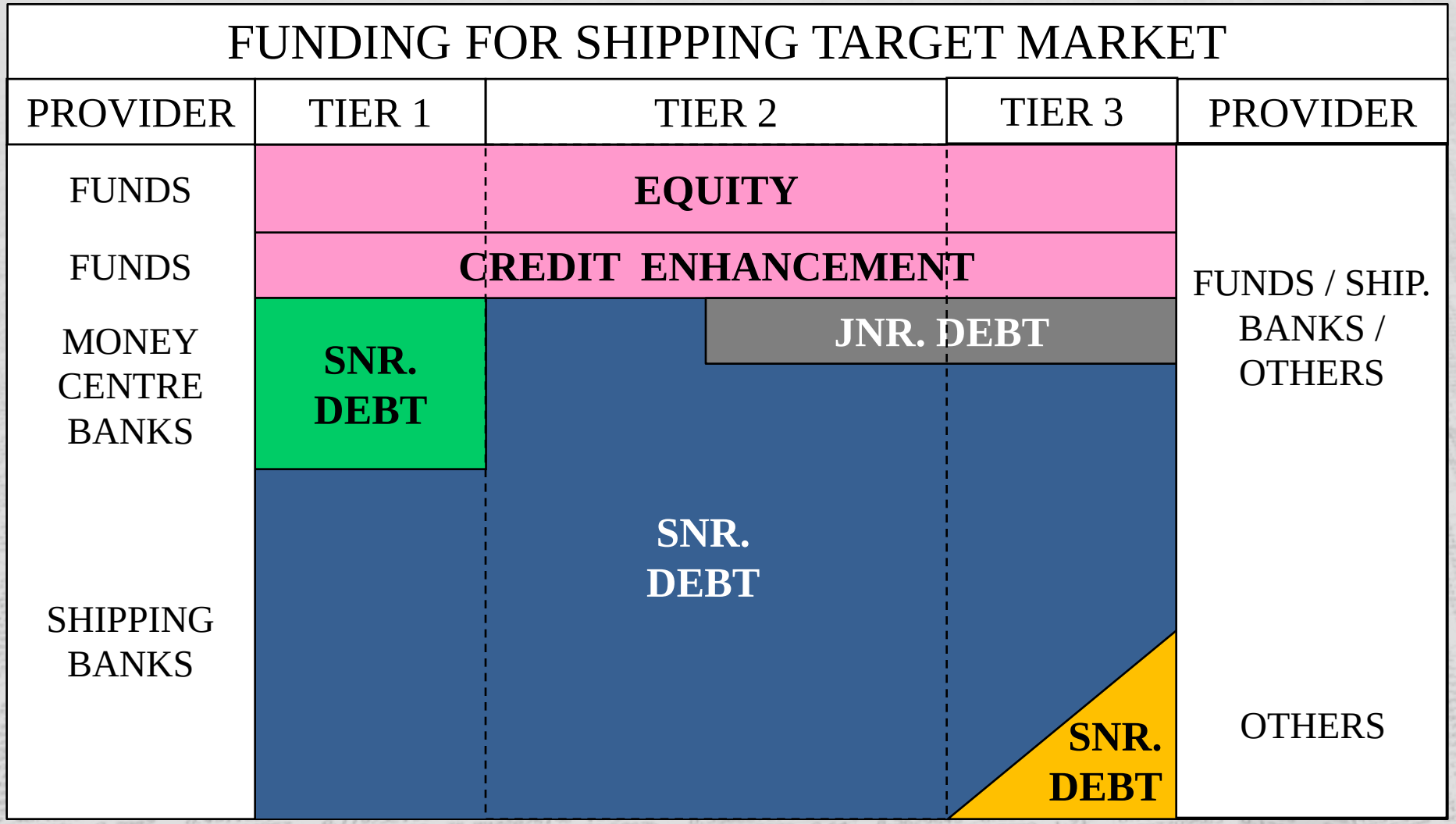
THEISEN risk

QUESTIONS

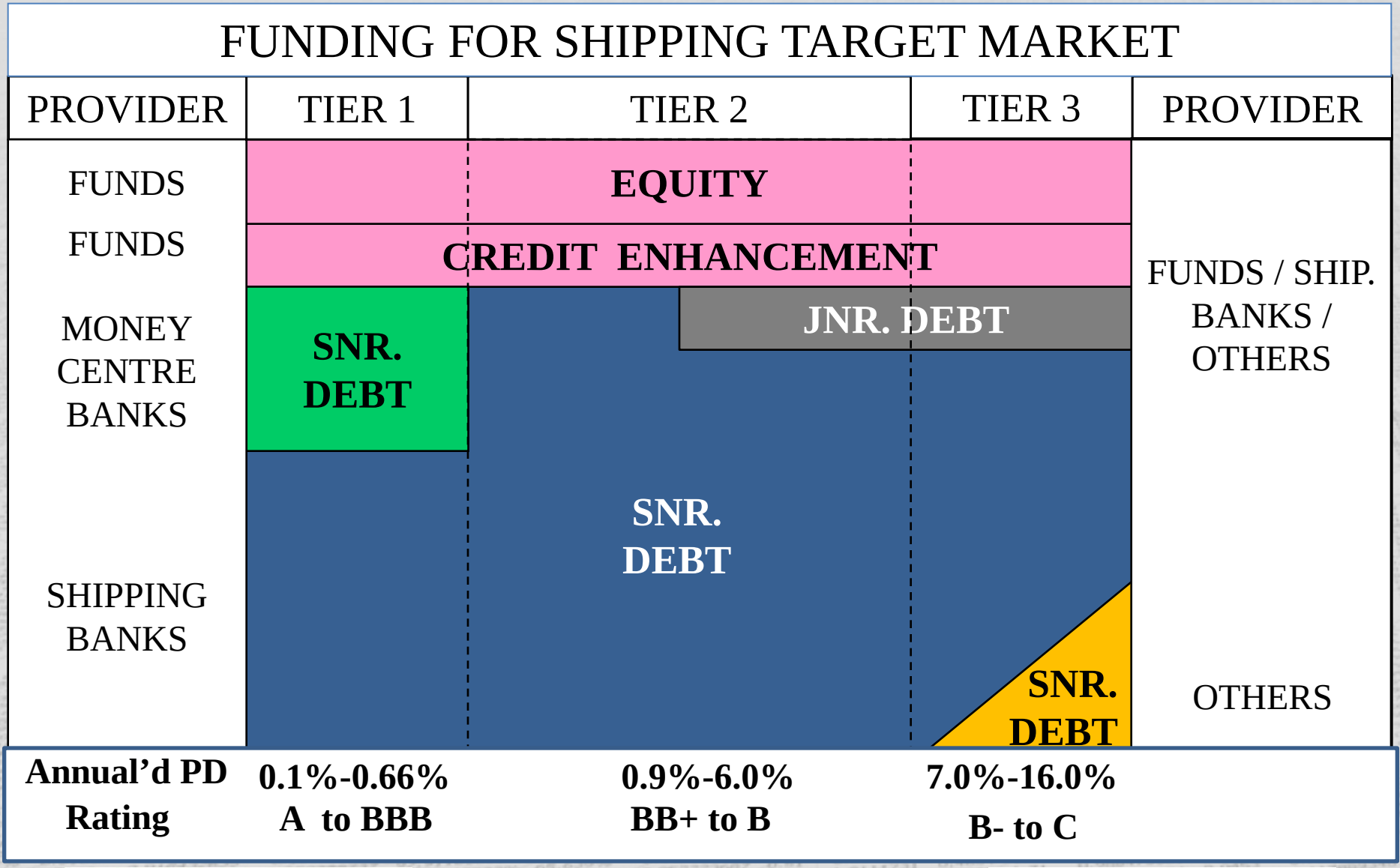
Issue: Shipping Banks providing senior debt are now focusing on Tier 1 borrowers leaving a void for senior debt provision to Tier 2 borrowers.

- **Is replacing Bank senior debt attractive to Funds? Can it meet their risk profile and return on investment criteria?**
- **What return is possible and what debt structures work?**
- **If Funds need to charge a higher spread, will Tier 2 borrowers have a competitive cost of capital?**

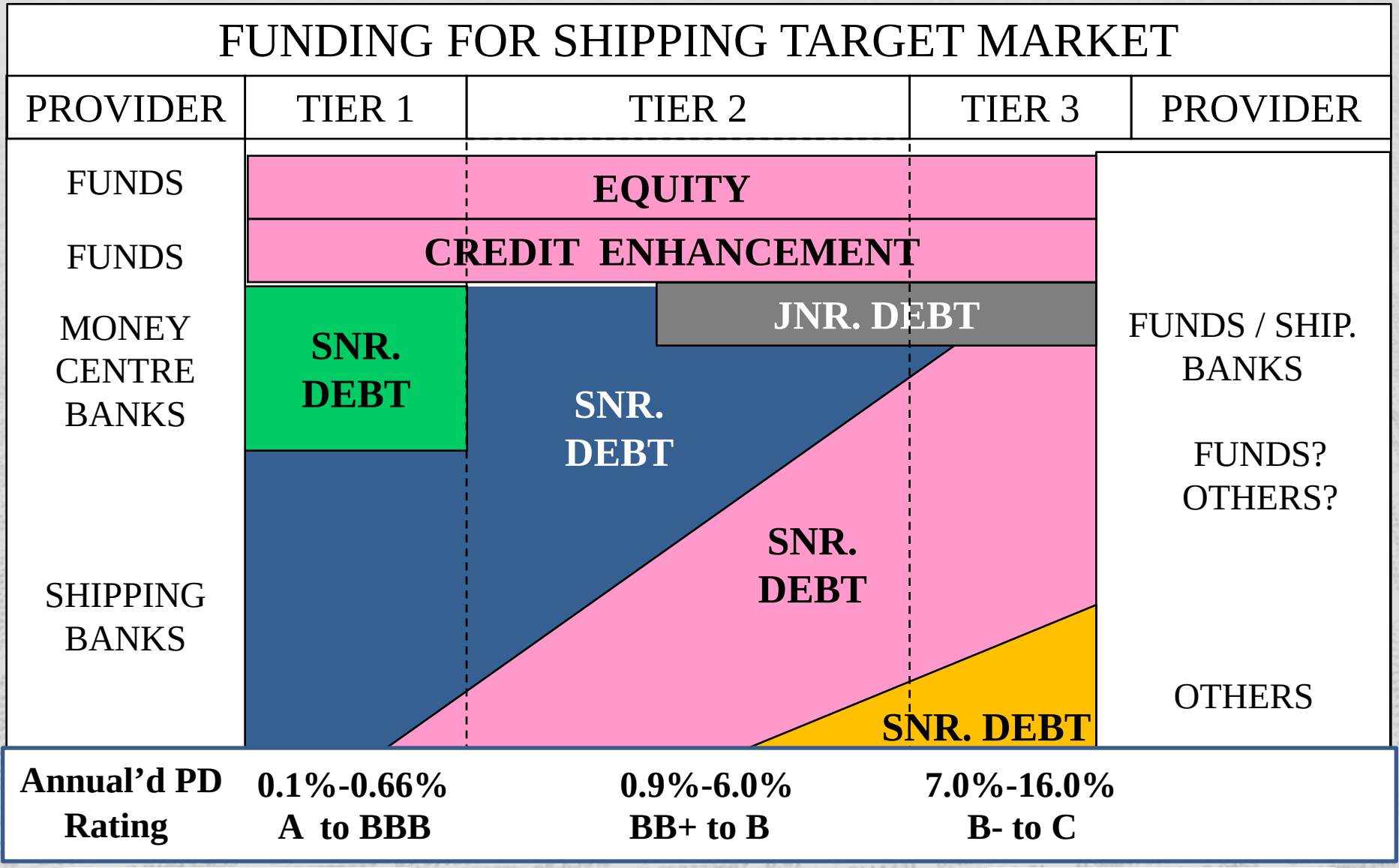
Previous Shipping Industry Funding`



Previous Shipping Industry Funding`



QUESTION?


FUNDING FOR SHIPPING TARGET MARKET
PROVIDER
TIER 1
TIER 2
TIER 3
PROVIDER
FUNDS
EQUITY
FUNDS
CREDIT ENHANCEMENT
MONEY CENTRE BANKS
SNR. DEBT
JNR. DEBT
SNR. DEBT
FUNDS / SHIP. BANKS
FUNDS? OTHERS?
SNR. DEBT
SHIPPING BANKS
OTHERS
SNR. DEBT
Annual'd PD Rating
0.1%-0.66% A to BBB
0.9%-6.0% BB+ to B
7.0%-16.0% B- to C

Regulatory Capital Assessment for Banks

Unexpected Loss for a granular portfolio where risks offset each other
Bank Equity Capital Required = Loan Amount x Risk Weight x 8% (or 10.5%)

BIS Risk Weight formulae (for each class or asset) =
12.5 x [LGD x N [(1-R)^-0.5 x G (PD) + (R/(1-R))^0.5 x G(0.999)] –PD x LGD]x (1-1.5 x b(PD)^-1 x (1+(M-2.5) x b(PD)]

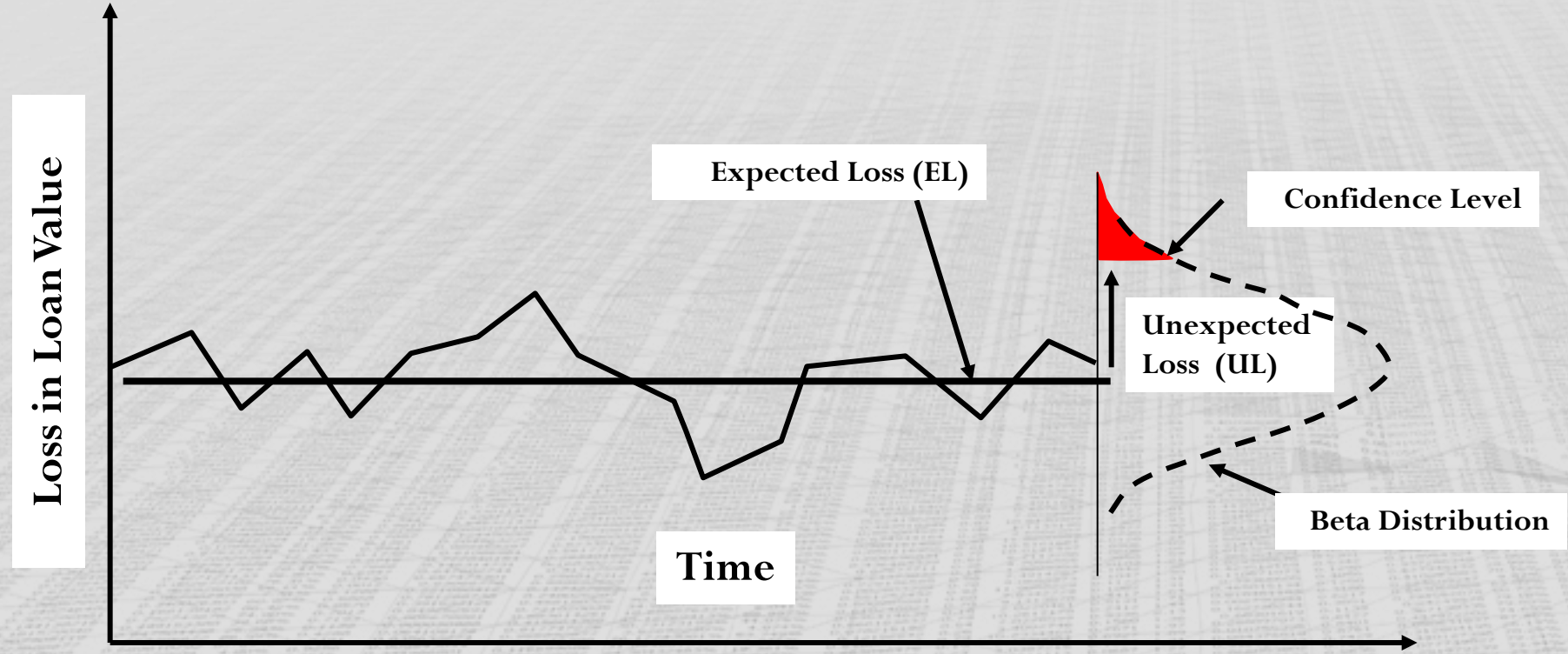
Where EAD=Exposure at Default; N=cumulative distribution function for a standard normal random variable; G=the inverse function of the same; R= an asset correlation coefficient formula involving PD; b= a maturity adjustment formula involving PD;

or more simply:

RW = *f* { PD, LGD, Correlation Coefficient, Maturity }

Regulatory Capital = Exposure at Default x RW x 8% (or 10.5%)

Economic Capital for Banks & Funds

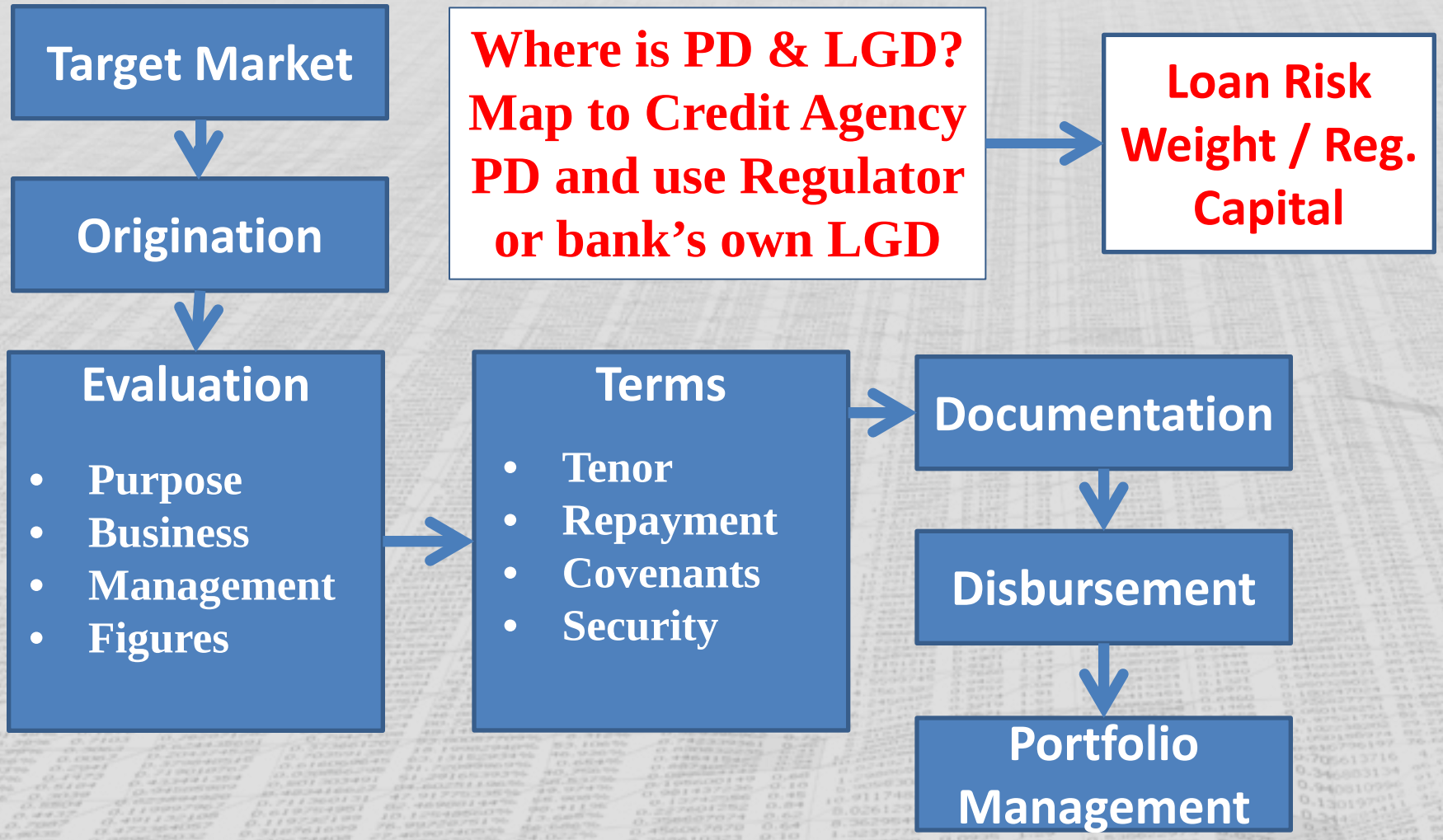


Total Transaction Loss = Expected Loss (PD x LGD) + Unexpected Loss (*f*(PD, sdPD, LGD, sdLGD)

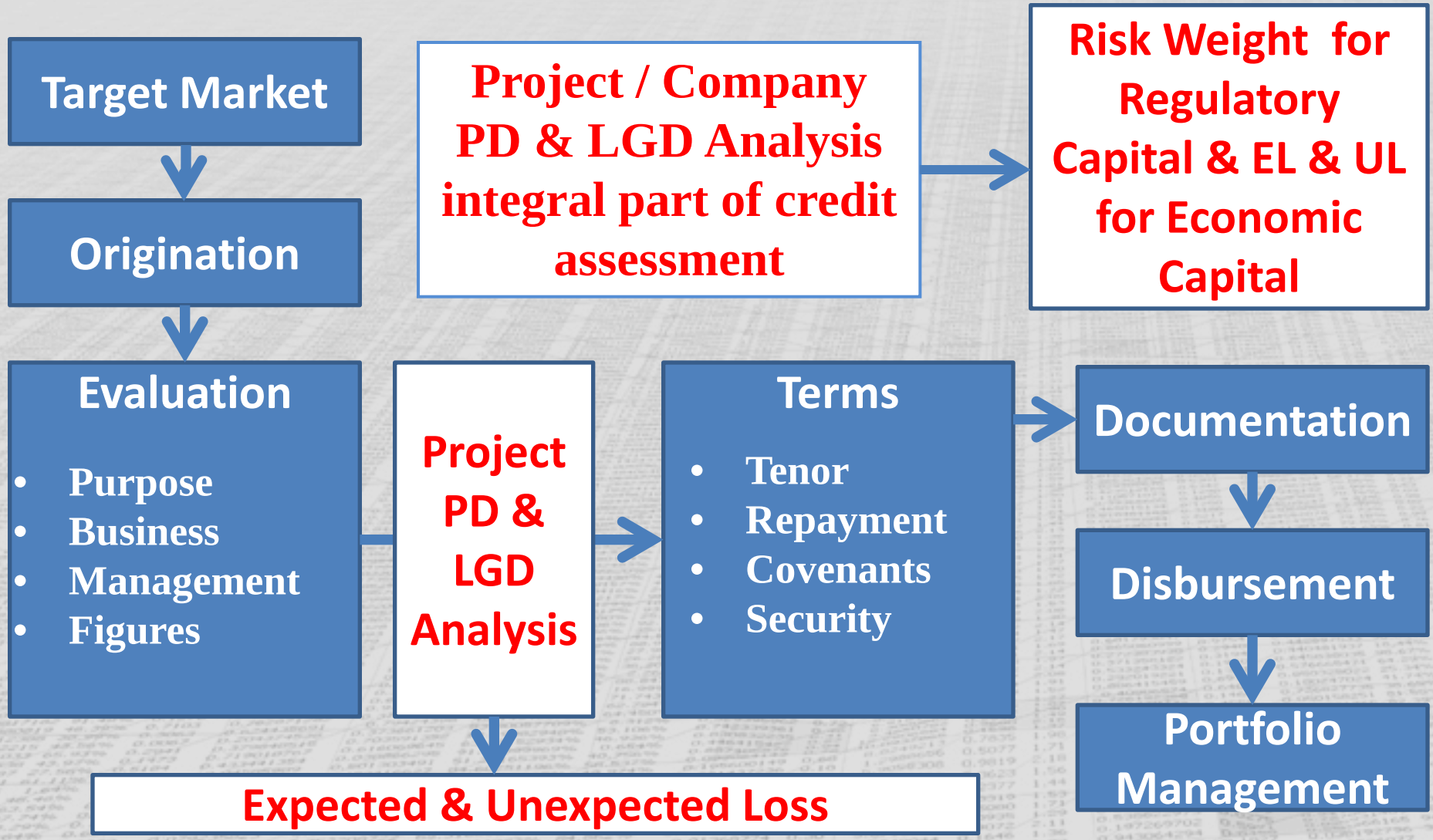
+ Obligor correlations to get portfolio loss distribution and apply multiplier to get portfolio "tail "loss

Economic Capital = Expected Loss + Unexpected Loss (for portfolio)

Traditional Shipping Bank Credit Analysis



Theisen Shipping Bank / Fund Credit Analysis



EXAMPLE - Bank Loan Risk vs Return

Bank Risk vs Return - Illustrative at 60% LTV

Loan Structure: 60% Bank Loan advance, 7 Year Term, 30% Balloon	1st Tier Credit TM 5 YR Old VLCC $80.5M with 5% start cash	2nd Tier Credit TM 5 Yr Old 2050 TEU $12.4M with 5% start cash	Non TM 5 Yr Old PMAX BC $18.0M with 5% start cash
Loan Margin bp	250	350	450
Net of operating/funding costs bp	150	250	350
Expected loss bp	10	50	280
Net return bp	140	200	70
Regulatory RW	39	99	129
Regulatory Capital Required (@10%)	**3.9%**	**9.9%**	**12.9%**
Return on Reg. Capital	35.9%	20.2%	5.4%
Unexpected Loss with portfolio C.V. bp	110	330	530
Multiplier for desired rating of portfolio	5	5	5
Economic Capital Required	**5.5%**	**16.5%**	**26.5%**
Return on Economic Capital	25%	12%	3%
Minimum Capital Required	**5.5%**	**16.5%**	**26.5%**
Return on Capital Required	**25.5%**	**12.1%**	**2.6%**

EXAMPLE – Fund Loan Risk vs Return

Fund Risk vs Return - Illustrative at 70% LTV

Loan Structure: 70% Fund advance, 7 Year Term, 30% Balloon	1st Tier Credit TM 5 YR Old VLCC $80.5M with 5% start cash	1st Tier Credit TM 5 YR Old VLCC $80.5M with 5% start cash	2nd Tier Credit TM 5 Yr Old 2050 TEU $12.4M with 5% start cash	3rd Tier Credit TM 5 Yr Old PMAX BC $18.0M with 5% start cash
Loan Margin bp	250	450	650	800
Net of operating/funding costs bp	200	400	600	750
Expected loss bp	30	30	110	340
Net margin bp	170	370	490	410
Funding interest basis 2% LIBOR bp	200	200	200	200
Net return bp	370	570	690	610
Regulatory RW	N/A	N/A	N/A	N/A
Regulatory Capital Required (@10%)	N/A	N/A	N/A	N/A
Return on Reg. Capital	N/A	N/A	N/A	N/A
Unexpected Loss bp	240	240	450	590
Multiplier for desired rating of portfolio	5	5	5	5
Economic Capital Required	12.0%	12.0%	22.5%	29.5%
Leverage possible	88%	88%	78%	71%
Cost of leverage at 250 bp for Inv. Grade bp	250	250	250	250
Funding interest basis 2% LIBOR bp	200	200	200	200
Total funding cost bp	450	450	450	450
Net return after funding cost bp	-26	174	341	293
Minimum Equity Capital Required	12.0%	12.0%	22.5%	29.5%
Return on Equity Capital	**-2.2%**	**14.5%**	**15.2%**	**9.9%**

EXAMPLE - Fund Economics

Fund Economics - Illustrative	1st Tier Credit TM	2nd Tier Credit TM	3rd Tier Credit TM
Loan Structure: 70% Fund advance, 7 Year Term, 30% Balloon	5 YR Old VLCC $80.5M with 5% start cash	5 Yr Old 2050 TEU $12.4M with 5% start cash	5 Yr Old PMAX BC $18.0M with 5% start cash
Pricing - Loan Margin bp	450	650	800
Amount of Equity required to suport Loan	12.0%	22.5%	29.5%
Return on Equity Capital	14.5%	15.2%	9.9%
Probability of obtaining return on equity used to support debt - no upside	100%	100%	100%
Target return for investing equity % shown directly	15% / 25%	15% / 25%	15% / 25%
Probability of obtaining return on pure equity - upside and downside	53% / 37%	48% / 30%	33% / 29%

EXAMPLE - Borrower Economics

Borrower Economics - Illustrative **Loan Structure: 60% Bank Loan & 70% Fund advance, 7 Year Term, 30% Balloon**	1st Tier Credit TM Bank Loan 60% 5 YR Old VLCC $80.5M with 5% start cash	1st Tier Credit TM Fund Loan 70% 5 YR Old VLCC $80.5M with 5% start cash	2nd Tier Credit TM Bank Loan 60% (if available) 5 Yr Old 2050 TEU $12.4M with 5% start cash	2nd Tier Credit TM Fund Loan 70% 5 Yr Old 2050 TEU $12.4M with 5% start cash
Loan Margin bp	250	450	350	650
Funding interest basis 2% LIBOR bp	200	200	200	200
Loan capital provided initially (LTV)	60%	70%	60%	70%
Average loan capital over 3 years	51%	60%	51%	60%
Contribution cost of Loan Capital	2.3%	3.9%	2.8%	5.1%
Equity return required bp	1500	1500	1400	1200
Average equity capital over 3 years	49%	41%	49%	41%
Contribution cost of equity capital	7.4%	6.1%	6.9%	4.9%
Total cost of debt and equity capital	**9.6%**	**9.9%**	**9.7%**	**9.9%**

QUESTIONS ANSWERED

Issue: Shipping Banks providing senior debt are now focusing on Tier 1 borrowers leaving a void for senior debt provision to Tier 2 borrowers.

- **Is replacing Bank senior debt attractive to Funds and can it meet their risk profile and return on investment criteria?** YES – but at what probability of return on invested equity?
- **What return is possible for Funds and what debt structures work?** 15% p.a. return on equity used is possible but may need to change loan structure (term, balloon, grace period, interest only, etc.) to add value to borrower and to manage the transaction PD / LGD
- **If Funds need to charge a higher spread, will Tier 2 borrowers have a competitive cost of capital cost?** YES – but Tier 2 borrowers may need to reassess their own equity return to match their perception of shipping market risk

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