

Valuation Report for

Test ISCA 2021
(Mgt case)

19 July 2021

VALUATION OVERVIEW

This overview summarizes the results of various valuation methodologies by showing ranges and mid-points

The grey area represents a weighted average range of all different methodologies and is thus a best estimate for the firm's fair value

DCF, LBO and DDM are cashflow-based approaches meaning that the firm's value is derived from looking at future cashflows

On the other hand, trading and transaction comparable company analyses derive the value of the firm by looking at similar companies' ratio of valuation relative to certain financial metrics

They are used primarily to verify the validity of the valuation results

The Dividend Discount Model is methodologically equivalent to the DCF Equity Approach

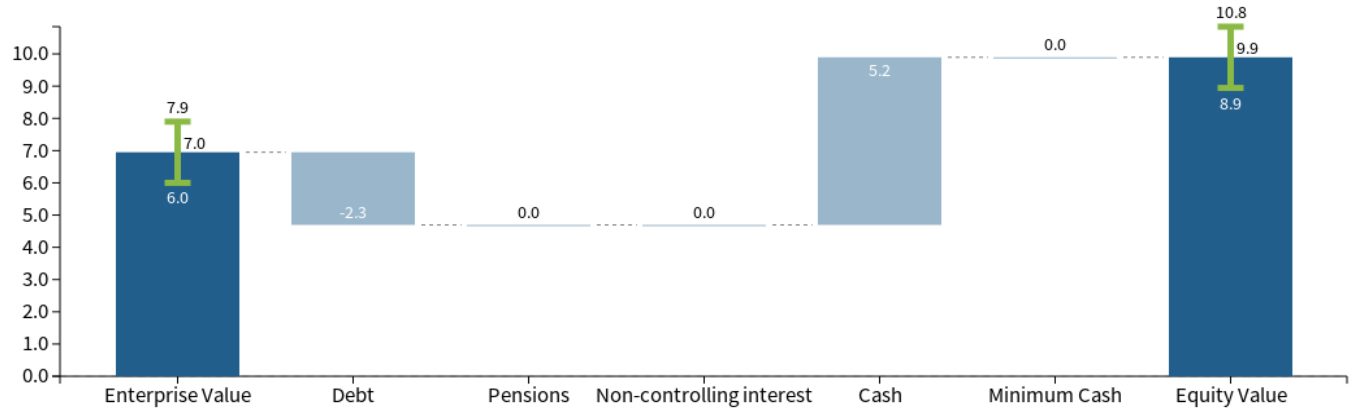


NET DEBT BRIDGE

This illustration identifies the key items that contribute to the **bridge between Enterprise Value and Equity Value**, such as debt, pensions, non-controlling interest, cash and minimum operating cash

The **starting point** is the **average of the min and max assumed for the value range** presented in the valuation overview

Waterfall Chart



Net Debt Components

	Min	Mid	Max
Enterprise Value	0.2	4.0	7.9
Debt	-2.3	-2.3	-2.3
Pensions	0.0	0.0	0.0
Non-controlling interest	0.0	0.0	0.0
Cash	5.2	5.2	5.2
Minimum Cash	0.0	0.0	0.0
Net Debt	-2.9	-2.9	-2.9
Equity Value	3.1	7.0	10.8

QUALITATIVE EVALUATION

This qualitative assessment of the company influences two different key factors that feed into the valuation analyses:

The **premium on Cost of Equity** is an estimate of the increased risk of the company, compared to its publicly listed peers.

The **discount (or premium)** reflects the empirical observation that **small and mid-caps have lower valuations** than large publicly listed companies (e.g. due to lower marketability or lower liquidity). These discounts typically are in the range of 30-50%.

Individual quality/risk factors

Premium on Cost of Equity¹⁾ 6.7%

(Discount)/premium on trading multiples²⁾ -40.3%

Weighted Score	Less Risk	Score					More Risk	Weights	Weighted scores
		1	2	3	4	5			
General									
Company size	Big						Small	35.0%	1.75
Positioning	Premium						Commodity	2.0%	0.08
Market									
Market Size	Big						Small	3.0%	0.06
Market Growth	High						Low	3.0%	0.09
Market Share	High						Small	2.0%	0.06
Competition	Low						High	5.0%	0.15
Exposure to Business Cycle	Low						High	2.0%	0.06
Exposure to Political-Legal Factors	Low						High	1.0%	0.03
Management									
Management Quality	High						Low	5.0%	0.15
Reliance on Key Persons	Low						High	5.0%	0.15
Sales									
Reliance on Key Customers	Low						High	5.0%	0.15
Reliance on Distribution Partners	Low						High	2.0%	0.06
Customer Lock-in	High						Low	2.0%	0.06
Purchasing									
Input-cost risk	Low						High	2.0%	0.06
Reliance on Key Suppliers	Low						High	2.0%	0.06
Product									
Product Quality	High						Low	3.0%	0.09
Innovativeness	Very Innovative						Not Innovative	3.0%	0.09
Intellectual Property Protection	High						Low	3.0%	0.09
Risk of Technological Disruption	Low						High	2.0%	0.06
Financial									
Capital Intensity	Low						High	2.0%	0.06
Leverage	Low						High	10.0%	0.30
Foreign exchange / currency risk	Low						High	1.0%	0.03
Sum								100.0%	3.69

1) Premium on Cost of Equity calculated as $0.05 + 0.025 \times (\text{weighted score} - 3)$

2) (Discount)/premium calculated as $-(0.30 + 0.15 \times (\text{weighted score} - 3))$

PEERS: MULTIPLES

The peer group is **essential in determining assumptions** for the firm's business plan as well as **key valuation parameters**

It is a group of firms that **share characteristics**, such as similar industry sectors, client exposures or geographic focus

The **discount** (or premium) on the median of the peer companies results from the **qualitative evaluation** of the company

Key assumptions

Industry sector	CONSTRUCTION
Country	Singapore

Name	Country	EV/Sales 2020	EV/Sales 2021	EV/Sales 2022	EV/EBITDA 2020	EV/EBITDA 2021	EV/EBITDA 2022	EV/EBIT 2020	EV/EBIT 2021	EV/EBIT 2022	P/E 2020	P/E 2021	P/E 2022
Boustead Projects Limited	Singapore	0.13x	0.18x	0.18x	1.40x	13.70x	4.40x	1.70x	-	7.80x	18.80x	3.20x	55.60x
Boustead Singapore Limited	Singapore	0.34x	0.37x	0.40x	3.30x	3.40x	2.90x	3.90x	3.90x	3.30x	18.80x	5.10x	16.20x
CH. Karnchang Public Company Limited	Thailand	1.73x	1.92x	1.56x	-	16.60x	11.10x	-	-	-	50.10x	37.10x	22.50x
Chiyoda Corporation	Japan	0.14x	0.17x	0.17x	1.80x	5.20x	2.50x	2.00x	7.60x	4.40x	10.00x	15.20x	13.00x
Hazama Ando Corporation	Japan	0.10x	0.11x	0.10x	1.40x	1.30x	1.40x	1.50x	1.40x	1.50x	9.50x	9.20x	9.60x
ISOTeam Ltd.	Singapore	0.76x	0.62x	0.59x	-	10.00x	8.70x	-	14.00x	14.00x	-	6.30x	5.50x
JGC Holdings Corporation	Japan	0.04x	0.04x	0.03x	0.70x	0.60x	0.60x	1.00x	0.70x	0.70x	62.90x	50.40x	15.40x
Lian Beng Group Ltd	Singapore	1.04x	-	-	10.10x	-	-	11.70x	-	-	8.70x	-	-
MAEDA ROAD CONSTRUCTION Co., Ltd.	Japan	0.46x	0.46x	0.44x	3.90x	3.70x	3.40x	5.50x	5.20x	4.60x	9.40x	10.60x	10.70x
Maeda Corporation	Japan	0.41x	0.30x	0.28x	4.10x	2.60x	2.50x	5.90x	4.30x	4.10x	12.80x	7.90x	7.50x
Sino-Thai Engineering and Constructi...	Thailand	0.13x	0.12x	0.12x	2.40x	2.10x	1.90x	4.90x	4.50x	3.40x	18.60x	18.10x	15.80x
Median		0.34x	0.24x	0.23x	2.40x	3.60x	2.70x	3.90x	4.40x	4.10x	15.70x	9.90x	14.20x
<i>Construction and Engineering</i>		<i>0.8x</i>	<i>0.6x</i>	<i>0.6x</i>	<i>8.8x</i>	<i>6.7x</i>	<i>5.9x</i>	<i>10.8x</i>	<i>9.1x</i>	<i>8.3x</i>	<i>14.3x</i>	<i>12.6x</i>	<i>11.2x</i>
<i>Discount / Premium to Median</i>		<i>-35%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>	<i>-40%</i>
Applied metrics		0.22x	0.14x	0.14x	1.44x	2.16x	1.62x	2.34x	2.64x	2.46x	9.42x	5.94x	8.52x

PEERS: DEBT & BETA

The peer group is **essential in determining assumptions** for the firm's business plan as well as **key valuation parameters**

It is a group of firms that **share characteristics**, such as similar industry sectors, client exposures or geographic focus

The **discount** (or premium) on the median of the peer companies results from the **qualitative evaluation** of the company

Key assumptions

Industry sector	CONSTRUCTION
Country	Singapore

Name	Country	Gearing (D/C)	Gearing (D/E)	Credit spread	Beta Levered	Beta Unlevered	R ²
Boustead Projects Limited	Singapore	10.2%	11.3%	5.3%	0.92	0.84	0.28
Boustead Singapore Limited	Singapore	32.8%	48.9%	4.5%	0.67	0.48	0.23
CH. Karnchang Public Company Limited	Thailand	58.8%	142.9%	1.3%	0.60	0.28	0.11
Chiyoda Corporation	Japan	27.9%	38.7%	1.9%	1.47	1.16	0.18
Hazama Ando Corporation	Japan	18.0%	22.0%	1.3%	0.73	0.63	0.13
ISOTeam Ltd.	Singapore	50.4%	101.5%	2.3%	0.39	0.21	0.05
JGC Holdings Corporation	Japan	24.4%	32.2%	0.3%	1.51	1.23	0.32
Lian Beng Group Ltd	Singapore	74.7%	295.2%	1.5%	0.86	0.25	0.22
MAEDA ROAD CONSTRUCTION Co., Ltd.	Japan	3.2%	3.3%	-	0.73	0.71	0.12
Maeda Corporation	Japan	59.1%	144.7%	1.7%	1.09	0.54	0.30
Sino-Thai Engineering and Constructi...	Thailand	13.2%	15.3%	0.5%	0.82	0.73	0.09
Median		27.9%	38.7%	1.6%	0.82	0.63	0.18
<i>Construction and Engineering</i>		<i>27.7%</i>	<i>38.2%</i>	<i>2.8%</i>	<i>0.69</i>	<i>0.46</i>	<i>0.07</i>
<i>Discount / Premium to Median</i>		<i>-</i>	<i>-</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
Applied metrics		-	-	1.6%	0.82	0.63	0.18

PEERS: BENCHMARKING

The peer group is **essential in determining assumptions** for the firm's business plan as well as **key valuation parameters**

It is a group of firms that **share characteristics**, such as similar industry sectors, client exposures or geographic focus

The **discount** (or premium) on the median of the peer companies results from the **qualitative evaluation** of the company

Key assumptions

Industry sector	CONSTRUCTION
Country	Singapore

Name	Sales Growth CAGR (2018-2020)	Sales Growth CAGR (2021-2023)	Avg. EBIT Margin (2021-2023)	Avg. Capex as % of Sales (2021-2023)
Boustead Projects Limited	58.51%	-6.22%	2.09%	0.16%
Boustead Singapore Limited	37.36%	-7.63%	12.08%	0.45%
CH. Karnchang Public Company Limited	-24.16%	30.44%	-2.03%	8.99%
Chiyoda Corporation	-13.08%	6.84%	3.54%	0.76%
Hazama Ando Corporation	0.15%	3.49%	7.34%	1.00%
ISOTeam Ltd.	4.60%	5.22%	4.78%	0.85%
JGC Holdings Corporation	-18.45%	13.79%	5.04%	1.59%
Lian Beng Group Ltd	16.89%			
MAEDA ROAD CONSTRUCTION Co., Ltd.	0.73%	1.98%	9.26%	3.85%
Maeda Corporation	2.13%	4.16%	6.77%	3.19%
Sino-Thai Engineering and Constructi...	14.13%	3.03%	3.25%	3.91%
Median	2.13%	3.82%	4.91%	1.29%

DISCOUNT RATES

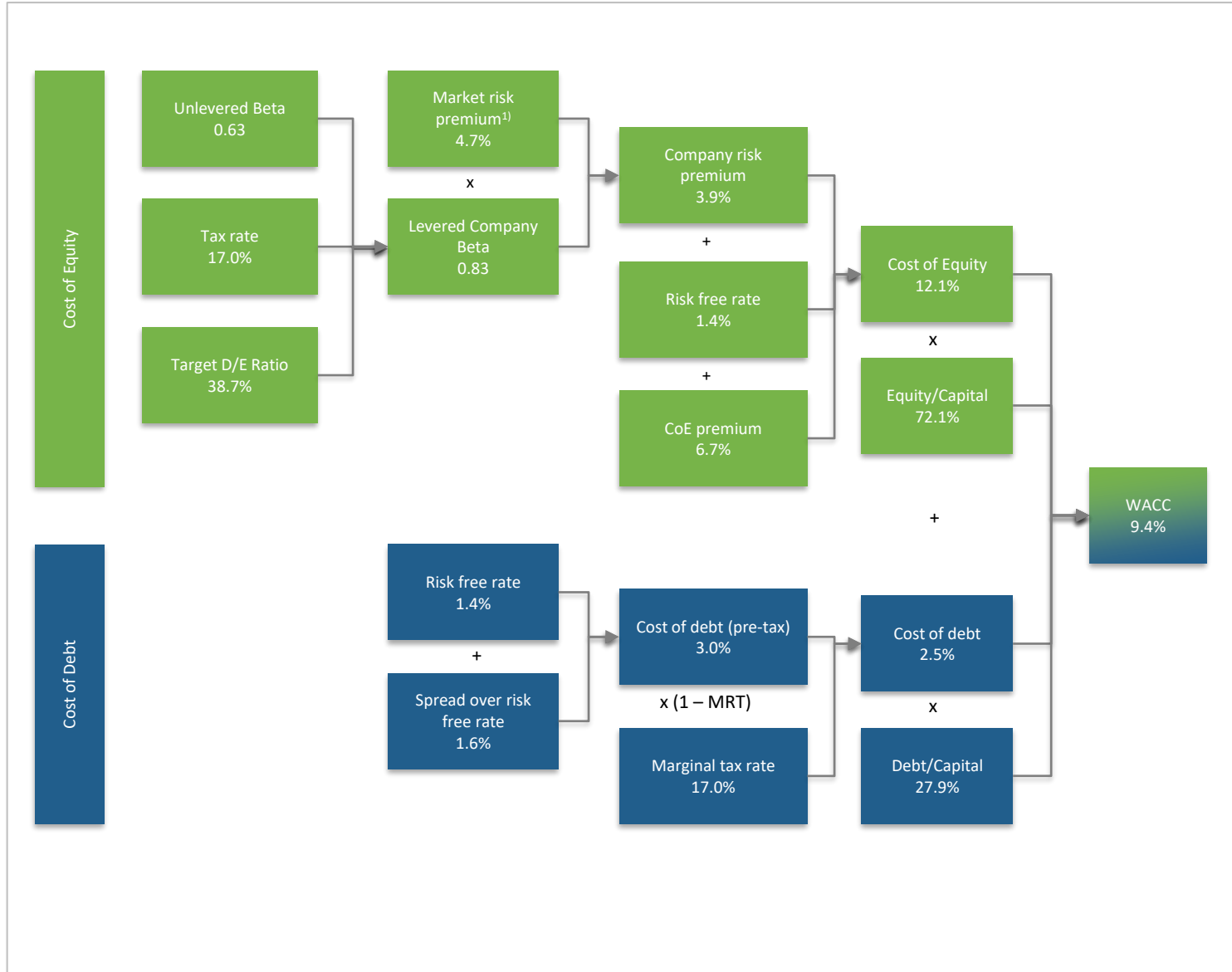
Weighted Average Cost of Capital (WACC) is a calculation of a firm's cost of capital in which each category of capital is proportionately weighted. All capital sources – equity and debt - are included in a WACC calculation

All else equal, the WACC of a firm increases as the beta and rate of return on equity increases. An increase in WACC notes a decrease in valuation and a higher risk

A firm's WACC is the **overall required return** on the firm as a whole and, as such, it is often used internally by management to determine the economic feasibility of expansionary opportunities

In Discounted Cashflow Analysis (DCF) the **WACC is used as the discount rate applied to future cash flows** for deriving a firm's net present value (see 'Discounted Cashflow' slide)

Based on the assumption of a constant capital structure and thus a related constant gearing ratio, the period-specific calculation of the beta factor is waived

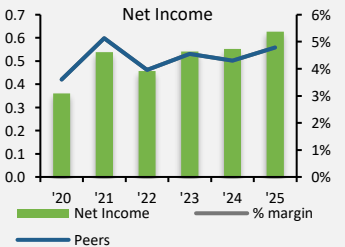
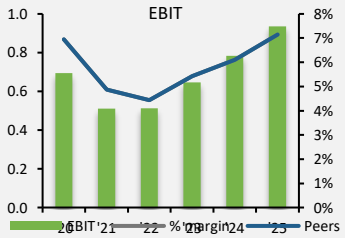
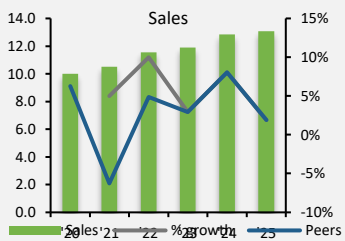


1) Method: Credit Spread (based on rating) * Emerging Markets Volatility Adjustment + Mature Market ERP

BUSINESS PLAN

The business plan reflects our current best estimate for the future development of the firm's most important financials and forms the basis for all following valuation analyses

Benchmarking



	2020	2021	2022	2023	2024	2025
Sales	10.0	10.5	11.6	11.9	12.8	13.1
% growth		5.0%	10.0%	2.9%	8.1%	1.9%
EBITDA	0.8	0.8	0.8	0.9	1.1	1.2
% margin	7.8%	7.6%	7.3%	7.5%	8.6%	9.5%
Depreciation & Amortisation	0.1	0.3	0.3	0.2	0.3	0.3
% of Sales	0.8%	2.7%	2.8%	2.1%	2.4%	2.3%
EBIT	0.7	0.5	0.5	0.6	0.8	0.9
% margin	6.9%	4.9%	4.4%	5.4%	6.1%	7.1%
Net Income	0.4	0.5	0.5	0.5	0.6	0.6
% margin	3.6%	5.1%	4.0%	4.6%	4.3%	4.8%
Capex	0.1	0.2	0.2	0.2	0.1	0.2
% of Sales	1.4%	1.5%	1.5%	1.3%	1.1%	1.5%
Accounts Receivable	2.8	2.9	3.2	3.3	3.6	3.6
Days Sales Outstanding	102	102	102	102	102	102
Inventories	0.3	0.3	0.4	0.4	0.4	0.4
Days Sales of Inventory	13	13	13	13	13	13
Accounts Payable	1.8	1.8	2.0	2.1	2.2	2.3
Days Payable Outstanding	69	69	69	69	69	69
Cash & cash equivalents	5.2	5.5	6.0	6.2	6.7	6.8
Debt	2.3	2.3	2.4	2.6	3.2	3.6

BUSINESS PLAN - VALIDATION

As the business plan forms the basis for any valuation analysis it is crucial that its **underlying assumptions are cross-checked for plausibility**

According to DuPont analysis, **ROE is affected by three things**: asset use efficiency, which is measured by total asset turnover; operating efficiency, which is measured by profit margin; and financial leverage, which is measured by the equity multiplier

Return on Capital Employed ('ROCE') is a profitability ratio that measures how efficiently a company can generate profits from its capital employed by comparing net operating profit to capital employed

Growth	2020	2021	2022	2023	2024	2025	TY
Sales growth	-	5.0%	10.0%	2.9%	8.1%	1.9%	1.5%
EBITDA growth		2.1%	5.5%	6.2%	23.4%	13.0%	2.0%
EBIT growth		-26.4%	0.4%	25.8%	21.4%	19.3%	10.4%
Net income growth		49.7%	-15.2%	18.4%	2.0%	13.5%	10.6%

Margins							
EBITDA margin	7.8%	7.6%	7.3%	7.5%	8.6%	9.5%	9.5%
EBIT margin	6.9%	4.9%	4.4%	5.4%	6.1%	7.1%	7.8%
Net income margin	3.6%	5.1%	4.0%	4.6%	4.3%	4.8%	5.2%

Profitability - Du Pont Analysis

Asset turnover (Sales / Assets)	6.48x	7.43x	9.18x	10.19x	13.01x	14.80x	14.62x
x Profitability (Net income / Sales)	3.6%	5.1%	4.0%	4.6%	4.3%	4.8%	5.2%
= Return on Assets (ROA)	23.3%	38.1%	36.3%	46.4%	55.9%	70.9%	76.3%
x Leverage (Assets / Equity)	34.3%	30.2%	27.4%	24.9%	21.0%	18.5%	18.8%
= Return on Equity (ROE)	8.0%	11.5%	9.9%	11.6%	11.8%	13.1%	14.3%

Profitability - ROCE

Fixed assets	1.5	1.4	1.3	1.2	1.0	0.9	0.9
Working capital	1.4	1.4	1.6	1.6	1.8	1.8	1.8
Capital employed	8.1	8.3	8.8	8.9	9.4	9.5	9.6
EBIT	0.7	0.5	0.5	0.6	0.8	0.9	1.0
- Tax	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
NOPAT	0.6	0.4	0.4	0.5	0.7	0.8	0.9
ROCE (NOPAT / Avg. Capital Employed)		5.2%	5.0%	6.0%	7.1%	8.2%	9.0%

DISCOUNTED CASHFLOW: WACC

DCF analysis uses **future free cash flow projections** and **discounts them using the WACC** to arrive at a present value estimate

There are several variations when it comes to assigning values to cash flows and the discount rate in a DCF analysis. But while the calculations involved can be complex, the purpose of DCF analysis is to **estimate the money an investor would receive from an investment, adjusted for the time value of money.**

Assumptions

WACC	9.4%
Perpetual growth rate ('g')	2.0%
Perpetual Capex/D&A	105.0%

In our valuation we are using a **sensitivity analysis** by varying both WACC and the perpetual growth rate ('g') to derive a range of values for the firm

	2021	2022	2023	2024	2025	TY
Sales	10.5	11.6	11.9	12.8	13.1	13.3
EBIT	0.5	0.5	0.6	0.8	0.9	1.0
- Tax (17.0%)	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
Net Operating Profit after Tax	0.4	0.4	0.5	0.7	0.8	0.9
+ Depreciation & Amortisation	0.3	0.3	0.2	0.3	0.3	0.2
- Capex	-0.2	-0.2	-0.2	-0.1	-0.2	-0.3
+/- Change in Net Working Capital	-0.1	-0.1	-0.0	-0.2	-0.1	-0.0
Free Cashflow	0.5	0.4	0.6	0.7	0.8	0.8
Time	0.5	1.5	2.5	3.5	4.5	
Discount Factor (9.4% WACC)	0.96	0.87	0.80	0.73	0.67	
Discounted Free Cashflow	0.5	0.4	0.5	0.5	0.6	7.3

		Perpetual growth rate ('g')				
		0.0%	1.0%	2.0%	3.0%	4.0%
Present value of Discounted Free Cashflows	2.4					
Present value of Terminal Value (100% included)	7.3					
Enterprise Value	9.6					
Net Debt	2.9					
Equity Value	12.6					
Weighted Average Cost of Capital ('WACC')	8.4%	9.1	10.0	11.2	12.8	15.2
	8.9%	8.6	9.3	10.3	11.7	13.6
	9.4%	8.1	8.8	9.6	10.8	12.3
	9.9%	7.7	8.3	9.0	10.0	11.3
	10.4%	7.3	7.8	8.5	9.3	10.4

DISCOUNTED CASHFLOW: APV (1/2)

The **Adjusted Present Value** approach ('APV') is conceptually similar to the DCF approach. However, the APV method hypothetically **assumes that the company does not use financial leverage** at all (i.e. no debt) **and then adds the value of the tax shields on interest payments on top of that value**

Assumptions

Unlevered Cost of Equity ('CoE')	11.1%
Perpetual growth rate ('g')	2.0%
Bankruptcy cost	0.0%
Probability of bankruptcy	0.0%

	2020	2021	2022	2023	2024	2025	TY
Free Cashflow		0.5	0.4	0.6	0.7	0.8	0.8
Time		0.5	1.5	2.5	3.5	4.5	
Discount Factor (11.1% CoE)		0.95	0.85	0.77	0.69	0.62	
Discounted Free Cashflow		0.5	0.4	0.4	0.5	0.5	5.5
Present value of Discounted Free Cashflow	2.3	29%					
Present value of terminal value (100% included)	5.5	71%					
Unlevered Enterprise Value	7.8	100%					

DISCOUNTED CASHFLOW: APV (2/2)

The **Adjusted Present Value** approach ('APV') is conceptually similar to the DCF approach. However, the APV method hypothetically **assumes that the company does not use financial leverage** at all (i.e. no debt) **and then adds the value of the tax shields on interest payments on top of that value**

Assumptions

Unlevered Cost of Equity ('CoE')	11.1%
Perpetual growth rate ('g')	2.0%
Bankruptcy cost	0.0%
Probability of bankruptcy	0.0%

	2020	2021	2022	2023	2024	2025	TY
Debt	2.3	2.3	2.4	2.6	3.2	3.6	3.7
Debt/ EBITDA	2.9x	2.9x	2.9x	2.9x	2.9x	2.9x	2.9x
Interest rate		3.0%	3.0%	3.0%	3.0%	3.0%	
Interest expense		0.1	0.1	0.1	0.1	0.1	0.1
Tax rate		17.0%	17.0%	17.0%	17.0%	17.0%	
Tax Shield on interest		0.0	0.0	0.0	0.0	0.0	0.0
Time		0.5	1.5	2.5	3.5	4.5	
Discount factor		0.95	0.85	0.77	0.69	0.62	
Discount Factor (11.1% CoE)		0.0	0.0	0.0	0.0	0.0	0.1

Present value of Discounted Tax shield	0.1	29%
Present value of Terminal Value (100% included)	0.1	71%
Value of Tax Shield	0.2	100%

Unlevered Enterprise Value	7.8
Bankruptcy cost	0.0
Enterprise value	8.0
Net Debt	2.9
Equity Value	10.9

		Perpetual growth rate ('g')				
		0.0%	1.0%	2.0%	3.0%	4.0%
Cost of Equity ('CoE')	9.1%	8.6	9.3	10.3	11.6	13.3
	10.1%	7.7	8.3	9.0	9.9	11.1
	11.1%	6.9	7.4	8.0	8.7	9.5
	12.1%	6.3	6.7	7.2	7.7	8.4
	13.1%	5.8	6.1	6.5	6.9	7.4

FLOW TO EQUITY

The Flow-to-Equity Approach derives the valuation of the company by discounting the cashflows that belong to equity holders.

It is similar to the DCF analysis, but derives the Equity Value (instead of the Enterprise Value).

Our approach is a slightly simplified version which assumes that all future capital needs are financed using the target gearing ratio.

Assumptions

Cost of Equity ('CoE')	12.1%
Perpetual growth rate ('g')	2.0%

	2020	2021	2022	2023	2024	2025	TY
Net Income	0.4	0.5	0.5	0.5	0.6	0.6	0.7
- Capex	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	-0.3
+ Depreciation & Amortization	0.1	0.3	0.3	0.2	0.3	0.3	0.2
+/- Change in Net Working Capital		-0.1	-0.1	-0.0	-0.2	-0.1	-0.0
Sub-total		0.1	0.0	0.0	0.0	0.1	-0.1
x (1 - 28% Debt ratio)		0.0	0.0	0.0	0.0	0.0	-0.0
Free Cashflow to Equity (FCFE)		0.6	0.5	0.6	0.6	0.7	0.7
Time		0.5	1.5	2.5	3.5	4.5	4.5
Discount Factor (12.1% CoE)		0.94	0.84	0.75	0.67	0.60	0.60
Discounted FCFE		0.6	0.4	0.4	0.4	0.4	3.9

Present value of discounted FCFEs in forecast period	2.2	36%
Present value of perpetual FCFEs (100% included)	3.9	64%
Equity Value ('EqV')	6.0	100.0%
Net Debt	2.9	
Enterprise Value ('EV')	3.1	

Cost of equity	Perpetual growth rate ('g')				
	0.0%	1.0%	2.0%	3.0%	4.0%
10.1%	3.5	4.0	4.6	5.3	6.3
11.1%	2.9	3.3	3.7	4.3	5.0
12.1%	2.5	2.7	3.1	3.5	4.1
13.1%	2.0	2.3	2.6	2.9	3.3
14.1%	1.7	1.9	2.1	2.4	2.7

DIVIDEND DISCOUNT MODEL

The Dividend Discount Model (DDM) is a procedure for valuing the value of a firm by using the predicted dividends and discounting them back to the present value

It is thus conceptually similar to the Discounted Cashflow Analysis ('DCF')

In the case of a 100% payout ratio this approach equals the discounted earnings model.

Assumptions

Cost of Equity ('CoE')	12.1%
Perpetual growth rate ('g')	2.0%
Payout ratio	100%

	2020	2021	2022	2023	2024	2025	TY
Net income	0.4	0.5	0.5	0.5	0.6	0.6	0.7
Payout ratio		100%	100%	100%	100%	100%	
Dividend		0.4	0.5	0.5	0.5	0.6	0.6
Time		0.5	1.5	2.5	3.5	4.5	
Discount Factor (12.1% CoE)		0.94	0.84	0.75	0.67	0.60	
Discounted Dividend		0.3	0.5	0.3	0.4	0.3	3.7

Present value of discounted dividends in forecast period	1.8	33.0%
Present value of Terminal value (100% included)	3.7	67.0%
Equity Value ('EqV')	5.5	
Net Debt	2.9	
Enterprise Value ('EV')	2.6	

Cost of Equity ('CoE')	Perpetual growth rate ('g')				
	0.0%	1.0%	2.0%	3.0%	4.0%
10.1%	3.0	3.4	4.0	4.7	5.6
11.1%	2.4	2.8	3.2	3.7	4.4
12.1%	2.0	2.3	2.6	3.0	3.5
13.1%	1.6	1.8	2.1	2.4	2.8
14.1%	1.3	1.4	1.7	1.9	2.2

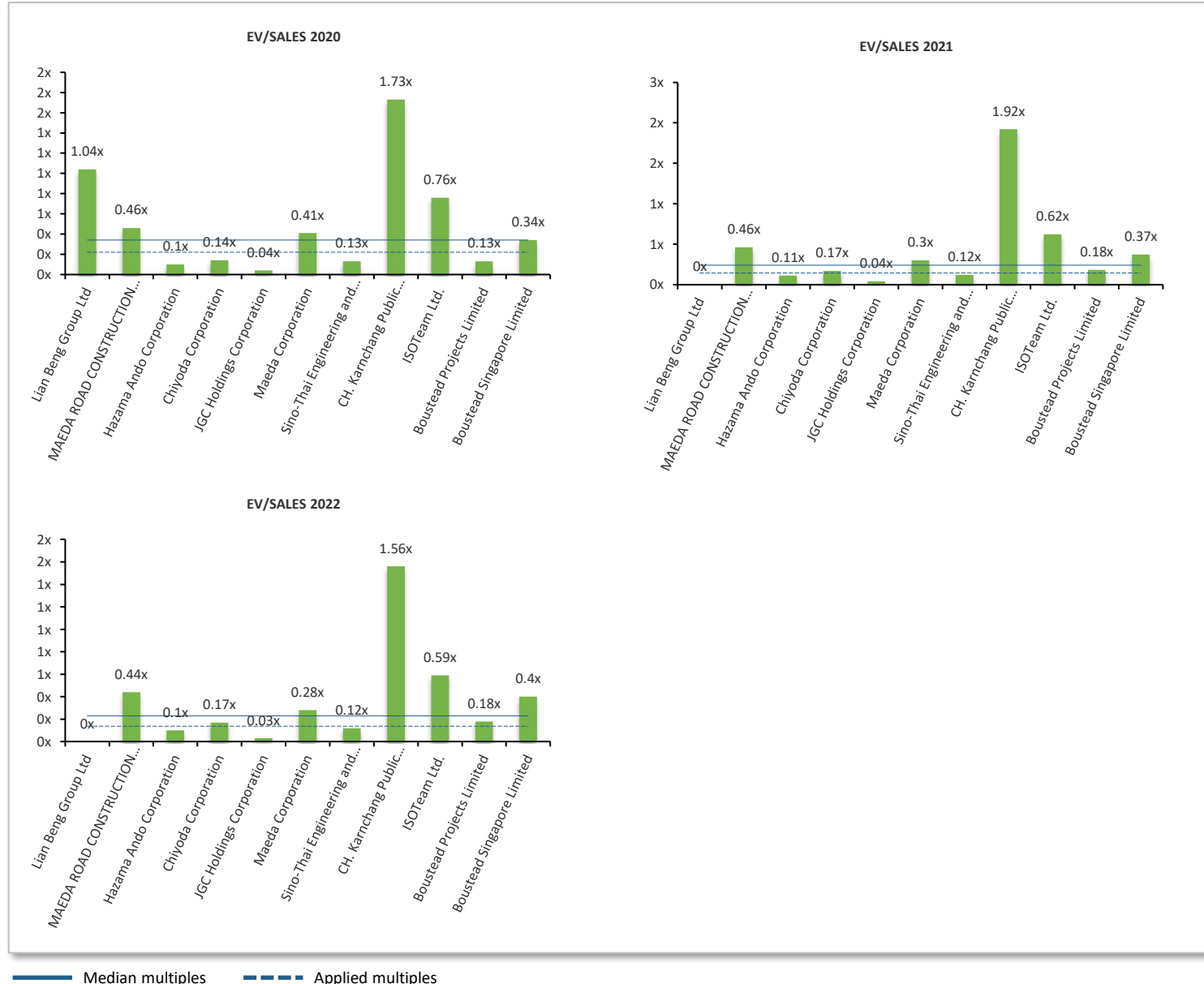
TRADING MULTIPLES: EV/SALES

The **multiples approach** ('Comparable Company Analysis' or 'CCA') is a **valuation theory based on the idea that similar assets have similar prices**

As a so called **relative valuation model** it compares a firm's value to that of its peers to determine the firm's financial worth.

This **assumes that a ratio** comparing value to some firm-specific variable (Sales, EBITDA, EBIT, Net income, etc.) **is the same across firms of the same industry and geography**

Relative valuation models are an alternative to absolute value models (e.g. DCF), which try to determine a company's intrinsic worth based on its estimated future free cash flows, discounted to their present value.



Multiples

EV/SALES 2020	0.22x
EV/SALES 2021	0.14x
EV/SALES 2022	0.14x

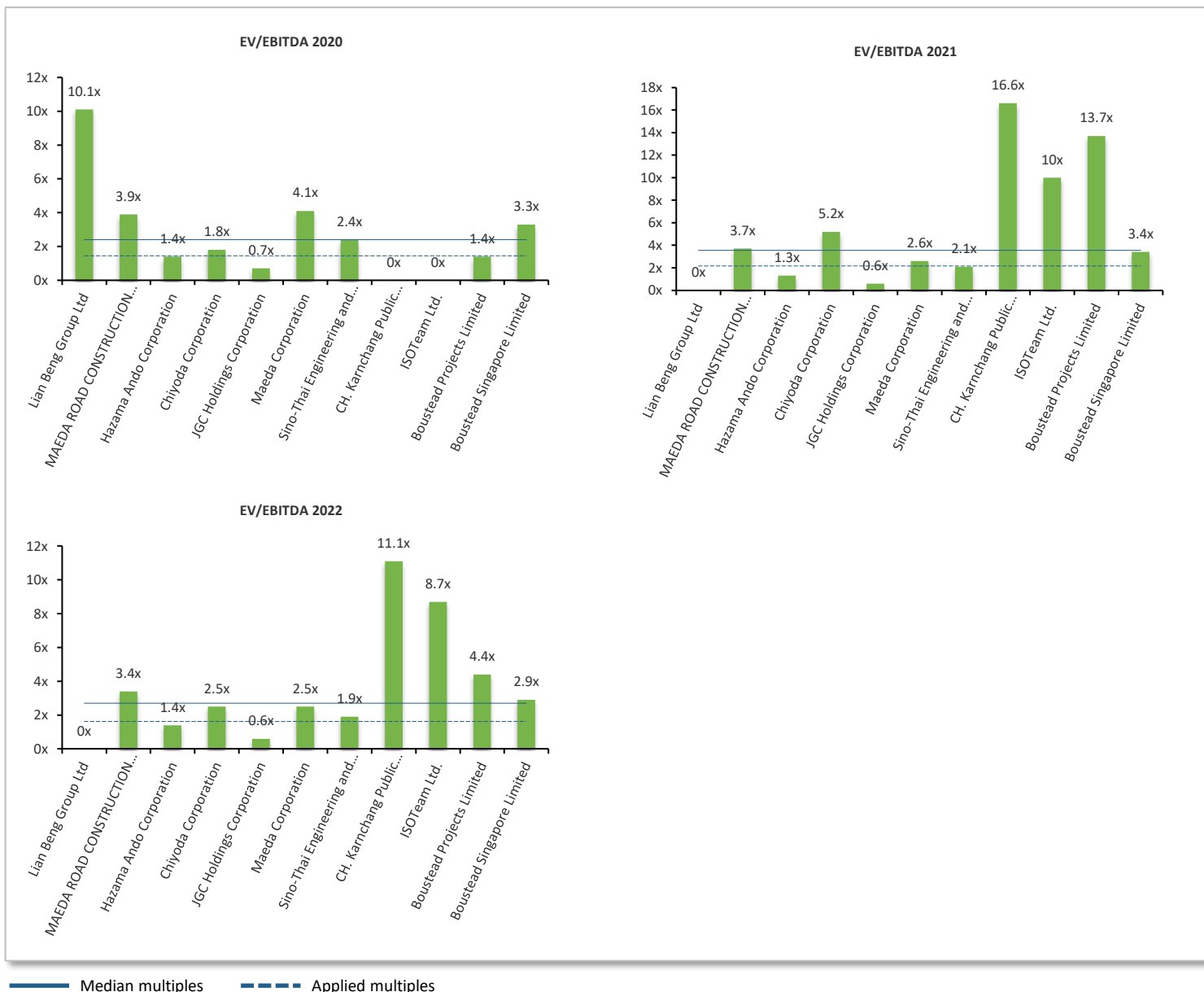
TRADING MULTIPLES: EV/EBITDA

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Relative valuation models are an alternative to absolute value models (e.g. DCF), which try to determine a company's intrinsic worth based on its estimated future free cash flows, discounted to their present value.



Multiples

EV/EBITDA 2020	1.4x
EV/EBITDA 2021	2.2x
EV/EBITDA 2022	1.6x

— Median multiples - - - Applied multiples

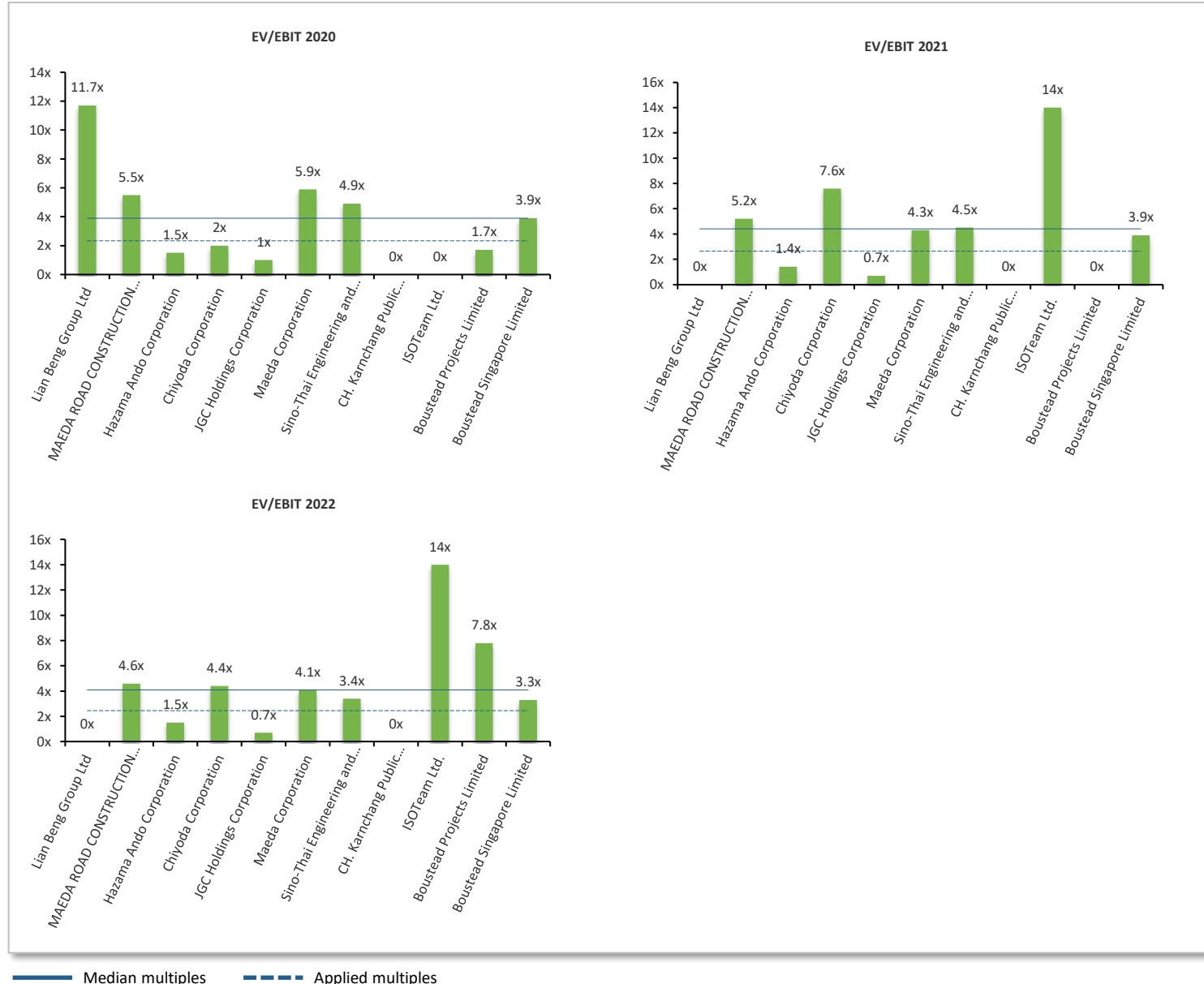
TRADING MULTIPLES: EV/EBIT

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Relative valuation models are an alternative to absolute value models (e.g. DCF), which try to determine a company's intrinsic worth based on its estimated future free cash flows, discounted to their present value.



Multiples

EV/EBIT 2020	2.3x
EV/EBIT 2021	2.6x
EV/EBIT 2022	2.5x

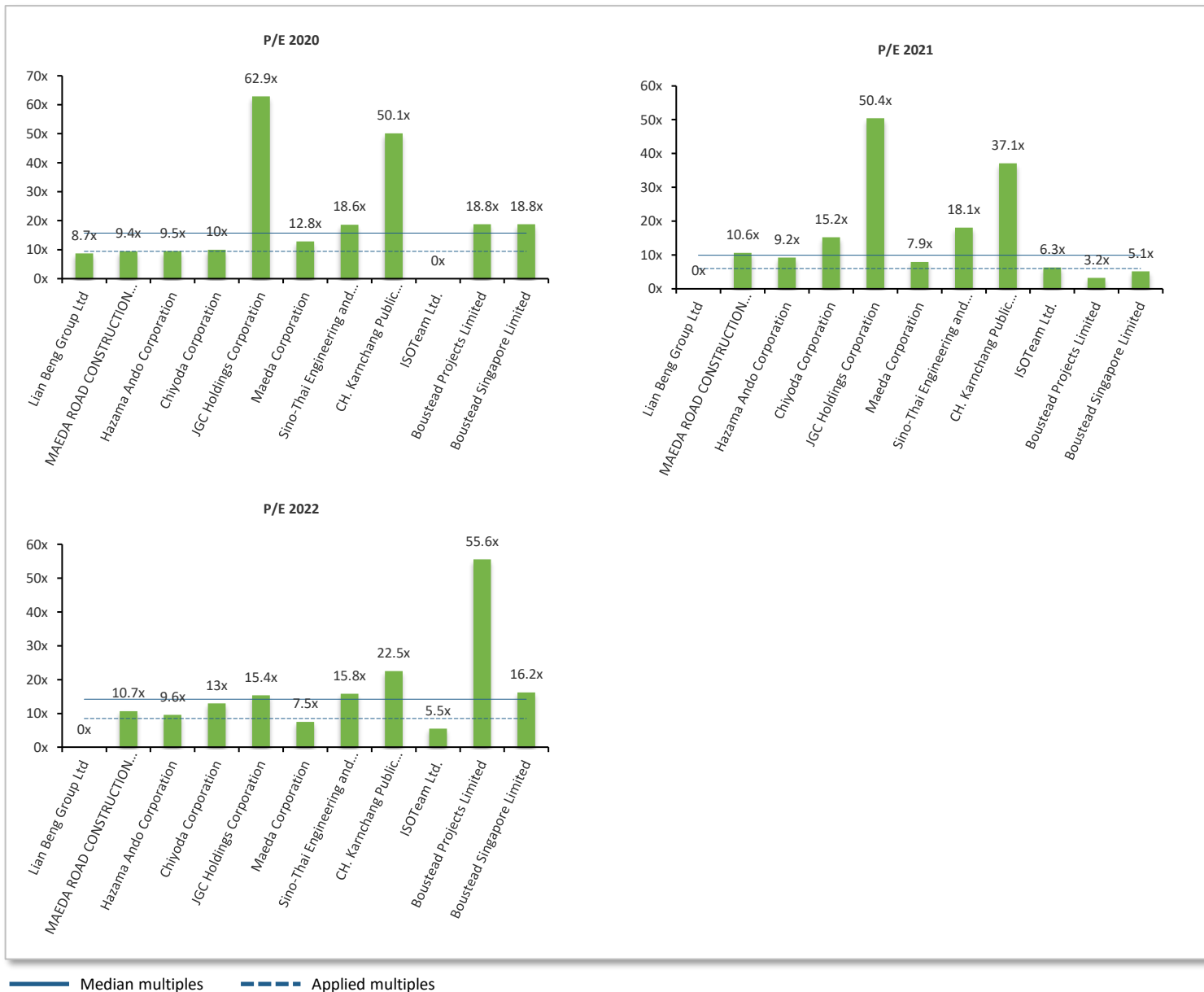
TRADING MULTIPLES: P/E

The **multiples approach** ('Comparable Company Analysis' or 'CCA') is a **valuation theory based on the idea that similar assets have similar prices**

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Relative valuation models are an alternative to absolute value models (e.g. DCF), which try to determine a company's intrinsic worth based on its estimated future free cash flows, discounted to their present value.



Multiples

P/E 2020	9.4x
P/E 2021	5.9x
P/E 2022	8.5x

TRANSACTION MULTIPLES: OVERVIEW

Comparable transactions analysis considers the **past sales of similar companies** that have an equivalent business model to the firm being valued

A comparable transaction approach is **generally used in conjunction with other valuation techniques** including DCF and other comparable company analysis techniques.

Multiples can be influenced by many factors such as scarcity or perceived attractiveness of a certain industry, but in general **higher multiples are seen in high growth industries**

Date	Bidder company	Target company	Target subsector	EV/Sales	EV/EBITDA	EV/EBIT	P/E
2021-07-14	Reach Goal Development Limited	Ling Yui Holdings Limited	Construction and Engineering	0.59x	-	-	-
2021-05-07	OKG Technology Holdings Limited	Bright Access (HK) Limited	Construction and Engineering	10.40x	-	-	-
2021-04-09	Eagle Fortitude Limited	HKE Holdings Limited	Construction and Engineering	0.34x	-	-	-
2021-04-01	HB Global Limited	Forward Resources and Construction Sdn Bhd	Construction and Engineering	3.11x	-	-	-
2021-03-22	Gayatri Highways Limited	HKR Roadways Limited	Construction and Engineering	0.02x	-	-	-
2020-12-16	LJHB Holdings (S) Pte. Ltd.	Keong Hong Holdings Limited	Construction and Engineering	-	-	-	-
2020-11-17	Ellipsiz Ltd	Lum Chang Holdings Limited	Construction and Engineering	0.83x	15.6x	23.1x	-
2020-07-07	Pierfront Capital	TEE International Limited	Construction and Engineering	0.21x	-	-	-
2020-03-27	Amber Capital Holdings Limited	Indigo Star Holdings Limited	Construction and Engineering	0.69x	-	-	-
2020-01-20	Maeda Corporation	MAEDA ROAD CONSTRUCTION Co., Ltd.	Construction and Engineering	1.04x	8.5x	12.1x	11.1x
2018-02-13	ISOTeam Ltd.; Taisei Oncho Co., Ltd.	ISO-Integrated M&E Pte. Ltd.	Construction and Engineering	1.73x	-	73.3x	-
Median				0.76x	12.1x	23.1x	11.1x
<i>Min</i>				0.02x	8.5x	12.1x	11.1x
<i>Max</i>				10.40x	15.6x	73.3x	11.1x
<i>Construction and Engineering</i>				0.65x	8.2x	10.3x	13.7x
<i>Discount / Premium to Median</i>				0%	0%	0%	0%
Applied multiples				0.76x	12.1x	23.1x	11.1x

Multiples

EV / Sales	0.76x
EV / EBITDA	12.1x
EV / EBIT	23.1x
P / E	11.1x

TRANSACTION MULTIPLES: EV/SALES

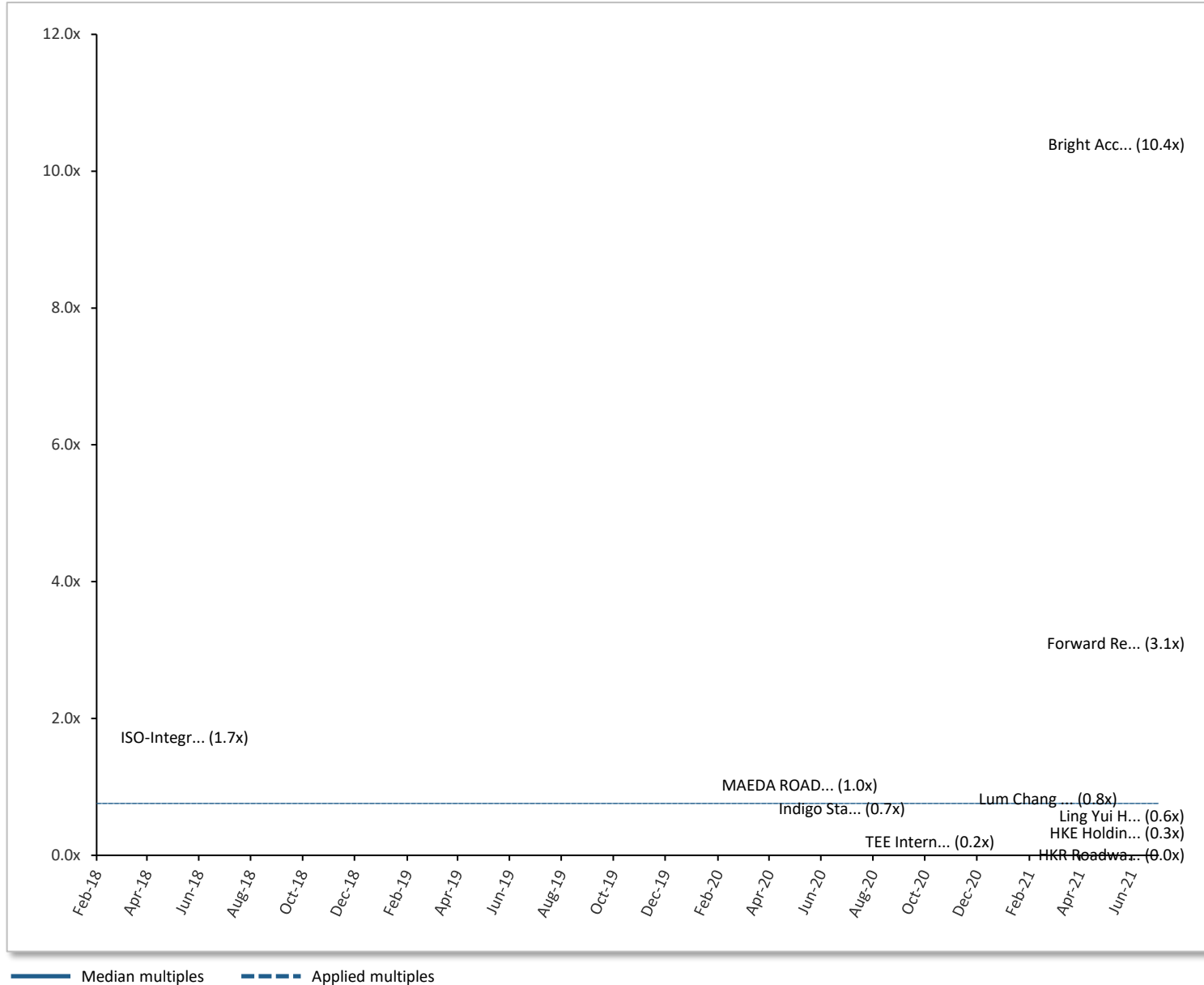
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Multiples

EV / Sales	0.76x
EV / EBITDA	12.1x
EV / EBIT	23.1x
P / E	11.1x



TRANSACTION MULTIPLES: EV/EBITDA

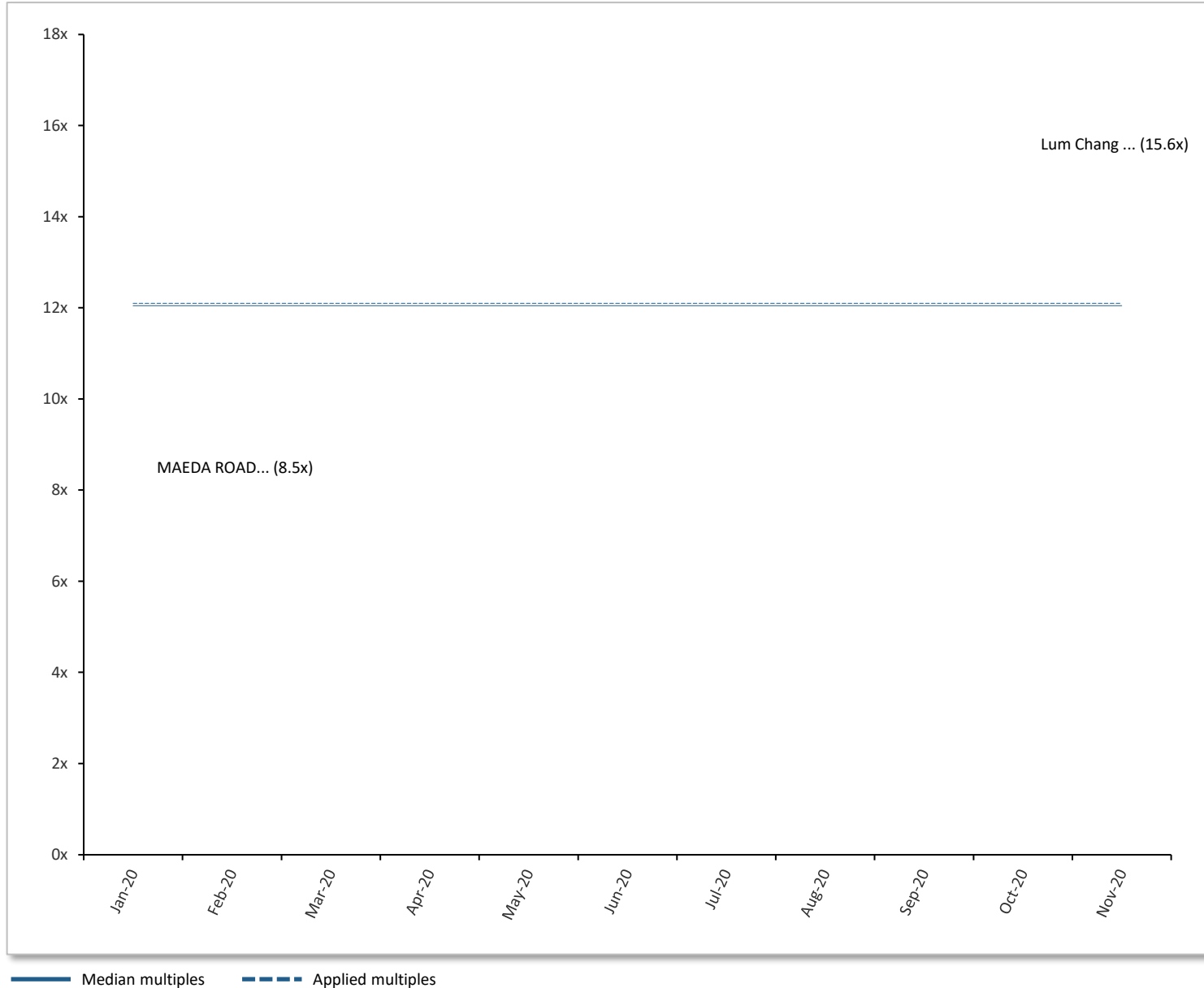
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Multiples

EV / Sales	0.76x
EV / EBITDA	12.1x
EV / EBIT	23.1x
P / E	11.1x



TRANSACTION MULTIPLES: EV/EBIT

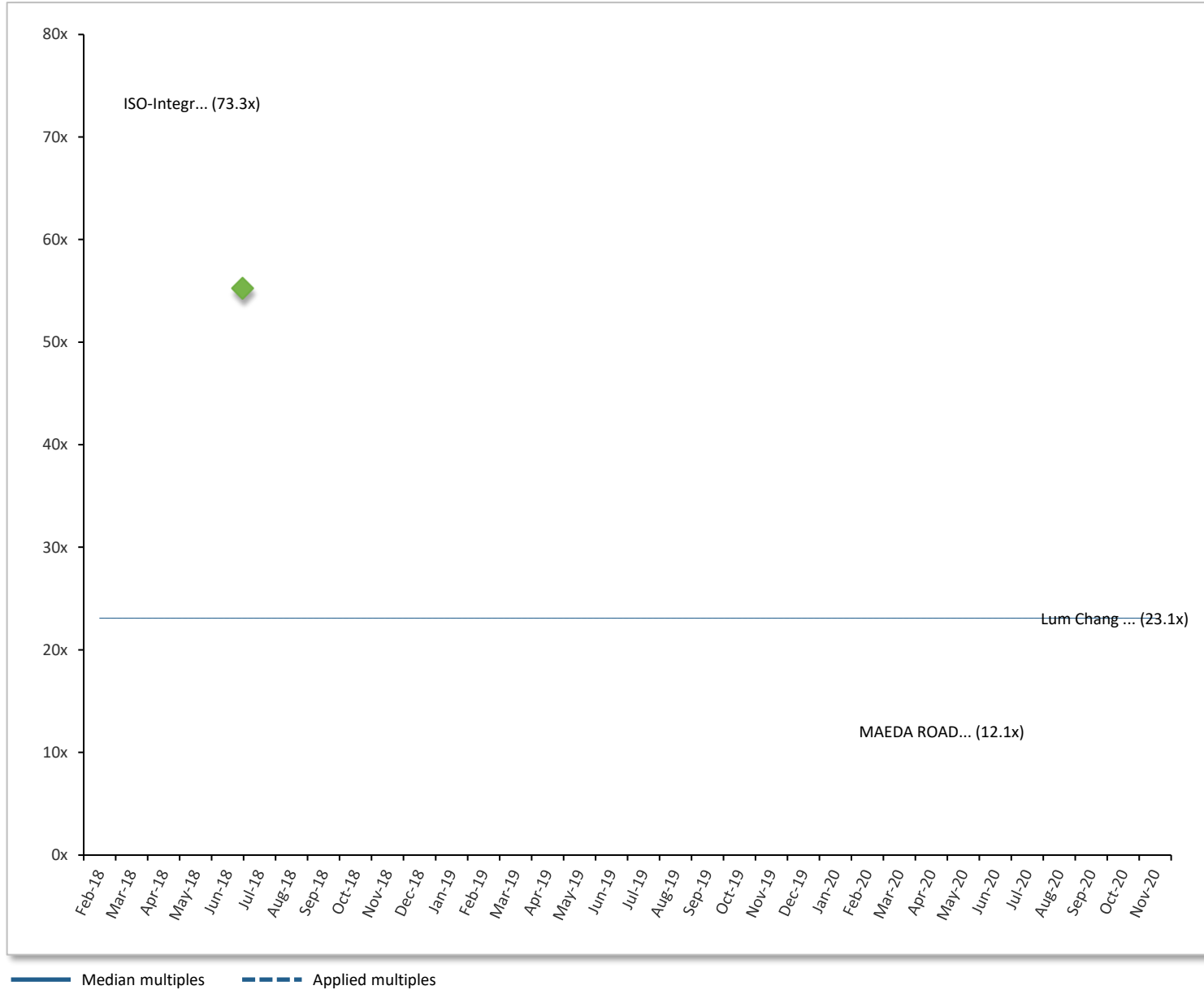
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Multiples

EV / Sales	0.76x
EV / EBITDA	12.1x
EV / EBIT	23.1x
P / E	11.1x



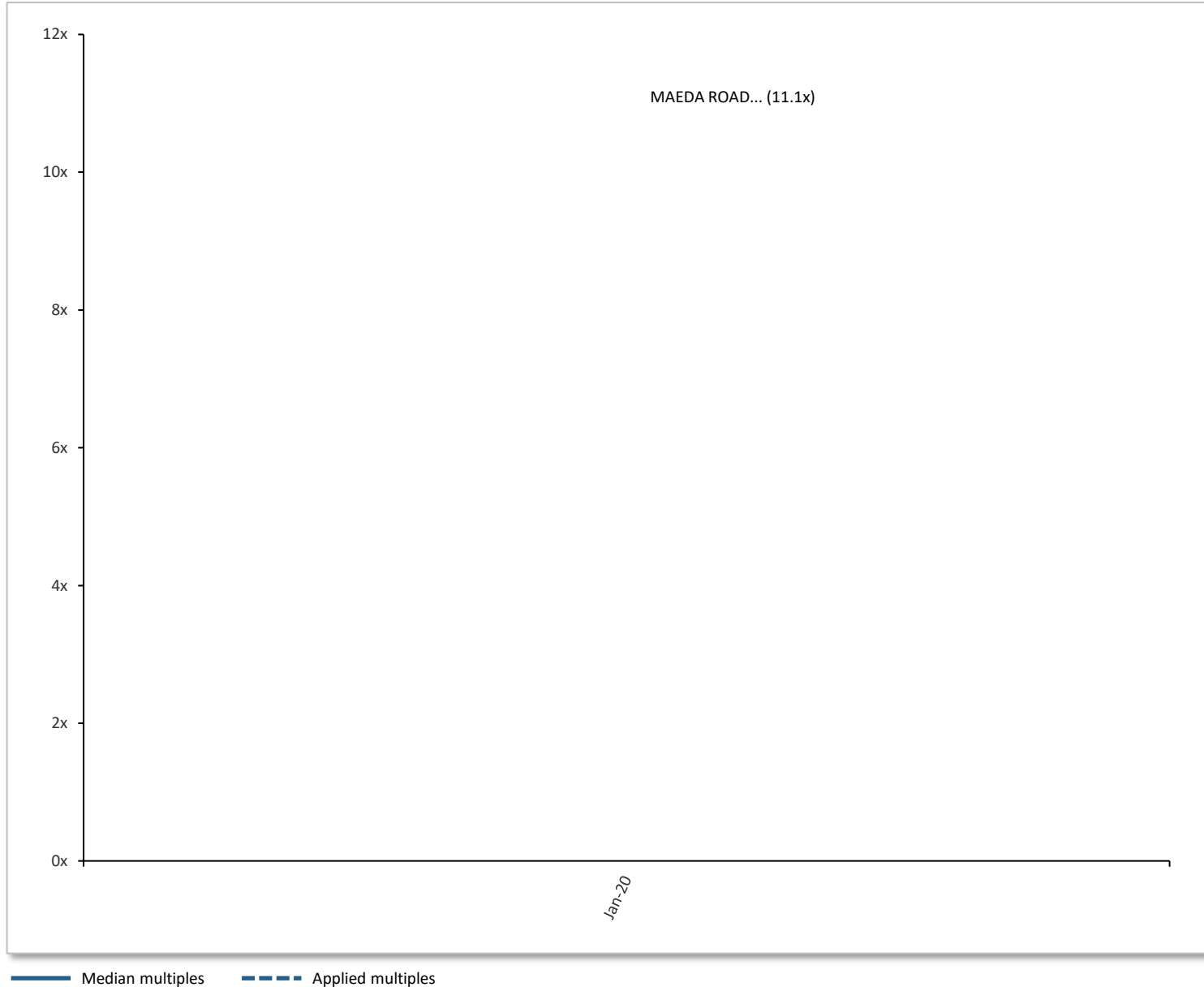
TRANSACTION MULTIPLES: P/E

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Multiples can be influenced by many factors such as scarcity or perceived attractiveness of a certain industry, but in general **higher multiples are seen in high growth industries**

Multiples	
EV / Sales	0.76x
EV / EBITDA	12.1x
EV / EBIT	23.1x
P / E	11.1x



LEVERAGED BUYOUT ANALYSIS (1/2)

A leveraged buyout (LBO) is the acquisition of a firm using a significant amount of borrowed money to meet the cost of the acquisition

LBO analysis is a useful addition to other valuation techniques as it takes the perspective of a financial acquirer (i.e. a private equity fund or similar)

FINANCING MIX

	Amount	%	xEBIT	xEBITDA
Debt	2.3	56.0%	3.4x	3.0x
Equity	1.8	44.0%	2.6x	2.4x
Total sources of funds	4.2	100.0%	6.0x	5.4x

CASHFLOWS

	2020	2021	2022	2023	2024	2025
EBITDA	0.8	0.8	0.8	0.9	1.1	1.2
EBIT	0.7	0.5	0.5	0.6	0.8	0.9
+/- Net interest (expense)/income		-0.1	-0.1	-0.1	-0.0	-0.0
EBT		0.4	0.4	0.6	0.7	0.9
- Tax (17.0%)		-0.1	-0.1	-0.1	-0.1	-0.2
Net income		0.4	0.4	0.5	0.6	0.8
+ Depreciation & Amortisation		0.3	0.3	0.2	0.3	0.3
+/- Change in Net Working Capital		-0.1	-0.1	-0.0	-0.2	-0.1
Cashflow from Operations		0.6	0.6	0.7	0.8	1.0
Cashflow from Investing (Capex)		-0.2	-0.2	-0.2	-0.1	-0.2
Cashflow from Financing		-0.4	-0.4	-0.5	-0.6	-0.4
Net Cashflow		0.0	0.0	0.0	0.0	0.5

SIDE CALCULATIONS

Debt (bop)		2.3	1.9	1.5	1.0	0.4
+/- Issuance/(Paydown)		-0.4	-0.4	-0.5	-0.6	-0.4
Debt (eop)		2.3	1.9	1.5	1.0	0.0
Interest expense		0.1	0.1	0.1	0.0	0.0
Cash (bop)		0.0	0.0	0.0	0.0	0.0
+/- Net Cashflow		0.0	0.0	0.0	0.0	0.5
Cash (eop)		0.0	0.0	0.0	0.0	0.5
Interest income		0.0	0.0	0.0	0.0	0.0

Assumptions

Leverage (ND/EBITDA)	3.0x
Interest rate on cash	0.5%
Interest rate on debt	3.8%
Entry EV/EBIT	6.0x
Exit EV/EBIT	6.0x
IRR requirement	25%

LEVERAGED BUYOUT ANALYSIS (2/2)

The mechanics of an LBO differ significantly from DCF and DDM approaches:

Given the projected cashflows of a firm, a buyer assumes a certain resale price after a few years.

The analysis then **reverse-calculates a possible maximum purchase price today** in order to **meet a certain IRR criterion** (typically 20%).

Stable and growing cashflows typically mean that a financial buyer can borrow more today.

Given a fixed equity component (assuming certain IRR) the buyer can then pay more today, which **raises the valuation**

CREDIT METRICS

	2020	2021	2022	2023	2024	2025
Debt / EBITDA	3.0x	2.4x	1.8x	1.1x	0.3x	0.0x
Net debt / EBITDA	3.0x	2.4x	1.8x	1.1x	0.3x	-0.4x
EBITDA / interest expense		9.0x	11.6x	15.4x	29.1x	93.5x
(EBITDA - Capex) / interest expense		7.3x	9.3x	12.8x	25.5x	78.2x
EBITDA / net interest expense		9.0x	11.6x	15.4x	29.1x	93.5x

EXIT CALCULATIONS

EV (@6x EBIT) - exit		3.1	3.1	3.9	4.7	5.6
- Net debt		-1.9	-1.5	-1.0	-0.4	0.5
EqV - exit		1.2	1.5	2.9	4.4	6.1

Implied Entry EqV (@25% IRR)		0.9	1.0	1.5	1.8	2.0
+ Acquisition debt		2.3	2.3	2.3	2.3	
Implied Entry EV		3.3	3.3	3.8	4.1	4.3
- Net debt @ Acquisition		2.9	2.9	2.9	2.9	2.9
Implied Purchase Price (EqV)		6.2	6.3	6.7	7.1	7.3

Exit EV (@6x EBIT)		3.1	3.1	3.9	4.7	5.6
Exit EqV		1.2	1.5	2.9	4.4	6.1
Implied IRR		-37.1%	-8.1%	16.2%	24.1%	27.1%

Assumptions

Leverage (ND/EBITDA)	3.0x
Interest rate on cash	0.5%
Interest rate on debt	3.8%
Entry EV/EBIT	6.0x
Exit EV/EBIT	6.0x
IRR requirement	25%

Appendix: Detailed peer calculations

Boustead Projects Limited

In SGD millions	Latest	2020	2021	2022	
Market capitalisation	417.0	417.0	417.0	417.0	S&P CapitalIQ as of 2021-07-19
+ Debt	200.5				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.0				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	-0.1				S&P CapitalIQ as of 2021-07-19
- Cash	-225.0				S&P CapitalIQ as of 2021-07-19
= Net debt	-361.9	-361.9	-361.9	-361.9	
Enterprise Value (EV)	55.1	55.1	55.1	55.1	
Sales		426.2	301.4	306.1	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.13x	0.18x	0.18x	
EBITDA		39.9	4.0	12.6	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		1.4x	13.7x	4.4x	
EBIT		32.9	-2.0	7.1	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		1.7x	-	7.8x	
Net income		22.2	131.7	7.5	S&P CapitalIQ as of 2021-07-19
= P / E		18.8x	3.2x	55.6x	
Debt + Pensions + NCI	47.3				
+ Market capitalization	417.0				S&P CapitalIQ as of 2021-07-19
= Total capital	464.2				
Gearing (D/C)	10.2%				
Gearing (D/E)	11.4%				
Interest expense	4.6				S&P CapitalIQ as of 2021-07-19
Debt	200.5				
= Estimated effective rate	6.80%				
- Risk-free rate (Singapore)	1.46%				Public sources as of 2021-07-19
= Credit spread	5.34%				
Levered beta	0.92				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 17.0%) * 11.4%)$			
= Beta Unlevered	0.84				

ISOTeam Ltd.

In SGD millions	Latest	2020	2021	2022	
Market capitalisation	44.2	44.2	44.2	44.2	S&P CapitalIQ as of 2021-07-19
+ Debt	45.7				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.0				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	-0.8				S&P CapitalIQ as of 2021-07-19
- Cash	-19.3				S&P CapitalIQ as of 2021-07-19
= Net debt	25.6	25.6	25.6	25.6	
Enterprise Value (EV)	69.8	69.8	69.8	69.8	
Sales		91.7	112.0	118.0	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.76x	0.62x	0.59x	
EBITDA		-11.9	7.0	8.0	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		-	10.0x	8.7x	
EBIT		-17.2	5.0	5.0	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		-	14.0x	14.0x	
Net income		-19.6	7.0	8.0	S&P CapitalIQ as of 2021-07-19
= P / E		-	6.3x	5.5x	
Debt + Pensions + NCI	44.9				
+ Market capitalization	44.2				S&P CapitalIQ as of 2021-07-19
= Total capital	89.1				
Gearing (D/C)	50.4%				
Gearing (D/E)	101.6%				
Interest expense	1.7				S&P CapitalIQ as of 2021-07-19
Debt	45.7				
= Estimated effective rate	3.80%				
- Risk-free rate (Singapore)	1.46%				Public sources as of 2021-07-19
= Credit spread	2.34%				
Levered beta	0.39				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 17.0%) * 101.6%)$			
= Beta Unlevered	0.21				

Lian Beng Group Ltd

In SGD millions	Latest	2020	2021	2022	
Market capitalisation	249.8	249.8	249.8	249.8	S&P CapitalIQ as of 2021-07-19
+ Debt	618.6				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.0				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	118.9				S&P CapitalIQ as of 2021-07-19
- Cash	-407.6				S&P CapitalIQ as of 2021-07-19
= Net debt	329.9	329.9	329.9	329.9	
Enterprise Value (EV)	579.7	579.7	579.7	579.7	
Sales		556.0	-	-	S&P CapitalIQ as of 2021-07-19
= EV / Sales		1.04x	-	-	
EBITDA		57.6	-	-	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		10.1x	-	-	
EBIT		49.5	-	-	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		11.7x	-	-	
Net income		28.7	-	-	S&P CapitalIQ as of 2021-07-19
= P / E		8.7x	-	-	
Debt + Pensions + NCI	737.5				
+ Market capitalization	249.8				S&P CapitalIQ as of 2021-07-19
= Total capital	987.4				
Gearing (D/C)	74.7%				
Gearing (D/E)	295.3%				
Interest expense	18.3				S&P CapitalIQ as of 2021-07-19
Debt	618.6				
= Estimated effective rate	2.96%				
- Risk-free rate (Singapore)	1.46%				Public sources as of 2021-07-19
= Credit spread	1.50%				
Levered beta	0.86				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 17.0%) * 295.3%)$			
= Beta Unlevered	0.25				

Boustead Singapore Limited

In SGD millions	Latest	2020	2021	2022	
Market capitalisation	580.8	580.8	580.8	580.8	S&P CapitalIQ as of 2021-07-19
+ Debt	215.0				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.4				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	154.1				S&P CapitalIQ as of 2021-07-19
- Cash	-412.1				S&P CapitalIQ as of 2021-07-19
= Net debt	-330.5	-330.5	-330.5	-330.5	
Enterprise Value (EV)	250.3	250.3	250.3	250.3	
Sales		726.6	685.7	627.3	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.34x	0.37x	0.40x	
EBITDA		75.1	73.8	85.0	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		3.3x	3.4x	2.9x	
EBIT		64.9	64.6	75.0	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		3.9x	3.9x	3.3x	
Net income		30.9	113.1	35.9	S&P CapitalIQ as of 2021-07-19
= P / E		18.8x	5.1x	16.2x	
Debt + Pensions + NCI	283.8				
+ Market capitalization	580.8				S&P CapitalIQ as of 2021-07-19
= Total capital	864.6				
Gearing (D/C)	32.8%				
Gearing (D/E)	48.8%				
Interest expense	5.2				S&P CapitalIQ as of 2021-07-19
Debt	215.0				
= Estimated effective rate	5.92%				
- Risk-free rate (Singapore)	1.46%				Public sources as of 2021-07-19
= Credit spread	4.47%				
Levered beta	0.67				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 17.0%) * 48.8%)$			
= Beta Unlevered	0.48				

Sino-Thai Engineering and Construction Public Company Limited

In THB billions	Latest	2020	2021	2022	
Market capitalisation	20.3	20.3	20.3	20.3	S&P CapitalIQ as of 2021-07-19
+ Debt	2.5				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.3				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	0.3				S&P CapitalIQ as of 2021-07-19
- Cash	-18.8				S&P CapitalIQ as of 2021-07-19
= Net debt	-15.7	-15.7	-15.7	-15.7	
Enterprise Value (EV)	4.6	4.6	4.6	4.6	
Sales		35.9	37.2	38.8	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.13x	0.12x	0.12x	
EBITDA		1.9	2.2	2.4	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		2.4x	2.1x	1.9x	
EBIT		0.9	1.0	1.3	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		4.9x	4.5x	3.4x	
Net income		1.1	1.1	1.3	S&P CapitalIQ as of 2021-07-19
= P / E		18.6x	18.1x	15.8x	
Debt + Pensions + NCI	3.1				
+ Market capitalization	20.3				S&P CapitalIQ as of 2021-07-19
= Total capital	23.4				
Gearing (D/C)	13.2%				
Gearing (D/E)	15.2%				
Interest expense	0.1				S&P CapitalIQ as of 2021-07-19
Debt	2.5				
= Estimated effective rate	2.14%				
- Risk-free rate (Thailand)	1.66%				Public sources as of 2021-07-19
= Credit spread	0.47%				
Levered beta	0.82				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 20.0\%) * 15.2\%)$			
= Beta Unlevered	0.73				

Maeda Corporation

In JPY billions	Latest	2020	2021	2022	
Market capitalisation	182.9	182.9	182.9	182.9	S&P CapitalIQ as of 2021-07-19
+ Debt	179.2				S&P CapitalIQ as of 2021-07-19
+ Pensions	21.4				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	115.2				S&P CapitalIQ as of 2021-07-19
- Cash	-245.6				S&P CapitalIQ as of 2021-07-19
= Net debt	17.9	17.9	17.9	17.9	
Enterprise Value (EV)	200.8	200.8	200.8	200.8	
Sales		487.9	678.1	717.4	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.41x	0.30x	0.28x	
EBITDA		48.8	77.5	79.7	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		4.1x	2.6x	2.5x	
EBIT		34.0	46.3	48.6	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		5.9x	4.3x	4.1x	
Net income		14.3	23.3	24.3	S&P CapitalIQ as of 2021-07-19
= P / E		12.8x	7.9x	7.5x	
Debt + Pensions + NCI	264.7				
+ Market capitalization	182.9				S&P CapitalIQ as of 2021-07-19
= Total capital	447.6				
Gearing (D/C)	59.1%				
Gearing (D/E)	144.5%				
Interest expense	2.3				S&P CapitalIQ as of 2021-07-19
Debt	179.2				
= Estimated effective rate	1.74%				
- Risk-free rate (Japan)	0.02%				Public sources as of 2021-07-19
= Credit spread	1.72%				
Levered beta	1.09				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 30.6%) * 144.5%)$			
= Beta Unlevered	0.54				

JGC Holdings Corporation

In JPY billions	Latest	2020	2021	2022	
Market capitalisation	259.0	259.0	259.0	259.0	S&P CapitalIQ as of 2021-07-19
+ Debt	50.6				S&P CapitalIQ as of 2021-07-19
+ Pensions	17.0				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	0.5				S&P CapitalIQ as of 2021-07-19
- Cash	-305.5				S&P CapitalIQ as of 2021-07-19
= Net debt	-242.0	-242.0	-242.0	-242.0	
Enterprise Value (EV)	17.0	17.0	17.0	17.0	
Sales		480.8	434.0	494.9	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.04x	0.04x	0.03x	
EBITDA		24.1	29.3	27.0	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		0.7x	0.6x	0.6x	
EBIT		17.1	22.9	23.0	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		1.0x	0.7x	0.7x	
Net income		4.1	5.1	16.8	S&P CapitalIQ as of 2021-07-19
= P / E		62.9x	50.4x	15.4x	
Debt + Pensions + NCI	83.4				
+ Market capitalization	259.0				S&P CapitalIQ as of 2021-07-19
= Total capital	342.4				
Gearing (D/C)	24.4%				
Gearing (D/E)	32.3%				
Interest expense	0.2				S&P CapitalIQ as of 2021-07-19
Debt	50.6				
= Estimated effective rate	0.27%				
- Risk-free rate (Japan)	0.02%				Public sources as of 2021-07-19
= Credit spread	0.25%				
Levered beta	1.51				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 30.6%) * 32.3%)$			
= Beta Unlevered	1.23				

Chiyoda Corporation

In JPY billions	Latest	2020	2021	2022	
Market capitalisation	121.2	121.2	121.2	121.2	S&P CapitalIQ as of 2021-07-19
+ Debt	35.9				S&P CapitalIQ as of 2021-07-19
+ Pensions	2.0				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	0.5				S&P CapitalIQ as of 2021-07-19
- Cash	-131.1				S&P CapitalIQ as of 2021-07-19
= Net debt	-67.6	-67.6	-67.6	-67.6	
Enterprise Value (EV)	53.6	53.6	53.6	53.6	
Sales		385.9	315.4	310.0	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.14x	0.17x	0.17x	
EBITDA		30.0	10.3	21.5	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		1.8x	5.2x	2.5x	
EBIT		26.8	7.0	12.3	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		2.0x	7.6x	4.4x	
Net income		12.2	8.0	9.3	S&P CapitalIQ as of 2021-07-19
= P / E		10.0x	15.2x	13.0x	
Debt + Pensions + NCI	46.9				
+ Market capitalization	121.2				S&P CapitalIQ as of 2021-07-19
= Total capital	168.1				
Gearing (D/C)	27.9%				
Gearing (D/E)	38.7%				
Interest expense	0.7				S&P CapitalIQ as of 2021-07-19
Debt	35.9				
= Estimated effective rate	1.94%				
- Risk-free rate (Japan)	0.02%				Public sources as of 2021-07-19
= Credit spread	1.92%				
Levered beta	1.47				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 30.6%) * 38.7%)$			
= Beta Unlevered	1.16				

Hazama Ando Corporation

In JPY billions	Latest	2020	2021	2022	
Market capitalisation	158.9	158.9	158.9	158.9	S&P CapitalIQ as of 2021-07-19
+ Debt	27.1				S&P CapitalIQ as of 2021-07-19
+ Pensions	12.8				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	0.8				S&P CapitalIQ as of 2021-07-19
- Cash	-138.8				S&P CapitalIQ as of 2021-07-19
= Net debt	-120.6	-120.6	-120.6	-120.6	
Enterprise Value (EV)	38.3	38.3	38.3	38.3	
Sales		378.1	352.0	365.0	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.10x	0.11x	0.10x	
EBITDA		26.5	29.4	27.6	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		1.4x	1.3x	1.4x	
EBIT		24.7	27.4	25.8	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		1.5x	1.4x	1.5x	
Net income		16.8	17.2	16.5	S&P CapitalIQ as of 2021-07-19
= P / E		9.5x	9.2x	9.6x	
Debt + Pensions + NCI	34.9				
+ Market capitalization	158.9				S&P CapitalIQ as of 2021-07-19
= Total capital	193.8				
Gearing (D/C)	18.0%				
Gearing (D/E)	22.0%				
Interest expense	0.4				S&P CapitalIQ as of 2021-07-19
Debt	27.1				
= Estimated effective rate	1.32%				
- Risk-free rate (Japan)	0.02%				Public sources as of 2021-07-19
= Credit spread	1.30%				
Levered beta	0.73				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 30.6%) * 22.0%)$			
= Beta Unlevered	0.63				

MAEDA ROAD CONSTRUCTION Co., Ltd.

In JPY billions	Latest	2020	2021	2022	
Market capitalisation	177.2	177.2	177.2	177.2	S&P CapitalIQ as of 2021-07-19
+ Debt	0.0				S&P CapitalIQ as of 2021-07-19
+ Pensions	4.4				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	1.6				S&P CapitalIQ as of 2021-07-19
- Cash	-111.3				S&P CapitalIQ as of 2021-07-19
= Net debt	-68.6	-68.6	-68.6	-68.6	
Enterprise Value (EV)	108.6	108.6	108.6	108.6	
Sales		237.8	234.6	247.0	S&P CapitalIQ as of 2021-07-19
= EV / Sales		0.46x	0.46x	0.44x	
EBITDA		28.0	29.2	32.0	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		3.9x	3.7x	3.4x	
EBIT		19.6	20.7	23.5	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		5.5x	5.2x	4.6x	
Net income		18.8	16.8	16.5	S&P CapitalIQ as of 2021-07-19
= P / E		9.4x	10.6x	10.7x	
Debt + Pensions + NCI	5.9				
+ Market capitalization	177.2				S&P CapitalIQ as of 2021-07-19
= Total capital	183.1				
Gearing (D/C)	3.2%				
Gearing (D/E)	3.3%				
Interest expense	0.0				S&P CapitalIQ as of 2021-07-19
Debt	0.0				
= Estimated effective rate	-				
- Risk-free rate (Japan)	0.02%				Public sources as of 2021-07-19
= Credit spread	-				
Levered beta	0.73				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$	$/(1 + (1 - 30.6\%) * 3.3\%)$				
= Beta Unlevered	0.71				

CH. Karnchang Public Company Limited

In THB billions	Latest	2020	2021	2022	
Market capitalisation	30.7	30.7	30.7	30.7	S&P CapitalIQ as of 2021-07-19
+ Debt	42.5				S&P CapitalIQ as of 2021-07-19
+ Pensions	0.9				S&P CapitalIQ as of 2021-07-19
+ Non-controlling interest	0.4				S&P CapitalIQ as of 2021-07-19
- Cash	-45.0				S&P CapitalIQ as of 2021-07-19
= Net debt	-1.2	-1.2	-1.2	-1.2	
Enterprise Value (EV)	29.5	29.5	29.5	29.5	
Sales		17.0	15.3	18.9	S&P CapitalIQ as of 2021-07-19
= EV / Sales		1.73x	1.92x	1.56x	
EBITDA		0.3	1.8	2.7	S&P CapitalIQ as of 2021-07-19
= EV / EBITDA		-	16.6x	11.1x	
EBIT		-0.4	-0.6	-0.2	S&P CapitalIQ as of 2021-07-19
= EV / EBIT		-	-	-	
Net income		0.6	0.8	1.4	S&P CapitalIQ as of 2021-07-19
= P / E		50.1x	37.1x	22.5x	
Debt + Pensions + NCI	43.8				
+ Market capitalization	30.7				S&P CapitalIQ as of 2021-07-19
= Total capital	74.5				
Gearing (D/C)	58.8%				
Gearing (D/E)	142.7%				
Interest expense	1.3				S&P CapitalIQ as of 2021-07-19
Debt	42.5				
= Estimated effective rate	3.00%				
- Risk-free rate (Thailand)	1.66%				Public sources as of 2021-07-19
= Credit spread	1.34%				
Levered beta	0.60				Valutico calculations based on S&P CapitalIQ as of 2021-07-19
$/ (1 + (1 - \text{Tax Rate}) * \text{Gearing (D/E)})$		$/(1 + (1 - 20.0%) * 142.7%)$			
= Beta Unlevered	0.28				

SOURCES

Category	Item	Source
General	Trading and market data	Capital IQ
	Company descriptions	Wikipedia
Discount Rate	Tax rate	Public sources (KPMG Corporate Tax Rate Guide and others)
	Target debt ratio (D/C)	Median of listed peers (Capital IQ)
	Risk free rate	Public sources / Valutico estimates
	Unlevered beta	Median of listed peers (Capital IQ)
	Market risk premium	Public sources (Morningstar, KPMG, Damodaran and others)
	CoE premium	User assumption
	Spread over 10y bond	Median of listed peers (Capital IQ)
	Perpetual growth	User assumption
DCF	Mid-year adjustment	User assumption
	% of Terminal Value included	User assumption
APV	Bankruptcy Cost	User assumption
	Probability of Bankruptcy	User assumption
LBO	Target leverage	User assumption
	Interest rate on debt	Country risk-free rate + median credit spread of peers
	Interest rate on cash	User assumption
	Entry EV/EBIT	Median of listed peers + 20% premium
	Exit EV/EBIT	Based on entry EV/EBIT
	IRR requirement	User assumption
DDM	Payout ratio	User assumption

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