Milliman Research Report

Prepared by:

Wen Yee Lee, FIAA, FIA, FSAS
Principal and Consulting Actuary, Singapore

Alex Bryant, FSAS, FIA
Consulting Actuary, Singapore

SEPTEMBER 2014

Milliman

Participating business in Asia

Where do we go from here?


Milliman

TABLE OF CONTENTS

1. GLOSSARY OF TERMS

90:10 gate	Restriction on the level of shareholder transfers from par business to maximum of 10% of surplus distributions in any year.
APE	Annual premium equivalent – a weighted premium income measure equal to 100% of annualised regular premiums +10% of single premiums.
Asset share	The estimated fair amount attributable to a policy, reflecting: the premiums paid; underlying investment return earned; expenses incurred; cost of insurance cover provided, etc.
Cash dividend	Discretionary cash bonus made to policyholder, usually annually, as part of a profit distribution mechanism.
Cost of bonus	For cash dividends and terminal bonuses this is the actual dividend/bonus amount. For regular bonuses it is the increase in the policy reserves resulting from the addition to the sum assured.
EBR	Equity backing ratio – the proportion of a fund's assets invested in equities (usually includes property and other riskier assets).
FSR	Fund solvency ratio – Singapore solvency measure, defined as the ratio of financial resources of fund over the total risk requirements of the fund.
GFC	The 2008 global financial crisis.
Limited pay endowment	An endowment with regular premiums paid for a period that is shorter than the full length of the contract.
MCL	Minimum condition liability. A prudent calculation of the guaranteed benefits only for participating policies used in Singapore solvency calculations.
Participating	A policy that participates in the fortunes of an insurance fund. Policyholders are entitled to a share of the profits from the business in the fund, which are distributed through bonuses and/or dividends.
PRE	Policyholders' reasonable expectations.
Regular bonus	Addition to basic sum assured, usually added annually, which cannot be taken away once it has been given, also referred to as reversionary bonus.
Reversionary bonus	See 'regular bonus'.
Rider	A provision of an insurance policy that is purchased separately from the basic policy that provides additional benefits at additional costs.
Smoothing	The process of holding back profits in good years to top-up bonuses in leaner years, but run to be neutral over the long term.
Sum assured	Minimum amount of life assurance payable on the assured event (typically death and, for endowment contracts, the maturity of the policy).
Terminal bonus	Additional benefit on a policy paid at the time of claim. As they only apply on claims, terminal bonus rates can be increased and decreased to reflect current conditions.
Traditional par	Non-unitised participating policy with profit distribution typically allocated through reversionary bonuses, terminal bonuses and cash payments.
ULIP	Unit linked investment product
Unitised with-profits	Participating policy where benefits are based on a unit account that grows with the addition of premiums and bonuses and falls with the deduction of charges and withdrawals.
Universal life	Non-participating insurance product where policyholder has an account value that insurer credits with interest and deducts charges for insurance cover provided.
With-profits	Alternative term for participating business, more commonly used in the UK.

2. INTRODUCTION

2.1 Participating (par) business represents a significant proportion of the new business being sold in Asian markets, but the current economic environment of low interest rates is testing the viability of existing product offerings. As well as the concerns over continued low interest rates, other potential threats to par business include tightening of prudential regulation (including the influence of Solvency II) and strengthened governance requirements and the risk of mis-selling.

2.2 The results of a 2013 Milliman survey of life insurance executives in the region highlighted that demand for par products from distributors and customers is still strong, but the companies themselves perceive the profitability of these products to be low.

2.3 Against this backdrop, we have carried out a review of par business in selected Asian markets (China, Hong Kong, India, and Singapore) to gain a better understanding of the issues facing providers in these markets. Where available, we make use of data from the public domain to identify the current trends that are defining the par business markets.

2.4 We have also provided a historical review of how par business (also called 'with-profits' business in the UK) evolved in the UK, with the purpose of highlighting some of the lessons that can be learned from this older market. We consider how par products there have changed over time, and whether similar product innovation might be appropriate in Asian markets too.

2.5 In particular we consider the concept of unitised with-profits (UWP), which, so far, has had limited use in Asia. We look at whether it can address some of the current issues identified with traditional par business, and how it compares to other product types from both the policyholder and shareholder perspectives. We base this analysis on a prototype pricing model, using Singapore as the example market and regulatory framework on which to base it in.

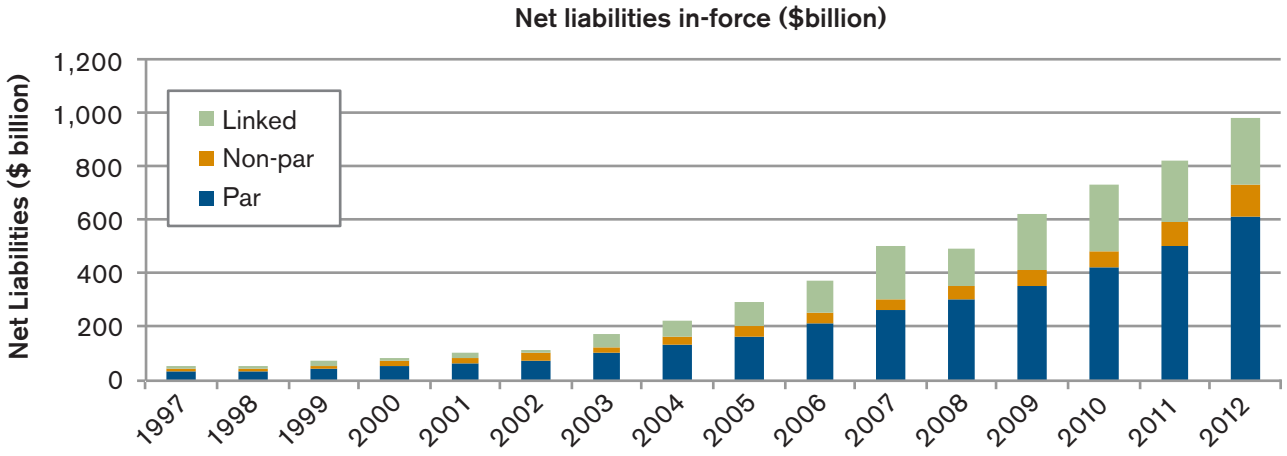
3. PARTICIPATING BUSINESS IN HONG KONG

Size and Evolution of the Market

In-force statistics

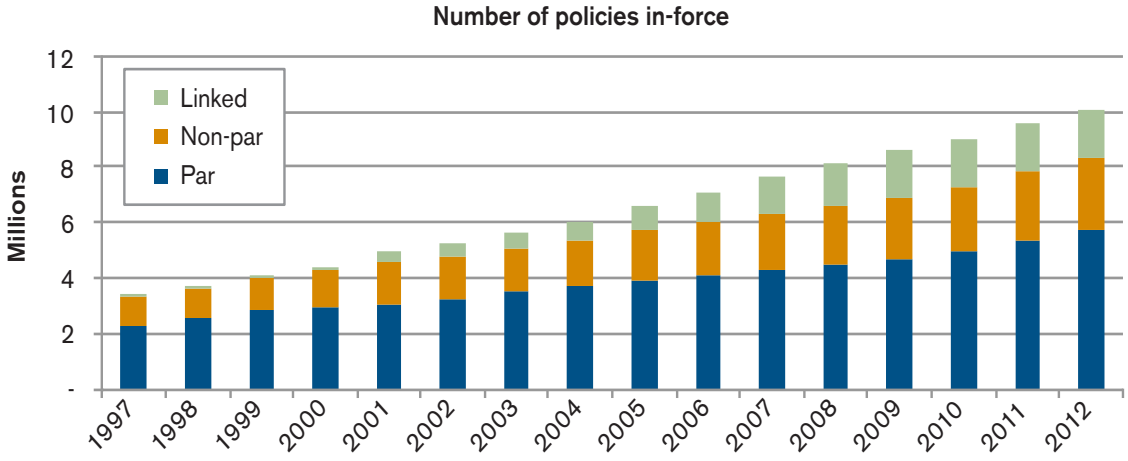
3.1 Par business has always represented a significant proportion of the life assurance business in Hong Kong. For example, in 2012 the total individual life net liabilities for par business amounted to 60% of the total liabilities over all classes of business, and the proportion has remained stable for many years as can be seen in Chart 3.1 and Chart 3.2.

CHART 3.1: NET LIABILITIES IN-FORCE (DOES NOT INCLUDE AIDS & OTHER ADDITIONAL RESERVES



Source: OCI insurance industry public statistics

CHART 3.2: NUMBER OF POLICIES IN-FORCE



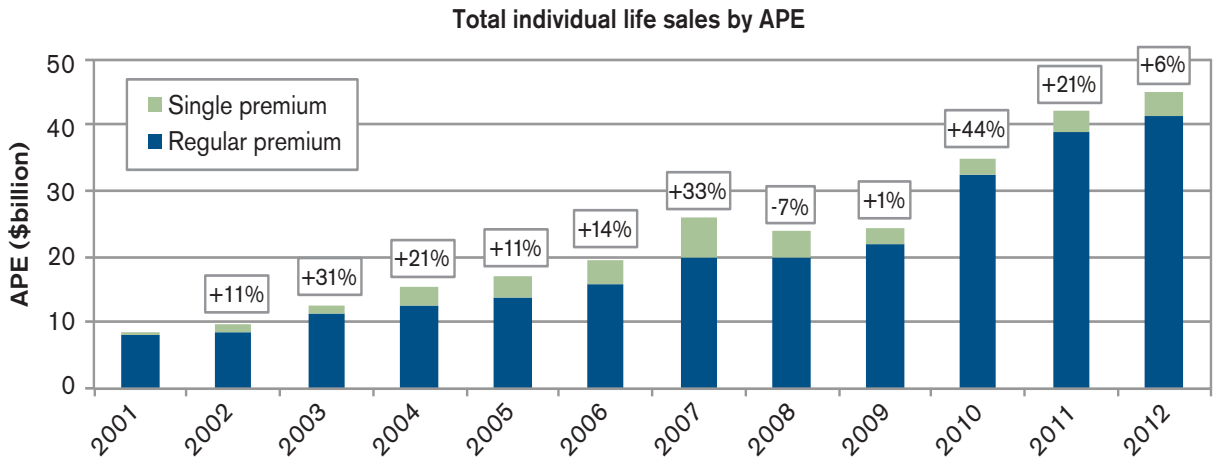
Source: OCI insurance industry public statistics

New business statistics

3.2 In terms of new business, 52% of the total unweighted new business premium was in respect of par business while the shares of non-participating (non-par) business and investment-linked business were 33% and 11%, respectively.

3.3 Chart 3.3 shows the evolution of sales for the total individual life business in Hong Kong, by annual premium equivalent (**APE**) (i.e., weighted premium income equal to 100% of annualised regular premiums + 10% of single premiums). Individual Life business has experienced sustained growth since 2001, except at the beginning of the Global Financial Crisis (**GFC**) when the total APE decreased by 7%.

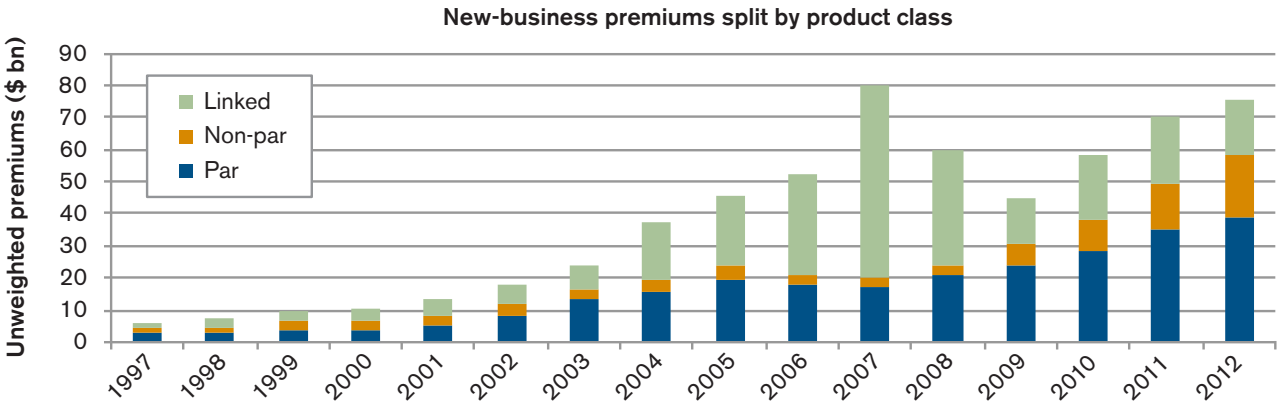
CHART 3.3: TOTAL INDIVIDUAL LIFE BUSINESS BY APE, FIGURES IN BOXES SHOW YEAR-ON-YEAR GROWTH OF TOTAL FIGURES



Source: OCI insurance industry public statistics

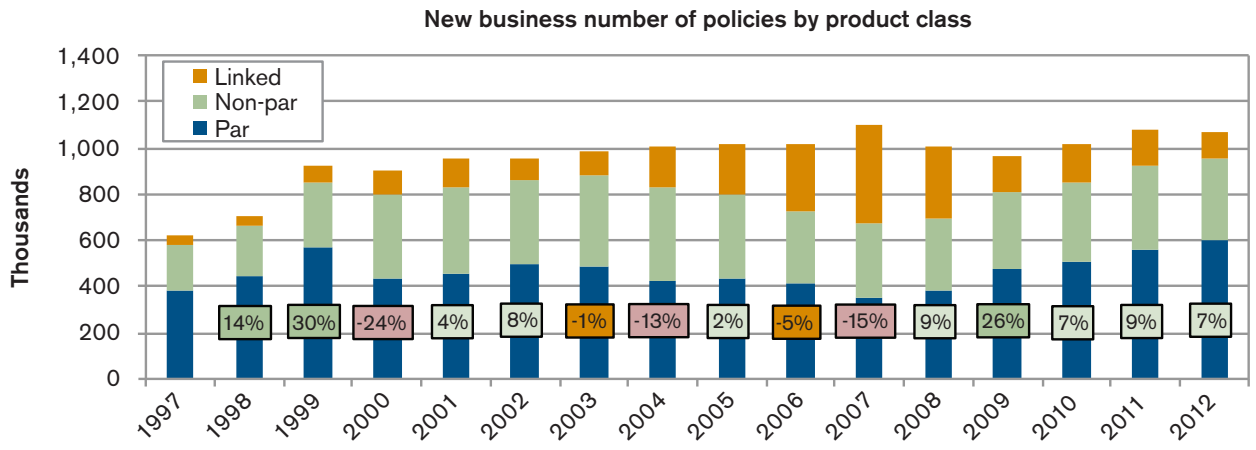
3.4 Chart 3.4 and Chart 3.5 show the split of new sales of individual life business by product category (par business, non-par business, and investment-linked business) in terms of unweighted premiums and the number of policies. From 2002 to 2007, the proportion of investment-linked new business grew strongly reaching 75% of the total unweighted premiums sold in 2007. This growth was mainly driven by sales of single premium investment-linked contracts. At the same time, sales of par products remained relatively stable (in monetary terms). Following the GFC, demand for investment-linked business reduced sharply and has not recovered. Conversely, par business has performed strongly and has experienced sustained growth since the GFC.

CHART 3.4: NEW BUSINESS UNWEIGHTED PREMIUM BY CATEGORY



Source: OCI insurance industry public statistics

CHART 3.5: NUMBER OF NEW-BUSINESS POLICIES BY CATEGORY (BOXES OF DIFFERENT COLOURS REPRESENT THE EVOLUTION RATE OF THE NUMBER OF POLICIES FOR THE PAR BUSINESS)



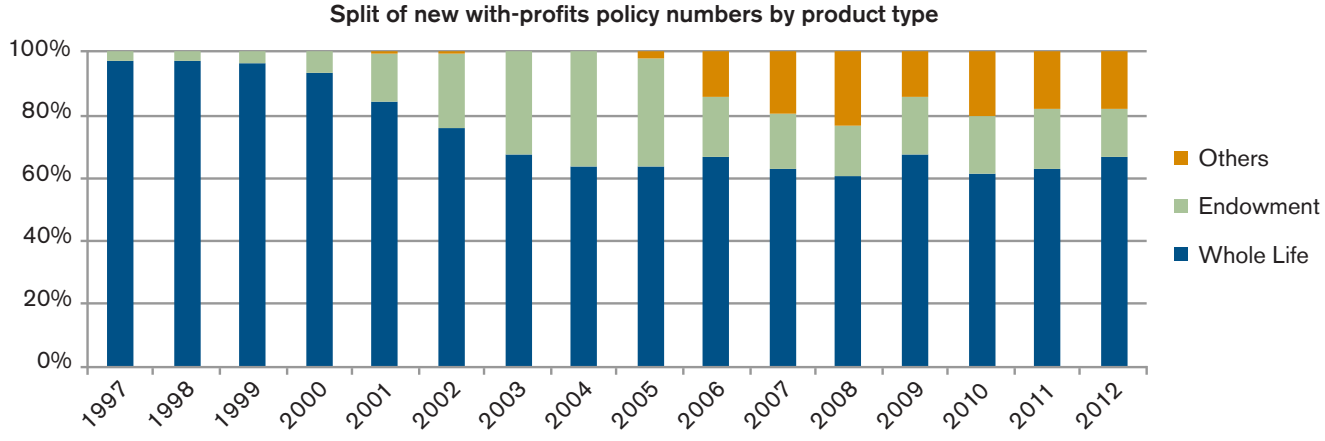
Source: OCI insurance industry public statistics

Types of Par Products

3.5 Chart 3.6 and Chart 3.7 show the split of the par business by the type of product. Whole of life was previously the only significant type of par product sold in Hong Kong, but it has gradually been challenged by limited pay and single premium endowments. However, it remains very significant and in 2012 whole life still represented 67% of the par policies (by number of policies).

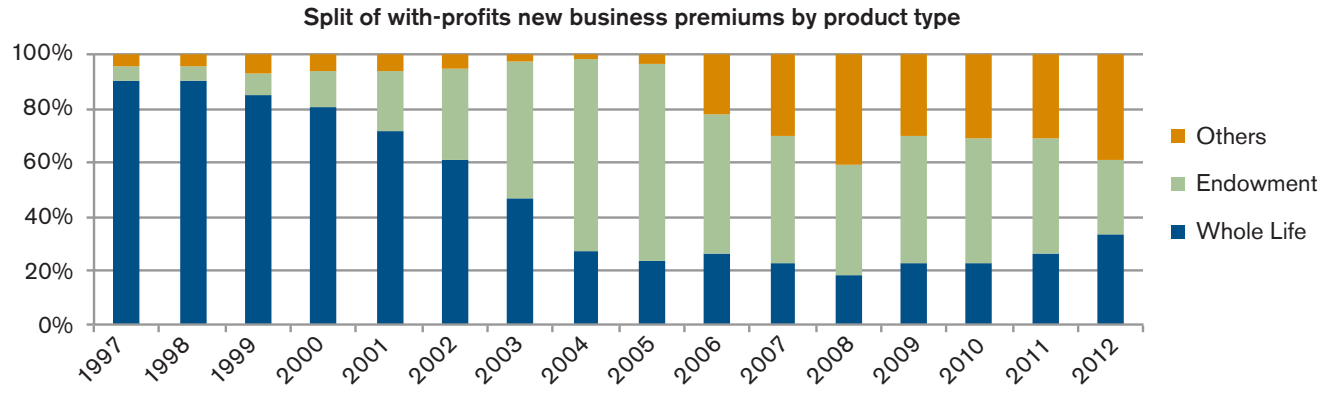
3.6 Since 2006 most companies have sold anticipated endowments (i.e., endowment assurances with a small periodic payment during part of the policy term, but before the payment of the final sum assured) and they have attached a higher proportion of riders (Others). The most popular types of riders in Hong Kong include personal accident and term. Critical illness and medical riders have also become increasingly important.

CHART 3.6: SPLIT OF THE PAR BUSINESS BY NUMBER OF POLICIES



Source: OCI insurance industry public statistics

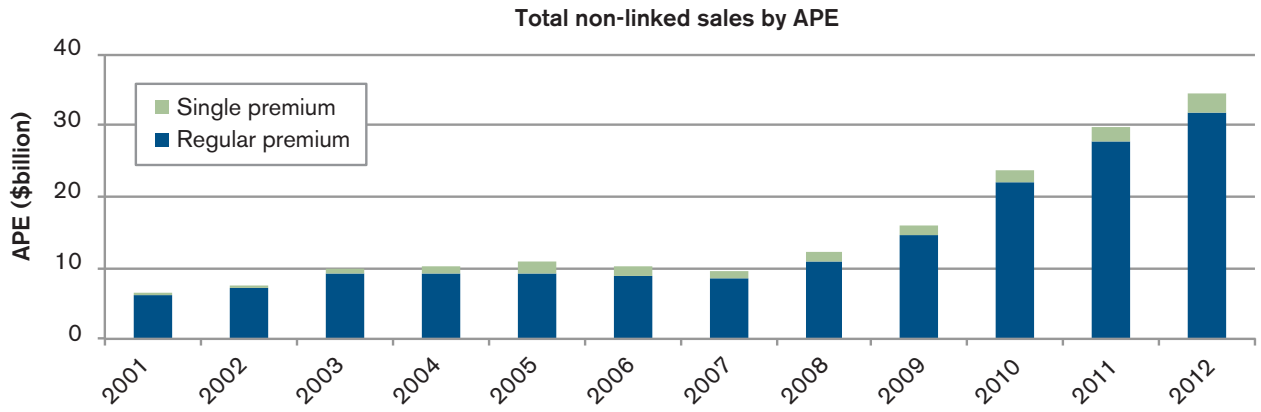
CHART 3.7: SPLIT OF THE PAR BUSINESS BY TYPE OF PRODUCTS



Source: OCI insurance industry public statistics

3.7 Single premium contracts represent a small proportion of the non-linked individual contracts in terms of APE as shown in Chart 3.8.

CHART 3.8: NEW BUSINESS VOLUMES FOR NON-LINKED BUSINESS BY APE (SPLIT OF NON-LINKED APE BETWEEN PAR AND NON-PAR BUSINESS IS NOT PUBLICALLY AVAILABLE)



Source: OCI insurance industry public statistics

3.8 Par policies in Hong Kong are generally of the North American style (i.e., cash dividends are payable to distribute the surplus accumulating). Discretionary benefits under the policies are in the form of annual dividends, although terminal dividends are also paid. Two major companies offer par products under the typical UK model (i.e., regular or reversionary bonuses are added to the guaranteed benefits each year and a final or terminal bonus may be payable in the event of a claim).

3.9 Dividends are typically paid out as cash, but the policyholder can choose (and many elect for this option) to leave the dividends on deposit with the granting insurance company. The deposited amounts are similar to call deposit accounts (although not formally the same as a bank account) and are credited with a variable, non-guaranteed, interest rate for each period.

Regulation

3.10 There is no specific legislation governing the operation of par business under the Hong Kong regulatory framework, although as a result of previous corporate restructurings there may be distinct par funds in some companies. For example, Prudential Hong Kong Limited is the subsidiary of the Prudential Assurance Company in the UK. It used to be a branch of that company until 2014 and, following domestication, it uses a ring-fenced structure for its par business similar to that which applied while it was a part of the UK company.

3.11 Policyholder dividends (and bonuses) are granted at the discretion of the board of directors of each company. In the absence of a formal segregation of the par business from non-par business in most cases, companies are not obliged to follow particular rules when determining the discretionary benefits payable to policyholders. (Prudential Hong Kong is an exception given the ring-fencing referred to above.) In practice, commercial pressures and policyholders' reasonable expectations (**PRE**) act to constrain companies' freedom in setting discretionary benefits.

3.12 Professional guidance issued by the Actuarial Society of Hong Kong (**ASHK**) requires the appointed actuary to consider PRE when recommending bonuses to the board of directors of an insurance company.

3.13 Guiding principles relating to the illustration of par policies are issued by the Hong Kong Federation of Insurers including key principles for the point of sale illustration, annual statement and the disclosure surrounding vanishing premiums (these are policies where the periodic dividends are left on deposit with the life insurance company in the hope, but not the guarantee, that the interest earned on the deposited balance will exceed the regular premium, which hence 'vanishes'). The appointed actuary does not approve illustrations of policies, however he is expected (in accordance with AGN5 issued by the ASHK) to have regard to their potential effect on PRE. Even with this in place though, the rules around illustrations for par policies are still fairly loose, particularly around the choice of investment return assumptions used. Although companies will often state that the investment return assumptions used in the illustrations are 'best estimate', these can vary significantly from company to company. Should the assumptions used in the illustrations turn out to be unrealistically optimistic, the potential implications from PRE could be significant.

3.14 Mathematical reserves are based on net premium reserves with an implicit allowance for future regular dividends/bonuses, but no explicit allowance for future terminal dividends/bonuses. That is, accrued but undistributed surplus in excess of the net premium reserve counts as available regulatory capital under the Hong Kong framework. Solvency margin requirements in Hong Kong are relatively straightforward and are based on a Solvency I approach (i.e., capital is a specified percentage of the mathematical reserve and a specified percentage of any sums assured at risk).

3.15 Each of the regulatory authorities (Hong Kong Securities and Futures Commission, The Office of the Commissioner of Insurance, and the Hong Kong Monetary Authority) have variously issued regulations covering many aspects of investment-linked business including sales practices, disclosure of product features and charges, and disclosure of commission. The combined effect of these regulatory changes has increased the burden associated with selling linked business, which has possibly contributed to the increased popularity of par business.

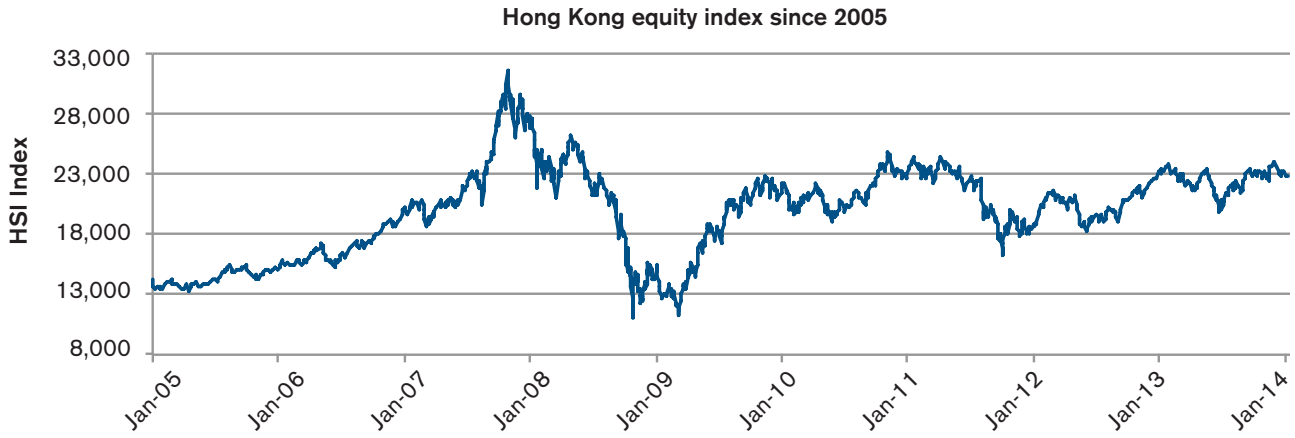
Investment

3.16 Possibly reflecting the lack of formal segregation between par and non-par business, par policy assets are typically invested in fixed income securities, with only a small proportion (compared to markets like Singapore and the UK) of the assets invested in riskier assets like real estate and equities. There is little public data regarding the asset allocation of par assets, although we understand the allocation to riskier assets is typically less than 20% in many cases. At least one company has historically invested a greater proportion of its policy assets in riskier securities such as equities.

3.17 Chart 3.9 and Chart 3.10 show historical values for the Hong Kong equity index and Hong Kong government bond yields, respectively. The recent economic environment (post GFC) has impacted adversely on the profitability of the par business. With a low interest rate environment, the guaranteed benefits of the par products have been onerous, leading companies to re-price business and cut discretionary benefits. At the same time, there has been much more emphasis on health/ protection stand-alone offerings, as shown in Chart 3.5 with the increase of non-par business.

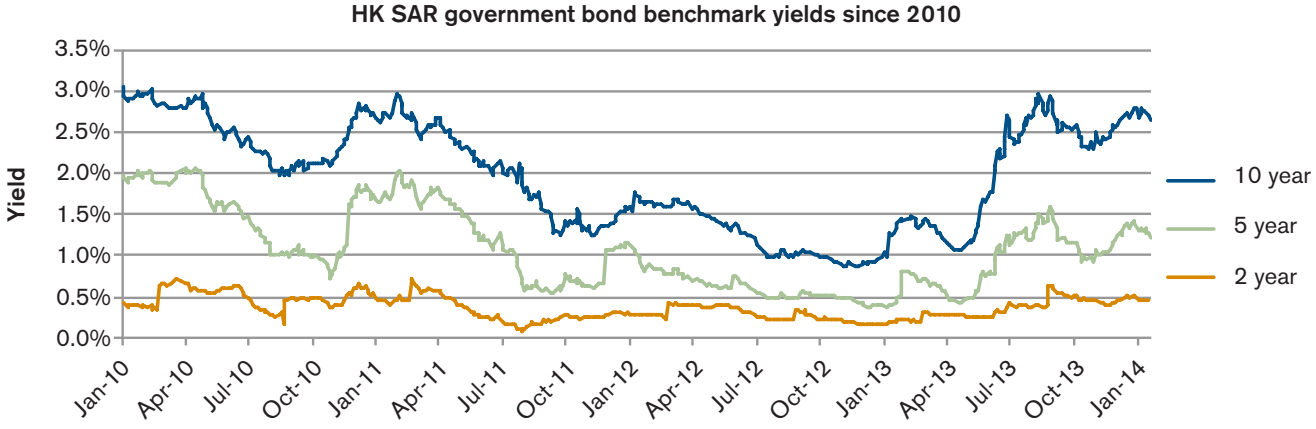
3.18 In the second half of 2013, yields for 10-year government bonds increased from 1% in May to more than 2.5% in December, which may reduce the profitability pressures on par products.

CHART 3.9: HONG KONG EQUITY INDEX



Source: Bloomberg

CHART 3.10: HONG KONG BOND YIELDS



Source: HK SA Government Bond Program

Conclusions

3.19 Notwithstanding the relatively light regulatory touch associated with the conduct of par business, the product has seen strong customer demand. The recent regulatory developments regarding linked business sales practices and disclosure have no doubt contributed to this trend. It remains to be seen whether the regulator will turn its attention to par business illustrations and their PRE impact next.

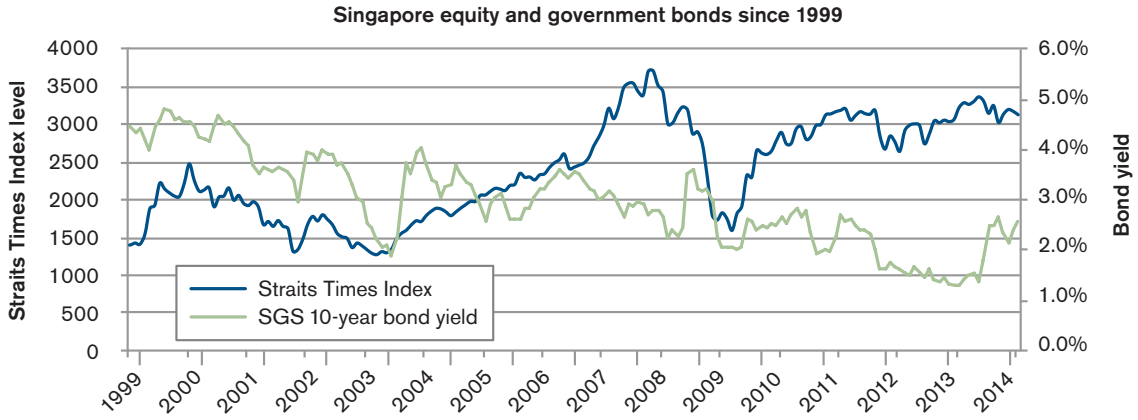
3.20 The low interest rate environment placed many participants under capital strain during the period following the financial crisis; however, the recovery in yields has alleviated much of the pressure. Provided companies can balance the need to provide an attractive product for customers and the desire to secure sufficient profitability, the product is likely to remain an important part of many companies' portfolios.

4. PARTICIPATING BUSINESS IN SINGAPORE

4.1 Par business has been an important part of the life insurance industry in Singapore since it commenced in the early 20th century. Of the 18 licensed direct life assurers in Singapore, 10 write par business, and the companies that do not write par business tend to be branches and subsidiaries of international companies and are smaller companies in the Singapore market. The majority of par business is of conventional UK style with reversionary and terminal bonuses, but cash dividends are also payable under some products. Singapore is an affluent country with a significant population of high net worth individuals, which provides insurers with a potential market for more sophisticated products, such as the recent growth in universal life.

Recent Economic Conditions

CHART 4.1: SINGAPORE EQUITY (STRAITS TIMES INDEX) AND GOVERNMENT BOND YIELDS (SGS 10-YEAR)



Sources: Bloomberg and MAS SGS benchmark data

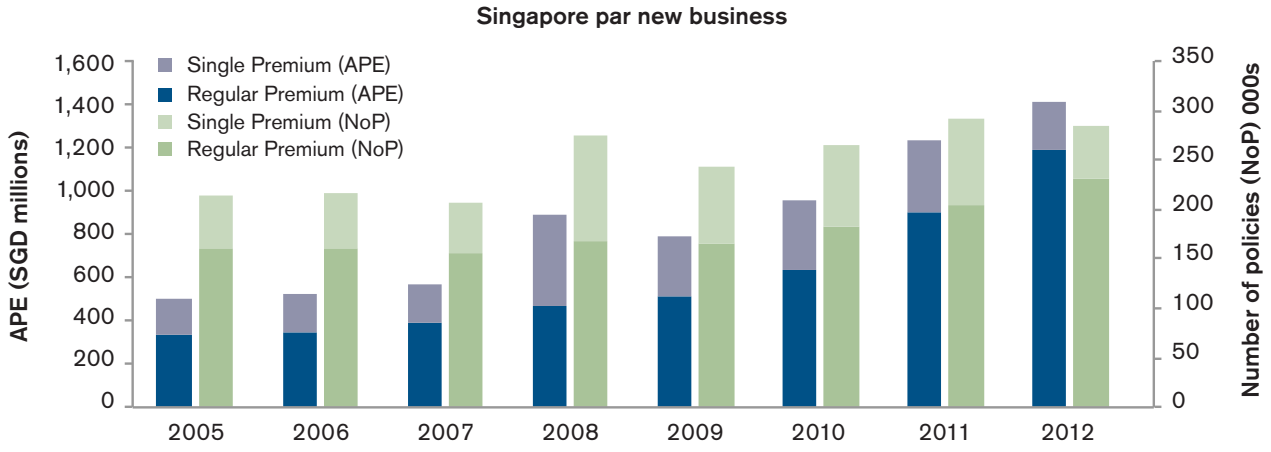
4.2 Since 1999, the Singapore equity market has followed a similar pattern to the markets in the rest of the world, with the bursting of the dot-com bubble in 2000 followed by resurgence before the 2008 crash and recovery in 2009-2010. Ten-year government bond yields have also shown some volatility, but overall the trend has been of decreasing yields, with a low of 1.3% at the end of 2012. Although yields have risen again to 2.4% at the end of 2013, this is still appreciably lower than at the turn of the millennium when they were around 4.5%.

Current Trends In Par Business

4.3 The following analysis is based on data from the statutory returns completed by life insurance companies operating in Singapore publicly available from the Monetary Authority of Singapore (**MAS**) website.

Sales

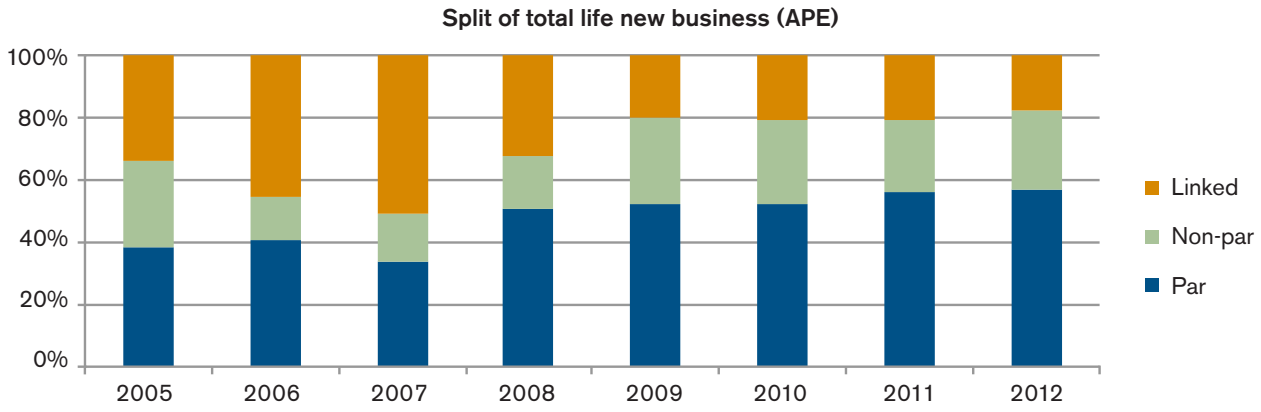
CHART 4.2: NEW BUSINESS VOLUMES IN TERMS OF APE AND NUMBER OF POLICIES



Source: Form 3 of MAS annual return

4.4 Sales of par business in Singapore (by APE) have steadily increased between 2005 and 2012, with much of the growth having come from regular premium business, where annual new business premiums have increased by over 250%. Single premium business has been more variable over this period, previously making up 47% of new par business in 2008, but dropping to only 16% in 2012. If, instead, we consider new business in terms of the number of new policies we find that the growth is not so marked, particularly for regular premium business. This indicates that most of the growth is coming from premium inflation, where the average regular premium for new business has increased from SGD2,094 to SGD5,148 per annum, an increase of 146%. A possible explanation for the premium inflation could be that insurers are increasing their sales to the high net worth and affluent customer base, for which we would expect higher premiums.

CHART 4.3: SPLIT OF TOTAL LIFE NEW BUSINESS, BY APE



Source: Form 3 of MAS annual returns

4.5 From Chart 4.3 it can be seen that par products made up 57% of the total 2012 sales of life business (by APE), which is a proportion that has grown gradually since 2008. Prior to this par had lost ground to sales of investment-linked business, which had been steadily growing in popularity and made up over half of all sales in 2007. However, following the 2008 financial crisis sales of investment-linked business have fallen away significantly as consumers look for more protection against such market volatility.

4.6 Sales of par business in Singapore are predominantly made up of endowment business (80% of all par new business in 2012, by APE) with whole life making up the majority of the remainder (18%). It is, therefore, not surprising that in 2012 par products made up 91% of all endowment sales in Singapore. Whole life business, however, is split fairly evenly between par (30%), non-par (28%), and investment-linked (41%). Protection business (term, accident, and health) is predominantly non-par, as might be expected.

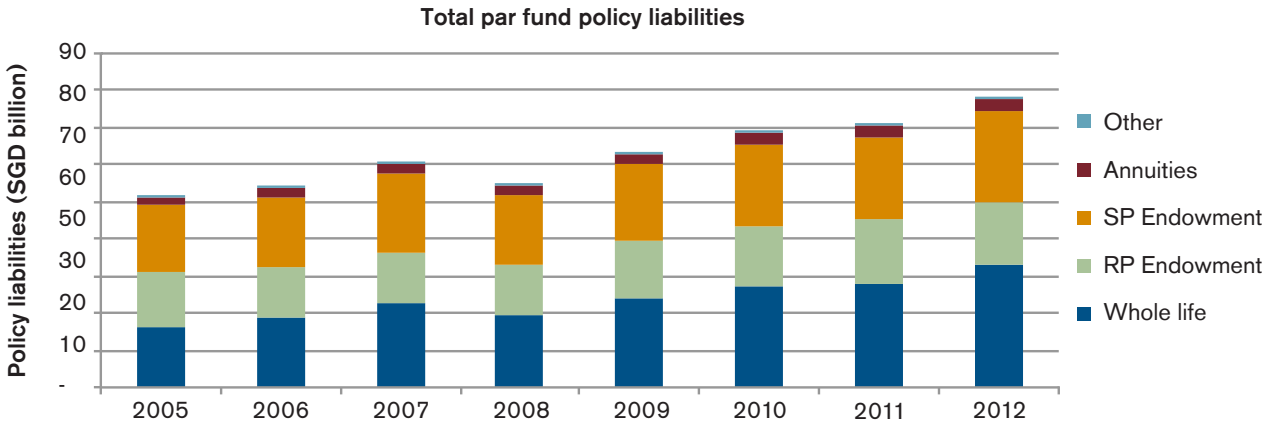
4.7 Clearly par business is a significant part of many companies' product offerings in Singapore, which is consistent with the results we saw from a par business survey Milliman carried out in 2013.[1]

4.8 The survey also highlighted that demand from sales channels and customers were the main reasons for companies offering par products, and not profitability or capital efficiency. This suggests there is an opportunity for companies if they could improve the benefits of par business from the perspective of the shareholders, whilst still meeting the requirements that customers and sales channels demand.

[1] Knowles, N. & Holloway, R. Asia Participating Business Survey. Available at www.milliman.com/insight/2013/Asia-Participating-Business-Survey/

In-Force Business

CHART 4.4: SPLIT OF TOTAL PAR FUND POLICY LIABILITIES BY PRODUCT TYPE

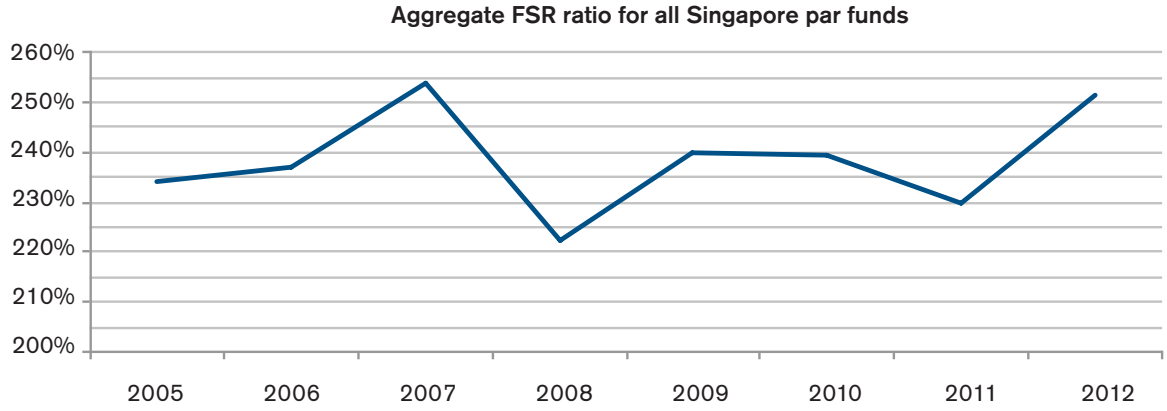


Source: Form 14(a)(i) of MAS annual return

4.9 Given the new business volumes already discussed, it is not surprising to see in Chart 4.4 that the majority of in-force par business is made up of endowment and whole life policies (based on the size of liabilities). The proportion of the in-force business that is whole life products is greater than for new-business volumes, and has gradually increased from 32% in 2005 to 42% in 2012. This may reflect the longer duration of these products compared to endowment business. Similarly, annuity business makes up 4% of the in-force book, but only 1% of new business volumes, again reflecting the longer duration of this business, although this is also due to a reduction in sales of par-annuity business.

Fund Strength and Capital

CHART 4.5: AGGREGATE FSR LEVEL ACROSS ALL SINGAPORE PAR FUNDS



Source: Form 21 of MAS annual returns – calculated from aggregated financial resources and risk requirement figures

4.10 The standard measure for capital adequacy of par funds under the Singapore solvency regime is the fund solvency ratio (**FSR**), which is the ratio of financial resources available over the risk capital required (based on a risk-based capital calculation approach). The financial resources for par funds reflect the available capital and are predominantly made up of the lesser of:

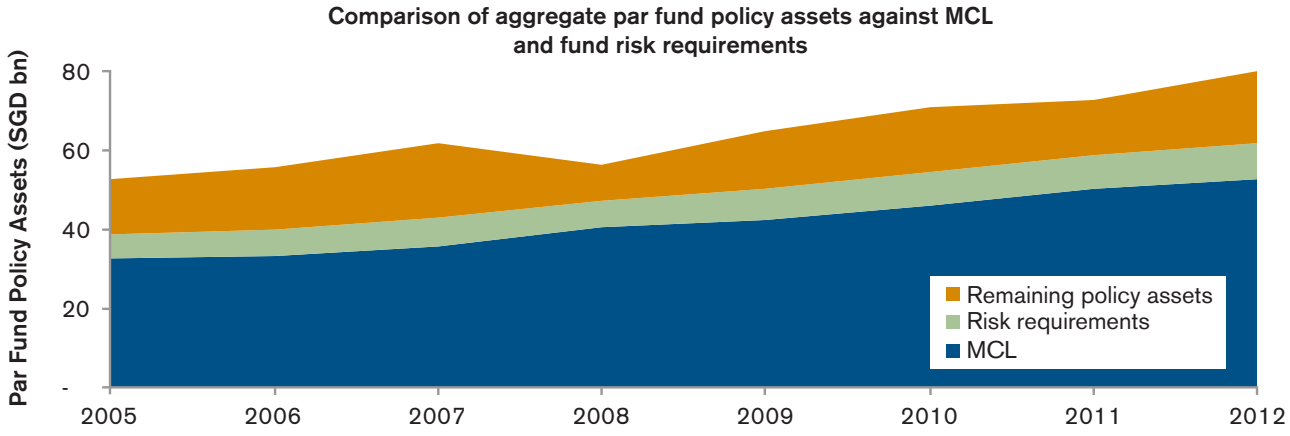
- Fifty percent of the provision for non-guaranteed benefits and provisions for adverse deviation (**PADs**)
- The excess of the actual policy liabilities over the minimum condition liabilities (**MCL**)

4.11 Here, the MCL is a prudent calculation of the guaranteed benefits only, and the actual policy liabilities recognised in the statutory balance sheet are typically all of the assets of the fund. The provision for non-guaranteed benefits and PADs is, basically, the difference between the actual policy liabilities recognised in the statutory balance sheet and a best estimate valuation of the guaranteed benefits. There is some argument that the arbitrary 50% factor in the above calculation makes the financial resources figure slightly contrived.

4.12 The aim of setting the financial resources for the par fund to equal a proportion of the provision of non-guaranteed benefits is to reflect the company's ability to adjust bonus rates in an adverse situation. In Chart 4.5, the fall in the aggregate industry FSR from 2007 to 2008 reflects the impact of the equity market crash and widening credit-spreads that occurred then, but as markets recovered in 2009, so too did the aggregate FSR. In 2011 falling bond yields took their toll, causing the aggregate FSR to drop again, but 2012 saw strong improvements in the aggregate FSR possibly because of changes in product mix as well as a pick-up in the equity markets.

4.13 Another point that can be taken from Chart 4.5 is that on a regulatory measure of capital the average par fund in Singapore is well capitalised. Even in the wake of the 2008 crash the aggregate FSR was over 220%, which, given that the regulatory warning level is 120%, suggests the par funds are in good health.

CHART 4.6: COMPARISON OF AGGREGATE PAR FUND POLICY ASSETS AGAINST MCL AND FUND RISK REQUIREMENTS



Source: Annex 1K (policy assets and MCL figures) and Form 21 (risk requirements) of MAS annual returns

4.14 For an alternative view of capital, Chart 4.6 considers the aggregate par fund policy assets in terms of: those covering the minimum condition liabilities; those needed for risk capital (based on the regulatory risk requirement calculation); and the remainder. The remainder is used to meet non-guaranteed benefits with any excess available to help support new business, or providing an additional buffer to meet any unexpected future shortfalls. The aggregate remaining policy assets are not reduced by the 50% factor referred to in paragraph 4.10.

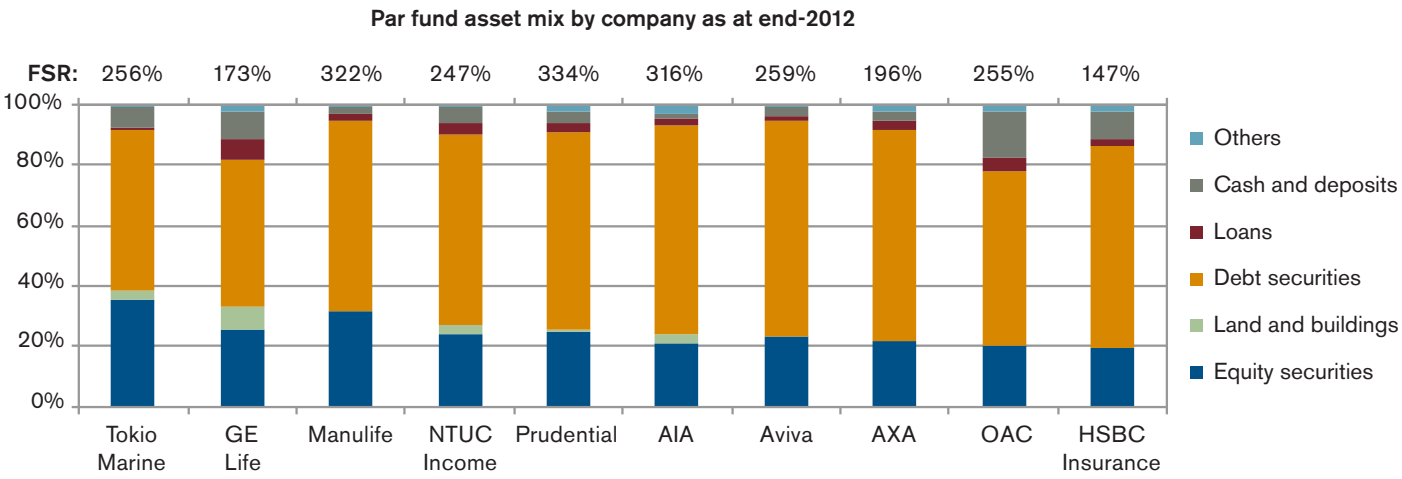
4.15 Chart 4.6 shows a steady increase in the MCL and risk requirements over time as the business has grown, with the assets exhibiting greater volatility. The equity market falls in 2008 ate into the surplus assets in the funds (defined as policy assets less MCL and risk requirements), leaving it at just 16% of the total policy assets, but market recoveries have since helped to ease this strain with the surplus at 22% at the end of 2012. However, we note that prior to 2008 the surplus levels had risen from 27% in 2005 to 31% in 2007, but since 2009 the surplus has been at lower levels of between 19% and 23%, on this measure. This is an averaged picture across all companies in Singapore however, and at individual company level, greater variation between companies is observed.

Investments

4.16 The average asset mix in Singapore's par funds as at the end of 2012 is fairly representative of the last eight years, with the exception of 2008 when the fall in equity markets reduced the equity proportion. On average 61% of assets are invested in bonds, which provide some matching of the interest rate risk exposures of the fund, and 6% of assets are invested in cash and deposits, which provide the funds with liquidity. The average allocation to riskier assets (equity and property) is 27%, which provides the funds with potential for real growth, and therefore some protection against inflation, but at the risk of greater volatility of returns.

4.17 Chart 4.7, below, shows the asset mixes of the par funds for different companies, as at the end of 2012. Whilst bonds are the major asset holding for all companies, the key difference lies in the proportion in equity and property, which doubles from one end of the spectrum to the other (19% for HSBC to 39% for Tokio Marine), reflecting different investment risk appetites.

CHART 4.7: ASSET MIXES FOR DIFFERENT COMPANIES' PAR FUNDS, AS AT 31 DECEMBER 2012, WITH FSR



Source: Form 1 of 2012 MAS annual returns

Bonuses

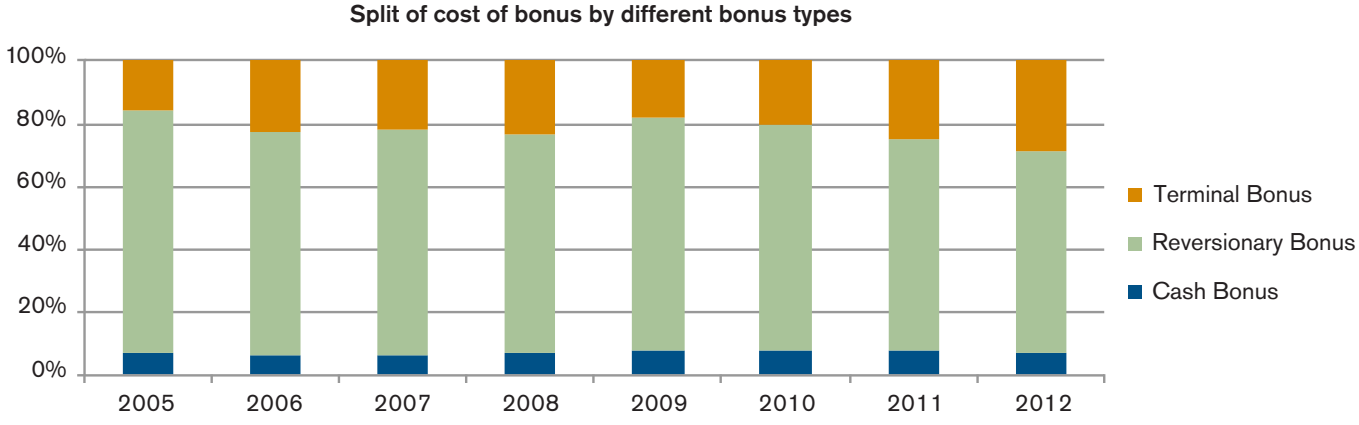
4.18 Par business in Singapore distributes profits to policyholders via:

- Reversionary bonuses (permanent additions to the sum assured)
- Cash bonuses (annual cash dividends paid out to the policyholder)
- Terminal bonuses (additional payments on claim)

4.19 Singapore legislation imposes a 90%:10% profit-sharing mechanism for par business (also called the 90:10 gate). That is, at least 90% of profits distributed from the par fund must be awarded to policyholders, with shareholders receiving the balance.

4.20 Chart 4.8 shows how the cost of bonus in each year, across all companies, has been split between the different bonus types.

CHART 4.8: SPLIT OF THE AGGREGATE COST OF BONUS BETWEEN DIFFERENT BONUS TYPES

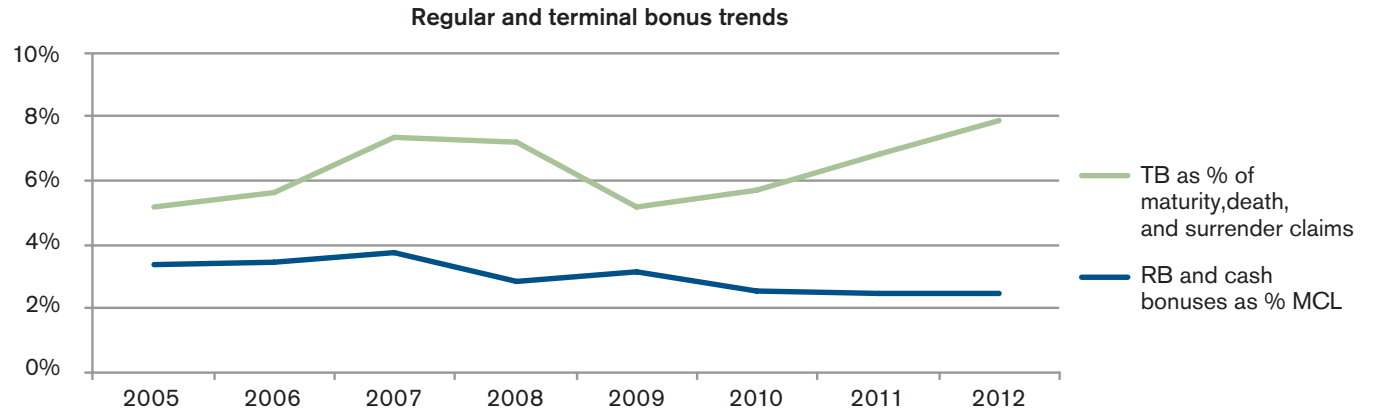


Source: Form 18 of MAS annual returns – 'Bonus payments made to policy owners in anticipation of allocation' have been included within the terminal bonuses

4.21 Chart 4.8 shows that the majority of the distribution is via reversionary bonuses, which make up approximately 64% of the cost of bonuses distributed in 2012; however, this figure has steadily reduced from 77% in 2005. Conversely, terminal bonuses have increased from 16% of the total cost of bonuses in 2005 to 29% in 2012, and cash bonuses have remained fairly stable around 7-8%.

4.22 For an alternative measure of how the regular (reversionary and cash) bonuses have evolved, we can consider the cost of their declaration in the context of the MCL liabilities (since the cost of reversionary bonus is calculated on the same basis as the MCL), as shown in Chart 4.9. In 2005, the cost of reversionary and cash bonuses was 3.4% of the total MCL, but by 2012 this had steadily decreased to 2.5%. For terminal bonuses we can consider the total terminal bonuses paid out as a proportion of the total claims paid for maturities, deaths, and surrenders, since the terminal bonuses should generally only apply on these claims, also shown in Chart 4.9. On this measure we see terminal bonuses increased from 5.2% in 2005 to 7.3% in 2007, but then fell to 5.1% in 2009 following the fall in markets in 2008. They have since increased again up to 7.9%.

CHART 4.9: TRENDS IN REGULAR AND TERMINAL BONUS LEVELS



Source: Form 18 (bonus figures), Annex 1K (MCL), and Form 3 (claims figures) of MAS annual returns

4.23 We would expect greater volatility in terminal bonuses, as companies might be expected to use them to manage the distribution of more volatile sources of surplus (including investment returns from equities). Chart 4.9 shows a steady decrease in the regular bonuses and a gradual movement in bonus philosophy from regular to terminal. This shift could indicate that companies view the level of guaranteed benefits as becoming too expensive in the current interest-rate environment, so are distributing a greater proportion of the profits through terminal bonuses which are not guaranteed in advance. There could also be an element of managing policyholders' reasonable expectations, demonstrating that future bonus rates can be cut and are not guaranteed to persist at the current levels.

Recent Regulatory Changes and Topical Concerns

4.24 The Risk Based Capital (**RBC**) framework in Singapore is currently under review by the MAS. The much anticipated second consultation paper on the proposed changes, commonly dubbed 'RBC 2', was announced at the end of March 2014, and set-out more specific proposals following the first consultation in June 2012. Of particular importance to par business is the proposal to phase out over a period of 5 years the long–term. risk-free discount rate (**LTRFDR**) for the purposes of calculating the MCL in respect of SGD denominated liabilities of 30 years duration or greater. At present, the LTRFDR is keeping the liability discount rate above the government yield curve which is used for durations shorter than 30 years, and removing this could cause an increase in policy liabilities. There is also a significant increase in the proposed risk charge factor for equities from 16% under the new framework to 40% (for most equity classes).

4.25 Par business could be the most adversely affected block of business by the proposed changes to the solvency requirements, because of its long dated liabilities and higher equity investment. The combined effect of the removal of LTRFDR and the increase in equity risk charges could increase the MCL and risk requirements quite substantially. However, the introduction of diversification factors for the insurance risks will help to offset these impacts. The full extent of the proposed changes will be better understood once results from the first Quantitative Impact Study are made available, having been submitted by companies at the end of June 2014.

Conclusions

4.26 The healthy regulatory capital position of many Singapore par funds should support the continued sale of par business, for which demand seems as strong as ever, although this may be affected if the proposed RBC2 regulations take effect. The recent sales trends suggest that after the effects of the 2008 financial crisis customers appreciate the extra financial protection that par products provide, in comparison to investment-linked products. However, there clearly was a growth in demand for investment-linked products prior to 2008, and perhaps some of the features associated with these products, such as transparent charging structures, would still be appealing, particularly to the more sophisticated high net worth market.

4.27 The recent low interest rate environment has put some pressure on reversionary bonus rates, which appear to have decreased as a result. It suggests that companies are looking to defer more of the guaranteed benefits in an attempt to reduce the capital strain of the products, but it could also be part of managing policyholders' reasonable expectations.

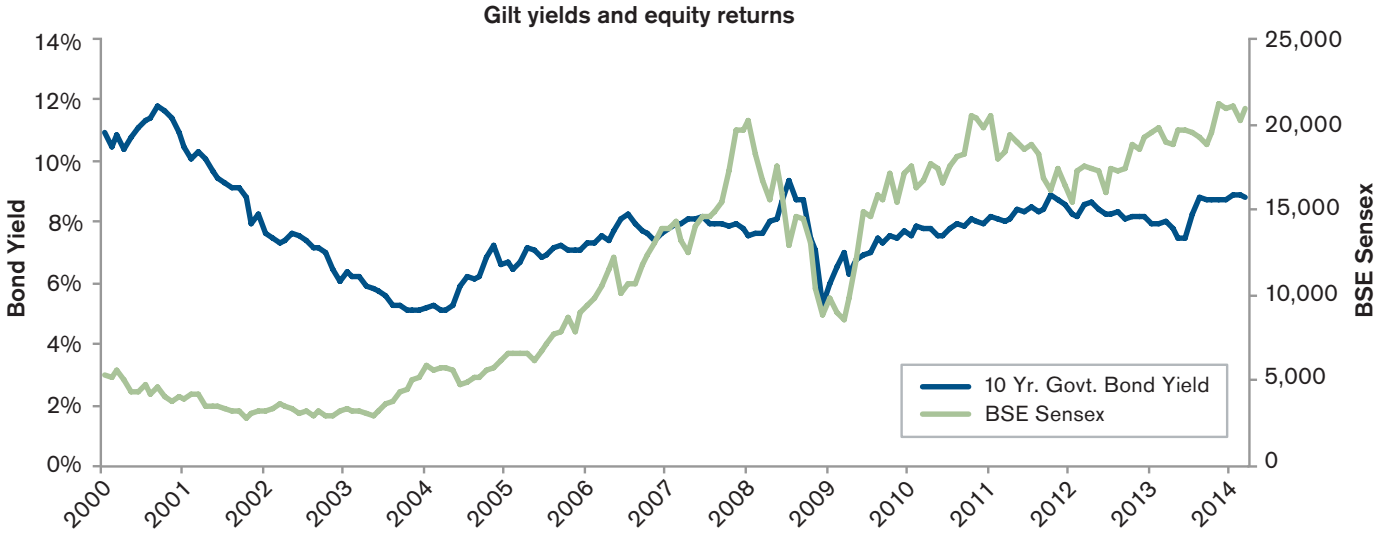
5. PARTICIPATING BUSINESS IN INDIA

History

5.1 The Indian life insurance sector was opened up to private sector participation in 2000. Prior to that, life insurance was sold solely by the public sector life insurer, the Life Insurance Corporation of India **(LIC)**, which had been operating as a monopoly since the nationalization of the insurance sector in 1956. The LIC has sold a wide range of insurance products, mostly par, over the past six decades.

5.2 After commencement of their business in 2000, most private sector life insurers offered similar products as the LIC, which were mainly par endowments. Like Singapore, regulations restrict the level of shareholder transfers from par business to 10% of surplus distributions in any year (i.e., a 90:10 gate applies). This profit-sharing requirement dissuaded some private sector companies from selling par business. However, up until 2003-2004,[2] around 80% of the new business sold was through par products. Some private companies did introduce unitised with-profits products (which we discuss in more detail in Section 7), but most players were again put-off by the restrictions resulting from the 90:10 gate on surplus distribution.

CHART 5.1: 10-YEAR INDIAN GOVERNMENT BOND YIELDS AND BSE SENSEX EQUITY INDEX LEVELS SINCE 2000



Sources: Reserve Bank of India website; BSE Sensex website

5.3 In 2004-2005 the market share of par business began to drop significantly, with the introduction of unit linked insurance products (**ULIPs**) by some new entrants to the market, sales of which were aided by the rising levels of stock markets at the time as can be seen in Chart 5.1. Existing providers had been hurt by the effects of sharp reductions in the interest rates from 2000 to 2004 (also shown in Chart 5.1) and could now also see the success new entrants were achieving through the sale of ULIPs. As a result, almost all life insurance companies swiftly introduced ULIPs and shifted their new business away from par. By 2010, more than 80% of the new business premiums garnered by the private sector players were through ULIPs.

5.4 Similarly, the public sector LIC continued to sell mainly par products up until 2005-2006, by which time ULIPs formed approximately only 30% of their new business income. Seeing the success achieved by the private sector through the sale of ULIPs, the LIC too started promoting ULIPs aggressively. By 2007-2008, the proportion of new business premiums generated through the sale of ULIPs by LIC had increased to approximately 60%.

5.5 In 2010 the market share of ULIPs started to decrease (as shown in Chart 5.3) as a result of a variety of factors. New restrictions on the benefit structure and charges in ULIPs were introduced by the Insurance Regulatory and Development Authority (**IRDA**) in September 2010, which made it difficult for insurers to offer attractive distributor compensation for ULIPs compared to traditional products. The sharp drop in stock markets in 2008 in the aftermath of the GFC had a negative impact on consumer demand for policies linked to investment performance, as did the bad publicity the product attracted following various reports of mis-selling. Consequently, par business has regained its market share and now accounts for more than 70% of the individual new business premiums for the industry in 2012-13.

[2] The financial year in India runs from 1 April to 31 March, so where figures are quoted for 2003-2004, for example, this refers to the financial year running from 1 April 2003 to 31 March 2004.

Types of Products and Bonus Structures

5.6 Companies in India offer the following basic product types as participating:

- Simple endowments
- Anticipated endowments (i.e., a periodic payment every few years during the lifetime of the policy)
- Whole of life

5.7 Surplus distribution within the par contracts is carried out through either:

- Cash dividends (pay-outs / paid-up additions)
- Reversionary bonuses (simple / compound)
- Terminal bonuses

5.8 The most common type of par product currently offered in the market is par-endowments featuring reversionary bonuses and terminal bonus after a certain number of years (i.e., UK-style products).

5.9 Given the short period since private sector companies started their operations, not many par policies have matured. Also, there is no industry level data available indicating the proportion of regular and terminal bonuses in claims payments by insurance companies.

5.10 Several private sector companies are in an 'expense overrun' phase where the actual expenses of the fund are higher than those loaded in the premium rates. Given this, bonus declarations have also been driven more by commercial / business considerations rather than the strict bonus earning capacity of the business or financing capability available within the surplus of the par funds.

5.11 However, point of sale illustrations issued by companies typically suggest that the guaranteed maturity return to policyholders are approximately at the 1% to 2% p.a. level, and the total illustrated maturity return to policyholders (at an illustration interest rate of 8% p.a.) are approximately 4% to 5% p.a., suggesting that the loadings for non-guaranteed bonuses in the premium rates would provide a return of approximately 3% p.a.

5.12 Going forward, as par business and funds mature, companies are expected to put in place appropriate bonus management frameworks.

Significant Regulatory Changes

5.13 In early 2013, the IRDA issued new regulations governing all types of products, including par products. These have become effective from 1 January 2014. The main regulations impacting par products include:

- The introduction of governance mechanisms on the management of par business, covering the need to set up an asset share framework; a 'with-profits committee' which would include an independent director of the board of directors, the CEO, appointed actuary and an independent actuary; and the granting of power to the IRDA to prescribe a methodology to allocate expenses between different funds. While this step is designed to improve the overall management of par business, it also restricts the 'flexibility' or 'discretion' available in the hands of the insurer in managing the par business.
- The introduction of maximum limits on commission rates that depend on the premium payment term of a policy. This has eliminated the anomaly / discretion that allowed insurers to pay disproportionately high levels of commission on short premium terms.
- An increased level of minimum guaranteed surrender values and requirements to link surrender values to the asset shares. This will likely result in a reduction in the surrender profits available on par business.
- The introduction of point of sales illustration requirements for all products assuming gross investment returns of 4% p.a. and 8% p.a. Previously, ULIPs were being illustrated at gross returns of 6% p.a. and 10% p.a. This reduction is expected to put more pressure on the marketability of life insurance products in an environment where the short-term interest rates are very high.

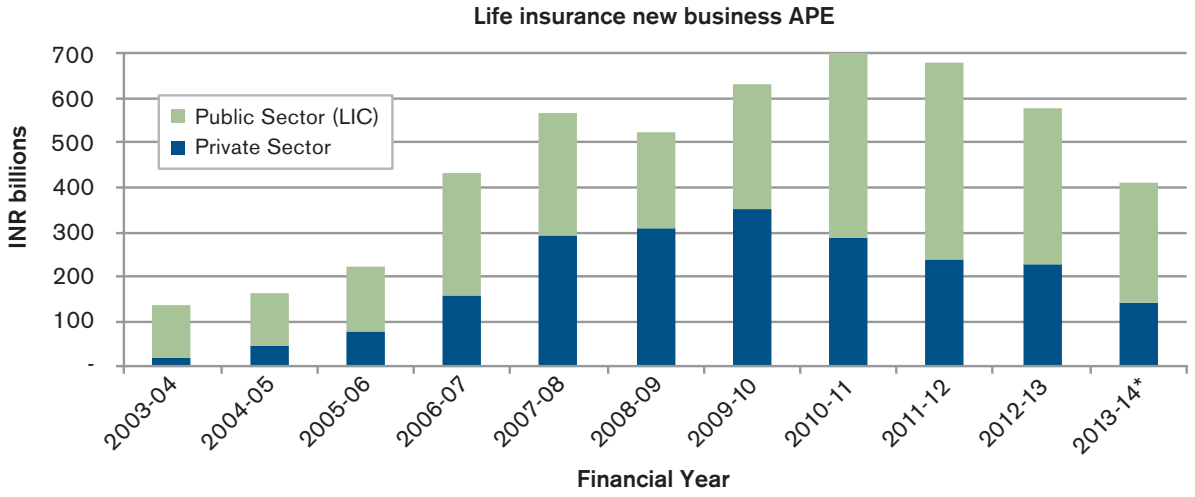
5.14 In the wake of these regulations, the relative (to other product types) appeal of par business has increased because companies are able to offer more competitive commission rates to distributors. However, the regulatory restrictions on shareholder transfers (i.e., the 90:10 gate) will continue to dissuade some companies from significantly increasing their focus on par products, especially if they are able to increase their exposure to ULIPs or if they are willing to take on more of the investment risk by selling non-par products.

Business Volumes

5.15 Chart 5.2 shows the new business volumes for the life insurance industry in India. Figures grew significantly between 2003 and 2011, but have dropped off during the past three years. Reasons for the decline in new business volumes include:

- The regulatory changes made in September 2010 have caused commissions on ULIP business to drop significantly. These changes make distributors less willing to sell ULIPs.
- Products with high NAV guarantees offered on a CPPI basis have been banned. Some other products (e.g., pensions, universal life) have been rendered ineffective due to regulatory changes imposing minimum investment return guarantees, maximum surrender charges, etc. Withdrawal of these products has had an adverse impact on new business volumes.
- The new regulations have reduced the overall margins available for insurance companies. As a result, insurance companies have had to realign their strategies, including a significant reduction in operating costs by closing down several unproductive branches, etc.
- Regulation changes have caused companies to re-price and re-launch their entire product suite a number of times over the past three to four years. Distribution channels have not been given adequate time to adjust to the changes, thus restricting sales.
- Individual policy case sizes have also reduced with the move away from ULIPs to traditional products.

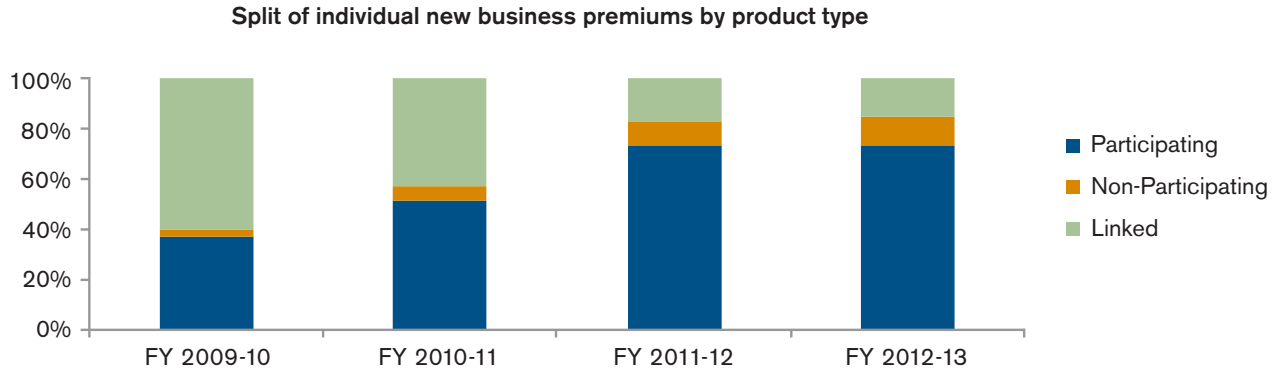
CHART 5.2: LIFE INSURANCE NEW BUSINESS VOLUMES BY APE; *FIGURES FOR 2013-14 ARE FOR YEAR TO Q3



Source: IRDA monthly / quarterly new business volume disclosures

5.16 Chart 5.3 shows the shift in new business away from ULIP since 2009-2010, reflecting the impact of the introduction of the new regulations in September 2010, which restricted the benefit structure and charges for ULIPs. As previously discussed, the decline is also an effect of the GFC and reputational damage to ULIPs from mis-selling cases. Par business has benefited from the decline of the linked business, but so has non-par business, which has increased significantly as a proportion of new business premiums.

CHART 5.3: SPLIT OF INDIVIDUAL LIFE INSURANCE NEW BUSINESS PREMIUMS BY PRODUCT-TYPE

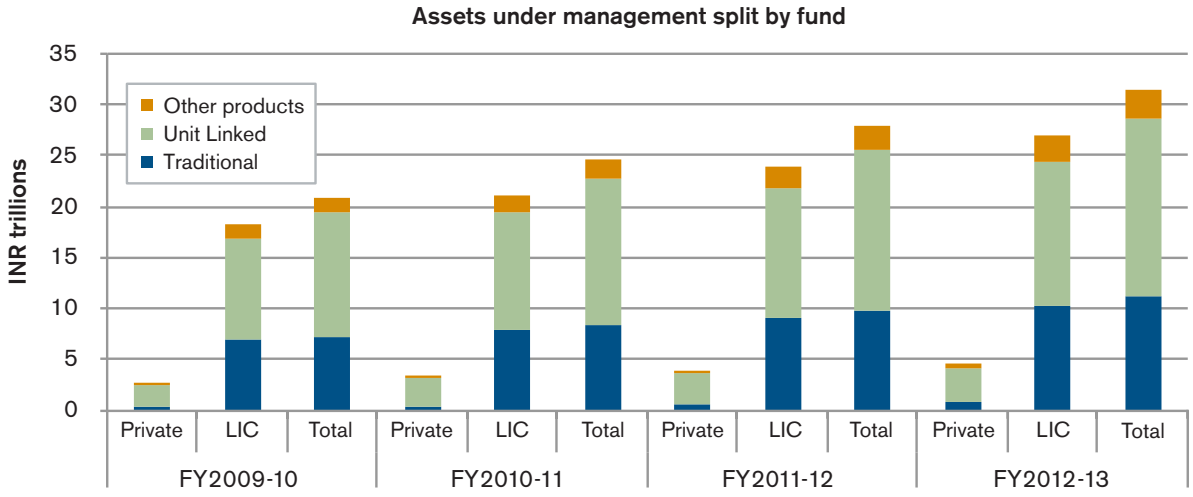


Source: IRDA segment wise data and IRDA journals

5.17 Despite new business volumes having been dominated by ULIPs for several years, in-force business volumes are still dominated by traditional products (expected to be mostly traditional par products). This is due to the large traditional book of the LIC, which has consistently sold large volumes of traditional products. As at the end of the 2012-13 financial year, unit linked business made up just 13% of the total number of in-force life insurance policies, with traditional business covering 86%.

Capital

CHART 5.4: EVOLUTION OF ASSETS UNDER MANAGEMENT, SPLIT BY PRODUCT TYPE AND BETWEEN PRIVATE AND PUBLIC SECTORS, SINCE 2009-2010



Source: IRDA annual reports

5.18 Chart 5.4 shows that the LIC has built a significant level of assets under management (**AUM**) over the past six decades, which dwarfs the asset base the private sector insurers have built since 2000. The private sector insurers currently have a large proportion of AUM under ULIPs, but continued higher sales of traditional products in the future will lead to their share of AUM to increase.

5.19 In India, the regulatory reserving requirement is based on prospective gross premium valuation (**GPV**) methodology with margins for adverse deviations (**MADs**) in the projection assumptions. Any negative reserves are required to be eliminated and the reserves are required to be floored to a minimum of the surrender values under the policies. For unit linked business, any negative non-unit reserves are required to be zeroised before adding to the unit reserves. This requirement has meant that the new business strain on unit linked products has typically been higher than that on traditional products.

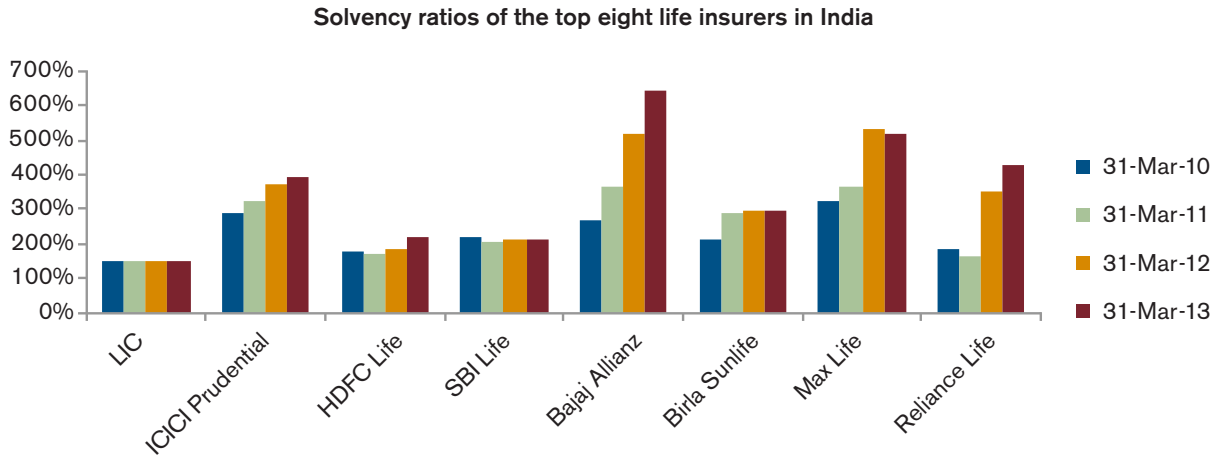
5.20 The regulatory solvency requirements in India are, like in Hong Kong, factor based–broadly a percentage of reserves plus a percentage of sum at risk. The solvency factors are specified in the regulations and vary by different product types. The insurance regulator specifies a minimum solvency ratio of 150%.

5.21 Despite the solvency factors applicable to the traditional products (broadly 3% of reserves and 0.3% of sum at risk) being higher as compared to those applicable to ULIPs (broadly 0.8% of reserves and 0.1% of sum at risk), the overall capital requirements have been lower under traditional products. This is mainly due to the low new business strain under such products. This has meant that companies have been able to achieve higher solvency ratios after shifting new business volumes away from ULIPs.

5.22 Chart 5.5, below, illustrates how solvency ratios for India's top eight life companies have typically increased over the last four years. The observed increase in solvency levels over the last four years for most of the companies is likely to be due to a combination of:

- The reduction in new business volumes over the period and associated reduction in new business strain.
- The shift away from ULIP business into traditional par business has also reduced new business strain, because of the gross premium valuation method used for par resulting in lower initial reserves than the unit reserves required under ULIP business.
- High lapse rates in recent years leading to a release of reserves.

CHART 5.5: EVOLUTION OF SOLVENCY RATIOS FOR TOP EIGHT LIFE COMPANIES IN INDIA FROM MARCH 2010 TO MARCH 2013

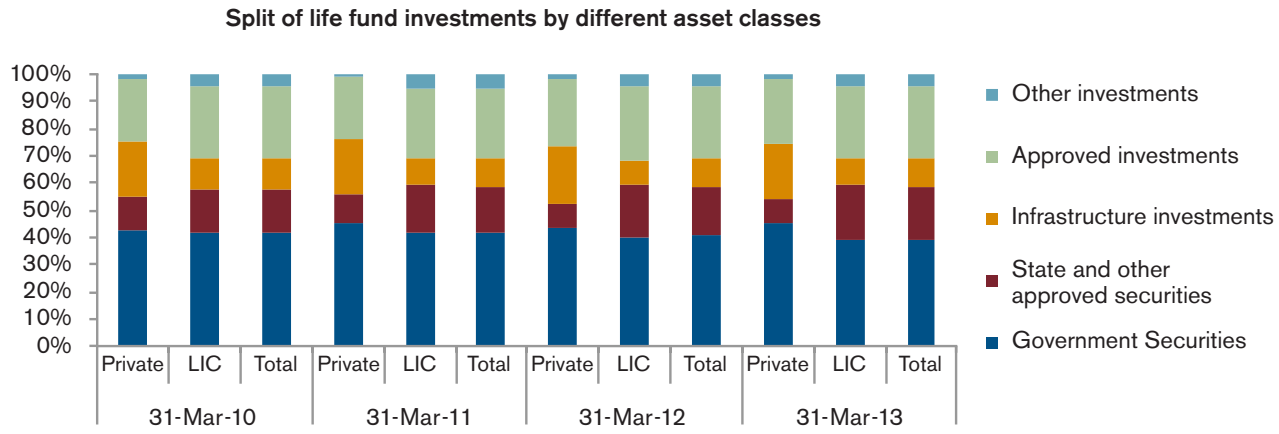


Source: IRDA annual reports, company public disclosures

Fund Mix

5.23 Regulations in India put restrictions on the investments life insurers can make. Broadly, the level of investment in 'approved investments' (includes: equities, corporate bonds, etc.) is restricted to 35% of the life fund. However, as shown in Chart 5.6, the overall investment pattern of the private sector companies as a whole has not exceeded 25% in such assets.

CHART 5.6: LIFE FUND INVESTMENT MIXES FOR PRIVATE AND PUBLIC (LIC) SECTORS FROM MARCH 2010 TO MARCH 2013



Source: IRDA annual reports

Shareholder Transfers

5.24 In India, the shareholder is expected to fund 100% of any deficit arising in the par fund. However, shareholder transfers from the par fund are restricted to only 10% of the surplus arising (i.e., the 90:10 gate). As a result of this, and considering the relatively nascent stage of development of the par funds, most private sector companies have not made any transfers out of par funds to date.

5.25 Going forward, as companies successfully eliminate their expense overruns and the par funds become self-sufficient, one would expect companies to effect transfers to shareholders from the fund.

Conclusions

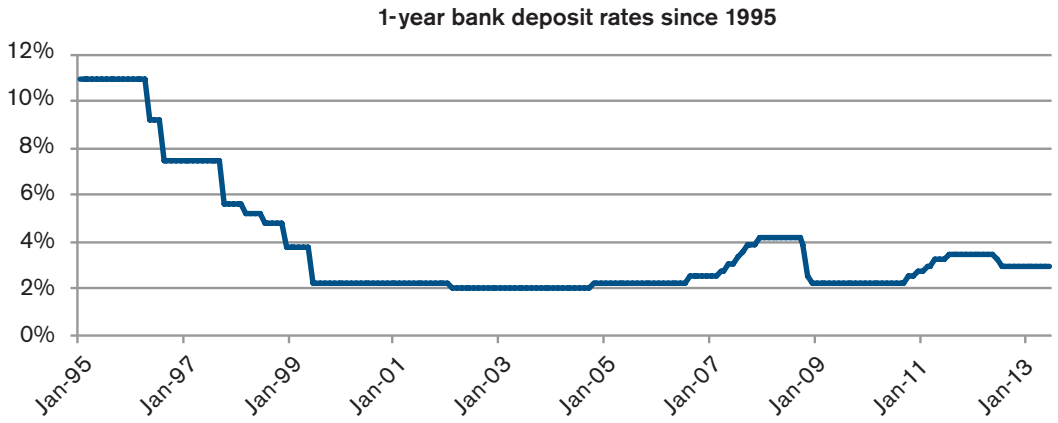
5.26 Following the various product regulations issued over the past four years, the industry focus in India has shifted away from selling ULIPs to selling par products. Although the existence of the 90:10 gate means lower profit margins on par products, companies have been able to garner new business volumes by offering higher commissions to distributors, which has proved to be difficult under ULIPs. Through these products, companies have also managed to avoid taking on longer term investment risks as present in non-par savings products. Going forward, it is envisioned that the increased focus on par business is likely to result in enhanced governance mechanisms.

6. PARTICIPATING BUSINESS IN CHINA

The Birth of Par Business in China

6.1 Par insurance products were first introduced in China in the year 2000, following a significant fall in interest rates during the second half of the 1990s, as illustrated in Chart 6.1.

CHART 6.1: PBOC ONE-YEAR BANK DEPOSIT INTEREST RATES SINCE 1995



Source: PBOC

6.2 At the start of 1996 the one-year bank deposit rate was nearly 11%, with insurance products typically being priced at 8%. Then in May 1996 the central bank in China, the People's Bank of China **(PBOC)**, started to cut interest rates and would make seven further cuts over the next three years. By June 1999 the one-year bank deposit rate was down to 2.25%, and Chinese insurance companies were facing huge negative interest spreads. The Chinese Insurance Regulatory Commission **(CIRC)** took action and issued an urgent notice to cap pricing interest rates at 2.5% on 10 June 1999, which helped reduce the negative interest spreads on new business, but also made traditional products much more expensive and therefore harder to sell.

6.3 In this environment, insurers were looking for new products and consumers were seeking alternatives to bank savings that could increase investment returns. Par products, where the pricing rate does not have to change when interest rates change, were seen as the solution to the insurers' interest rate issues when introduced in 2000. They also provided consumers with a new investment vehicle by adding the investment component into an insurance product.

Types of Par Products

6.4 One of the selling points of par business, compared to traditional insurance products, is that it gives the policyholder the opportunity to share in the future gains of the fund. Regulations stipulate that at least 70% of any surplus distributed from the par fund must go to the policyholder (with the remaining 30% going to the shareholder). There are two approaches adopted for distributing surplus to policyholders:

- Annual cash dividends
- Reversionary additions to the sum assured and terminal bonus

6.5 The first par products launched in 2000 used the annual cash dividend approach, and these were followed in 2001 with the first policies that would use the reversionary bonus approach. To date, the annual cash dividend approach remains the most common method for surplus distribution in China.

6.6 In terms of product structure, most of the par business sold is of a conventional nature, but in 2005 a unitised with-profits offering was launched. Up to now, only one insurer offers UWP, suggesting it has not really taken off in the Chinese market. No detailed analysis has been performed to understand why this is the case, but some possible reasons are:

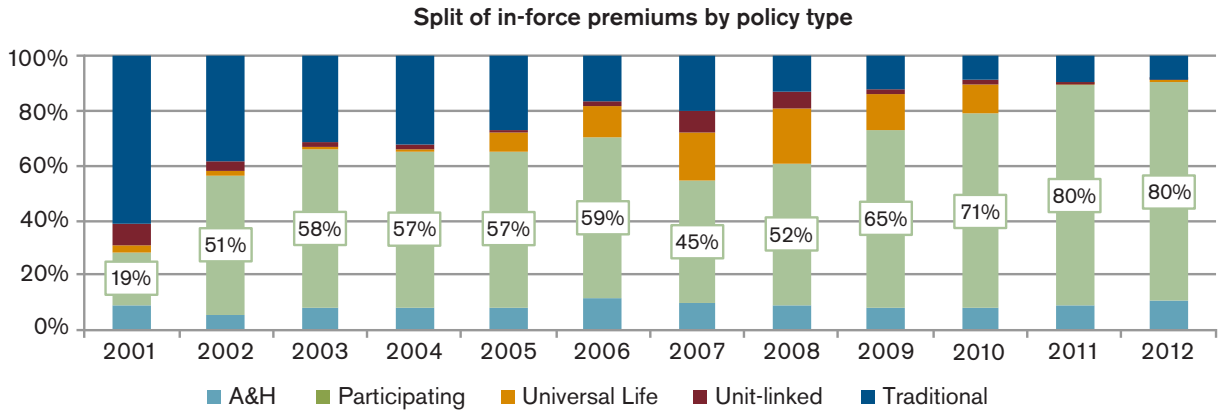
- UWP is a more complicated proposition for distributors to explain to customers.
- UWP requires developments to insurers IT operations and administration systems.
- UWP shares similarities with universal life (such as transparency of fee structure), which already existed in the market and was easier for the sales channels to understand.

6.7 The types of insurance products sold as participating are: endowments; annuities; and whole of life, with endowments being the most popular.

Sales

6.8 The following chart shows how the proportion of total in-force premiums split by product type has evolved since 2001:

CHART 6.2: SPLIT OF TOTAL IN-FORCE PREMIUMS BY CLASS OF BUSINESS



Source: China Insurance Year Book

6.9 Chart 6.2 shows that from its launch, in 2000, par business grew rapidly to 2003, and then more slowly until 2006. Then, in 2007 there was a fall in the proportion of in-force business that was participating, with universal life and investment-linked business eating into the participating share. However, in response to the high volatility and underperformance of the equity market in China in recent years (Chart 6.3) consumers have been drawn back to the guarantees provided by par business, which has further strengthened its position as the dominant product type in the Chinese life insurance market.

CHART 6.3: SHANGHAI COMPOSITE INDEX SINCE 1995

Source:Sohu.com

6.10 The high volatility in the Chinese equity markets, and in particular the large fall during 2008, as illustrated above, has had a negative effect on the popularity of investment-linked products, with consumers placing more value on the guarantees offered by par products. Universal life business grew steadily from 2004 to 2008, but since 2008 this has dropped-off significantly as a result of insurers cutting crediting rates to less competitive levels because of unsatisfactory investment performance.

Reserving and Solvency

6.11 Statutory reserves for par business in China are calculated on a net-premium valuation basis, with an allowance for Zillmer adjustment. Similar to Hong Kong and India, the regulatory solvency requirements for long-term business in China are factor based—a percentage of reserves plus a percentage of sum at risk. The solvency adequacy ratio is calculated as the available capital divided by the minimum solvency capital requirement, with the specified minimum set by the insurance regulator being 100%.

Conclusions

6.12 Whilst the publically available information on par business in China is limited, the sales figures suggest that par business is the dominant type of life insurance currently offered in the Chinese market (based on premium amounts). However, as it is typically seen as more of an investment product than insurance, the challenge going forward could be in competing against products offered by other financial institutions (such as wealth management arms of commercial banks, trust companies, and security firms).

6.13 Other challenges that par funds could face in the future relate to the business becoming more mature. Commercial pressures of continuing to meet policyholders' expectations on dividend rates are testing the actual investment returns being earned and the levels of expense being incurred. Liquidity is also a potential issue as large volumes of endowments that have been sold since the inception of par business in China start to mature. The strategies that insurers adopt in meeting these challenges will have a strong bearing on the future of both par business and the life insurance industry as a whole.

7. SPOTLIGHT ON UNITISED WITH-PROFITS

7.1 In Section 8 we will look at how par business evolved in the United Kingdom, which will include the development of unitised with-profits (**UWP**). Later on, in Section 9, we will also be specifically considering how UWP could work in Singapore. To give the reader a better understanding of what UWP is and how it works, ahead of these discussions, this section provides a spotlight on its basic features and key differences from traditional par products.

Relationship With Traditional Par Products

7.2 UWP is a term used for par products where the benefit amounts are, in some way, linked to a unit account. For this report we use the term 'traditional' to refer to all par products that are not unitised, however the term 'conventional' can also be used for this. UWP and traditional par products share the common feature of profit sharing and will typically be written in the same (par) fund, and when a company refers to its par business this will include both UWP and traditional par business.

7.3 Although there are different styles of UWP, as we will discuss below, let us first consider the common type that we will be using as our example later in Section 9. The policyholder's view of this model is to pay premiums into an account from which charges are then taken throughout the course of the policy. Regular bonuses are added to the account in a similar way in which interest is added to a bank account, and at any point in time the policyholder can see this 'face value' of their policy. At the point of a claim (for example on death or maturity) the policy will pay out the face value plus, potentially, an additional terminal bonus.

7.4 In contrast, under a traditional par policy the policyholder pays premiums in return for a basic sum assured amount. Unlike UWP, the policyholder cannot see any clear link between the premiums and the sum assured and no charges are taken that affect the sum assured. Each year regular bonuses increase the sum assured and at the point of claim the policyholder receives the basic sum assured, plus the regular bonuses that have been added during the course of the policy and, potentially, a terminal bonus.

7.5 The clearest difference between a traditional par product and a UWP product can be seen with a regular premium example. For a UWP product the face value at the start of the policy will be low, as it only reflects the premiums paid to date, but for a traditional product the sum assured is much higher as it is based on the premiums expected over the duration of the policy. However, if the policyholder wants to have additional life coverage on the UWP product, to provide greater protection in the early policy years, then typically they can take out a rider that pays out the gap between the death benefit from the basic UWP policy and a higher fixed amount of their choosing. An additional charge is deducted from the face value of units for this extra cover, based on the size of the amount of additional cover at each point that a charge is taken.

Basic Features of UWP

7.6 UWP can be implemented in many different ways, ranging from basically a traditional par product that is just presented differently, at one end of the spectrum, through to smoothed fund investment-linked products at the other end. Common to all methods, however, is the policyholder view of an account value that is made up of a number of units and a unit price, underlying the policy.

7.7 Typically the policyholder will see the UWP policy working in very much the same way as an investment-linked policy:

- Premiums are paid into an account.
- Charges are deducted from the account and/or the premiums prior to allocation to the account.
- The account value accrues interest, either from an increase in the unit price or the addition of units.

7.8 Unlike investment-linked policies, however, the interest that is credited to the policy is not *directly* linked to an underlying investment (although it can be *indirectly* linked). A common approach used is for the interest added to be based on a regular bonus rate, declared annually and applied over the course of a year. Typically with this approach, the regular bonus rate would be subject to a minimum (possibly zero), such that it provides a guarantee on the investment return. On top of the regular bonuses, a terminal bonus might be applied at the time of a claim, increasing the pay-out, but these would not be guaranteed in advance.

7.9 The use of terminal bonuses in this approach gives more flexibility on final pay-outs and therefore reduces the guarantees provided to the policyholder. This limits the investment risk to the par fund, but it can also reduce the transparency of the product to policyholders as the value of the policy is not simply the account value. The terminal bonuses are usually set with reference to the actual performance of the underlying assets of the fund, but will also allow for smoothing as this is seen as a fundamental feature of participating insurance.

7.10 An alternative approach, which has developed in more recent years, is for the unit price to move in line with a smoothed investment return, which can go down as well as up. An additional guarantee of a minimum unit price can be offered on a policy-by-policy basis, with an explicit charge for the additional guarantee. No terminal bonuses apply under this approach, making it clearer to the policyholder what the value of their policy is. Whilst this smoothed fund approach is becoming more popular, for our later work we shall not be considering this, instead using the more common format described previously.

7.11 Often additional benefits, on top of those provide by the account value, can be attached to the policy as riders, with additional deductions from the account value taken to cover the costs of the riders. This can include additional death benefit amounts, which can be set in relation to the value of the main policy (so as to give a minimum combined death benefit). These riders can be written in either the par fund or the shareholder fund, depending on any regulatory rules around transfers between the funds.

Surrenders

7.12 With guarantees and smoothing inherent in the account values under both of the accumulation approaches described, there are potential anti-selection issues with surrenders on UWP policies. Under the first approach, if markets fall and the underlying investments are worth less than the face value of the units then policyholders could select against the fund by surrendering their policies. To prevent this from happening, companies have used market value adjusters (MVAs, see also page 32 in Section 8) which reduce the pay-outs on surrenders to levels consistent with the asset share for the policy.

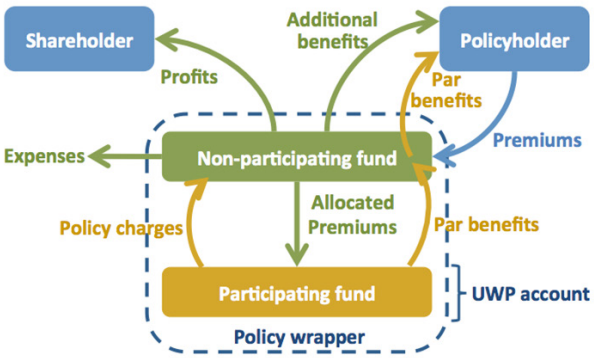
7.13 MVAs are not required for traditional par products because there is no face value to adjust from. Instead, companies use surrender values, but the policyholder has no other policy value that they can directly relate these to. As is discussed later in Section 8, the experience of the UK market was that policyholders were not expecting the use of MVAs, and their use resulted in significant negative publicity for UWP products. Clear communication at the point of sale is therefore important to manage expectations around the use of such reductions.

7.14 For the smoothed fund approach the basic fund value does not have a specific guarantee (unless the policyholder has chosen one on top), so the need for MVAs is reduced. However, the smoothing mechanism will typically mean that in periods of falling markets the smoothed fund value would be higher than the underlying asset values, and therefore presents a selection risk (mass surrenders during falling markets would result in significant smoothing costs). To protect the fund against this anti-selection risk, companies will reserve the right to suspend smoothing if the net cash flows in or out of the fund become too severe. Again though, it is essential for companies to give clear explanations and communication at the point of sale to manage the future expectations of policyholders with regards to this possibility.

Policy Structure and Profit Sharing

7.15 Typically, UWP policies are presented as a fund option inside a non-par investment-linked master policy or wrapper, which allows the policyholder to invest a proportion of their policy in UWP and the remainder in other investment-linked funds. Within this structure, as illustrated in Figure 7.1 for a policy with only one (UWP) fund link, premiums are paid into the policy wrapper and then allocated to the UWP account. Charges are deducted from the UWP account in return for the additional benefits covered by the non-par fund (i.e., additional death benefits and other riders) and also for expenses relating to the policy. The excess of these charges over the actual costs and expenses is profit to the shareholder. When the policyholder makes a claim, the benefits from the UWP account are paid out, plus any additional benefits from the non-par fund.

FIGURE 7.1: DIAGRAM SHOWING INVESTMENT-LINKED POLICY STRUCTURE WITH 100% ALLOCATION TO UWP FUND



7.16 Historically, par products would share in all of the profits related to the business (investment, expense, mortality, surrender, etc.), with a proportion of the profits going to the shareholder (for example 1/9th in a 90:10 split). However, under the UWP structure described above, where the par investment is essentially a fund-link enclosed in a non-par wrapper, expenses (excluding investment) and mortality costs are borne by the non-par fund in return for the explicit charges taken. The UWP element is only exposed to investment profits (and investment expenses), and so in this structure the profit-sharing is reduced. In the UK, it is now common that under this policy structure, the policyholder receives 100% of the investment profits (i.e., a 100:0 arrangement) as the shareholder is receiving its profits via the explicit charges that it takes. The shareholder does retain some interest in the investment returns, however, through any charges that are a percentage of fund value.

7.17 It is possible to structure the policies differently, and to maintain the same profit-sharing arrangements that apply on traditional par policies. This involves the policy wrapper sitting inside the par fund, with the deductions from the UWP account (and any other fund links) going into the main par fund. In return, the par fund has to cover the expenses related to the policy and the additional benefits paid out in excess of the UWP (and other investment-linked) benefits. Any profits or losses from the excess of the charges over the expenses and benefit costs are distributed across the par fund through bonuses, with the shareholder receiving their proportion of any bonuses declared. This is the approach used by mutual companies, where there are no shareholders and for policies written in mutual funds that were subsequently demutualised.

7.18 As discussed later in Section 8, one of the advantages of the 100:0 structure, described above, is that it improves transparency and separates the shareholders' interests from the policyholders' interests.

8. LESSONS FROM ANOTHER MARKET: UK WITH-PROFITS

8.1 In the earlier sections we have seen that par business has been an important element of many life insurance markets in Asia. Customers continue to value the guarantees and predictability offered by par business, compared to the returns from investment-linked products, for example, particularly following recent economic events. Given this significance, it seems useful to consider how par business could evolve in the future and to explore some of the issues it might face.

8.2 As a case study, this section considers the experience of par business in the United Kingdom. For over 200 years par business was the major offering in the UK life insurance market but, since the end of the 20th century sales have dwindled to negligible volumes. We will look at what made it so popular, why it evolved as it did, and what caused its demise. Drawing on the lessons from the experiences of the UK, may suggest how to prevent the same fate occurring in Asian markets.

UK With-Profits History[3]

8.3 The concept of participating insurance (more commonly referred to as with-profits in the UK) has been around since the 18th century, when the first mutual companies were set up. The first mutual life assurance company in the UK was Equitable Life, established in 1762, and the first bonuses were declared in 1781. Unlike proprietary companies, mutuals have no shareholders and are instead owned by their customers (members) who share in the fortunes of the company, providing capital and receiving a share of any profits that arise. During the 1980s and 1990s however, many mutual companies in the UK 'demutualised' and raised capital from external investors (who would become shareholders) leading to proprietary companies with ring-fenced with-profits funds where the policyholders still have an entitlement to a share of the profits emerging.

8.4 Originally, all with-profits bonuses were reversionary increases to the basic sum assured and were based on the view of the mutual's board members as to how much profit could be distributed. Computation and calculation powers during the 19th century were limited, and companies, understandably, tended to take a prudent approach to bonuses, leading to a build-up of excess capital that supported new business being written. In more modern times, when asset share type calculations became common for determining policyholder pay-outs (via bonuses), this built-up capital would not be identified as belonging to any existing groups of policyholders, and instead would be deemed the 'inherited estate' (or working capital) of the fund. These inherited estates would prove important in the future as a buffer against unexpected events[4], including providing capital support under more stringent regulatory solvency requirements, but also had the associated ownership issues of how to distribute the excess capital when the funds closed and went into run-off.

8.5 The 1930s saw a period of low interest rates and rising taxes, which would have put pressure on the sustainability of bonus rates at the time, but bonuses were not cut. Under modern valuation and solvency regulations some funds could have been at risk of not being able to meet their minimum solvency requirements, but then came the onset of WW2 in 1939. Companies did not declare any bonuses for three to five years during the war in the early 1940s, and this helped them to survive the low interest rate period.

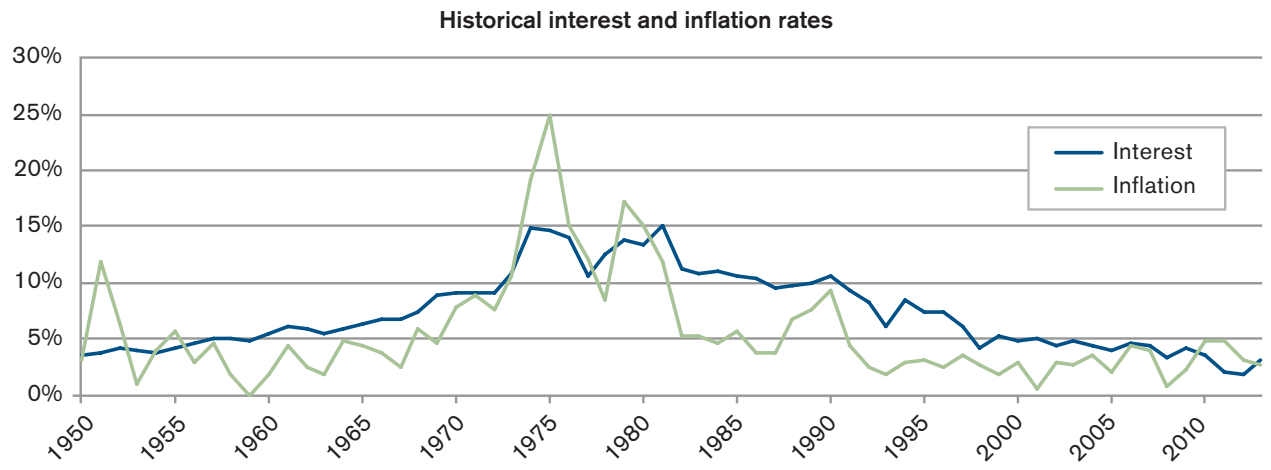
8.6 The 1950s saw the introduction of policies grouped into different bonus classes within the same with-profits fund, mainly because of the introduction of, firstly overseas business, and then pensions business. The first terminal bonuses were declared by Prudential in 1956 and over the course of the 1950s and 1960s reversionary bonuses moved from simple to compound, and then later to super-compound, in an attempt to improve the balance of profit distribution between short- and long-term policies.

[3] This section draws heavily on the following two papers, which the reader is directed to for more detail on UK with-profits business: *'Unitised With-profits – Gamaliel's Advice', JE O'Neil and HW Froggatt, Journal of the Institute of Actuaries [JIA] (1993) 120: 140-469; and 'Smashing With-profits Business', Howard Froggatt and Icki Iqbal, Staple Inn Actuarial Society, 15 October 2002.*

[4] Equitable Life's practice of full distribution, without maintaining an inherited estate, was a factor in its downfall.

8.7 Chart 8.1 hows the trends in UK interest and inflation rates since 1950.

CHART 8.1: UK INTEREST AND INFLATION RATES SINCE 1950



Sources: interest rates from Bank of England (10 year spot rates[5]); inflation (RPI) rates from the UK Office of National Statistics

8.8 During the 1950s gilt yields started to rise (to c. 5% by the end of the decade), but high running yields on equities (c. 4.5%) made it tempting for the funds to move from gilts into equities. Inflation rose dramatically during the 1970s (peaking at 25% in 1975), and although bond yields also rose, it was not by as much. This resulted in negative real returns from bonds, which also promoted a move from bonds into equity and property.

8.9 The 1970s saw the introduction of low-cost endowments to back property mortgage loans[6] and also significant sales of deferred annuity pensions business with guaranteed minimum annuity rates. Both of these products would prove to have significant impacts on with-profits business in the UK.

The Birth of UWP

8.10 The unitised with-profits concept was introduced during the 1980s, with several factors influencing its development and later popularity. The rising market environment of the 1980s made new investment-linked products more attractive than traditional with-profits products where bonuses are added gradually to the policy. This prompted older with-profits companies to reconsider the design of their products. Later, when markets crashed in 1987 and again in 1990, sales of investment-linked business suffered as customers desired more protection and guarantees, such as those offered on the new UWP products which gained in popularity as a result.

8.11 During the 1980s interest rates started to fall from the highs of the late 1970s and early 1980s. This made the guaranteed minimum maturity benefits on traditional with-profits policies more expensive to meet. Higher reserves were required to be put aside because the future investment returns that would be earned on those reserves, and on future premiums, was expected to be lower than assumed: (i) when the policies were issued (in respect of minimum maturity benefits purchased through the payment of premiums); and (ii) when reversionary bonuses were added in the past.

8.12 In contrast under UWP policies each premium purchases units, and regular bonuses are credited in the form of an increase in unit price or as bonus units. Unit prices are typically guaranteed not to fall in value but, as the face value of units allocated to a policy is only paid at maturity (or earlier death), that is a less onerous guarantee than built into traditional with-profits policies. In particular, lower interest rates during the term of the policy can be reflected in the rate at which benefits are credited to the policy. In the falling interest rate environment that the UK has experienced since the early 1980s, this feature of UWP made it a more attractive proposition for insurance providers to sell, compared to traditional with-profits.

[5] Interest rates prior to 1975 from: 'Long Term rate of Interest in the Valuation of a Pension Fund', C. D. Daykin, a paper discussed by the Society on 17 February 1976.

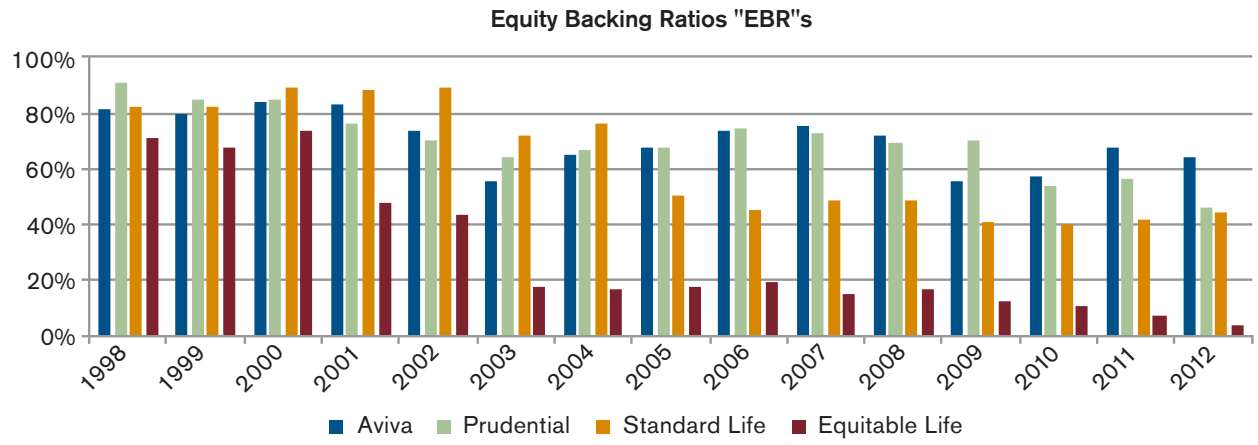
[6] A with-profits policy was sold as a means of repaying an interest-only mortgage and offering the possibility that the maturity value would exceed the outstanding debt.

8.13 Pensions business was becoming an increasing source of sales for life companies, but changes in pension legislation in 1988 increased the sales opportunity significantly.[7] Traditional with-profits products were not well suited to the personal pensions business, where premiums tended not to be regular or level. Instead, companies needed to develop a new product design that had greater flexibility to cope with this type of saving. UWP met this requirement, with its benefit amounts and guarantees linked to the premiums that have been paid, rather than to a final sum assured figure set at policy inception. Also, the administration systems that had been built for investment-linked products could be easily adapted for UWP, minimising the development costs.

8.14 Between the 1950s and 1980s, premium rates on non-profit products reduced significantly, but rates for traditional with-profits policies remained largely unchanged. The effect was that companies were typically increasing the loading for future bonuses in their with-profits premiums from 10% to over 40%. Unlike non-profit business where the key comparison between providers was on premium rates, for with-profits products competition was based on bonus rates. This was further influenced by changes in regulation (the Financial Services Act 1986) which saw the focus of sales promotion move from prospective illustrations to past pay-outs and bonus rates. Competitive pressures meant that companies wanted to avoid cutting bonus rates, but falling investment returns in the late 1980s and early 1990s made them difficult to maintain. The introduction of UWP provided an opportunity to offer different bonus rates on new (UWP) and existing (traditional) business, which also could not be directly compared. This allowed companies to reduce bonus rates on older business, whilst still offering competitive rates for new business.

8.15 With-profit fund investment in equities, which covers both traditional and unitised with-profits business, continued to increase and by the late 1990s equity backing ratios (EBRs), which we define as the proportion of a fund's assets invested in equity and property, were in excess of 80% for some funds. This can be seen in Chart 8.2, which shows EBRs for with-profits funds from four representative UK companies (Aviva, Prudential, Standard Life, and Equitable Life). The general trend since the start of the 21st century has been for funds to reduce their exposure to equities and property, which will be discussed later, as will the more extreme reduction seen for Equitable Life.

CHART 8.2: SAMPLE EQUITY BACKING RATIOS SINCE 1998



Source: 'UK Life and Platforms', Cazalet Consulting

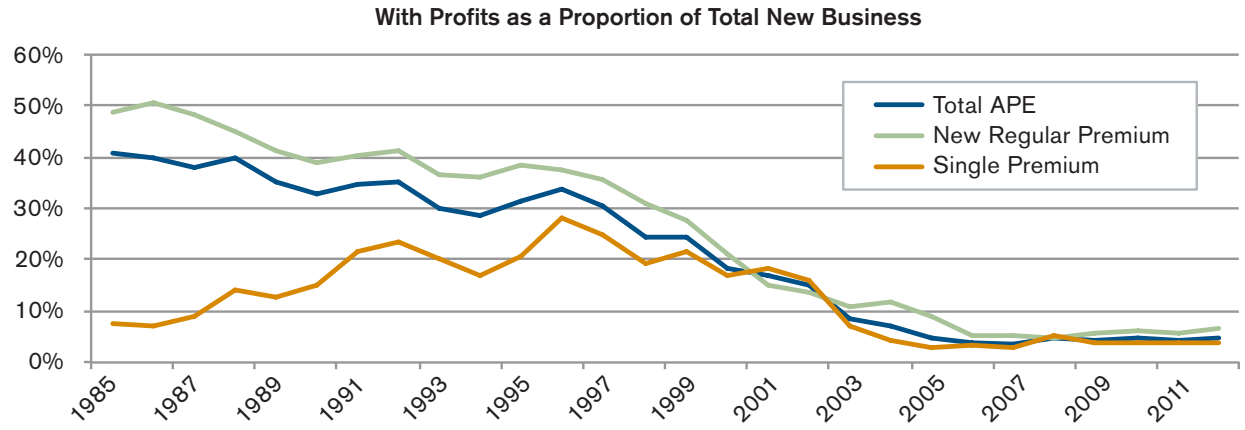
8.16 The stock market crashes of 1987 and 1990, as well as the costs associated with implementing new regulatory changes, had an adverse impact on available capital in with-profits funds, as did the costs of maintaining high bonus rates for competitive purposes. Coupled with the large increase in sales from pensions business and associated new business strain, the lower capital requirements of UWP over traditional with-profits was another important factor in its development. As reversionary bonuses for UWP are declared as a proportion of the accumulating 'fund value' rather than a final sum assured, the immediate cost of bonus declarations for UWP was also lower than for traditional with-profits.

[7] The sale of personal pensions between 1988 and 1994 would later give rise to the UK Life Industry's most costly mis-selling scandal, arising from customers being advised against their employers' pension schemes, rather than specific failings with the products being offered.

Scandals and the Demise of With-Profits

8.17 Chart 8.3 gives an idea of how the with-profits new business volume has evolved since 1985, as a percentage of total new business. It shows that sales of with-profits business continued to be strong through the 1990s, making up a significant proportion of new business. However, interest rates and inflation both dropped significantly in the 1990s and have not returned to the higher levels seen in the 1970s and 1980s (as shown in Chart 8.1). The drop in interest rates would prove to have significant implications for with-profits business in the UK, sparking the failure of the world's oldest life assurer, Equitable Life.

CHART 8.3: PROPORTION OF NEW BUSINESS VOLUMES FROM WITH-PROFITS



Source: FSA Returns

Equitable Life

8.18 A significant amount of the pensions business issued during the 1970s and 1980s had guaranteed annuity options (GAOs) attached to them, which provided the policyholder with a minimum annuity rate that would apply at the time they retired. With long-term interest rates at the high levels seen in the 1970s and 1980s, the guaranteed annuity rates were well below the market levels of the time, and hence were not seen as a particularly significant liability and no reserves were held in respect of the option. However, when interest rates dropped dramatically in the 1990s, these GAOs suddenly became very valuable to policyholders and a significant liability to the with-profits funds. Equitable Life believed that they could manage the risk by reducing terminal bonuses on those policies where the policyholder exercised the GAO to effectively neutralise the additional cost of the GAO, which they started to do in 1994. Complaints then followed as the practice essentially made the guarantee worthless, and a representative legal case was taken through the courts, ultimately ending in a House of Lords judgement in 2000, that found in favour of the complainants. Equitable Life's difficulties were compounded by, inter alia, their practice of full distribution (so an inherited estate was not available to cushion the impact of the ruling), and policy guarantees applying to all future premiums (including additional single and regular premiums).

8.19 Equitable Life had not made any provisions against a negative ruling, and found that they had no way to cover the immediate £1.5bn increase in their long-term liabilities. After unsuccessfully putting themselves up for sale, they were forced to close to new business and cut benefits to policyholders and effect a compromise scheme. In Chart 8.2 we can see the impact that this had on their investment strategy, quickly reducing their exposure to riskier assets as they no longer had the capital to support this investment strategy. Investigations and reports into the collapse would carry on for the next ten years, but the damage to the reputation of with-profits[8] had been done: with-profits business had become synonymous with the failing of Equitable Life.

Endowment-backed mortgages

8.20 As well as the issues with GAOs, the fall in inflation during the 1990s dampened down expected returns on with-profits funds, which at the point of sale in the 1980s had been high, often in excess of 10% p.a. Regulation changes and concerns over potential future mis-selling problems meant insurers had to scale back their expected growth rates and, as a result, customers were seeing projected maturity values that were significantly lower than had been projected at the time they took their policies out.

[8] And to the Actuarial Profession, the UK regulator and the regulatory system.

8.21 This was a particular problem for the large amount of with-profits endowments that had been bought to back interest-only mortgages in the 1980s and 1990s. These policies had been taken out by customers who intended to pay off the principal and interest on their property mortgages at the end of the term using the proceeds from the endowment. When taking out the endowments customers had selected their sum assured allowing for expected future bonuses based on the high projected growth rates being illustrated at the time, so when actual growth rates turned out to be lower and projections were scaled back, policyholders began to realise that their maturity values were not going to be sufficient to repay their mortgage. At the time they took the policies out, many customers believed they would actually be getting back more than they would need to pay off the mortgage, so the shock of not even having enough to cover that was even more pronounced.

8.22 Many complaints were brought against the insurance companies during the first decade of the 21st century in relation to mortgage endowments, and it gained a large amount of coverage in the media, particularly because of the social implications of the failings (home ownership is the dominant form of housing tenure in the UK). Not adequately explaining the risks (that there could be a shortfall between the endowment payout and the mortgage debt), and in some instances being incorrectly told that the endowment would definitely cover the mortgage, were the main complaints. Although not all mortgage endowment products were with-profits, the majority were, and consequently the problems with mortgage endowments and associated bad press had a very damaging impact on the reputation of with-profits in general. Although complaints related to these products have reduced significantly from their peak in the mid-2000s, many of the policies are now maturing, keeping the story in the news.

Market value adjustments

8.23 On top of the issue with GAOs and mortgage endowments, the bursting of the dot-com bubble and subsequent stock market crash at the start of the 21st century added further to the problems of with-profits funds. Equity investment had steadily increased since the 1970s and by 2000 it was typical for funds to have well over 50% of the fund invested in equities and property (as shown in Chart 8.2), so the crash was felt strongly. As a result, terminal bonuses were cut sharply and the following years would be marked by continual drops in the reversionary bonus rates, as well as a scaling back of equity exposure. With asset shares typically having dropped significantly below the face value of units of UWP policies, insurers started to apply market value adjustments (MVAs[9]) that reduced surrender values below the unit face values.

8.24 The MVAs were applied to protect the remaining policyholders in the fund from the effect of paying the face value of units to surrendering policyholders when this exceeded the value of the underlying assets, but many just saw them as a penalty included in the small print of contracts to prevent customers from terminating their policies. One of the challenges with UWP is that the fund value gives policyholders an expected 'value' for their policy, unlike traditional business where the sum assured could be years away and so there is no such easily identifiable 'value' to expect on immediate surrender (note that UK traditional with-profits policies did not offer guaranteed surrender values). This makes surrender penalties on traditional business easier for policyholders to accept than MVAs, especially because the effect of those surrender penalties cannot be readily quantified by the policyholder. MVAs were new and unexpected having not previously applied before the turn of the new millennium. Anger at the introduction of MVAs applied yet more damage to the image of with-profits products in the UK.

Response to the Scandals, Reviews and Regulation Changes

8.25 In response to the near insolvency of Equitable Life, the UK regulator launched a review[10] into with-profits business, which highlighted lack of transparency and poor communication to policyholders as key failings of the business. Outcomes of the review included new rules and guidance on: treating with-profits customers fairly; inherited estate reattribution processes; and the process of closing funds to new business. Another key outcome of this review was the introduction of Principles and Practices of Financial Management (**PPFM**) documents, which had to provide details of how the with-profits funds are run (including policies on smoothing, investment, bonus and MVAs setting).

8.26 At the same time, and in conjunction with the review of with-profits, the regulator also developed a new solvency framework for insurers during the early 2000s. This included a realistic balance sheet valuation of with-profits funds which reflects the risks of the fund and the manner in which it is run. In particular, it makes allowance for the financial options and guarantees within with-profits policies, based on the volatility of the assets backing the funds. Riskier investments such as equities now have a cost on the balance sheet as they will increase the time-value of those guarantees and options. The techniques developed by the industry to produce realistic valuations provided greater insight into the risks faced by with-profits funds. As a result, some insurers reduced the exposure of their with-profits funds to riskier assets (see Chart 8.2) with the aim of achieving a more desirable balance between risk and reward for with-profits policyholders. Such reductions reduce the potential for higher bonuses in the future, but increase the likelihood that the insurer is in a position to honour commitments made to date.

[9] Older UK contracts and marketing material typically refer to market value adjustments. Nowadays contracts and marketing materials will refer to market value reductions (MVRs) because such adjustments, when applied, always reduce the benefits that would otherwise be paid.

[10] The National Archives. With profits review. Retrieved 14 August 2014 from http://webarchive.nationalarchives.gov.uk/20080814090418/fsa.gov.uk/pages/library/other_publications/profits/index.shtml

8.27 Separately, the UK government commissioned Ron Sandler to conduct a wider review[11] of the financial services industry in 2001. With-profits were a particular focus of the review, with concerns around the lack of transparency to policyholders and the level of discretion that providers could exercise in the management of the funds. Amongst other things, Sandler felt that the 90 policyholders:10 shareholder split of profits was too arbitrary and that new products should be written in 100:0 funds, with shareholders profits coming from margins arising from explicit policy charges. Many funds had already moved to this system for their UWP policies anyway, so this was not considered particularly revolutionary.

8.28 To improve transparency, Sandler recommended the removal of MVAs and the introduction of smoothed unit prices and unsmoothed unit prices (reflecting actual asset values) published daily, allowing the consumer to clearly see the value of their policy. This would be a move away from the existing practice, where smoothing occurs on the final pay-outs, after the application of any terminal bonus, rather than on unit values. Within the industry this raised concerns over policyholders choosing to surrender only when smoothed unit prices exceed unsmoothed unit prices, particularly as Sandler also wanted smoothing accounts to be run with zero cost, so the cost of selective surrenders would fall on the remaining policyholders. Perhaps the most challenging of his recommendations was that charges for products should not exceed 1% p.a., which was felt challenging enough by the industry, even before trying to allow for the costs of any guarantees that the products may offer.

8.29 In 2005, the government applied Sandler's recommendations to a new breed of low-cost simple savings products that insurance companies could offer, including the 'stakeholder pension'. However, the low charges (limited to 1.5% p.a.) gave companies little incentive to sell these and so they never really took-off[12]. By the late 2000s, sales of new with-profits business in the UK had dropped off significantly, as illustrated in Chart 8.3.

8.30 In its follow-up review[13] of the with-profits regime, published in 2010, the regulator concluded that with-profits was still too opaque, and identified the areas of governance (particularly around conflicts of interest) and policyholder communication as being of particular concern. The response was to further strengthen the rules around how with-profits managed, in some cases making it harder for companies to justify continuing to offer it. Separately, there has been concern from mutual companies that the new regulations do not allow for the mutual business model, potentially forcing them to close to all new business (not just with-profits). Termed 'Project Chrysalis', the discussions and investigations into this issue are now, nearly ten years on, leading to some resolution of these issues.

8.31 On top of this, and perhaps more significant in the context of sales, has been the Retail Distribution Review (RDR) regulation changes, introduced at the start of 2013, which banned undisclosed commission. This has led to a further reduction in the sales of new with-profits policies and the withdrawal of a number of products (particularly single premium with-profits investments) from the market.

8.32 One of the big issues facing with-profits funds in the UK now is how to manage the inherited estates, which have built up as capital support to the with-profits business, but are now greater than is required for the contracting size of the funds. High profile cases in recent years have included reattributions of the inherited estates by AXA in 2001 and Aviva in 2009, where policyholders have been offered special cash bonuses in return for giving-up their rights to future distributions from the relevant inherited estate. Determining what constitutes a fair amount to policyholders in these reattributions is a contentious issue and the debates involved have drawn yet more public attention onto the workings of with-profits, and the lack of transparency and level of discretion involved.

With-Profits Today and Conclusions

8.33 As shown in Chart 8.3 with-profits now makes up a very small proportion of sales in the UK. The majority of the little new business being written is unitised, typically with the with-profits fund just one of a wide variety of fund options available to the insurance product wrapper. 'Smoothed investment fund' type offerings are a new development, where smoothing is still employed, but there is no implicit or explicit guarantee preventing the unit price from falling. For these smoothed return products, separate guaranteed options exist and there is an explicit charge for that guarantee fixed at outset that depends on the term of the investment and market conditions at the point of sale.

[11] The National Archives (9 July 2002). Sandler Review: Medium and Long-term Retail Savings in the UK. Retrieved 14 August 2014 from http://webarchive.nationalarchives.gov.uk/20100407202258/http://www.hm-treasury.gov.uk/medium_and_long_term_retail_savings_in_uk.htm

[12] The introduction of stakeholder pension business had a beneficial impact for policyholders on some in-force business. Where necessary, insurers reduced future charges to avoid cannibalisation of their existing pension books.

[13] Financial Services Authority (June 2010). With-profits regime review report. Retrieved 14 August 2014 from http://www.fca.org.uk/static/documents/fsa-with-profits-report.pdf

8.34 There has been significant evolution of with-profits business in the UK since its inception in the 18th century, but the reputational damage from the scandals at the turn of the 21st century has left it as a difficult proposition to market. The failings that led to this reputational damage have arguably been due to fund mismanagement (in the case of Equitable Life), poor communication of the risks involved during the sales process, and the opacity of the product. Underneath these issues though, the with-profits concept itself is still a sound and important proposition that can distinguish insurers from other financial product providers. This is particularly true now, with consumers placing greater value on guarantees following the global financial crisis, but there are many lessons that should be taken away from the UK's with-profits experience.

8.35 From the policyholder's perspective:

- Smoothing and guarantees are valuable benefits that distinguish with-profits from other product types.
- With-profits business is not simple, and for it to work consumers need to understand the risks as well as the benefits of the products, which requires clear, good quality, communication from providers.
- The discretionary nature of with-profits, together with its complexity, can make it very opaque in the eyes of the policyholder, which then makes it difficult to trust the provider. Greater transparency about how funds are run, through well written thorough PPFMs, can help with this issue.
- Transparency is also aided by UWP, particularly if it is written as 100:0 and only participates in investment and smoothing profits and losses, because it makes it clearer what the policyholder is paying to the company for the services provided.
- UWP allows for greater flexibility than conventional with-profits products, making it more suitable when future contribution amounts might need to change, for example with retirement saving (pensions).

8.36 From the shareholder's perspective:

- Reputation and regulatory risks can be very significant for with-profits business. A simpler and more transparent product can reduce those risks.
- Because of the discretion involved, policyholders' reasonable expectations play a significant part in the management of with-profits business. Providers need to maintain good controls over the sales process and give clear communication both at the point of sale and afterwards.
- Working capital/inherited estate is very important to the management of with-profits funds. Clear definition around its use and ownership can help avoid conflicts in the future.
- Funds need to be managed carefully with due regard to the relationship between the assets held and guarantees (including bonuses) provided and/or expected under policyholders' reasonable expectations.
- UWP can be more capital efficient than conventional with-profits, as the basic sum assured builds-up over time with the payment of regular premiums. This structure also makes it easier for the company to predict its future profits from the product.

8.37 We remain firmly of the opinion that there is a place for par business in Asia, but for its success to continue, the industry in these markets needs to take heed of the lessons from the United Kingdom. Regulators across the region (especially, Singapore, India and Malaysia) are starting to take steps to improve governance, but there is still a wide gap with practices in the UK.

9. EXAMPLE: UWP IN SINGAPORE

9.1 In this section we consider a hypothetical single premium UWP product in the context of the Singapore market, and compare it against two examples of existing products (single premium traditional par and single premium universal life). UWP is not currently sold in Singapore and, as a result, specific regulations, particularly for reserving and capital, do not exist. For the purposes of this work we have designed the example product in such a way that we can fit it to the existing valuation and capital framework in a sensible manner. However, the Singapore regulator (the MAS) may have different views on this, should they allow such products to be sold.

9.2 For simplicity, the products that have been considered here are single-premium whole of life, with a premium of SGD100,000 and a minimum sum assured of SGD500,000. The assumptions used in the projections and calculations are provided in Appendix A, together with the detailed product features that we have used in the examples. The example traditional par and universal life products are not based on any specific existing products and are just examples for comparison. The UWP product has been designed in this specific example as a comparison against the traditional par and universal life products illustrated in this study. In reality, an insurer would undergo a full pricing exercise to tailor the products to their specific target markets and internal risk and profitability targets, which could significantly affect the results presented here.

9.3 Where we compare the projected policyholder benefits and the profitability figures across the different example products it should be noted that this is just for the specific example products. By altering charging structures, premium rates, or other product features, it will be possible to change the balance between the benefit to the policyholder and profit to the shareholder. The purpose of this analysis is to highlight differences in the general shape of benefits, capital requirements, and profitability drivers.

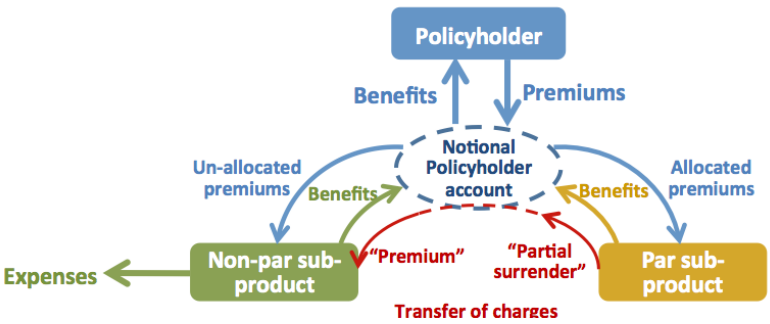
9.4 For ease of comparison, basic summaries of the three products are as follows (see Appendix A for more detail):

- **Traditional par product:** The total sum assured is provided by the par fund and is increased each year by compound regular bonuses. An additional terminal bonus is applied on claims.
- **UWP product:** The initial 'face value' of units in the par fund is equal to the premium paid less initial charges. This amount is increased over time through compound regular bonuses, which are offset to an extent by deductions for charges. On claims, a terminal bonus is added, which increases the benefit from the par fund. Any additional cover on death to reach the minimum sum assured amount (SGD500,000) is provided by the shareholder, in return for a monthly charge related to the cost of the additional cover required at that time.
- **Universal life product:** Initial account value is equal to the premium paid less initial charges. Further charges are deducted from the account value over time, but it is also credited with interest, guaranteed to be at least 2%. Payment on death is equal to the greater of the account value or the minimum sum assured. One of the charges deducted from the account value is for the additional death cover for any shortfall between the account value and the minimum sum assured, and is taken monthly based on the cost of the cover at that time. All benefits are paid by the shareholder.

UWP Product in Singapore

9.5 To apply the existing Singapore regulations to the UWP product, it has been considered as two interacting sub-policies: one par; and one non-par. This is represented in Figure 9.1. The two sub-products allow us to split the investment benefit (from the par sub-product) from the expense and insurance risk benefit (the non-par sub-product).

FIGURE 9.1: DIAGRAM SHOWING THE SPLIT OF THE UWP PRODUCT INTO NOTIONAL PAR AND NON-PAR SUB-PRODUCTS. NOTE HOW CHARGES ARE TRANSFERRED VIA A PARTIAL SURRENDER OF THE PAR SUB-PRODUCT



9.6 The single premium, less an initial charge, is allocated to the par sub-product, with an initial sum assured in the par sub-product equal to the allocated premium.

9.7 The initial premium charge and subsequent periodic charges taken monthly from the par sub-product are paid to the non-par sub-product. We have considered these periodic charges as partial surrenders of the par sub-product and not as explicit charges deducted from the par fund itself. This is to accommodate the legislation that limits transfers to the shareholder from the par fund to 1/9th of the cost of bonuses distributed in the year, and hence does not expressly permit for variable charges to be deducted for the benefit of the non-par fund in this way. (If explicit fees could be deducted from the par fund without having to flow thorough the 90:10 gate this would permit a simpler structure to be adopted.) We have also assumed surrender penalties can be deducted from the par-fund surrender benefit to cover establishment costs and transferred to the non-par fund. In practice, it would need to be discussed with the MAS how to accommodate this within the current regulatory framework.

9.8 Considering the par sub-product in terms of a current traditional par product, the sum assured is increased by regular bonuses, which in our example have been assumed to be a guaranteed 3% per annum. Any excess investment return is paid out as terminal bonuses (including on surrenders), with no resulting transfer to the shareholder. In other words, this is assuming a 100:0 split of investment profits between the policyholder and the shareholder, but there are no other sources of profit on the par sub-product (as the expense and death risks are taken on by the non-par sub-product in return for the charges paid). Partial surrenders are taken to meet the premiums required on the non-par sub-product.

9.9 The non-par sub-product covers all of the expenses associated with the product, including commissions, and the additional death benefit required to meet the minimum guaranteed on the product. This is effectively a monthly-renewable assurance, with the monthly premium depending on the sum-at-risk (the difference between the current death benefit from the par sub-product and the minimum death benefit overall). The extent to which the premiums into the non-par sub-product (in other words the charges on the combined product) exceed the actual expenses and cost of insurance determines the profits to the shareholder.

9.10 The overall product is similar to an investment-linked product, with a rider for additional death benefit that covers any shortfall between the current account value and a fixed sum assured. In practice, the company can consider the investment-linked account in two different ways: a nominal or face-value account where the investment return applied to the units is a declared reversionary bonus rate; and a market value account where the account value is based on the actual underlying investment returns (also called an asset share). In this view, the face-value account represents the guarantee level of benefit, and the asset share represents the true underlying value of the assets backing the policy.

9.11 Typically the policyholder would only see the face value of the units, but the company would use the asset share account as a reference for setting terminal bonus rates. Smoothing could also be applied to the asset-share investment return. In this dual-account view, the benefit paid out from the investment account is the higher of the face value and the (smoothed) asset share. In our example we have assumed the guaranteed face-value applies on surrenders as well as claims, but in the UK this is typically not the case and MVAs can be applied on surrenders so that surrenders do not lead to any costs of guarantees.

Benefit Illustrations

9.12 Example benefit illustrations for the three product types are provided in Appendix B.

Traditional par product vs UWP

9.13 Comparing the UWP product with the traditional par product in this example shows that the projected total death benefits on the UWP product are not as attractive as on the traditional product.

9.14 Part of this relates to discretionary benefits acting to increase the death benefits on the traditional par policy. The bonuses on the traditional policy are applied to the total sum assured from the outset of the policy, but on the UWP product the bonuses are applied to the much lower account value. This results in the death benefit increasing on the traditional product, long before the UWP account value (plus any terminal bonus) has exceeded the minimum death benefit. The cost of this extra cover for the traditional product in the earlier years results in lower increases to the benefits in later years than is seen for the UWP product (at 4.75% growth rate the death benefits on UWP at very late years start to catch-up with those on the traditional product).

9.15 The projected surrender benefits from the UWP product are higher than those from the traditional product, except at very long durations on the lower investment return assumption. This is because the surrender penalties applied in the earlier years are more severe on the traditional product (which allows for higher benefits on non-surrendering policies) than on the UWP product. The lower death benefits on the UWP product also help it to give better surrender values, since higher death benefits would result in higher charges from the account. The guaranteed surrender values, and total projected surrender values at the lower growth rate, on the UWP product look less attractive at longer durations because of the account values being exhausted by the mortality charges.

9.16 Overall, in these examples, the benefit illustrations for the traditional product look more attractive than for the UWP product, but note that this also leads to greater profitability to the shareholder on the UWP product (discussed below). The improved projected surrender benefits in the earlier years of the policy could, however, be attractive if customers are concerned with the unpredictability of their future financial needs, and the possibility that they may need to cancel the policy in the future. Surrender profits on early termination for the traditional product are fed back to remaining policyholders, with shareholders taking 1/9th, whereas in our UWP product we have no investment surrender profits if we base surrender values on the smoothed asset share. Moreover, any residual non-investment profits would remain within the non-par fund (i.e., profits flow to the shareholder and not the policyholder).

Universal life versus UWP

9.17 The projected death benefits for universal life and UWP are fairly similar, with the minimum SGD500,000 benefit biting at ages up to 75. At ages beyond this the death benefit on the UWP contract is more attractive, because of the higher growth rate used in the projection, but this does reflect the higher expected return from the UWP fund, because of its greater investment freedom. Also, the 3.8% crediting rate for universal life, is based on an assumed actual growth rate of 4.3%, since we have assumed the company would take a 0.5% spread on the investment return. This compares with a growth rate of 4.75% assumed for the UWP (assumed to reflect a more aggressive investment mix for the UWP product compared to the typical bond investments held to back UL products).

9.18 The other point to highlight is that the UWP product has assumed a no-lapse guarantee for all ages, so the product continues to provide death benefit on lower growth rates beyond age 90, but the universal life product does not. In this specific example, we have assumed that the no-lapse guarantee will be covered by the non-par fund. We have included this feature in our example product for the purpose of comparability with the benefits offered on the single premium traditional par and universal life products which are typically sold for legacy planning with consumers requiring some form of guaranteed pay-out upon death. We note, however, that this is not a common feature for UWP products in the UK, and whether this would be offered in practice would need to be considered with a view to both marketability and risk tolerance.

9.19 The surrender values on the UWP product look more attractive compared to the universal life product, and again this is due to the higher growth rates used in the projections. As the minimum regular bonus rate on the UWP product has been set at 3%, the guaranteed benefits from the UWP product also look better than on the universal life product, where the minimum crediting rate is 2%. Initially the guaranteed surrender benefits on the universal life product look better as a result of the 3.8% locked-in crediting rate in the first year, but this is outweighed by the higher long-term guaranteed rate on the UWP policy. It should be noted that a 3% guarantee for UWP is high compared to the guarantees offered in the UK. Under the current regulatory frameworks, material guarantees are onerous under the UK (market consistent) regulatory regime. The reserving regime, together with other factors, such as an appetite to hold greater equity content, have led to low guarantees being offered in the UK (typically 0% in more recent years).

9.20 Overall the illustration for the UWP product looks slightly more attractive than for the universal life product, but this is mainly due to the different growth rates used. Part of the effect of the different illustrations will depend on how much the customer believes the different growth assumptions used, and also what figures the customer puts the most focus on (surrender values or death benefits, and at what ages). In practice, the charging structure of the UWP product would need to be tailored to meet customer needs.

Profitability

9.21 The profit margins for the three example products are shown in the following table, before and after the cost of capital. The margins are expressed as a percentage of APE, calculated on a traditional embedded value basis with a risk discount rate of 7% p.a. As well as the central scenario, based on the assumptions described in Appendix A, the table also shows profit margins where the investment return has been stressed up and down by 2%. Although a full analysis would require a stochastic approach, these up and down stresses give a flavour of the sensitivity of the results to changes in investment return.

TABLE 9.1: PROFIT MARGINS AS A PERCENTAGE OF APE FOR THE THREE EXAMPLE PRODUCTS, BEFORE AND AFTER THE COST OF CAPITAL, ON THE CENTRAL INVESTMENT RETURN ASSUMPTIONS AND STRESSES UP AND DOWN BY 2%

	BEFORE COST OF CAPITAL			AFTER COST OF CAPITAL		
Investment return scenario	**-2%**	**Central**	**+2%**	**-2%**	**Central**	**+2%**
Traditional par product	-0.2%	14.6%	45.0%	-0.2%	14.6%	45.0%
UWP product	-25.1%	25.9%	41.3%	-40.2%	25.9%	41.3%
Universal life product	-225.5%	101.6%	86.9%	-354.9%	17.4%	37.2%

9.22 The first thing we can note from Table 9.1 is the effect of the cost of capital. In these examples we are assuming that existing capital retained within the par fund can provide the capital support for the new par business, so there is no marginal cost of capital to the shareholder on the traditional product. Whilst there is no explicit allowance for cost of capital to the shareholder in this approach, there is an implicit cost of capital (which would be recognised in an embedded value) through the cost of deferral of distribution of surplus retained in the par fund, which provides the capital resources to cover the capital requirement. The shareholder would otherwise be entitled to one-tenth of the value of this surplus when it is distributed to policyholders and shareholders under a bonus distribution.[14]

9.23 On the UWP product there is only a cost of capital in relation to the non-par part of the product, and this only occurs in the down investment return scenario. In the central (and up) scenario the future charges from the UWP account are enough to cover the future expenses and additional mortality cover, even with the PADs on the assumptions for the reserve and risk charge calculations, so no reserve or capital is required for the non-par part. However, in the scenario with reduced investment returns the UWP account is exhausted by the charges taken, but we assume the product does not lapse and the basic death cover continues to be provided. At this point no charges are being received to cover the benefit and expenses, so the non-par fund has to set up reserves and additional capital.

9.24 In contrast, there is a very large cost of capital in relation to the universal life product, which significantly reduces the profitability in our example. This is because the capital requirements in respect of the universal life account, including the minimum crediting rate, have to be provided by the shareholder, unlike for the par products where the par-fund provides this support. Part of the capital requirements stem from the mis-match of duration between the liabilities, which are actually very short in duration because of the surrender value biting in the liability calculation, and the duration of the bonds held to back the policy. We have only considered the policy in isolation, but in practice insurers may be able to offset some of this duration mismatch against other product lines, which would reduce the capital requirements at the fund level. The cost of capital decreases as the investment return assumption increases because the interest earned on the capital is greater.

9.25 In terms of profitability, the UWP product offers greater profitability to the shareholder on the central scenario than the traditional par product. This is a result of the charges on the policy providing greater profits than the share of the cost of bonuses on the traditional product, which is limited to 1/9th of the cost of declared bonuses to the policyholders. Before the cost of capital, the universal life product is considerably more profitable than the UWP product because the spread on the investment return is 0.5%, but the annual management charge (AMC) on the UWP product is only 0.25% (we have assumed an additional 0.25% charge on the UWP product to cover the guarantee on the fund value, but this is held within the par fund).

9.26 When the investment return scenario is increased, the profitability of the traditional par product increases more significantly than the UWP product. This is because the shareholder gains 10% of the investment profits on the traditional product, but in the UWP product we have assumed a 100:0 distribution of investment profits, so the policyholder takes all of this. There is some increase in the UWP, however, since the AMC is applied to a higher account value, although this is partially offset because there is less mortality cover provided when the account value is higher, which reduces the profits from mortality charges.

[14] In reality there could also be explicit capital requirements for the shareholder if it needs to support the par fund. This would be more significant in the low investment return scenario.

9.27 The profitability of the universal life product, before the cost of capital, actually decreases under the higher investment return assumption. Again, most of the additional investment profits go to the policyholder, as the assumed spread that the company takes does not change. Although the AMC is applied to higher asset values, the reserving approach (holding assets to meet surrender value liability rather than the full account value) reduces the benefit gained from this. As with the UWP product, the higher investment returns increase future account values and therefore reduce the amount of mortality cover (in excess of the account value) provided, and the profits associated with this cover. This loss of mortality profits outweighs the reduced gains in AMC income, leading to a small reduction in profitability before the cost of capital.

9.28 On the low investment return scenario the bonuses on the traditional product drop to zero and so too does the profitability to the shareholder. The UWP product becomes loss-making on the lower investment return, which is due to the no-lapse guarantee that we have assumed. In this scenario the UWP account is exhausted by the charges on the policy around 50 years into the policy (at age 85), and the non-par fund then provides free mortality cover beyond this point, which comes at a cost to the shareholder. Without the no-lapse guarantee the UWP product would still be profitable to the shareholder on this low investment return scenario, with a profit margin after the cost of capital of 19.4% (compared with the negative 40.2% shown in Table 9.1.

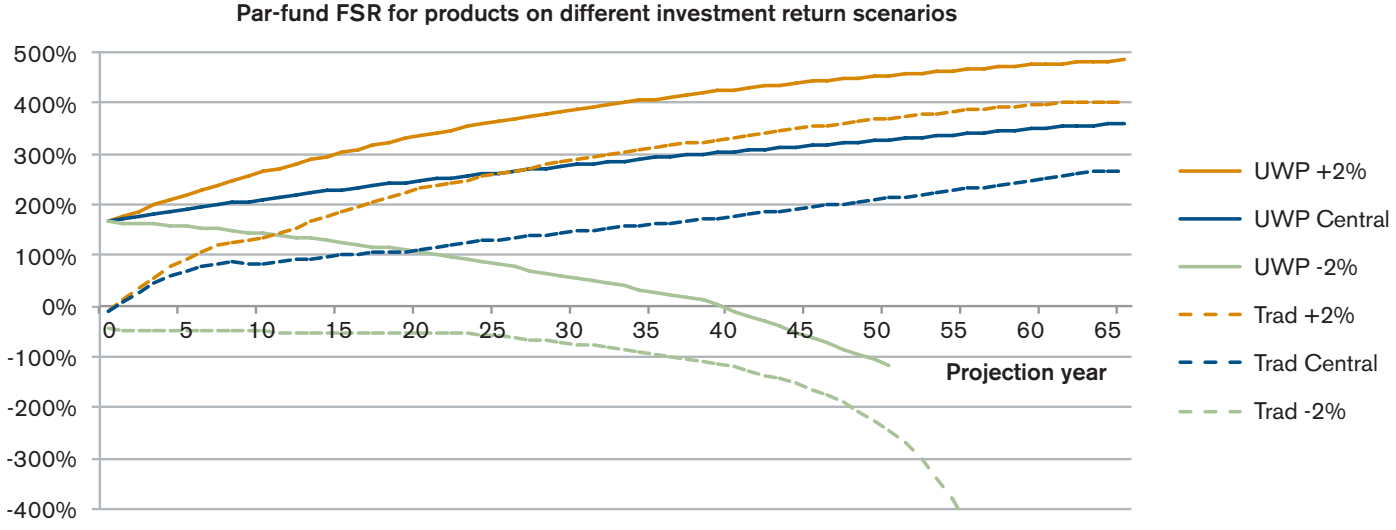
9.29 The low investment return scenario leads to significant losses on the universal life product. Under this scenario the minimum guaranteed crediting rate bites, reducing the spread that goes to the shareholder to an unsustainable level. The no-lapse guarantee also bites at around the same time as for the UWP product, leading to further losses. The effects are similar to those for the UWP product, but with the UWP product the par fund is supporting the guarantee on the fund return, saving the shareholder (to the extent that the par fund can provide this support).

Par Fund Capital

9.30 Chart 9.1, below, shows the projected fund solvency ratios (FSRs) for the traditional par example product and the par element of the UWP example product, on the three investment return scenarios we have considered. These are at the policy level, so where the FSR is below the target level for the fund (for example 180%), the additional capital required to meet the target would need to come from any surplus in the par-fund, and, in the absence of surplus, from the shareholder.

9.31 Under our assumptions of how UWP would fit into the Singapore capital framework, it is significantly less capital intensive than the traditional product example, particularly in the early years. Under the central assumption, the UWP product reaches a FSR of 180% by the end of year three, but the traditional product does not reach this level until the end of year 41. The lower capital requirements for the UWP product reflect the much lower guaranteed benefits on the UWP product (from the par element) in the earlier years of the policy. For both product types, however, the low investment return scenario would have a very detrimental impact on the FSR. The projected FSR for the traditional par product is negative in the initial years as the MCL in this particular example exceeds the asset share and hence support will be required from either the par fund estate or from shareholders to fund for both reserving as well as capital requirements.

CHART 9.1: PROJECTED FSR FOR THE UWP AND TRADITIONAL PAR EXAMPLE PRODUCTS, ON EACH OF THE THREE INVESTMENT RETURN ASSUMPTIONS



Note that in -2% scenarios the par element of the UWP product is exhausted in year -50

9.32 FSRs for both products in the low investment return scenario are low, but for the UWP product the par element of the policy effectively lapses once the account value is exhausted (in year 50), with the non-par fund supporting the policy beyond this point. The FSR for traditional product in this scenario starts to become exponentially negative as the death benefits being paid out are far in excess of the asset-share of the policy and has to eat into capital provided by the rest of the par fund. This effect also happens for the UWP product, but only on the guaranteed fund value for the UWP account, with the shareholder picking up the much higher cost of meeting the guaranteed death benefits.

Conclusions

9.33 The example products that have been looked at here have shown that UWP could be a viable addition to the existing product range in the Singapore market:

- From the policyholders' perspective, UWP offers greater transparency and less need for capital support from existing policyholders, at the cost of possibly slightly lower returns.
- For the shareholder, the charging structure on UWP gives more control on the level and timing of profits compared to the traditional par product. As the majority of the capital support for the UWP product is provided by the par fund, the cost of capital to the shareholder is much lower than for the capital intensive universal life product. Within the par fund, the capital support required for the UWP product is significantly lower than that required for traditional par products.

9.34 Further investigation into the potential for UWP is required, including a consideration of what benefits and guarantees are most important to customers, and the potential risks associated with offering these. The example products that have been considered were chosen to be reasonably comparable, but actual products in the market do differ. For example, we believe the mortality spreads assumed on universal life products are typically greater than the 20% we have assumed in our example, but changing this would clearly then affect the benefits offered to the policyholder and therefore the marketability of the product. With a more specific product to compare against, the advantages and disadvantages of a specific UWP alternative could be better identified.

9.35 Additionally, further work would be required to fully understand and analyse the risks associated with a specific product. As already mentioned, whilst the simple investment return stresses we have looked at give a flavour of the sensitivity to the investment return assumption, a full analysis would require stochastic modelling to understand the costs of any guarantees offered. Similarly, other risks need to be tested in detail, including the sensitivity of the various assumptions. The sensitivity of the lapse and mortality assumptions is likely to be significant, with surrender and mortality profits being important to the profitability of all of the products we have looked at (and bonus sustainability for the traditional par product). The cost of the no-lapse guarantees on the UWP and universal life products could also be a significant factor.

9.36 The introduction of any new product type would require approval from the governing regulatory body, and how it is treated within the territory's valuation and solvency framework will impact its viability. However, from the results of this research, there does seem to be potential for UWP in the future of par business in Asia.

9.37 The results presented in this section are based on the existing regulatory framework and do not take into consideration any changes proposed by MAS in respect to RBC 2. Any revisions to the current regulatory framework could have a different impact on the results presented.

9.38 In conclusion, the initial analysis performed in this report indicates that UWP could have substantial appeal in the Singapore market, with the next steps being to develop and test more specific example products, as well as gaining the regulator's view on how it might fit into the current solvency framework.

10. APPENDIX A: SINGAPORE PRODUCT EXAMPLES – ASSUMPTIONS AND PRODUCT FEATURES

Common Assumptions

10.1 Unless stated otherwise, the following assumptions have been used across all three of the example products considered in Section 9.

General

10.2 Policyholder is a male, aged 35 at policy inception.

10.3 Policies are all whole of life, with a single premium of SGD100,000 and basic sum assured on death of SGD500,000.

Investment return

10.4 The investment returns assumed for the central scenarios are 4.75% for the two par products and 4.3% for the universal life product (assumed to reflect a more adventurous investment mix for the UWP product compared to the typical bond investments held to back UL products). The investment return for the non-par fund assets in the UWP product is assumed to be 3.5% in the central scenario. In the up and down investment return scenarios, all of these assumptions are increased/decreased by 2%. These investment return assumptions are net of all investment management expenses.

Expenses and commission

10.5 Initial commission of 7.5% of premium; no trail commission.

10.6 Initial per-policy expense of SGD200.

10.7 Best-estimate per-policy renewal expenses of SGD50 per annum, inflating at 3% per annum.

Mortality

10.8 Best-estimate mortality rates of 70% of S9702.

10.9 For the UWP and universal life products, charges for mortality are based on 87.5% of S9702. For the purposes of splitting projected benefits into guaranteed and non-guaranteed in the policyholder illustrations we assume the products guarantee that mortality charges will not exceed 125% of S9702.

Persistency

10.10 Best-estimate lapse rates at a fixed 2% per annum.

10.11 No partial withdrawals.

Tax

10.12 Corporation tax at 17% has been assumed. No tax on investment returns has been allowed for.

Reserving and capital basis

10.13 Reserving and capital requirements have been applied in line with the current Singapore regulatory framework. The following PADs have been used in the calculation of the reserves and capital C1 risk charges:

ASSUMPTION	RESERVE PAD	PAD FOR C1 RISK CHARGE
Mortality	106.25% of best-estimate rates for UWP and universal life products 97.5% of S9702 (139.3% of best-estimate) for traditional par product	112.5% of best-estimate rates for UWP and universal life products 125% of S9702 (178.6% of best-estimate) for traditional par product
Expenses	105% of best-estimate	110% of best-estimate
Lapses	More onerous of 87.5% and 112.5% of best estimate	More onerous of 75% and 125% of best estimate

10.14 The different approach for mortality is because we have assumed the mortality charges on the UWP and Universal Life products are reviewable, so less onerous PADs are required by the regulations.

10.15 The best-estimate growth-rate assumed for the par products (traditional and UWP) is 4.75%. For Universal Life the current crediting rate is assumed to be 3.8%, with a spread of 0.5% (so 4.3% return in total). The lower assumption for universal life reflects the difference in investment strategy for this product. These assumptions are not changed when the investment return assumption is stressed up and down.

10.16 The discount rates used for the MCL and C1 risk charge calculations are based on the SGD and USD risk-free yield curve at 31 December 2013, as per the regulations:

Year	SGD	USD
1	0.30%	0.13%
2	0.37%	0.38%
3	0.61%	0.78%
4	0.84%	1.27%
5	1.08%	1.75%
6	1.38%	2.10%
7	1.67%	2.45%
8	1.97%	2.65%
9	2.26%	2.84%
10	2.56%	3.04%
11	2.64%	3.11%
12	2.73%	3.18%
13	2.81%	3.24%
14	2.90%	3.31%
15	2.98%	3.38%

Year	SGD	USD
16	3.04%	3.45%
17	3.11%	3.52%
18	3.17%	3.58%
19	3.24%	3.65%
20	3.30%	3.72%
21	3.30%	3.74%
22	3.30%	3.77%
23	3.30%	3.79%
24	3.30%	3.82%
25	3.30%	3.84%
26	3.30%	3.86%
27	3.30%	3.89%
28	3.30%	3.91%
29	3.30%	3.94%
30+	3.30%	3.96%

10.17 For the two par products we have assumed the policies to be SGD denominated, but for the universal life product we have assumed that it will be USD denominated, as is the case for all universal life currently sold in Singapore.

10.18 We have assumed the following average C2 risk charges, as a factor of the reserves held:

PRODUCT / FUND	C2 Charge	RATIONALE
Par fund	9.3%	Based on average from 2012 MAS forms
Non-par fund in UWP product	5.8%	Based on average from 2012 MAS forms
Non-par fund for Universal life product	7.6%	Based on RBC regulations for C2 risk charge in relation to debt assets (typically held to back universal life). Made up of 6% general and 1.6% specific debt risk charges (assumes debt is qualifying with term of 10-12 years).

10.19 The target capital adequacy ratio is assumed to be 180%.

Common Product Features

10.20 Both the UWP and universal life products have an account value from which charges are deducted, so for consistency in the comparison of the different product types, the following charges have been set the same for both of these products:

- An initial charge of 3% of premiums is deducted before allocation to the account.
- Deductions for mortality cover based on the mortality rates described in paragraph 10.9 applied to the sum at risk between the account value and the death benefit.
- Surrender penalties deducted from the account value (in the case of the UWP product this is applied to the benefit from the par fund, which could include a terminal bonus), as per the following table:

POLICY YEAR	SURRENDER CHARGE	POLICY YEAR	SURRENDER CHARGE
1	20%	6 – 7	15%
2	19%	8 – 9	12.5%
3	18%	10 – 14	10%
4	17%	15 – 19	5%
5	16%	20+	0%

Specific Product Features

Traditional whole of life par

10.21 On death the policy pays out the sum of: the basic sum assured; reversionary bonuses accrued to date; and a terminal bonus based on the accrued reversionary bonuses. Surrender benefits consist of: a basic surrender value (an increasing proportion of the basic sum assured); a proportion of the reversionary bonuses declared to date; and a terminal bonus based on the surrender value of reversionary bonuses.

10.22 Assumed bonus rates are set to recycle all profits arising from the policy back into the policyholder benefits (after allowing for shareholders share of any bonuses). The terminal bonus and surrender value structure are fixed and the reversionary bonus rate is set such that the full asset shares will be paid out at the end of policy term (i.e., termed as profit neutrality).

10.23 The terminal bonus scale used is:

POLICY YEAR	TB ON DEATH (% OF ACCUMULATED RBS)	TB ON SURRENDER (% OF SURRENDER RB)
1 – 4	0%	0%
5 – 9	10%	50%
10 – 14	15%	75%
15 – 19	20%	100%
20 – 24	25%	125%
25 – 29	30%	150%
30+	175%	175%

10.24 Basic surrender values are assumed to start at 16% of the basic sum assured and then increase at 2% per year (compounding on the surrender value) thereafter.

10.25 The proportion of the accumulated reversionary bonus (based on full sum assured) that is assumed to be paid on surrender follows the following scale:

YEAR	SV SCALE	YEAR	SV RB	YEAR	SV RB	YEAR	SV RB	YEAR	SV RB
1	21%	14	55%	27	65%	40	64%	53	77%
2	22%	15	57%	28	59%	41	65%	54	78%
3	23%	16	61%	29	55%	42	66%	55	79%
4	24%	17	64%	30	52%	43	67%	56	80%
5	33%	18	67%	31	53%	44	68%	57	81%
6	34%	19	69%	32	54%	45	69%	58	82%
7	36%	20	71%	33	56%	46	70%	59	83%
8	37%	21	75%	34	57%	47	71%	60	84%
9	38%	22	79%	35	58%	48	72%	61	87%
10	44%	23	82%	36	59%	49	73%	62	91%
11	48%	24	85%	37	60%	50	74%	63	94%
12	51%	25	87%	38	61%	51	75%	64	97%
13	53%	26	73%	39	63%	52	76%	65	100%

10.26 The reversionary bonus rate used to achieve profit neutrality is 0.66% per annum, when the investment return is 4.75%, and is applied to the basic sum assured and attaching reversionary bonuses.

10.27 Transfers to shareholders are taken as 1/9th of the cost of any bonus declarations (i.e., assumes a 90:10 split of profits).

Unitised with-profits product

10.28 The overall structure of the product is as described in Section 9, with separate par and non-par elements that interact with each other. The reversionary bonus rate on the face-value of units is assumed to be 3% per annum, which is also assumed to be the guaranteed minimum. Terminal bonuses are assumed to be equal to any excess of the underlying asset shares over the face-value of units.

10.29 We have allowed for an annual management charge (AMC) of 0.25% per annum on the units, which goes to the non-par (shareholder) fund. A further charge of 0.25% per annum is deducted to cover the cost of guarantees provided by the par fund, and is kept within the par fund. The same percentage reduction in face value and asset share is applied, with the actual amounts transferred (to the non-par fund for the AMC and the par fund for the guarantee charge) based on the asset share amount.

10.30 The sum at risk for the mortality deductions is based on the difference between the minimum death guarantee on the policy (SGD500,000) and the benefit that would be paid out by the UWP account at that time (face value of units plus any terminal bonus). The non-par fund receives the amount required for the cost of cover from the par fund, but how this is accounted for in terms of the face value and asset share associated with the policy depends on the relative sizes of the face value and asset share (i.e., if the par guarantee is biting). Where the asset share is higher than the face value of units, the asset share is reduced by the full amount of the charge, and the face value is reduced proportionally to the asset share (in effect assuming a terminal bonus element is used to pay part of the charge). Where the face value is higher than the asset share, the face value is reduced by the full amount of the charge, the asset share is reduced in proportion to this, and the additional cost required to meet the charge comes from the par-fund as a guarantee cost.

10.31 On surrender, the pay-out from the par fund allows for the guarantee on the face value of units and any additional terminal bonus, but the benefit to the policyholder is reduced by the surrender charge, which goes to the non-par fund.

Universal life product

10.32 The starting crediting rate for the universal life product is assumed to be 3.8%, with a locked-in period of one year. In the best estimate scenario (growth rate of 4.3%) this is assumed to continue for the rest of the policy. The guaranteed minimum crediting rate is set at 2%. For projections on different investment return assumptions, the crediting rate is assumed to be set at 0.5% below the investment return after one year, subject to the 2% minimum.

10.33 The policy is guaranteed not to lapse as a result of an exhausted fund value up to the policyholder's 90th birthday, a feature that is commonly observed in the Singapore market.

11. APPENDIX B: BENEFIT ILLUSTRATIONS FOR EXAMPLE PRODUCTS

Traditional Whole of Life Par Product

YEAR / AGE	PREMIUMS TO DATE	DEATH BENEFIT					SURRENDER VALUE				
		GUARANTEED	PROJECTED AT 3.25%		PROJECTED AT 4.75%		GUARANTEED	PROJECTED AT 3.25%		PROJECTED AT 4.75%	
			NON-G'TEED	TOTAL	NON-G'TEED	TOTAL		NON-G'TEED	TOTAL	NON-G'TEED	TOTAL
1 / 36	100,000	500,000	414	500,414	3,258	503,258	80,000	88	80,088	694	80,694
2 / 37	100,000	500,000	829	500,829	6,538	506,538	81,600	183	81,783	1,442	83,042
3 / 38	100,000	500,000	1,243	501,243	9,839	509,839	83,232	284	83,516	2,246	85,478
4 / 39	100,000	500,000	1,659	501,659	13,162	513,162	84,897	392	85,288	3,108	88,005
5 / 40	100,000	500,000	2,282	502,282	18,157	518,157	86,595	760	87,355	6,049	92,643
6 / 41	100,000	500,000	2,739	502,739	21,859	521,859	88,326	944	89,270	7,531	95,857
7 / 42	100,000	500,000	3,197	503,197	25,586	525,586	90,093	1,139	91,232	9,115	99,208
8 / 43	100,000	500,000	3,655	503,655	29,337	529,337	91,895	1,346	93,241	10,806	102,701
9 / 44	100,000	500,000	4,114	504,114	33,113	533,113	93,733	1,567	95,299	12,611	106,343
10 / 45	100,000	500,000	4,780	504,780	38,591	538,591	95,607	2,101	97,708	16,957	112,564
11 / 46	100,000	500,000	5,261	505,261	42,590	542,590	97,520	2,504	100,024	20,273	117,793
12 / 47	100,000	500,000	5,741	505,741	46,614	546,614	99,470	2,902	102,372	23,563	123,033
13 / 48	100,000	500,000	6,222	506,222	50,665	550,665	101,459	3,296	104,755	26,838	128,298
14 / 49	100,000	500,000	6,704	506,704	54,743	554,743	103,489	3,687	107,176	30,109	133,597
15 / 50	100,000	500,000	7,498	507,498	61,405	561,405	105,558	4,253	109,811	34,831	140,389
16 / 51	100,000	500,000	8,001	508,001	65,716	565,716	107,669	4,846	112,515	39,800	147,470
17 / 52	100,000	500,000	8,505	508,505	70,054	570,054	109,823	5,430	115,253	44,728	154,551
18 / 53	100,000	500,000	9,009	509,009	74,421	574,421	112,019	6,008	118,027	49,629	161,648
19 / 54	100,000	500,000	9,513	509,513	78,816	578,816	114,260	6,580	120,839	54,513	168,773
20 / 55	100,000	500,000	10,435	510,435	86,708	586,708	116,545	7,445	123,990	61,865	178,410
25 / 60	100,000	500,000	13,594	513,594	114,611	614,611	128,675	11,879	140,554	100,147	228,822
30 / 65	100,000	500,000	34,580	534,580	295,843	795,843	142,068	17,825	159,893	152,502	294,570
35 / 70	100,000	500,000	40,427	540,427	351,001	851,001	156,854	23,360	180,214	202,821	359,675
40 / 75	100,000	500,000	46,299	546,299	407,981	907,981	173,180	29,451	202,631	259,521	432,701
45 / 80	100,000	500,000	52,195	552,195	466,841	966,841	191,204	35,985	227,189	321,857	513,061
50 / 85	100,000	500,000	58,115	558,115	527,644	1,027,644	211,105	42,865	253,970	389,188	600,293
55 / 90	100,000	500,000	64,060	564,060	590,455	1,090,455	233,077	50,536	283,613	465,802	698,879
60 / 95	100,000	500,000	70,030	570,030	655,339	1,155,339	257,336	58,690	316,026	549,227	806,562
65/100	100,000	500,000	71,226	571,226	722,365	1,222,365	284,119	62,205	324,687	722,365	1,006,485

UWP Whole of Life Product

YEAR / AGE	PREMIUMS TO DATE	DEATH BENEFIT					SURRENDER VALUE				
		GUARANTEED	PROJECTED AT 3.25%		PROJECTED AT 4.75%		GUARANTEED	PROJECTED AT 3.25%		PROJECTED AT 4.75%	
			NON-G'TEED	TOTAL	NON-G'TEED	TOTAL		NON-G'TEED	TOTAL	NON-G'TEED	TOTAL
1 / 36	100,000	500,000	0	500,000	0	500,000	79,332	252	79,584	1,409	80,741
2 / 37	100,000	500,000	0	500,000	0	500,000	82,099	528	82,627	2,952	85,051
3 / 38	100,000	500,000	0	500,000	0	500,000	84,930	831	85,761	4,637	89,567
4 / 39	100,000	500,000	0	500,000	0	500,000	87,822	1,162	88,984	6,474	94,296
5 / 40	100,000	500,000	0	500,000	0	500,000	90,776	1,524	92,300	8,474	99,250
6 / 41	100,000	500,000	0	500,000	0	500,000	93,792	1,918	95,710	10,646	104,437
7 / 42	100,000	500,000	0	500,000	0	500,000	95,746	2,319	98,064	12,849	108,595
8 / 43	100,000	500,000	0	500,000	0	500,000	100,595	2,824	103,419	15,637	116,232
9 / 44	100,000	500,000	0	500,000	0	500,000	102,648	3,288	105,936	18,197	120,845
10 / 45	100,000	500,000	0	500,000	0	500,000	107,712	3,888	111,601	21,511	129,224
11 / 46	100,000	500,000	0	500,000	0	500,000	109,860	4,425	114,285	24,476	134,337
12 / 47	100,000	500,000	0	500,000	0	500,000	112,019	4,996	117,016	27,623	139,642
13 / 48	100,000	500,000	0	500,000	0	500,000	114,184	5,603	119,788	30,960	145,145
14 / 49	100,000	500,000	0	500,000	0	500,000	116,347	6,251	122,598	34,502	150,849
15 / 50	100,000	500,000	0	500,000	0	500,000	125,083	7,328	132,412	40,386	165,469
16 / 51	100,000	500,000	0	500,000	0	500,000	127,333	8,110	135,443	44,596	171,930
17 / 52	100,000	500,000	0	500,000	0	500,000	129,550	8,948	138,499	49,067	178,617
18 / 53	100,000	500,000	0	500,000	0	500,000	131,719	9,850	141,569	53,816	185,535
19 / 54	100,000	500,000	0	500,000	0	500,000	133,823	10,821	144,645	58,863	192,686
20 / 55	100,000	500,000	0	500,000	0	500,000	142,997	12,495	155,491	67,610	210,607
25 / 60	100,000	500,000	0	500,000	0	500,000	151,598	19,575	171,173	101,863	253,461
30 / 65	100,000	500,000	0	500,000	0	500,000	153,953	30,539	184,492	149,687	303,640
35 / 70	100,000	500,000	0	500,000	0	500,000	141,200	49,412	190,613	220,926	362,126
40 / 75	100,000	500,000	0	500,000	0	500,000	101,335	82,835	184,170	332,404	433,739
45 / 80	100,000	500,000	0	500,000	29,390	529,390	10,314	145,722	156,036	519,076	529,390
50 / 85	100,000	500,000	0	500,000	151,140	651,140	0	73,033	73,033	651,140	651,140
55 / 90	100,000	500,000	0	500,000	300,892	800,892	0	0	0	800,892	800,892
60 / 95	100,000	500,000	0	500,000	485,084	985,084	0	0	0	985,084	985,084
65/100	100,000	500,000	0	500,000	711,636	1,211,636	0	0	0	1,211,636	1,211,636

Universal Life Product

YEAR / AGE	PREMIUMS TO DATE	GUARANTEED BASIS			NON-GUARANTEED BASIS		
		PROJECTED VALUES AT MINIMUM CREDITING RATE OF 2.0% & MAX CHARGES			PROJECTED VALUES AT CURRENT CREDITING RATE OF 3.8% & CURRENT CHARGES		
		ACCUMULATED VALUE	SURRENDER VALUE	DEATH BENEFIT	ACCUMULATED VALUE	SURRENDER VALUE	DEATH BENEFIT
1 / 36	100,000	100,438	80,350	500,000	100,512	80,410	500,000
2 / 37	100,000	102,176	82,763	500,000	104,141	84,354	500,000
3 / 38	100,000	103,918	85,212	500,000	107,886	88,467	500,000
4 / 39	100,000	105,659	87,697	500,000	111,751	92,753	500,000
5 / 40	100,000	107,399	90,215	500,000	115,739	97,221	500,000
6 / 41	100,000	109,138	92,767	500,000	119,854	101,876	500,000
7 / 42	100,000	110,877	94,245	500,000	124,105	105,489	500,000
8 / 43	100,000	112,616	98,539	500,000	128,496	112,434	500,000
9 / 44	100,000	114,355	100,061	500,000	133,032	116,403	500,000
10 / 45	100,000	116,092	104,482	500,000	137,718	123,946	500,000
11 / 46	100,000	117,820	106,038	500,000	142,557	128,302	500,000
12 / 47	100,000	119,536	107,582	500,000	147,553	132,797	500,000
13 / 48	100,000	121,230	109,107	500,000	152,706	137,435	500,000
14 / 49	100,000	122,895	110,605	500,000	158,019	142,217	500,000
15 / 50	100,000	124,518	118,292	500,000	163,491	155,317	500,000
16 / 51	100,000	126,088	119,784	500,000	169,124	160,668	500,000
17 / 52	100,000	127,592	121,212	500,000	174,918	166,172	500,000
18 / 53	100,000	129,012	122,561	500,000	180,871	171,828	500,000
19 / 54	100,000	130,330	123,813	500,000	186,983	177,634	500,000
20 / 55	100,000	131,526	131,526	500,000	193,251	193,251	500,000
25 / 60	100,000	134,852	134,852	500,000	226,890	226,890	500,000
30 / 65	100,000	130,634	130,634	500,000	264,175	264,175	500,000
35 / 70	100,000	109,161	109,161	500,000	303,808	303,808	500,000
40 / 75	100,000	57,062	57,062	500,000	346,510	346,510	500,000
45 / 80	100,000	0	0	500,000	395,535	395,535	500,000
50 / 85	100,000	0	0	500,000	455,501	455,501	500,000
55 / 90	100,000	0	0	500,000	543,253	543,253	543,253
60 / 95	100,000	0	0	0	654,620	654,620	654,620
65 / 100	100,000	0	0	0	788,816	788,816	788,816

12. ACKNOWLEDGEMENTS

We would like to thank the following people for their contributions to this report:

Nigel Knowles, *formerly* of Milliman's Hong Kong office, for input to all aspects of the report

Clement Bonnet, Milliman – Hong Kong office, for Section 3

Shir Lynn Ong, Milliman – Singapore office, for Sections 4 and 9

Shamit Gupta, Milliman – Gurgaon office, for Section 5

Sanket Kawatkar, Milliman – Mumbai office, for Section 5

Sharon Huang, Milliman – Beijing office, for Section 6

Andrew Gilchrist, Milliman – London office, for Section 8

Matthew Cocke, Milliman – London office, for Section 8

Michael Culligan; Milliman – Dublin office, for peer review

CONTACT

If you have any questions or comments on this paper, please contact:

Beijing
15/F NCI Tower, Unit 1544
No. 12A Jianguomenwai Avenue
Chaoyang District
Beijing 100022
Tel: +86 10 8523 3189

Sharon Huang
sharon.huang@milliman.com

Hong Kong
Unit 3901-02, AIA Tower
183 Electric Road, Hong Kong
Tel +852 2152 3138

Michael Daly
michael.daly@milliman.com

Paul Sinnott
paul.sinnott@milliman.com

Mumbai
B/712, 215 ATRIUM
Chakala, Andheri-Kurla Road
Andheri (East)
Mumbai 400 059
Tel: +91 22 3954 4000

Sanket Kawatkar
sanket.kawatkar@milliman.com

Seoul
Suite 819, Kwanghwamun Officia Bldg.
163 Shinmunro 1ga
Jongro-ku, Seoul, Korea
Tel: +82 2 3276 2500

Chihong An
chihong.an@milliman.com

Sung Hoon Kim
sung.hoon.kim@milliman.com

Singapore
133 Cecil Street
#12-02 Keck Seng Tower
Singapore 069535,
Tel: +65 6327 2300

Richard Holloway
richard.holloway@milliman.com

Wen Yee Lee
wenyee.lee@milliman.com

Alex Bryant
alex.bryant@milliman.com

Taipei
Unit A, 10th Floor
No. 1 Song Zhi Road
Taipei 11047
Taiwan, R.O.C.
Tel: +886 2 8780 0701

Wing Wong
wing.wong@milliman.com

Tokyo
Urbannet Kojimachi Building 8F
1-6-2 Kojimachi
Chiyoda-ku, Tokyo 102-0083
Tel: +81 3 5211 7031

Steve Conwill
stephen.conwill@milliman.com

Masaaki Yoshimura
masaaki.yoshimura@milliman.com

ABOUT MILLIMAN

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com