INSTITUTE OF VALUERS AND APPRAISERS, SINGAPORE

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BU-002: CONSIDERATIONS REGARDING IMPACT OF IFRS 16 ON CALCULATION OF DISCOUNT RATES

1. Introduction

1.1. GN-001: Impact of IFRS 16 on Valuation Analysis was issued by the Institute of Valuers and Appraisers, Singapore ("IVAS") on 14 October 2022.

1.2. GN-001 sets out guidance considering the implications of changes in IFRS 16 on valuation practices.

2. Objective of this bulletin

2.1. This bulletin from IVAS provides an overview of the key areas that valuation professionals should consider when considering the impact of IFRS 16 on the calculation of discount rates.

2.2. As mentioned in GN-001, valuers should ensure consistency between the pairing of cash flows and discount rates in valuation analyses.

2.3. The principle is that the valuation impact relating to leases needs to be captured either as part of the cash flows, or captured in the discount rate and lease payments valued separately and deducted from EV (as a component of net financial debt) when calculating equity value.

2.4. GN-001 illustrated two approaches to calculate these consistently, as follows:

i. The first illustrative approach includes lease payments in the cash flows, hence the discount rate should not include a lease financing component; and

ii. The second illustrative approach excludes lease payments from the cash flows, hence the discount rate should include a lease financing component. In the event that cash flows to the firm are used to calculate enterprise value, the value of the lease financing component deducted in the adjustment to equity value needs to consider future lease payments (as further elaborated in para 4.6.).

2.5. This bulletin is divided into two sections, providing guidance on discount rate considerations under the two approaches. A summary of the differences between the first and second illustrative approach is shown below.

Area	First illustrative approach (Lease payments included in cash flows)	Second illustrative approach (Lease payments excluded from cash flows)
WACC	Discount rate excludes include cost of lease financing component	Discount rate includes cost of lease financing component
Beta	The value of lease payments is included in the debt component of in D/E ratio used to unlever and re-lever beta.	The value of lease payments is excluded in the debt component of in D/E ratio used to unlever and re-lever beta.
D/E ratio	"D" <u>excludes</u> the value of the lease payments	"D" <u>includes</u> the value of the future lease payments (as further elaborated in para 4.6.)
Net debt adjustment (from enterprise to equity value)	Net debt <u>excludes</u> the value of the lease payments	Net debt <u>includes</u> the value of the future lease payments (as further elaborated in para 4.6.)

2.6. As this document is a bulletin, its intention is only to provide information to practitioners on the potential impact to their work and not intended to be prescriptive.

3. First illustrative approach: Discount rate considerations when lease expenses are included in the cash flows

3.1. As mentioned in GN-001, under the first illustrative approach, all lease-related payments (i.e. from both operating and finance leases) are included in the cash flow projections as part of the cash outflows. Please refer to Exhibit 4 of GN-001 for how cash flow composition under the first approach is implemented.

3.2. Under the first approach, to ensure the consistency of the cash flows and the discount rate used in the valuation exercise:

i. The discount rate should not contain any lease financing component or weighting to lease components.

ii. The D/E ratio (0.33 in the example below) should only consist of debt and equity components without any lease component. The reason for excluding the value of the lease payments from the D/E ratio calculation is because the lease payments have already been accounted for in the cash flows.

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3.3. To illustrate how the discount rate is calculated under the first illustrative approach, please refer to the exhibit shown below.

Exhibit 1: Discount rate calculation under the first illustrative approach

	WACC
Risk-free rate	1.0%
Relevered beta	0.59
Market risk premium	6.0%
Company specific risk premium	3.2%
Cost of equity	**7.7%**
Pre-tax cost of debt	6.0%
Tax rate	17.0%
Post-tax cost of debt	**5.0%**
Weight of equity	*75.0%*
Weight of debt	*25.0%*
WACC	**7.0%**

The D/E ratio under the first illustrative approach is calculated as follows:

	Loans and borrowings	Value of lease payments	Total debt	Equity value	D/E ratio (%)
Comparable company 1	500	Not included	500	2,000	25.0%
Comparable company 2	1,000		1,000	3,000	33.3%
Comparable company 3	0		0	5,000	0.0%
Comparable company 4	800		800	2,400	33.3%
Comparable company 5	1,500		1,500	4,500	33.3%
Mean					**25.0%**
Median					**33.3%**

Notes: In local currency. Financial information used is for illustration purposes only.

4. Second illustrative approach: Discount rate considerations when impact of lease payments is included in the discount rate

4.1. As mentioned in GN-001, under the second approach, all lease payments whether operating or finance leases are excluded from the cash flow projections into perpetuity. Please refer to Exhibit 5 of GN-001 for how cash flow composition under the second approach is implemented.

4.2. Under the second approach, to ensure the consistency between the cash flows and the discount rate used in the valuation exercise:

i. The discount rate contains a lease component (i.e., WACC is composed of debt, equity, and lease finance components).

ii. The D/E ratio comprises debt, equity, and lease finance components. The value of lease payments is now included in the D/E ratio calculation because the lease payments are not captured in the cash flows and are classified as debt.

4.3. Since the value of lease payments is included in the numerator of the D/E ratio under the second approach, unlevering betas under the second approach uses a higher D/E ratio than under the first approach, which would result in lower asset betas. However, this perceived decrease in the asset beta is only theoretical since the risk of the company is unlikely to have changed due to the changes in accounting standards. When the seemingly lower asset betas are relevered using a higher D/E ratio, the resulting relevered beta should, in principle, approximate to the relevered equity beta derived before the adoption of IFRS 16. An illustration of this is shown below.

Exhibit 2: Illustration of levering of betas under the first and second illustrative approach

	First illustrative approach Value of lease payments not included in debt	**Second illustrative approach Value of lease payments included in debt**
Raw equity beta	0.59	0.59
D/E ratio[1]	33.3%	69.5%
Tax rate	17.0%	17.0%
Unlevered beta	**0.46**	**0.37**
D/E ratio	33.3%	69.5%
Relevered beta [2]	**0.59**	**0.59**

4.4. As mentioned in para 4.6.5. of GN-001, consideration should also be given to the length of the look-back period when selecting data points used in the beta calculation and in ensuring that the analysis is performed on a like-for-like basis. Since IFRS 16 became effective in 2019, valuers using historical data points prior to 2019 in the beta calculation should ensure proper adjustments to the D/E ratios have been made. When adjustments are not possible due to data limitations, valuers should assess any impact of using data points within the shorter look-back period.

4.5. Please refer to the exhibit shown below for a calculation of the discount rate under the second illustrative approach. Note that in this example, the discount rate is 6.3% using the second approach in contrast to the 7.0% discount rate under the first illustrative approach.

[1] These D/E ratios are derived with reference to the weightings in this bulletin.
[2] As shown above, levering and relevering at the same D/E ratio results in the relevered beta being equal to raw equity beta. In the case that the unlevered beta is relevered at a different D/E ratio (i.e. based on comparable companies), the two betas would be different.

Exhibit 3: Discount rate calculation using the second illustrative approach

	WACC
Risk-free rate	1.0%
Relevered beta	0.59
Market risk premium	6.0%
Company specific risk premium	3.2%
Cost of equity	**7.7%**
Pre-tax cost of debt	6.0%
Tax rate	17.0%
Post-tax cost of debt	**5.0%**
Cost of lease finance	**4.1%**
Weight of equity	*57.0%*
Weight of debt (excl. leases)	*19.0%*
Weight of lease payments	*24.0%*
WACC	**6.3%**

The D/E ratio using the second approach is calculated as follows:

	Loans and Borrowings	Value of future lease payments	Total Debt	Equity Value	Total Debt and Equity
Comparable company 1	500	500	1,000	2,000	3,000
Comparable company 2	1,000	1,300	2,300	3,100	5,400
Comparable company 3	0	1,600	1,600	5,000	6,600
Comparable company 4	800	800	1,600	2,100	3,700
Comparable company 5	1,600	2,500	4,100	4,500	8,600
As % of total debt and equity:					
Mean	**15.0%**	**23.0%**		**62.0%**	
Median	**19.0%**	**24.0%**		**57.0%**	

Notes: In local currency. Financial information used is for illustration purposes only.

4.6. A further area under the second illustrative approach where consistency is required, is in the net financial debt adjustment from gross enterprise value ("GEV") to equity value. Since the business will presumably require lease payments on an ongoing basis to support the operating capacity of the business past the expiry of the existing contracted leases, the valuer should consider future lease payments in calculating the value of the lease payments.

4.7. If only the book value of the lease liability (based on contractual expiry of existing leases) is included in net financial debt when adjusting from GEV to equity value, this will lead to an overstatement in equity value.

4.8. As mentioned in section 4.1.1 of GN-001, while issues arise in practice, the aggregate cash flows and risks, and therefore the equity value should theoretically remain unchanged even taking into account on the impact of IFRS 16.

5. Conclusion

5.1. This bulletin note has discussed the considerations regarding the impact of IFRS 16 on calculation of discount rates.

5.2. In selecting which approach to use, valuer’s judgment should be exercised in determining whether the adjustment should be in the cash flows, or the discount rate based on the facts and circumstances of the specific engagement.