PVi Actuarial Ltd.
Pricing, Valuation, Illustration

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To
Bank Hapoalim

Re: Actuarial Evaluation of Liabilities in Respect of Employee Benefits

Identity of the actuary

I have been requested by Bank Hapoalim to evaluate its liability towards pensioners and employees with respect to the retirement period and other benefits as well its liability with respect to reserves for augmented severance compensation and budget-based pensions for senior employees as at March 31, 2019 (hereinafter the "Liability"), in accordance with the Reporting to the Public Regulations of the Supervisor of Banks.

Other than carrying out this actuarial evaluation, I have no business connections with Bank Hapoalim, its subsidiary companies, companies related to the Bank, any interested party of the Bank or anyone else, that are liable to raise any doubts as to my objectivity. There is no dependence between myself and the Bank and my work was not affected by any restrictions or stipulations which could have affected my work.

I have acted as the external actuary of the Bank since 2006. I have a M.Sc. degree from Columbia University, am a member of the International Actuarial Association and the Israel Association of Actuaries, with 21 years' experience in the field of actuarial evaluations. I provide actuarial services to large companies in the local market including to insurance companies.

The scope of the actuarial opinion

In order to calculate the liabilities of the Bank, I have relied on data provided to me by the Bank. My requests to receive information and data were complied with satisfactorily for the purpose of evaluating the Liability for purposes of the financial statements. I have checked the reasonableness and adequacy of the data which included a comparison of such data with the data for the year to which the statement refers and with the data for the previous years.

The actuarial assumptions employed by me in my work, as well as the methods for evaluating the Liability were determined by me, to the best of my professional judgment, subject to the regulations, directives and principles specified below.

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The opinion

I have evaluated the liabilities according to generally accepted actuarial principles, the Reporting to the Public Regulations and generally accepted accounting principles.

After examining the foregoing data, I have concluded that the data is reasonable and satisfactory, and that it may be relied upon for the purpose of my evaluation.

The liability set out in the actuarial report is, to the best of my knowledge and evaluation, an appropriate liability for covering the liabilities of the Bank towards pensioners and employees with respect to the retirement period and other benefits as well as its liability with respect to reserves for augmented severance compensation and budget-based pensions for senior employees.

I agree that this opinion may be published as part of the financial statements of the Bank as of March 31, 2019.

Yours faithfully,

David Engelmayer, Actuary

David Engelmayer

Actuarial Evaluation of the Liabilities in respect of Employee Benefits

The groups of employees at the Bank as at March 31, 2019 are set out below:

Active employees – This group comprises all of the employees employed at the Bank as at the day of the actuarial evaluation. This group is divided into four sub-groups:

- **Temporary employees** – New employees of the Bank whose maximal term of employment is up to 4 years (when this term is over these employees end their employment at the Bank or become permanent employees).

- **Permanent employees** – Permanent employees whose terms of employment are regulated collectively, in collective agreements and arrangements formulated from time to time between the Bank and the employees' union at the Bank.

- **Employees under personal contract** – Employees whose terms of employment are regulated by personal contracts, such that the collective agreements and arrangements do not apply to them.

- **Employees under executive personal contract** – Certain employees in the upper echelon of management (including members of the Board of Management), whose terms of employment are regulated by personal contracts, such that the collective agreements and arrangements do not apply to them.

Pensioners – Employees who have retired from the Bank. This group is divided into two sub-groups:

- **Pensioners according to the law** – Employees who have retired at the age of retirement prescribed by law.

- **Pensioners who have taken early retirement** – Employees who have retired prior to the age of retirement prescribed by law.

Survivors – The spouse of the pensioner or the employee.

A description of the benefits granted:

Pensions for retired employees – Pensioners who have taken early retirement are entitled to a monthly pension until the age of retirement prescribed by law, for men (67) or the number of years as determined by the retirement agreement, whichever is lower. The monthly cost includes the following components:

1. Salary according to the components in respect of which a pension is payable according to the projected rate of the pension at the end of early retirement period.
2. Wage tax
3. Convalescence pay
4. Pension fund deposits

Augmented compensation for employees under executive personal contract – Following the passing of the Financial Corporations' Office Holders' Remuneration Law, the Bank announced a new remuneration policy for office holders, and on 29th November, 2016 the Bank adopted a new remuneration policy and remuneration plan for its senior employees.

Under the new plan, when the employment comes to an end as a result of dismissal or resignation, the executive will be entitled to severance pay at the rate of 100% for the seniority he accumulates from the time the new agreement enters into force. Furthermore, senior executives who in the future join the ranks of the Bank will only be entitled to severance pay at the rate of 100%. According to the previous agreements, employees under executive personal contract are entitled to severance pay at the rate of 250% in the event that the Bank decides to dismiss them or to terminate their employment when the term of the agreement comes to an end.

In addition, under the previous arrangements, with respect to the part of the executives, when they reach a point in time when the sum of their age and their seniority at the Bank exceeds 75, they are entitled to take early retirement and to choose between receiving augmented severance pay at the rate of 250% and receiving a monthly pension at variable rates which becomes payable from the time they take early retirement and until they reach the retirement age according to law. The rate of the pension for a member of the Board of Management ranges from between 2% - 2.67% per annum depending upon seniority and his position, and up to a maximal rate of pension of 70% of the salary eligible for pension. The accumulation for members of the Board of Management is up to the end of the existing agreement and not later than 31.12.17. For senior employees who are not members of the Board of Management, the accumulation rate ranges from between 1.5% and 2.55% per annum depending upon seniority and position, and up to a maximal rate of 70%.

A senior employee, including members of the Board of Management, who reaches the age of 62 can choose to receive a monthly pension only or compensation at the rate of 100%.

It should be noted that being eligible for these terms is subject to the projected expense, as defined in the Law restricting remuneration, not exceeding the ceilings of the Law.

Early retirement pensions for active employees – The provision was calculated for active employees who in the estimation of the Board of Management, are expected to retire before the age of retirement prescribed by law. Early retirement pensions are payable on the basis of eligible salary and according to a rate of accumulation which the employee would have reached at the age of retirement as prescribed by law and up to a maximal rate of 70%, or according to the accumulation rate just before retirement, with a maximal addition of up to 16% over and above the present accumulation (which represents a period of early retirement pension of no more than 8 additional years), whichever is the lower.

Augmented compensation for active employees – For active employees who in the estimation of the Board of Management are expected to retire before the age of retirement prescribed by law, along the track of augmented compensation, a liability was calculated based on a projection of the compensation payable, based on past experience.

Early Retirement Grant – The following are two grants paid at the time of early retirement:

1. **Special Grant** – A grant which is calculated according to the number of years remaining until he reaches age 67, subject to a ceiling.
2. **Executive Grant** – A grant paid in the early retirement track only for department manager grade or above. The grant is calculated based on the difference between the gross salary and the early retirement pension amount, and depends on the number of years until the legal retirement age.

Holiday gift – A gift granted every year, at Passover and at New Year's, to the group of active employees and pensioners. Where the employee has passed away, the gift is given to his survivors.

Convalescence – The pensioners' group is entitled to receive, every year, the value of 9 days' convalescence. This amount is payable once every year. This benefit will be given only to those persons retiring by the end of June 2014.

Collective insurance – Pensioners taking early retirement are entitled to the Bank's participation in collective insurance in case of death. This amount varies from employee to employee according to rank at retirement and according to a variable insurance tariff. This benefit is payable until the employee reaches the age of retirement as prescribed by law.

Nursing care insurance, life insurance and health insurance – Pensioners by law can choose to continue the insurance coverage for nursing care insurance, life insurance and health insurance which they had before reaching the age of retirement, without the need for any underwriting. The Bank participates in covering these insurances subject to an established budgetary ceiling.

Country club – The pensioners' group (including the survivors) is entitled to the Bank's participation in the membership of a country club, fitness club or swimming pool. This benefit is payable once every year and is limited by the budget.

Summer camps – The pensioners' group is entitled to the Bank's participation in the financing of the cost of a summer camp for up to two children / grandchildren. The benefit is dependent upon the family situation of the pensioner, the number and ages of his children and grandchildren. This benefit is limited by budget. This benefit will be given only to those persons retiring by the end of June 2014.

25 years' service grant – Active employees are entitled to receive a month's salary by way of a grant at the end of 25 years of employment. This benefit is accumulated in proportion to the overall period. Only active employees who attain the relevant seniority before the age of retirement prescribed by law are entitled to the grant.

Sick leave – Active employees are entitled to receive 25 days' sick leave per year. There is no ceiling to the number of days of sick leave which can be accumulated. Should the utilization of such leave be less than the accumulation of sick leave, compensation / a grant is payable upon retirement on account of the balance which has not been utilized (irrespective of whether the employee retires at the age of retirement by law or whether he takes early retirement). In case of death, sick leave is given as compensation / a grant to the survivors. A sick leave grant is a function of the extent to which sick leave has been utilized, as set out below:

Extent of Utilization	Payment Conversion Rate
More than 65%	0%
36% - 65%	15%
Less than 36%	20%

Normal severance pay: An employee who is dismissed is entitled to the payment of his last salary multiplied by his seniority, less his accumulated personal severance pay fund. An employee who reaches retirement age is not entitled to the Bank's standard supplementation of severance pay.

Assumptions on which the calculation is based:

1. **Discount rate –** According to the directives of the Bank of Israel, from January 1, 2015 the discount rate is based on a risk-free interest curve (government bonds linked to the index in Israel), plus an average margin of corporate bonds rated AA and above in the United States (the difference between the yield on corporate bonds rated AA and above and the yield on government bonds in the United States).

2. **Age of retirement**– 67 for both men and women.

3. **Growth in salary** – The rate of the rise in salary fluctuates between 0% and 7.5% in real terms, according to the age of the employee and the manner of employment.

4. **Utilization of country club benefit** – The degree of utilization of this benefit is a function of gender and age based on utilization patterns and past experience.

5. **Leave rates** – The leave rates for augmented severance pay and for early retirement have been established in accordance with the Bank's experience taking into consideration the age and gender of the employee. The leave rates reflect the projections of the Board of Management and its resolutions regarding the retirement of employees with preferable terms and is based on research carried out among employees of the Bank and including leave data starting from 1997. The current leave rates were updated according to a study of the Bank employees' leaves.

   On 27th October, 2016 the Board of Directors of the Bank approved a multi-year efficiency plan. Under the plan, permanent employees will be permitted to take early retirement on beneficial terms in the years 2017 – 2020.
   In addition, in the third quarter of the year 2016, the Bank updated the long-term rates of employee leaves (from 2021 onwards) with beneficial terms. The new leave rates vary by age and gender and reflect a weighted leave rate of approximately 7.5% per annum, compared with a rate of 6.25% per annum prior to the change.

6. **Indexation** – The values of the holiday gift, the country club and the summer camp are not linked to the index. The amount of the insurances and the budget-based pensions are linked to the consumer price index. The value of the convalescence is not linked to the index, until it reaches the maximal level of convalescence prescribed by law.

7. **Mortality rate** – The evaluation is based on up-to-date mortality tables for insurance companies and the method of calculation is as set out in circular 2013-1-2, which is the most recent to have been published.[1]

8. **Disability rate –** The disability basis is determined in accordance with circular 2013-3-1 of the pension funds, which is the most recent to have been published.[2]

[1] In October 2017, a circular was published for a pension mortality table that will take effect as of 31/12/2017. No update for insurance has yet been released.

[2] Further to footnote 1, a new circular was published for pension funds, which also includes an update of disability rates. The impact of this update is not expected to be material to the liability of the Bank.

Method of calculation:

The actuarial method of calculation which was used to evaluate the liability is the unit of projected entitlement method. According to this method, the evaluation includes all of the benefits which each employee is expected to receive, those being attributed on the basis of the straight-line method relative to the seniority (put against the projected period of service).

The results of the actuarial evaluation:

The following is a table of the actuarial liability:

	December 31, 2018	March 31, 2019
	In millions of ILS	
Early Retirement	3,323	3,455
Jubilee Bonus	35	36
Sickness	339	359
Other benefits upon and after termination of employment	571	610
Total	4,268	4,460

Sensitivity analysis:

The following are sensitivity analyses of the amount of the Liability to a change of 1% in the interest rate applied to capitalization, 1% index change, 1.0% in the annual salary increase, non-increase of salary ("cumulative benefit" basis) and a change of 1.0% in the projected departure rate of employees in the ages eligible for early retirement:

	Actuarial Liability for 31/3/2019	Sensitivity to Change in Discount Rate				Sensitivity to Change in Index Value				Sensitivity to Change in Salary Increase Rate						Sensitivity to Change in Leave Rate*			
		1.0% Increase	Rate of Change	1.0% Decrease	Rate of Change	1.0% Increase	Rate of Change	1.0% Decrease	Rate of Change	1.0% Increase	Rate of Change	1.0% Decrease	Rate of Change	No Salary Increase	Rate of Change	1.0% Increase	Rate of Change	1.0% Decrease	Rate of Change
Early Retirement	3,455	3,188	-7.74%	3,770	9.11%	3,455	0.00%	3,455	0.00%	3,691	6.81%	3,254	-5.82%	3,290	-4.78%	3,632	5.12%	3,283	-5.00%
Jubilee Bonus	36	34	-6.18%	39	6.95%	36	0.00%	36	0.00%	39	7.10%	34	-6.45%	33	-9.39%	36	-0.26%	36	0.22%
Sickness	359	326	-9.05%	397	10.66%	359	0.00%	359	0.00%	397	10.76%	325	-9.31%	335	-6.46%	361	0.69%	356	-0.66%
Other Benefits	610	548	-10.14%	685	12.30%	575	-5.79%	653	7.11%	610	0.00%	610	0.00%	610	0.00%	613	0.49%	607	-0.46%
Total	**4,460**	**4,096**	**-8%**	**4,891**	**10%**	**4,425**	**-1%**	**4,504**	**1%**	**4,737**	**6%**	**4,223**	**-5%**	**4,269**	**-4%**	**4,642**	**4%**	**4,282**	**-4%**
Difference		**(364)**		**430**		**(35)**		**43**		**276**		**(237)**		**(192)**		**182**		**(178)**	

* Does not include the years up to 2021.

The above translation is an unofficial translation of the Hebrew version and has been prepared for convenience only. In case of any discrepancy, the Hebrew version will prevail.