

Your Wealth & Life

Personal strategies for wealth management

CIO Wealth Management Research



Long-term care

What to do now

Contents

01	Editorial
02	What is long-term care?
04	What do LTC services include?
05	How much do LTC services cost?
06	Will you need LTC services?
07	How much will LTC cost your family?
08	Will LTC disrupt your retirement plan?
09	Does insurance help?
11	A note on same-sex households
12	Medicare and LTC
13	Conclusions
16	Disclaimer
18	Publication details

We want to hear from you

Please drop us a line and let us know how we're hitting the mark.

What do you find of particular **value** in this report? Anything you'd like to see **more of**? **Less of**?
Suggestions for improvement?

[Click to email us your thoughts.
wmrfeedback@ubs.com.](mailto:wmrfeedback@ubs.com)

Thank you.



This report has been prepared by UBS Financial Services Inc. ("UBS FS").

Please see important disclaimers and disclosures at the end of this report.

This report was published on 7 September 2016.



Mike Ryan, CFA



Michael Crook, CAIA, CRPC

Dear readers,

In this report, we take a clear-eyed look at long-term care (LTC), including who provides LTC services, how to deal with the costs, and whether or not LTC expenses are likely to ruin your otherwise well-constructed financial plan (spoiler alert: they can).

The Q4 2015 UBS *Investor Watch* survey, "Unassisted Living," found that investors have pretty clear expectations for how they will handle LTC in retirement. **A majority of respondents reported that they want to age at home** and not be a burden on their children. At the same time, fewer than half are confident that they can cover the costs of LTC.

In order to analyze the LTC question, we created a model to simulate usage of LTC services in retirement using academic research designed for actuaries who develop LTC insurance products. Those simulations enable us to develop a much clearer understanding of how LTC affects the sustainability of financial plans.

We explore **who might be at risk of incurring high LTC expenses**, and we expect that our findings will motivate some of you to rethink your current financial plans. For example, women are more likely to outlive men and are more likely to need LTC services for an extended period. Relying on a spouse for care, as 80% of *Investor Watch* respondents said they intend to do, simply won't work most of the time.

Behavioral scientists find that most of us avoid thinking about complex issues, especially when they seem far in the future and out of our control. We hope this analysis will give you the information and encouragement necessary to tackle the LTC challenge head on.

A handwritten signature in black ink, appearing to read "Mike Ryan".

Mike Ryan, CFA

Chief Investment Strategist, WMA
Regional CIO, Wealth Management US

A handwritten signature in black ink, appearing to read "Michael W Crook".

Michael Crook, CAIA, CRPC

Head of Investment Planning
Wealth Management US

What is long-term care?

Long-term care services assist you with personal care as you age. Most LTC services help you with the basic tasks of everyday living, but some LTC includes medical care.

Healthcare professionals use the term “activities of daily living” (ADLs) as a way to systematically monitor your ability to perform self-care activities. You can think about ADLs as the activities you normally need to do every morning after waking: getting out of bed, bathing, dressing, eating, and using the bathroom. Your ability or inability to perform these activities provides a gauge of your functional status and whether or not you need assistance on an ongoing basis.

Activity	Description
Eating	You may have trouble preparing meals, following an adequate diet, or even feeding yourself without assistance.
Bathing	You may struggle to thoroughly bathe yourself.
Dressing	You may need help dressing and undressing completely and may struggle to fasten garments or tie shoes.
Toileting	You may require assistance moving to and from the restroom.
Continence	You may need assistance monitoring these functions.
Transferring	You may need help standing or moving in and out of beds and chairs.

Source: U.S. Department of Health and Human Services, UBS, as of 1 September 2016



What do LTC services include?

In this report, we focus on the three main types of LTC that you are most likely to use: home health aides, assisted living facilities, and nursing home facilities.

- 1) **Home health aides** provide private home-based care and help with activities of daily living, like bathing, cooking, and transportation. Some states allow aides to give medication, check vital signs, and perform other health-related services, but home health aides are generally not medical professionals.
- 2) **Assisted living facilities** generally provide personal care support for activities of daily living, like meal preparation, bathing, and transportation. In addition to ADL assistance, assisted living facilities will typically help to coordinate care with outside healthcare providers. They offer varied living arrangements, including stand-alone homes and individual apartments in some facilities.

- 3) **Nursing home facilities** cater to people that need continual medical care and have significant ADL limitations. Nursing homes offer the most extensive non-hospital care available for the elderly, and typically have physical, occupational, and respiratory therapists on staff. Patients commonly move into nursing home care from assisted living (and then frequently back to assisted living) as their needs change.

When you're developing your plan for LTC, keep in mind that many people prefer to live at home as long as possible. Additionally, it is common to receive at least some LTC from unpaid caregivers, like spouses or adult children, but the UBS *Investor Watch* survey also found that most people do not want to rely on their children for daily care.



How much do LTC services cost?

Based on nationwide monthly averages, assisted living facilities cost USD 3,628, home health aides cost USD 3,861, and nursing home facilities cost USD 7,698. However, costs vary dramatically based on the types of service and the location in which they are provided. For example, a year in a nursing home costs approximately USD 60,000 in Oklahoma, but USD 135,000 in New York¹ (see Fig. 1).

For comparison, inflation in the US increased by 1.55% annually over the same period. Based on our estimate that inflation will return to 2.5% over the long term, we used the following estimates for future LTC inflation in our analysis in this report:

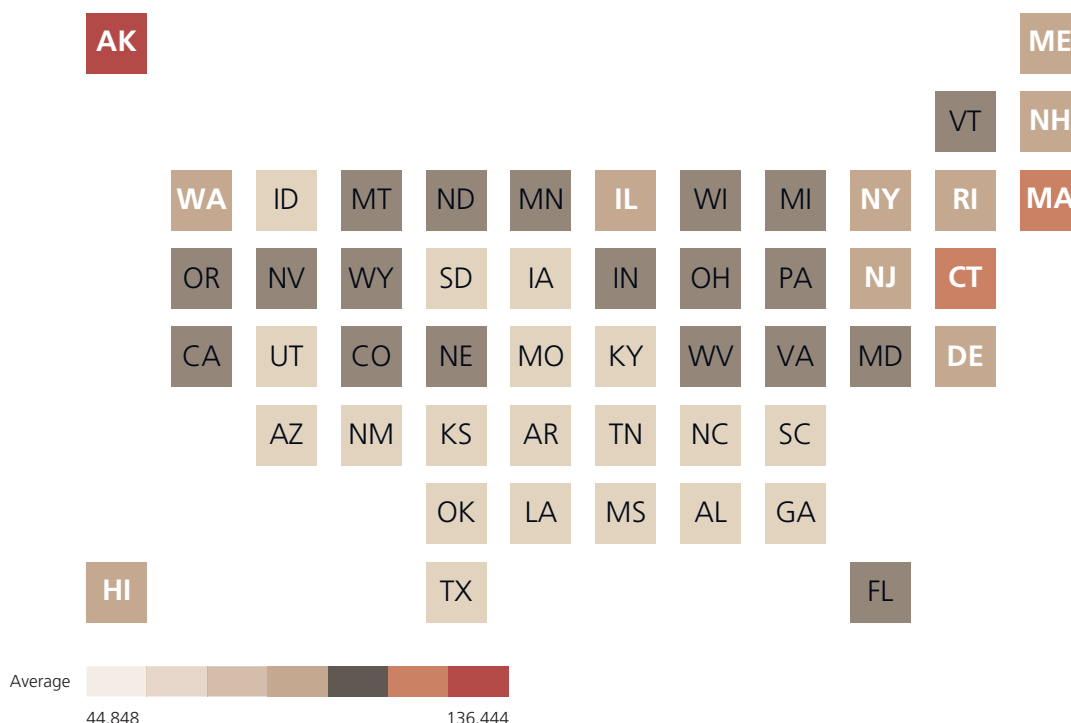
- Home health aide: 2.2%
- Assisted living facility: 3.4%
- Nursing home facility: 3.9%.

Annual cost growth over the last five years has been:

- Home health aide: 1.28%
- Assisted living facility: 2.16%
- Nursing home facility: 3.51%.

Fig. 1: The cost of long-term care can vary dramatically based on the type and location of care

Average combined median cost of home health care, assisted living, and nursing home care



Source: Genworth Cost of Care Survey 2016, UBS, as of April 2016

Will you need LTC services?

The simple answer is probably yes. While it's difficult to imagine and to acknowledge the reality, our findings indicate that about 85% of couples will use some type of LTC services before they pass away² (see Fig. 2).

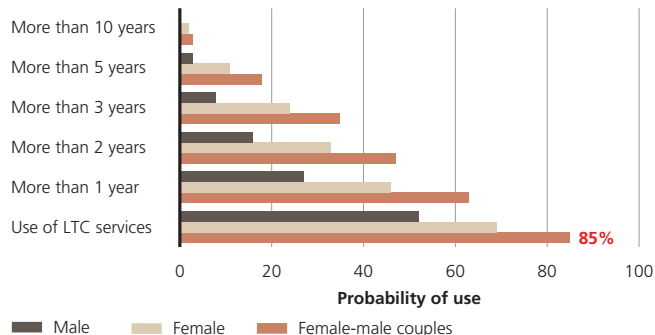
We believe there are some common misconceptions about nursing home usage as well. Based on our analysis, men and women have a 44% and 58% probability, respectively, of ever using a nursing home.³ More importantly, a 65-year-old couple has a 78% likelihood of at least one member using a nursing home for some period of time (see Fig. 3).

Perhaps, more surprisingly, approximately 77% of people who go into a nursing home return to the community – typically with a home health aide or by moving into assisted living. Accordingly, financial plans should incorporate the possibility of either returning home or moving to an assisted living facility. Since most families sell their home when they move to assisted living, we have assumed that once individuals use assisted living, they will not return home. They will either remain in assisted living, move to a nursing home, or eventually pass away.



Fig. 2: About 85% of households will use some type of long-term care

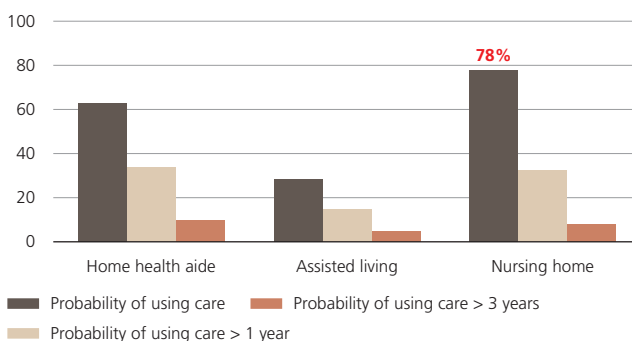
Probability of using some type of LTC, in %



Source: UBS, as of 1 September 2016

Fig. 3: A 65-year-old couple has a 78% chance of at least one member using a nursing home

Probability of at least one member using home health aid, assisted living, or a nursing home, in %



Source: UBS, as of 1 September 2016

How much will LTC cost your family?

Behavioral science shows fairly clearly that humans do a poor job of evaluating probabilities when it comes to planning for uncertain events. The problem is even worse when it comes to planning for events that we have never personally experienced, which is typically the case with LTC.

Anecdotally, we find that many investors either downplay the costs of LTC or exaggerate the likelihood of needing it. Those that downplay LTC tell us that they intend to stay healthy and avoid the expense. Alternatively, we find that investors who have witnessed family members who experienced worst-case LTC outcomes assume that they will also need years of care that will deplete the majority of their estate.

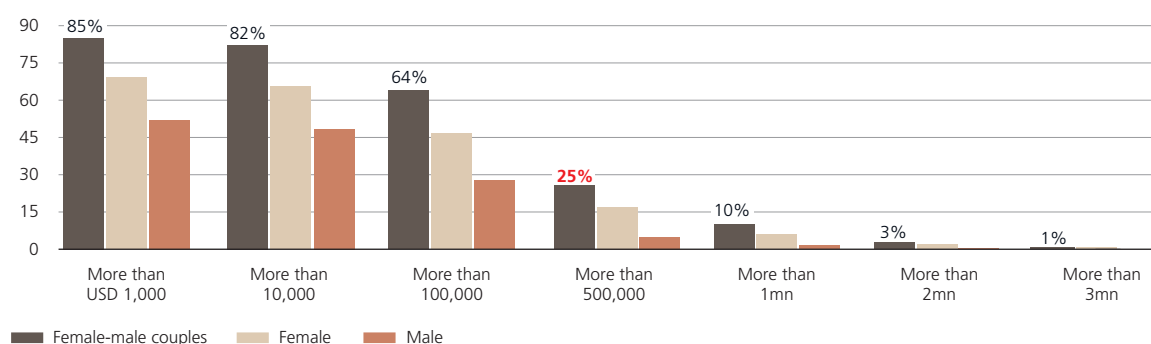
In reality, although you are likely to need LTC services, you are unlikely to experience devastating LTC expenses. About 15% of families will have no LTC expenses at all, and our analysis indicates that the median 65-year old couple in 2016 will incur a total of USD 184,000 in LTC expenses during their lifetimes. However, and this is a

big however, roughly 25% of families will incur expenses of more than USD 500,000, and 10% of families will incur expenses greater than USD 1mn (see Fig. 4). Therein lies the challenge.

Self-funding the worst 25% of outcomes, which results in USD 0.5–3mn of expenses, is impractical for the vast majority of American households. The functional equivalent would be trying to self-fund rebuilding your house after a fire instead of holding insurance to cover the cost.

Fig. 4: Roughly 25% of couples at age 65 today will spend more than USD 500,000 on LTC during their lifetime

Probability LTC spending will exceed each specified amount, in %



Source: UBS, as of 1 September 2016

Will LTC disrupt your retirement plan?

Our results indicate that LTC expenses can cause failure in otherwise well-considered financial plans. We created 1,000 simulated trials of LTC expenses for a 65-year old couple. The trials reflected a statistically accurate range of possible LTC expenses starting at age 65. Some trials experienced no LTC expenses and therefore didn't impact the plan. A few trials led to very high expenses, and the rest were somewhere in the middle. Figure 5 illustrates the LTC experience for two of the individuals in our simulation.

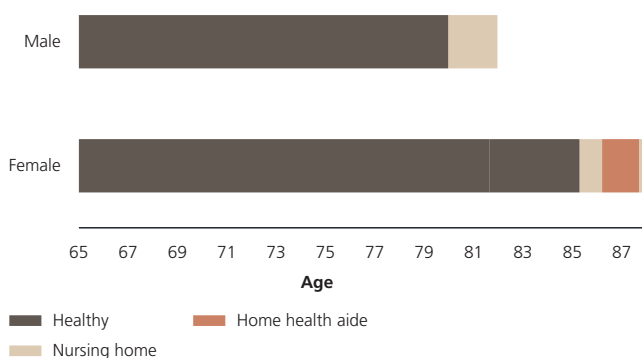
The man in this trial remains healthy until age 80, goes into a nursing home for 24 months, and then passes away. The woman remains healthy until age 85, experiences a short stay in a nursing home, returns home with a home health aide, returns briefly to a nursing home, and then passes away.

After overlaying⁴ the LTC expenses on otherwise successful financial plans, we found that financial plans failed (defined as depleting the entire portfolio) 32% of the time for USD 1mn households, 9% of the time for USD 5mn households, and 5% of the time for USD 10mn households (see Fig. 6).

Based on this analysis, we can conclusively say that LTC expenses can ruin an otherwise well-considered financial plan for households under USD 10mn net worth.

Fig. 5: Timelines for two illustrative care-state simulations

Care-state based on age for two of our simulations



Source: UBS, as of 1 September 2016

Fig. 6: For USD 1mn households, 32% of otherwise-successful financial plans failed after including long-term care expenses

Failure rates due to long-term care expenses, initial portfolio value in USD millions

	1mn	2	3	4	5	6	7	8	9	10
Male	7%	5%	3%	2%	2%	1%	1%	1%	1%	1%
Female	21%	12%	10%	8%	6%	5%	5%	5%	4%	4%
Female-male households	32%	20%	15%	11%	9%	8%	7%	6%	6%	5%

Source: UBS, as of 1 September 2016

Does insurance help?

Unfortunately, LTC insurance isn't designed to protect investors against worst-case scenarios. Think about a typical insurance product like homeowners insurance. The policy is generally set up so the purchaser of the policy is responsible for a small portion of the loss (known as the deductible), while the insurance company covers the remainder of the loss. If your house burns down, you might have a USD 10,000 deductible, but the insurance company would cover losses above that level.

Ideally, an LTC policy would also have a reasonable deductible and cover expenses above that amount. For instance, a household might choose a policy where they pay the first USD 10,000 of LTC expenses per year and the insurance company would cover any amount above that number. Such a policy would add a lot of certainty to planning. However, there are no LTC policies that use that structure. Instead, policies are generally structured with low or no deductibles and also with caps on annual and lifetime coverage.

We analyzed three types of LTC insurance policies to see if they help improve failure rates among households:

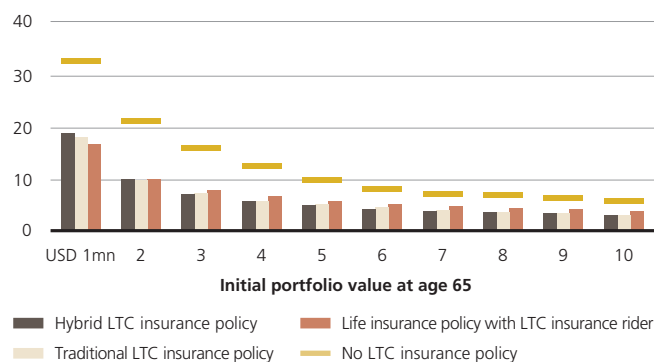
- 1) **Traditional long-term care insurance policies** generally allow the purchaser to customize benefits (amount, period, inflation, deductible) based on their needs. Premiums are typically paid monthly, quarterly, semiannually, or annually. One significant and notable drawback is that premiums can be subject to rate increases.
- 2) **Hybrid long-term care insurance policies** provide long-term care coverage and include a death benefit. The premium is commonly paid upfront in full, or in a series of fixed installments. If long-term care is never used, the beneficiary's estate usually receives a death benefit equal to the purchase price of the policy when the insured dies.

- 3) **Permanent insurance policies with a long-term care insurance rider** focus on providing the insured individual with a larger death benefit as does a traditional life insurance policy. However, they also provide a small rider that covers long-term care expenses.

We found that all three types of insurance products reduce financial plan failures stemming from LTC expenses (see Fig. 7). Unfortunately, the cap on benefits prevents LTC insurance from eliminating the risk altogether. LTC insurance has the greatest impact on reducing failure rates for couples with a portfolio value between USD 1–5mn. On average, the probability of failure fell by 9% after including LTC insurance in a financial plan. We also found that LTC insurance has a more modest impact on portfolios between USD 6–10mn. These investors should consider whether their expenses are flexible enough to enable them to reduce spending in other areas to handle LTC expenses when necessary.

Fig. 7: Insurance can help to reduce portfolio failure rates

Probability of failure (in %, y-axis), portfolio value in USD millions



Source: John Hancock, Lincoln Financial Group, Mutual of Omaha, UBS, as of 1 September 2016

Options to consider when planning for long-term care expenses

Option	Description	Benefits	Considerations
Self-insure	Utilize liquid assets to pay for long-term care expenses	If long-term care is not needed, money will be saved from not purchasing one of the other options	Difficult to exercise self-control and save Uncertainty of returns
Traditional long-term care insurance policy	Benefits are selected at the onset of the policy and can be designed for both current and future needs	Premiums are guaranteed renewable Flexibility with premiums: monthly, quarterly, etc. Policy can be custom-tailored to suit needs Spousal shared benefits and inflation riders may be available	Premiums may be subject to periodic rate increases Premiums for unused benefits are gone: If you don't use it, you lose it Full underwriting process
Hybrid long-term care insurance policy	Provides long-term care benefits for qualifying claims, and a smaller life insurance benefit if the long-term care benefits are not used	Includes a death benefit Return-of-premium provision Premium is fixed	Significant upfront premium Death benefit reduced dollar-for-dollar when LTC policy is engaged Smaller LTC pool compared to a traditional LTC policy
Permanent insurance policy with a long-term care insurance rider	A life insurance policy that provides a death benefit, as well as a long-term care benefit rider attached to the policy for an additional fee	Can provide a large death benefit Cost-effective if the individual has both LTC needs and life insurance needs	Can be an expensive policy if the individual has no life insurance need Full underwriting process Payouts for services are often more limited than in LTC policies
Fixed Annuity with a long-term care insurance rider	Long-term care within a fixed annuity	Less stringent underwriting process: no medical exam Can provide 2 or 3 times the purchase payment for LTC Open for 1035 exchange from current annuities and life insurance	Smaller LTC pool compared to a traditional LTC policy
Health savings account (HSA)	Acts like a 401(k) and a checking account combined to use for qualified medical expenses	Tax-free withdrawals if used for qualified medical expenses Contributions made through payroll deposits (through employer) are typically made with pre-tax dollars Earnings are tax-free	Contribution limits To be eligible, the individual must be enrolled in a special health insurance plan called a High-Deductible Health Plan

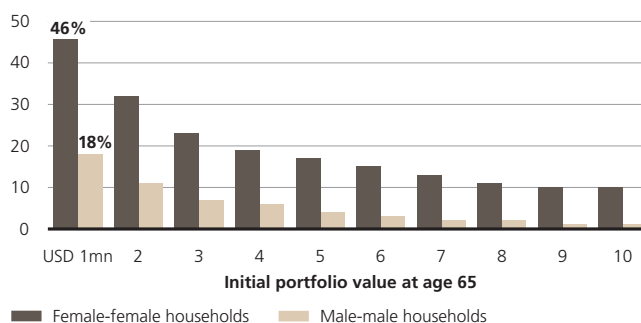
A note on same-sex households



Same-sex couples represent a small but growing (84% growth between 2000-2010⁵) segment of households in the United States. Male-male couples have a lower usage rate for LTC services than male-female couples, and female-female couples are at particular risk due to longer life expectancies and higher expected LTC usage (see Fig. 8).

Fig. 8: Female same-sex households are at particular risk

Failure rate in otherwise-successful financial plans due to long-term care expenses, initial portfolio value in USD millions, in %



Source: UBS, as of 1 September 2016



Medicare and LTC

If skilled nursing home care (i.e., care that can only be provided by a registered nurse or doctor) is needed, Medicare covers the cost, but only for a limited time and with certain restrictions. For instance, Medicare covers up to 100 days of skilled nursing care if the patient enters the nursing facility within 30 days of a hospital stay that lasted at least three days. However, 100% coverage is only provided for the first 20 days, at which point the patient is responsible for a copay (USD 161 in 2016) that might be covered by a Medigap policy.

We did not attempt to model Medicare coverage into our analysis for a couple of reasons. First, we don't have a framework for identifying nursing

home stays that would meet the qualifications of Medicare coverage. Second, and more importantly, we did not have any instances where success or failure in a particular trial was predicated on three months of nursing home expenses. Some families will bequeath slightly more wealth than our analysis predicts due to Medicare picking up some of the tab for nursing home expenses. Other families will deplete their assets slightly less quickly than we predict, but the gap between success and failure is unlikely to be bridged by Medicare coverage.

Conclusions

- 1 Most couples will utilize some type of LTC service after the age of 65.
- 2 The median lifetime LTC expense for a healthy 65-year-old couple in 2016 will be USD 184,000, but some households will experience much higher lifetime expenses – up to USD 3mn.
- 3 Excluding LTC in a retirement plan can result in significantly overestimating the likely success of the plan.
- 4 Women, in particular, need to develop clear plans for handling LTC expenses.
- 5 LTC insurance products can help reduce, but not eliminate, the planning risk from LTC expenses.



About the contributors

Michael Crook is a Managing Director and Head of Investment Planning in CIO Wealth Management Research, where he advises investors on asset allocation, portfolio construction, and financial planning. He is an author of numerous academic and professional articles.

Bryan Cryder worked with the Investment Planning team in CIO Wealth Management Research as a second-year analyst in the Graduate Talent Program at UBS. He received his BS in Finance from The Pennsylvania State University.

Svetlana Gherzi is a behavioral finance specialist within the Investment Planning group in CIO Wealth Management Research. She is responsible for transforming academic research into actionable ideas and practical tools that Financial Advisors can use to improve individuals' financial well-being. She has a BA and MA in economics and a PhD in behavioral science from the University of Warwick, UK.

Jeff LeForge is a Strategist within the Investment Planning Research group in CIO Wealth Management Research. He focuses on advice related to investment strategy, portfolio construction, and financial planning.

Mike Ryan is the Chief Investment Strategist for Wealth Management Americas and Regional Chief Investment Officer for Wealth Management US. He brings together market and investment insights and positions them so as to optimize the impact for clients.

Ronald Sutedja is a member of Investment Planning in CIO Wealth Management Research. Before UBS, he worked on portfolio analysis at AQR Capital Management. He currently focuses on portfolio construction, simulation, and risk profiling.

Endnotes

- ¹ Genworth, "2016 Cost of Care Study," April 2016, <https://www.genworth.com/about-us/industry-expertise/cost-of-care.html>
- ² For a detailed explanation of our methodology, see: Crook, Michael W. and Sutedja, Ronald, Will Long Term Care Ruin Retirement Plans? (July 24, 2016). Available at SSRN: <http://ssrn.com/abstract=2813771>
- ³ Leora Friedberg, Wenliang Hou, Wei Sun, Anthony Webb, and Zhenyu Li, "New Evidence on the Risk of Requiring Long-Term Care," Center for Retirement Research at Boston College, October 2015.
- ⁴ M. Barton Waring and Laurence B. Siegel, "The Only Spending Rule Article You Will Ever Need," Financial Analysts Journal, Volume 71, No. 1, January/February 2015, pp.91-107.
- ⁵ 2010 US Census.



Insurance and related products

Insurance and annuity products are issued by unaffiliated third-party insurance companies and made available through insurance agency subsidiaries of UBS Financial Services Inc.

Guarantees are based on the claims-paying ability of the issuing insurance company.

Long-term care insurance has certain exclusions, limitations, reduction of benefits, and terms under which a particular policy may be continued or discontinued. For costs and complete details of coverage, please contact your financial advisor.

Disclaimer

Chief Investment Office (CIO) Wealth Management (WM) Research is published by UBS Wealth Management and UBS Wealth Management Americas, Business Divisions of UBS AG (UBS) or an affiliate thereof. CIO WM Research reports published outside the US are branded as Chief Investment Office WM. In certain countries UBS AG is referred to as UBS SA. This publication is for your information only and is not intended as an offer, or a solicitation of an offer, to buy or sell any investment or other specific product. The analysis contained herein does not constitute a personal recommendation or take into account the particular investment objectives, investment strategies, financial situation and needs of any specific recipient. It is based on numerous assumptions. Different assumptions could result in materially different results. We recommend that you obtain financial and/or tax advice as to the implications (including tax) of investing in the manner described or in any of the products mentioned herein. Certain services and products are subject to legal restrictions and cannot be offered worldwide on an unrestricted basis and/or may not be eligible for sale to all investors. All information and opinions expressed in this document were obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness (other than disclosures relating to UBS and its affiliates). All information and opinions as well as any prices indicated are current only as of the date of this report, and are subject to change without notice. Opinions expressed herein may differ or be contrary to those expressed by other business areas or divisions of UBS as a result of using different assumptions and/or criteria. At any time, investment decisions (including whether to buy, sell or hold securities) made by UBS AG, its affiliates, subsidiaries and employees may differ from or be contrary to the opinions expressed in UBS research publications. Some investments may not be readily realizable since the market in the securities is illiquid and therefore valuing the investment and identifying the risk to which you are exposed may be difficult to quantify. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS, into other areas, units, divisions or affiliates of UBS. Futures and options trading is considered risky. Past performance of an investment is no guarantee for its future performance. Some investments may be subject to sudden and large falls in value and on realization you may receive back

less than you invested or may be required to pay more. Changes in FX rates may have an adverse effect on the price, value or income of an investment. This report is for distribution only under such circumstances as may be permitted by applicable law.

Distributed to US persons by UBS Financial Services Inc. or UBS Securities LLC, subsidiaries of UBS AG. UBS Switzerland AG, UBS Deutschland AG, UBS Bank, S.A., UBS Brasil Administradora de Valores Mobiliarios Ltda, UBS Asesores Mexico, S.A. de C.V., UBS Securities Japan Co., Ltd, UBS Wealth Management Israel Ltd and UBS Menkul Degerler AS are affiliates of UBS AG. UBS Financial Services Incorporated of Puerto Rico is a subsidiary of UBS Financial Services Inc. UBS Financial Services Inc. accepts responsibility for the content of a report prepared by a non-US affiliate when it distributes reports to US persons. All transactions by a US person in the securities mentioned in this report should be effected through a US-registered broker dealer affiliated with UBS, and not through a non-US affiliate. The contents of this report have not been and will not be approved by any securities or investment authority in the United States or elsewhere. UBS Financial Services Inc. is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.

UBS specifically prohibits the redistribution or reproduction of this material in whole or in part without the prior written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect.

Version as per September 2015.

© UBS 2016. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

UBS Financial Services Inc. is a subsidiary of UBS AG.
www.ubs.com/financialservicesinc



Publication details

Publisher

UBS Financial Services Inc.
Wealth Management Research
1285 Avenue of the Americas, 20th Floor
New York, NY 10019

This report was published on 7 September 2016.

Editor in chief

Michael Crook

Primary authors

Michael Crook
Ronald Sutedja

Editors

Abraham De Ramos
Roz Myers

Contributors

(in alphabetical order)

Bryan Cryder
Svetlana Gherzi
Zoe L'Esperance
Jeff LeForge
Mike Ryan

Project management

John Collura
Paul Leeming
Matt Siegel

Report design

George Stilabower

Graphics support

Cognizant Group – Basavaraj Gudihal,
Srinivas Addugula, Pavan Mekala
and Virender Negi