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European Insurance

Generating Cash in a Volatile Solvency II World



Cash has been fundamental to the re-rating that the European insurance sector has enjoyed in recent years. Management teams have recognised that in a mature sector generating cash is critical. We have observed significantly more discipline, in particular when investing in new business.

We believe that the introduction of Solvency II on 1 January 2016 presents a threat to this success story on two fronts. 1) Available capital post-Solvency II becomes significantly more volatile and 2) the way in which cash is currently disclosed needs to fundamentally change.

1) Available capital is substantially more volatile under Solvency II than under Solvency I. Our proprietary modelling backtest over the last 10 years, along with historical MCEV disclosures, illustrates that own funds (i.e. economic equity) will be markedly more volatile.

2) Beyond free surplus – changing the cash definition. Free surplus is a Solvency I measure. However, in a Solvency II world, value in-force becomes an integral part of own funds. In place of free surplus we think insurers will need to communicate the key dividend constraints – i.e. i) IFRS distributable earnings, ii) solvency and iii) shareholder liquidity.

Strategies for managing volatility. We recommend a range of mitigating strategies: i) setting a clear risk appetite with appropriate buffers, ii) capital volatility management (e.g. ALM / hedging), and iii) improved disclosure and communication.

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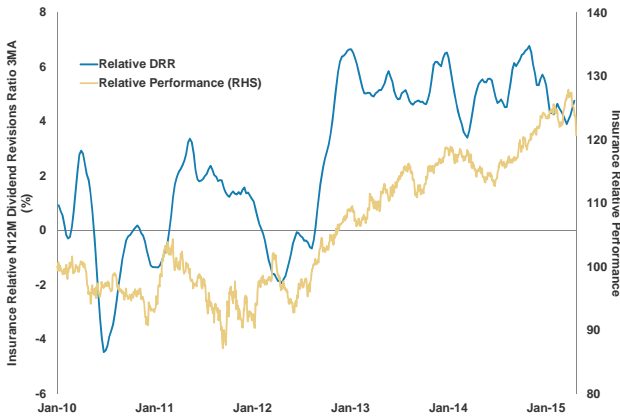
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Generating Cash in a Volatile Solvency II World

Exhibit 1

European Insurance Dividend Revisions Ratio over the last 5 years: Sector started to strongly outperform in July 2012

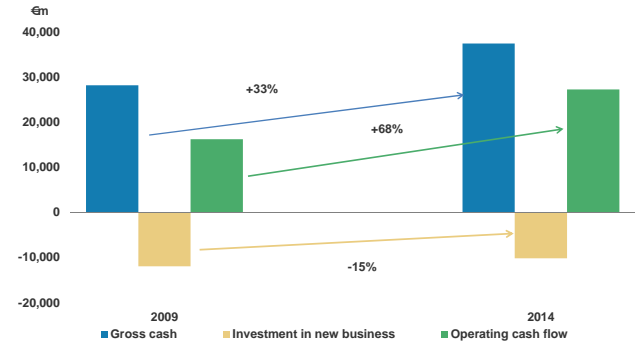


Source: Bloomberg, Morgan Stanley Research / Oliver Wyman

Exhibit 2

European insurers cash flow has improved markedly since 2009 – aided by careful control of investment in life new business.**

Operating cash flow development

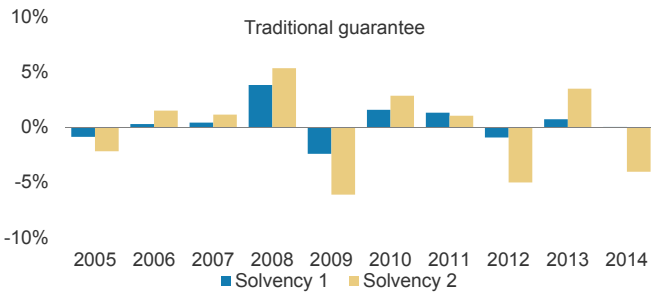


Source: Source: Morgan Stanley Research / Oliver Wyman

**Based on a weighted sample of 10 insurers which comprises ~66% of the Morgan Stanley European insurance universe's market capitalisation excluding the reinsurers

Exhibit 3

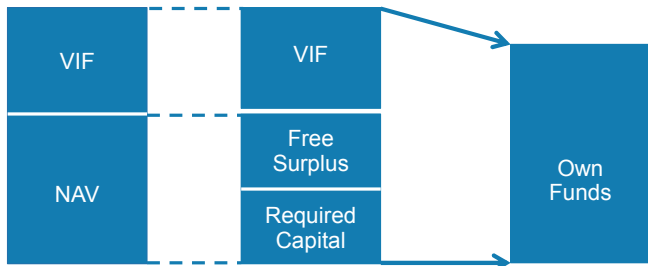
Comparison of change in surplus for Solvency I vs. Solvency II, as a % of assets by product: We see ~3x increased volatility on a Solvency II basis when compared with Solvency I without management actions



Source: Morgan Stanley Research / Oliver Wyman

Exhibit 4

Beyond free surplus*: In a post Solvency II world, there is no obvious distinction between net worth and VIF – creating a clear communication challenge

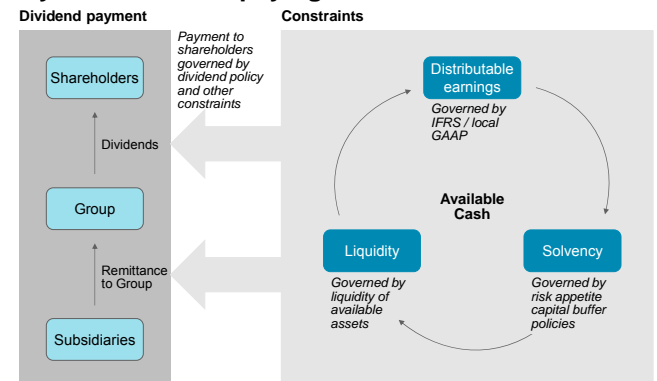


Source: Morgan Stanley Research / Oliver Wyman

* N.B. the size of "own funds" relative to embedded value (i.e. VIF + NAV) is indicative only

Exhibit 5

Communicating cash in a Solvency II world: We foresee a shift from free surplus to looking at three key constraints to paying dividends



Source: Morgan Stanley Research / Oliver Wyman

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Executive Summary

Cash has been fundamental to the re-rating that the European insurance sector has enjoyed in recent years.

Management teams have recognised that in a mature sector generation of cash is critical and as a result have been more disciplined in investing cash in new business, have worked to improve the fungibility of capital and rewarded shareholders with steady progression in dividends.

Our analysis shows that for a representative sample of European insurers over the period 2009 to 2014 weighted gross cash (i.e. before investment in new business) grew by 33% while 'net' cash grew by 68% as investment in life new business fell by 15% over the period – see Exhibit 6. Improvements in the remittance ratio to the holding company and control of central expenses saw cash available to pay the dividend grow by 138%.

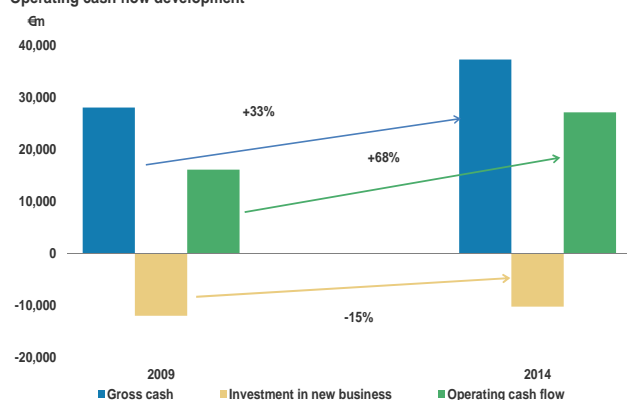
Since the middle of 2012 – when dividend revisions for European insurance turned positive relative to the wider market – the sector has outperformed European equities by 19%.

However, we believe that the introduction of Solvency II on 1 January 2016 poses a threat to this success story on two fronts:

Exhibit 6

European insurers'* cash flow has improved markedly since 2009 – aided by careful control of investment in life new business.

Operating cash flow development



Source: Morgan Stanley Research / Oliver Wyman

*Based on a weighted sample of 10 insurers which comprise ~66% of the Morgan Stanley European insurance universe's market capitalisation excluding the reinsurers.

- available capital post-Solvency II (i.e. own funds) becomes significantly more volatile if left unmanaged, therefore capital surplus and solvency ratios will become more volatile and constrain cash available for distribution; and
- the way cash is disclosed today needs to change given the current 'free surplus' approach is anchored in the Solvency I / IFRS world.

We think that if insurers take the appropriate steps then the re-rating can be sustained – however, there is a possibility that the market views insurers' cash flows as more at risk than in the past. This could result in a higher cost of equity and lower stock market valuations.

Managing volatility in a Solvency II world

Available capital in a Solvency II world (own funds) becomes substantially more volatile than in the current Solvency I regime. If not managed carefully we believe this has the potential to disrupt dividends to shareholders.

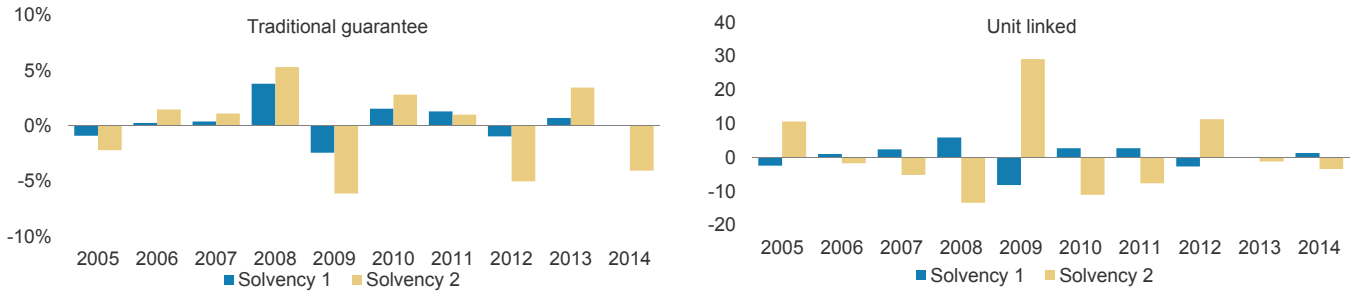
Our proprietary modelling (see pages 17-18 and Exhibit 17) illustrates the higher degree of volatility under Solvency II – our back testing over the past 10 years suggests that the annual change in capital surplus is on average three times larger under Solvency II for both traditional guaranteed and unit-linked business.

Although the absolute amount of cash extracted from a portfolio as it runs off will remain the same, there is a clear risk that remittance ratios from subsidiaries could become more volatile. Given this, we think insurers need to consider a range of mitigating strategies:

- 1) **Clear risk appetite with appropriate capital buffers:** In order to manage volatility and reliably extract capital, sufficient buffers are required locally and at group level, these should be defined through a top-down risk appetite covering both acceptable solvency ranges and minimum floors.
- 2) **Capital volatility management:** Effective actions to mitigate the inherent volatility in Solvency II own funds is also likely to become more important – for example, ALM and hedging strategies. We show some examples in Exhibit 8.

Exhibit 7

Comparison of change in surplus for Solvency I vs. Solvency II, as a % of assets by product: We see ~3x increased volatility on a Solvency II basis than under Solvency I without management actions



Source: Morgan Stanley Research / Oliver Wyman

Exhibit 8

Various techniques can be employed to manage the inherent volatility of Solvency II own funds

Lever	Description	Potential solvency impacts	Typical strength of lever for volatility management
Solvency II calculation approach	Use of (partial) internal models for relevant parts of the business, and potential use of matching adjustment, volatility adjustment or transitional measures where appropriate	Reduces SCR and increases own funds	Medium
	Optimising base balance sheet calculation, e.g. <ul style="list-style-type: none"> Removing prudence from best estimate assumptions Ensuring deferred tax assets and liabilities are treated appropriately Reviewing risk margin calculation 	Increases own funds	Weak
	Ensuring stresses are appropriately calibrated and assets exposures are shocked correctly, i.e. not too conservatively	Reduces SCR	Weak
Management actions	Embedding management actions in models can improve solvency but can also reduce management discretion, e.g. <ul style="list-style-type: none"> Bonus setting in BEL calculation Contingent actions under stress 	Reduces SCR and increases own funds	Strong
ALM and investment strategy	Investment portfolio optimisation for Solvency II, e.g. <ul style="list-style-type: none"> Optimised strategic asset allocation Hedging strategies to reduce market risk SCR Reducing asset management fees 	Reduces SCR	Strong
Balance sheet structure	Range of potential actions to improve solvency, e.g. <ul style="list-style-type: none"> Changes to legal entity structure Changes in capital structure Contingent loan structures Internal reinsurance / risk mixing External reinsurance / risk transfer Securitisation / carve-out / remutualisation 	Reduces SCR and increases own funds	Medium
Product optimisation under Solvency II	Capital efficient product design, including review and re-design of existing products where appropriate, e.g. <ul style="list-style-type: none"> Restructure fees on in-force Restructure guarantees on in-force / product mutation Other liability segmentation 	Reduces SCR and increases own funds	Strong, but takes time to replace business

Note: SCR = Solvency Capital Requirement
Source: Morgan Stanley Research / Oliver Wyman

- 3) **Improved disclosure and communication:** Providing investors with greater transparency on the impact of this volatility, communicating how managing this plays a role in maintaining dividend distribution policy and linking this more clearly to the two areas listed above. Disclosing sensitivity to potential changes (such as to the Ultimate Forward Rate and credit spreads) would also be valuable.

Beyond ‘free surplus’ – changing ‘cash’ definition

Many insurers currently use ‘free surplus’ as the principal way to disclose cash generation from a life unit. However, we think this measure will be outmoded post Solvency II and that the industry needs to find a new way to communicate cash.

In essence, free surplus is a Solvency I measure as it is the element of the adjusted net worth that is in excess of the Solvency I required capital.

However, in a Solvency II world, VIF becomes an integral part of own funds (i.e. tier 1 equity) and is also part of the stress in the required capital (SCR) and therefore it will not be possible to identify free surplus in the same way.

We think that the relevance of existing market consistent embedded value (MCEV) disclosures will also diminish – especially the much used net worth reconciliation.

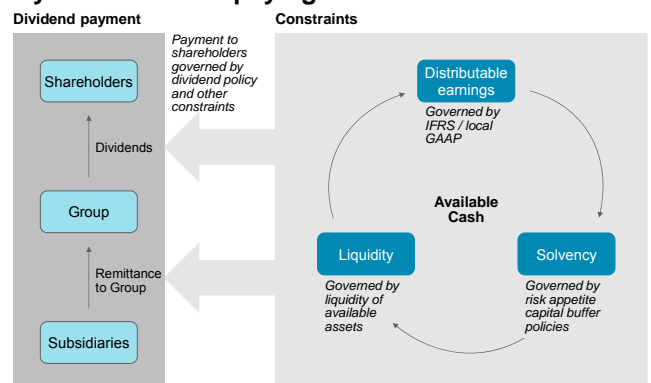
In the place of free surplus, we think insurers will need to communicate broadly around cash generation highlighting how the key constraints to dividend payment are being managed, namely:

- 1) **IFRS distributable earnings:** to what extent is this a constraint? How will earnings emerge over time? How will moves towards more cash efficient new business feed through to distributable earnings?
- 2) **Solvency:** how are comfortable solvency buffers being managed at subsidiary and group level? What are the key scenarios that could constrain upstreaming or distributing cash?
- 3) **Shareholder liquidity:** having met IFRS and solvency requirements, is cash available in the shareholder fund to pay the dividend (i.e. not future profits)?

We think that track-record will become ever more important to investors and the current free surplus disclosure understates the true economic volatility of an insurer’s balance sheet.

Exhibit 9

Communicating cash in a Solvency II world: We foresee a shift from free surplus to looking at three key constraints to paying dividends



Source: Morgan Stanley Research / Oliver Wyman

There is a clear risk here of increasing complexity and deterring generalist investors – potentially resulting in a higher cost of capital for the sector.

Impact of transitional relief

A further management – and disclosure – complication will be the likely use by some insurers of transitional measures that ease the shift from Solvency I to Solvency II.

These may have the effect of dampening volatility, but importantly we believe the impact of the amortisation of transitional add-on capital on cash generation needs to be clearly disclosed.

We explore the impact of transitional relief on pages 20-22.

Why should an investor read this report?

A focus on cash flow has been fundamental to the positive re-rating of the European insurance sector over the past few years.

‘Cash’ has facilitated communication of what is typically regarded as a complex and opaque sector to a broad range of non-specialist investors without the need to explain esoteric industry specific jargon.

However, in this report we argue that the introduction of Solvency II on 1 January 2016 presents a challenge to this success story:

- Solvency II capital is intrinsically more volatile than under Solvency I
- the ‘free surplus’ method of cash communication needs to change as it becomes outmoded with Solvency II

How the focus on cash has paid off for European insurers

European insurers' strategic focus on cash generation has been rewarded by investors with a structural re-rating of the sector in recent years.

Although pockets of growth exist (e.g. Asia and emerging markets, UK group pensions) European insurance is a mature sector with limited expansion opportunities. Given this, a focus on generating cash flow is a logical strategic response from management.

As we demonstrate in Exhibit 10 the outperformance of the European insurance sector in recent years was catalysed by dividend revisions moving positive relative to the wider equity market since July 2012.

This close relationship can also be seen in Exhibit 11 which shows how the market capitalisation of the European insurance sector has very closely tracked the cash dividend payments.

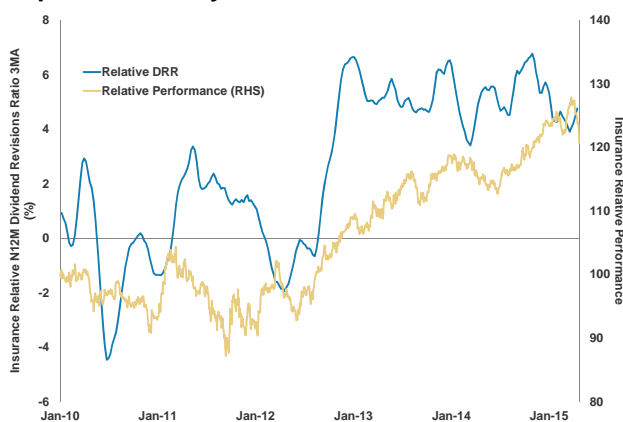
Free surplus has been the principal cash definition

As we explain on pages 12-14, for life insurers the typical definition of cash flow has become the movement in free surplus over the period.

The free surplus is the element of the net worth (i.e. the tangible book value) that is excess above the required capital.

Exhibit 10

European Insurance Dividend Revisions Ratio over the last 5 years: Sector started to strongly outperform in July 2012

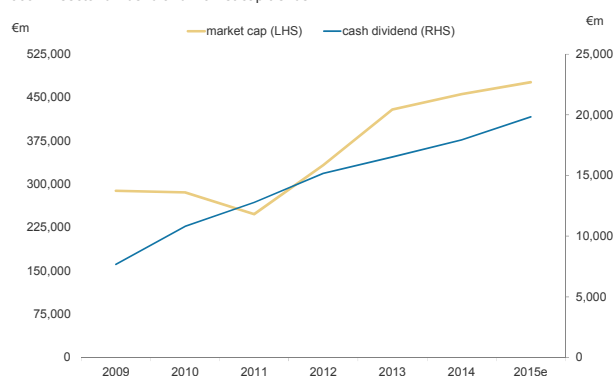


Source: Bloomberg, Morgan Stanley Research / Oliver Wyman

Exhibit 11

European Insurance sector cash dividend and market capitalisation, 2009-14 – share prices have closely tracked dividends

2009-14 sector dividend and market cap trends



Source: Bloomberg, Morgan Stanley Research / Oliver Wyman

Given this, the level of free surplus generation is in at least part dependent on the definition of required capital. Unfortunately there is no uniformity of approach here.

In Appendix 1 we have reproduced the embedded value required capital policies for a selection of European insurers.

Movements in cash flow since 2009

Strong improvement in cash flow

To demonstrate the improvement in cash flow for the European insurance sector we have analysed and aggregated holding company cash flow movements for a representative sample of names.

Together the insurers in our sample account for ~66% of the non-reinsurer market capitalisation of the Morgan Stanley coverage universe. We believe this produces a representative picture.

We have looked at operational cash flow – an aggregation of life, non-life, asset management and other business units – deducting the investment in life new business.

Exhibit 12 shows the aggregated weighted results. For the names in our sample over the period 2009-2014, the gross cash flow grew by 33% – or a CAGR of 5.9%.

Greater discipline over the reinvestment decision is key However, over the same period 'investment in new business' fell by some 15% (or a CAGR of -2.8%), as insurers took a more rigorous approach to reinvesting cash flow.

Taking these together, cash available to be paid up to the holding company increased by 68% over the period – or 10.9% per annum.

Exhibit 12

Operating cash flow for our sample: Gross cash flow +33%, with tight control over new business investment driving net cash ahead by 68%

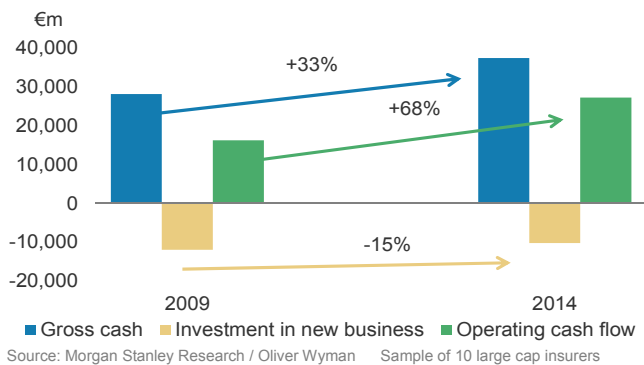


Exhibit 13

An increase in the remittance ratio for our sample saw cash to the holding company grow at a faster rate than net cash...

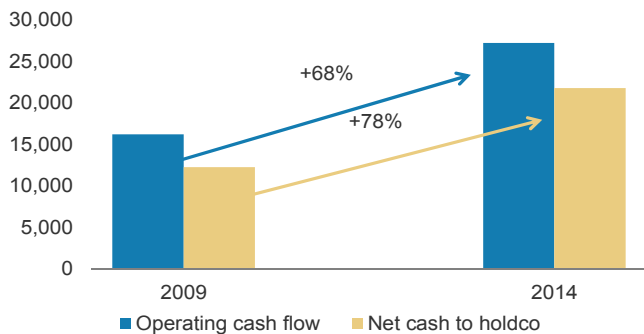
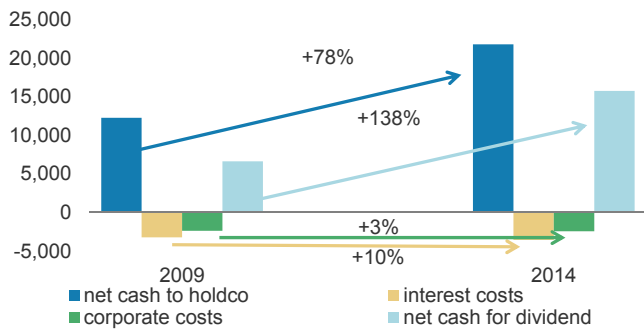


Exhibit 14

...while control over holding company expenses saw cash available to pay the dividend over 2009-2014 grow at an even faster rate (+138%)



Greater fungibility of cash flow

We have also seen insurers focus on being able to remit an increasing proportion of cash flow up to the holding company – an area where several insurers have struggled in recent years.

This increase in remittance ratio – from 75% in 2009 to 80% in 2014 for our sample – has driven growth in cash flow at the holding company ahead of that seen in operational cash flow.

Relatively stable holding company costs

A further element of gearing has been that holding company costs, in the form of central expenses and interest costs, have grown more slowly than the cash remitted to the holding company.

How sustainable is this growth in cash flow?

Our analysis shows that a 33% growth rate in “gross cash” over the six year period 2009 to 2014 along with the other changes discussed has driven a 138% increase in cash available to pay the dividend at the holding company.

We think this demonstrates how successful management teams have been in improving cash flow. However, it also raise questions about whether such a performance is likely to be repeated prospectively. To assess this we thought it would be interesting to analyse the “investment in new business” trends in more detail.

How do we define “investment in new business”?

There are two elements to the investment in new business:

- **‘Cash’ new business strain:** the reduction in net worth as a consequence of writing new business – typically the commission paid to an intermediary and the direct costs of new business infrastructure; and
- **‘Increase in required capital’:** the additional capital that is required as a consequence of writing new business – this element is neutral on the overall net worth, but is a transfer from free surplus to required capital.

In aggregate, these two movements comprise the investment in new business. Our analysis only splits out the life insurance segment – we have ignored P&C and asset management.

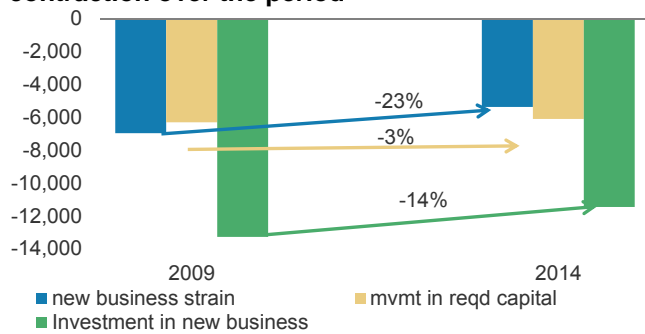
Reducing cash and capital intensity

We have analysed movements in “investment in new business” for 13 companies in the period 2009 to 2014.

Over this period, the investment in new business declined by 14% – analysed as a 23% reduction in “cash” new business strain and a 3% reduction in the amount invested in required capital.

Exhibit 15

Investment in new business movements* 2009-FY14: Cash strain has seen an especially sharp contraction over the period



Source: Morgan Stanley Research / Oliver Wyman *Sample of 13 life insurers

A similar – although less dramatic – shift is also seen when looking at required capital. The €27.3 of new business profit generated per € of incremental capital requirement is some 52% higher than that achieved in 2009.

While some of these movements might be amplified by the depressed nature of new business profits for some MCEV reporters in 2009, we think the general trend illustrates the significant shift that has been experienced.

However, new business sales (measured on the PVNBP basis) for the group actually increased by 19% over the period – highlighting that insurers have not simply reduced volumes to save cash, but have remodeled the structure of products. We illustrate this in Exhibit 16.

The reductions in new business cash strain have been the most significant. We believe that the introduction of the Retail Distribution Review in the UK in January 2012 is likely to have been a modest contributory factor here – but our sample of insurers is pan-European in nature.

On the required capital front, the reduction has been smaller over the period, but is still very material in terms of its impact in leveraging the overall growth in cash flow.

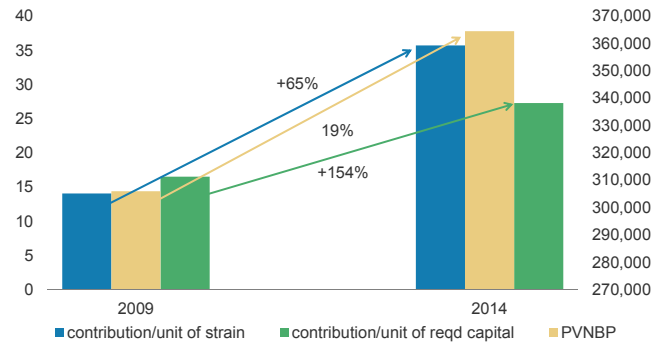
Required capital has declined materially for many players as management teams have sought to de-emphasise capital-intensive guaranteed business in the face of challenges from Solvency II and low bond yields.

Increased return on cash and capital

For our sample of insurers, in 2009 €1 of cash new business strain incurred generated €14 of new business profits. By 2014 this had increased to €36 of new business profits per unit of strain – a 154% increase (see Exhibit 17).

Exhibit 16

New business profit and volume movements FY09-FY14



PVNBP – RH scale, €mn; others – LH scale: €
Source: Morgan Stanley Research / Oliver Wyman *Sample of 13 life insurers

Prudential – a case study

We believe that Prudential is an excellent example of what the sector has achieved in terms of cash and capital management since the crisis.

Over the period from 2009 to 2014 Prudential's new business volumes (measured on a PVNBP basis) have increased by 69% while new business profits have increased by 88%.

However, over the same period, Prudential has seen the required capital invested in business remain flat while the cash new business strain has fallen by 32% – driving an overall 10% reduction in the investment in new business.

In 2014, Prudential generated €4.69 of new business profit for every €1 of incremental capital required – the highest in our sample and a substantial increase from the €2.51 produced in 2009.

In terms of cash strain, every €1 of strain generates €13.90 of new business contribution (up significantly from €5.05 in 2009).

Overall new business profit per € invested in new business (i.e. strain plus capital requirement) was €3.51 in 2014 – up from €1.68 at the start of the period.

Furthermore, the new business profit per unit of investment in new business has increased every year over the course of the 6 year period.

This has been as a consequence of management proactively allocating cash and capital to the highest return opportunities while adjusting the product and country footprint to generate the best results for shareholders.

If we look at the regional performance, a similar picture can be seen:

- Asia new business volumes have grown by 106%, new business profits by 118% and investment in new business by just 41%.
- US new business volumes are up 72%, new business contribution up 61% and investment in new business down 43%.

Beyond ‘free surplus’ as a cash measure

In this section we argue that ‘free surplus’ generation as a cash measure will not survive the introduction of Solvency II and should be replaced by clear disclosure of the principal constraints to generating cash – i.e. sufficient 1) IFRS distributable earnings, 2) surplus solvency capital, and 3) shareholder liquidity.

While this is more complex than ‘free surplus’ we believe it better reflects the reality of cash generation in the new regulatory environment.

The death of free surplus as a cash measure

We believe that the introduction of Solvency II – and the subsequent introduction of IFRS 4 Phase 2 – will render the current ubiquitous ‘free surplus’ definition of cash flow obsolete.

We also believe it makes elements of the current Market Consistent Embedded Value (MCEV) disclosures outmoded (in particular the much used net worth reconciliations).

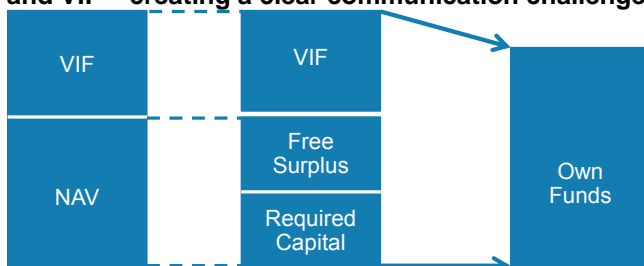
In our view, this will create a significant communication challenge for the industry – and if not handled carefully could jeopardise the positive re-rating seen in recent years.

Analysis of the movements in the ‘free surplus’ element of the embedded value disclosure is currently fundamental to the market’s assessment of cash flow for a life company – however, the ‘free surplus’ which underpins this disclosure is a Solvency I (statutory) concept.

Under the Solvency II regime the ‘value-in-force’(VIF) becomes an integral part of ‘own funds’ (i.e. tier 1 equity) –

Exhibit 17

Beyond free surplus*: In a post Solvency II world, there is no obvious distinction between net worth and VIF – creating a clear communication challenge



Source: Morgan Stanley Research / Oliver Wyman

* N.B. the size of ‘own funds’ relative to embedded value (i.e. VIF + NAV) is indicative only

and consequently the disaggregation of “embedded value” into the component parts of required capital, free surplus (together comprising the net worth) and the VIF becomes false.

This is illustrated in Exhibit 17.

Why does free surplus disappear?

The required capital that is deducted from net worth to get to today’s free surplus will change fundamentally under Solvency II. Additionally, both the solvency net worth and the Solvency Capital Requirement (SCR) concepts are further from cash than Solvency I due to the inclusion of significant future profits in their calculation.

Post Solvency II, the net worth of an insurer crudely becomes the full own funds (i.e. similar to the full MCEV) rather than the tangible Solvency I element. This means that the VIF is an integral part of the equity – and as such introduces significantly more volatility into statutory equity if actions are not taken to address this.

It is not possible to easily identify the distributable element of the equity – given the “co-mingling” of the VIF.

Why doesn’t it make sense to deduct the required capital to infer the free surplus?

One could argue it is still possible to deduct the required capital from the Solvency II own funds in order to arrive at a free surplus number. However, this runs up against the limitation that a large element of the own funds is ‘VIF’ and is therefore not immediately distributable.

It is also possible that insurers could seek to create a notional ‘VIF’ or reconciling item by deducting the IFRS shareholders’ equity from own funds (assuming the business is 100% equity funded). Some will report this as a ‘reconciliation reserve’ in their own funds. A further adjustment could then be made to deduct required capital from the IFRS equity.

However, the problem here is that there will not be an appropriate required capital figure to deduct from this adjusted net worth because the SCR in Solvency II represents the stress to the economic balance sheet including future profits and this would be too penal a deduction to cash generation. Solvency II SCR is therefore significantly larger than the Solvency I required capital for most lines of business as we

explore further on page 15. Deduction of this Solvency II required capital from a form of NAV therefore doesn't result in a useful cash measure.

Back to the early 2000s?

One of the major benefits of the free surplus methodology for analysing cash flow generation is that it allowed investors to identify insurers that were unsustainably converting tangible capital (i.e. cash) into long-dated intangibles (i.e. VIF) in a manner that would ultimately put the dividend at risk.

Friends Provident was an excellent example of this, where the embedded value consistently grew but the free surplus steadily depleted – ultimately leading to a dividend cut. However, at the time this was not clear as the embedded value disclosure did not separately identify the free surplus.

We believe that post Solvency II the same challenge will recur. We will see insurers generating embedded value or its Solvency II equivalent, own funds, but it will not be clear how the cash element of this develops.

What will replace 'free surplus' as a cash metric?

Unfortunately, we do not believe that free surplus can be replaced with one single metric. Indeed whereas free surplus gave the market the comfort of forecasting the future cash flows on a multi-year basis this may have given investors the impression that the cash release was almost exclusively governed by the 'free surplus'.

Instead, we think that insurers will have to communicate cash flow through a combination of metrics:

- **IFRS distributable earnings:** to what extent is this a constraint? This will not change with Solvency II, although it could potentially change more when IFRS 4 Phase 2 is implemented.
- **Solvency:** this is going to change to a more volatile solvency position and therefore may act as a constraint on the release of the cash from IFRS earnings. Communication of the capital position at group level and individual business units – maintenance of sufficient buffer capital, how and when it may constrain dividend flow, will become much more important.
- **Shareholder liquidity:** whilst insurers typically have adequate liquidity in insurance portfolios, the 'shareholder' liquidity for paying dividends can vary. As today cash can be constrained by investment in new business ventures,

... tied up in future profits or constrained in less liquid assets. To maintain dividend flow the cash needs to be liquid.

We illustrate this approach in Exhibit 18.

As we explore elsewhere in this report we would also expect a clear explanation of the actions available to the company in order to mitigate the inherent Solvency II volatility.

These measures are not fully disclosed by insurers today and we expect investors to demand more clarity on all three to understand the cash headroom available for dividends and how and when it will be constrained.

We think that insurers can make cash disclosure of the future more understandable with more scenario-based information - in particular around Solvency constraints on the cash, so that investors have a clearer understanding of under what conditions dividends and remitted cash within the group will be impacted.

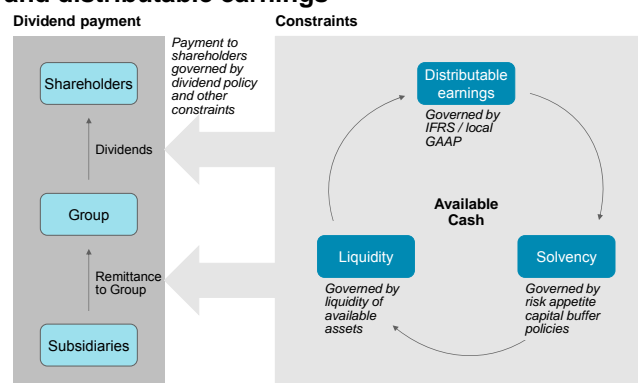
What about international business units?

What we have written in this section applies for those business units that will be operating under the full Solvency II regime. However, many companies have units which operate outside of the European Economic Area.

Post implementation of Solvency II these units will operate either on an 'equivalent' basis – for example in the United States (where in effect the local regime prevails at least for a period of time) – or on a 'non-equivalent' basis where Solvency II does apply as an overlay (for example Asia).

Exhibit 18

Communicating cash under Solvency II – focus on three distinct elements: solvency position, liquidity and distributable earnings



Source: Morgan Stanley Research / Oliver Wyman

This creates a further level of complexity, though for the equivalent territories, one could argue that nothing changes and that the current disclosure regime remains relevant.

However, the picture is not as clear for the non-equivalent territories – the local regulator may still allow cash remittances from a unit in accordance with its rules, but it is possible these could be restricted by a requirement to hold the unit to higher Solvency II level of capitalisation at the group level. In reality the business mix will be of crucial importance here – i.e. where the Solvency II requirements sit relative to those enforced locally.

Potentially an impact on investor perception

In our view, the focus on free surplus generation as a metric has led investors to underestimate the inherent underlying volatility in an insurance business. In effect, the 'comfort blanket' of the clear delineation between net assets and VIF, and the relatively smooth emergence of free surplus will be replaced by a focus on the growth of the overall economic equity (i.e. the MCEV) and the consistent production of unencumbered cash that is available to pay shareholder dividends.

There is clearly a risk that as disclosure evolves following Solvency II the required rate of return for the sector (i.e. the risk discount rate) goes up as this volatility becomes more apparent.

We also believe that the apparent complexity of the sector will further increase, deterring generalist investors. To have clear and understandable disclosures will be a challenge for the sector. We provide more on our view on disclosures on pages 27-28.

How the market currently thinks about cash flow for insurers

It is worth a brief recap of how investors and analysts typically assess free cash flow for a life insurance company.

For life entities, the embedded value disclosure remains fundamental to assessing free cash flow – in particular the movement in free surplus over the period. This embedded value approach is summarised in the grey box below.

The free cash flow indicated from the embedded value disclosure is calculated as the movement in “free surplus” – which is the movement in the element of the adjusted net worth that is in excess of the required capital.

Given this, there is a degree of lack of comparability in the results – given the difference in embedded value methodologies (i.e. between MCEV reporters and those using the more traditional EEV basis) and the variations in “required capital”. Typically insurers will define required capital as the higher of the internal policy (internal model) or 150% of Solvency I local requirements. Appendix I outlines the different interpretations of required capital used by insurers.

While most insurers define life insurance cash flow in this way, a minority of players (for example Legal & General) take an IFRS disclosure approach to cash flow – which as a consequence does not reflect movements in required capital.

Definition of cash for a life insurer

Investors typically think about cash flow for a life insurer as the movement in free surplus (i.e. on an embedded value basis).

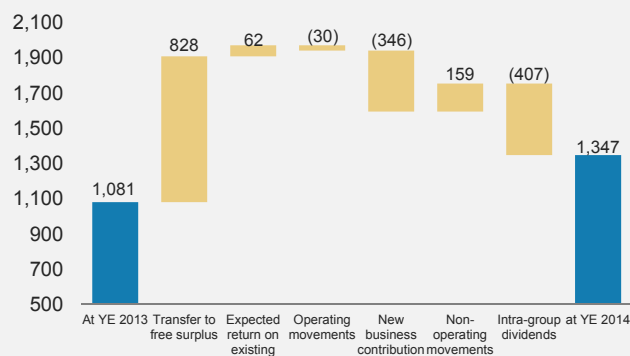
Simplistically the various movements are:

- + Transfer to free surplus (investment margin, release of prudent margins etc.)
- + Expected return on existing business (investment return on assets backing capital)
- ~ Operating movements (non-economic experience vs assumptions, e.g. lapses)
- Impact of writing new business (additional required capital + cash strain)
- ~ Non-operating movements (e.g. investment variances)
- Dividends back to group

See Prudential Asia free surplus movement – Exhibit 19

Exhibit 19

Prudential Asia EV Free Surplus Movement, YE 2013 to YE 2014

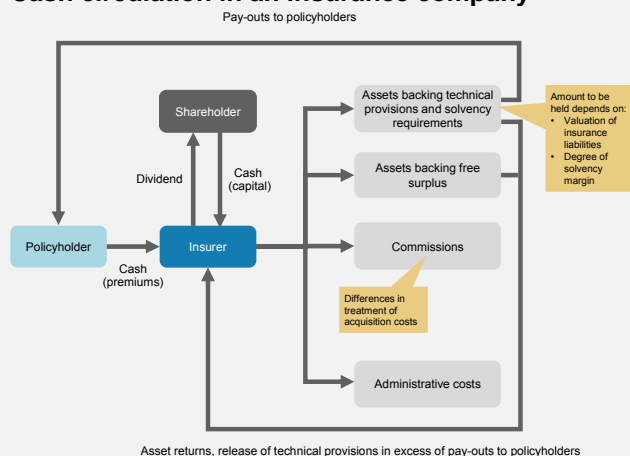


Source: Company Data, Morgan Stanley Research / Oliver Wyman

In practice, each accounting and solvency regime places its own restrictions on the realisation of cash from a portfolio of insurance contracts, and the degree to which this cash surplus can be used to pay dividends. For a portfolio of insurance contracts, the ultimate cash generation will be what is realised at the end once the book of business has run off. At that point we know for a fact what the incomes, expenses and claims were. Different regimes differ in three essential ways with regard to the restrictions they put on the release of cash, 1) the valuation of insurance liabilities and hence the value of assets needed to back these, 2) solvency capital requirements and assets required to support these, and 3) the treatment of acquisition costs and whether deferred costs count as an asset or not. Exhibit 20 below illustrates these in the context of cash circulation within an insurance company.

Exhibit 20

Cash circulation in an insurance company



Source: Morgan Stanley Research / Oliver Wyman

Cash then traced up to the holding company

Having identified the life 'free surplus' generation, the market then typically looks at what proportion is able to be upstreamed to the holding company (i.e. the remittance ratio).

A similar assessment is made for "non-life" units (e.g. property & casualty and asset management).

At the holding company level an assessment is made of the various commitments (i.e. central expenses and debt interest) before forming a view as to the sustainability or opportunity for growing the dividend.

We explore this in detail on pages 6-8, looking at how cash available to pay the dividend has increased substantially since 2009.

How is cash from an insurance portfolio recognised?

Accounting and solvency rules determine how cash emerges over the life of an insurance portfolio. However, it is important to remember that ultimately the cash generated by the business is only known at the end once the policy has finished or the claim has happened and been paid. This differs significantly from manufacturing businesses where the true cost of manufacture is only known at the end.

The different accounting and solvency measures are different paths to end up at that same ultimate cash amount. Some measures allow cash to be released earlier, some later – while some are more exposed to volatility than others.

The proliferation of measurement bases for insurers' cash generation makes it harder for investors to monitor performance over time and is one reason why there are sometimes surprises along the road.

How does cash get released under the accounting rules?

In conceptual terms, IFRS tries to release the profit margin over the life of the contract rather than either having to wait until the end or allowing insurers to take all the expected profit at the start. It does this through deferral of acquisition costs and use of cautious margins in the assumptions. IFRS or local statutory profit is the release into retained (or 'distributable' earnings) so that it can then be used to support a dividend.

In theory, IFRS should be a relatively smooth release of profit and conversion into cash for investors. However, there are a number of reasons why this path towards the ultimate cash

generation can be a bumpy road and profit expectations can change:

- investment returns change over the lifetime of the contract;
- assumptions about the future change (e.g. yield curve levels, mortality); and
- claims patterns change (as can other assumptions such as lapse behaviour).

How does solvency affect cash?

If accounting profit is a key measure for releasing cash over the lifetime of the life insurance book, then the solvency regime is the 'safety mechanism' that sits over the top. It restricts IFRS retained earnings from being available to distribute if the solvency balance sheet is not strong enough.

The solvency regime is principally concerned with protecting policyholders and prevents the early recognition and distribution of cash that ultimately may be needed to secure the promised contractual benefits.

Solvency is a different calculation method for determining the path to the ultimate profit release so it will end up with the same number at the end of the run-off, but its purpose is different and therefore the calculation methods are different. Under Solvency I the calculation methods were similar to IFRS, but with some significant differences including:

- Solvency I might use more prudent assumptions to hold stronger reserves for longer;
- Solvency I does not defer acquisition expenses whereas IFRS does – therefore Solvency recognises some profit later; and
- Solvency I requires capital of typically 1-4% of the reserves to be held in addition to the reserves (depending on whether policyholder returns are guaranteed), whereas IFRS does not – the impact of which is to hold back cash for longer.

To avoid solvency requirements being a recurring restriction on cash emergence, insurers try to run with significant solvency surpluses and establish a 'risk appetite' that takes management actions if the solvency buffer becomes depleted. Solvency I available capital and required capital are not particularly volatile. This has ensured that throughout the operation of Solvency I that the 'safety mechanism' only very

rarely becomes a realistic constraint on releasing cash to investors in the form of a dividend.

Inconsistency of required capital assumptions

We believe that one of the major limitations of the current free surplus disclosure is the inconsistency and opacity of the 'required capital'. In Appendix I we have collated the required capital policies for the life units of the majority of the European insurers.

Given that free surplus is defined as "adjusted net worth" minus "required capital" then the lower the required capital the

higher the reported free surplus. In practice, we believe that much of the stock of "free surplus" reported by the industry is not truly "free" due to the inadequacy of the required capital as defined (i.e. the business unit would not be able to operate in an unencumbered fashion if it only held the required capital).

In part this weakness has been addressed by the industry through the disclosure of remittance ratios, which allow investors to assess how much of the free surplus generation can typically be extracted as cash back to the holding company.

What changes post Solvency II?

Solvency II moves to a different calculation method for capital that is further removed from IFRS profit emergence than was the case under Solvency I.

In broad terms compared to Solvency I, the Solvency II approach:

- holds back more capital surplus against business with guarantees (traditional and participating) due to holding the economic cost of guarantees in the technical provisions and significant capital to cover the market risk on guarantees; and
- requires less capital surplus to back unit-linked and protection business, but unit-linked becomes more volatile than it was under Solvency I and the additional surplus is mainly in the form of future profits which is not immediately available to shareholders as cash.

Given increased volatility on own funds and therefore surplus capital we expect the solvency ‘safety mechanism’ will bite more often than before to constrain dividends.

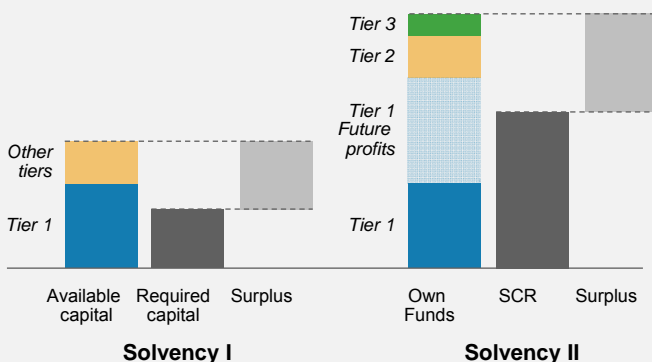
However, in practice this risk will be mitigated by insurers through the establishment of adequate capital buffers and proactive steps to stabilise the Solvency II balance sheet. We explore these actions to manage a more volatile capital position in more detail on pages 23-25.

Investors should note that cash flow emerging from underlying portfolios under Solvency II will not be fundamentally different

Exhibit 21

Solvency I vs Solvency II – Future profits are an integral part of Solvency II own funds

A reminder – Solvency I vs Solvency II



from today. Solvency II surplus capital, however, will be more volatile and without careful management and buffers may act to constrain distributable cash more often.

Transitional measures under Solvency II (where insurers choose to apply them) will have the impact of keeping the new solvency regime closer to the existing Solvency I regime for some years to come (with a 16 year phase-in period for liabilities pre-dating 1 January 2016, although new business will move fully to the new regime).

This will give insurers additional time to build necessary buffers for Solvency II and implement the balance sheet actions that will help stabilise the Solvency II balance sheet.

However, it is possible that investors may seek to differentiate between those insurers that are reliant on the use of transitional measures and those that have been able to fully apply the Solvency II rules at inception.

We note that this was the case with the banks, where the market generally focused on capitalisation relative to the “fully-loaded” Basel III requirements.

However, we would stress that the structure of an insurer’s balance sheet is fundamentally different to that of a bank and consequently a more gradual transition is appropriate.

We discuss the various transitional options available under Solvency II on pages 20-22.

What is different?

- Own funds is more volatile than Solvency I available capital due to future profits being included in own funds.
- Solvency II Solvency Capital Requirement (SCR) is usually larger than Solvency I required capital due to the SCR being a stress on the economic balance sheet (including a stress on future profits).
- The Solvency II surplus (or solvency ratio) is therefore more volatile under Solvency II and this capital surplus position is more important than the size of the SCR itself.

Source: Morgan Stanley Research / Oliver Wyman

Evidence for higher volatility – the changing solvency balance sheet

The Solvency II balance sheet is based on an economic approach that holds assets and liabilities at a mark to market valuation. Future profit cashflows are a feature of the economic balance sheet, and therefore for insurers with long duration business, embedded guarantees, and significant market risks, the volatility of the economic balance sheet that underlies Solvency II will be high.

The available capital under Solvency II becomes 'own funds', which is the economic version of net worth.

Breaking it down into its constituent parts, it can be thought of as a combination of stable balance sheet capital items such as shareholder equity and subordinated debt, and the present value of future profits (i.e. VIF), which is volatile on most measures. Therefore own funds will typically be larger but significantly more volatile than Solvency I available capital, unless actions are taken to manage this.

The required capital under Solvency II is the SCR that is a stress on the own funds (see Appendix II). The SCR itself is more stable than the own funds, but because of the own funds volatility, and the inclusion of significant future profits in the own funds itself, the SCR is typically much larger than Solvency I required capital. The new solvency regime is a very different measurement regime from Solvency I.

Exhibit 21 shows an illustration of the elements of required and available capital under Solvency I and Solvency II and highlights the key changes.

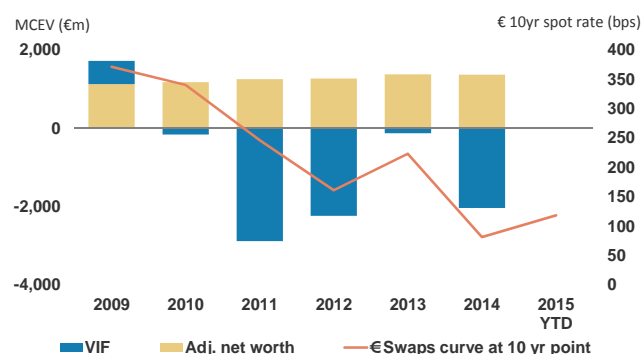
Evidence for higher volatility – the empirical arguments

Market consistent embedded value (MCEV) results have been reporting using a stable methodology over time and nicely illustrate the principle that available capital calculated on a market consistent basis is more volatile. Given this, it is clear that the overall solvency ratio will be substantially less stable than on the old basis.

Exhibit 22 illustrates this through the MCEV disclosures made by Munich Re for its German primary life unit. We have chosen this example given its exposure to partially unhedged

Exhibit 22

Munich Re German Primary Life MCEV 2009-14: While adjusted net worth has been stable, the overall MCEV has been very volatile*



Source: Company data, Morgan Stanley Research / Oliver Wyman
 *N.B. Munich Re has a very conservative MCEV methodology, including no illiquidity premium and using an unadjusted swap curve (i.e. not using the interpolation option to an ultimate forward rate or UFR which is available in Solvency II).

long-dated interest rate guarantees (although Munich Re's use of swaptions is more advanced than most local peers).

Munich Re also applies an unusually conservative assumption set. For example, it does not apply the Ultimate Forward Rate curve (which is available under Solvency II) and does not include any illiquidity premium in the discount rate. Given this, the volatility seen here will be even higher than that likely seen in Solvency II own funds.

Exhibit 22 clearly shows the markedly greater volatility in the overall MCEV (i.e. the sum of the adjusted net worth and the VIF) than in the adjusted net worth. The adjusted net worth can be thought of as the pure statutory equity (i.e. crudely the IFRS equity with the deduction of the deferred acquisition costs).

Over the course of the period, the net worth has been relatively stable while at times the MCEV has turned negative – a consequence of falling bond yields and the explicit capturing of the cost of options and guarantees.

Very crudely – the volatility in the net worth is similar to that experienced under a Solvency I regime, while that of the overall MCEV more reflective of that likely to be seen under Solvency II own funds.

Allianz capital management policy example

Allianz is an example of a European insurer that has communicated clearly to the market about its capital management policy. The group is one of five European primary insurers that have been designated as Global Systemically Important Insurers (or G-SIIs).

Exhibit 23 summarises our understanding of the group's policy. Under Solvency II, Allianz must maintain a minimum SCR ratio of 100%; however, given its G-SII status an additional buffer is likely to be required above this. Unfortunately, the capital consequences of the G-SII designation remain unclear ahead of the implementation in 2019. It is reasonable to assume that the Higher Loss Absorbency (HLA) requirements will be equivalent to an additional 25ppts on the Solvency II ratio. In crude terms this would be roughly equivalent to a Standard & Poor's style 'A' requirement versus the base 'BBB' (100%) calibration of Solvency II.

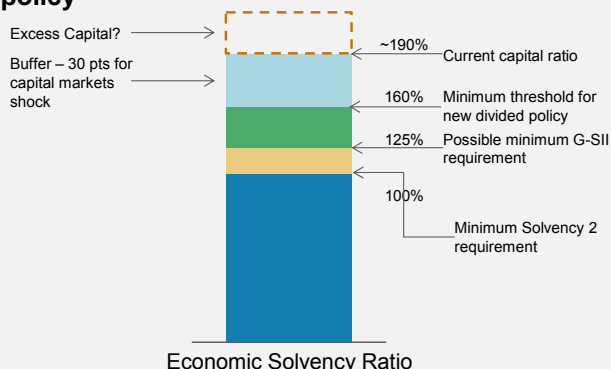
However, to comfortably run the business and absorb the inherent volatility in the business (which will become clearer under Solvency II), Allianz will choose to hold additional buffers over and above this minimum level of (say) 125%.

Allianz's recently established new dividend policy (to pay 50% of net income as a dividend, plus any unused M&A budget) applies as long as the group's economic solvency ratio is sustainably in excess of 160%. Separately, management has spoken of a reasonable "hit" to solvency – i.e. a combination of equity markets falling, credit spreads widening and yields falling as being around 30ppts of solvency.

Given this, our interpretation is that Allianz is in effect likely to conservatively maintain a "double buffer" over and above its G-SII requirements – i.e. from its current (1Q15) solvency ratio of 191% Allianz could absorb a 30ppts hit before considering whether to adjust the dividend (although we would stress the "sustainable" nature of the 160% requirement) and a further 35ppts hit before coming up against the potential G-SII level of 125%.

Exhibit 23

Our interpretation of Allianz's capital management policy



Source: Company Data, Morgan Stanley Research / Oliver Wyman

Evidence for higher volatility – proprietary modelling

The extent to which market volatility will impact insurers' capital will of course vary depending on the business model of a given insurer; as such we have considered how different products would be affected in the move to Solvency II.

To explore this in more detail, we have updated our proprietary model to reflect the latest Solvency II requirements and have examined the impact of changing market conditions over the last 10 years on the economics of different insurance products.

The objective here is not to fully model an insurance balance sheet over time, rather to demonstrate the key changes in levels and volatilities of capital surplus by product, so we can determine if these could become constraints upon cash flows to shareholders.

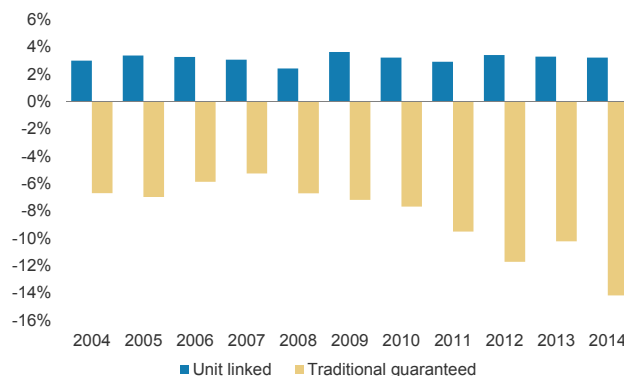
We have explicitly modelled a traditional guaranteed life contract and a unit-linked product. For UK-style annuity products the impact of Solvency II is strongly dependent on market conditions and on how the matching adjustment is applied, as such the result differs significantly by insurer. Consequently, we have not included these products in our analysis.

Importantly, it should be noted that the impact of transitional measures are not included in the analysis, which may reduce the volatility observed.

Also note that our modelling does not assume that significant management actions will be taken that could stabilise or improve solvency.

Exhibit 24

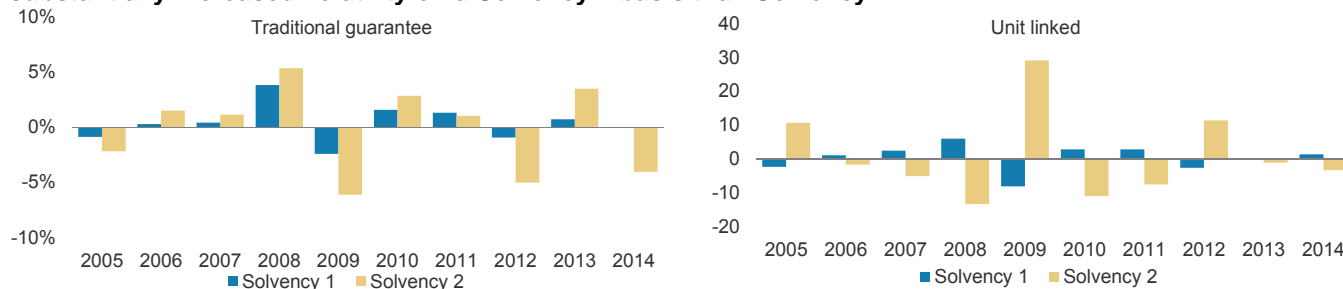
Contribution to surplus capital under Solvency II relative to Solvency I, as a % of assets by product – traditional looks far worse on the new basis



Source: Morgan Stanley Research / Oliver Wyman

Exhibit 25

Comparison of change in surplus for Solvency I vs. Solvency II, as a % of assets by product: We see substantially increased volatility on a Solvency II basis than Solvency I



Source: Morgan Stanley Research / Oliver Wyman

Exhibit 24 compares the contribution to surplus capital (as a % of assets) for two products under Solvency I and Solvency II – by surplus capital, we mean the excess of the own funds over the SCR.

Unit-linked products contribute more to surplus capital due to the inclusion of the VIF in Solvency II own funds, whereas traditional guarantee products generally look less attractive on a Solvency II basis due to higher liability values (which offsets the benefit of ‘including’ VIF in tier 1) and greater capital requirements.

Our second observation, as shown in Exhibit 25, is that the volatility of the surplus under Solvency II is markedly greater than under Solvency I if you assume no actions are taken to dampen this volatility (as covered later in this document). In fact, our backtest modelling of the last 10 years shows that the change in capital surplus is on average around three times larger under Solvency II than under Solvency I for both traditional guarantee and unit-linked business.

For this analysis we have modelled surplus at a product level, i.e. the excess capital over required capital, with Exhibit 25 showing the year-on-year change in this surplus under both Solvency I and Solvency II. Our modelling also shows that unit-linked and traditional guarantee products react differently to market conditions and in many cases may act as a natural balance to one another, depending of course on asset allocations and assuming interest rates and equities are negatively correlated. As this simplified model illustrates, asset allocations across product mixes and ALM will be a critical lever for solvency volatility management.

Increased volatility of surplus capital and solvency ratios has the potential to act as a constraint on the use of cash generated to pay dividends, unless insurers are sufficiently well capitalised. A further complication to understanding this

interaction will be the inclusion of transitional measures in results and the phasing out of these over time.

These measures are not necessarily well understood by the investor community, in particular their impact on own funds and solvency capital requirements over time. Pages 20-22 give an overview of the phasing for different transitional measures and discuss implications for the transparency of results reporting.

Insurers preparing for managing future volatility

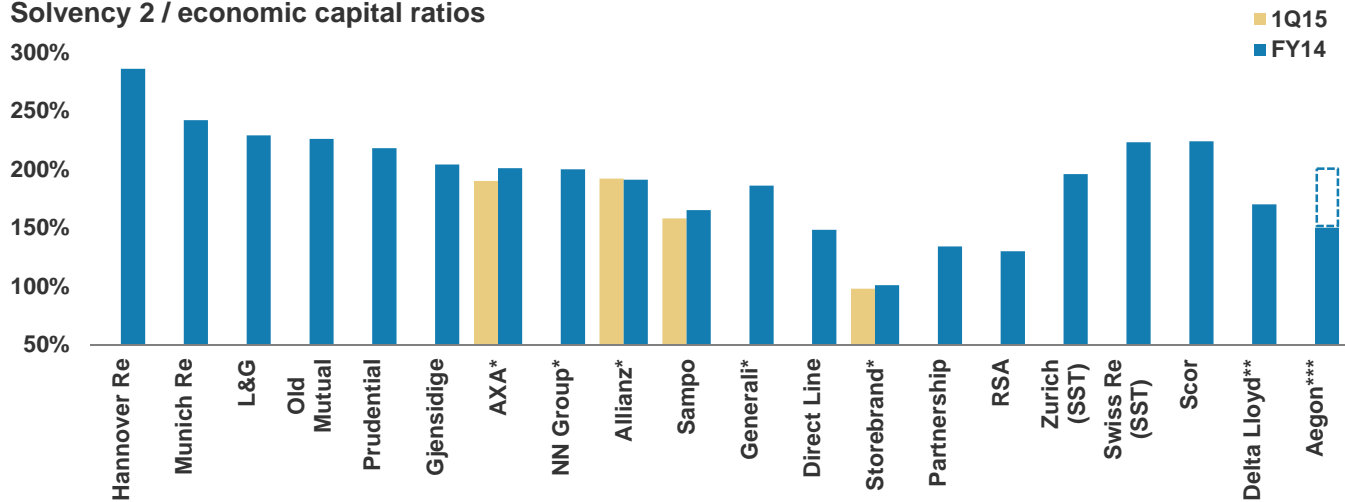
Once Solvency II comes into effect from 1 January 2016 insurers will be required to hold sufficient available ‘own funds’ in order to cover their solvency capital requirement (SCR).

Further to this, to reduce the risk of own funds falling below SCR simply as a result of volatility in the balance sheet, insurers will hold an additional capital buffer. Minimum acceptable solvency ratios (own funds as a percentage of SCR) of 140% upwards are typical at group level (although they may run thinner buffers at a local entity level). However, we note that few insurers have as yet publically confirmed to the market what they target or what their minimum acceptable ratio would be. Exhibit 26 provides an overview of publically reported Solvency II or Economic Capital ratios (where Solvency II is not currently available). Once Solvency II goes live we expect more transparency around solvency targets, including an explanation as to the volatility that implied buffers relate to, for example: "a target ratio of X% which provides sufficient capital buffer to prevent breaching the SCR in a combined 1-in-Y year stress".

Given increased capital requirements under Solvency II, insurers face the risk of an additional constraint on their use of cash generated to pay dividends. The need to maintain sufficient capital buffers to manage volatility in Solvency II

Exhibit 26

**Summary of publicly stated capital ratios and targets
Solvency 2 / economic capital ratios**



Source: Company Data, Morgan Stanley Research / Oliver Wyman *Company states that these ratios are Solvency II ratios. All others are economic ratios. **This ratio is estimated, based on being near the top end of the 140-180% target range, ***Aegon gives a range of 150-200% for its Solvency II ratio

own funds could potentially require cash to be held back to build capital rather than be paid out to shareholders.

However, in practice this constraint is something that insurers have already been considering during their preparation for Solvency II, as evidenced by the solvency ratios shown in Exhibit 26. Efforts to ensure appropriate capitalisation come January 2016 in some cases may have already prompted insurers to hold back more retained earnings in order to build capital buffers. However, the constraint imposed by Solvency II will now be visible to the market for all insurers and as such will need to be understood and considered by investors. In particular, the increased volatility in Solvency II capital surplus relative to Solvency I will need to be taken into account.

Only a small number of insurers have consistently reported Solvency II results in recent years, with most choosing instead to report their own Economic Capital measure of solvency or to continue reporting on the outgoing Solvency I basis. This has been understandable until lately given the fluidity of the Solvency II design process – particularly in relation to some very material elements such as the calibration of the discount rate and treatment of subsidiary entities domiciled outside of the European Economic Area (EEA).

Transitional measures and capital drag

The idea of transitional measures is to phase in the full impact of Solvency II relative to Solvency I over a number of years, thereby acting as a volatility dampener but with declining impact over time. However it is not correct to think of the unwind of the transitional measures as being a simple 1/16th (in the case of technical provisions module) or 1/7th (in the case of equity risk module) unwind of today's starting transitional measures. There are more elements at play, which means that the unwind is not linear.

Four elements combine to determine how the transitional benefit will amortise over time:

- 1) *The transitional measure's linear roll off rate, e.g. 1/16th for technical provisions measure.*
- 2) *Run-off of the book. As the size of the book for which the transitional measure applies reduces, so does the size of the transitional benefit.*

- 3) *Changes in the difference between Solvency I and Solvency II technical provisions will be rebased each year for the technical provisions measure. Changes in the risk-free interest rate will impact the value of Solvency II technical provisions and therefore the benefit.*
- 4) *Changes in the business, including asset holdings and their associated risk profiles, could impact the benefit received from transitional measures relating to the SCR.*

The reason that all these factors will have an impact on the transitional capital add-on is because the transitional capital will be recalculated from the then gap between the Solvency I and Solvency II technical provisions measures each year in the future rather than being fixed as a dollar value in 2016 and then run-off.

The box below illustrates how elements 1, 2 and 3 above could interact to effect the unwind of benefit received from the technical provisions transitional measure.

Transitional measures

Temporary transitional measures can be applied for by insurers in their Solvency II application allowing a slower transition from a Solvency I to Solvency II approach as outlined in Exhibit 27 below. Note that the matching adjustment and the volatility adjustment are not included as we view these two as permanent measures rather than temporary transitional measures.

Exhibit 27

Overview of Solvency II transitional measures

Transitional measure	Description	Transition period
Technical provisions <i>(can be used instead of risk-free interest rate measure – both cannot be used)</i>	Transition from current technical provisions to Solvency II technical provisions. A portion of the difference between the two is deducted from Solvency II technical provisions, reducing linearly over time.	Linear transition over 16 years 2032: Measure removed
Risk-free interest rate <i>(can be used instead of technical provisions measure – both cannot be used)</i>	Transition from current discount rate to the Solvency II discount rate. Applied as an adjustment to the relevant risk-free interest rate term structure used to discount admissible insurance obligations. The adjustment is calculated as a portion of the difference between the two rates, reducing linearly over time.	Linear transition over 16 years 2032: Measure removed
Equity risk module	For certain equity exposures purchased on or before 1 January 2016, standard formula parameters are calculated as the weighted averages of parameters with and without the duration based approach, assigning an initial weight of 0% to the latter and increasing the weight to 100% over time.	Linear transition over 7 years 2023: Measure removed
Exposure to governments within EU	Reduction in the parameters used to calculate spread and concentration risk sub-modules for standard formula entity exposures to EU governments denominated in non-domestic currency. Parameters increase in steps until no reduction will apply.	Stepped transition over 4 years 2016-17: 100% exempt 2018: 80% exempt 2019: 50% exempt 2020: Measure removed

Source: EIOPA, Morgan Stanley Research / Oliver Wyman

Are amortising transitional measures a constraint on distributable cash?

The benefit received from transitional measures under Solvency II is not a cash item itself as we have outlined above. However, the Solvency II capital position and the risk appetite that governs buffer levels can be a constraint on whether cash can be distributed from subsidiaries to group or to shareholders as dividends.

Those insurers that decide to drive their risk appetite policy from capital levels with transitional capital included in the risk

appetite will naturally need to unwind the transitional capital year on year. For these insurers, the amortisation of transitional measures can become a constraint on cash distribution, if this were to directly result in solvency deviating from acceptable levels as defined in the insurer's risk appetite. As such, we expect disclosures relating to transitional measures to not only cover the magnitude of the impact, but also the likely amortisation schedule over time and key sensitivities to market changes.

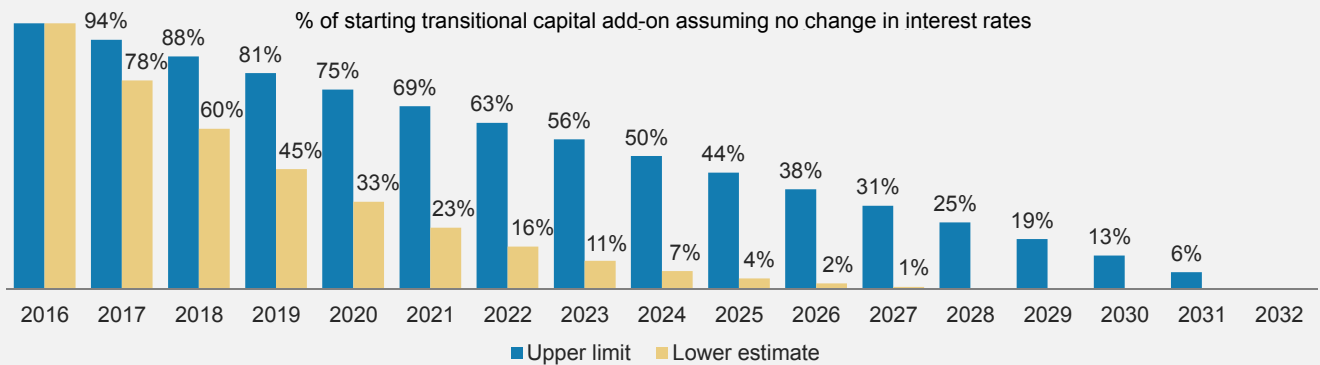
Illustrative run-off of the technical provisions transitional measure

A changing amortisation schedule for transitional capital

As discussed, a range of factors will influence how the benefit received from transitional measures will run-off over time. Exhibit 28 illustrates how this might vary if you assume no macroeconomic changes over this period and look at only the impact of how Solvency I and Solvency II technical provisions are expected to run off. The upper limit shown is the linear unwind of the transitional measure (i.e. decreasing by 1/16th each year). If Solvency I and Solvency II technical provisions run off at the same rate this is how the measure would amortise. The lower estimate shown is for a scenario where Solvency II technical provisions run-off significantly more quickly than Solvency I technical provisions, as is likely to be the case for some traditional guarantee businesses where the value of options and guarantees decrease over time. In this case the benefit reduces more quickly than the 1/16th unwind as the difference in liability values reduces over time. In reality the run-off profile seen will vary depending on the specifics of the portfolio in question – for businesses in some jurisdictions Solvency I technical provisions could run off more quickly than Solvency II.

Exhibit 28

Illustrative technical provisions transitional measure amortisation profiles: Our modelling suggests a significantly higher benefit from transitionals in the early years – however the exact profile is portfolio specific



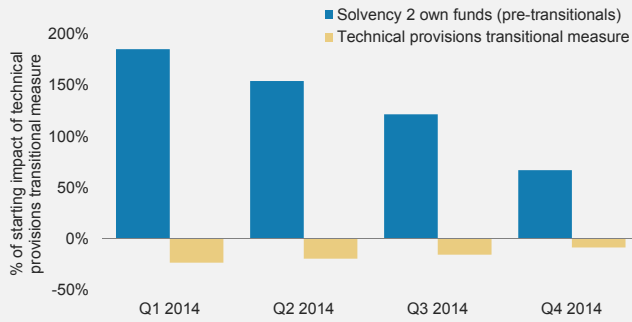
Source: Morgan Stanley Research / Oliver Wyman

Transitional capital may be a natural volatility dampener

Further to this, the impact of the technical provisions transitional measure will vary with changes in the risk free interest rate used to value Solvency II liabilities. With interest rates currently at low levels, increases in rates will in most cases result in lower Solvency II technical provisions for traditional guarantee products, therefore impacting the size of the transitional measure. Exhibit 29 illustrates the impact of EUR interest rates increasing to the levels seen during 2014. While this will of course lower the benefit received from the transitional measure, this is more than compensated for by an increase in Solvency II own funds as a result of lower technical provisions.

Exhibit 29

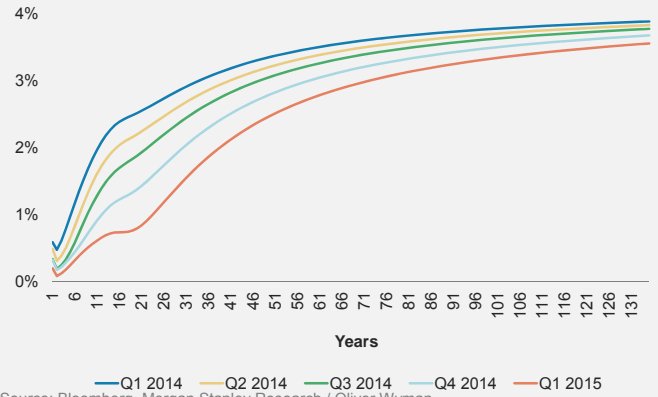
Size of the transitional measures will depend on prevailing yields



Source: Morgan Stanley Research / Oliver Wyman

Exhibit 30

EUR risk free interest rates used in the calculation



Source: Bloomberg, Morgan Stanley Research / Oliver Wyman

Managing capital in a more volatile solvency regime

There are various actions that insurers can take either to improve their solvency position or to help manage volatility in their Solvency II own funds. Taking action to manage this volatility will be important to give investors comfort that dividend momentum can be maintained. Limiting the likelihood that cash will need to be held back to support solvency either at a group level or local level (which would constrain remittance to Group) means that dividends will not be constrained.

We believe that insurers will invest significant effort and resources in improving their volatility management as Solvency II implements. Indeed we are aware that a number of insurers now have some initial actions in place that will help release Solvency II capital and also in some cases stabilise the balance sheet. Insurers developing stronger capital volatility management capabilities will, in our view, do so through two main areas:

1. actions and restructuring that will reduce the underlying volatility of the solvency surplus to reduce the problem itself; and
2. since actions can only reduce volatility to some extent, we expect a further upgrade of the risk appetite and capital management capabilities at insurers to help them more actively manage capital buffers and better understand how and when this may constrain cash.

Reducing the underlying volatility

While many insurers have focussed on model building and calibration in the run-up to Solvency II, most are now shifting their focus to improvements that can be made through changes in business model and the balance sheet. In most cases significant optimisation areas will still exist to further prepare the business for Solvency II.

Exhibit 31

Levers to improve solvency levels and manage volatility – in Solvency II own funds

Lever	Description	Potential solvency impacts	Typical strength of lever for volatility management
Solvency II calculation approach	Use of (partial) internal models for relevant parts of the business, and potential use of matching adjustment, volatility adjustment or transitional measures where appropriate	Reduces SCR and increases own funds	Medium
	Optimising base balance sheet calculation, e.g. <ul style="list-style-type: none"> • Removing prudence from best estimate assumptions • Ensuring deferred tax assets and liabilities are treated appropriately • Reviewing risk margin calculation 	Increases own funds	Weak
	Ensuring stresses are appropriately calibrated and assets exposures are shocked correctly, i.e. not too conservatively	Reduces SCR	Weak
Management actions	Embedding management actions in models can improve solvency but can also reduce management discretion, e.g. <ul style="list-style-type: none"> • Bonus setting in BEL calculation • Contingent actions under stress 	Reduces SCR and increases own funds	Strong
ALM and investment strategy	Investment portfolio optimisation for Solvency II, e.g. <ul style="list-style-type: none"> • Optimised strategic asset allocation • Hedging strategies to reduce market risk SCR • Reducing asset management fees 	Reduces SCR	Strong
Balance sheet structure	Range of potential actions to improve solvency, e.g. <ul style="list-style-type: none"> • Changes to legal entity structure • Changes in capital structure • Contingent loan structures • Internal reinsurance / risk mixing • External reinsurance / risk transfer • Securitisation / carve-out / remutualisation 	Reduces SCR and increases own funds	Medium
Product optimisation under Solvency II	Capital efficient product design, including review and re-design of existing products where appropriate, e.g. <ul style="list-style-type: none"> • Restructure fees on in-force • Restructure guarantees on in-force / product mutation • Other liability segmentation 	Reduces SCR and increases own funds	Strong, but takes time to replace business

Source: Morgan Stanley Research / Oliver Wyman

There are a large number of levers that insurers could use to adjust the solvency position and manage volatility in own funds. In practice, the strongest levers do vary by insurer depending upon the specifics of their business and how they have implemented Solvency II. Exhibit 31 provides a high-level overview of some of the levers available to insurers.

To give more colour on how these work, here we give more detail on just two of the levers that insurers can use:

Example 1 – Hedging (permanent or temporary) on the unit-linked book

The unit-linked book under Solvency II has significant market risk SCR due to the fee profit stream being linked to the value of the units. Partial hedging of the fee flows, either via underfunding of units (where allowed) or use of futures in key market indices, reduces the market risk SCR for these products. Continuous hedging of the fee stream provides capital relief, albeit at a cost to the P&L. A more dynamic 'when needed' hedging process can be part of a capital volatility reduction process that the CFO has access to as part of a wider toolkit. This approach can help to stabilise the own funds, although of itself it does not turn future profits into cash today – for that, other liquidity actions would be required.

Example 2 – Legal entity changes to address capital fungibility

Given the requirement for insurance groups to cover the SCR at a legal entity level, there arise under Solvency II various instances where capital may be "trapped" within subsidiary entities (i.e. it is not fungible) and as such this may exacerbate issues with balance sheet volatility at a group level. Measures to make capital more fungible are varied, in some cases involving changes in legal entity structures or the transfer of businesses within a group.

In other cases the use of "risk mixer" reinsurance entities can enable more efficient passing around of the risk within the group to capture more of the diversification potential and utilise capital more efficiently. Such measures often have a good business case for use even though they do add cost in terms of complexity and potential tax.

Risk appetite – managing to the volatility

The need for a clearer risk appetite becomes evident when one considers the increased volatility and complexity of the Solvency II balance sheet. Traditionally risk appetite measures around capital have focused on buffer levels of

capital or excess capital ratios. We believe that this is still appropriate and these measures will continue to be the focus. However, given the more volatile nature of the balance sheet, we expect that investors will demand a clearer understanding of the risk appetite, actions to be taken to remain within appetite, and how or when it will constrain cash.

Whether an insurer would need to target 140% or 170% capital buffer levels depends upon their risk profile, the volatility of their balance sheet and their appetite for potential capital raising (or dividend retention).

Insurers' risk appetite upgrade will also include more clarity on how the capital buffers are managed in the local entities within a group of companies. Some insurers are targeting lower buffers in local entities preferring to keep more excess capital at the group level. This helps ensure that capital is fungible and available to be used where needed, however holding a lower capital buffer at a local entity level (for example 120%) could mean that cash remittance from that local entity will be constrained more regularly, potentially as much as every 2-3 years. This is the trade-off that insurers need to manage.

We expect that best practice players will be transparent not only in terms of target levels but also the solvency "corridor" around this and steps then will be taken progressively as actual solvency levels move outside of this preferred range and towards a hard floor or limit. Consideration as to how target levels should vary through the cycle and capital built up again following a shock will be another differentiating factor between insurers.

Linking risk appetite to dividend policy

We expect insurers to become more transparent about when the capital risk appetite may constrain cash remittances to group or dividends to shareholders. Today, dividend policies may contain multiple elements, with most articulating at least a target pay-out or dividend cover ratio relative to earnings or cash. The biggest change in our view, is that investors will want to see how and when the more volatile capital regime will act as a limiting factor on the dividend policy. Those insurers with larger buffers or less volatile balance sheets will constrain the dividends less often.

Exhibit 32 outlines some of the different elements of European insurer dividend policies that have been publically disclosed. It may be that some of the high pay-out ratio dividend policies prove to be constrained in the short term by a need to embed a stronger risk appetite for capital. In particular, in the situation where the capital level falls

Exhibit 32

European Insurers: Examples of dividend policies

Policy element	Examples
Target relative to earnings or cash	<ul style="list-style-type: none"> 40-50% pay-out ratio as a % of adjusted earnings, excluding restructuring costs and non-cash amortisation (AXA) 50% pay-out ratio as a % of net income attributable to shareholders (Allianz) Returning two thirds of net cash to shareholders via dividends (L&G) Targeting a dividend cover in the range of between 2.0 and 2.25 times AOP earnings (Old Mutual) 35-40% pay-out ratio guidance for ordinary dividend (Hannover Re) 45% pay-out ratio for ordinary dividend (Admiral) 35% minimum dividend pay-out ratio (Scor) 20-40% pay-out range target (Swiss life) >70% pay-out (Gjensidige)
Target relative to past dividends	<ul style="list-style-type: none"> Dividend no less than previous year's level (Allianz) "Stable to rising" ordinary dividend, with buybacks to right-size capital (Munich Re) Implicit ratchet under all UK style progressive dividend policies
Management discretion	<ul style="list-style-type: none"> Dividend policy consistent with strategy, having regard to overall capital requirements, liquidity and profitability (Old Mutual)
Solvency II constraint	<ul style="list-style-type: none"> Entire dividend policy subject to sustainable Solvency II ratio >160% (Allianz) Pay-out target subject to Solvency II surplus being no lower than Solvency I (L&G)

Source: Morgan Stanley Research / Oliver Wyman

significantly below the target, it may be appropriate for the dividend policy to retain cash to address this shortfall

IFRS 4 phase 2 will become a further hurdle.

IFRS 4 phase 2 promises to bring the new IFRS regime more into line (although not exactly) with this new Solvency II calculation methodology, but this is still some time off.

It is possible that the Final Standard could be published at the end of 2015 – but this could well slip into 2016. Given the phase-in period, it is likely that implementation will not occur until 2018 or 2019.

Allianz capital management policy example

Allianz is an example of a European insurer that has been clear to the market about its capital management policy – the group is one of 5 European primary insurers that have been designated as Globally Systemically Important Insurers (or G-SIIs).

Exhibit 33 summarises our understanding of the group's policy. Under Solvency II, Allianz must maintain a minimum SCR ratio of 100%, however, given its G-SII status an additional buffer is likely to be required above this. Unfortunately, the capital consequences of the G-SII designation remain unclear ahead of the implementation in 2019.

However, we believe it is reasonable to assume that the Higher Loss Absorbency (HLA) requirements will be equivalent to an additional 25ppts on the Solvency II ratio. In crude terms this would be roughly equivalent to a Standard & Poor's style 'A' requirement versus the base 'BBB' (100%) calibration of Solvency II.

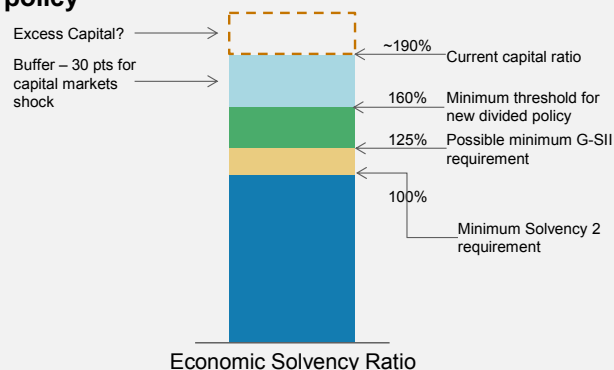
However, in order to comfortably run the business and absorb the inherent volatility in the business (which will become clearer under Solvency II) Allianz will choose to hold additional buffers over and above this minimum level of (say) 125%.

Allianz's recently established new dividend policy (to pay 50% of net income as a dividend, plus any unused M&A budget) applies as long as the group's economic solvency ratio is sustainably in excess of 160%. Separately, management has spoken of a reasonable "hit" to solvency – i.e. a combination of equity markets falling, credit spreads widening and yields falling as being around 30ppts of solvency.

Given this, our interpretation is that Allianz is in effect likely to conservatively maintain a "double buffer" over and above its G-SII requirements – i.e. from its current (1Q15) solvency ratio of 191% Allianz could absorb a 30ppts hit before considering whether to adjust the dividend (although we would stress the "sustainable" nature of the 160% requirement) and a further 35ppts hit before coming up against the potential G-SII level of 125%.

Exhibit 33

Our interpretation of Allianz's capital management policy



Source: Company Data, Morgan Stanley Research / Oliver Wyman

Although there is still ongoing debate about the final shape of the new rules, it is expected that IFRS accounting for insurance contracts will show significantly more volatility than is currently the case. It is also possible that the new regime could create some challenges in terms of distributable earnings in some territories.

So, while the fundamentals of cash recognition on an accounting basis aren't expected to change drastically in the near term, insurers' dividend prospects face a degree of uncertainty. Changes on the horizon, in particular Solvency II, may act as constraints to the way in which cash can be released and as such to continued dividend improvements.

A new lens for disclosing cashflow post Solvency II

As discussed previously, we think investor focus is on how much cash insurers are able to generate at the holding company after meeting corporate and debt interest costs.

It is this unencumbered cash flow at the holding company that is able to drive growth in the group dividend.

We see three principal constraints to generating cash and paying shareholder dividends:

- 1) **IFRS distributable earnings:** To pay an external dividend, an insurer needs to be able to ensure that it has sufficient IFRS distributable earnings. This can be a restriction at both the subsidiary and the group level.
- 2) **Solvency capital:** An insurer must have a sufficient solvency capital buffer, both at a local subsidiary level and at a group level, in order to manage volatility in own funds and so be able to extract and distribute a dividend. Amortisation of transitional capital add-ons may act as a further drag on the capital.
- 3) **Liquidity:** There must be sufficient liquid resources to enable the payment of the dividend distribution. In addition to liquidity at the ultimate holding company, there must be sufficient liquidity in intermediate holding companies and the regulated insurance entity. The constraints on liquidity under Solvency II will be that a significant portion of the own funds may be in the form of future profits, which is not a liquid form of capital.

Assuming an insurer is able to meet these three criteria it will be able to pay a dividend.

The main change in 2016 will be that Solvency II creates a more volatile backdrop against which to achieve this.

Solvency II volatility has potential to reduce remittance ratio

We see two significant changes on the horizon in terms of insurers' ability to extract cash in order to pay dividends.

Firstly, we have the looming introduction of Solvency II, which goes live on 1 January 2016. Slightly further into the future we have the adoption of IFRS 4 Phase 2 (which is likely to be adopted in 2018-19).

As we have outlined in this paper, we believe that Solvency II will introduce significantly more volatility into insurers' capital ratios and therefore complicate the generation of cash in order to support dividend payments.

The adoption of the transitional measures available under Solvency II is also likely to create issues as the amortisation of the transitional capital over the permitted 16 years will generate a headwind to free cash generation. Furthermore, as we explored earlier in the paper (see page 21) the annual recalculation of the transitional capital benefit introduces a further element of uncertainty.

We are less concerned about IFRS 4 Phase 2 given the medium-term nature of the implementation; however, it could potentially change the shape of distributable earnings (depending on how it interacts with local company law) and may increase the volatility of 'headline' cash measures.

A challenge to the dividend case, but can be managed

The additional volatility of capital surplus and the greater potential volatility of the remittance ratio could restrict insurers' ability to deliver dividend payout ratios unless carefully managed.

While much of the focus to date on Solvency II has been on assessing whether insurers are appropriately capitalised under the new regime, we believe the impact on cash generation is an important one and has had less scrutiny to date.

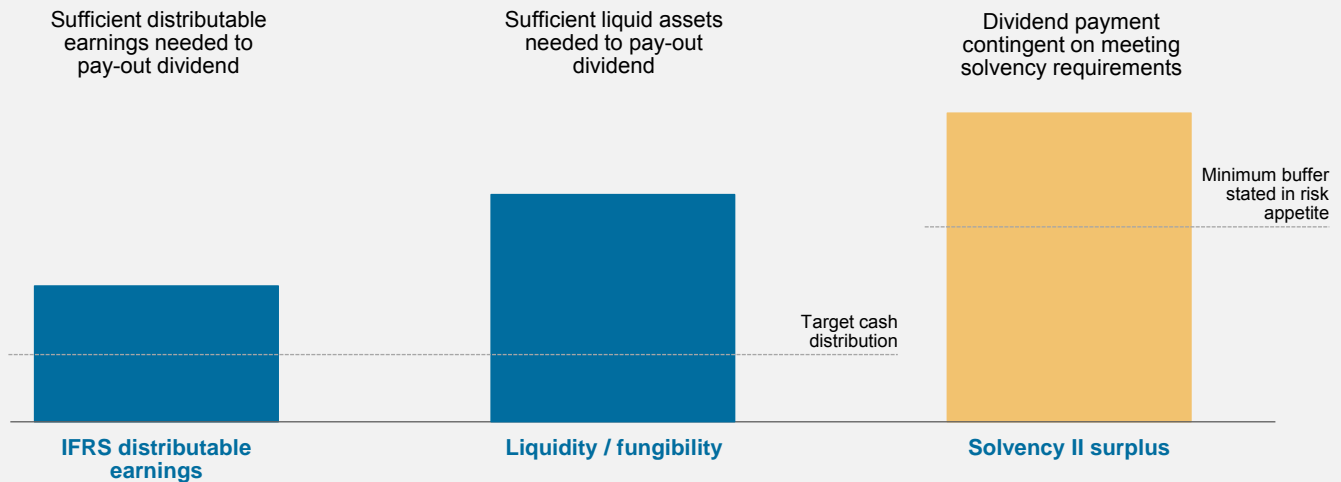
Disclosure transparency

We believe this all calls for more transparency and clear communication towards investors if insurers are to give sufficient comfort around their ability to maintain dividend momentum. This includes further transparency across a number of areas:

The three lenses for looking at cashflow disclosures

Exhibit 34

Future disclosures will need to be clear on potential constraints



Investor questions

- Sustainability of earnings generation?
- Impact of shorter payback products?
- Key risks to earnings?

- Sustainability of remittance of cash up to Group?
- Actions available to accelerate release of VIF?

- How does risk appetite link to dividend policy?
- Sensitivity to shock scenarios?
- Actions available to improve solvency without holding back cash or raising equity?

Source: Morgan Stanley Research / Oliver Wyman

- **Risk appetite and how this links to dividend policy.** What is the insurer's target solvency range, and what scenarios would cause risk appetite breaches? What is the likely impact on cash generation and dividend payout in these circumstances?
- **Solvency management actions yet to be taken.** Going beyond stating current solvency levels, best practice disclosures will give greater clarity on the range of actions that an insurer would be willing to take (but have yet to) in order to manage solvency and as such prevent the need to raise capital or hold back cash to fill any shortfalls.
- **Transparency around Solvency II results.** In particular not only on the size of the impact of transitional measures but how these are expected to change over time. Also, sensitivity to potential changes (such as to the Ultimate Forward Rate and credit spreads), would help to ease investor concern around the sustainability of current solvency levels and therefore dividend distributions.

A new lens for looking at cashflow disclosure?

Different insurers and even different entities within an insurance group may be constrained differently on the three measures of IFRS distributable earnings, solvency position, and liquidity to upstream cash.

The goal of the increased transparency should be to help investors understand which of the three factors constrains cash upstreaming, when, and how that changes in key circumstances. The risk appetite, dividend policies and capital management all play a part in helping insurers manage cash generation and dividend payment in a sustainable way.

Exhibit 34 illustrates that the available cash headroom may vary by the three principle constraints, and outlines some of the key questions we expect that investors will be asking insurers to clarify in future disclosures.

Attributes of winners and losers

While it is hard to generalize in terms of the impact of this enhanced capital volatility on cash and dividend policies, we think it is possible to identify the attributes of winners and losers.

Attributes of winners:

- **Well capitalised:** those insurers with comfortable buffers are in a better position to manage the additional volatility that arises under the new regime.
- **Established liquidity buffers at subsidiary and holding level:** we believe those players that do not have to build additional liquidity resources are well placed.
- **Good quality capital and risk management:** in our view, insurers will need to plan dividend payments over a longer-term period than has historically been the case – given the greater uncertainty over the ability to extract capital in any given period.
- **Diversification by country, line of business and risk type:** the greater the degree of diversification, the less likely that it becomes problematic to meet the group dividend in any one period.
- **Business mix – low dependence on traditional business.** We believe that having a significant proportion of cash flow from capital-light units such as asset management is likely to be a distinct advantage.
- **Scale:** we think the ability to invest in a high capability risk management function is likely to become more of a competitive advantage

More challenged players:

- **Concentration in a small number of product areas – especially capital intensive traditional business:** undue reliance on extracting cash from a limited number of legal entities is a risk – especially where the focus is on traditional business
- **Those where current dividend policy is predicated on a high payout ratio and / or high remittance ratio from subsidiaries.** in these cases the shift of regime could increase the risk to the dividend or constrain the ability to grow it at a competitive rate
- **High degree of reliance on transitional capital:** an insurer which is heavily reliant on transitional relief may find the amortization of the transitionals in future periods a constraint to free cash flow and a constraint to dividend growth

Appendix I: Various required capital definitions

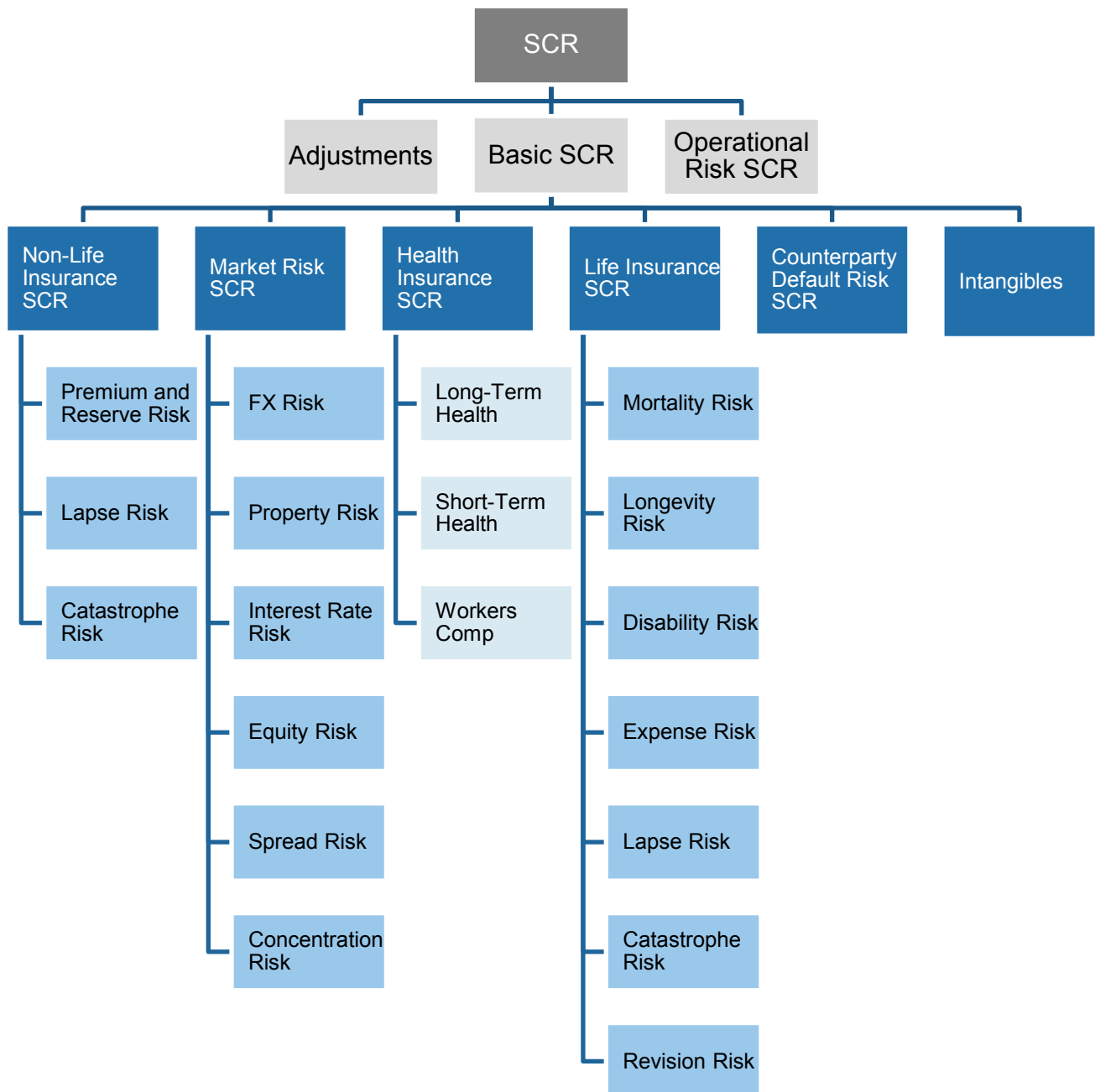
Ageas	Required capital is 100% of Solvency 1
Allianz	<p>Req capital is the MAX of local min statutory solvency capital/internal risk capital model/market standards.</p> <p>Internal risk capital is the max loss of MCEV that shareholder's may experience under adverse conditions over a 1 yr time horizon with a 99.5% CI. The Group's capitalization level is 130% and the CI of 99.5% represent the Group's target of rating AA.</p>
Aviva	<p>Required capital is the market value of assets attributed to the covered business over and above that required to back liabilities for covered business, for which distribution to shareholders is restricted. Required capital is reported net of implicit items permitted on a local regulatory basis to cover minimum solvency margins which are assessed at a local entity level. The level of required capital for each business unit is generally set equal to the highest of:</p> <ul style="list-style-type: none"> • The level of capital at which the local regulator is empowered to take action; • The capital requirement of the business unit under the Group's economic capital requirements; and • The target capital level of the business unit; <p>where "highest of" is assessed as the basis yielding the lowest level of free assets.</p>
AXA	<p>>1.5x the min coverage ratio in the local solvency framework.</p> <p>'Hard capital' (capital NOT related to VIF, unrealized gains, sub debt, reinsurance etc) must be >0.75x the local solvency min coverage ratio.</p>
Delta Lloyd	Required capital for EV is based on the Internal Model Economic Capital (EC), with a 140% target in line with Group Risk Appetite Statement (GRAS), with a condition that it is at least as large as the current regulatory Solvency I capital.
Generali	Req capital is the greater of the local regulatory minimum capital requirement and the risk capital arising from the Group's Economic Balance Sheet methodology.
Old Mutual	Minimum capital requirement: Required capital equal to the minimum statutory requirement.
Storebrand	<p>Higher of Norwegian regulatory capital and internal capital requirements. Internal capital requirements are equal to 150% of the EU minimum solvency requirements.</p> <p>Required capital at the group level reflects the actual group solvency requirements (150% of the EU min) and not the sum of the individual requirements for SBL (Norway) and SPP(Sweden).</p> <p>The group requirement is assumed to be released in line with the run off of the business in-force.</p>

<p>Legal & General</p>	<p>For UK with-profits business, the required capital is covered by the surplus within the with-profits part of the fund and no effect is attributed to shareholders except for the burn-through cost, which is described later. This treatment is consistent with the Principles and Practices of Financial Management for this part of the fund.</p> <p>For UK non profit business, the required capital will be maintained at no less than the level of the EU minimum solvency requirement. This level, together with the margins for adverse deviation in the regulatory reserves, is, in aggregate, in excess of internal capital targets assessed in conjunction with the Individual Capital Assessment (ICA) and the with-profits support account.</p> <p>For LGA, the Company Action Level (CAL) of capital has been treated as required capital for modelling purposes. The CAL is the regulatory capital level at which the company would have to take prescribed action, such as submission of plans to the State insurance regulator, but would be able to continue operating on the existing basis. The CAL is currently twice the level of capital at which the regulator is permitted to take control of the business.</p>
<p>Prudential</p>	<p>US: The overall credit in 2013 of £242 million included a charge of £(13) million for the effect of a change in required capital on the EEV basis from 235% to 250% of risk-based capital.</p> <p>(v) Level of required capital In adopting the EEV Principles, Prudential has based required capital on its internal targets subject to it being at least the local statutory minimum requirements. For with-profits business written in a segregated life fund, as is the case in Asia and the UK, the capital available in the fund is sufficient to meet the required capital requirements. For shareholder-backed business the following capital requirements apply:</p> <ul style="list-style-type: none"> — Asia operations: the level of required capital has been set to an amount at least equal to the higher of local statutory requirements and the internal target; — US operations: the level of required capital has been set at 250 per cent of the risk-based capital required by the National Association of Insurance Commissioners (NAIC) at the Company Action Level (CAL); and — UK insurance operations: the capital requirements are set to an amount at least equal to the higher of Pillar I and Pillar II requirements for shareholder-backed business of UK insurance operations as a whole.
<p>Standard Life</p>	<p>UK and Europe - no capital requirements in excess of statutory reserves or asset shares is valued in the EEV UK and Europe - 100% of EU min regulatory capital Canada - 160% of the MCCR Asia and EM - based on local statutory capital requirements</p>
<p>Swiss Life</p>	<p>100% of statutory solvency capital</p>
<p>Zurich</p>	<p>The required capital is the sum of the minimum amount of solvency capital required to satisfy local regulators and the additional capital that management considers appropriate to hold in addition to minimum solvency capital.</p>

Appendix II: Solvency Capital Requirement (SCR) Composition

Exhibit 35

SCR Composition



Source: April 2014 Technical Specification (Preparatory Phase), Morgan Stanley Research / Oliver Wyman

Appendix III: Glossary of terms

Term	Definition
BEL (Best Estimate Liabilities)	The economic value of the insurance obligations. They are calculated as the present value of the expected cashflows on these liabilities and include the present value of future profits and the time value of financial options and guarantees. The BEL is the largest element of the Solvency II Technical Provisions.
Embedded Value	A measure of the consolidated value of shareholders' interests in the covered business. It is calculated by adding the adjusted net asset value and the present value of future profits of a firm. The present value of future profits considers the potential profits that shareholders will receive in the future, while adjusted net asset value considers the funds belonging to shareholders that have been accumulated in the past
Free Surplus	The market value of assets allocated to, but not required to support, the in-force covered business at the valuation date, as defined in MCEV Principle 4. Formerly it was named 'excess capital'.
Investment in New Business	The total impact of new business on net worth in the year business is written. Includes the impact on free surplus plus the movement in required capital to write the new business
MCEV (Market Consistent Embedded Value)	A measure of the consolidated value of shareholders' interests in the covered business. It is defined as: <ul style="list-style-type: none"> – Net asset value (NAV) – Present value of future profits (PVFP) – Time value of options and guarantees (O&G) – Cost of residual non-hedgeable risk (CNHR) – Frictional cost of required capital (CReC)"
Net Worth	In embedded value, the adjusted net worth is defined as the market value of assets allocated to the covered business in excess of statutory policy reserves and other liabilities as at the valuation date. It is composed of the free surplus and the required capital.
New Business Strain	Impact of new business on free surplus in the year business is written: (negative) profit in the first year plus initial capital binding. Negative result in first year reflects the shareholder share in initial expenses.
Own Funds	Available capital under Solvency 2. Basic Own Funds are the excess of economic balance sheet assets over liabilities plus qualifying subordinated debt. Some off-balance-sheet finance arrangements may also qualify as capital. These are termed Ancillary Own Funds.
PVNBP	"Present value of new business premiums' is the present value of projected new regular premiums, discounted with risk-free rates, plus the total amount of single premiums received."
Required Capital	The market value of assets attributed to the covered business over and above that required to back liabilities for covered business whose distribution to shareholders is restricted.
Risk-Free (Interest) Rate	The theoretical rate of return of an investment with no risk of financial loss. One interpretation is that the risk-free rate represents the interest that an investor would expect from an absolutely risk-free investment over a given period of time.

Risk Margin	Risk margin reflects the risks in the business that are unhedgeable. It can be calculated using a few different methods, and in concept is equal to a 6% cost of capital on the unhedgeable required capital under Solvency II in the run-off of the book. Together with BEL the Risk Margin gives the Solvency II Technical Provisions
SCR (Solvency Required Capital)	The risk-based level of regulatory required capital under Solvency 2.
Solvency 1	Solvency I is the name given to changes to the EU's insurer solvency regime made in 2002. Member States were required to adopt their laws to comply with the 2002 Directive by 20 September 2003 and its measures were first applied to the supervision of accounts for financial years beginning on 1 January 2004.
Solvency 2	The Solvency II Directive is a new regulatory framework for the European insurance industry that adopts a more dynamic risk-based approach and implements a non-zero failure regime, i.e., there is a 0.5 percent probability of failure over one year. One of the main aims of Solvency II is to contribute to the objectives of the EU Financial Services Action Plan (FSAP) by encouraging a deeper single insurance services market that enables EU companies to operate with a single license throughout member countries.
Technical Provisions	"The amount that an insurer needs to hold in order to meet its expected future obligations on insurance contracts. Under Solvency II technical provisions are the economic value of the obligations and are calculated as the sum of the Best Estimate Liabilities and the Risk Margin."
Transitionals	<p>Transitional measures are designed to allow firms to introduce the effect of Solvency II on the liability side of the balance sheet gradually over a period of 16 years. The transitionals only apply to business sold before Solvency II comes into force. There are two main alternatives for transitional measures available – one on the risk-free interest rate and one on technical provisions.</p> <p>Firms that choose the technical provisions option will be able to introduce the risk margin gradually as the risk margin forms part of the technical provisions under Solvency II.</p>
UFR (Ultimate Forward Rate)	The estimate of the UFR is defined in a QIS5 paper. An extrapolation is needed past last available market data points. The UFR is determined for each currency using macro-economic methods, the most important factors being long term expected inflation and real interest rates. Although the UFR is subject to revision, it should be stable and only change when there are fundamental changes to long term expectations.
VIF (Value of In-Force)	Present value of future profits from in-force business (PVFP) minus the time value of financial options and guarantees (O&G) granted to policyholders, minus the cost of residual non-hedgeable risk (CNHR), minus the frictional cost of holding required capital (CReC).

Source: Morgan Stanley Research / Oliver Wyman, Allianz, Lloyds, KPMG, Sompo, Hymans Robertson

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Total	3,346		757		

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