AvivaSA Emeklilik ve Hayat A.Ş.

Market Consistent Embedded Value Report

Half-year 2016

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1. Introduction

Embedded value is a financial reporting metric specifically developed for long-term life insurance and pension business over the years. It aims to overcome the known shortcomings of accounting metrics by taking into account the projected cash flows throughout the lifetime of the products using best estimate assumptions. This is necessary to give a more realistic picture of the profitability of the long-term life insurance products since writing new business leads to a financial loss on day one. The projected expected profits arising out of the cash flows are adjusted by a risk allowance to reflect the inherent uncertainties of such projection. Additionally, there is an allowance for cost of capital, to reflect the cost of holding capital. This report should not be considered as a substitute for AvivaSA's primary financial statements.

This report provides the Market Consistent Embedded Value (MCEV) results of AvivaSA on a 100% ownership basis as of June 30, 2016 and the value of new business and related metrics for the six months ended June 30, 2016.

2. Definition of Embedded Value

MCEV represents the present value of shareholders' interests in the earnings distributable from assets allocated to the covered business after making sufficient allowance for the aggregate risks in the covered business, plus the shareholders' net worth. The allowance for risk is calibrated to match the market price for risk where reliably observable.

The value of future new business is excluded from the MCEV. New business is defined as business arising from the sale of new contracts and includes expected renewals on those contracts (noting the exception for yearly renewable life insurance term business, which is detailed below in section 6) and expected future contractual alterations to those contracts. Non-contractual increases in premiums, such as additional contributions to the pensions business, is included within new business. For group pension business, new business is defined as newly obtained schemes or additions of members to existing schemes.

The results have been prepared under the European Insurance CFO Forum Market Consistent Embedded Value Principles (''MCEV Principles'') © (Copyright © Stichting CFO Forum Foundation 2008) published October 2009.

Calculations are performed after allowing for reinsurance and on an after-tax basis applying current legislation and practice, together with future known and certain changes.

The methodology, assumptions and results have been reviewed by Deloitte. Their opinion is included in section 16.

3. Covered business

The MCEV Principles draw a distinction between "covered business" to which the MCEV methodology is applied, and "non-covered business" which is reported on an unadjusted IFRS net asset value basis. All of AvivaSA's business is regarded as covered business for purposes of MCEV reporting as all of the company's business is related to insurance business and the assets backing that business. As such, no non-covered business or a Group MCEV are presented.

4. Methodology and components of MCEV

MCEV consists of the aggregate of shareholders' net worth and the value of in-force business relating to the covered business.

4.1. Shareholders' net worth

Shareholders' net worth is defined as the market value of assets allocated to the covered business not required to back the in-force regulatory liabilities at the valuation date. The shareholders' net worth is calculated on the basis of the local regulatory surplus.

The shareholders' net worth is comprised of required capital and free surplus. The required capital is the market value of assets allocated to the covered business over and above that required to back liabilities for the covered business, whose distribution to shareholders is restricted. The required capital is defined as 150% of the Turkish regulatory capital requirements, as this is approximately the internal capital target level.

The free surplus is the market value of any assets allocated to, but not required to back liabilities or support required capital, the in-force covered business at the valuation date. The free surplus excludes any DAC asset. A reconciliation of the shareholders' net worth and the IFRS shareholders' equity (referred to as "IFRS net asset value" in the MCEV Principles) is provided under section 9.

4.2. Value of in-force covered business

The in-force portfolio consists of policies underwritten up to the valuation date and excluding future new business.

The value of in-force (VIF) of covered business is the value arising from the in-force portfolio, and consists of the following components:

- the present value of future profits (PVFP), where profits are post taxation shareholder cash flows from the in-force covered business and the assets backing the associated liabilities;
- the time value of financial options and guarantees (TVOG);
- the frictional costs of required capital (FC); and
- the costs of residual non-hedgeable risks (CNHR).

The methodology used to calculate each of these components is set out below.

Present value of future profits (PVFP)

The PVFP is the present value of the profits distributable to shareholders arising from the in-force covered business projected on a best estimate basis. Distributable profits generally arise when they are released following valuations carried out in accordance with Turkish regulatory requirements, which are designed to demonstrate and ensure solvency.

Future distributable profits are projected using best estimate non-economic assumptions and market consistent economic assumptions. The PVFP is calculated using the certainty equivalent approach, consistent with MCEV Principles, under which the same reference rate is used for both the projected investment return and the discount rate.

Time value of financial options and guarantees (TVOG)

An allowance for TVOG must be required with respect to Principle 7 where policyholders are provided with financial options and guarantees. The material guarantees are present for only certain unit-linked life savings contracts which is in run-off. For certain unit-linked life savings contracts, the policyholder has been provided with financial guarantees around the level of financial return on its investment. The analysis carried out to determine the TVOG indicates that the financial guarantees is immaterial due to the size of the unit-linked life savings and the high interest rate environment in Turkey relative to the guaranteed level of financial return on the contracts. Therefore, the TVOG for all covered business has been set to nil.

Frictional costs of required capital (FC)

The FC reflects the present value of additional costs to shareholders of holding the assets backing required capital within an insurance company. The frictional costs allowed for are the taxation costs applicable to investment returns and any additional investment expenses on the assets backing the required capital. These frictional costs are projected and then discounted at the reference rate to determine the FC.

Cost of residual non-hedgeable risks (CNHR)

The CNHR allows for risks which have not been sufficiently allowed for elsewhere in the valuation. The allowance for relevant risks within the CNHR, includes but is not limited to:

- potential regulatory action (e.g. a change to the pensions State Contribution) and uncertainty around further capping of the pension business fees;
- operational risk, in so far as this has generally not been allowed for elsewhere;
- allowance for the variance between best estimate assumptions and actual experience (including mortality, mass lapse and expenses) as well as some allowance for uncertainty has been made; and
- counterparty default risk of business partners.

The CNHR is allowed for by using a ‘cost of capital’ approach, where the charge assumed has been set to ensure that the total CNHR is sufficient to meet the impact of the risks considered as outlined above. The CNHR has been calculated by projecting the relevant risk capital using appropriate risk drivers over the term of the business. The reference rate has been used as the discount rate for this calculation.

The CNHR calculation allows for diversification between different non-hedgeable risks. No diversification between hedgeable and non-hedgeable risk has been allowed for.

5. Value of new business

The value of new business (VNB) is calculated consistently with the VIF and represents the value arising from new business written in the six months ended June 30, 2016.

The VNB consists of the present value of future distributable profits of business written in the relevant reporting period, with allowance for related CNHR, FC and TVOG. This is calculated using a point of sale approach where separate calculations are carried out for each quarter’s new business, using economic assumptions at the end of the previous quarter and throughout using non-economic assumptions as of the valuation date June 30, 2016.

6. Additional matters relating to the MCEV methodology

Treatment of yearly renewable term assurance

All yearly renewable products are assumed to have a term of one year only as there is currently not yet sufficient experience of the yearly renewable business to set a renewal assumption with confidence. Any renewals on the in-force business are classified as new business. Given the current volumes of in-force and new yearly renewable products, the methodology set out here does not have a material impact on the VIF or VNB.

Policy data treatment as of the valuation date

For half-year reporting, the in-force business data is extracted from the administration systems as of May 31, 2016 rather than June 30, 2016. The position as of June 30, 2016 is then based on a roll-forward from May 31, 2016 to June 30, 2016 using a basis consistent with that used in the MCEV. A check has been carried out that the 5+1 basis does not materially distort the results. The value of new business and other new business metrics are based on six months' of actual policy data.

7. Assumptions

This section describes the key assumptions used in preparing the MCEV results.

The projection assumptions used to value new business are consistent with those used to value in-force business.

7.1. Economic assumptions

Reference rate

The table below sets out the reference rates used in the MCEV calculations as of June 30, 2016 and December 31, 2015 at sample durations, expressed in swap spot rates (%). For half-year reporting, 5+1 basis is used as per the policy data treatment, effectively using swap spot rates and exchange rates as of 31 May, 2016. A check has been carried out using interest rate sensitivities that the 5+1 basis does not materially distort the results.

Table 1

Term	TL Swap spot rates (%) June 30, 2016	December 31, 2015
1	10.7	12.3
2	10.6	12.2
3	10.6	12.1
4	10.7	12.1
5	10.7	12.0
6	10.7	11.9
7	10.7	11.9
8	10.7	11.8
9	10.6	11.8
10	10.6	11.7
20	10.4	11.4
30	10.3	11.4

Table 2

Term	U.S. dollar Swap spot rates (%) June 30, 2016	December 31, 2015
1	0.9	0.9
2	1.0	1.2
3	1.2	1.4
4	1.3	1.6
5	1.3	1.7
6	1.4	1.9
7	1.5	2.0
8	1.6	2.1
9	1.7	2.2
10	1.7	2.2
20	2.1	2.6
30	2.2	2.7

Each reference rate is based on the swap curve which is extracted from Bloomberg using mid-yields as of the relevant valuation date. These swap yields are then converted to swap spot rates which are used to discount the cashflows. Given the lack of a deep and liquid market at the longer end of the Turkish Lira yield curve, an extrapolation is done to the yield curve for longer durations by assuming the market implied 10-year forward rate is held constant at all subsequent durations. The impact on the MCEV and VNB of instead using the Turkish Lira Bloomberg data up to 20 years (the longest point at which it is available) is not material. Available market data for U.S. dollar swap rates is used for all terms shown above.

No liquidity premium is assumed in the reference rate.

<u>Foreign exchange rates</u>

The MCEV and VNB are calculated in the currency applicable to each of the underlying contracts and then converted to Turkish Lira using the corresponding exchange rates as of the valuation dates for the VIF and end of the previous quarter for the VNB. The U.S. dollar exchange rates used in the MCEV calculations as of June 30, 2016 and December 31, 2015 are given below.

Table 3	U.S. dollar exchange rates	
	June 30, 2016	**December 31, 2015**
U.S dollar/Turkish Lira	2.95	2.92

Real-world investment returns

Swap spot rates were materially at the same level as the yield on the interest-bearing assets in Turkey. In light of this, the real-world yields are set equal to the reference rates as given above. Any equity risk premium that would be earned on equity assets is ignored on grounds of materiality. The resulting yield is consistent with management's expectation of the return on the business. Real-world investment returns are used for calculating the expected return in the analysis of MCEV earnings, IRR and payback period new business metrics.

Inflation assumption

The inflation assumption has been set by an assessment of long-term rates which has been primarily informed by the implied inflation between nominal and real Turkish government bonds. The inflation assumption is set to be 7% per annum through the projection.

The expense inflation is assumed to be the same as the inflation assumption.

Cost of capital for CNHR

AvivaSA's methodology includes a charge on non-hedgeable risk capital set at 6% per annum (after tax) and applied to the non-hedgeable risk capital, in line with the risk margin as defined by the Solvency 2 Directive.

7.2. Non-economic assumptions

Operating assumptions are reviewed on a regular basis, and updated typically at each year-end date to reflect changes in emerging experience when considered appropriate to do so, unless management becomes aware of a material change in the emerging experience that should be reflected sooner at the half-year. No adjustment was considered necessary as of June 30, 2016 and as such the same non-economic assumptions were assumed as of June 30, 2016 as those assumed as at December 31, 2015.

Expense assumptions

The best estimate expense assumptions have been set on a going concern basis and are based on the current level of expenses allocated to the covered businesses.

Management expenses have been analysed and split between expenses relating to segments and further with respect to the acquisition of new business, the maintenance of in-force business, exceptional development and one-off expenses.

For maintenance expenses (excluding investment expenses), assumptions are derived for each product line and are typically expressed as per policy amounts. Per policy maintenance expenses are assumed to increase in the future with an appropriate level of inflation as described in the previous section. The amount of acquisition expenses in the relevant period is allowed for as a deduction in the calculation of the VNB for that period.

Expenses of an exceptional nature are excluded from the expense assumptions used in the VIF and VNB calculations. These are identified separately when they occur and will impact the shareholder's net worth as and when they are incurred.

No future productivity gains were assumed in the MCEV.

Investment management expenses paid to third parties have been allowed for in the projections of future cashflows.

Demographic assumptions (including persistency and mortality)

Assumptions have been made in respect of future levels of lapses, morbidity, mortality, premium persistency and surrenders. The assumptions reflect the best estimates of the likely future experience, and are based on recent experience and relevant industry data, where available, and management judgement.

The assumptions for future mortality rates for the pensions, individual life and group whole life businesses are based on the company's experience to date. No allowance is made for the expected improvements in mortality of the business.

The long-term value arising from pensions business is highly dependent on the persistency assumptions such as surrenders and premium collection. These assumptions have been set with reference to AvivaSA's historical experience over a sufficiently long period to provide a credible estimate of future experience. No allowance has been made for improvements in persistency rates.

Tax assumptions

The corporate tax rate assumptions used in the projection of the distributable earnings at each valuation date has been set to the Turkish corporate tax rate of 20%.

8. Market Consistent Embedded Value Results

The table below shows the summary statement of the AvivaSA MCEV as of June 30, 2016 and as of December 31, 2015.

Table 4

(TL millions)	**June 30, 2016**	**December 31, 2015**	***Change (%)***
Value of In-force	**1,207.2**	**1,075.8**	***12.2%***
PVFP	1,418.0	1,265.1	*12.1%*
FC	-22.9	-23.0	*-0.3%*
CNHR	-187.9	-166.2	*13.0%*
TVOG	0.0	0.0	*N/A*
Net Worth	**163.6**	**172.6**	***-5.2%***
Free surplus	-22.2	-6.9	*N/A*
Required capital	185.8	179.5	*3.5%*
MCEV	**1,370.8**	**1,248.4**	***12.2%***

Although the free surplus is negative in the MCEV balance sheet, AvivaSA has a positive statutory surplus. The table below shows the VIF broken down by segment.

Table 5

(TL millions)	**June 30, 2016**	**December 31, 2015**	***Change***
Individual pensions	961.7	850.8	*13.0%*
Group pensions	99.3	89.3	*11.2%*
Life protection	135.0	123.7	*9.1%*
Personal accident	13.1	12.3	*6.5%*
Life savings	-1.9	-0.2	*N/A*
VIF	**1,207.2**	**1,075.8**	***12.2%***

Pensions business remains by far the most significant portion of the in-force book, representing about 88% of the VIF.

9. Reconciliation from IFRS shareholders' equity to MCEV shareholders' net worth

The table below shows the reconciliation between the IFRS shareholders' equity and the MCEV shareholders' net worth.

Table 6

(TL millions)	**June 30, 2016**	**December 31, 2015**	***Change***
IFRS shareholders' equity	382.1	373.1	*2.4%*
IFRS deferred acquisition costs	-208.4	-191.4	*8.9%*
Difference in technical provisions between IFRS and MCEV	-10.1	-9.1	*10.5%*
MCEV shareholders' net worth	**163.6**	**172.6**	***-5.2%***

The MCEV shareholders' net worth differs from the IFRS shareholders' equity with respect to the following items:

- IFRS deferred acquisition costs in relation to the covered business are not included in the MCEV shareholders' net worth, which amounted to TL 208.4 million as of June 30, 2016 and TL 191.4 million as of December 31, 2015.

- Difference in technical provisions between IFRS and MCEV arises primarily because the IFRS basis does not allow for equalisation reserves which are included in the statutory reserves used to derive the MCEV shareholders' net worth.

The reduction in MCEV shareholders' net worth is due to the dividend payment during the period.

10. Analysis of MCEV Earnings

The table below set out the analysis of the embedded value earnings for the period from December 31, 2015 to June 30, 2016.

Table 7

(TL millions)	Free Surplus	Required Capital	VIF	MCEV
Opening MCEV	**-6.9**	**179.5**	**1,075.8**	**1,248.4**
Value of new business	-115.5	39.3	173.2	97.1
Expected existing business contribution (reference rate)	-0.3	8.8	79.0	87.4
Expected existing business contribution (in excess of reference rate)	-	-	-	-
Transfers from VIF and required capital to free surplus	145.8	-30.6	-115.2	-
Experience variances	0.6	-4.5	-23.2	-27.2
Assumption changes	-	-	-	-
Other operating variances	-13.9	-3.7	-0.6	-18.2
Operating MCEV earnings	**16.5**	**9.3**	**113.3**	**139.1**
Economic variances	-3.2	-3.1	18.1	11.8
Other non-operating variance	-	-	-	-
Total MCEV earnings	**13.3**	**6.3**	**131.3**	**150.9**
Capital movements	-28.6	0.1	-	-28.5
Closing MCEV	**-22.2**	**185.8**	**1,207.2**	**1,370.8**

The following section explains the driver of changes between the opening and closing MCEV. The value of new business is separately discussed in "New business results" below.

Expected existing business contribution

The expected existing business contribution represents the unwinding of the reference rate on the opening MCEV and reflects management's expectation of the earnings on this business. This is essentially the change in MCEV during the reporting period arising from the in-force at the start of the year. The existing business contribution in excess of reference rate is nil, consistent with the real-world investment returns being set to be the same as the reference rate.

Transfer of VIF and required capital to free surplus

This denotes the capital generation from the in-force business at the start of the period. It is composed of two items. The monetisation of VIF following the emergence of earnings during the period and the release of required capital running off.

Operating variances

Operating variances represent the impact on the MCEV as a result of the difference between assumed and actual operating experience in the reporting period, including expense, mortality and persistency experience.

Pension persistency variance for the first six months is composed of poor lapse experience partially offset by the positive premium collection experience. Life protection lapse variance is adversely affected due to higher lapses than anticipated, primarily arising from the regular premium long-term credit-linked business. Expenses during the period were higher than expected due to the removal of capitalisation of the IT project.

No major assumption changes were done with the exception of refinement of required capital for the long-term life protection business.

Other operating variance on the free surplus is mainly arising due to the restatement of the opening net assets as a resulf of the accounting restatement in respect of the Return of Premium life protection product.

Economic variances

This item includes the impact of both economic assumption changes and economic variances. Economic variance reflects the impact of actual investment return experience in the period differing from assumed investment returns.

The Turkish Lira swap spot rates have decreased across the curve for all durations between as of December 31, 2015 and as of June 30, 2016, leading to a positive impact on pensions PVFP. The aggregate investment performance of the pension funds were higher than the year 1 swap spot rate. This meant that higher than expected funds under management accumulated as of June 30, 2016. The positive economic variance is a result of the higher projected fund management fee income.

Capital movements

Capital movements are mainly composed of dividends, the cash upstreamed to AvivaSA's holding companies, which was TL 30.9m within 2016 and unrealised losses of TL 2.4m TL due to an increase in interest rates.

11. New business results

VNB is one of the key indicators that AvivaSA uses to measure the profitability and steer the growth of new business written in the life and pensions segments. The table below sets out an overview of the value of new business and other related metrics (defined below) for the six months ended June 31, 2016 and June 30, 2015.

Table 8

(TL millions)	**Half-year 2016**	**Half-year 2015**	***Change***
Value of New Business (VNB)	97.1	104.8	-7.4%
Present Value New Business Premiums (PVNBP) (1)	2,195.6	2,418.1	-9.2%
New business margin (PVNBP basis) (2)	4.4%	4.3%	0.1%
Single premium	357.6	444.6	-19.6%
Annual premium	504.7	499.4	1.1%
Average annual premium multiplier (3)	3.6	4.0	-7.8%
Annual Premium Equivalent (APE) (4)	540.4	543.9	-0.6%
Internal Rate of Return (IRR)	36.0%	35.7%	0.3%
Payback period (in years)	2.5	2.4	0.1

Note (1): The present value of premiums arising from new business calculated by projecting the premiums expected in each future year from point of sale.

Note (2): Calculated as VNB divided by PVNBP.

Note (3): Calculated by the following formula: (PVNBP - single premium)/annual premium.

Note (4): APE = annual premium + 10% of single premium.

An IRR is the discount rate at which the present value at the time of issue of projected distributable profits (net of the impact of required capital) from new business is nil, with no explicit allowance for CNHR.

Specifically it is more relevant when a particular product consumes capital. The payback period is calculated using the same cash flows as are used for the IRR calculations. The payback period is calculated as the time period (measured in years) at which the sum of all undiscounted distributable profits (net of the impact of required capital), measured from the time of issue, first becomes greater than nil.

11.1. New business bridging

Table 9

Half-year 2016 ***(TL millions)***	**VNB**	**NB Margin**	**PVNBP**
Opening	104.8	4.3%	2,418.1
Volume impact	-9.1	-	-208.9
Mix impact	7.2	0.3%	15.1
Economics and others	-5.9	-0.2%	-28.6
Closing	**97.1**	**4.4%**	**2,195.6**

VNB is lower year-on-year due to a slowdown in sales in a challenging environment. The lower projected fees in pensions following the legislation change lead to lower margins, which was more than offset by the higher minimum wage and the new expense allocation. Higher weighting of life protection in the overall new business mix supported the flat new business margin despite a slight negative impact from economic assumptions.

The following tables set out the VNB and other new business metrics by product for the six months ended June 30, 2016 and June 30, 2015 respectively.

Table 10

Half-year 2016 ***(TL millions)***	**Life protection(*)**	**Personal accident**	**Individual pensions**	**Group pensions**	**Pensions**	**Total**
VNB	44.3	3.0	48.2	1.6	49.8	**97.1**
PVNBP	228.6	35.9	1,777.3	153.8	1,931.1	**2,195.6**
New business margin (PVNBP basis)	19.8%	8.9%	3.1%	1.5%	3.0%	**4.4%**
Single premium	52.4	35.9	257.1	12.3	269.4	**357.6**
Annual premium	46.8	0.0	428.7	29.2	457.9	**504.7**
Average annual premium multiplier	3.8	N/A	3.5	4.8	3.6	**3.6**
APE	52.0	3.6	454.4	30.4	484.8	**540.4**
IRR	84.8%	30.4%	26.4%	19.4%	25.9%	**36.0%**
Payback period (in years)	0.9	1.0	3.8	7.0	3.9	**2.5**

Table 11

Half-year 2015 ***(TL millions)***	**Life protection(*)**	**Personal accident**	**Individual pensions**	**Group pensions**	**Pensions**	**Total**
VNB	40.4	9.2	51.1	4.0	55.2	**104.8**
PVNBP	154.4	30.6	1,965.5	267.5	2,233.1	**2,418.1**
New business margin (PVNBP basis)	26.2%	30.1%	2.6%	1.5%	2.5%	**4.3%**
Single premium	52.2	30.6	255.2	106.7	361.8	**444.6**
Annual premium	29.4	0.0	436.4	33.6	470.0	**499.4**
Average annual premium multiplier	3.5	N/A	3.9	4.8	4.0	**4.0**
APE	34.6	3.1	462.0	44.3	506.2	**543.9**
IRR	134.9%	159.1%	20.5%	31.3%	20.9%	**35.7%**
Payback period (in years)	0.9	0.5	5.5	5.0	5.4	**2.4**

* There is no new business attributable to the life savings segment.

New business volumes are weighted towards lower margin pensions relative to life protection and personal accident products, which have a higher margin.

The lower margin of the pensions business is due to the fee caps imposed by the regulator and higher level of expenses relative to the level of premiums and assumed persistency.

The life protection and personal accident businesses have higher new business margins, mainly due to the value from the projected release of prudent mortality and morbidity margins from the statutory reserves.

Overall, the expense assumption chages set with respect to the activity based costing has increased the costs allocated to the life protection and personal accident segments, leading to lower margins compared to half-year 2015.

Life protection

The reduction in margin from 26.2% to 19.8% is primarily explained by the expense assumption changes and the new business mix impact within the life protection segment. Sales are weighted more towards stand-alone life protection compared to credit-linked life protection where the former has a lower margin compared to the latter.

Personal accident

The new expense assumptions have significantly affected the personal accident new business margins. Despite the inherently profitable nature of the underwriting margins of this segment, the corresponding post-assumption change new business margin better reflects the low ticket size of the products.

Individual pensions

The increase in the individual pensions margin can be explained by the increase in minimum wage and the expense assumption changes due to the activity based costing expense allocation. The strong single premium inflows supported the new business profitability, which demonstrates resilience in a volatile market environment.

Group pensions

Flat new business margin year-on-year where previous year's volumes had one-off large scheme transfers.

12. Maturity profile of business

The tables below represent the profile of the VIF emergence expected to turn into profits over the projection years for in-force and new business respectively.

Table 12 – In-force

In Years	Half-year 2016	Full-year 2015
1	14.4%	15.0%
2	26.7%	27.3%
3	37.4%	37.7%
4	46.7%	46.8%
5	54.8%	54.9%
6	61.6%	61.7%
7	67.8%	67.8%
8	73.1%	73.1%
9	77.6%	77.7%
10	81.1%	81.3%
11 to 15	92.2%	92.4%
16 to 20	97.5%	97.6%
Above 20	100.0%	100.0%

Broadly half of the VIF is expected to monetise into profits in the next five years

Table 13 – New business

In Years	Half-year 2016	Half-year 2015
1	25.9%	20.9%
2	39.0%	31.7%
3	49.9%	39.4%
4	58.8%	46.4%
5	66.0%	53.2%
6	70.6%	59.5%
7	75.0%	65.4%
8	79.3%	71.1%
9	83.2%	76.4%
10	86.2%	79.8%
11 to 15	92.9%	90.6%
16 to 20	96.9%	96.5%
Above 20	100.0%	100.0%

The pace of VIF monetisation is faster year-on-year primarily due to the impact of pension legislation change on fee structure.

13. Sensitivity analysis

Embedded value calculations rely upon best estimate assumptions such as expense, interest rate, investment return, lapse rate and mortality rate assumptions.

Sensitivity testing of the embedded value outcomes for alternative assumptions is provided in the tables below. AvivaSA does not have material exposure to equity or property assets so no sensitivity has been provided for these asset classes.

The sensitivities are applied proportionately for the non-economic assumptions but as an additive for the economic assumptions.

Table 14

	June 30, 2016	
(TL millions)	**MCEV**	**Value of new business**
Base Value	**1,370.8**	**97.1**
Sensitivity to non-economic assumptions		
Lapse rates +10%	-62.8	-6.9
Lapse rates -10%	69.8	7.7
Maintenance expenses +10%	-33.6	-4.1
Maintenance expenses -10%	33.6	4.1
Assurance mortality/morbidity +5%	-3.1	-1.2
Assurance mortality/morbidity -5%	3.1	1.2
Paid-up rates +10%	-6.9	-3.0
Paid-up rates -10%	7.0	3.1
Required capital at the Solvency I level	7.3	0.7
Market interest rates +1%	-14.1	1.7
Market interest rates -1%	10.6	-1.0

Table 15

	December 31, 2015	
(TL millions)	**MCEV**	**Value of new business**
Base Value	**1,248.4**	**104.8**
Sensitivity to non-economic assumptions		
Lapse rates +10%	-62.0	-19.5
Lapse rates -10%	64.1	22.1
Maintenance expenses +10%	-30.5	-8.4
Maintenance expenses -10%	30.5	8.4
Assurance mortality/morbidity +5%	-2.8	-2.0
Assurance mortality/morbidity -5%	2.8	2.1
Paid-up rates +10%	-6.6	-9.1
Paid-up rates -10%	6.7	9.4
Required capital at the Solvency I level	7.7	0.9
Market interest rates +1%	-17.4	-2.5
Market interest rates -1%	14.2	2.3

A brief explanation of each of the sensitivities is provided below.

Lapse rates +10%/-10%: To illustrate the impact of a different scenario in the assumed level of lapses, lapse rates were increased and decreased by 10% of the base assumption. Premium collection rates are excluded from the lapse sensitivity. The relatively large impact of the lapse sensitivity is due to loss of future charges for the pensions business partially offset by higher deferred entry fee income, which is charged to participants at the time of exit.

Maintenance expenses -10%: The MCEV increases when maintenance expenses are lower by 10% due to an increase in future earnings.

Assurance mortality/morbidity -5%: To illustrate the impact of lower mortality/morbidity, it was assumed that mortality and morbidity rates decrease by 5% of the base assumptions. This sensitivity shows that the insurance portfolio is dominated by the risk business.

Premium collection rates +10%/-10%: To illustrate the impact of a different scenario in the assumed level of premium collection, premium collection rates were increased and decreased by 10% of the base assumption for the pensions business only. An increase in premium collection rates implies that there are more contracts paying contributions leading to a higher embedded value and vice versa.

Required capital at the Solvency I level: This is to show the impact of targeting a higher internal required capital in the base MCEV, which is an addition of 50% on top of the Solvency I capital requirement.

Market interest rates +1%/-1%: When the market interest rate sensitivities are performed, consequential changes in yield and values are allowed for on all interest-bearing assets and liabilities, including updating the assumptions for indexation of regular premiums and expense inflation. MCEV increases when interest rates decrease and decreases when interest rates increase due to its exposure to the fee-based pensions business which is of a longer duration than the life insurance business. Underlying assets backing life savings liabilities are assumed to be invested in cash when carrying out the interest rate sensitivities. In contrast, VNB increases when interest rates increase and decrease when interest rate decrease due to the Return of Premium product's partial reliance on spread profits.

14. Differences between reported Aviva plc MCEV disclosures

The differences between the MCEV of AvivaSA in this report and that reported in the supplementary information to the accounts of Aviva plc are primarily the result of the following factors:

- CNHR capital charge of 2% per annum is increased to 6% per annum where the former allowed for the diversification benefit of non-hedgeable risks at Aviva Group level; and

- allowance is no longer made for the withholding tax that would be incurred by Aviva plc on the distributable earnings.

15. Statement of Directors' responsibilities in respect of the MCEV basis

When compliance with the MCEV Principles is stated, those principles require the directors to prepare supplementary information in accordance with the methodology contained in the MCEV Principles and to disclose and explain any non-compliance with the guidance included in the MCEV Principles. In preparing this supplementary information, the directors have done so in accordance with these MCEV Principles and have also fully complied with all the guidance. Specifically the directors have:

- determined assumptions on a realistic basis, having regard to past, current and expected future experience and to relevant external data, and then applied them consistently;

- made estimates that are reasonable and consistent; and

- provided additional disclosures when compliance with the specific requirements of the MCEV Principles is insufficient to enable users to understand the impact of particular transactions, other events and conditions, and AvivaSA's financial position and financial performance.

16. Independent Opinion

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Independent Auditor's Report on AvivaSA MCEV as of 30/06/2016

To the Board of Directors of

AvivaSA Emeklilik ve Hayat AS

We have performed the procedures detailed below on the accompanying Market Consistent Embedded Value (MCEV) documentation and calculations (hereafter: "MCEV HY2016 Reporting") of AvivaSA Emeklilik ve Hayat AS (hereafter: "the Company") as of 30 June 2016 (hereafter: "Valuation date"). The MCEV HY2016 Reporting cover the Value of Business In-Force, the New Business, the analysis of Earnings on MCEV, the sensitivities and the related notes. The MCEV is an alternative method of reporting the value and performance of the life, health and insurance business, and should not be considered as a substitute for Company's primary financial statements. Significant actuarial assumptions and estimates are used to determine the MCEV and, accordingly, actual outcomes may differ significantly from those expected.

Management's responsibilities for the MCEV report
Management is responsible for the preparation and the fair presentation of the MCEV as at the valuation date in accordance with the CFO Forum MCEV Principles & Guidelines (published in June 2008 and amended in October 2009) (hereafter: "Guidelines"), using the market consistent methodology and the assumptions set out in MCEV HY2016 Reporting, and for such internal controls as management determines is necessary to enable the preparation of its calculations and documentation that are free from material misstatement, whether due to fraud or error.

Auditor's responsibilities
It is our responsibility to issue this Independent Auditor's Report, based on the work performed, as to whether the MCEV HY2016 Reporting of the Company has been properly prepared in accordance with the above Guidelines.

Inherent Limitations
The MCEV HY2016 Reporting is based upon numerous assumptions with respect to economic conditions, operating conditions, policyholders' behavior, taxes and other matters, many of which are beyond the management's control. Although the assumptions used represent Company's best estimates as at the Valuation date, actual experience in future may vary from that assumed in the calculation of the MCEV and such variation may be material.
We have relied without independent verification upon the completeness and accuracy of the data, models and information provided by the Company, both orally and in written form. Where practically possible, we have performed limited high-level checks and reconciliations for reasonableness without undertaking an exhaustive review of them.

Reliance was placed on, but not limited to, the completeness and accuracy of the following:

- historical financial statements and asset valuation
- reconciliation between the MCEV Net Worth and the IFRS equity
- data and actuarial models used for the projection of the cash flows along with calculations performed outside the actuarial models
- any projection results at an aggregate level and at more granular product line level
- values and explanations provided for the analysis of Earnings

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- details of contractual, legal and commercial conditions regarding Company's products and Company's agreements with commercial partners and therefore, we relied on Company's applying these conditions for creating model inputs regarding charges, commissions and fund management expenses
- historical data backing the experience studies performed by the Company to ensure the reasonability of the assumptions used (e.g. lapses, mortality, morbidity, etc)
- plan figures used to derive renewal expense overruns
- reserving basis and methodology as at the Valuation date

The projections and the figures developed have been constructed on a "going concern" basis and assume continuation of the current economic, taxation, legal and regulatory environment prevailing in Turkey. We have not considered possible financial implications arising from the changes in these areas.
We do not, in performing our work, accept or assume responsibility for any other purpose or to anyone other than the Company and the directors of the Company selectively acting as a body to whom this Report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Scope of our work
We conducted our work on the methodology and assumptions used for the preparation of MCEV HY2016 Reporting in accordance with the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board (IAASB).

The standard requires us to plan and execute our work to obtain a limited assurance. The nature, timing and extent of procedures for gathering sufficient appropriate evidence in a limited assurance engagement are, however, less in scope than an audit or a reasonable assurance engagement performed in accordance with ISAE 3000 and, accordingly, we do not express an audit opinion and not all relevant matters might have come to our attention that would have been reported to you.

Basis of our Conclusions
For the purposes of our work, we performed analytical procedures to assess whether the methodology as applied by the Company is in accordance with the above Guidelines and the assumptions used are reasonable.
In particular, our work included the following procedures:

- understanding of the procedures adopted by management to prepare the MCEV HY2016 Reporting;
- analysis of the market consistent approach adopted by management, described in the MCEV HY2016 Reporting, for consistency with Guidelines;
- analysis of the consistency of the methodology used and implemented by management with that described in the MCEV HY2016 Reporting;
- analysis of the consistency of the economic assumptions and of their consistency with observable market data;
- analysis of the consistency of the operational assumptions with regard to past, current and expected future experience;
- performing high-level checks on results, to assess their consistency with methodology and assumptions;
- obtaining the information and explanations as deemed necessary to deliver our conclusion.

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Conclusions

Based on our work nothing came to our attention that caused us to believe that the MCEV HY2016 Reporting has not been properly prepared in accordance with the methodology and assumptions set out on it. In addition, we concluded that:

- The methodology and economic assumptions used for the calculations and disclosures comply with the Guidelines;
- The operating assumptions are reasonable in the context of recent available experience and management expectations about the future operating environment. However they should be closely monitored as they have a material impact on the results.

We have performed high-level checks on results, which demonstrated consistency with methodology and assumptions applied.

DRT BAĞIMSIZ DENETİM VE SERBEST MUHASEBECİ MALİ MÜŞAVİRLİK A.Ş.
Member of **DELOITTE TOUCHE TOHMATSU LIMITED**

Mujde Sehsuvaroglu

Partner

Istanbul, 25 Nowember 2016