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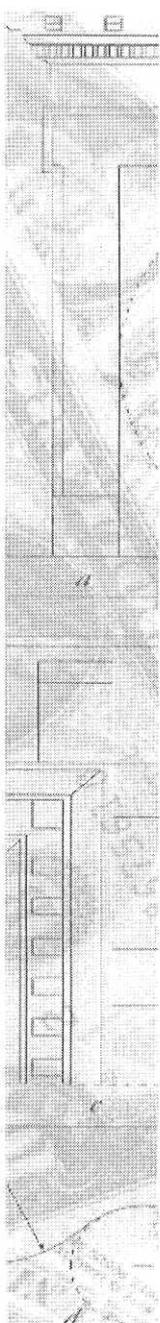
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**Life Settlements: Signposts to a Principal
Asset Class**

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Life Settlements: **Signposts to a Principal Asset Class.**

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Abstract

The paper offers an explanation for the evolution and increasing maturity of the life settlement market and the implications for all longevity based financial instruments and products by exploring the market dynamics and asset valuation processes. The paper begins by revisiting the brief history of the life settlement market before examining the market's evolution, finding that the increased participation in this multi-stage market has driven innovation, leading to the commoditization of various services and products which forces present service providers to either withdraw or adopt one of the operational marketing models, and lowers the barriers to entry for revolutionary service and product development. The paper then examines the value that the life settlement asset provides to both parties and establishes how that value is assessed. The paper finds that for impaired lives and specific other policies the settlement value is significantly greater than the surrender value, and that the calculation of worth to both buyer and seller must calculate both financial value and utilization value; the seller gains utilization from releasing liquidity, the buyer from portfolio diversification in an asset class whose underlying is at most weakly correlated to equities, bonds, real estate and commodities. The paper examines the value, considerations and risks for institutions considering investment in life settlements and other longevity based financial instruments. The paper finds that there are individual and market benefits from the asset class, that the asset class also creates macro-economic benefits, and that it is simply a matter of time before life based financial instruments join equities, bonds, real estate and commodities as a staple of portfolio diversification.

¹ The author thanks Professor Chris Geczy for his guidance and Zach Mortensen for his assistance. All errors are my own.

² Longevity Mortality Strategies was founded as a result of the writing of this paper.

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INTRODUCTION

The longevity mortality markets encompass a wide variety of longevity based financial instruments and products, from life insurance and annuities to life settlements, reverse mortgages and synthetics providing longevity exposure. Life settlements were the first longevity based financial product of the new generation; this paper will examine life settlements, outline and evaluate the development of longevity based financial instruments and explain the implications they have for the investment and retail financial and insurance markets.

The life settlement alternative asset class provides significant risk mitigation through portfolio diversification. Adverse economic conditions drive the attractiveness of diversification while risk mitigation becomes increasingly desirable as the effects of longevity and mortality on most businesses are understood. These factors inspire the creation of innovative longevity mortality strategies and products; life settlements were the first significant next generation of longevity based financial instruments and products.

The life settlement asset class is a deserving subject of analysis because the uncorrelated nature of the life settlement underlying³ with traditional financial instruments creates an important investment and risk mitigation tool. The asset class is an early component of the developing longevity-mortality markets, and offers insights into how the longevity mortality markets will develop. Innovation is developing new tools to understand and leverage underwriting and actuarial models, and this new understanding is driving the application of capital to longevity-based markets.

The longevity mortality markets will enjoy high growth and wide use as longevity and mortality risks are quantified and longevity based financial instruments are created for their management. Longevity mortality markets affect a broad range of institutions, including federal, state and local government pension funds, insurers, pharmaceutical and bio-tech companies, and manufacturers of life-style products. The corresponding market size is significant; the market in unwanted life insurance policies was valued at \$16 billion in 2008⁴. Further, the Life Settlements Market was projected to grow to between \$90 billion and \$140 billion by 2016⁵ from a baseline of \$12 billion in 2007⁶, according to a report by Conning Research.

³ Human mortality.

⁴ BusinessWeek, 25 Feb 2008, 'Why Death Bonds Look so Frail' .quoting the Life Insurance Settlement Association. The most recent industry estimate is from The Life Insurance Settlement Association (LISA) pamphlet 'The Basics of Life Settlements – A Guide for Consumers' (2008), estimates that the industry value in 2008 will be \$16 Billion.

⁵ Conning Research and Consulting, Inc (2007), *Life Settlement Market, Increasing Investor and Capital Demand*, Conning Research and Consulting, Inc Strategic Study Series.

⁶ Conning Research and Consulting, Inc (2008), *Life Settlements, New Challenges to Growth*, Conning Research and Consulting, Inc Strategic Study Series.

These estimates do not reflect the crisis in the financial markets and their effect on liquidity and this market in particular. The predictions are likely to have been optimistic for mid-2007 through early 2009. Looking forward, re-evaluations of risk/return profiles and the need for portfolio diversification will increase demand while the liquidity crisis effect on Main Street will increase supply.

The Life Settlement market evolved from the viaticals⁷ market of the early 1990s. This secondary market in life insurance policies has come under significant criticism and pressure from life insurance companies, legislators, regulators and the press⁸. Perceptions of the life settlement market, the activities that support the market and the value to all parties are, for many, outdated.

Much of this perception bias derives from misunderstandings about the industry and its vernacular. There are distinct markets that are confused together under the phrase 'Life Settlements' which must be distinguished:

- a. Life Settlements. A life settlement is the purchase of a life insurance policy from the policyholder. In return for buying the policy the purchaser continues to pay the premiums on the policy, and collect the death benefit when the policy matures⁹.
- b. Premium Financing. Premium financing is a vehicle for investors to loan money to intending policyholders so they may purchase life insurance for themselves or others. The return on investment is normally the interest on the loan, paid out either after a set period of time or on maturity of the policy.
- c. Stranger Originated Life Insurance (STOLI). Stranger Originated Life Insurance is the taking out of life insurance on another when there is no insurable interest. The purchasing of life insurance when there is no insurable interest on the part of the policyholder is illegal because it creates 'the potential for mischief and incentives for crime'¹⁰. The abbreviated term is open to confusion; it has also been taken to mean Stranger Owned Life Insurance¹¹; this confusion is leveraged to create negative

⁷ The viaticals market was the secondary market in the life insurance policies of AIDS sufferers. The policy settlements created funds for medicines and health care. The market was seriously afflicted when retro-virals were introduced.

⁸ For an explanation of the history of the life settlement market and the drivers of market expansion, see Doherty and Singer (2002).

⁹ The insured dies.

¹⁰ Grigsby v. Russell, 222 U.S. 149 (1911).

¹¹ McRaith, M.T. (2009), Testimony Before the United States Senate Special Committee on Aging, *Regarding: Life Settlements and the Need for Increasing Transparency*, April 29, 2009.

sentiment. Both the industry organizations and the Model Acts being implemented by the states¹² disavow Stranger Originated Life Insurance.

This paper will use the following terms to provide a consolidated nomenclature where there are a variety of terms for the same concepts:

- a. Longevity Mortality Markets. All financial and insurance markets that contain, provide or include as a component of valuation either longevity or mortality risk.
- b. Longevity Based Financial Instruments (LBFIs). Financial instruments that provide investment opportunities with longevity exposure to institutional investors. These are either traded at the institutional level as derivatives and synthetics, or provide the base for retail products;
- c. Longevity Based Financial Products (LBFPs). Financial and life insurance products that serve the retail markets. Any financial or insurance product that uses longevity as a basis for calculation of price or value should be regarded as an LBFP. This includes, but is not exclusive to, life insurance, annuities, reverse mortgages, life settlements and premium financing.
- d. Longevity Curve. The cumulative mortality curve for an individual, determined by an underwriting process that takes account of health data and potentially other factors such as lifestyle. The phrase 'longevity curve' or simply 'longevity' is used in reference to both the calculation and product when applied to longevity based financial instruments and products; it is differentiated from a life expectancy report because the curve is the basis for understanding and pricing, rather than a point estimate that is the median of the curve.
- e. Longevity Risk: The risk of an individual living beyond currently planned financial means. At the individual level, this risk affects investment decisions directed toward ensuring sufficient resources for that individual's remaining lifespan. For institutions, the risk is that investment returns will not be sufficient to cover the institution's obligations. Such risk is particularly critical for pension and superannuation funds.
- f. Mortality Risk: The risk of an individual or pool of individuals passing away sooner than expected and thus incurring financial stress. At the individual level, for example, the family wage-earner may pass away without life insurance. At the institutional level, for example, a significant number of sooner-than-expected mortalities may stress a life insurer's capital reserves and thus its ability to honor its financial commitment. Mortality risk is thus the flipside of longevity risk.

¹² The Model Acts are the recommended legislation proposed by both the National Association of Insurance Commissioners (NAIC) and the National Conference of Insurance Legislators (NCOIL).

This paper discusses both normal and impaired lives. An impaired life is a life that has, through the acquisition of medical conditions, a lower life expectancy compared to that of the population covered by the subject population¹³. The level of impairment is determined by the underwriting assessment process. The underwriting process examines the medical conditions of the insured, and assigns the insured to a 'Table'. The Table sets out the cumulative mortality statistics for those that fall within that Table. As Table allocation increases, so does impairment. This process differs between individual underwriters and insurers, as described later in the calculation of the value of an asset.

In Part II, The Life Settlement Market, the paper explains in detail the life settlement market before examining the market developments that are creating asset and market maturity. The paper extrapolates to draw conclusions about the market and the use its expertise and products will be put to, and how they may revolutionize investment decision making for life insurance consumers.

In Part III, The Value of the Life Settlement Asset, the paper discusses the value of the individual asset to both the buyer and seller before examining the valuation process and the critical element of asset valuation, the Life Expectancy Report. The paper draws conclusions about the macro-economic value of this market, in particular the opportunity for Baby Boomers who tend to be characterized as 'asset rich, cash poor' to realize cash from their asset, which places cash that was tied up in an asset back in circulation to be spent on health care or quality of life expenses.

The conclusion will interweave the various strands of longevity based financial instruments and products with the implications of the longevity curve for the finance markets, insurance markets and for public policy, and it will confirm the robustness of life settlements as an investment class. This platform will then be used to explain how the combination of these factors will establish longevity based financial instruments as a future principal asset class.

¹³ The subject population for classification is the actuarial tables in use by the entity assessing the potential policy or life settlement. These tables may be VBT 2008 or a company specific set of actuarial tables.

THE LIFE SETTLEMENT MARKET

Market Overview.

The original longevity based financial products were life insurance and annuities. These products are established, credible and are based on the same principles as the more modern longevity based financial products such as life settlements. Life settlements extract the value that is left unrealized when a life insurance policy is surrendered directly to the insurer; this unrealized value is the difference between the expected value the life insurance company puts on the policy and the perceived expected value that another party puts on the same policy. This is most starkly demonstrated with policies that have no cash surrender value¹⁴, but that investors may find attractive because of their net present value.

History. Life settlements developed from viaticals, the sale of life insurance policies held on AIDS patients. The limited life expectancies of the insureds made the purchase of their policies an attractive proposition for both investors and the insureds, who redeployed the money to medical care. The introduction of retro-virals and related measures significantly increased the survivability of AIDS patients, effectively closing the viatical market. Life settlements apply the viaticals concepts to seniors, predominantly those with impaired¹⁵ life expectancies.

Market Valuation. This secondary market in life insurance policies was projected by Conning Research to reach between \$90 billion and \$140 billion by 2016¹⁶ from \$12 billion in 2007¹⁷ and from almost \$0 in 2001¹⁸. The market in unwanted life insurance policies was valued at \$16 billion in 2008¹⁹, and is expected to continue to grow, particularly given current economic conditions. Market growth has tightened significantly with the general reduction in liquidity, but growth exceeding that of the

¹⁴ Term policies generally have no Cash Surrender Value (CSV).

¹⁵ An impaired life is one where the medical conditions make maturity of the policy more likely than the expected normal policy.

¹⁶ Conning Research and Consulting, Inc (2007), *Life Settlement Market, Increasing Investor and Capital Demand*, Conning Research and Consulting, Inc Strategic Study Series.

¹⁷ Conning Research and Consulting, Inc (2008), *Life Settlements, New Challenges to Growth*, Conning Research and Consulting, Inc Strategic Study Series.

¹⁸ BusinessWeek, 30 Oct 2007, 'Profiting from Mortality' Matthew Goldstein, referencing Sanford C Bernstein and Co. Accessed at www.businessweek.com/magazine/content/07_31/b4044001.htm.

¹⁹ BusinessWeek, 25 Feb 2008, 'Why Death Bonds Look so Frail' Matthew Goldstein quoting the Life Insurance Settlement Association. The most recent industry estimate is from The Life Insurance Settlement Association (LISA) pamphlet 'The Basics of Life Settlements – A Guide for Consumers' (2008), estimates that the industry value in 2008 will be \$16 Billion.

general financial markets is expected as part of a search for greater portfolio diversification.

Regulation. Regulation of life insurance and related matters lies within the jurisdiction of the States. While there are still states that have not regulated this industry, specific regulation now exists either on the books or is being examined in 30 states²⁰, and whether there is a need for federal regulation is an issue being discussed in Congress.

Legal Basis. The life settlement market is centered on the United States, where life insurance policies are legally assets, taking the form of contracts rather than securities. This status is enshrined by the Supreme Court in 1911²¹, when Justice Oliver Wendell Holmes opined life insurance policies were a recognized form of ‘investment and self-enforced saving’ and that to restrict their resale to those with insurable interest was to limit the asset’s value²². The opinion actively requires that there be the risk of loss to the policy purchaser, known as insurable interest, when a policy is bought, in order to prevent mischief and incentives for crime. The Court’s rationale is that if a policy may be bought by anyone, for anyone, it would be profitable for those without morals to take out life insurance on someone and then have them killed in order to reap the reward; this would not only promote crime, but destabilize the life insurance industry.

Institutional Participation. Participation in the life settlement markets is increasingly widespread. Current and former participants include Goldman Sachs, JP Morgan, Deutsche Bank, Morgan Stanley, Credit Suisse, Gen Re, AIG, Phoenix Life and TransAmerica.

Foreign Markets. Secondary markets based around life products exist in other countries, based on the widespread life insurance markets. There is also significant investment in the life settlement market from outside the US, particularly from Europe²³, and vibrant life insurance and secondary markets abroad, demonstrated below.²⁴

²⁰ LISA maintain a regulation notification page at www.thevoiceoftheindustry.com/state-document-report.aspx.

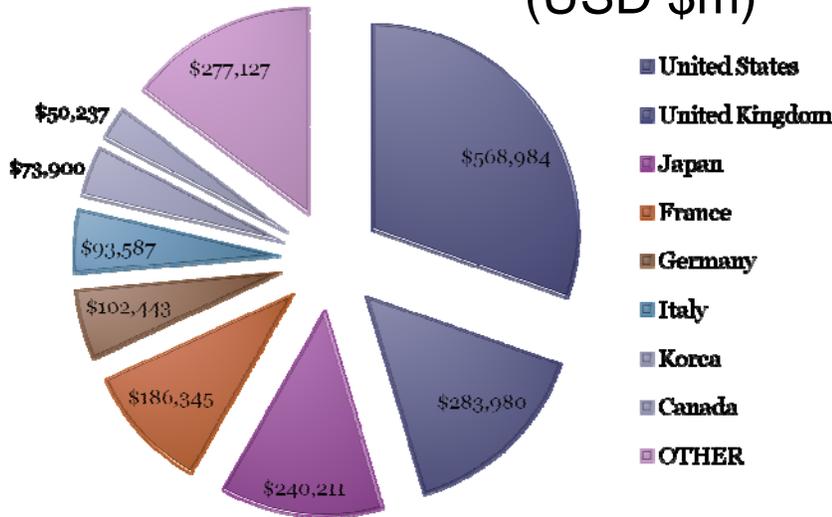
²¹ Grigsby v. Russell, 222 U.S. 149 (1911).

²² Doherty and Singer (2006) provide a cogent explanation of the value of a secondary market in an asset in their paper, *The Benefits of a Secondary Market in Life Insurance*, published by the Financial Institution Centre of the Wharton Business School.

²³ There is a German equivalent to the Life Insurance Settlement Association, the Bundesverband Vermögensanlagen im Zweitmarkt Lebensversicherungen (BVZL). European longevity mortality activity includes investment in UK Traded Endowment Policies and US life settlements.

²⁴ Global Life Insurance Market table statistics from the Organisation for Economic Co-Operation and Development’s Directorate for Financial and Enterprise Affairs. *OECD insurance statistics: towards a global framework*, available at http://www.oecd.org/document/28/0,3343,en_2649_34851_40182748_1_1_1_1,00.html

Global Life Insurance Market (USD \$m)



Source of Value Created. The attractiveness of the secondary market in life insurance policies in the United States was created by the monopsony power held by the life insurance companies for the repurchase of life insurance policies. Before the life settlements market developed, liquidity for a policy could only be gained by selling the policy back to the insurer; as the only possible buyer, the life insurance company dictated the price. The insurer paid an insurance regulator approved fee for all policies, healthy or impaired, at the time of the original purchase of the policy. This structure was the result of there being no secondary market.

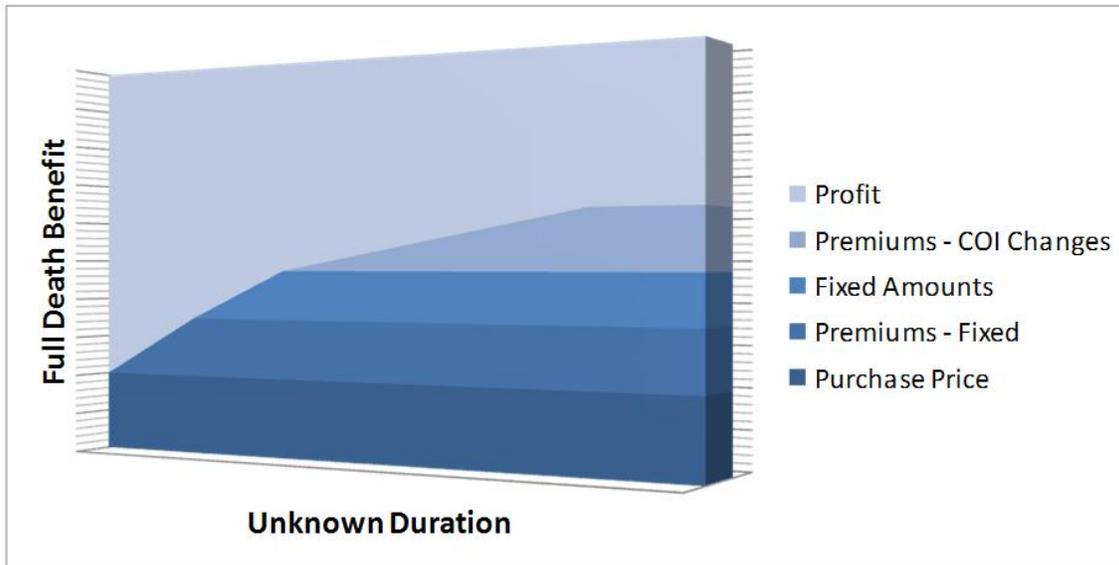
The secondary market has created the opportunity for the holder of a policy with an attractive profile to gain much greater value from the resale of the policy, particularly as there are often competing bids for a policy. For the majority of life settlements, which focus on impaired lives, the life insurance policy of an impaired senior can be priced better today than when it was written; although life insurance companies and the Life Expectancy companies use similar actuarial tables and underwriting methods, the applicable medical conditions change over time. The policy was written with an expectation of maturity; when a normal insured surrenders their policy, the surrender value reflects the expected amount of premiums remaining between now and the expected period to maturity. However, for an impaired life, there are far fewer premiums to be paid before the policy matures; the ‘normal’ surrender value, the price at which the insurance company can buy back their obligation to continue to receive premiums in exchange for a known payout at a future unknown date, is underpriced, because it does not account for the far earlier maturity and far fewer premiums to be paid.

The discrepancy between the valuation of a life insurance policy on an insured who is ‘impaired’ and the valuation calculated by the life insurance company at ‘normal’ pricing

to establish the Cash Surrender Value creates the secondary market in the life insurance policies of impaired lives²⁵. This differential enables the policyholder and investors to realize the value of the additional economic rents that the life insurance companies would otherwise receive.

A life settlement is an attractive investment when the net present value of the settlement is greater than that of the cost of purchase plus servicing and premium payments.

Value of Acquired Asset



The Early Market. Early investors were attracted to life settlements by the promise of between 15 to 20% returns²⁶. These expectations were optimistic for a long term market standard return. They were optimistic because they were derived from life expectancy estimations that were based on mortality tables with insufficient information and accuracy, leading to the overestimation of the value retained in the policy and hence the investment's return. The inaccurate pricing was aggravated by the lack of demand in the market for the policies, which led to sale prices being accepted that were relatively low, compared to when the competition increased. The recent economic conditions have forced significantly more supply onto the market at a time when demand has further

²⁵ This market is sometimes characterised as exploiting the arbitrage between information when the insured's policy was written, and the information now. This confuses cause and effect; the medical conditions drive impairment, and the difference between impaired maturity and normal maturity has financial value represented in the policy's surrender value. It is this value that creates the arbitrage or risk and value for the secondary market.

²⁶ This figure has been attested to in interviews by leading market participants and industry association leaders.

slowed; this, and other factors will drive variability around the return forecast for individual assets in the short term.

Projected Returns. Projected unlevered returns for a life settlement asset promises are between 9% and 13%²⁷. The uncorrelated nature of human mortality with the movements of financial markets provides the promise of steady returns regardless of the state of the financial markets, including comparable investments in equity, debt, commodities and property. The uncorrelated nature of this alternative asset, and other longevity based financial instruments, make it an important potential part of a portfolio diversification and risk management strategy.

Correlation and Returns. Although the underlying - longevity - is uncorrelated with the financial markets, the desire for returns and the cost of capital are functions of the broader financial markets. The desire for returns places all investment options in competition. However, that competition must be measured not only in expected return, but the utility gained from diversification away from financial market correlation.

The Life Settlement Process.

The market's value chain is subject to the market dynamics affecting any developing market, including integration, efficiencies and innovation. There are many options for each value chain component, and the challenge facing many investors wishing to participate in the industry is identifying the value chain that best meets their requirements.

Policyholders settle their life insurance policies because the sale generates more funds than from allowing the policy to lapse where all value in the investment is lost, or surrendering it to the life insurance company²⁸ and receiving only a percentage of the investment's value.

Policyholders may wish to relinquish their policies for a myriad number of reasons that summarize thus;

- a. The policy is no longer required to mitigate the risk for which it was purchased. For instance, life insurance may be taken out to mitigate the risk of a family's primary income earner dying and leaving the family destitute and homeless. The policy is judged unnecessary as there is sufficient income from savings and investments for the insured and their partner, their children are self-sufficient and the mortgage on the residence has been paid off.
- b. There is a need for liquidity, usually for quality of life or health care reasons.

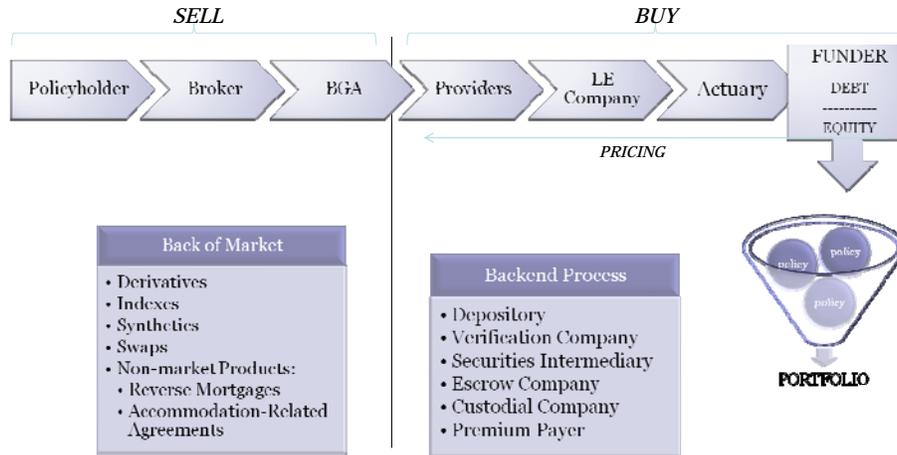
²⁷ The return currently cited by market participants during research interviews.

²⁸ Depending on the type of policy they hold a policyholder can expect in current markets to receive about three times the surrender value.

- c. There are administrative reasons such as estate simplification, charity donations or tax purposes, such as settling the policy and placing the proceeds in a charitable remainder trust²⁹.
- d. There is an arbitrage between selling the current policy and buying a new one with the same cover for less, thereby releasing value.
- e. The premiums on the policy are no longer affordable.

The process for the parties exchanging a life insurance policy on the secondary market is intricate because of the nature of the asset, particularly asset valuation and matching the opposing imperatives of the investors' valuation and the insured's medical confidentiality.

The Life Settlement Process



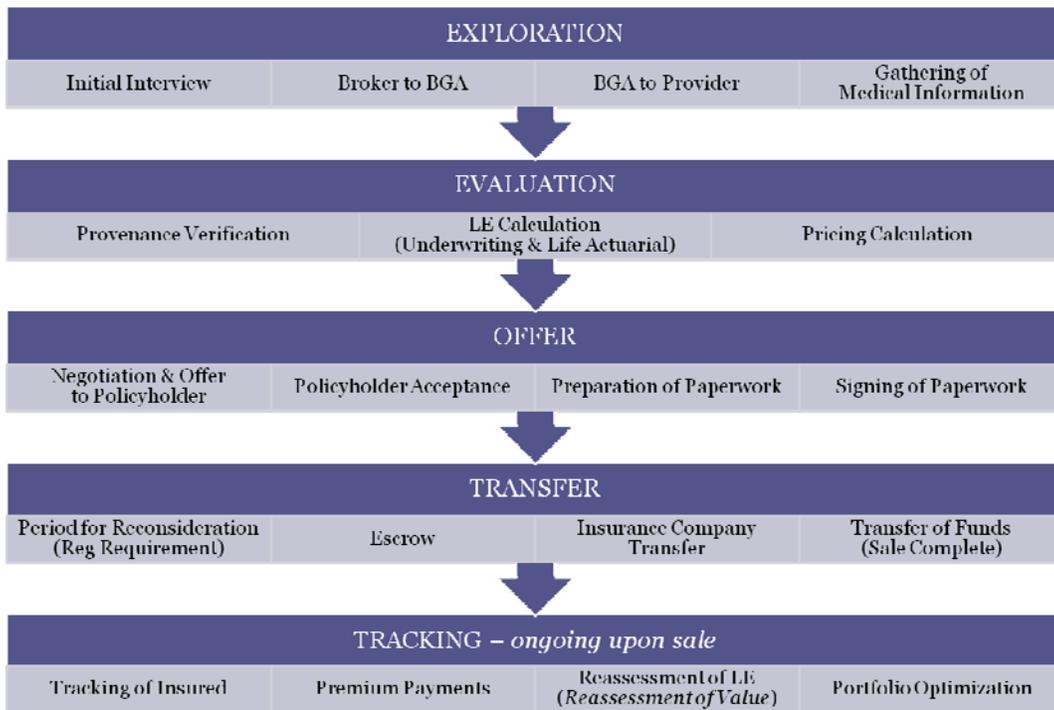
A policyholder who wishes to settle their life insurance policy is represented by a broker, agent or other representative who either directly markets the policy or passes it to an organization better able to do so, normally a Broker General Agent. The Broker General Agent as the seller's representatives markets the policy to multiple providers, the organizations that sit astride the confluence of the insurance and finance industries and represent the buyers. The providers assess the policy to determine if it fits within the parameters of any of the portfolios that they are representing at that time.

²⁹ Breus, A, (2008) Virtues and Evils of Life Settlements, *Journal of Accountancy*, June 2008.

If the policy meets a set of investor’s parameters, the insured’s medical information is assessed by a Life Expectancy company. Life Expectancy companies provide underwriting and actuarial services to establish a life expectancy report, which states, in months, the mean life expectancy for the insured. The Life Expectancy Report’s figure is used by the funder or their representative to establish a price for the policy.

Once the insured accepts a price, the insurer executes the change of ownership and sends it to the escrow agent, who pays the seller within three business days, at which point the statutory 15 day rescission period³⁰ begins, which enables the seller to reconsider. Once the rescission period has expired the insurance agent is paid.

The Longevity Mortality Market: 5 Phase Process



Throughout the life of the policy premiums are paid, generally controlled by an asset manager supported by a specialist tracking agency who confirm that the insured is still alive before paying the premium. If the policy has matured, they process the death benefit claim.

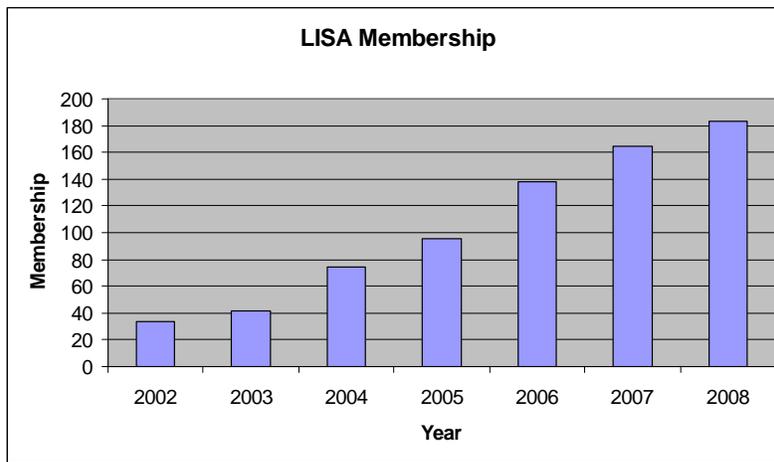
The Evolution of Market Participation.

³⁰ The 15 day rescission period is common to most US states, but is at the state’s discretion, and varies by state.

The life settlement industry has evolved from its infancy into a more mature marketplace. In infancy there was little specific regulation by the states, few specialist companies and a wide range of investors with low institutional participation. The market trends indicate greater stability through much wider specific regulation and increased participation by institutions and institutional investors.

The industry organization, the Life Settlement Association (LISA), was formed in 2002 and membership includes committing to a range of standards. Membership of the organization includes all participating groups in the industry, and its growth acts as a robust supplemental indicator of growth to the size of investment in the market.

The graph below demonstrates the growth in LISA membership over time³¹;



The lynch pin of the life settlement industry is the confluence of the finance and insurance worlds; this function is managed by ‘providers’, the firms, now firms and departments, that sit between the buy and sell sides of the market. This specialist position makes them an important indicator of market dynamics; a number of investment houses and life insurance companies have recognized this crucial component by vertically integrated these skills through acquisition³².

Their specialist role is to translate investor intentions into the purchase of assets that have specific contractual irregularities and that perform differently from the investments most institutions are familiar with. Changes to the market where providers are acquired, differentiate, adapt or fold are explained through both the classic strategic models of

³¹ LISA membership slide reproduced with LISA permission. Slide accessed at <http://www.thevoiceoftheindustry.com/content/1/LISA.aspx>.

³² Relationship examples include the Credit Suisse’s investment in Peach Holdings, the parent of Peachtree Settlement Funding, the Goldman Sachs purchase of Longmore Credit Services LLC, the Morgan Stanley purchase of Maple Life Financial and the Phoenix Life purchase of Phoenix Life Solutions.

Operational Efficiency, Customer Intimacy and Product Innovation³³, and vertical integration. These models are useful for describing the current and likely evolution of the various components in the value chain.

Operationally efficient providers are investing in technology and focusing on process, delivering services in a cost-effective, high-tempo manner. Providers have developed products that exploit their knowledge bases or value chains, or that better suit their client's requirements. For instance, premium financing is not a life settlement product, but uses the same distribution channels³⁴.

Small face programs³⁵ are only possible using operationally efficient models where processing prices are kept low and medical assessment risk is accepted. These programs demonstrate moves away from the 'sweet spot' policies sought by those seeking to create securitizable portfolios. These sweet spot policies tend to be between \$1m and \$1.5m in face value, and between 8-11 years Life Expectancy. Because these policies are highly sought their market value is high, reducing the expected return of the individual asset. Higher returns are created outside the sweet spot through innovation in real assets deployment, and are possible through the judicious use of specific asset-related synthetics.

Market Limitations.

At present there is little price transparency around individual assets; purchase prices are private, and each asset is slightly different due to policy terms and conditions. This may change under particular, increasingly likely scenarios. The trading of settled policies between investors already take place; this tertiary market provides a likely scenario for the more open trading of assets as investors and investment houses seek to drive longevity based financial assets into more familiar investing platforms and structures.

There is no universal standard trading platform or exchange for life based assets analogous to ISDA. The existence of a universal trading platform would make possible an open market with price transparency. This will occur either when a trading platform recognizes the value of being the central point of reference for price or when the government mandates that such a platform exist. A possible model is that the trading platform will provide a range of 'standard' assets as reference points, with an indication of an individual asset's deviation from the closest reference asset. The standard assets will be a cross section of features; period until expected mortality and mortality table at least, likely with an expression of policy restrictions. The variation, likely expressed as a

³³ Treacy, M. and Wiersema, F. (1995) *The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market*, HarperCollins, New York.

³⁴ For example Magna, Coventry and Life Settlement Solutions among others have supported premium financing programs.

³⁵ A small face program creates a portfolio whose policies are capped; initial caps of either \$250,000 or \$500,000 were common.

percentage, will provide deviation from the standard, enabling an easy to understand variable.

Under this scenario of a common exchange there will be an increase in fluidity of assets, driving up the asset class use and value. Market fluidity will gain increased momentum with the creation of common documentation that enable swift assessment of an asset's underlying legalities.

For the market to gain exponential growth there must be the assurance that medical information will remain confidential. This is essential in gaining the widespread acceptability on Main Street, politically and with the media, as demonstrated by recent publicity surrounding the Obama Administration's determination that all health records are digitized³⁶. Again, many participants already require this because the administrative and legal burden of holding attributed medical information is onerous, as is the unnecessary and unwanted reputational risk.

For the Life Settlement market some reputational challenges remain. However, the significant growth in self-regulation and regulation, participation by institutional investors, the creation of products that will enable the directing of funds to lower face value policies and the potential of more open, transparent markets reinforce confidence in predictions of high market growth for this asset class.

The greatest significance is the signposts for the future. The market developments discussed in this section have created the understanding for a much broader base of longevity based financial instruments and products, the details of which are explored below.

³⁶ http://news.cnet.com/8301-13578_3-10161233-38.html?part=rss CNET News dated February 10, 2009.

Life Settlements and the Insurance Industry.

The insurance industry is the source of value to the life settlement industry. When a policy is life settled, the life insurer is now certain that they must pay the death benefit for that asset, rather than the possibility that the policy will be lapsed or surrendered before maturing; this causes a reduction in the life insurer's expected lapse rate³⁷, which is the rate at which policyholders simply stopped paying premiums and abandoned their policies.

Life insurance policies state their surrender value formulas, which are approved by the insurance regulator. Before life settlements, there were simple models governing surrender values based on 'normal' lives. Because of the monopsony power of the life insurance company where the underwriter was the only possible purchaser, there was no market driven imperative for the life insurer to calculate a market competitive Cash Surrender Value. Rather, the CSV was calculated as a standard policy, even for an impaired life. The life settlement industry is forcing a change to this approach.

Elements of the life insurance industry³⁸ are engaging more closely with the life settlement industry. These companies, including Gen Re, AIG, Transamerica³⁹, Aegon⁴⁰ and GenWorth⁴¹, do so because the life settlement industry creates real value for the life insurance companies and their customers, offering the promise of future sales and allowing the insurers to hedge their own risks using assets underwritten by others.

This move closer to life settlements by some is balanced by the lack of engagement by others. This lack of engagement includes the increase in delays in processing changes of ownership⁴² and more proactive prohibitions by others⁴³.

³⁷ Anecdotal evidence suggests that the policies were predicated on 30 year durations; arguably the policies for many impaired lives are realizing additional value above initial pricing estimates when the policies were written.

³⁸ Matthew Goldstein. *Business Week*, *Even the Insurers Have Hopped on Board*, insert to *Profiting from Mortality*, 30 Jul 2007.

³⁹ TransAmerica participation announcement at http://www.transamericalifesolutions.com/services/life_settlement_solution.aspx.

⁴⁰ Aegon's participation is through Clearwater Financial Marketing, whose homepage is at <http://clearwaterfinancialmarketing.com/about.html>.

⁴¹ Genworth Press Release to take a minority position in ILS with Goldman Sachs is at http://phx.corporate-ir.net/phoenix.zhtml?c=175970&p=irol-newsArticle_Print&ID=1089456&highlight.

⁴² Interviews with a number of providers produced anecdotal evidence of the change of ownership of a life insurance policy now taking over 20 business days with some life insurance companies. This increases the risk of the sale not completing and the policyholder being frustrated in their intent to realize the value of their asset, because the investor does not pay for the policy until the change of ownership is complete.

Regulators are increasingly requiring life settlements to be part of the options explained to a policy holder seeking to relinquish the policy. As this requirement spreads, insurance companies and their captive insurance providers must understand the life settlement process, and be able to educate their clients capably about it, both the opportunities and the risks.

Changing demographics and macro-economic realities, in particular the transition from work to retirement by Baby Boomers, is changing their spending and saving habits. These changes, and the current economic realities, are threatening life insurance companies' business models. Ernst and Young's Doug French⁴⁴ wrote;

“Insurers need to take a more aggressive stance since mutual funds, asset management firms and other financial services institutions are aggressively competing for the same dollars, and will build approaches that minimize the need for insurance products.”

Life settlements offer life insurance companies the opportunity to leverage their knowledge and expertise to invest directly in life settlements. These investments are the purchase of policies that are underwritten by the insurer themselves, and the purchase of policies underwritten by others.

The purchase by a life insurer of policies that they underwrote is a sound investment because the insurer continues to pay the premiums while the re-insurer carries the risk – it is common practice for life insurers to pass the risk of life insurance on to re-insurers at a price. For the period that the reinsurer carries the obligation to pay the death benefit the life insurer is analogous to a life settlement investor; paying premiums in the expectation of receiving the death benefit on maturity. As soon as the risk is internalized because the obligation is returned to the insurer, the policy is lapsed, and the exposure terminated.

The purchase of the policies underwritten by competitors casts life insurance companies as straightforward life settlement investors. An investment in life insurance policies underwritten by others enables life insurers to balance their own obligations by effectively laying-off the risk.

There is diversity of response among life insurance companies; there are both early adopters and those that are opposed⁴⁵. However, those life insurance companies that are exploring the new market are in a position to create opportunities to not only develop

⁴³ Interviews with a number of providers have included sight of internal life insurer documentation banning the conversions of term policies so that they can be settled, and charging back any commissions paid if a policy is settled within two years of conversion.

⁴⁴ French, D. (2007), *Life Insurance Industry 2008 Outlook*, Ernst and Young Global Investment Centre.

⁴⁵ Matthew Goldstein. *Business Week, Even the Insurers Have Hopped on Board*, insert to *Profiting from Mortality*, 30 Jul 2007.

new revenue streams, but to build tailored solutions and advice that incorporate new products.

The longevity mortality markets will force significant changes to life insurance assumptions, thinking and products. The combination of longevity curve calculations, the possibilities inherent in life based financial investments and products and the application of technology offer an unparalleled opportunity for the life insurance industry to exploit its knowledge and experience to create and seize new longevity-based financial products that are increasingly closely tailored to the needs of the individual consumer.

Regulation.

The nature of this asset class and the participatory bodies created early reputational challenges, for instance the Business Week ‘Death Bonds’ cover story⁴⁶. At its inception the life settlement industry was attractive to many, including the character type that sold sub-prime mortgages in a predatory fashion. This financial risk to the consumer and these reputational and operational risks to the industry are being actively addressed through regulation and industry action; STOLI and the purchase of ‘wet paper’⁴⁷ are both actively disavowed by the industry⁴⁸.

The National Commissioners of Insurance Legislators (NCOIL) published their Viatical Settlements Model Act in June 2007⁴⁹. The National Association of Insurance Commissioners (NAIC) responded in November 2007⁵⁰ with a Model Act that addressed concerns with the NCOIL Model Act. The former was the base for 12 states in 2008 legislation, the latter for 6 states; most legislation contains features of both acts. Thus far 30 states have regulated life settlements through a concerted effort by regulators, legislators and the industry.

The NAIC’s Model Act contains stricter regulations around the confluence with banking and securities laws. Market conditions suggest that these Model Act provisions will increase in popularity for those states still creating legislation, and others that contemplate revisions.

The NAIC Model Act’s most significant provision is the extension of the contestability period from two years to five years. The contestability period is the period during which the insurer can, without recourse, cancel the policy. The contestability period is intended to protect the life insurance company from fraud; the effect of the extension is to restrict

⁴⁶ Goldstein, M (2007), Profiting from Mortality, *Business Week*, June 30, 2007.

⁴⁷ ‘Wet paper’ refers to policies that have not yet passed out of their contestability period.

⁴⁸ This policy has been repeatedly stated in interviews with the former President of LISA, LISA’s Executive Director and LISA members.

⁴⁹ www.ncoil.org.

⁵⁰ www.naic.org.

the policy's use as a tradable asset until the contestability period has ended, reducing the viability of the purchase of a life insurance policy which is to be settled later.

The disclosure of commissions to brokers selling life settlements as an option is an increasingly common requirement by investors, providers and regulated states. This disclosure acts as both a control and additional verification to the seller of transaction transparency and legitimacy, concepts at the heart of all good legislation that protect the consumer.

Increasing federal attention is being paid to the 'viaticals' markets, including a hearing in April, 2009 by the United States Senate Special Sub-Committee on the Aged. Regulators, currently at the state level, must find a difficult compromise between acknowledging the status of life insurance as an asset, and in protecting their seniors.

Regulatory risk does not serve the regulator, the investor or the consumer. Regulators must have transparent vision of not only life settlements but of all life based financial product transactions; this is essential to provide assurance for regulators, investors and consumers alike.

Consumers who are at risk of being taken advantage of must be protected, not least by ensuring that those providing advice to those considering a life settlement or other life based financial product are educated sufficiently to provide the appropriate advice.

However, life settlements do provide a legitimate option for policyholders to dispose of their asset as they wish. A clear, easily understood and robust regulatory and tax regime across all life based financial products is essential, so that consumers can easily understand their options and maximize the possible value they can accrue from investments and life insurance.

Individually tailored longevity based financial products are rapidly approaching; the processes and technologies certainly already exist. Regulator expressed concerns about the distribution of medical information are legitimate, but processes are easily put in place to separate medical data and personal data. If regulators embrace these concepts, then platforms are created for much stronger regulator and auditor understanding of the obligations and risk appetites of all investment platforms with longevity and mortality risk, including those of pension funds and life insurance companies.

Life settlements have reminded the markets how narrow the gap is between life insurance and financial instruments; from the 'business end', the portfolio construction and investment fundamentals of life insurance use similar logic and techniques as any other portfolio. Life insurance receives particular protections in its role as a hedge against misfortune. However, the stringent complaints about the sale of policy holder owned assets (as supported by the Supreme Court), and the risks to seniors, may prompt a closer look by other elements in Washington, DC about the nature of life insurance and its use as a tax-free investment tool rather than a hedge against misfortune.

Effective regulation of life settlements is rolling out across the US states, reducing the political risk and introducing stability to the market. Regulation, be it state or federal, should not only provide clear rules and protections for today's life based financial instruments and products, but facilitate the rapid development of products that enable better servicing of consumer need within a transparent and well-regulated regime.

Synthetics.

As the longevity and mortality markets have developed synthetics have been developed in response; the most significant of these to date is indices⁵¹. A pool of actual lives is used to create an index, against which investors manage longevity and mortality risk. These indices are created in accordance with the appropriate legislation in order to ensure regulatory compliance.

Indices have been created to satisfy the demand for longevity and mortality exposure while minimizing transaction activity; the involvement in physically holding and managing assets. Returns are dictated by the performance of the pool; to participate in synthetics effectively the investor must assess the nature of the lives that the index reflects, the index provider's actuarial proficiency and perspective, and the fees, commissions or spread charged.

The convenience presented by the index is balanced by the investment being tied to the performance of the specific index rather than the investor being able to create a portfolio that meets their particular risk/return requirements. For instance, a Californian pension fund seeking to hedge its own longevity risk with an index pool has basis risk, because the members of the Californian pool have different mortality profiles to the members of the index pool. The pools will have common characteristics, but will not perform in exactly the same manner; investors must understand the delta in order to make provision if necessary.

Index authors have robust confidence in the utility of indexes⁵² to investors; the data does not yet exist to provide long-term statements of performance, but this will predominantly be driven by the investor's understanding of the pool and effective predictions of performance. The recent re-evaluations of processes by AVS in response to the publication of VBT 2008, which led to a lengthening of life expectancies suggests that opportunities existed for those trading the QxX Index, which is based on AVS-reported lives.

⁵¹ For instance, the Goldman Sachs group of companies provides the QXX Index through QxX Index Co, the details of which are accessible at www.qxx-index.com. The underlying pool is provided by American Viatical Services, LLC.

⁵² This view has been expressed in interviews with Goldman Sachs and in a presentation by Deutsche Bank to the LISA Conference, November 2008.

There is scope for the rapid development of a broad array of synthetics and derivatives. These include the ability to hedge against performance at both the asset and portfolio level. As life-based financial instruments are increasingly accepted by the financial establishment this exponential growth of financial instruments is inevitable.

A small regulatory risk remains to indices as it does to other longevity based financial instruments. The perceptions of the product, despite the prevailing legal environment, forced changes. If this risk does materialize it will not directly affect index participants because of contractual arrangements for the unwinding of the index, but does underscore the requirement that synthetics, like all life based financial instruments, are completely transparent to the investment and regulatory communities.

When combined with the other factors driving the longevity mortality markets there is an exponential increase in the ability to design synthetics that closely support institutional investors with longevity or mortality risk. While this area will lead to focus from regulators, the establishment of robust, transparent processes and early regulator involvement will enable the producers of synthetics to much better enable the hedging of longevity risk at the institutional level.

THE VALUE OF THE LIFE SETTLEMENT ASSET

Broadly homogenous asset valuation techniques suggest a maturing market that understands both the asset and the factors affecting that market. This section examines the pricing process to assess the maturity of the process and whether this reflects stability and credibility.

This section will comment on the value of the life settlement transaction to both buyers and sellers before examining in more detail the pricing process for an individual policy and examining the cornerstone of the asset pricing model for the purchase of impaired policies, the Life Expectancy Report. This section concludes with a short commentary on the macro-economic potential of this market.

The Value to the Participants.

Portrayed as an asset, a life settlement is the payment of a fixed sum at an undetermined time in the future. This combination of a fixed sum but unknown duration means that the real value at the time of payment relative to the time of investment is not known, and creates challenges in calculating the investment return compared with similar calculations for other investment opportunities of fixed duration, such as investments in bonds or commodities.

These challenges face the potential seller and investor in similar manners. This section will distinguish between the point of maturity, which is when the policy matures and the face amount is paid out by the insurer, and the point of realization, when the original policyholder sells the policy to realize the value in the asset.

The attractiveness of any investment class is affected by the risk and return profiles of the competing investment opportunities. Longevity mortality products offer an underlying separated from the financial markets, providing diversification away from that of equities, bonds, commodities and property. For some products within the longevity mortality markets this diversification comes at the cost of inflation.

Any discussion of the value of investments in this asset class must recognize the concept of utility; the lack of correlation of the underlying with financial markets provides the added dimension of the value of diversifying away from correlated returns as a hedge against pessimistic market sentiment and stressed market conditions that reduce returns on property, equities and bonds. Likewise, for an individual policyholder one must consider the utility of realizing the cash from the policy asset now, rather than when the insured passes away.

There are a number of pressures on the value of an individual policy. The policy's value increases every year as the likelihood of maturity increases with time; the increase in value is not smooth, rather it responds to the vagaries of the mortality profiles of different illnesses over time. Simultaneously inflationary pressures are degrading the real value of the policy over time. By the time a policy becomes a viable life settlement the former

already outweighs the latter, although a potential investor is better able to manage inflation risks better than the individual policyholder.

The Value of a Life Settlement Asset.

The calculation of policyholder benefit is simply whether it is better to hold onto a policy or sell it and realize the value immediately and spend the money on lifestyle, health, alternative investments or a comparable policy at a lower price. The intangible element is the policyholder’s utility for the sale, and that utility can only be measured by the sale price of the asset on the open market.

Actual values for settlement in 2008 range from settlements that settled for only 4.9% of face but 869% of the Cash Surrender Value to 73% of Death Benefit with no Cash Surrender Value pertaining⁵³.

Value Distribution

Policyholder	Broker>> BGA	Providers	Life Company	Actuary	FUNDER
Price less Broker's commission	At provider discretion IFG = 6% Mkt 6%+	% of face IFG = 1% Mkt 1 – 6%	Fixed	% of purchase	
Example 1: Universal Life policy of \$2 million, 3% premium, 75 yr old with 8 yr LE.					
\$378,000	\$162,000	\$20,000	\$250	0.75% of purchase	
Cash Surrender Value: \$68,000 Increased Value over Surrender: 558%					
Example 2: Convertible Term policy of \$2 million, 4% premium, 75 yr old with 8 yr LE.					
\$308,000	\$132,000	\$20,000	\$250	0.75% of purchase	
Cash Surrender Value: \$0 Increased Value over Surrender: \$308,000					

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Securitization Factors. Some portfolios are assembled with the intention of securitization; clear guidelines have been issued by ratings agencies⁵⁵ for consideration and rating procedures. Important considerations include policy provenance, life expectancy age, portfolio diversification and stop loss provisions. Securitization was

⁵³ A selection of settled cases are listed on the LISA website at http://www.lisassociation.org/vlsaamembers/certified_cases/csvsearch.pl?mytemplate=tp3&verified=YES&method=perfect.

⁵⁴ Figures provided are for illustrative purposes only, and do not reflect any individual transaction.

⁵⁵ Modu, E, (2008), *Life Settlement Securitization*, A.M. Best, Oldwick.

perceived as the next exponential driver of market expansion, and was the subject of much industry discussion⁵⁶. However, in the current financial climates where equities, bonds, property and commodities have proven to move in a generally correlated fashion and where securitization is seen as a strong contributory factor to the wider market conditions in some quarters, securitization is judged to be less significant as a driver of the life settlement market expansion than the potential for life settlements and other longevity based financial instruments to act as a financial risk mitigation tool.

Effect of Inflation. An important, but potentially disregarded, discrepancy between the relative values of a life insurance policy is the effect of inflation. Because the investor has a wider range of tools available to hedge inflation, and because the investor's driving motivation is different, that risk is more readily accepted by the investor than the seller.

Effects of Taxation. The tax status of life settlements and related products remains a complicating factor in assessing the best course of action for potential sellers of policies⁵⁷. However, the Tax Court has supported capital gains treatment for the excess of sale price over the higher of CSV or basis⁵⁸. The Obama Administration has signaled that from Dec 31, 2010 there will be a requirement for life insurers to report on all transactions over \$1m that involve separate ownership of a life insurance policy⁵⁹. Certainly as with any significant financial act the advice of professionals is important; it is a sign of gathering maturity in the market that not only are professionals who may have to advise increasingly aware, but are now internally generating advice as part of their professional education mandate, with articles on the topic in industry journals such as the *Journal of Accounting*⁶⁰, covering not only tax status but also the conditions under which participation should be a consideration.

LBFi Portfolio Diversification. It will be appropriate for some investors to complement or substitute the use of equity – the outright purchase of a life insurance policy – with the use of debt; lending to policyholders to pay the premiums on a policy themselves in exchange for a fixed, compounding return paid to the investor upon maturity. Likewise when considering the very nature of the assets, a wide range of hedges, puts and derivatives can be structured to strengthen the value, minimize the risk and narrow the uncertainty attached to asset purchase; these are accomplished through the use of such

⁵⁶ The attractiveness of securitization as an exponential driver of industry growth was particularly prevalent as a discussion topic at the LISA Conferences in November 2007 and May 2008. This had fallen away by November 2008 in light of the lack of liquidity in the markets, and the lack of clarity about securitization in general for the future.

⁵⁷ Ring, K. and Siebert, PA, (2008) *Taxation of Life Insurance Policies in an Evolving Secondary Marketplace*, Insurance Studies Institute, Keystone.

⁵⁸ Breus, A, (2008) Virtues and Evils of Life Settlements, *Journal of Accountancy*, June 2008.

⁵⁹ Department of the Treasury, (2009), *General Explanations of the Administration's Fiscal Year 2010 Proposals*, pg 89, May, 2009.

⁶⁰ Breus, A, (2008) Virtues and Evils of Life Settlements, *Journal of Accountancy*, June 2008.

products as annuities and guarantees on returns linked to Life Expectancy Reports. The growth of the synthetics offerings has demonstrated the potential for this market’s development over time, of risk mitigations and new methods of creating value.

Longevity Mortality as a Correlated Asset Class.

This section compares longevity mortality as an underlying with the performance of equities, bonds, real estate and commodities over a 12 month period, using indices as proxies that are both reflective and easily accessible. To find an accessible and reasonable proxy for longevity mortality the pool of lives that comprise the QxX Index⁶¹ was used. The QxX Index is a synthetic comprising almost 50,000 actual lives that is provided by Goldman Sachs to its clients to provide them with exposure to longevity mortality markets. The pool of lives that comprise the index is provided by American Viatical Services LLC (‘AVS’), a Life Expectancy reporting firm, and these lives are tracked using reporting to the Social Security Death Index. This pool has particular value as a proxy for correlation because AVS provides underwriting⁶² against those lives that are candidates for life settlements. The index reports mortality within the pool on a monthly basis, providing the opportunity to track mortality within a particular, large, group of lives.

The proxies used to reflect comparative investment classes are the S&P 500 Index⁶³ (SPX), the US iShares Aggregate Bond Index⁶⁴ (AGG), the US iShares Dow Jones Real Estate Fund Index⁶⁵ (IYR) and the US iShares S&P GSCI Commodity Indexed Trust⁶⁶ (GSG).

Summary Statistics	QxX	SPX	AGG	IYR	GSG
Mean	0.00197	-0.04156	0.00048	-0.05900	-0.05087
SD	0.00026	0.05939	0.02439	0.13063	0.12076
Skewness	0.32696	-0.55358	1.89962	-0.52456	-0.22117
Kurtosis	1.46318	0.06993	4.11091	-0.46714	-0.20127

⁶¹ The QxX Index can be found at <http://www.qxx-index.com/>.

⁶² The underwriting provided by AVS on individual lives in this instance is not relevant, as it is the absolute performance, rather than deviation from predicted performance, that drives the assessment.

⁶³ Equities are represented by the S&P 500 Index, available at www.bloomberg.com/apps/quote?ticker=SPX:IND.

⁶⁴ Bonds are represented by the US iShares Aggregate Bond Index, available at www.bloomberg.com/apps/quote?ticker=AGG:US.

⁶⁵ Property (real estate) is represented by the US iShares Dow Jones US Real Estate Fund Index, available at www.bloomberg.com/apps/quote?ticker=IYR:US.

⁶⁶ Commodities are represented by the US iShares S&P GSCI Commodity Indexed Trust, available at www.bloomberg.com/apps/quote?ticker=GSG:US.

The first table demonstrates that longevity-mortality asset class, and the QxX index in particular, exhibit very low volatility relative to the other asset classes. This observation may be explained by the diversification of the QxX index pool of lives. Second, the QxX index exhibits low skewness, with the distribution of returns above and below the mean more symmetrical than that of other asset classes, especially bonds. Finally, performance of the QxX index exhibits much less kurtosis than do the other asset classes, meaning that the tails of the distribution of QxX returns are not as heavy as those of other asset classes.

	Correlation Matrix				
	QxX	SPX	AGG	IYR	GSG
QxX	1.00	0.09	-0.35	-0.16	0.21
SPX	0.09	1.00	-0.45	0.39	0.54
AGG	-0.35	-0.45	1.00	0.44	-0.09
IYR	-0.16	0.39	0.44	1.00	0.44
GSG	0.21	0.54	-0.09	0.44	1.00

The above matrix illustrates the correlation among the returns on indices that correspond to various asset classes. It is noteworthy that returns on the life-based exhibit low correlation with returns on other indices. Our analysis is somewhat constrained by the brevity of the period for which life-based returns are available, as returns on other asset classes (commodities, real estate, and bonds) were quite monotonic during 2008, though due to factors presumably unrelated to mortality of life-insurance policyholders.

Multiple Linear Regression of QxX over GSG, IYR, AGG, SPX					
	GSG	IYR	AGG	SPX	Intercept
β	0.000665	4.88E-05	-0.00493	-0.00129	-0.00199
Standard Error	0.000835	0.001043	0.005635	0.002348	0.0001
T-Statistic	0.796349	0.046727	-0.87499	-0.54976	
F-Statistic	0.498034				
R-Squared	0.19937				

Multiple Linear Regression of SPX over GSG, IYR, AGG				
	GSG	IYR	AGG	b
β	0.103499	0.274489	-1.70551	-0.01928
Standard Error	0.113425	0.116455	0.562678	0.012659
T-Statistic	0.912495	2.357052	-3.03106	
F-Statistic	5.925922			
R-Squared	0.6639			

The table illustrates the output of a multiple linear regression analysis of QxX returns over returns on commodities, real estate, bonds, and equities. The very low factor weighting coefficients, insignificant T- and F-statistics, and low R-square illustrate that

there is no statistically significant linear model that predicts returns on the life-based index based on returns on these other asset classes during the time period in question.

By comparison, the regression output illustrates that returns on real estate and bonds were significant predictors of returns on the S&P 500 over the same time period. We submit that returns on a well-diversified portfolio of longevity-mortality assets, such as the QxX index, are uncorrelated with and exhibit significantly lower volatility than returns on equities, bonds, real estate, and commodities.

Asset Valuation Models.

To understand the pricing mechanisms for a life settlement there must be a reasonable model for describing the instruments in terms of investments that are easier to price. Two conventions meet this stipulation; the life settlement as a bond, and the life settlement as a derivative of the underlying life expectancy of an insured or a pool of insureds.

A life settlement can be described as a negative-coupon bond having fixed premium payments, a known face value, and a variable maturity. We can assess the risk-neutral reservation price for the asset, the asset’s intrinsic value, as:

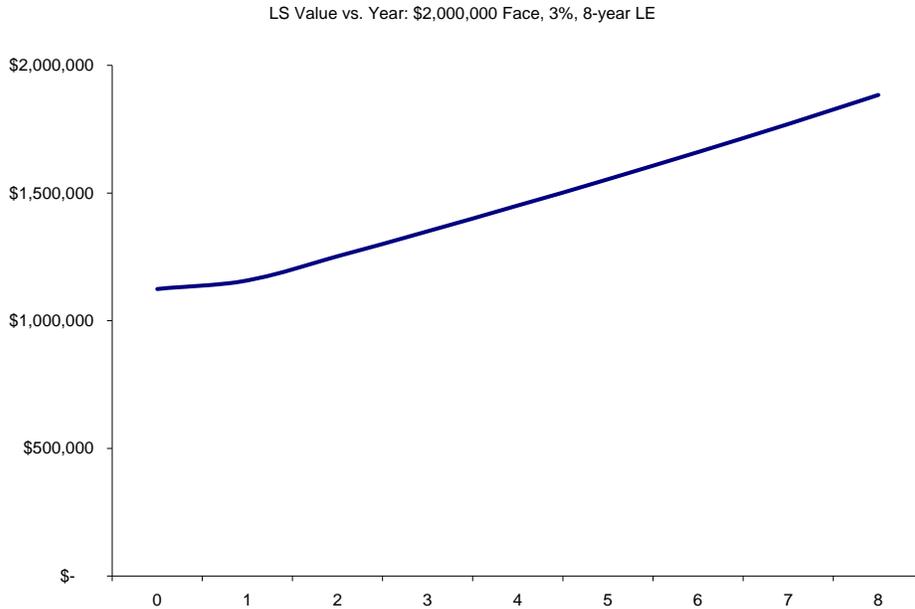
Face value policy	\$2,000,000
Annual premium	3%
Life Expectancy	8
Discount rate	10%
Year	Cash Flow
0	\$0
1	\$(60,000)
2	\$(60,000)
3	\$(60,000)
4	\$(60,000)
5	\$(60,000)
6	\$(60,000)
7	\$(60,000)
8	\$1,940,000
Total P&L	\$1,520,000
NPV	\$557,199

Assuming no changes to the life expectancy, the annual premium, or the discount rate, the value of the life settlement over time is the net present value of the expected number of premium payments and the face value:

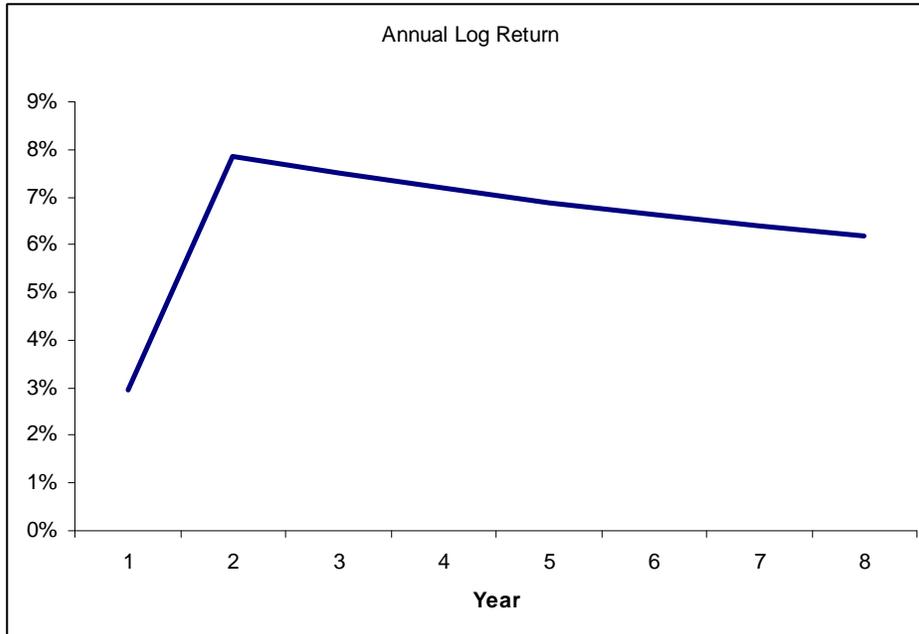
Face value policy	\$2,000,000
Annual premium	3%
Year LE	8
Discount rate	10%

Year	LS Value	LE Years Remaining
0	\$ 557,199	8
1	\$ 612,919	7
2	\$ 734,211	6
3	\$ 867,632	5
4	\$ 1,014,395	4
5	\$ 1,175,835	3
6	\$ 1,353,418	2
7	\$ 1,548,760	1
8	\$ 1,763,636	0

Based on this valuation method, we can show how the fundamental value of a life settlement changes with respect to time throughout the holding period defined by the life expectancy of the insured.



The valuation model yields the following annual rates of return:



Asset Pricing.

A life insurance policy is relatively more valuable to the policyholder on an impaired insured because the impairment makes the period to maturity less than that assessed by the original underwriting. This reduced timeline increases the value of the payout in real terms⁶⁷, and diminishes the amount of premiums that will have to be paid before the policy matures. For the policyholder, the price offered on the secondary market may in financial and utility terms outweigh the value of the policy at maturity.

Valuing and setting an offer price for an asset is a multi-faceted process. The market’s evolution created the Life Expectancy estimate, a qualitative and quantitative process with its roots in underwriting that examines cases to establish expected mortality, and therefore contributes significantly to the price set for the asset.

A series of factors contribute to the offer price for a life settlement asset:

- a. Life Expectancy Report. Produced by specialist life expectancy companies, generally identifies an expected period to mortality, described variously as either the median or average life expectancy. This is discussed in greater detail in the next section.
- b. The expected return. The required return, described either in IRR or NAV terms depending on the investor. The expected return is calculated by deducting from the face value of the policy the cost of acquisition of the policy, the associated costs and the

⁶⁷ The payout is worth more in real terms because it will happen earlier than forecast, exposing it to lower discount factors.

ongoing cost of insurance, also known as the premiums, for the period until the expected maturity.

- c. Portfolio construction factors. There must be diversity within a portfolio of life insurance policies, in order to minimize exposure to adverse factors. Portfolios will be diversified by face amount, age, disease, and insurance policy carrier. Portfolio construction is essential, and so those building portfolios may be willing to pay a premium in order to source the last, possibly more difficult policies in order to close the portfolio, and to accept the premium paid in the context of the overall price to build the fund.
- d. Miscellaneous factors. There can be many other factors, most expressing a risk premium or allowance of some description. Miscellaneous factors can arise from market context, such a desired distribution of insurance policy underwriter ratings or following a securitization checklist⁶⁸. Legislative factors such as the state of origin of an asset, and the risk associated with that state, particularly assets bought from the remaining unregulated states, should be considered in pricing; investors may wish to assign a discount to policies from states where specific regulation has not yet been passed.
- e. Counterparty Risk. The most significant risk associated with longevity mortality investments is counterparty risk, which is equally true across all investments, including synthetics. Calculating counter-party risk for a life settlement is based on the rating of the insurance carrier.

Because medical conditions differ in their duration and effect, the mortality curve should theoretically be slightly different for every individual, depending on the combinations of lifestyle and health factors. The optimum solution is for mortality curves to be calculated for each individual; this is not yet possible.

Because the asset may mature at different times in the future, the pricing model must take account of the changing value of money over time. The use of a single figure for a Life Expectancy report, which can be described as expected mortality, should not be used as the base for the pricing calculation because there is no consideration of the value of money over time nor of the idiosyncrasies of the insured's particular mortality curve; rather, the mortality curve that the LE Report is based on must be the basis for calculating the expected value of a policy, and therefore the price to be offered for it.

The likelihood of a policy maturing increases with time; hence, the relative value of that asset similarly increases. By understanding the particular mortality probability model for a policy, one can better price the incremental increase in value as time passes – effectively some premium payments are more valuable than others, and that incrementally the policy's resale value at some times is worth relatively more than others.

⁶⁸ For instance the AM Best Guide to Securitization 2008 lists the construction factors necessary for a portfolio to be rated; this includes distribution requirements by factors such as disease, carrier and a maximum value of any single policy within the portfolio.

There is a unified understanding and method of pricing assets in this market; the presence of such a homogenous process lends credence to the perception of this market having stability and credibility. As the market becomes more mature and increasingly popular, the development of better pricing models and better life expectancy data and estimations will continue, which will drive more precise asset valuation. The logical future of an asset class with common asset valuation processes is a much more open market, where assets will flow freely according to investment strategies and portfolio need.

Life Expectancy Reports.

The Life Expectancy report is the most significant factor in a policy valuation. The report, written by a specialist life expectancy company, provides a predictive figure in months of the life expectancy of the insured; for instance, a LE of 89 months⁶⁹. This Life Expectancy is calculated from two data sources; the mortality rating and the cumulative mortality curve. The mortality rating is assessed from applying the standard rating, or the health of a very health person, 100% - and adjusting it for impairments. For instance, someone with a number of chronic illnesses may have a 300% rating, or there is a 300% higher likelihood of policy maturity each year. The adjusted mortality rating is applied to a mortality curve – determined from the life expectancy company's own adjustments to the Society of Actuaries' Valuation Basic Table 2008⁷⁰, to establish the life expectancy.

For example, the effects of prostate cancer on a 50 year old are more pronounced than on an 80 year old, in whom the cancer's progression is significantly slower. Impairments must be placed in their proper clinical context; an 87 year old with congestive heart failure could be rated very highly, but some conditions are treatable. With treatment, some 87 year olds are cleared for the rigors of elective surgery, such as knee surgery, suggesting that a 300% rating is inappropriate.⁷¹

Mortality tables describe life expectancy for a given medical profile on a percentile basis. The mortality tables are derived from the industry-generated VBT tables, to which the life expectancy companies make amendments according to their own experiences. Life expectancy companies are focusing on impaired risks, an area that has received less actuarial attention compared to standard and preferred risks. The need for effective assessment solutions led to the development of impaired risk specific processes and data.

⁶⁹ Investigations throughout both the life expectancy companies themselves and a number of investors revealed a preference for point estimate life expectancies, explained either as a median or average.

⁷⁰ Society of Actuaries, (2008) VBT Report and Tables. VBT 2008 is the Actuarial industry's standard model for use.

⁷¹ The author is grateful to Yves Fourage, Ed Mohoric, Mike Fasano and Jack Kettler for their contribution to his understanding of life expectancy assessments.

Life expectancy reporting is an indicator of stability in the market; as the expectancies become more correlated, market efficiencies will become more apparent. Recent moves in the market following the recent publication of the tables calculated and generated by the Society of Actuaries, the VBT 2008 Tables have driven significantly increased similarity in Life Expectancy reports between companies, creating coherence in the life expectancy provider market and an indicative maturity to the life expectancy industry.

There remain distinct qualitative- and quantitative-based models for producing life expectancies among the Life Expectancy providers; the increase in correlation between the LE reports since the publication of VBT 2008 have been towards the qualitative-based models' quotes. Following this increased report correlation the critical factors in delivering life expectancy reports will become speed and price, because the reports are likely to become commoditized.

The estimation of life expectancies is subject to a series of variabilities and risks that affect the pricing model, while the individual's age and impairments affect that individual's mortality curve. The mortality or longevity curve is the expression of the cumulative mortality for the actuarial table that the insured falls under.

Life expectancy report changes affecting the whole market take on two forms: cause and effect. Effect-based changes affect the class of impairment or disease, brought about by the likes of a new treatment. Cause-based effects are changes in the market's assessment of diseases – how the life expectancy duration quotes move together or separately in their assessments. The changes in cause-based effects are driven by increased information, and can be driven by market forces; a life expectancy provider supplying lower quotes than its competitors may be more attractive because those reports make potential assets look more valuable.

In addition to their value to life settlements, the modeling of cumulative mortality curves signposts the future of longevity based financial instruments and products; the application of technology to processes and data, and the methods to which those cumulative mortality curves, or longevity curves, can be used, are both broad and deep.

'Life Expectancy Reports' have been critical to the development of the life settlement industry, and this importance will not diminish. However, point estimates of life expectancy, or the 'median figure', do not maximize the potential of the longevity curve when pricing of longevity based financial products.

At the retail level the creation of longevity curves for individuals offer financial advisors and their clients the ability to use the longevity curve to identify the most appropriate product mix to meet the client's aspirations, requirements and risk appetite for expected longevity.

With appropriate models and technology targeted longevity curve modeling can revolutionize both retail financial advising and the assessment of the obligations and investment profiles of financial institutions with exposure to longevity risk such as

pension funds and life insurers. These will not be achieved overnight, but their delivery is very much imminent.

Investment Considerations and Risks.

Investment in longevity and mortality markets carries risks which must be addressed as part of the process for investing. This section assumes that the diversification of the total portfolio and the risk / return assessment has directed the investor towards a life settlement solution. The revaluations of life expectancy reports by a number of Life Expectancy Companies following the publication of VBT 2008 highlight that return expectations for life based financial instruments are subject to a range of factors, similar to every other investment class.

The risks that must be considered when assessing a life settlement solution are longevity risk, operational risk, counterparty risk, market risk and regulatory risk.

Longevity risk is the risk that the rate of maturity within a portfolio will be slower than that predicted by the underwriting and actuarial modeling. This risk must be mitigated through the use of the best possible models and systems for modeling, and may also be mitigated through the application of a range of available or possible synthetics, including a portfolio-wide hedge against asset performance or asset specific synthetics.

Operational risk expresses the risks inherent in designing a portfolio and in the procuring and managing the assets. The value chain supporting this process is compartmentalized, and the sourcing of the correct composition must be addressed through due diligence and reinsurance that the value chain has transparency, efficacy, a coherent methodology and effective pricing regime.

Counterparty risk includes both the underwriter of the life insurance policy and the participants in the acquisition chain. An asset may be valueless if the life insurance policy underwriter fails, or if the acquisition process for the policy itself is open to challenge through allegations of fraud. The underwriter counterparty risk is mitigated through diversification of underwriter and confidence in the ratings ascribed the underwriting entities. Acquisition-based counterparty risk is mitigated through appropriate due diligence of the acquisition chain.

Market risks are the fundamental risk of trading assets. That the value of assets may rise or fall is the most fundamental marketplace risk. In the life settlements market the driver on the supply side is the amount of policies available for life settlement, while the driver for the demand side is the amount of funds available to purchase life settlements. The management of market risk includes portfolio diversification to reduce volatility in exchange for ensuring a market competitive, positive return. Failing to understand this risk as it applies to this asset class may most significantly affect unsophisticated retail investors being sold life settlements as an investment option but who are not adequately educated on the importance of diversification within a life settlement portfolio.

The regulatory risks are that regulations surrounding life settlements, particularly in the unregulated states or at federal level, or that taxation regimes may change. This risk is mitigated by adhering to strict, financially sound acquisition principles and practices, which is achieved through sound value chain selection and due diligence on the assets being acquired. The industry can best mitigate the regulatory risk by making the activities surrounding each asset as transparent as possible to regulators.

The longevity and mortality markets are driven by information, in particular ensuring that as much value can be created from the health of the insured as possible. Therefore an investor's most significant decision when choosing to invest in this market is the methodology for valuing the asset; this decision should be made on the basis of considering underwriting and actuarial processes, and how those processes are applied to actual pricing.

Investments in life settlements can be tailored very carefully to the investment intent. A great value of the asset class is the ability to describe the efficient frontier in terms of particular investment aspirations and risk appetite, but also to meet particular diversification wants and needs. For instance, a very high expected return aspiration could be met by waiting for high face value policies that were written on those in perfect health but are suddenly afflicted with critical, short mortality illnesses and pressing liquidity concerns. This can be traded for much more stable, lower expected value returns over a dictated period to match obligations.

The risks affecting life settlements broadly describe those affecting all life based financial instruments. Risk mitigation is best achieved through understanding the investment class' idiosyncratic drivers, transparency and high standards of process and clear regulation within which to operate.

Macro-Economic Context and Effects.

The life settlement market presents a range of public policy opportunities, particularly in the face of the Baby Boomer wave crashing against the shore of retirement, and the current state of those markets where the Baby Boomers have their investments. There is a public policy imperative to find new resources for the Baby Boomers to exploit if they are to survive their retirement and the burden on the government and the taxpayer is to be minimized.

The retail process of the sale of the life settlement policy provides the broker or agent with the opportunity to conduct a further sale of a life product, be it an annuity, new life insurance or another product, returning revenue to the insurer. These activities both generate taxes and reduce the reliance of the policy-holder on the state for future support, and cash is released to be spent within the economy. In the current financial situation, this may prove the fastest mechanism for delivering significant non-public funds to Main Street, at little risk to the taxpayer.

The challenges of driving liquidity to street level are well documented in recessionary periods and during other financial crises. Life settlements support the political and financial imperative of driving capital to Main Street by providing an investment/realization vehicle to fast track funds from institutional investors to the retail level, based on an underlying that is stable and not correlated to the major investment classes. Life settlements can provide cash to the asset-rich, cash poor and a stable haven for investors in a period of real need for all parties.

The Obama Administration is seeking additional revenue-creating measures for the government, is likely to create more robust regulation of the financial markets, and seeks to digitize all medical records.

The application of technology, in the form of digitized medical records, will deliver consumers with the ability to apply information that is already held to their own purposes. There is a risk that this application of technology will outstrip regulators' ability to address a new context; the combination of medical data and automatic longevity modeling. When this combination is possible, a consumer can sit with his investment advisor, download his longevity curve and then receive offers from all potential longevity based financial product providers; new life insurance, annuity prices, offers for life settlements on the existing policies, etc.

There is a substantial change likely to happen to the life insurance industry, their representatives and their regulators in the next few years; longevity based financial products will be calculated as rapidly as mortgages, and offers generated as quickly, speeding transactions, generating greater competition and enabling consumers much greater flexibility in disposing of their assets under their own terms through choice.

CONCLUSION

Life settlements are an important emerging asset class both in their own right and because they forecast the future of longevity based financial instruments and products. Based on the Janus-like factors of longevity and mortality, which pose opportunities and risks to most business and investment types in some form; life settlements are the fundamental longevity based financial instrument.

Life settlements do not arise from radical new concepts. Grounded in the same financial modeling as life insurance and annuities, their value is in creating a secondary market for life insurance policies where there was none. The notion that they present some new form of gambling on human life is erroneous; owning shares in a life insurance firm is investing in a longevity based financial instrument, with a vested interest in longer life so that premiums continued to be paid in excess of the real cost of the policy's face value. The fundamental offering provided by life settlements is that they provide greater cash settlements for policies than the life insurers themselves, when the policyholder needs as much value as possible from their asset.

The life settlement market is reducing the lapse rates on life insurance policies. Some life insurance companies are seeing opportunities from this new market, such as the opportunity to hedge and to offer new financial products, while others see the loss of value as a threat to be mitigated. This changing marketplace creates the opportunity for both insurers and reinsurers to create a range of new longevity based financial instruments and products at the consumer and investor level, products that are much more closely tailored to the needs of the consumer in a much more cost effective manner; those insurers that refuse to change may very well be left behind as new markets and products are created around them.

The life settlement market has led to a greater concentration on the modeling of an individual's longevity, particularly for seniors. This modeling of an individual's longevity curve will prove an important tool for individuals, their financial planners, insurance brokers and others to provide much more effective assistance in assessing future needs and designing financial strategies that meet those needs. The application of these individual models at higher levels will provide more accurate modeling of the obligations of pension funds, superannuation funds and of the obligations of life insurance companies themselves.

Life expectancy is the primary factor in calculating price. Different methodologies and assumptions have been applied across life expectancy reporting companies, and the late 2008 revaluations by some of these companies proved the dictum that expectations of capital returns are subject to changes, and that after longevity risk the second most significant risk in this market is operational risk. This operational risk necessitates the selection of an integrated, effective acquisition chain when becoming involved with any form of life based financial instrument. The increasing automation of the calculation of longevity curves, coupled with the digitization of health data, will revolutionize the

deliver of longevity based financial products to Main Street, and pull many of those products closer to financial products in both perception and reality.

Market evolution is leading both to commoditization of current service provision types, and the innovation of new products and systems of delivery. The market is increasingly well-regulated, transparent and positioned to provide value to investor and consumer alike.

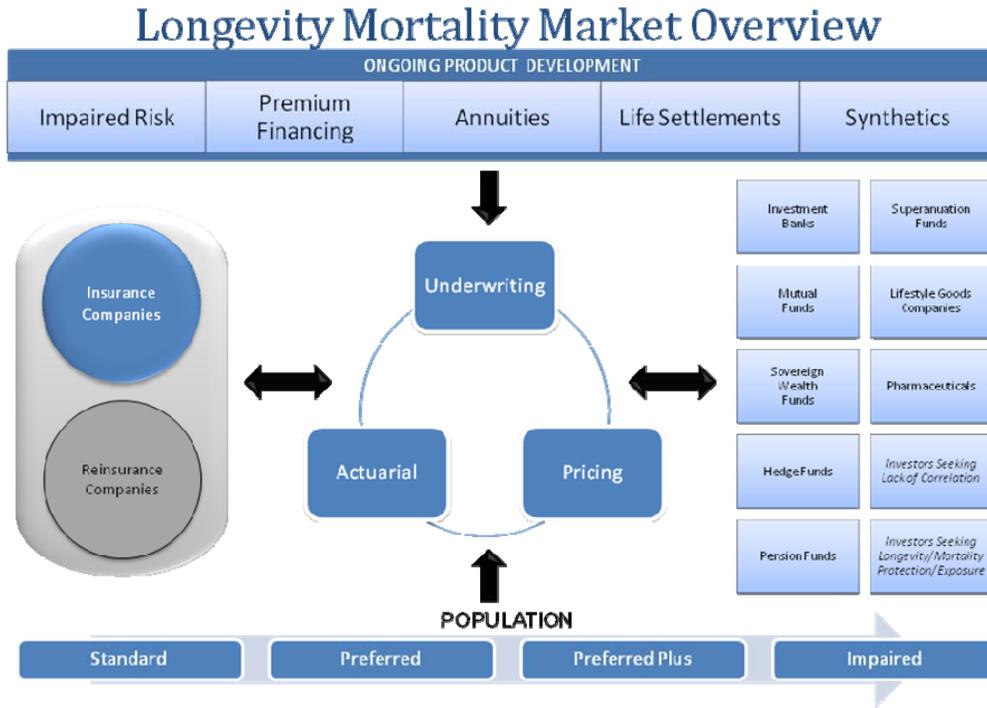
This market innovation is creating new products rapidly, such as premium financing and synthetics like indices. Synthetics will have an important role within the longevity mortality markets. Synthetics face the reputational examination that life settlements have already undergone, and this examination may again reflect on life settlements. Indices are created to reduce transaction risk and provide longevity mortality exposure. Different indices provide different options in addressing these needs, and it is anticipated that synthetics and derivatives of all types are only at the inception stage; there is much instrument development to come. This development should exploit current developments to provide institution level tailoring of risk mitigation tools and exposure, particularly for the management of longevity risk.

There is much debate around the morality of life settlements. Life settlements themselves are neither moral nor immoral – they are a financial instrument; emotive language is introduced as a tool of persuasion. When stripped of all emotive language, a life settlement creates greater value than the cash surrender value offered by the life insurance company; if that value was not there, the settlement would not be viable. The life settlement is based on the calculation of risk and return as applied to the longevity of the insured, just as life insurance and annuities are calculated when sold. The debate must be around the protection of those who might be mis-sold life settlements and other longevity based financial products, and the facilitation of innovative, transparent and consumer focused longevity-based markets that are openly regulated in a structure that accommodates innovation and that embraces the fine distinctions between investments and insurance.

Investors are faced with a series of risks when investing in life based financial instruments; longevity risk, operational risk, counterparty risk and regulatory risk. These risks should act as an effective guide to investing; as with any new market, investors must be sure that they have access to the industry knowledge and background in order to invest in the investment or investments that match their priorities. Longevity based financial instruments offer, within the realm of available investments, the ability to apply a portfolio approach that balances both individual assets, and investment types.

The life settlement market has the growth, stability, regulatory oversight and acceptance both domestically and internationally to thrive. The growth and development of the life settlement industry has led to innovations in the understanding of the calculation of the longevity of an individual and the application of that understanding to financial and insurance products, pricing such an asset and the use of technology to speed this process.

The longevity mortality markets are increasingly vertically and horizontally integrated, making reformation nigh on inevitable.



For these reasons, it is a safe prediction that by the end of 2012, the key elements of portfolio diversification for sophisticated investors will be equities, bonds, commodities, real estate and longevity.

BIBLIOGRAPHY

Agent Media (2008), *Life Settlement Research Study (PowerPoint Presentation)*, Agent Media.

Breus, A, (2008) Virtues and Evils of Life Settlements, *Journal of Accountancy*, June 2008.

Conning Research and Consulting, Inc (2007), *Life Settlement Market, Increasing Investor and Capital Demand*, Conning Research and Consulting, Inc Strategic Study Series.

¹ Department of the Treasury, (2009), *General Explanations of the Administration's Fiscal Year 2010 Proposals*, pg 89, May, 2009.

Doherty, N.A, and Singer, H.J. (2002) *The Benefits of a Secondary Market for Life Insurance Policies*, Working Paper Series, Wharton Financial Centre, University of Pennsylvania, Philadelphia.

French, D. (2007), *Life Insurance Industry 2008 Outlook*, Ernst and Young Global Investment Centre.

Accessed at

[http://www.ey.com/Global/assets.nsf/International/Industry_Insurance_Life_Outlook_2008/\\$file/Industry_Insurance_Life_Outlook_2008.pdf](http://www.ey.com/Global/assets.nsf/International/Industry_Insurance_Life_Outlook_2008/$file/Industry_Insurance_Life_Outlook_2008.pdf).

Goldstein, M (2007), Profiting from Mortality, *Business Week*, June 30, 2007.

Accessed at http://www.businessweek.com/magazine/content/07_31/b4044001.htm.

Goldstein, M (2008), 'Why Death Bonds Look so Frail' *BusinessWeek*, 25 Feb 2008.

Accessed at

www.businessweek.com/magazine/content/08_08/b4072040348943.htm?campaign_id=rs_s_daily.

Holmes, O.W, (1911), Decision Author, GRIGSBY v. RUSSELL, 222 U.S. 149 (1911), 222 U.S. 149.

Accessed at http://caselaw.lp.findlaw.com/scripts/printer_friendly.pl?page=us/222/149.

Understanding Life Settlements and Industry Issues Entering 2008, (2008) Insurance Studies Institute, Keystone.

McRaith, M.T. (2009), Testimony Before the United States Senate Special Committee on Aging, *Regarding: Life Settlements and the Need for Increasing Transparency*, April 29, 2009.

Modu, E, (2008), *Life Settlement Securitization*, A.M. Best, Oldwick.

Accessed at www.ambest.com/ratings/methodology.

Mohoric, E, and Kinney, R.O (2008), *Life Settlement Mortality Considerations and Their Effect on Portfolio Valuation*.

Mott, A. (2007) New Swaps to Hedge Alpha and Beta Longevity Risks of Life Settlement Pools, *The Journal of Structure Finance*, Summer 2007,
Accessed at
<http://www.ijjournals.com/JPF/DEFAULT.ASP?Page=2&ISS=24013&SID=690268>

OECD Directorate for Financial and Enterprise Affairs: *Insurance Statistics: Towards a Global Framework* (2008). Accessed at
http://www.oecd.org/document/28/0,3343,en_2649_34851_40182748_1_1_1_1,00.html.

Quinn, S. (2008) *The Inversion of Morals in Markets: Death, Benefits, and the Exchange of Life Insurance Policies*, University of California, Berkeley.

Ring, K. and Siegert, P.A., (2008) *Taxation of Life Insurance Policies in an Evolving Secondary Marketplace*, Insurance Studies Institute, Keystone.

Bahna-Nolan, M. (chair), Ritzke, C. (co-chair) et al, (2008) *VBT Report and Tables*, Society of Actuaries.
Accessed at <http://www.soa.org/files/pdf/research-2008-vbt-report.pdf>.

Treacy, M. and Wiersema, F. (1995) *The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market*, HarperCollins, New York.

Vadiveloo, J, (2005) *The Life Settlements Market, An Actuarial Perspective on Consumer Economic Value* by Deloitte Consulting LLP and The University of Connecticut.