

Memorandum

To: Michael Black, Port of Melbourne
From: Incenta Economic Consulting
Date: 16 September, 2020
Subject: Revised tables for report titled “Estimating the Port of Melbourne’s equity beta”

1. Revised tables and figure

As part of cleaning up the spreadsheets that underpinned the calculations of beta estimates provided in our report dated 28 May 2020, we discovered two errors in the calculations, which are as follows:

- **Download failure in USD at 31 December for some Chinese businesses** – the Bloomberg download formula was set to present all debt and equity market value estimates to USD, but for three Chinese businesses the download of data failed (unfortunately, as the destination sheet already contained data that was intended be overwritten, this resulted in erroneous gearing estimates rather than blanks).
- **Referencing error for Net Debt affecting weekly beta estimates at 31 December, 2019** – A referencing error applied gearing ending at 31 March 2020, rather than gearing at 31 December, 2019 to estimate the weekly asset betas at 31 December, 2019.

The appendix to this memorandum sets out revised versions of the tables that correct for these errors. In addition, in order to confirm that the data we downloaded from Bloomberg is correct, we have refreshed the download of data in the last few days, and this more recent download is included in the spreadsheet model that accompanies this memorandum. This updating has led to small changes in asset beta estimates for a number of firms.¹

The items in our report that are affected by correcting the two errors identified, as well as from the refreshing of the Bloomberg data download, are as follows:

- Tables 1.1 and 4.1: Asset betas for port and other industry comparator groups to 31 December, 2019 using monthly return data
- Table 4.2: Ports comparator group – individual asset betas to 31 December 2019, using monthly data
- Table 4.4: Gearing levels (Net Debt) for the port comparator group

¹ The small changes occur because Bloomberg first presents forecasts of debt for the most recent period, and then updates this once actual results are available. This updating will cause changes in gearing estimates for the same firm at the same time when data is downloaded at different dates.

- Figure 4.3 Port comparator group – asset beta regressed against (Opex + COGS) / Gross Non-Current Assets (affected by the fact that some beta estimates have changed)
- Footnote 68 – results of the regression shown in Figure 4.3
- Appendix Table I.1: Asset betas for port and other industry comparator groups to 31 December, 2019 using weekly return data.
- Appendix Table I.2: Asset betas for port and other industry comparator groups to 31 March, 2020 using monthly and weekly return data.²

We have set out updates of these items in the Appendix to this memorandum.

In our view, the effect of making these corrections on the aggregate estimates for the various sectors are very small,³ and do not cause us to amend the conclusions that we reached in our report.

² We note that the title of this Figure did not properly reflect the content, which deals only with port comparators. This has been rectified in the Revised Table I.2 below.

³ Of the asset betas for the three Chinese port entities that were affected by the first error, when measured using our preferred method (10 years to 31 December, 2019 using monthly observations), one reduced materially, one increased materially by approximately the same amount and the third was largely unchanged, and the average across all entities in our port sample remained unchanged at 0.85.

Appendix: Revised items from our report

Revised Tables 1.1 and 4.1: Asset betas for port and other industry comparator groups to 31 December, 2019 using monthly return data

Industry	No. of comparators		5yr asset beta	10yr asset beta
Rail	8	Average	0.90	0.86
		Median	0.93	0.90
Ports	18	Average	0.87	0.85
		Median	0.84	0.85
Airports	24	Average	0.74	0.67
		Median	0.67	0.58
Tollroads	32	Average	0.61	0.58
		Median	0.58	0.54

Source: Bloomberg and Incenta analysis

Revised Table 4.2: Ports comparator group – individual asset betas to 31 December 2019, using monthly data

Company name	Ticker	Index	5 year asset beta	10 year asset beta
Ningbo Zhoushan Port Co Ltd	601018 CH Equity	Shanghai	1.32	1.11
Qingdao Port International Co Ltd	6198 HK Equity	Hong Kong	1.46	1.32
Societe d'Exploitation des Ports	MSA MC Equity	Casablanca	1.07	1.07
Dalian Port	GPPV IN Equity	Natl India	1.09	0.96
Luka Koper	LKPG SV Equity	Ljubijana	0.64	0.90
Shanghai International Port Group Co Ltd	600018 CH Equity	Shanghai	0.87	0.92
Jiangsu Lianyungang Port Co Ltd	601008 CH Equity	Shanghai	0.90	0.90
Beibuwan Port Co Ltd	000582 CH Equity	Shenzhen	0.71	0.69
Xiamen International Port Co Ltd	3378 HK Equity	Hong Kong	0.89	0.92
Adani Ports & Special Economic Zone Ltd	ADSEZ IN Equity	Natl India	1.21	0.88
Yingkou Port Liability Co Ltd	600317 CH Equity	Shanghai	1.02	0.79
China Merchants Port Holdings Co Ltd	144 HK Equity	Hong Kong	0.80	0.81
Rizhao Port Co Ltd	600017 CH Equity	Shanghai	0.82	0.80
Tianjin Port Development Holdings Ltd	3382 HK Equity	Hong Kong	0.75	0.74
Dalian Port PDA Co Ltd	2880 HK Equity	Hong Kong	0.77	0.73
COSCO SHIPPING Ports Ltd	1199 HK Equity	Hong Kong	0.40	0.74
Hutchison Port Holdings Trust	HPHT SP Equity	Singapore	0.50	0.54
Port of Tauranga Ltd	POTNZ Equity	NZX	0.45	0.51
Average			0.87	0.85
Median			0.84	0.85

Source: Bloomberg and Incenta analysis

Revised Table 4.4: Gearing levels (Net Debt) for the port comparator group

Company name	Ticker	Country	Gearing (Net Debt)	
			5 year	10 year
Adani Ports & Special Economic Zone Ltd	ADSEZ IN Equity	India	21%	23%
China Merchants Port Holdings Co Ltd	144 HK Equity	Hong Kong	26%	23%
COSCO SHIPPING Ports Ltd	1199 HK Equity	Hong Kong	31%	28%
Dalian Port	2880 HK Equity	Hong Kong	20%	27%
Gujarat Pipavav Port Ltd	GPPV IN Equity	India	0%	0%
Hutchison Port Holdings Trust	HPHT SP Equity	Singapore	50%	44%
Luka Koper	LKPG SV Equity	Slovenia	17%	35%
Port of Tauranga Ltd	POTNZ Equity	New Zealand	11%	12%
Rizhao Port Co Ltd	600017 CH Equity	China	32%	29%
Tianjin Port Development Holdings Ltd	3382 HK Equity	Hong Kong	49%	48%
Xiamen International Port Co Ltd	3378 HK Equity	Hong Kong	49%	31%
Yingkou Port Liability Co Ltd	600317 CH Equity	China	7%	23%
Societe d'Exploitation des Ports	MSA MC Equity	Morocco	0%	0%
Jiangsu Lianyungang Port Co Ltd	601008 CH Equity	China	36%	30%
Shanghai International Port Group Co Ltd	600018 CH Equity	China	12%	12%
Ningbo Zhoushan Port Co Ltd	601018 CH Equity	China	18%	14%
Qingdao Port International Co Ltd	6198 HK Equity	Hong Kong	0%	0%
Beibuwan Port Co Ltd	000582 CH Equity	China	17%	22%
Average			22%	22%
Median			19%	23%

Source: Bloomberg and Incenta analysis

Revised Table I.1: Asset betas for port and other industry comparator groups to 31 December, 2019 using weekly return data

Industry	No. of comparators	Weekly returns	5yr asset beta	10yr asset beta
Rail	8	Average	0.89	0.92
		Median	0.88	0.94
Ports	18	Average	0.78	0.77
		Median	0.76	0.73
Airports	24	Average	0.71	0.63
		Median	0.71	0.62
Tollroads	32	Average	0.56	0.53
		Median	0.53	0.52

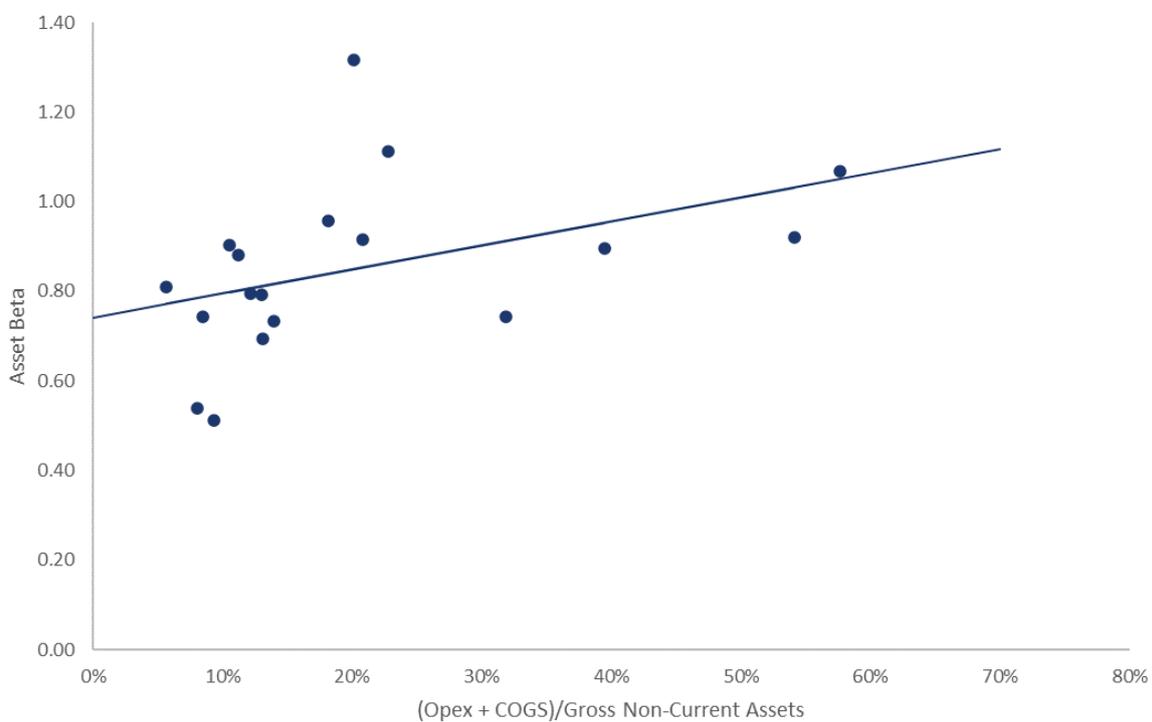
Source: Bloomberg and Incenta analysis

Revised Table I.2: Asset betas for the port comparator group to 31 December, 2019 using weekly return data

Industry	Return interval	5yr asset beta	10yr asset beta
Ports	Average (Monthly)	0.91	0.88
	Median (Monthly)	0.87	0.84
Ports	Average (Weekly)	0.85	0.82
	Median (Weekly)	0.85	0.80

Source: Bloomberg and Incenta analysis

Figure 4.3 Port comparator group – asset beta regressed against (Opex + COGS) / Gross Non-Current Assets



Source: Bloomberg and Incenta analysis

Footnote 68:

68. The regression equation is $\text{Asset beta} = 0.742 + 0.536 (\text{Opex} + \text{COGS})/\text{Non-current Assets}$, where both coefficients are highly statistically significant (t-Statistics of 10.254 and 1.887 respectively) with an adjusted R^2 of 0.13. We note that whilst statistical significance is achieved in this case, asset betas are subject to considerable estimation error and are therefore not ideal as a dependent variable.