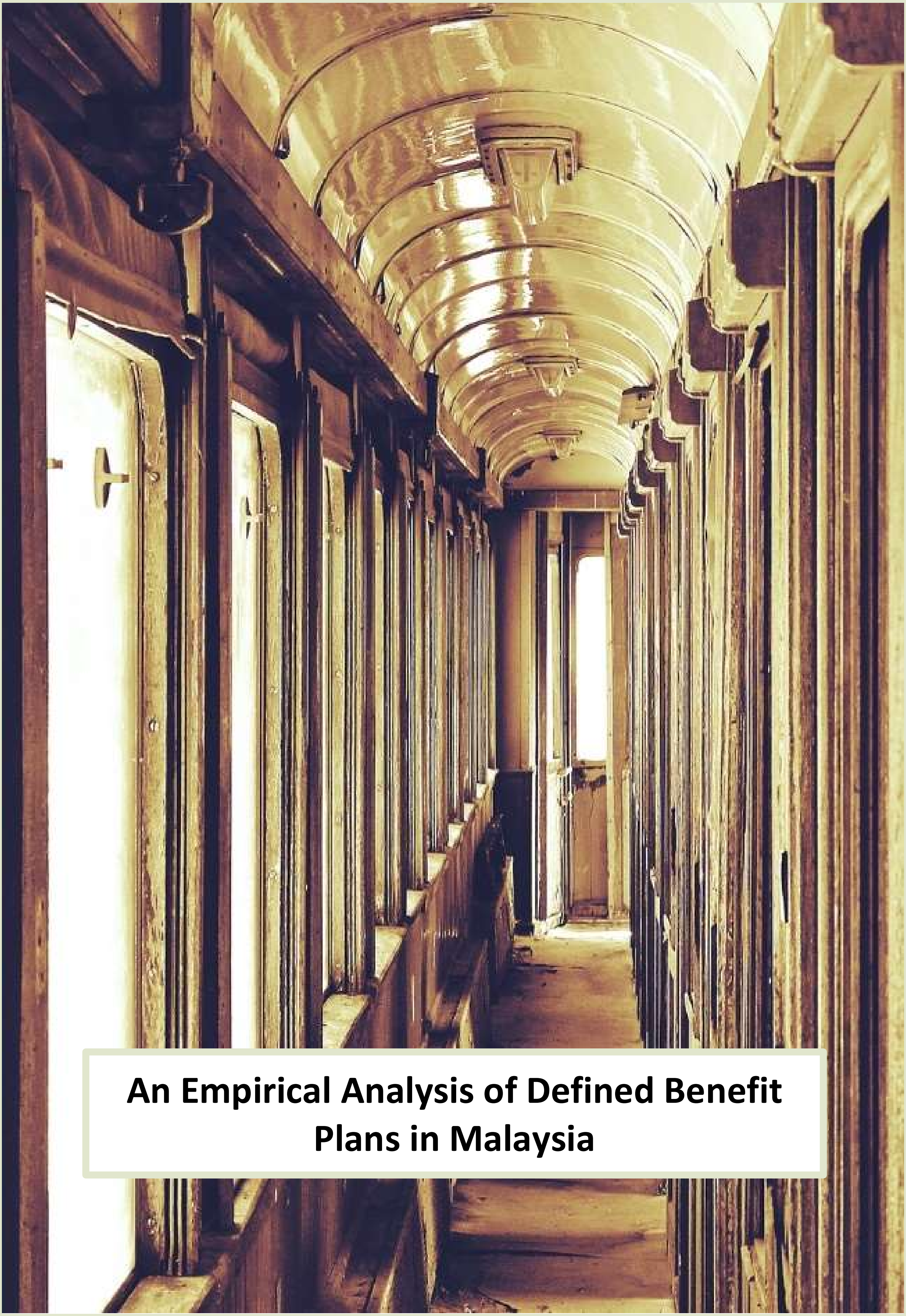

An Empirical Analysis of Defined Benefit Plans in Malaysia

n - a c t u a r i a l

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Executive Summary

This paper analyses and summarises the Defined Benefit (DB) plans of the listed companies in Malaysia for the financial year 2018. The accounting and disclosure for DB plans of the listed companies are mostly driven by the requirements of Malaysian Financial Reporting Standard 119 (MFRS 119).

Based on the information we collected from the listed companies, below is the movement of net Defined Benefit Obligation (DBO) as at 31 December 2018.

Movement of DBO (MYR million)	
Net DBO as at 1 January 2018	**16,579**
Defined Benefit Cost	902
-Reflected in Profit or Loss	994
-Reflected in Other Comprehensive Income	-92
Benefits Paid	-1,055
Others	-711
Net DBO as at 31 December 2018	**15,714**

The principle actuarial assumptions used are as follows:

Actuarial Assumptions	
Average Discount Rate	5.96%
Average Annual Salary Increment Rate	6.17%

More details and graphs are set out in Section A-J.

Section A: Introduction to Defined Benefit Plans in Malaysia

The pension system in Malaysia consists of the public pension, employer or occupational pension and personal saving. This paper focuses on occupational pension plans. In Malaysia, most of the companies provide retirement benefits to employees using a Defined Contribution (DC) plan whilst some companies provide retirement benefits to employees using a Defined Benefit (DB) pension plan. Employees Provident Fund (EPF), a federal statutory body under the Ministry of Finance that manages the mandatory retirement planning for the private sector employees has the largest DC plan in Malaysia. According to the annual report of EPF, its overall investment assets stood at MYR 833.76 billion as at 31 December 2018. In comparison, the defined benefit obligations of the DB plans stood at MYR 15.7 billion as at 31 December 2018.

A DB pension plan is a type of plan where a company promises to make predetermined payments to the employees for retirement, death, disability, termination, post-employment medical benefits, etc. The retirement gratuity is typically predetermined by a formula based on the employee's salary, year of service, age, etc. There are normally two types of DB pension schemes, one is based on the final salary upon retirement, while the other is based on the average salary received throughout the employment period. The most prevalent DB plans offered in Malaysia are based on the final salary upon retirement.

Section B: Research Methodology

We have performed a detailed analysis of the DB plans of the listed companies in the Malaysia for the year 2018. Financial information of the DB plans were extracted from the annual reports of the listed companies. Out of 918 listed companies, 128 or 14% of them have DB plans. The top 10 listed companies in terms of DB plan size and the other listed companies that had DB plans in 2018 are set out in Appendix 1.

We extracted information such as the DBO, service costs, interest costs and remeasurement of actuarial gain or loss for analysis from the financial reports of listed companies that have DB plans. These information are summarised and analysed in Section D-J.

We have not performed a detailed analysis of DB plans for unlisted companies as information is not publicly available.

Section C: International Accounting Standard 19 (IAS 19) Employee Benefits and Malaysian Financial Reporting Standard 119 (MFRS 119)

IAS 19 Employee Benefits is issued by the International Accounting Standards Board (IASB) with the objective to prescribe the accounting and disclosure for employee benefits.

In Malaysia, the Malaysian Accounting Standards Board (MASB) issued MFRS 119 Employee Benefits which is applicable for annual periods beginning on or after 1 January 2012.

MFRS 119 is equivalent to IAS 19 as issued and amended by IASB. It is noteworthy that entities that comply with MFRS 119 will simultaneously be in compliance with IAS 19. This is in line with MASB's implementation its policy of convergence with IASB.

Under MFRS 119, accounting for DB plan is complex because actuarial assumptions are required to measure the obligation and the expense and there is a possibility of actuarial gains and losses. Moreover, the obligations are measured on a discounted basis because they may be settled many years after the employees render the related service.

An actuarial valuation, using the projected unit credit method, is required under MFRS 119. The actuarial valuation will be performed using demographic (e.g. mortality, morbidity, withdrawal etc) and financial (e.g. discount rates, salary growth, inflation etc) actuarial assumptions are required.

Some public sector entities may comply with Malaysian Public Sector Accounting Standard 25 (MPSAS 25) and some private sector entities may comply with Malaysian Private Entities Reporting Standard 28 (MPERS 28) in the financial reporting of employee benefits. Nevertheless, these accounting standards are similar to what is prescribed in MFRS 119.

Further details of the requirements of MFRS 119 are set out in Appendix 3.

Section D: Funding of DB Plans

Figure 1 shows the breakdown of the type of DB plans amongst listed companies. A DB plan can either be funded or unfunded. Details of the difference between funded and unfunded DB plan are set out in Appendix 2.

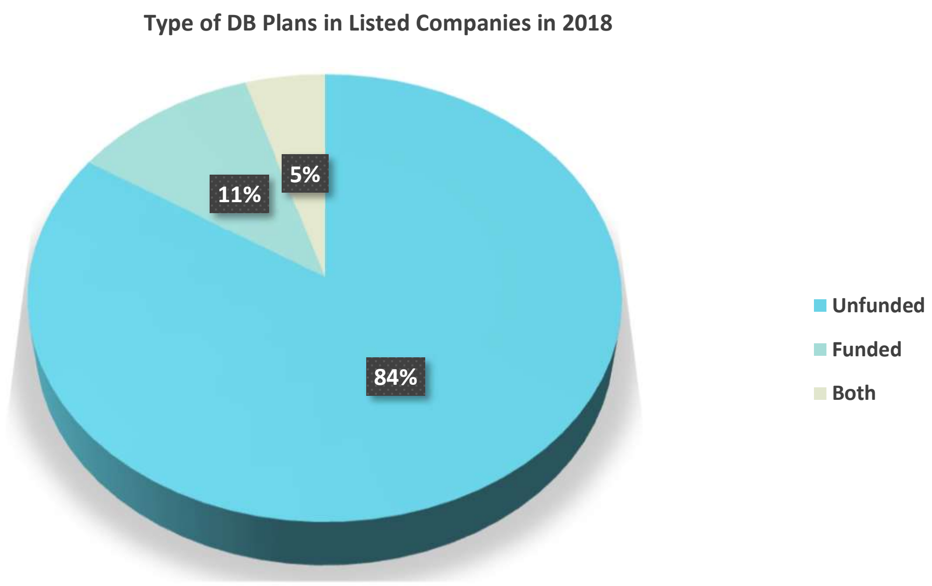

Figure 1

In Malaysia, most of the DB plans are unfunded. Only minority of the DB plans are funded. According to annual financial statements as at financial year end 2018, 84% of the listed companies only had unfunded DB plans, 11% only had funded DB plans and 5% had both funded and unfunded DB plans.

Section E: Liabilities of DB Plans

Figure 2 shows the net DBO, which is the value of the liabilities of the DB plans reported by the top 10 listed companies in terms of DB plan size and the other listed companies in 2017 and 2018.

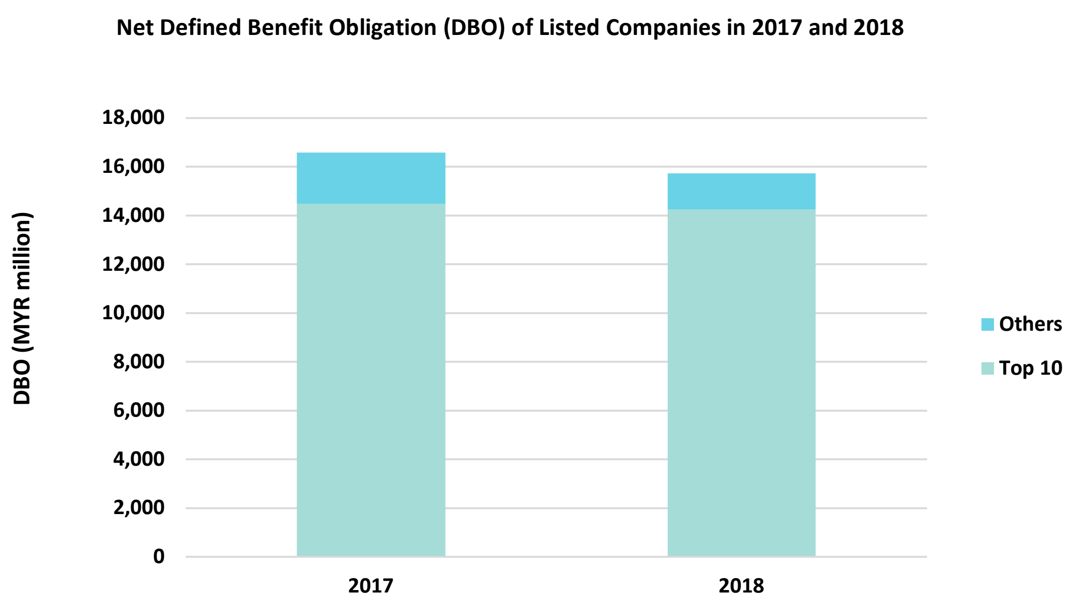

Figure 2

Summary Results (MYR million)	Top 10 Companies	Others	Total
Net DBO in 2018	14,242	1,472	15,714
Net DBO in 2017	14,473	2,105	16,579
Increase / (Decrease)	-231	-633	-864
Percentage	-2%	-30%	-5%

Based on the information we collected from the listed companies, the total net DBO was MYR 15,714 million in 2018 and MYR 16,579 million in 2017. This had decreased by MYR 864 million or 5% over the year.

The net DBO reported by the top 10 companies was MYR 14,242 million in 2018 and MYR 14,473 million in 2017. This had decreased by MYR 231 million or 2% over the year.

The net DBO reported by the other companies was MYR 1,472 million in 2018 and MYR 2,105 million in

Section F: Cost of DB Plans Reflected in Profit or Loss (P&L)

Figure 3 shows the DB cost reported by the top 10 listed companies in terms of DB plan size and the other listed companies in Profit or Loss (P&L) in 2017 and 2018. DB cost reported in P&L comprises current service cost, interest cost and past service cost.

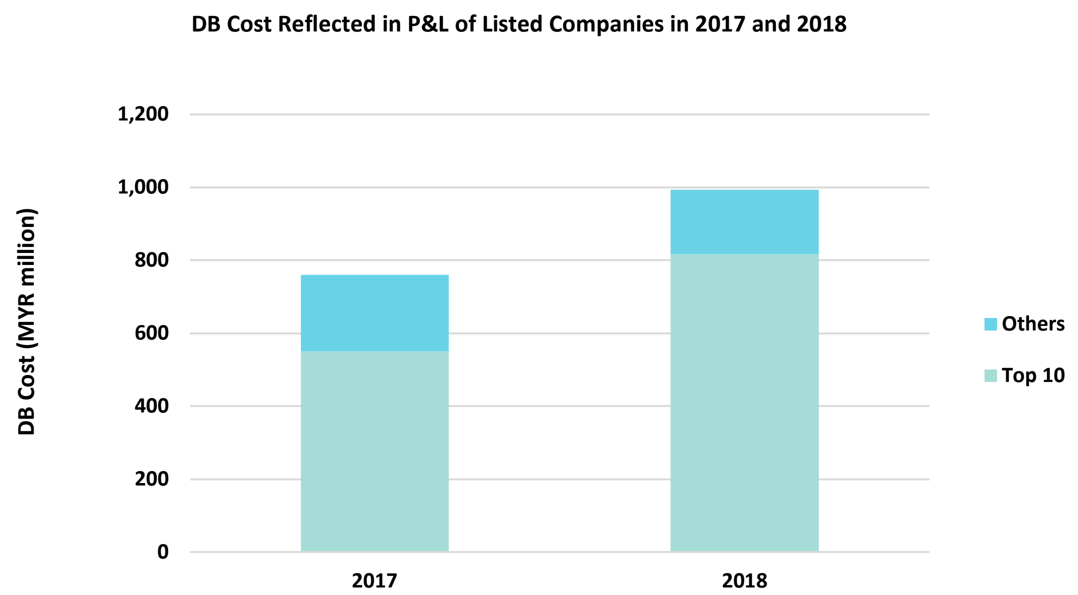

Figure 3

Summary Results (MYR million)	Top 10 Companies	Others	Total
DB Cost in 2018	817	176	994
DB Cost in 2017	550	210	760
Increase / (Decrease)	267	-33	234
Percentage	49%	-16%	31%

Based on the information we collected from the listed companies, the DB cost reported in P&L was MYR 994 million in 2018 and MYR 760 million in 2017. This had increased by MYR 234 million or 31% over the year.

The DB cost reported by the top 10 companies was MYR 817 million in 2018 and MYR 550 million in 2017. This had increased by MYR 267 million or 49% over the year.

The DB cost reported by the other companies was MYR 176 million in 2018 and MYR 210 million in

Section G: Cost of DB Plans Reflected in Other Comprehensive Income (OCI)

Figure 4 shows the actuarial gain or loss reported by the top 10 listed companies in terms of DB plan size and the other listed companies in Other Comprehensive Income (OCI) in 2017 and 2018. Remeasurement of actuarial loss or gain arise when there is adjustment of actuarial assumptions used in valuation of DB plans.

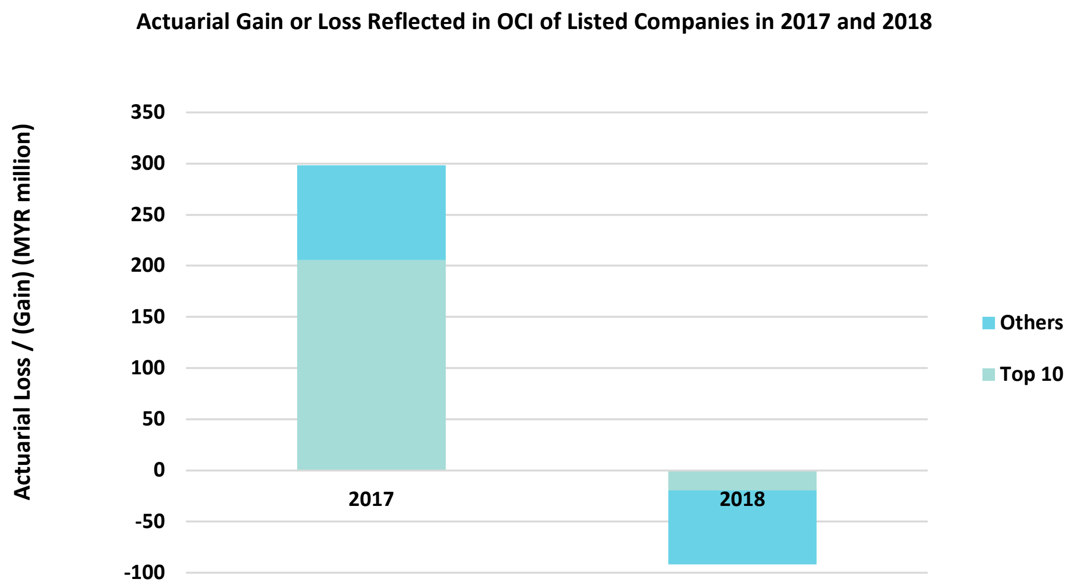

Figure 4

Summary Results (MYR million)	Top 10 Companies	Others	Total
Actuarial Loss / (Gain) in 2018	-20	-72	-92
Actuarial Loss / (Gain) in 2017	206	92	298
Increase / (Decrease)	-225	-165	-390
Percentage	-109%	-178%	-131%

Based on the information we collected from the listed companies, the total actuarial gain reported in OCI was MYR 92 million in 2018 and the total actuarial loss reported in OCI was MYR 298 million in 2017. The total actuarial loss had decreased by MYR 390 million or 131% over the year.

The actuarial gain reported by the top 10 companies in OCI was MYR 20 million in 2018 and the actuarial loss reported in OCI was MYR 206 million in 2017. The actuarial loss had decreased by MYR 225 million or 109% over the year.

The actuarial gain reported by the other companies in OCI was MYR 72 million in 2018 and the actuarial loss reported in OCI was MYR 92 million in 2017. The total actuarial loss had decreased by MYR 165 million or 178% over the year.

Section H: Movement Analysis of DB Plans

Figure 5 shows the movement of DBO of the listed companies in 2018.

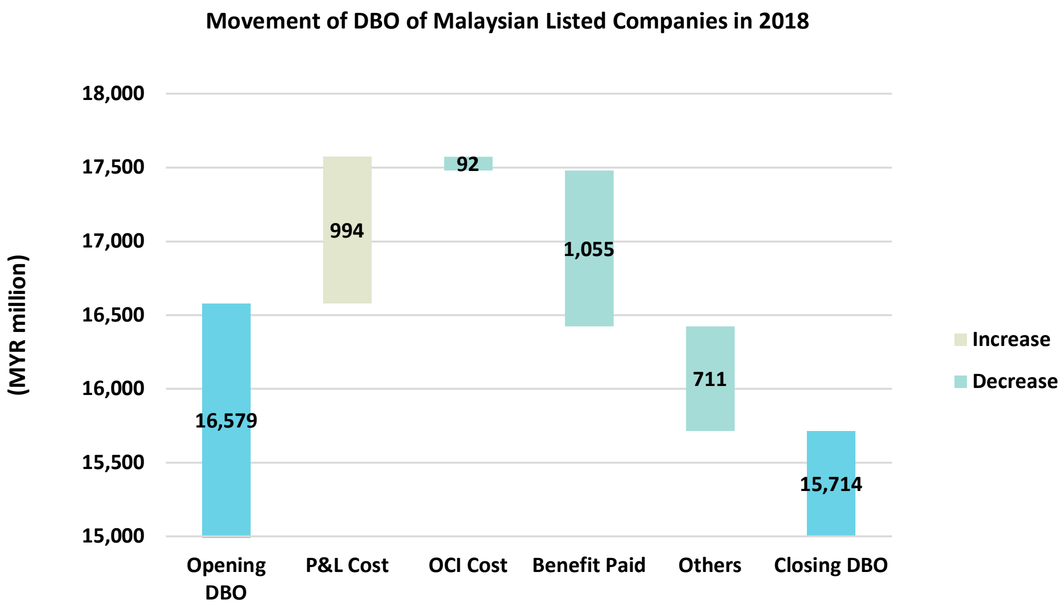

Figure 5

In financial year 2018, the total opening DBO of the listed companies was MYR 16,579 million. The DB cost reported in P&L was MYR 994 million and the actuarial gain reported in OCI was MYR 92 million. The total DB payment that had been made in 2018 was MYR 1,055 million. The balancing amount of MYR 711 million was mainly due to the effect of foreign exchange differences and disposal of subsidiaries.

Section I: Key Ratios of DB Plans

Figure 6a shows the range of ratio of current service cost to total staff cost of the listed companies in 2018. Current service cost is the increase in the present value of the DBO resulting from employee service in current period. The ratio of service cost to total staff cost of the company measures the relative cost of the DB plan in terms of total staff remuneration.

Figure 6b shows the range of ratio of DBO to total asset of listed companies in 2018. DBO is the value of the liabilities of the DB plans. Expressing DBO as a percentage of the total asset of the company measures the relevance of the DB plan in the company's balance sheet.

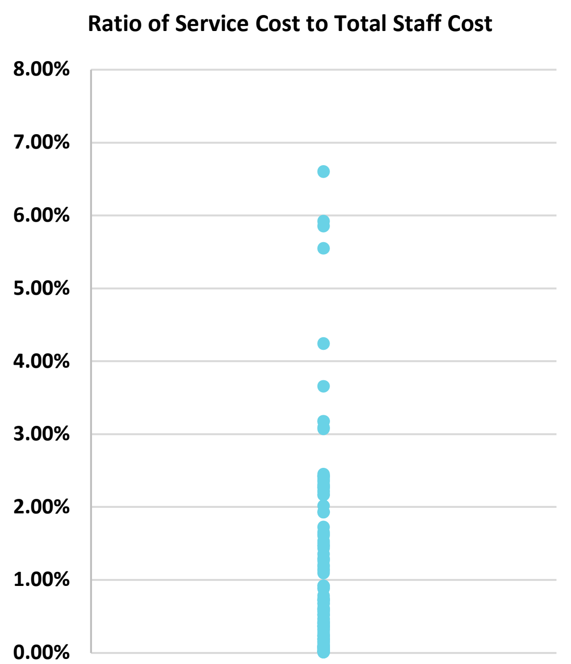

Figure 6a

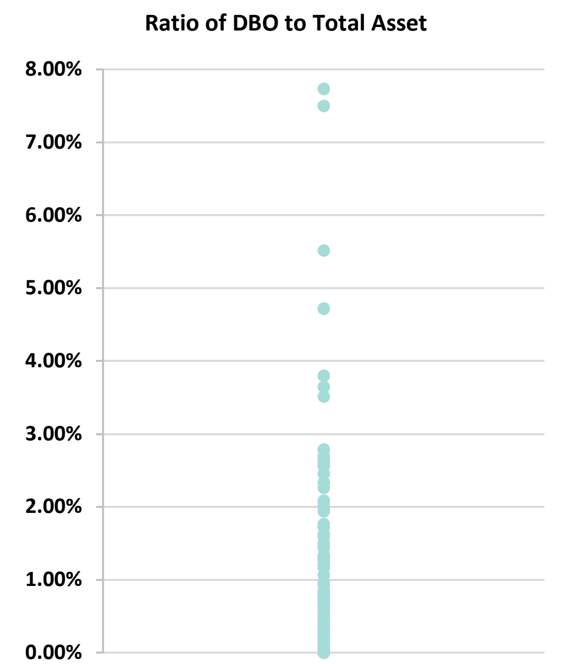

Figure 6b

Summary (%)	Average	Lower Quartile	Median	Upper Quartile
Service Cost/Total Staff Cost	1.09%	0.19%	0.61%	1.65%
DBO/Total Asset	1.09%	0.10%	0.44%	1.32%

The average ratio of service cost to staff cost in 2018 was 1.09%. The lower quartile was 0.19% and the upper quartile was 1.65%, giving an interquartile range of 1.47%. The graph in Figure 6a is positively skewed most likely because some companies provide generous DB plans.

The average ratio of DBO to total asset in 2018 was 1.09%. The lower quartile was 0.10% and the upper quartile was 1.32%, giving an interquartile range of 1.22%. The graph in Figure 6b is positively skewed as

Section J: Actuarial Assumptions in DB Plans

Figure 7 shows the actuarial assumptions used by the listed companies in the actuarial valuation of DB plans in 2018. Based on the information we collected, the most common actuarial assumptions disclosed were the discount rates and the annual salary increment rates.

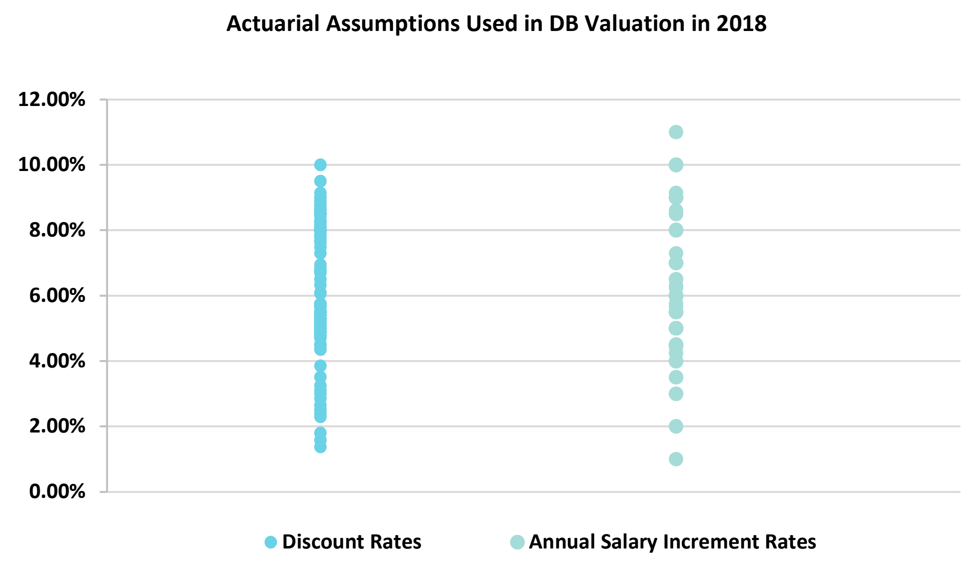

Figure 7

Summary (%)	Average	Lower Quartile	Median	Upper Quartile
Discount Rate	5.96%	5.00%	5.50%	7.86%
Salary Rate	6.17%	5.00%	6.00%	7.08%

In 2018, the simple average discount rate used was 5.96%, with a lower quartile of 5.00%, an upper quartile of 7.86% and an interquartile range of 2.86%. According to the information we obtained from the listed companies, some of the DB plans were from foreign subsidiaries, mainly in Indonesia, hence a higher discount rate is used.

The simple average annual salary increment rate used was 6.17%, with a lower quartile of 5.00%, an upper quartile of 7.08% and an interquartile range of 2.08%.

Appendix 1: Malaysian Listed Companies with DB Plans in 2018

No	The Top 10 Companies
1	Batu Kawan Berhad
2	Genting Malaysia Berhad
3	Kuala Lumpur Kepong Berhad
4	Malakoff Berhad
5	MMC Corporation Berhad
6	Pelikan International Corporation Berhad
7	Public Bank Berhad
8	Sime Darby Plantation Berhad
9	Tenaga Nasional Berhad
10	YTL Corporation Berhad

Appendix 1: Malaysian Listed Companies with DB Plans in 2018

No	The Other Companies
1	Advance Information Marketing Berhad
2	Advance Synergy Berhad
3	Ahmad Zaki Resources Berhad
4	AirAsia Group Berhad
5	Aluminium Company of Malaysia Berhad
6	Amalgamated Industrial Steel Berhad
7	APM Automotive Holdings Berhad
8	Berjaya Corporation Berhad
9	Berjaya Food Berhad
10	Berjaya Sports Toto Berhad
11	Boustead Plantations Berhad
12	Box-Pak (Malaysia) Berhad
13	BTM Resources Berhad
14	Bursa Malaysia Berhad
15	C.I. Holdings Berhad
16	CB Industrial Product Holding Berhad
17	CCK Consolidated Holdings Berhad
18	Central Global Berhad (formerly known as Central Industrial Corporation Berhad)
19	CNI Holdings Berhad
20	CWG Holdings Berhad
21	Digi.Com Berhad
22	Diversified Gateway Solutions Berhad
23	D'Nonce Technology Berhad
24	Dolphin International Berhad
25	DRB-HICOM Berhad
26	Eastern and Oriental Berhad
27	Econpile Holdings Berhad
28	EG Industries Berhad
29	Eurospan Holdings Berhad
30	Evergreen Fibreboard
31	Eversendai Corporation Berhad
32	FGV Holdings Berhad
33	Fima Corporation Berhad
34	Fraser & Neave Holdings Berhad
35	Frontken Corporation Berhad
36	Gamuda Berhad
37	GD Express Carrier Berhad
38	Genting Plantations Berhad
39	Globaltec Formation Berhad
40	Golden Land Berhad
41	Golden Pharos Berhad
42	Guan Chong Berhad
43	Hap Seng Consolidated Berhad

Appendix 1: Malaysian Listed Companies with DB Plans in 2018

No	The Other Companies
44	Heveaboard Berhad
45	Ho Wah Genting Berhad
46	Hong Leong Industries Berhad
47	HSS Engineers Berhad
48	IHH Healthcare Berhad
49	Inari Amertron Berhad
50	Innity Corporation Berhad
51	IOI Corporation Berhad
52	JCY International Berhad
53	Johore Tin Berhad
54	KESM Industries Berhad
55	Komarkcorp Berhad
56	Konsortium Transnasional Berhad
57	KPJ Healthcare Berhad
58	Lingkaran Trans Kota Holdings Berhad
59	Luxchem Corporation Berhad
60	MAA Group Berhad
61	Mah Sing Group Berhad
62	Malayan Cement Berhad (formerly known as Lafarge Malaysia Berhad)
63	MBM Resources Berhad
64	Media Chinese International Limited
65	Mesiniaga Berhad
66	Metrod Holdings Berhad
67	Microlink Solutions Berhad
68	MIECO Chipboard Berhad
69	MKH Berhad
70	MTD ACPI Berhad
71	Mtouche Technology Berhad
72	MUDA Holdings Berhad
73	N2N Connect Berhad
74	Nestle Berhad
75	New Hoong Fatt Holdings Berhad
76	Notion Vtec Berhad
77	NPC Resources Berhad
78	NTPM Holdings Berhad
79	OCK Group Berhad
80	Parkson Holdings Berhad
81	Pasdec Holdings Berhad
82	Petron Malaysia Refining & Marketing Berhad
83	Pharmaniaga Berhad
84	Pos Malaysia Berhad
85	Prestar Resources Berhad
86	Progressive Impact Corporation Berhad

Appendix 1: Malaysian Listed Companies with DB Plans in 2018

No	The Other Companies
87	QES Group Berhad
88	QL Resources Berhad
89	Ranhill Utilities Berhad (formerly known as Ranhill Holdings Berhad)
90	Rex Industry Berhad
91	Rohas Tecnic Berhad
92	Samchem Holdings Berhad
93	Sapura Industrial Berhad
94	Scientex Berhad
95	Seacera Group Berhad
96	Serba Dinamik Holdings Berhad
97	Shangri-la Hotels Berhad
98	Southern Acids Berhad
99	Southern Steel Berhad
100	Tan Chong Motor Holdings Berhad
101	TAS Offshore Berhad
102	TDM Berhad
103	Texchem Resources Berhad
104	TH Plantations Berhad
105	Tien Wah Press Holdings Berhad
106	Tomypak Holdings Berhad
107	TSH Resources Berhad
108	Turbo-Mech Berhad
109	UEM Edgenta Berhad
110	Unisem (M) Berhad
111	United Malacca Berhad
112	United Plantations Berhad
113	Uzma Berhad
114	Warisan TC Holdings Berhad
115	Willowglen Berhad
116	WTK Holdings Berhad
117	Y.S.P Southeast Asia Holding Berhad
118	YTL Power Berhad

Appendix 2: Difference between Funded and Unfunded DB Plans

Numerous companies nowadays are offering retirement benefits to its employees due to reasons ranging from tax advantages to attracting talent. Defined benefit is one of the most common employer-sponsored retirement plans. As its name implies, this particular retirement plan allows employees to receive benefits upon retirement, in which the entire contributions are made by employer based on a formula that usually involves each employee's income and years of continuous service. Defined benefits plan may be funded or unfunded.

What is the difference between these two funding arrangements?

In an unfunded plan, assets are not specifically being set aside today to cover for retirement benefit payments in the future. Instead, benefits will be paid by the employer or another pension sponsor every time it is necessary. This financing arrangement is the reason an unfunded scheme is also commonly known as pay-as-you-go pension plan. Many defined benefit plans are actually unfunded and unfunded scheme requires regular accounting valuation.

In contrast, a funded plan means assets are specifically being set aside today and the plan's assets are invested in a fund to meet the future retirement benefit obligations. These assets may be fully-funded which means it is enough to fund all future obligations, or it may only be enough to fund some of the future obligations, in which case it is partially-funded. A funded plan typically needs to be regularly reviewed. Actuaries carry out a valuation of the defined benefit plan's assets and liabilities regularly to make sure the assets will meet the future benefit obligations and to ensure it is financially sustainable. Therefore, in addition to accounting valuation, funded scheme also requires funding valuation.

Appendix 3: Malaysian Financial Reporting Standard 119 (MFRS 119)

Actuarial Valuation Method

Under MFRS 119, an entity shall use the projected unit credit method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost. [MFRS 119.67]

The projected unit credit method (sometimes known as the accrued benefit method pro-rated on service or as the benefit / years of service method) sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation. [MFRS 119.68]

Components of Defined Benefit Cost

An entity shall recognise the components of defined benefit cost, except to the extent that another MFRS requires or permits their inclusion in the cost of an asset, as follows:

1. Service cost in P&L: [MFRS 119.120(a)]
• Past service cost, which is the change in the present value of the defined benefit obligation for employee service in prior periods, resulting from a plan amendment (the introduction or withdrawal of, or changes to, a defined benefit plan) or a curtailment (a significant reduction by the entity in the number of employees covered by a plan); [MFRS 119.8]
• Current service cost, which is the increase in the present value of the defined benefit obligation for employee service in prior periods, resulting from employee service in current period. [MFRS 119.8]

2. Net interest on the net defined benefit liablity (asset) in P&L: [MFRS 119.120(b)]
• comprises interest income on plan assets, interest cost on the defined benefit obligation and interest on the effect of the asset ceiling. [MFRS 119.124]

3. Remeasurements of the net defined benefit liability (asset) in OCI: [MFRS 119.120(c)]
• Actuarial gains and losses, which are the changes in the present value of the defined benefit obligation resulting from experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred) and the effects of changes in actuarial assumptions; [MFRS 119.8]
• The return on plan assets, which is interest, dividends and other income derived from the plan assets, together with realised and unrealised gains or losses on the plan assets, less any cost of managing plan assets and tax payable by the plan itself, excluding amounts included in net interest on the net defined benefit liability (asset). [MFRS 119.8]

Appendix 3: Malaysian Financial Reporting Standard 119 (MFRS 119)

Actuarial Assumptions

Actuarial assumptions shall be unbiased and mutually compatible. [MFRS 119.75]

Actuarial assumptions are an entity's best estimates of the variables that will determine the ultimate cost of providing post-employment benefits. [MFRS 119.76]

Actuarial assumptions comprise:

1. Demographic assumptions about the future characteristics of current and former employees (and their dependants) who are eligible for benefits. [MFRS 119.76(a)] Demographic assumptions deal with matters such as:
• Mortality assumptions which are determined by reference to its best estimate of the mortality of plan members both during and after employment; [MFRS 119.81]
• Rates of employer turnover, disability and early retirement. [MFRS 119.76(a)(ii)]

2. Financial assumptions shall be based on market expectations, at the end of reporting period, for the period over which the obligations are to be settled. [MFRS 119.120(b)] Financial assumptions deal with items such as:
• Discount rate which is determined by reference to market yield at the end of the reporting period on high quality corporate bonds. For currencies for which there is no deep market in such high quality corporate bonds, the market yields (at the end of the reporting period) on government bonds denominated in that currency shall be used. The currency and term of the corporate bonds or government bonds shall be consistent with the currency and estimated term of the post-employment benefit obligations. [MFRS 119.83]
• benefit levels, excluding any cost of the benefits to be met by employees, and future salary. [MFRS 119.76(b)(ii)]