CU – MSF, EQUITY ANALYSIS

DISCOUNTED CASHFLOW (DCF) VALUATION

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COMMON APPROACHES

1. RELATIVE APPROACH - MULTIPLES BASED
2. ABSOLUTE APPROACH - DISCOUNTED CASHFLOWS (fair value)
3. DDM & RESIDUAL INCOME
4. SUM OF PARTS

ABSOLUTE APPROACH - DISCOUNTED CASHFLOWS

PRIOR KNOWLEDGE

- TIME VALUE OF MONEY
- DISCOUNT RATE, REQUIRED RETURN ON EQUITY, AFTER TAX COST OF DEBT
- WACC (WEIGHTED AVERAGE COST OF CAPITAL)
- TERMINAL GROWTH
- PV, FV

3 COMMON WAYS

MODEL	CASHFLOW	CAPITAL PROVIDED	DISCOUNT RATE
FCFF *Free Cashflow to Firm*	Free Cashflow to Firm	Debt and Equity	Required Return to the Firm (WACC)
FCFE *Free Cashflow to Equity Holders*	Cashflow to Shareholders	Equity	Required Return to Equity (Required ROE)
DDM *Dividend Discount Model*	Dividends to Shareholders	Equity	Required Return to Equity (Required ROE)

REQUIRED RETURNS VS. RETURNS FROM FINANCIAL STATEMENTS

↳ return required demand by investors

↳ How much company can generate return for investors

RETURN ON EQUITY (ROE)	- Returns generated to shareholders from the operating business - Returns based on actual/reported earnings - A function of capital structure
REQUIRED RETURN ON EQUITY	- Returns required by equity investors in the **capital market** - Function of operating performance - Functions of capital market risks and beta
COST OF DEBT	- Returns required by lenders - Function of capital structure - Credit appetite of lenders
REQUIRED COST OF DEBT	- Returns required by debt investors in the **capital market** - Functions of capital market risks and credit risk premium - bond yield

DISCOUNT RATE COMPONENTS

REQUIRED RETURN ON EQUITY

CAPM

= LONG-TERM RISK-FREE RATE + (MARKET RISK PREMIUM * BETA)

Free of Default Risk	RISK associated with investing in Equity asset class. At the index level, this is referred as Market Risk Premium (MRP)	RISK specifically associated with a company

REQUIRED RETURN ON DEBT

= (LONG-TERM RISK-FREE RATE + CREDIT RISK PREMIUM) * (1-TAX RATE)

Tax shield

CALCULATING WACC

- **WEIGHTED AVERAGE COST OF CAPITAL = REQUIRED RETURN OF CAPITAL FOR THE FIRM**
- $$WACC = REQUIRED\ RETURN\ ON\ EQUITY * \left(\frac{EQUITY}{(EQUITY+DEBT)}\right) + REQUIRED\ RETURN\ ON\ DEBT * \left(\frac{DEBT}{(EQUITY+DEBT)}\right) * (1 - TAX\ RATE)$$

market prices!

VARIABLES

- RISK FREE RATE (TYPICALLY 10Y GOVERNMENT BOND YIELD)
- EQUITY RISK PREMIUM
- BETA
- COST OF DEBT
- TAX RATE
- CAPITAL STRUCTURE
- EQUITY = MARKET CAPITALIZATION (Price x Shares outstanding)
- DEBT = MARKET VALUE OF DEBT
- EQUITY + DEBT = ENTERPRISE VALUE

COMMON METHODS

- **SINGLE STAGE**
  - A SINGLE YEAR'S CASHFLOW IS USED TO ESTIMATE PRESENT VALUE

- **MULTI-STAGE OR CONTINOUS**
  - SEVERAL YEARS OF CASHFLOWS ARE USED TO ESTIMATE PRESENT VALUE
  - GROWTH AND RISKS CAN BE BETTER INCORPORATED DURING FORECAST YEARS

SINGLE STAGE

If: FCFF= 100, Growth Rate = 3%, WACC = 10%

↳ assume this CF will go forever at 3%

FIRM VALUE (FV)

= **FCFF** (1+GROWTH RATE %) / (WACC % - GROWTH RATE %)

= 100 * 1.03 / (10%-3%)

= 1,471

EQUITY VALUE

= **FCFE** (1+GROWTH RATE %) / (REQD. RETURN ON EQUITY % – GROWTH RATE %)

DDM

= **DIVIDENDS** (1+GROWTH %) / (REQD. RETURN ON EQUITY % – GROWTH RATE %)

MULTI-STAGE

common to do DCF
(build assumptions for future CF

① forecast ② terminal

Period	0	1	2	3	4	TERMINAL VALUE
EBIT	3,000	3,450	3,968	4,563	5,019	
Tax	-600	-690	-794	-913	-1,004	
EBIT After Tax	2,400	2,760	3,174	3,650	4,015	
Depreciation	266	288	302	308	308	
Working Capital Changes	-70	-90	-110	-130	-145	
Capital investments	-500	-600	-500	-400	-300	
FCFF	2,096	2,358	2,866	3,428	3,878	xxxx

EXPLICIT FORECASTS

TERMINAL VALUE TREATED AS A 'SINGLE-STAGE'

Period	0	1	2	3	4	Terminal Value
EBIT	3,000	3,450	3,968	4,563	5,019	
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Capital investments	-500	-600	-500	-400	-300	
						single stage *(3,878 * 1.02) / (7.55%-2.0%)* = 71,266
FCFF	2,096	2,358	2,866	3,428	3,878	
Discounting factor	1.000	0.930	0.865	0.804	0.747	0.747
Present value of FCFF	2,096	2,192	2,478	2,756	2,898	53,265

Sum of FCFF PV	65,685
Debt	-20,000
Equity Value	**45,685**
# of shares	1,000
Value per share	**45.7**

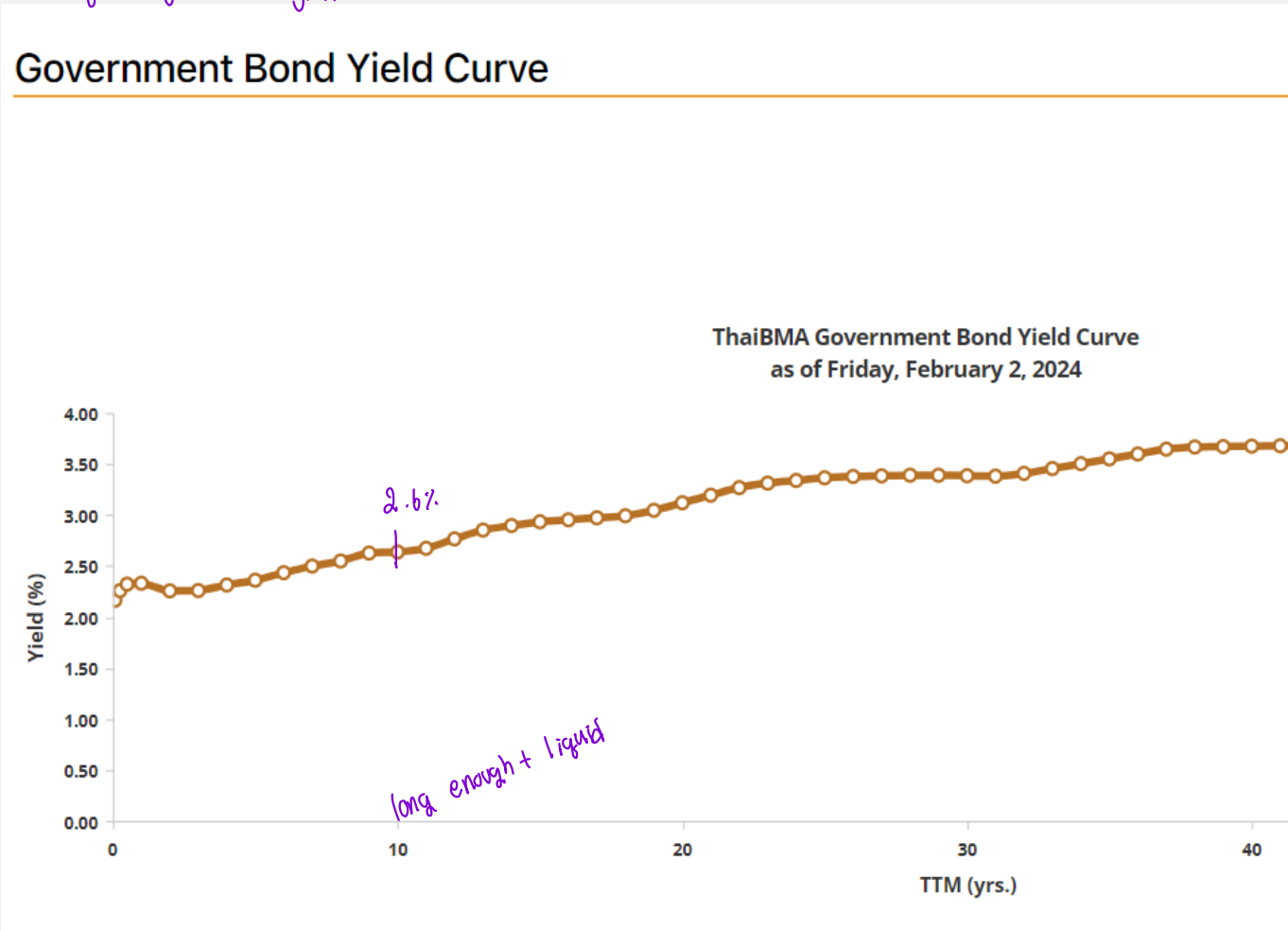
Risk Free Rate	3.0%
Market Risk Premium	4.0%
Beta	1.5
Rqd. Return on Equity	9.0%
Return on Debt	4.0%
Tax	20%
Terminal Growth	2.0%
WACC	7.55%

Market Value of Equity	60,000
Value of Debt	20,000
Total Firm Value	**80,000**

RISK-FREE RATE

- LONG TERM GOVERNMENT BOND YIELD
- GOVERNMENT CONSIDERED TO BE FREE OF CREDIT RISK
- 10-YEAR BOND YIELD IS WIDELY USED
  - – WIDELY AVAILABLE AND TRADED (LIQUIDITY)
  - – LONG-TERM ENOUGH TO COVER 'FOREOVER CASHFLOWS'
- SAME CURRENCY WITH UNDERLYING CASHFLOWS

10-year govt bond yield



Source: ThaiBMA

MANY WAYS TO ESTIMATE MARKET RISK PREMIUM

1. Professor Damodaran estimates (January 2024)

good concept for international investor not local investors

Country	Moody's rating	Equity Risk Premium	Country Risk Premium
Thailand	Baa1	6.94%	2.34%
China	A1	5.63%	1.03%
Japan	A1	5.63%	1.03%
Vietnam	Ba2	9.00%	4.40%
United States	Aaa	4.60%	0.00%

4.6% + 2.34%

credit spread btw Baa1 & AAA US

govt bond 10 year

Source: www. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

S&P 12 EPS = 200

INDEX = 2000

EARNING YIELD = $\frac{200}{2000}$ = 10%

what mkt expects to be compensated

2. Local brokers = 4% to 9%

very conservative

pure dividend stream

DRS

ESTIMATING MARKET RISK PREMIUM (II)

PERIOD	Last 20 Years 2003-2022	Last 10 Years 2013-2022	Last 5 Years 2018-2022	Covid Years 2020-2022
assume invest & reinvest				
HISTORICAL AVERAGE RETURNS				
SET RETURN	10.8%	2.5%	-1.4%	2.5%
10Y TGB	2.0%	4.0%	-3.5%	-27.1%
ERP	8.8%	-1.5%	2.1%	29.7%
assume invest & wait → compound				
HISTORICAL GEOMETRIC RETURNS				
SET RETURN	8.0%	1.8%	-1.0%	2.8%
10Y TGB	1.4%	2.9%	-2.5%	3.4%
ERP	6.6%	-1.1%	1.5%	-0.6%
12M ESTIMATES EARNINGS YIELD				
SET EARNINGS YIELD	-	6.4%	6.0%	5.7%
10Y TGB	3.3%	2.6%	2.0%	1.8%
~~ERP~~ MRP	N.A.	3.87%	3.92%	3.84%

Source: Bloomberg

MRP ISSUES

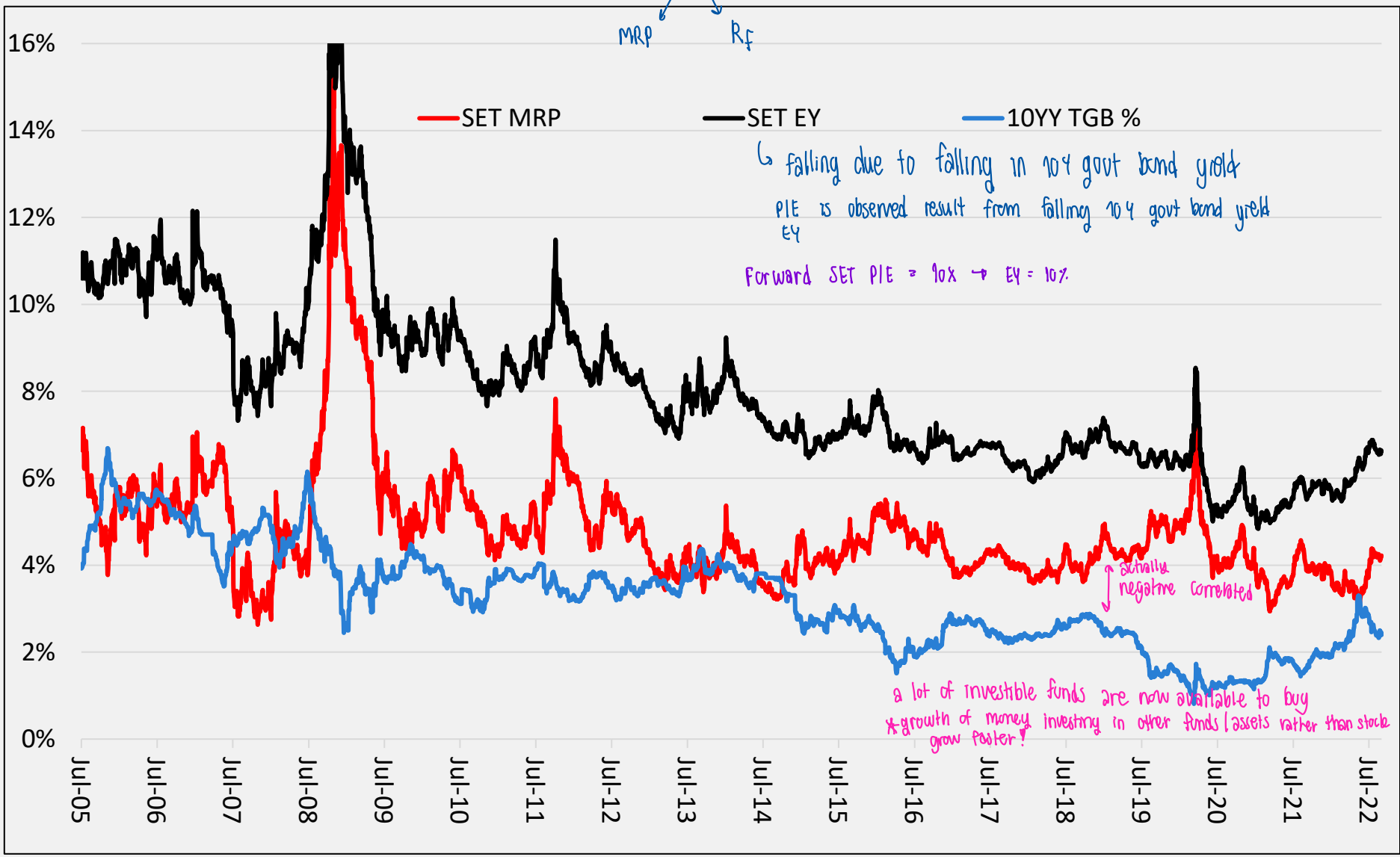
mkt trade on forward

- **Forward MRP vs Historical MRP**
  - Future view vs Rear view

- **Total Return Index (includes Dividends) vs Equity Index**
  - Total Returns assumes Dividends are reinvested
  - The Forward view of Equity index already includes Dividends

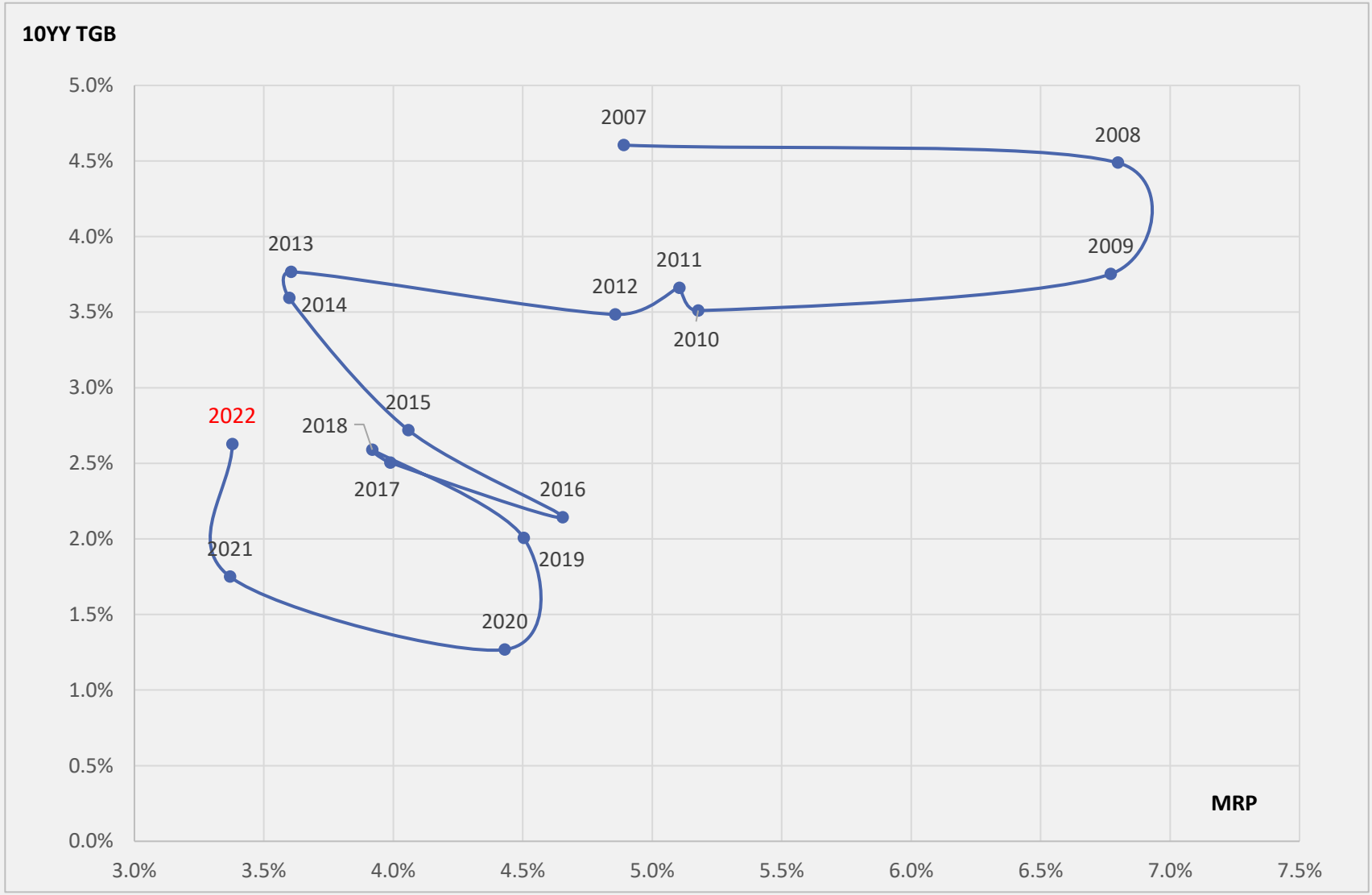
use equity index

SET FORWARD EARNINGS YIELD (EY) – 10YY TGB = MRP



Source: Bloomberg

SET MRP AND 10YY TGB



BETA

SLOPE function

- BETA = COVARIANCE BETWEEN STOCK AND BENCHMARK / VARIANCE OF BENCHMARK
  - MONTHLY, WEEKLY, DAILY
  - LT BETA

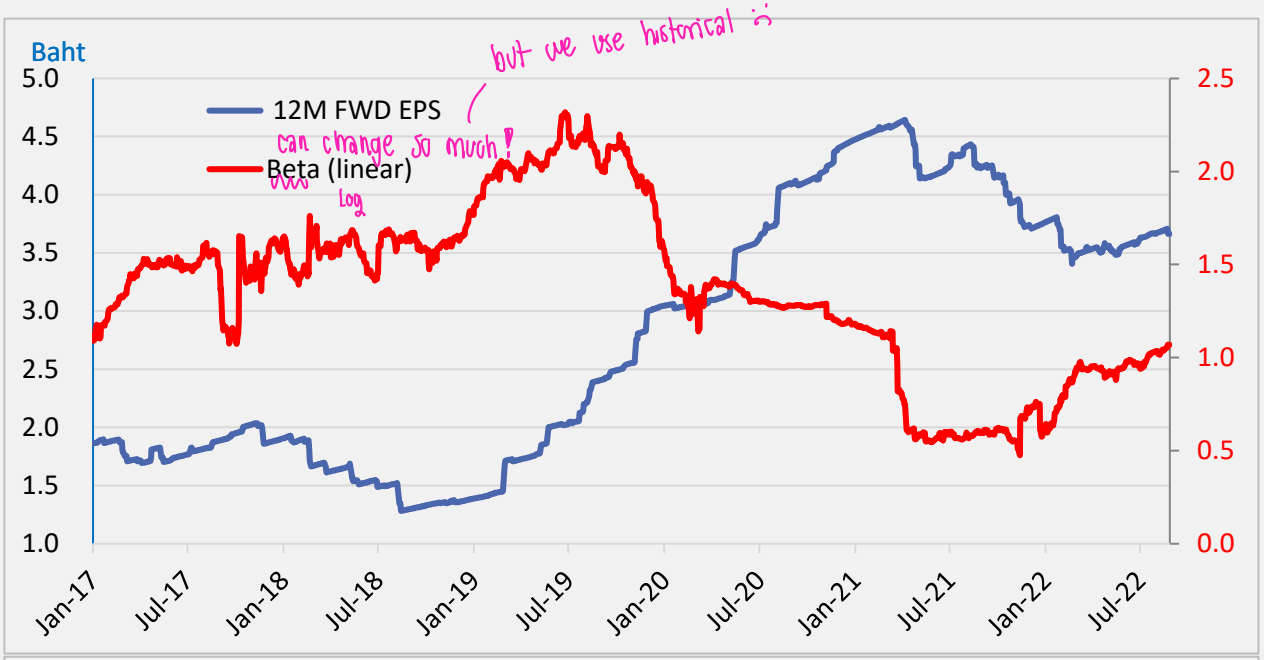
Subjective about period

	DAILY	CORRELATION
3Y	1.03	0.42
2Y	1.05	0.40
1Y	0.96	0.35

Statistics		
F/S Period (As of date)	31/12/22	
P/E		41.88
PEG		-2.03
P/BV		8.96
Enterprise Value (M.Baht)		104,170.31
EV / EBITDA		28.84
%Dividend Yield		1.57
%12M Dividend Yield		1.57
Market Cap. (M.Baht)		95,750.00
%Volume Turnover		19.12
ROI		-0.26
Beta		1.10

weekly basis - 2 years

CBG BETA



- SETSMART, 1.01 (12M DAILY)
- WEEKLY OR DAILY
- TRADING DAYS
- 6M/12M/YEARS

REQUIRED RETURNS AND WACC

RISK FREE	2.60%
EQUITY RISK PREMIUM	4.00%
BETA	1.46
RQD. RETURN ON EQUITY	**8.44%**
COST OF DEBT	**2.0%**
Tax	20%
AFTER TAX COST OF DEBT	1.6%
WACC	**7.99%**

assume it will go up slightly

Share price	76.0
# shares (Mn)	1,000
Equity Value (BtMn)	76,000
Net Debt (BtMn) latest debt available	5,001
NET DEBT / (EQUITY + NET DEBT)	6.58%

↳ can use the firm's mentioned D/E ratio if there's solid plan for it otherwise use mkt

TERMINAL GROWTH

need to be well justified!

	LT Growth	Proportion of Sales
Overall	**3.39%**	
Domestic Sales	2%	44%
CLMV + Overseas Sales	4%	56%

LT GDP + inflation ≈ 5%

should be lower than GDP

concern about health

young mkt

list of sources of sales

CBG FREE CASHFLOW

How many yr → drag until CAPEX is normalized as depreciation!

PERIOD		0	1	2	3	Terminal Value
	2022	2023F	2024F	2025F	2026F	
EBIT	2,794	2,482	2,912	3,080	3,161	
TAX	(433)	(470)	(559)	(593)	(611)	
EBIT AFTER TAX	2,361	2,012	2,353	2,487	2,550	
DEPRECIATION	813	783	767	790	803	
WORKING CAPITAL CHANGE	(1,074)	590	(64)	(143)	(79)	
CAPEX	(445)	(500)	(1,000)	(1,200)	(800)	
CASHFLOW TO THE FIRM	**1,654**	**2,885**	**2,056**	**1,933**	**2,474**	**43,356**
DISCOUNTED CASHFLOW		2,885	1,904	1,658	1,965	34,427

PV OF FIRM VALUE	42,646
NET DEBT	5,001
PV OF EQUITY VALUE	37,645
# OF SHARES (MN)	1,000
EST. SHARE VALUE	**37.6**

80% of it is terminal value!

it will grow at 2.16%
it won't die
Constant growth! forever
assumption you made on this will be constant forever
(2026F)
→ risk factor

additional
→ Don't expect to invest in CAPEX → final yr CAPEX should be as close as possible as depreciation
* organic growth → productivity + inflation
GDP is fair enough

BONDS

cost of debt for firm that issue in diff currencies → need to forecast foreign exchange rate

use what we know today! → and keep constant

no assumption for macro risk, only from operation

condition

leave for fund managers/ investors to decide

Rating :	A/TRIS

Issuer Information

CARABAO GROUP PUBLIC COMPANY LIMITED (CBG)

Issuer | Current Bond | Financial Information | Issuer News | Event Sign Bond | Expired Bond

1.Short Term Debenture

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Option	Registered Date
No Data Found											

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2. Long Term Debenture

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Option	Registered Date
CBG254A II	29-Mar-2023	04-Apr-2025	1,585.00	1,585.00	2.02 Yrs	1.17	UNSEC...		500.00		29-Mar-2023
CBG264A II	29-Mar-2023	03-Apr-2026	546.00	546.00	3.02 Yrs	2.16	UNSEC...		500.00		29-Mar-2023

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MARKET YIELD OF DEBT

TGB TERM AND YIELD

TTM (Yrs.)	Yield (%)	TTM (Yrs.)	Yield (%)
0.08	2.163996	9.00	2.627242
0.25	2.258149	10.00	2.637817
0.50	2.321603	11.00	2.673781
1.00	2.330864	12.00	2.765911
2.00	2.256434	13.00	2.852263
3.00	2.259580	14.00	2.896913
4.00	2.313970	15.00	2.933798
5.00	2.360529	16.00	2.953391
6.00	2.434436	17.00	2.972983
7.00	2.499620	18.00	2.992576
8.00	2.549417	19.00	3.045981

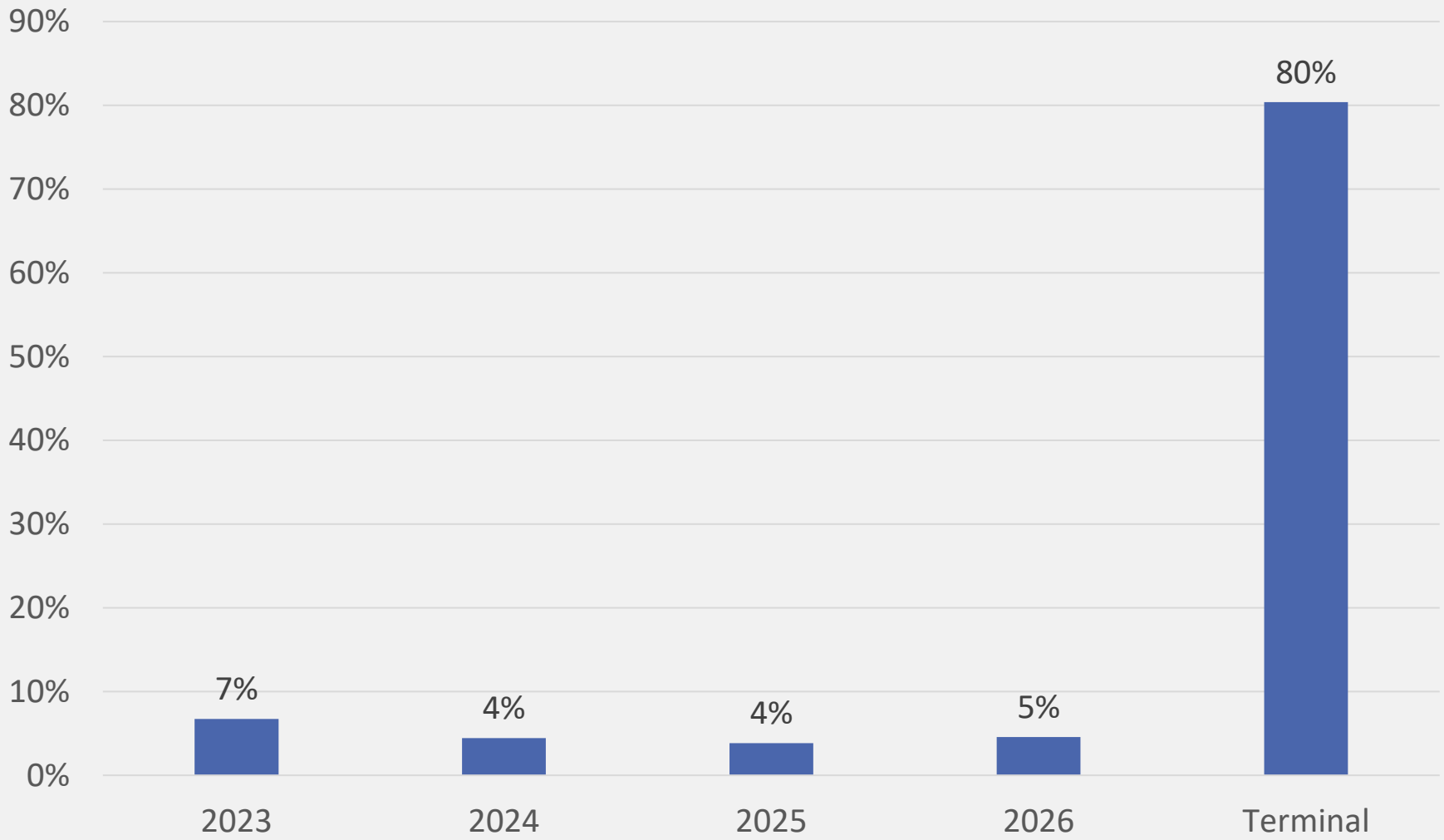
CREDIT SPREAD

Corporate Bond Yield Curve (Averaged Spread)

Corporate Bond Yield Curve (Based on TTM) as of 02 February 2024

Group	Averaged Spread (bp)			
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<=
AAA	41.658934	61.981439	86.076631	
AA+	52.731528	80.422377	93.914661	1
AA	52.757243	80.571154	103.521998	
AA-	54.918913	93.534831	108.579971	
A+	82.742390	109.442326	135.649034	
A	71.103587	108.183643	128.745799	2
A-	86.584337	133.956998	151.021299	
BBB+	191.066718	244.743053	295.199746	3
BBB	249.264055	235.905770	-	
BBB-	314.056037	-	-	

TERMINAL VALUE DOMINATES



SENSITIVITY

What factor has most influence on valuation

	Base Case	Sensitivity (10% Higher than Base Case)				
Value	**37.6**	**39.10**	**37.60**	**34.20**	**37.60**	**34.10**
Terminal Growth	2.16%	2.38%				
Risk Free	2.60%		2.86%			
Equity Risk Premium	4.00%			4.40%		
Cost of Debt	2.00%				2.20%	
Beta	1.46					1.61
Change in value		4%	0%	-9%	0%	-9%

TERMINAL VALUE BY MULTIPLE

Not popular

BT MILLION	2022	2023	2024	2025	2026	TERMINAL VALUE BASED ON TERMINAL YEAR PE RATIO: TERMINAL VALUE	DISCOUNTED TERMINAL VALUE	EXPLICIT FORECAST PERIOD	NET DEBT	VALUE	VALUE PER SHARE (BT)
FREE CASHFLOW (from forecast)	1,654	2,885	2,056	1,933	2,474						
SHARE PRICE	76.0										
EPS	**2.29**	**1.88**	**2.24**	**2.37**	**2.44**						
PER					31.1						
						76,973	61,074	8,409	5,001	64,481	**64.5**
										From DCF	47.3
										From Terminal Growth Method	~~**37.6**~~

(x)

discount to pv

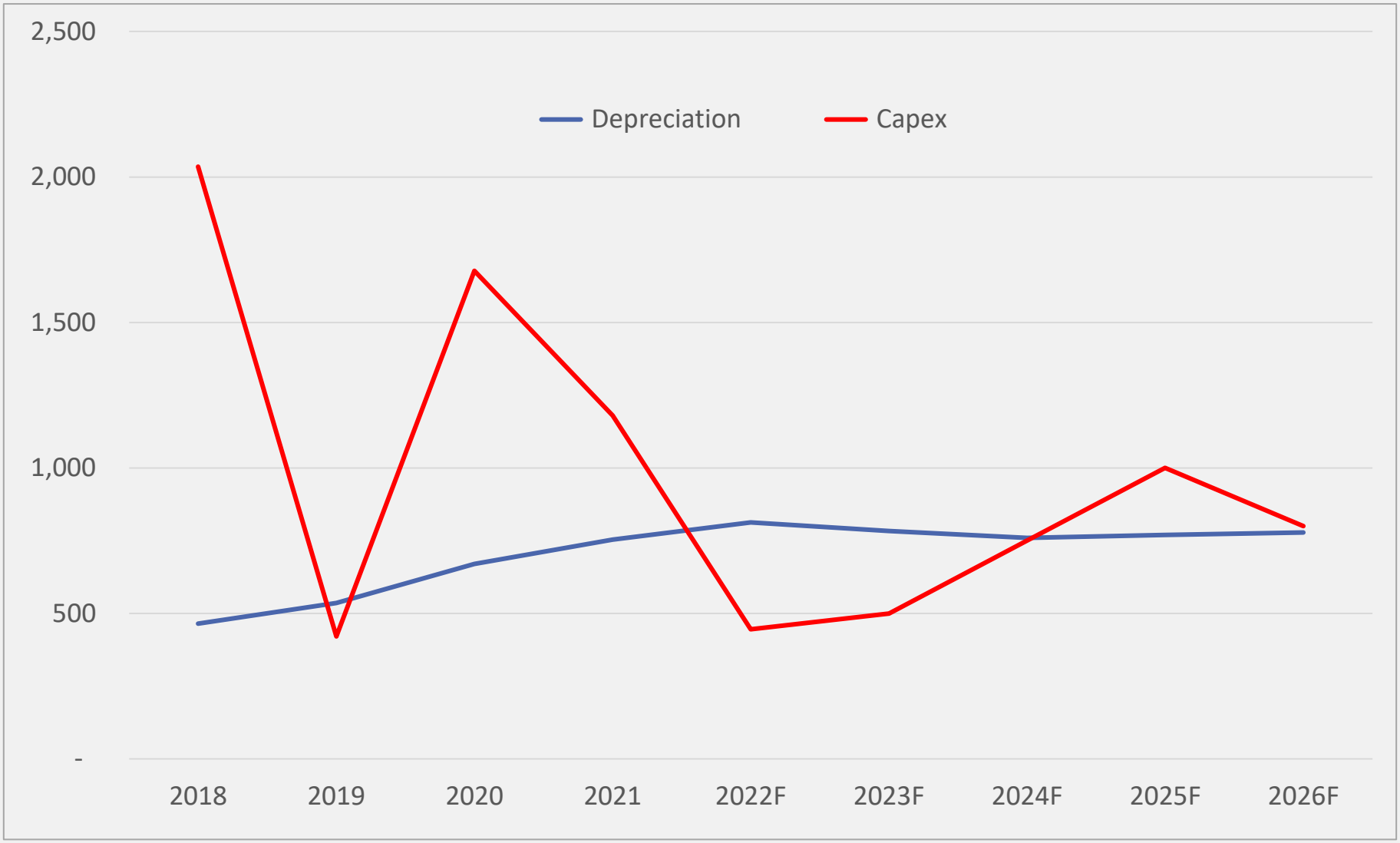
expect mult will price as today forever

stock has strong earning yield : high PER and will drop in future

assume the same mult condition

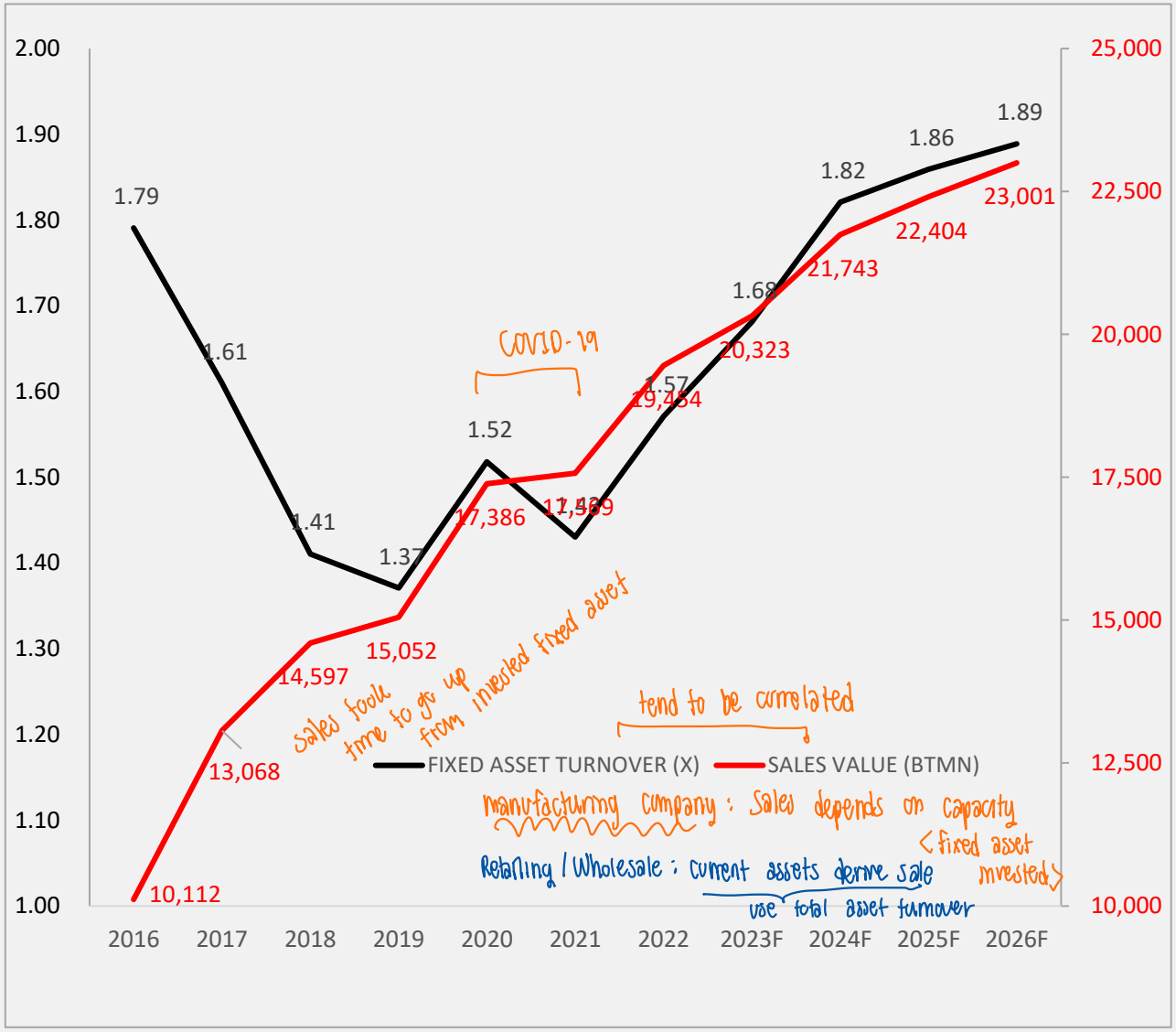
very huge assumption!

CAPEX AND DEPRECIATION AT TERMINAL



PLANT CAPACITY AND SALES CAPACITY

fixed asset turnover
↳ to high / low compared to the past



MAX UTILIZATION

To achieve FA T/O	=1.68
2026 Sales would be	= 20 ,701
Fall in Sales would be	= -10.0%

unless you assume more productivity → keep 23 billion

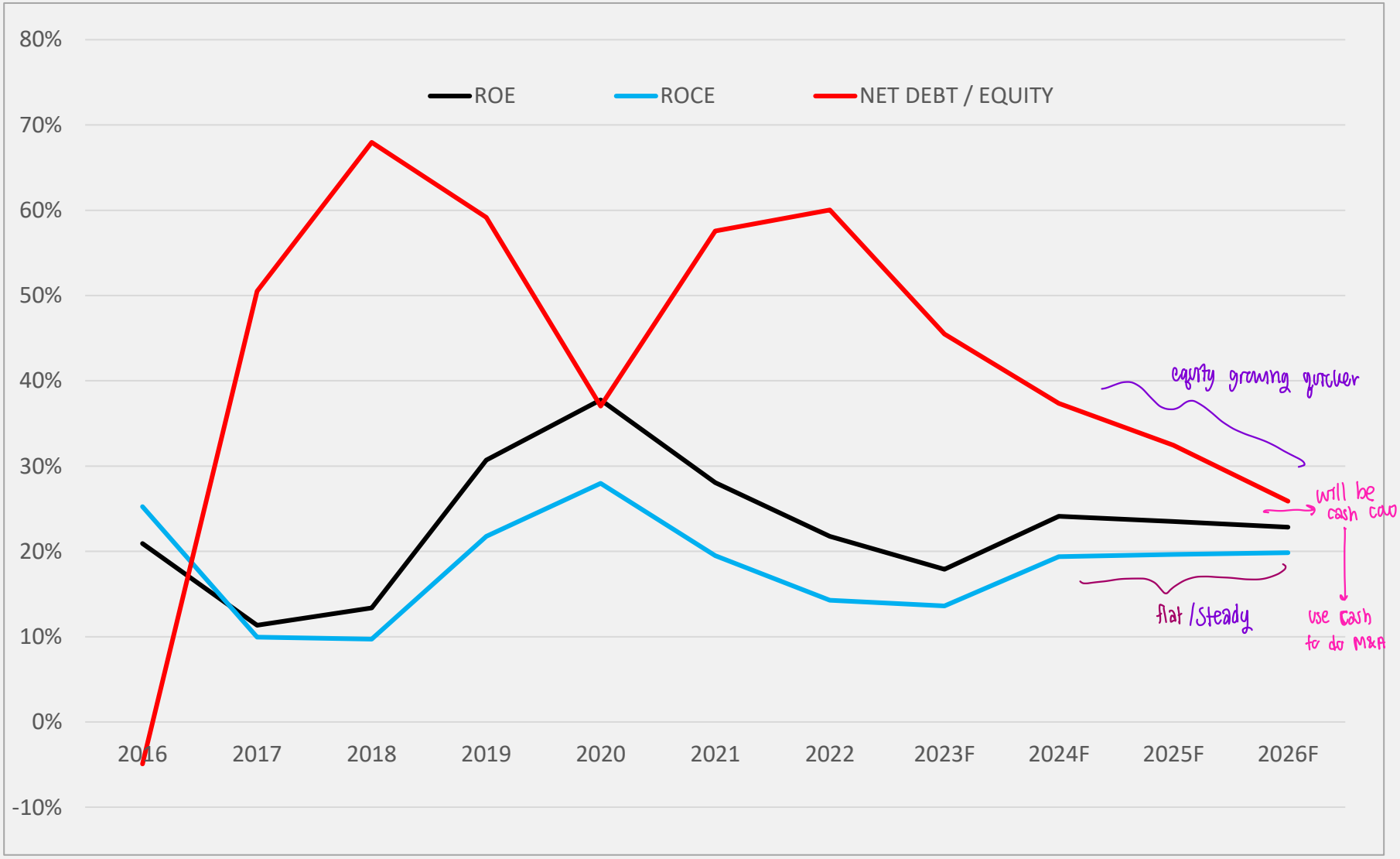
- Profits will be lower
- Marketing costs maybe less aggressive

TO ACHIEVE TARGET

To achieve sales	=23,001
At Fixed Asset Turnover of (assume ↗ doing ole)	= 1.68
Fixed Assets Need to be	= 14,537
New Capex needed	= 1,750
Rise in Capex would be	= 12%

- Depreciation costs will rise
- Interest expenses may rise from more borrowing

GRADUAL RISE IN PROFITABILITY
DEBT DECLINING SLOWLY



2 WACCS - SAMPLE

Forecast Horizon Cost of Equity		
Risk free Rate	**Proxy**	**Weight**
10Y CGS Yield Spot (20/8/2019)	0.95%	50%
10Y CGS Yield (5 Year Average)	2.49%	50%
10Y CGS Yield (10 Year Average)	3.41%	0%
Weighted Average	**1.72%**	**100%**
Adjusted Beta	**Proxy**	**Weight**
Comparable Beta	1.08	80%
Bloomberg	1.06	10%
Reuters	1.03	0%
CAPM Regression (5Y Monthly)	0.99	10%
Weighted Average	**1.07**	**100%**
Equity Market Risk Premium (EMRP)	**Proxy**	**Weight**
Historic EMRP (incl. imputation)	6.80%	0.50
Survey (Fernandez et al., 2019)	6.50%	0.50
Weighted Average	**6.65%**	**100%**
Capital Asset Pricing Model (CAPM)	**Proxy**	
Risk-free rate	1.72%	
Beta	1.07	
EMRP	6.65%	
CAPM Cost of Equity	**8.83%**	

Terminal Horizon Cost of Equity		
Risk free Rate	**Proxy**	**Weight**
10Y CGS Yield Spot (20/8/2019)	0.95%	0%
10Y CGS Yield (5 Year Average)	2.49%	100%
10Y CGS Yield (10 Year Average)	3.41%	0%
Weighted Average	**2.49%**	**100%**
Adjusted Beta	**Proxy**	**Weight**
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Weighted Average	**6.50%**	100%
Capital Asset Pricing Model (CAPM)	**Proxy**	**Weight**
Risk-free rate	2.49%	
Beta	1.08	
EMRP	6.50%	
CAPM Cost of Equity	**9.51%**	

Source: CFA Institute Research Challenge 2020 Winner of Research report. (An Australian bank). Page 21.
https://www.cfainstitute.org/-/media/documents/support/research-challenge/challenge/rc-2020-winning-report-university-of-sydney.ashx

FIXED VS VARIABLE WACC

FIXED WACC

Year		0	1	2	3	4	5	6	7	TERMINAL
EBIT		1,500	1,650	1,898	2,182	2,509	2,635	4,000	4,160	
TAX	20%	-300	-330	-380	-436	-502	-527	-800	-832	
DEPRECIATION		250	260	270	280	290	300	310	320	
WC CHANGES		-45	-50	-95	-65	-75	-79	-120	-125	
CAPEX		-300	-350	-400	-320	-320	-320	-320	-320	
FCFF		1,105	1,181	1,293	1,640	1,902	2,009	3,070	3,203	74,500
DISCOUNTED FCFF		1,105	1,099	1,120	1,323	1,428	1,404	1,997	1,940	45,115
NPV OF FIRM		56,531								
NET DEBT		-15,000								
NPV OF EQUITY		**41,531**								

TERMINAL GROWTH	3.00%
DEBT	15,000
EQUITY	20,000
DEBT / (DEBT + EQUITY)	43%
Rqd. RETURN ON DEBT	5.0%
Rqd. RETURN ON EQUITY	10.0%
WACC	**7.4%**

VARIABLE WACC → recalculate D/E → not common

Debt	15,000	14,000	13,000	12,000	11,000	10,000	9,000	8,000
Equity	20,000	20,500	21,000	21,500	22,000	22,500	23,000	23,500
DEBT / (DEBT + EQUITY)	43%	41%	38%	36%	33%	31%	28%	25%
Rqd. RETURN ON DEBT	5.0%	5.3%	5.5%	5.8%	6.0%	6.0%	6.0%	6.0%
Rqd. RETURN ON EQUITY	10.0%	10.3%	10.5%	10.8%	11.0%	11.0%	11.0%	11.0%
TAX	20%							
VARIABLE WACC	**7.4%**	**7.8%**	**8.2%**	**8.5%**	**8.9%**	**9.1%**	**9.3%**	**9.4%**
PRESENT VALUE OF FIRM	1,105	1,095	1,105	1,282	1,351	1,300	1,805	1,705	27,333
NPV OF FIRM	38,082							
NET DEBT	-15,000							
NPV OF EQUITY	**23,082**							

MARKET VS EXPECTED

CF based on expected
but the price depends on expected CF & macro condition (required rate of return)
we probably use mkt
assume same mkt condition
but hard to do!!!

- MARKET / EXPECTED RISK-FREE RATE (10Y TGB)
- MARKET / EXPECTED EQUITY RISK PREMIUM
- MARKET / EXPECTED BETA
- MARKET / EXPECTED COST OF DEBT
- OBSERVED / TARGET CAPITAL STRUCTURE D/E
- TAX RATE

FREE CASHFLOW TO EQUITY - FCFE

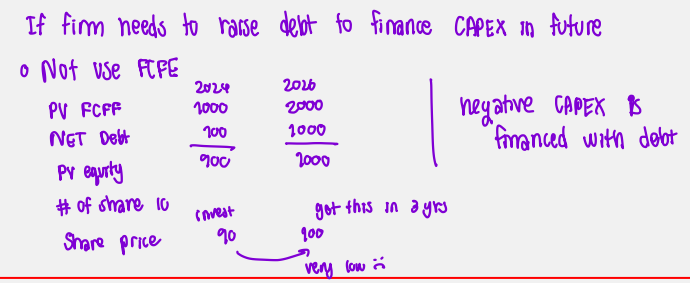
- ASSESS HOW MUCH CASH IS AVAILABLE TO EQUITY INVESTORS
- FECE = FCFF - NET OF DEBT REPAYMENTS AND NEW ONES ISSUED

FREE CASH FLOW TO EQUITY (FCFE) = NET INCOME - CAPITAL EXPENDITURES + DEPRECIATION + CHANGE IN NON-CASH WORKING CAPITAL **+ NEW DEBT ISSUED - DEBT REPAYMENTS**

DISCOUNT RATE = REQUIRED RETURNS ON EQUITY

Considerations

- Potential error from forecasting changes in debts repayments / new borrowings
- Short-term debts should be treated as 'rolling over': Repay and Re-Borrow every year



DIVIDEND DISCOUNT MODEL

- CAPITAL INTENSIVE, REQUIRED BY TIGHT REGULATIONS AND MARKET SCRUTINY
- SLOW GROWTH / VALUE PLAYS

- PRESENT VALUES FROM EXPECTED DIVIDEND STREAM
- DISCOUNT RATE USED IS REQUIRED RETURNS ON EQUITY
- COMMONLY USED IN SLOWER GROWING SECTORS SUCH AS
  - BANKS
  - HOLDING COMPANIES

BBL – DDM

template → income, ROE, dividend

not DDM forecast but to look for logic

RISK FREE	3.00%
MARKET RISK PREMIUM	4%
BETA	1 → bank group
RQD RETURN ON EQUITY	**7.00%**
TERMINAL GROWTH	2.00%
Number of shares (MN)	1,909

☆ earning growth & ROE & div payout

sustainability of dividend

(1 – div payout)

what you retain × ROE

PERIOD	YEAR	Forecast / Actual Growth	BT MN PROFIT	BT MN EQUITY	PER SHARE EPS	PER SHARE Payout Ratio (rhs) (dividend)	PER SHARE DPS	Implied Potential Growth	ROE from forecast	DISCOUNT FACTOR	**TERMINAL VALUE**	**PV OF DIVIDENDS**
	2013		35,906	296,051	18.81	35%	6.50	7.9%	12.1%			
	2014	1.2%	36,332	323,643	19.03	34%	6.50	7.4%	11.2%			
	2015	-5.9%	34,181	362,031	17.91	36%	6.50	6.0%	9.4%			
	2016	-6.9%	31,815	379,244	16.67	39%	6.50	5.1%	8.4%			
	2017	3.8%	33,009	402,007	17.29	38%	6.50	5.1%	8.2%			
	2018	7.0%	35,329	412,814	18.51	35%	6.50	5.6%	8.6%			
	2019	1.4%	35,816	427,751	18.76	35%	6.50	5.5%	8.4%			
	2020	-52.0%	17,180	449,013	9.00	28%	2.50	2.8%	3.8%			
	2021	54.3%	26,507	492,727	13.89	25%	3.50	4.0%	5.4%			
	2022	10.6%	29,305	505,345	15.35	26%	4.00	4.3%	5.8%			
0	2023f	12.0%	32,822	526,679	17.19	35%	6.02	4.1%	6.2%	1.0000		6.0
1	2024f	10.0%	36,104	550,146	18.91	35%	6.62	4.3%	6.6%	0.9346		6.2
2	2025f	8.0%	38,992	575,491	20.43	35%	7.15	4.4%	6.8%	0.8734		6.2
3	2026f	5.0%	40,942	602,103	21.45	35%	7.51	4.4%	6.8%	0.8163		6.1
4	2027f	4.0%	42,579	629,780	22.31	35%	7.81	4.4%	6.8%	0.7629		6.0
5	2028f	4.0%	44,283	658,564	23.20	35%	8.12	4.4%	6.7%	0.7130		5.8
											166	118.1

assumption

high bad

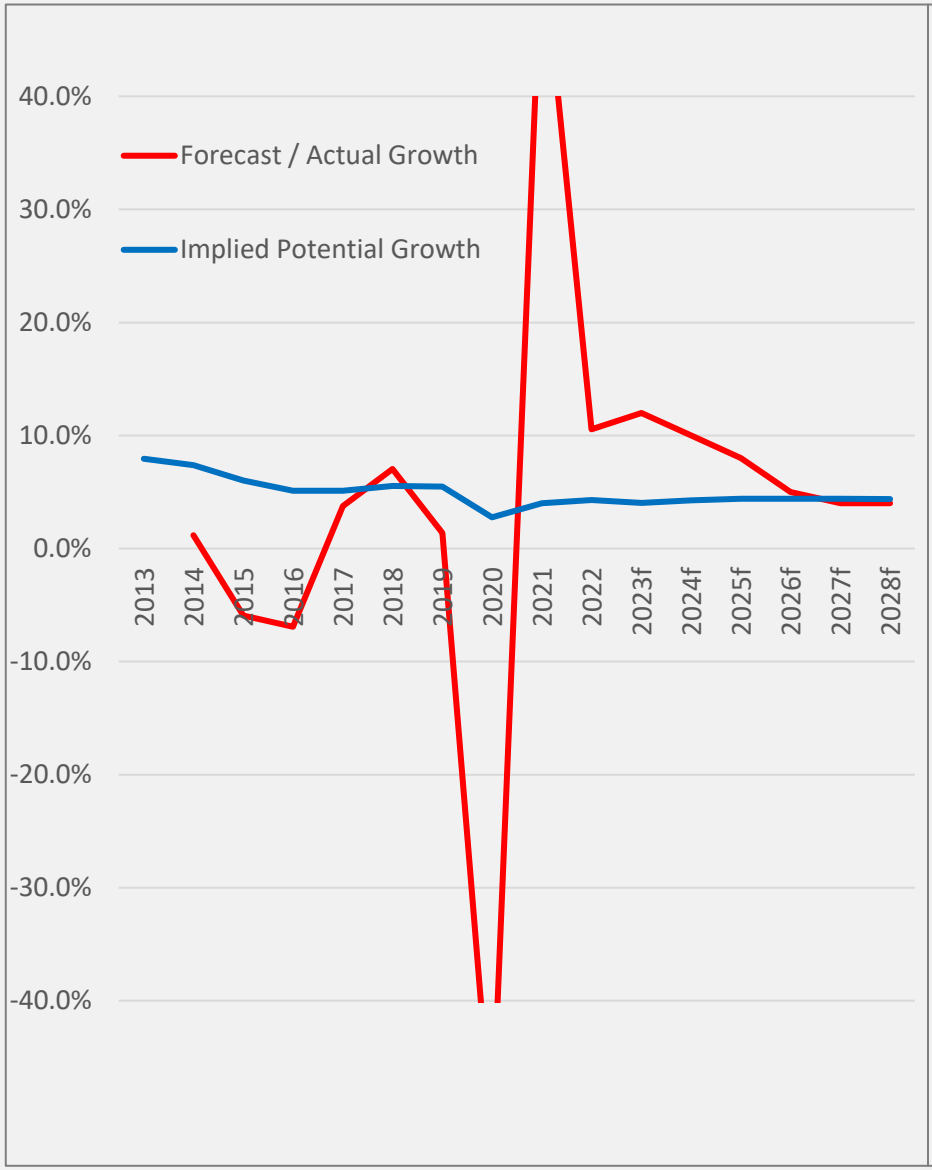
pay less if high growth!

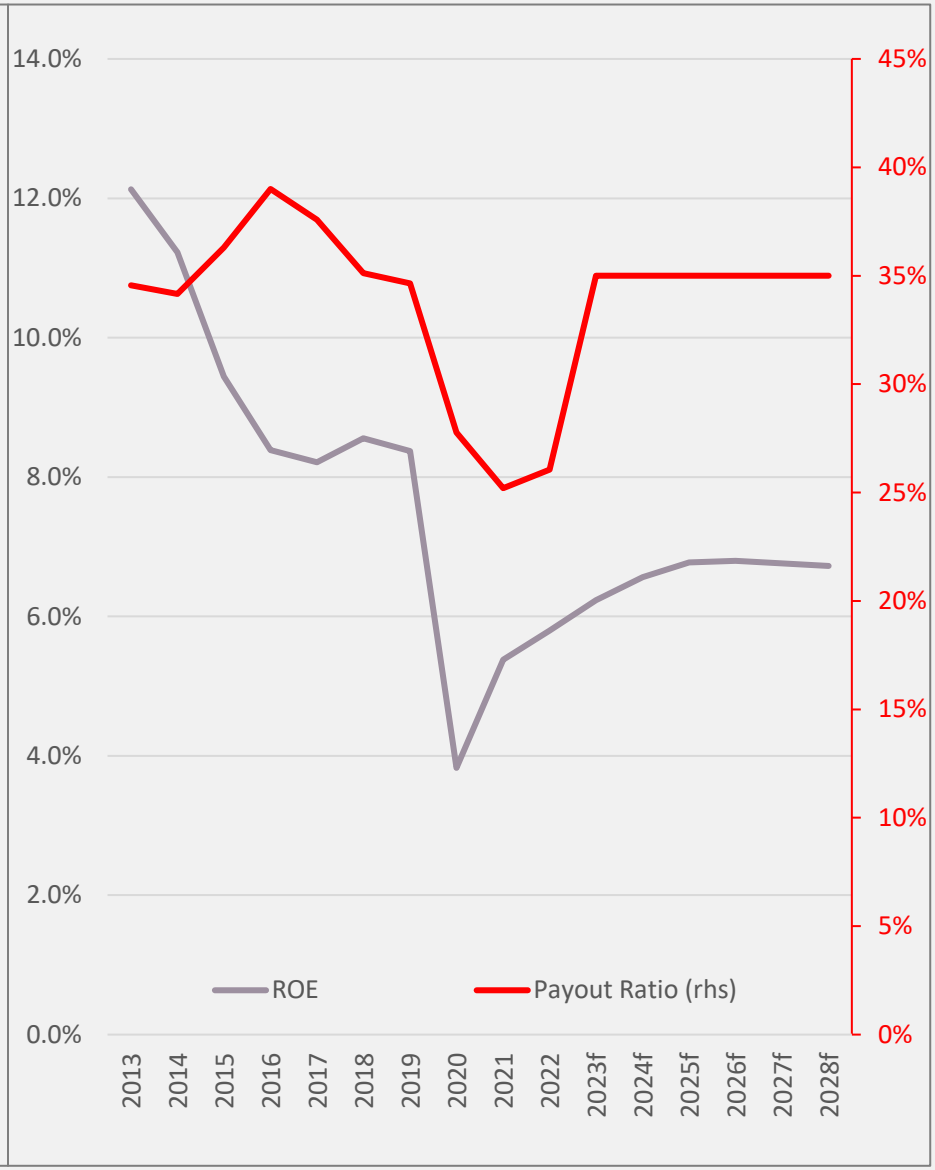
high good

IMPLIED POTENTIAL GROWTH = RETENTION x ROE

SHARE VALUE		**154.4**
SHARE PRICE	20-Sep-23	**166.0**

GROWTH, ROE AND PAYOUT ALL RELATED





RESIDUAL VALUE

Period		-	1	2	3	
BBL						
YEAR (BtMn)		**2023**	**2024**	**2025**	**2026**	**TERMINAL VALUE**
SHAREHOLDERS EQUITY		526,679	550,146	575,491	602,103	
(rqd) RETURN ON EQUITY	7.00%					
LT GROWTH	2.00%					
OPPORTUNITY ON EQUITY COST		(36,868)	(38,510)	(40,284)	(42,147)	
FORECAST NET PROFIT		32,822	36,104	38,992	40,942	
RESIDUAL INCOME		(4,046)	(2,406)	(1,292)	(1,206)	(24,594)
DISCOUNTED VALUE		(4,046)	(2,249)	(1,129)	(984)	(20,076)
NPV		(28,484)				
INITIAL BOOK VALUE as of the end of latest 3Q 2023		505,345				
TOTAL VALUE		476,861				
NUMBER OF SHARES		1,909				
VALUE PER SHARE		**250**				
SHARE PRICE		**166**				
PREMIUM/DISCOUNT		*-34%*				

pv

WHO GETS WHAT

CASHFLOW (NUMERATOR)	FCFF	FCFE	DIVIDENDS
	• DEBT HOLDERS (INTERESTS AND PRINCIPAL) • EQUITY HOLDERS (DIVIDENDS AND OWNERSHIP)	• OWNERSHIP OF ALL EQUITY ENTITLEMENTS	• CASH RECEIVED FROM DIVIDENDS AND OWNERSHIP
DISCOUNT RATE (DENOMINATOR)	**WACC**	**REQUIRED RETURN ON EQUITY (ROE)**	**REQUIRED RETURN ON EQUITY (ROE)**

SUM-OF-THE-PARTS METHOD

- Value each business separately and combine
- Some discount is generally warranted
- Suitable for Holding companies / Conglomerates

SOURCE: https://corporatefinanceinstitute.com/

APPLICATIONS

- M&A
- Unlocking value by spinning off

Considerations

- Avoid double counting
- Some discount in value is warranted
- Cash / Borrowings from ‘Consolidated’ or ‘Unconsolidated’
- Issue with Contingent liability / Cross guarantees

EXAMPLE: PTT

Figure 2: Sum of parts valuation

	PTT's % holding	Target price (THB/share)	Entity value (THBm)
Upstream E&P			
PTTEP	65.3%	111.80	289,770
Refineries & petrochemicals			
TOP	49.1%	99.00	99,163
IRPC	48.1%	6.30	61,864
PTTGC	48.9%	108.00	238,066
Utilities:			
GPSC	22.6%	59.00	19,958
Listed subsidiaries/affiliates/associates			708,821
PTT, DCF valuation (WACC 9.01%)			1,020,718
PTT's total entity value			1,729,539
Less net debt, PTT only			(96,741)
Entity value			1,632,798
Intrinsic value (THB/share)			**572**

Source: RHB

As of February 2018

Core Business

PARENT COMPANY

EXAMPLE: INTUCH

Company	Rating	Target price (THB)	Outstanding share (m)	Holding (%)	Proportionate value based on Target price (THB m)
ADVANC	ADD	209.0	2,973	40.5%	251,347
THCOM	Non Rated	8.52	1,096	41.1%	3,841
Gross value (THB m)					**255,188**
FY21F net cash (debt)					2,238
Equity value					257,426
Out shares (m)					3,206
Equity value per share (THB)					**80.28**
Holding discount					-14.0%
SoP-based valuation (THB)					**69.04**

Source: CGS-CIMB As of August 2021

EXAMPLE: GULF

	Equity value (Bt m)	Valuation method	WACC	Value (Bt per GULF's share)
Subsidiaries				
- GMP	37,354	DCF	4.9%	3.18
- GCG	235	DCF	4.4%	0.02
- GTN	1,434	DCF	5.7%	0.12
- Borkhum Riffgund	18,799	DCF	7.3%	1.60
- GSRC	51,833	DCF	4.7%	4.42
- GPD	58,436	DCF	4.9%	3.33
- Global Mind	1,380		15% IRR on investment cost	0.12
- Mab-Ta-Phut 3	10,736		15% IRR on project cost	0.92
HQ & parents				(0.85)
Subtotal				**12.86**
Associates				
- GULF JP	15,948	DCF	4.4%	1.36
- GULF WHA MT	283		15% IRR on project cost	0.02
- Marafiq	16,412	DCF	4.7%	1.40
- Hin Kong	11,874	DCF	4.9%	1.01
- Burapa	3,475	DCF	4.9%	0.30
- Mekong solar	695	DCF	5.2%	0.06
- Mekong wind	3,115	DCF	5.4%	0.27
- La Pech 1, 2	3,040	DCF	5.4%	0.26
- PTT NGD	8,910		10% IRR on investment cost	0.76
- Lam Chabang 3	3,600		10% IRR on project cost	0.31
- One Bangkok	460		15% IRR on project cost	0.04
- M6, M81 motorways	7,320		10% IRR on project cost	0.62
Subtotal				**6.41**
Other investments				
- SPCG	1,652		10% discount from market price	0.14
- INTUCH	94,830		Based on our fair value at Bt65/share	8.08
Subtotal				**8.22**
Total - Existing projects and secured investment				**27.49**
Potential new projects				
- LNG-to-power projects	104,259	DCF	10.0%	8.89
- Three hydropower projects	8,301	DCF	10.0%	0.71
- 1,000MW renewable plants	29,188	DCF	10.0%	2.49
- Marafiq expansion	5,580	DCF	10.0%	0.48
Total - potential projects				**12.56**
Grand Total				**40.0**

Sources: Company data, Thanachart estimates

Source: Thanachart Securities, Sept-2021

READING

- **Investment Valuation Damadoran 3rd Edition.**
  - Chapter 13: Dividend Discount Models
  - Chapter 14: Free Cashflow to Equity Models
  - Chapter 15: Firm Valuation: Cost of Capital and APV Approaches

- **Valuation: Measuring and Managing the Value of Companies.** University Edition McKinsey & Company by Tim Koller, Marc Goedhart, DavidWessels.
  - Chapter 15 Market Value Tracks Return on Invested Capital

ASSIGNMENT

1. ESTIMATE VALUE OF EQUITY PER SHARE USING FCFF
    1. PROVIDE SUPPORT TO THE TERMINAL GROWTH ASSUMPTION USED

same CF

2. ESTIMATE VALUE PER SHARE BASED ON DDM
    1. WHICH MARKET FACTOR IS THE MOST SENSITIVE TO YOUR VALUATION BETWEEN MULTIPLE AND FCFF

Reference EBITDA interest cover
ratio Net Asset

③ R_f = 3%
REP = 5%
k_d = 4%
T = 20%
beta = 1.2
W_e = $\frac{15}{25}$
W_d = $\frac{10}{25}$

CAPM = 3% + 1.2(5%) = 9%

WACC = 4%(1 - 20%)(40%) + 9%(60%)
= 1.3% + 5.4%
= 6.7%

QUIZ