
The Social and Economic Contributions of the Life Insurance Industry

PREPARED BY

Professor David Cummins, Fox School of Business, Temple University

Michael Cragg, *The Brattle Group*

Bin Zhou, *The Brattle Group*

Jehan deFonseka, *The Brattle Group*

September 2018



This report was funded by MetLife, Inc.

This report was originally published in October 2016. The current version incorporates the updated industry statistics as of April 2018. All results and any errors are the responsibility of the authors and do not represent the opinion of The Brattle Group or its clients.

Copyright © 2018 The Brattle Group, Inc.



Table of Contents

Executive Summary	ii
I. How Does Life Insurance Work?	1
II. Life Insurers' Benefits to Individuals.....	3
A. Life Insurance Improves Quality of Life	3
B. Life Insurers Supplement Social Security	9
III. How Life Insurers Benefit the Economy.....	11
A. Life Insurers Promote Economic Growth and Efficiency.....	12
B. Life Insurers Provide A Critical Source of Long-Term or “Patient” Capital.....	14
C. Life Insurers Provide Stability to Financial Markets	18
D. Life Insurers are Critical in the Private Placement Market.....	19
E. Life Insurers Invest in State and Local Economies.....	22
IV. How Life Insurers Alleviate Pressure on Social Programs.....	23
A. Life Insurers Reduce Pressure on Social Security.....	24
B. Life Insurers Reduce Pressure on Other Government Spending	26
V. Conclusion	27
References	28

Executive Summary

The life insurance industry in the United States is a driver of economic growth and important to the overall health and financial well-being of U.S. households. Through its primary products—life insurance, annuities, and non-medical health products such as disability income insurance and long-term care insurance (LTCI)—which are sold either directly to individuals or through employers or agents, the life insurance industry functions as a unique private provider of personal financial protection. The life insurance industry is also a critical contributor to long-term economic growth by supporting both consumer spending and capital markets. Approximately 60 percent of American households are covered by some form of life insurance, with an average life insurance policy coverage amount of over 2.5 times their annual household income. Total financial protection provided by life insurance policies in force in 2016 was \$20.3 trillion, about 109 percent of the \$18.6 trillion U.S. economy. Further, life insurance supplements social insurance and welfare programs, lifting many families out of poverty and reducing pressure on government outlays.

This white paper looks beyond statistics, and explains the life insurance industry's roles and contributions to the U.S. economy and society from three perspectives: to individuals, to the economy, and to government spending.

How Life Insurers Benefit Individuals

The life insurance industry provides millions of American families with protection against the risk of premature death, illness, disability, and inadequate retirement income. Life insurers improve the quality of life for their policyholders by pooling the risk of mortality, morbidity, and longevity among a large group of individuals and returning the benefits of this pooling in the form of guaranteed payments. Risk pooling makes risk protection possible—whether or not a financially adverse event will happen to a single policyholder is hard to determine, but with a large pool of individuals, the percentage of those policyholders that will experience a financially adverse event can be predicted with relative precision.

Life insurers offer an efficient way of providing financial protection and peace of mind to many families as risk pooling makes insurance less costly and more financially efficient than self-insurance (setting precautionary savings aside by each individual). Insurance products offer

reliable protection against premature death and loss of income, as non-insured savings are rarely sufficient to replace a wage-earner's salary in the event of premature death or disability.

Academics agree that the risk pooling practiced by life insurers provides substantial individual and societal benefits. For example:

1. Bernheim, *et al.* (2003a) shows that life insurance reduces the percentage of households experiencing severe financial deterioration, following the death of the primary earners from 33 percent (without life insurance) to just 6 percent (with life insurance).
2. Yogo (2009) shows that a household headed by a 65-year old in good health experiences a 16 percent increase in the household's financial and housing wealth due to an investment in annuities.

Life insurance also provides policyholders and their dependents with the peace of mind that comes with the feeling of financial security—an invaluable and intangible benefit. By design, life insurers' products protect insureds and their dependents from the stress and anxiety they would feel if life insurance were not available. Constant concern about financial security can inhibit individual productivity and creativity.

Life insurance also works extremely well in tandem with existing government benefits. Since 1935, the Social Security program has provided American workers and their qualified dependents with an important measure of protection against poverty caused by mortality, longevity, and morbidity risks. However, Social Security was not designed to fully replace pre-retirement income for most Americans. Social Security benefits typically must be supplemented by work place retirement plans, personal savings and investments for most workers to achieve adequate income security in retirement. The widespread demand for life insurance, annuity, and non-medical health products in the last 80 years is clear evidence that these products are valuable supplements to Social Security for millions of Americans. The life insurance industry remains the only private-sector provider using risk-pooling and guarantees to provide financial safety and security to millions of Americans.

How Life Insurers Benefit the Economy

Life insurers are vital to an efficiently functioning modern economy and society and are a key contributor to long-term economic growth and improved living standards. We highlight five principal ways the industry contributes to the economy.

First and foremost, life insurers help channel household savings from a large portion of the population into productive investments. They also promote economic growth through their own unique funding channels and investments. Recent research suggests that a one percentage point increase in the ratio of life insurance premiums to gross domestic product (GDP) would lead to a 0.15 percentage point increase in the GDP growth rate, or an increase of \$26 billion in GDP. It would also create 69,000 additional insurance industry jobs.

Second, life insurers are a critical source of patient capital for the overall economy. Life insurers carefully match assets and liabilities as required by prudent business practices and insurance regulation. Life insurers invest primarily in long-term fixed-income assets to match the long-term liabilities associated with life insurance and annuities. In fact, close to 90 percent of life insurers' general account assets are fixed income. Of their bond investments, at time of purchase, 96 percent have maturities greater than five years, and 72 percent have maturities of 10 years or more.

Third, the stable, long-term nature of life insurers' liabilities greatly reduces their need for liquid assets and allows them to play a stabilizing role in the financial system during financial panics. For example, with relatively stable long-term liabilities and net cash flow during the 2007 – 2008 financial crisis, there was little evidence that life insurers sold into any downward market spirals.

Fourth, as institutional investors, life insurers play a critical role in the private placement debt market. By developing specialized expertise in risk analysis and monitoring, life insurance companies provide reliable and customized funding to a segment of corporate borrowers not well served by others.

Finally, life insurers play an important role in local and state economies, through coverage provided, benefits paid out, investments made and jobs provided. For example, as of 2016, across 50 states and the District of Columbia, life insurance policies issued to individuals provided \$32 trillion of life insurance coverage through 140 million individual policies. In addition, the industry employs more than 920,000 people across America.

How Life Insurers Benefit the Government

At the macroeconomic level, the life insurance industry provides a benefit to the government and taxpayers by alleviating pressure on social spending. For example, from 2010 to 2017, the life insurance industry distributed \$1,118 billion in contract payments, including life insurance

benefits, income payments from annuities and disability income payments. This represents 20 percent of total Social Security payments made over the same period and 4 percent of the entire Federal Government's annual spending. If the private life insurance industry did not exist, it is likely that the government would feel pressure to replace some portion of that \$1,118 billion in payouts through increased social spending and higher taxes.

Additionally, life insurers indirectly alleviate government spending on other welfare programs by keeping households out of poverty following the death of a primary earner. Based on conservative estimates, this results in individuals remaining above qualification levels for various state and federal social programs, saving the government and taxpayers close to 0.8 billion dollars a year.

Looking ahead, in addition to the industry's traditional roles and contributions, the life insurance industry will likely play a larger role in providing retirement savings that cannot be outlived. Moreover, life insurers will likely play a more prominent role in funding long-term capital-intensive investments, which will be vital in accelerating economic growth.

I. How Does Life Insurance Work?

For millions of Americans seeking risk protection against a loss of income resulting from premature death, disability, or length of life after retirement, the life insurance industry is uniquely positioned as the only private-sector provider of guaranteed financial protection, promoting the long-term financial safety and security of insureds and those who depend on them. Today's life insurance industry offers three primary types of insurance products, the first two covering death-related risk (mortality and longevity risks) and the last category dealing with health-related risk (morbidity risk). These products include:

1. **Life Insurance.** As the name implies, life insurance provides financial protection against premature death of policyholders to others who are dependent upon the income they earn. With a typical life insurance policy, the policyholder pays the insurer a contractual premium each year as long as the coverage is kept in force or until death, after which the insurer will pay a lump sum to the policy's beneficiaries. This product category dominated other life insurance products until the 1980s. At present, life insurance policies account for 28.7 percent of the industry's policy reserves.¹
2. **Annuities.** In its simplest form, an individual pays a lump sum premium in exchange for ongoing, guaranteed cash flows for the duration of the annuitant's life. In recent decades, life annuity contracts gained popularity among older Americans as insurance against the risk of outliving one's financial assets. Demand for annuities increased from \$6 billion in annual contributions in 1980 to \$202 billion in 2016, and at present, annuities account for about 66 percent of U.S. life insurer activities as measured by policy reserves.²
3. **Disability and Long-Term Care Insurance.** In addition to mortality risk, individuals are exposed to health risk that causes temporary or permanent loss of earnings capability (disability) and/or temporary or permanent loss of the ability to live independently (long-term care). Disability and long-term care insurance accounted for only 5 percent of life insurer policy reserves in 2016.³

¹ American Council of Life Insurers (ACLI) 2017, p. 28.

² ACLI (2017), pp. 28, 76.

³ ACLI (2017), p. 28. "Health insurance" in the Fact Book consists of disability insurance, long-term care insurance, and other types of non-medical health insurance.

These insurance products are offered by employers through group policies, such as life insurance, disability or retirement plans, and sold by independent insurance agents or directly from insurance companies to individuals. According to the latest industry statistics, group insurance policies in 2016 represented 41 percent of the face value of all life insurance coverage in force, and 46 percent of those insured.⁴

The fundamental social and economic functions performed by the life insurance industry are guarding families against the adverse financial impact of premature mortality, excess longevity, and morbidity risks. Whether or not a financially adverse event will happen to a single individual is nearly impossible to determine, but with a large pool of individuals, the percentage that will experience a financially adverse event can be predicted with relative precision. Equipped with actuarial science, a special field of study for insurance, insurers effectively spread that risk across all individuals in the pool. For example, in the case of mortality risk, premiums are collected from a large group of individuals that are at risk for the event. Benefits are paid only to the beneficiaries of individuals who actually experience the adverse event, but they are all protected in case they are the specific individual that experiences the event.

The U.S. life insurance industry has been a stable and steady contributor to personal well-being, and has evolved considerably over the last 250 years to meet Americans' evolving needs for protection and retirement savings.⁵ Total financial protection covered under life insurance policies outstanding in 2016 was \$20.3 trillion,⁶ about 109 percent of U.S. Gross Domestic Product (GDP).⁷ Approximately 61 percent of all households in the United States are covered by some form of life insurance.⁸ On average, each life insurance policy covers 2.5 times the household income of the insureds (Section I.B). Moreover, life insurers are vital to an efficiently

⁴ ACLI (2017), p. 66.

⁵ The history of risk pooling and transfer can be traced back to the early days of organized society, such as Greek Societies and Roman Collegia (Black and Skipper (2000), p. 49). In the U.S., the first life insurance entity was established in 1759 to provide death benefits to the widows and orphans of deceased ministers (NAIC and CIPR (2013), p. 6).

⁶ ACLI (2017), p. 72.

⁷ U.S. GDP in 2016 was \$18.625 trillion (<http://www.statista.com/statistics/188105/annual-gdp-of-the-united-states-since-1990/>).

⁸ See Table 1. LIMRA, "2016 Insurance Barometer Study Shows an Improving Climate for Life Insurance," accessed April 20, 2018, http://www.limra.com/Posts/PR/News_Releases/2016_Insurance_Barometer_Study_Shows_an_Improving_Climate_for_Life_Insurance.aspx.

functioning modern economy and society, and a key contributor to enabling robust long-term economic growth. Life insurers invest predominantly in long-term, stable, fixed-income investments to match their long-term obligations to the insureds. Of the life insurance industry's total assets, nearly \$4 trillion is invested in fixed income assets to support the long-term nature of payouts for life insurance and annuity products.⁹ Last, but not least, the benefits that life insurers pay help support the consumer sector of the U.S. economy and those benefits lessen the government's and taxpayers' burden.

In the rest of this white paper, we will explain the economic functions and contributions of the life insurance industry from three separate perspectives: individuals, the economy, and the government.

II. Life Insurers' Benefits to Individuals

Individuals are exposed to many life-altering events, such as premature death, debilitating illness, and injuries, which can affect their earnings capacity and the well-being of their family members. For millions of retirees in the U.S., outliving their financial assets has become an increasingly important risk to manage. The life insurance industry is uniquely positioned to help millions of Americans mitigate these risks more efficiently than through precautionary savings, thus increasing financial security and living standards. Since 1935, Social Security has provided a basic safety net to citizens, but, on a standalone basis, it will not allow many households to maintain their standard of living in retirement. We discuss in this section how private life insurance products supplement governmental programs and provide significant benefits to individuals beyond those provided through social insurance.

A. LIFE INSURANCE IMPROVES QUALITY OF LIFE

Life insurers improve the quality of life for their policyholders and their dependents by reducing the economic consequences of life-altering events and the financial risks associated with premature death, disability, and extended longevity. In the face of financial hardship, households may be forced to rely on government assistance and support from their extended family, work

⁹ "Fixed income assets" include checkable deposits and currency, money market fund shares, security repurchase agreements, debt securities, and loans. Federal Reserve Statistical Release z.1: L.116.g (Life Insurance Companies: General Accounts).

multiple jobs over longer hours, and/or cut back consumption such as preventive medical care and educational expenses that would improve their long-term financial future.

Life insurers offer an efficient way of providing financial protection and peace of mind to many families. They are much more financially efficient than self-insurance (setting precautionary savings aside by each individual) because risk pooling makes insurance less costly. Insurance products are a reliable source of protection against these risks and noninsured savings are rarely sufficient to replace a wage-earner's salary in the event of premature death or disability. Life insurers offer financial protection by pooling the variety of risks found among a large group of individuals. This means that only enough funds for events that actually occur within the group must be collected, so each policyholder's contribution represents only a share of his or her potential exposure. In the case of life insurance policies, for instance, annual premiums collected in the early years from a specific pool will exceed total benefit payments to the dependents of deceased policyholders. Insurers hold the premiums exceeding early-year claims to support insurance reserves and invest them in long-term, stable investments. Later, life insurers' benefit payments to policyholders in the pool will exceed annual premiums, and life insurers will draw down the assets supporting the insurance reserves. Annuities work in a similar fashion. Payments received are invested, and total group assets are drawn down over time as annuity benefit payments are made. Just as with premature death, the entire group is insured for the risk, and all policyholders benefit from income they cannot outlive. However, premiums have been calibrated to reflect the fact that only a certain percentage of policyholders will live beyond average life expectancy.

Pooling of risk facilitated by life insurers provides households with secure and stable incomes to mitigate the effect of unfortunate events. To maintain living standards without life insurance, households would have to self-insure by building precautionary savings. This means that current period consumption has to be cut and that precautionary savings have to be invested in short-term, liquid assets. However, self-insurance is insufficient for households whose main wage earner suffers premature death or incapacity early in the life cycle. To illustrate this point, consider a 40-year old individual with an annual income of \$75,000 who wants to provide \$300,000 of financial security to his dependents in the event of a premature death over the next 20 years. Self-insurance would require saving \$9,073 every year for 20 years to reach a total of \$300,000 by year 20 (assuming a 5 percent annual return) and only the actual amount saved is

available at any given time before year 20. Alternatively, term life insurance can be obtained with an annual premium of \$500 or less,¹⁰ and the family will achieve full financial protection immediately. The annual life insurance premium is lower than the required amount of annual precautionary savings because of the beneficial effects of risk pooling:¹¹ since many policy holders live beyond the term of their insurance and do not collect, risk pooling has the effect of reducing the premium required to cover the mortality risk without reducing the benefits if a policy is triggered. Life insurance enables individuals and households to avoid self-insuring and better deploy savings in long-term, productive investments, and/or enjoy higher consumption.

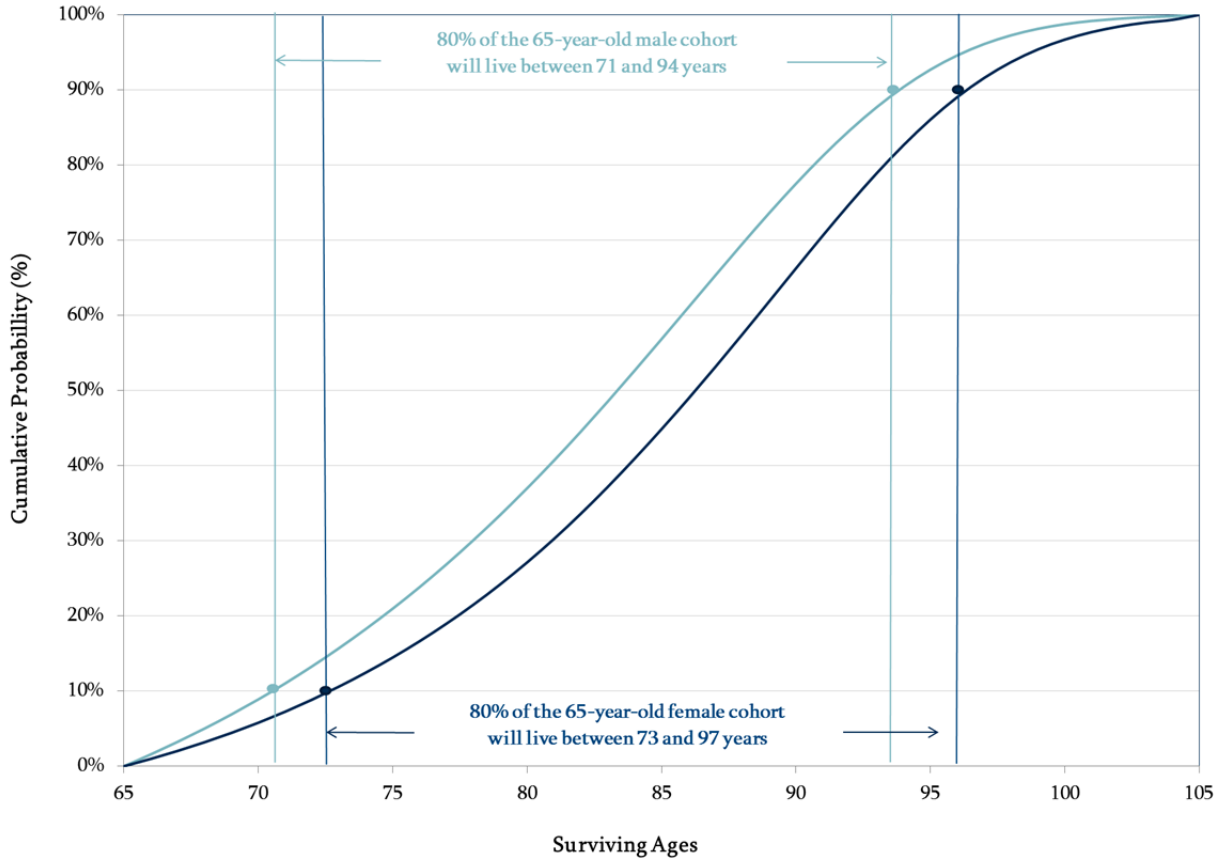
Similarly, annuities insure for longevity risk—a risk that is growing as lifespans get longer. For millions of older Americans, determining how much to save to maintain a comfortable retirement life is a challenge.¹² This challenge is compounded by steadily increasing life expectancies and highly variable lifespans. According to the latest government statistics, at age 65, the average life expectancy for men and women is 83 and 85, respectively, but 10 percent of current 65-year-old men will die before turning 71, and another 10 percent will survive past age 94 (Figure 1). For women, 10 percent will die before turning 73 and 10 percent will live past 97. Thus, the range of likely lifespans for each gender is more than 20 years.

¹⁰ The quote is obtained for an above-average health 40-year-old man living in Massachusetts, retrieved April 19, 2018 from <<http://www.term4sale.com/>>.

¹¹ There is another reason for the large difference between the annual savings and insurance premiums. Under the self-insurance scenario, if the 40-years-old individual survives age 60, he will have built up a savings of \$300,000. The insured under the 20-year term life insurance, however, will not get any death benefits if he lives past 60.

¹² Poterba, *et al.* (2012), p. 57, finds that 46.1 percent of individuals relied almost entirely on Social Security for income in retirement.

Figure 1. Cumulative Survival Probability of a 65-year-old Individual



Source: Authors' calculation based on Social Security Life Table for 2014, retrieved from <http://www.ssa.gov/oact/STATS/table4c6.html>.

Annuities are a natural and straightforward way to insure for longevity risk, since individuals receive annuity payments for their natural life, no matter how long it lasts. Social Security provides a limited basic amount of income to all of those who have worked a sufficient number of quarters to meet program requirements. Historically, for some retirees, part or all of their remaining longevity risk has been covered through employer-sponsored defined benefit pension plans. However, the availability of such pension plans has been declining for the last 30 years.¹³ With the increase in availability and popularity of defined contribution plans such as 401(k) plans, the risk of living longer and need for continued income has increasingly shifted from employers to individuals. Consider the retirement planning for a 65-year-old man with \$100,000 savings who wants to secure a fixed retirement income. He could purchase an annuity or “self-

¹³ Butrica, *et al.* (2009). See also NAIC and CIPR (2013), p. 50.

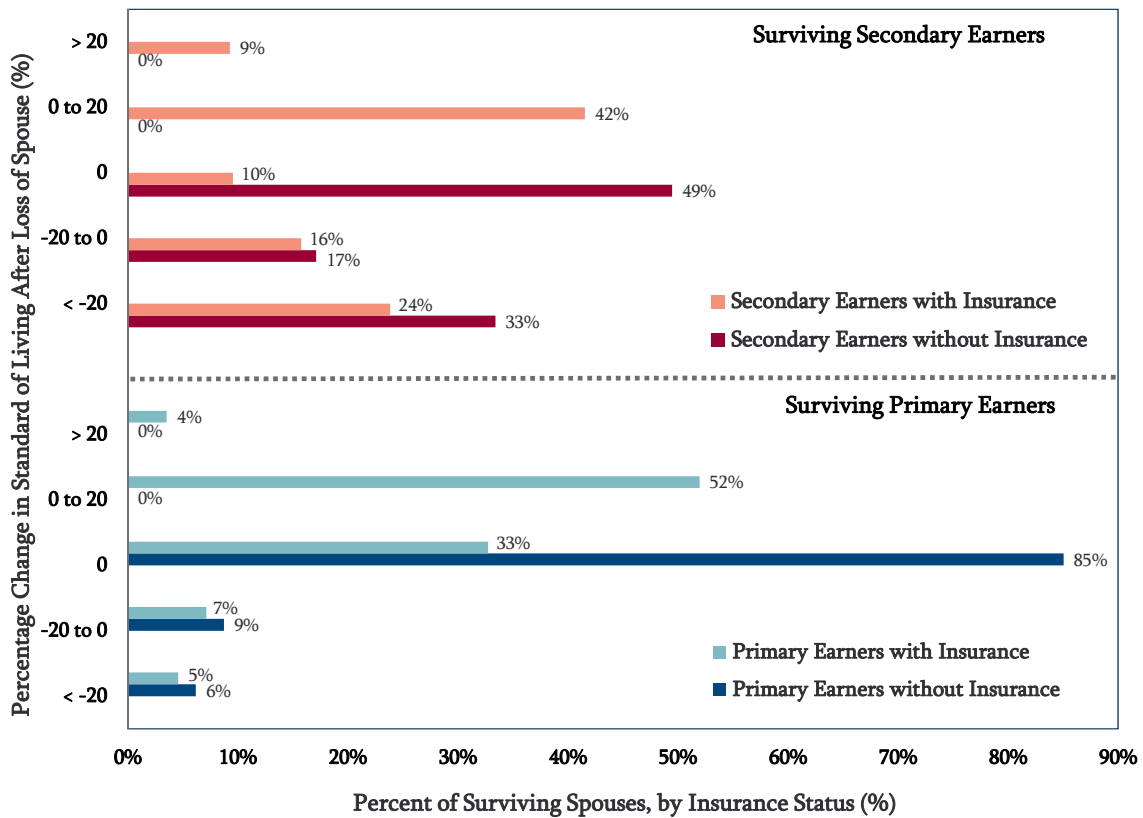
insure.” Brown (2004) compares these two approaches.¹⁴ If that individual chooses to “self-insure” and expects to live until 85, he would have \$7,704 to spend, invest or save every year. In that case, however, there would be a 30 percent chance he runs out of money at age 85.¹⁵ Alternatively, Brown calculates the 65-year-old man could receive an annuity of the same \$7,704 annual payout with an initial investment of \$100,000. In essence, an immediate, up-front investment could guarantee fixed lifetime annuity payments without the risk of depleting the household’s other financial resources.

Researchers have shown the purchase of life insurance has a positive impact on an individual’s living standards compared to those without such protection. For example, using data from the National Institute on Aging’s Health and Retirement Study (HRS), which surveyed over 7,000 households with at least one adult between the ages of 51 and 61 in 1993, Bernheim, *et al.* (2003a) compares the changes in the standard of living for households following the death of a spouse, with and without life insurance. Figure 2 summarizes their main results for surviving spouses; secondary earners are in the top panel and primary earners are in the bottom panel. For each type of survivor, the distribution of changes in living standards following the death of an earner is portrayed as the horizontal bars.

¹⁴ Brown (2004), pp. 10-11. As there is no such thing as “self-annuitization”, Brown adds quotation marks. His paper describes nonannuitization.

¹⁵ If the individual dies before age 85, the remaining investment will be inherited by his dependents.

Figure 2. Percent Change in Standard of Living for Surviving Spouses



Source: Bernheim, *et al.* (2003a), Table 1.

The figure shows that 33 percent of surviving secondary earners without insurance (the dark red bars) and 6 percent of surviving primary earners without insurance (the dark blue bars) are at risk of significant financial deterioration (defined as a decline in living standard of 20 percent or greater).¹⁶ With life insurance, however, the proportion of surviving secondary earners at risk of significant financial deterioration declines by more than a quarter to 24 percent (the light red bars) from 33 percent (the dark red bars). A similar pattern can be observed for the surviving primary earners—the proportion of surviving spouses at risk of significant financial deterioration declines to 5 percent (the light blue bars). A companion paper by Bernheim, *et al.* (2003b) examines the same issues using a larger population from the 1995 Survey of Consumer Finances (SCF). In contrast to HRS, the SCF sample, although less detailed, includes adult respondents of all ages. The authors find that the uninsured vulnerabilities are considerably greater among

¹⁶ This finding is consistent with the empirical pattern that husbands tend to be the primary earners in the average households, and their death has a larger impact on the family finances.

younger couples than among older couples. Nearly two-thirds of secondary earners between the ages of 22 and 39 are at risk of significant financial deterioration upon the death of the primary earners.¹⁷

Researchers have shown similar results for the purchase of annuities. Yogo (2009) uses the bi-annual HRS surveys from 1992 to 2006 to examine the benefits from private annuities above the implicit annuitization through Social Security and employer-sponsored defined benefit pension plans. He shows that the gain in welfare for a household with a 65-year-old head in good health, relative to an economy without a private annuity market, is 16 percent of the household's financial and housing wealth.¹⁸ This 16 percent gain arises from the fact that without private annuities to insure against longevity risk, beyond that covered by Social Security and pensions, individuals would be forced to consume less before retirement and seek to save more. With private annuities, the annuitants can enjoy higher level of consumption, and generally enjoy more secure returns from annuities. Based on an average individual's longevity risk, the model predicts that annuities should account for a majority of a household's financial and housing wealth.¹⁹

In addition to its primary benefit of smoothing and stabilizing household consumption, life insurers provide intangible benefits such as peace of mind and the feeling of financial security. By design, life insurers protect insureds and their dependents from the stress and anxiety they would feel if their products were not available. Constant concern about financial security can inhibit individual productivity and creativity.²⁰

B. LIFE INSURERS SUPPLEMENT SOCIAL SECURITY

The private life insurance industry in the U.S. existed well before the 1930s, and has been an important source of insurance historically. Since 1935, the U.S. government has provided three main types of social insurance to almost all U.S. workers: 1) old age, 2) survivor, and 3) disability

¹⁷ Berhneim, *et al.* (2003b), p. 532. More recent studies, such as Lin and Grace (2007), confirm these findings.

¹⁸ Yogo (2009), Table 12.

¹⁹ For example, at age 77, the optimal investment portfolio for a healthy head of household should consist of 27 percent housing, 77 percent private annuity, -4 percent in bonds (a negative ownership, or short position), and no equity (Yogo (2009), Table 13).

²⁰ Black and Skipper (2000), pp. 53-54.

(collectively OASDI, also popularly known as “Social Security”).²¹ The primary purpose of the OASDI program is to guard against poverty caused by longevity, mortality, and morbidity risks. As first described by President Roosevelt:

We can never insure one hundred percent of the population against one hundred percent of the hazards and vicissitudes of life, but we have tried to frame a law which will give some measure of protection to the average citizen and to his family against the loss of a job and against poverty-ridden old age.²²

The mandatory nature of Social Security provides a critical level of protection against income-related risks, but, by design, is not intended to be a full replacement for retirement income for many Americans. Life insurers offer products that provide financial security above and beyond Social Security and allow flexibility to meet diverse personal needs. Products offered by life insurers remain the only significant market mechanism for the sharing of mortality and morbidity risks.

The need for protection is particularly evident for younger widows with children, as Weaver (2010) shows that the survivor benefits received by between 22 and 37 percent of widows were below the poverty threshold. As discussed below, to the extent some of these widows have access to life insurance, their demand on the government’s social welfare programs other than Social Security will be reduced (Section I.I).

The demand for life insurance and annuity products in the last 80 years suggests that private life insurance and annuities are valuable supplements to Social Security. As of 2016, 61 percent of all households in the United States were covered by some type of life insurance product (Table 1). Even for low-income households, 34 percent of households in the lowest income quintile and 55 percent of those in the second lowest quintile own life insurance.

²¹ When first enacted in 1935, Social Security provided just old age benefits to retirees in commerce and industry. The program was expanded over time to cover additional categories of people. Benefits for surviving spouses and dependents were added early in the program’s history. Only in 1956 was disability insurance coverage extended to those unable to work due to total and permanent disability and for their dependents. National Research Council and National Academy of Public Administration (2010), p. 107.

²² “Franklin Roosevelt’s Statement on Signing the Social Security Act,” last retrieved April 20, 2018 from <<http://docs.fdrlibrary.marist.edu/odssast.html>>.

Table 1: Ownership of Life Insurance by Household Income

Household Income Groups		Percent with Life Insurance Products	Face Value of Life Insurance Policies Relative to Household Income
First Quintile	\$25,000 or Less	34%	490%
Second Quintile	\$26,000 - \$49,000	55%	267%
Third Quintile	\$50,000 - \$89,000	71%	300%
Fourth Quintile	\$90,000 - \$207,000	80%	332%
Fifth Quintile	\$208,000 and Above	86%	207%
All		61%	266%

Source: 2016 Panel Survey of Consumer Finances.

For the average household except for those in the top quintile, the face value of life insurance policies covers more than 250 percent of annual household income. The 2.5 times or higher level of the average life insurance policies relative to income demonstrates the importance of life insurance as multi-year financial assistance, which could potentially provide households enough time to reorganize their lives, *e.g.*, by finding a job or reducing living expenses, to avoid poverty permanently.

III. How Life Insurers Benefit the Economy

In addition to the quantitative benefits conferred upon individuals through increased financial security and qualitative benefits provided by the peace of mind that life insurance offers, a robust and vibrant life insurance industry also promotes economic growth and efficiency in a number of ways. Economics literature in the last 20 years has documented in various cross-country studies that economies of countries with developed financial systems (banking, insurance, and capital markets) advance faster than countries with less-developed financial systems.²³ More specifically, Skipper (1997) argues that life insurers: 1) promote financial stability and growth and encourage loss mitigation, 2) enable risk to be managed more efficiently, 3) complement social insurance, 4) facilitate trade and commerce, 5) mobilize savings, and 6) foster more efficient capital allocation.

Separate from the direct benefits of loss mitigation and efficiency of risk transfer to the insureds (Section II above), and to the government of complementing social insurance programs (Section IV below), this section discusses benefits to the general economy. The benefits to the economy

²³ See *e.g.*, Levine (2005), King and Levine (1993), and Rajan and Zingales (1998).

can be grouped into five areas. First and foremost, life insurers help channel household savings from a large proportion of the population, in the form of life insurance premiums and annuity contributions, into productive, long-term investments (Section III.A). Second, life insurers are unique in their focus on matching long-term liabilities with investments in long-term fixed-income securities (Section III.B).²⁴ Third, this long-term focus provides stability for the economy overall (Section III.C). Fourth, the life insurance industry plays a critical role in the private placement debt market. By developing specialized expertise in risk analysis and monitoring, life insurance companies provide reliable funding to a segment of borrowers not well served by the rest of the financial system (Section III.D). Finally, the life insurance industry contributes to state and local economies (Section III.E).

C. LIFE INSURERS PROMOTE ECONOMIC GROWTH AND EFFICIENCY

As early as 1964, the United Nations identified the insurance industry as an important component of a healthy economy, calling the insurance market “an essential characteristic of economic growth.”²⁵ Life insurers play a critical role in transforming household savings into long-term, productive investments. As shown in Table 2, the insurance sector (life and non-life combined) comprises 2.7 percent of U.S. GDP.

Table 2: Finance and Insurance Contributions to U.S. GDP

	2010	2011	2012	2013	2014	2015	2016	Average
Gross domestic product (\$ billions)	14,964	15,518	16,155	16,692	17,428	18,121	18,624	
Percentages: Finance & Insurance								
Finance and insurance Total (%)	6.7	6.7	7.1	6.8	7.2	7.5	7.5	7.1
Insurance companies and related activities	2.4	2.4	2.5	2.4	2.7	3.1	3.1	2.7
Other	4.2	4.2	4.6	4.3	4.4	4.4	4.5	4.4

Source: U.S. Bureau of Economic Analysis, retrieved from <http://www.bea.gov/industry/gdpbyind_data.htm>.

Several recent papers have explicitly considered the unique role played by the life insurance industry in promoting economic growth and development.²⁶ To date, the most comprehensive

²⁴ Fixed income instruments pay fixed or variable but pre-specified interest over the finite life of the instrument. Examples include corporate bonds, bank loans, and mortgages and mortgage backed securities. Unlike equities or stocks, fixed income instruments are debt obligations of the borrowers, and represent safer and only modestly risky assets.

²⁵ Proceedings of the United Nations Conference on Trade and Development (1964), Final Act and Report, p. 55, annex A.IV.23.

²⁶ See, *e.g.*, Outreville (2013).

empirical analysis was performed by Arena (2008), who uses a sample of 56 countries over the 1976-2004 period to find robust evidence of a positive and significant causal relationship between life insurer market activity (measured as premiums as a percentage of GDP) and the rate of economic growth. The paper measures the historical relationship between life insurer market size and GDP growth whereby on average a one percentage point increase in the ratio of life insurer premiums to GDP has been associated with a 0.15 percentage point increase in the rate of real GDP growth (*i.e.*, net of inflation). To quantify this impact, assuming this historical relationship held for the U.S. today, this would mean that if the ratio of life insurer premiums to GDP in the U.S. increased from 1 percent (its current level) to 2 percent, real GDP growth would increase by around \$26 billion (0.15 percent of U.S. GDP).²⁷ The corresponding increase in direct employment in the industry is about 69,000.²⁸

Arena (2008) also finds life insurers, banks, and capital markets are complementary in promoting economic growth. The reason is each type of financial institution serves as a unique funding channel and collectively improves the efficient allocation of capital to companies and public entities.²⁹ In particular, institutional investors such as insurers contribute to efficient capital allocation because of the due diligence they perform when making their investment decisions. Effective project screening and monitoring improve the overall quality of the investments and foster private entrepreneurship, hence accelerating economic growth. These investments include infrastructure, real estate and other long-term projects in industries across the real economy.

In addition, life insurers provide valuable services to pension funds such as payment processing and investment management. As of year-end 2016, almost \$700 billion in life insurer reserves in the separate accounts³⁰ (33 percent) were for pension plans and other group annuities (Table 3).

²⁷ Han, *et al.* (2010) provides corroborating estimates using insurance density as an independent variable rather than insurance penetration. See also Lee, *et al.* (2012).

²⁸ According to the Bureau of Economic Analysis, \$1 billion GDP increase in the insurance industry creates 2,640 jobs.

²⁹ Impavido, *et al.* (2001) describes how insurance companies serve as an important complement to the banks system. Life insurance companies and pension funds, in addition to funding long-term projects in the non-financial sectors, also supply liquidity to the banking sector directly by purchasing long-dated bank debt and/or investing in bank deposits.

³⁰ As explained in Section I.D, a life insurer generally divides its assets between two accounts, general and separate accounts. Separate accounts are associated with products such as variable annuities and variable life insurance for individuals, and pension products for the corporate sponsors.

Since life insurers already have the infrastructure and scale to handle such tasks, they are an efficient service provider to individual pension funds. Competition among life insurers, asset management firms, and other service providers for financial advisory and account custody promotes economic efficiency and growth.

Table 3: Breakdown of Separate Account Balances

(\$ Billions)	2010	2011	2012	2013	2014	2015	2016	Average	%
Separate Account Balances	1,624	1,629	1,840	2,096	2,174	2,162	2,242	1,967	
Ordinary Life Balances	148	143	150	170	178	223	230	177	9%
Individual Annuity Balances	839	847	959	1,125	1,174	1,173	1,216	1,048	53%
Group Annuity Balances	554	554	640	707	724	666	695	649	33%
Group Life Balances	81	82	87	90	93	95	97	89	5%

Source: Best's Aggregates and Averages (2011-2017).

D. LIFE INSURERS PROVIDE A CRITICAL SOURCE OF LONG-TERM OR "PATIENT" CAPITAL

A closer look at life insurers provides an even sharper illustration that life insurers invest primarily in long-term bond markets. Life insurers generally divide their assets between general and separate accounts; insurers are liable for payments under the products and contracts supported by both types of reserves. The general accounts support large blocks of life insurance policies and annuities with guaranteed benefits. In the investments they make for their general accounts, life insurers demonstrate a strong preference for fixed income instruments, such as long-term bonds because these investments most effectively match assets and liabilities and adhering to regulatory requirements. In 2017, life insurers had \$4.6 trillion in general accounts assets, with 84 percent invested in debt and loans. Investments in equities and short-term debt were only 2 percent and 1 percent, respectively (Table 4).

Table 4: Asset Distribution of Life Insurers

Asset Holdings by Type	2000	2005	2010	2015	2016	2017
General Accounts (\$ Billions)	\$2,043	\$3,008	\$3,508	\$4,052	\$4,294	\$4,600
Debt Securities	71%	73%	72%	70%	70%	70%
Loans	17%	13%	13%	14%	14%	14%
Mutual Fund Shares	0%	0%	0%	0%	0%	0%
Equity Securities	5%	3%	2%	2%	2%	2%
Short Term Debt	0%	1%	1%	1%	1%	1%
Other Assets	7%	9%	12%	13%	13%	12%
Separate Accounts (\$ Billions)	\$1,134	\$1,455	\$1,835	\$2,393	\$2,471	\$2,671
Debt Securities	14%	14%	15%	16%	16%	16%
Loans	1%	1%	1%	1%	1%	1%
Mutual Fund Shares	64%	67%	71%	67%	62%	63%
Equity Securities	13%	12%	8%	11%	15%	15%
Short Term Debt	0%	1%	1%	1%	1%	1%
Other Assets	8%	5%	4%	5%	5%	5%

Source: Federal Reserve Statistical Release Z.1: L.116.g (Life Insurance Companies: General Accounts) and L116.s (Life Insurance Companies: Separate Accounts). Other Assets include direct investment abroad and miscellaneous assets.

Note: In 2016, the Federal Reserve expanded the “Mutual Fund Shares” category under “Separate Accounts” to include variable annuity mutual funds, which were previously included in the “Equity Securities.”

Separate accounts support liabilities associated with variable annuities, variable life insurance, and pension products. With separate accounts, insureds and annuitants typically bear most market investment risks themselves, and typically direct the investments in their accounts. As a result, the asset mix of general accounts is vastly different from separate accounts. Separate accounts totaled \$2.7 trillion in 2017 and consisted primarily of mutual fund shares (63 percent) (Table 4).³¹

Life insurers have historically held 20 to 25 percent of total corporate and foreign bond investments (see Table 5), which is more than private pensions, commercial banks, and mutual funds. Life insurers also play a large role in the commercial mortgage market, as well as the private placement market, discussed further below.

³¹ A comparison with the asset composition under the pre-2016 categorization shows that most of the mutual fund shares are invested in equity securities.

Table 5: Asset Ownership (Percent of Overall Market)

Asset Holdings by Investors	2000	2005	2010	2015	2016	2017
Corporate and Foreign Bonds (\$ Billions)	\$4,853	\$8,254	\$10,435	\$11,697	\$12,060	\$12,722
Life Insurers	25%	23%	20%	21%	22%	22%
Pensions	5%	3%	4%	6%	6%	6%
Mutual Funds	7%	7%	12%	15%	15%	16%
U.S. Commercial Banks	6%	6%	5%	4%	4%	4%
Other	56%	61%	58%	54%	53%	52%
Commercial Mortgages (\$ Billions)	\$1,152	\$1,886	\$2,349	\$2,495	\$2,628	\$2,741
Life Insurers	16%	12%	11%	13%	14%	14%
Pensions	0%	0%	1%	1%	1%	1%
Mutual Funds	0%	0%	0%	0%	0%	0%
U.S. Commercial Banks	54%	56%	54%	56%	58%	59%
Other	29%	32%	34%	30%	28%	26%

Source: Federal Reserve Statistical Release Z.1: L.213 (Corporate and Foreign Bonds), L.220 (Commercial Mortgages). Other consists of primarily of nonfinancial businesses, households, the government and government-sponsored enterprises, foreign banks, property and casualty insurance, and rest of world.

The life insurance industry's focus on long-term investments to support its general account liabilities makes the industry a stable funding source for the credit markets. Private companies in all economic sectors and public sector borrowers rely on these funding channels to finance new construction and manufacturing and/or other asset purchases, and to help grow the economy overall. Since life insurers' liabilities are long-term in nature,³² they are an ideal long-term funding source for longer-term projects. Table 6 also summarizes the asset composition of other large commercial holders of financial assets in the U.S.: commercial banks, private pensions, and mutual funds. In contrast to life insurers, the assets of commercial banks are predominantly bank loans, real estate, and other short-term assets financed by deposits.

³² Cummins and Weiss (2014).

Table 6: Aggregate Financial Assets by Largest Financial Institutions (2017)

	Life Insurance			Pension Plans		Mutual Funds
	General Account	Separate Account	Commerical Banks	Defined Benefit	Defined Contribution	
Total Assets (\$ Billions)	4,600	2,671	15,363	3,203	6,197	15,899
Cash/Short Term	2%	2%	10%	3%	2%	1%
Loans	14%	1%	59%	0%	0%	0%
Fixed Income Securities	69%	15%	24%	27%	6%	29%
Mutual Fund Shares	0%	63%	0%	14%	53%	0%
Equity Securities	2%	15%	1%	38%	24%	68%
Other Assets	12%	4%	6%	19%	14%	1%

Sources: Federal Reserve Statistical Release Z.1: L.111 (U.S-Chartered Depository Institutions), L.116.g (Life Insurance Companies: General Accounts), L.116.s (Life Insurance Companies: Separate Accounts), L.118.b (Private Pension Funds: Defined Benefit Plan), L.118.c (Private Pension Funds: Defined Contribution Plans), and L.122 (Mutual Funds).

In addition to being the largest single-industry investor in corporate bonds, life insurers invest heavily in corporate bonds of long duration. In 2017, of life insurer bond portfolios, at time of purchase, 96 percent of life insurers' holdings had a maturity greater than five years, and 72 percent had a maturity of 10 years or longer.

Table 7: Maturity of Bonds Held by Life Insurers at Time of Purchase

Maturity	Percent Distribution (%)								Average
	2010	2011	2012	2013	2014	2015	2016	2017	
20 years and over	33	32	37	37	38	38	38	39	37
10 - 20 years	29	30	31	32	32	32	33	33	31
5 - 10 years	30	30	26	26	26	26	25	24	26
Less than 5 years	8	8	7	5	5	5	4	4	6
Total	100	100	100	100	100	100	100	100	

Source: ACLI Life Insurance Fact Books, 2011-2017.

Both of those percentages have remained relatively stable even through the financial crisis. In contrast, commercial bank assets typically have shorter terms. Just 27 percent of commercial bank financial assets are considered long-term assets with a maturity greater than five years.³³

³³ FDIC Statistics on Banking, last retrieved April 17, 2018 from <<https://www5.fdic.gov/SDI/SOB/>>.

The maturity of securities held by mutual funds varies based on the stated investment strategy of the fund.

Life insurers also help fill critical funding gaps when public funds are not available. Infrastructure investments are one example of this.³⁴ A recent report from Standard & Poor's estimated that \$57 trillion in global infrastructure investments would be needed through 2030 and available public funds could fall short by as much as \$500 billion a year.³⁵ The report concluded since government could not likely close the gap alone, insurance companies and pension funds would be critical to closing the funding gap for infrastructure investments.³⁶ Della Croce and Yermo (2013) similarly concluded, "Institutional investors, such as pension funds, insurers and sovereign wealth funds due to the longer-term nature of their liabilities, represent potentially major source of long-term financing for illiquid assets such as infrastructure."³⁷ Without investments to close the funding gap, current infrastructure will not be maintainable, and new infrastructure will be severely limited, which will negatively impact quality of life and economic growth.

E. LIFE INSURERS PROVIDE STABILITY TO FINANCIAL MARKETS

The asset/liability structure of life insurers also provides stability to financial markets, especially during a financial crisis. Since bank depositors can withdraw their deposits at any time, banks' liabilities are inherently less dependable and stable. This risk can manifest itself in what is known as a financial panic or a bank run. Institutions lending into commercial lending markets can similarly "run" from borrowing institutions if counterparties suddenly withdraw, whether due to a loss in confidence or to meet their own liquidity needs.

³⁴ Standard & Poor's (2014). B20 Panel (2014).

³⁵ Standard & Poor's (2014).

³⁶ Standard & Poor's (2014), p. 2. Insurers and certain pensions are particularly suited not only due to their long-term investment philosophy, but also because of their substantial assets under management, prior history of infrastructure investments and goal to increase the share of infrastructure investments in their portfolios. Nevertheless, for state and local governments, the infrastructure challenge is more a problem of cash flow. Even if they could obtain credit at 0 percent, many state and local governments would pass because they are not in a position to repay even the principal.

³⁷ Della Croce and Yermo (2013).

The core activities of life insurers have been less affected by financial crises than those at commercial banks or broker dealers, as life insurers do not rely on wholesale funding, but rather on the reserves of their policy holders, and so are relatively insulated from this type of run.³⁸ Long-term stable funding from policyholders and stable net cash flow during the recent financial crisis greatly reduced life insurers' need to sell assets in a down market.³⁹ Dr. Therese Vaughan, dean of Drake University's College of Business and Public Administration and former president of the National Association of Insurance Commissioners (NAIC), concludes, "Life insurers can manage through [financial crisis] volatility and look to the long term, and this difference provides an important source of stability for both individual consumers and financial markets."⁴⁰

F. LIFE INSURERS ARE CRITICAL IN THE PRIVATE PLACEMENT MARKET

When corporations or public institutions borrow funds, they have three primary sources: 1) the public debt market, 2) the bank loan market, and 3) the private placement market. Typically, large, well-established firms use the public debt market, where large debt issuances are open to the public and purchased by a variety of institutional investors such as insurers, pensions, and mutual funds. Issuance of this debt requires various regulatory disclosures. Smaller companies get loans directly from local banks or larger commercial banks. Bank loans tend to be smaller and have customized, restrictive requirements that the borrower must adhere to. In private placement debt issuances, securities are sold to a relatively small number of institutional investors, including life insurers and pension funds.

The private placement debt market is a critical funding source for borrowers such as privately-held, medium-sized, and growth companies for which public markets are expensive to access.⁴¹ Life insurers are uniquely suited as lenders due to their long-term liabilities and sophistication in effectively screening high-quality investments. In 2016, life insurers held over \$900 billion of private placement issuances, 30 percent of their overall bond holdings (Table 8). Without private

³⁸ Cummins and Weiss (2014).

³⁹ Although some insurers were affected by the most recent financial crisis, recent research found that insurers did not cause the recent economic crisis, but rather were victims of systemic risk. See Chen and Cummins, *et al.* (2014).

⁴⁰ Vaughan (2012).

⁴¹ Carey, *et al.* (1993), p. 27.

placements, these investments could not be funded at all or as efficiently, thus driving up the average cost of capital and causing reduced investment.

Table 8: Private Placement v. Public Bond Holdings by Life Insurers

	2010	2011	2012	2013	2014	2015	2016
<u>Life Insurers' Holdings (\$ in Billions)</u>							
Publicly Traded Bonds	1,925	2,002	1,980	2,021	2,060	2,073	2,140
Privately Placed Bonds	654	689	740	740	797	847	903
Total Bond Holdings	2,579	2,691	2,721	2,761	2,856	2,920	3,043
<u>Life Insurers' Holdings (%)</u>							
Publicly Traded Bonds	75%	74%	73%	73%	72%	71%	70%
Privately Placed Bonds	25%	26%	27%	27%	28%	29%	30%
<u>Weighted Average Maturities (Years)</u>							
Publicly Traded Bonds	10.5	10.7	10.8	11.2	11.5	11.4	11.5
Privately Placed Bonds	9.1	8.9	8.7	8.6	8.9	8.8	8.7

Source: Best's Aggregates and Averages (2011 – 2017).

The private placement debt market offers important benefits to borrowers and lenders. Borrowers find the private placement market attractive because it combines features of the bank loan market and the public debt market.⁴² Like bank loans, privately placed debt issuers enjoy customized covenants and closer lender-borrower relationships. Issuance amounts in the private placement market, however, can be much larger than bank loans. In addition, interest rates on privately placed debt are typically longer-term fixed rates, rather than shorter-term, floating rates as offered by bank loans that can be more expensive. For example, Arena (2011) finds firms that do not access the public market mainly because of flotation costs, and information asymmetries are more likely to use traditional private placements rather than bank loans.

Relative to the public debt market, Kwan (2010) highlights two characteristics of the private placement market that make it attractive to borrowers:⁴³

1. The covenants are designed based on a negotiation between the lender and the borrower. This allows for covenants tailored to the specific business needs and risks of the borrower.

⁴² Prowse (1997).

⁴³ Gomes and Phillips (2012) and Blackwell and Kidwell (1988) come to similar conclusions.

2. When a borrower defaults on a covenant, private placement lenders will often renegotiate rather than force the company into bankruptcy. This is in part a consequence of the closer involvement of direct investment in the private placement market.⁴⁴

The private placement market is attractive to life insurers principally because it provides a means to make long-term, typically fixed-rate, high-quality investments that help them match the maturity profile of their benefit obligations to policy holders.

Life insurers' participation in the private placement market is also beneficial for the economy. Life insurers are large, sophisticated investors with considerable infrastructure to conduct their own due diligence and effectively monitor their lending targets. A recent Ernst & Young survey of the most active private placement investors in the U.S. found that the top criterion for evaluating any investment opportunity is credit quality, with 93 percent of private placement investors ranking credit as their first priority.⁴⁵ Investment in high-quality private placement issuances is important not only for the insurers to meet their obligations to the policyholders, but also to the efficient functioning of credit markets and to economic growth.

The effectiveness of life insurers' investment decisions and subsequent monitoring manifests itself in higher-quality investments. First, only 10 percent of the private placement issuances held by insurance companies are rated below investment-grade.⁴⁶ Second, even if some of these investments suffer financial distress, the probability of default tends to be lower than for other comparable investments.⁴⁷ Recovery rates are also higher: "The average recovery rate on distressed private placement bonds was 65 percent compared to the historical public bond average recovery rate of 40 percent."⁴⁸

⁴⁴ Kwan (2010) also observes that private placement lenders directly monitor the borrowers, in contrast to public borrowers who are typically monitored by rating agencies. As a result, private placement lenders have a greater incentive to ensure financial soundness of their borrowers.

⁴⁵ Ernst & Young (2016), p. 4.

⁴⁶ NAIC, "Private Placements," January 30, 2018, retrieved from <http://www.naic.org/cipr_topics/topic_private_placements.htm>.

⁴⁷ Life insurers' private placement debt has "resulted in much lower default rates for this asset class than for comparable publicly traded bonds." NAIC, "Private Placements," January 30, 2018, retrieved from <http://www.naic.org/cipr_topics/topic_private_placements.htm>.

⁴⁸ HIMCO (2013). Note that the public bond average recovery rate includes bonds in all rating categories.

G. LIFE INSURERS INVEST IN STATE AND LOCAL ECONOMIES

Life insurers play an important role in local and state economies, through the coverage they provide, the benefits they pay out, the investments they make and the jobs they provide. Millions of individuals and families are covered through individual and group policies that provide financial benefits in the event of premature death or disability to current workers, and income protection to seniors in retirement. Life insurers also own billions in real estate, stock and bond investments that finance business development, job creation and services throughout the nation. Further, commercial mortgages issued by life insurers help drive investment and development in local real estate markets. In addition, the life insurance industry creates hundreds of thousands of jobs throughout the country. For a closer look at the state-by-state impact of the industry, see Table 9 below.

Table 9: State-Level Contributions of the Life Insurance Industry (2016)

State	Benefits Paid Out (billions)	Total Coverage In Force (billions)	Total Individual Policies In Force	Average Coverage Amount	Investments (billions)	Direct Jobs
Alabama	\$6	\$409	5,000,000	\$54,000	\$60	10,100
Alaska	\$1	\$63	170,000	\$235,000	\$17	730
Arizona	\$10	\$520	2,000,000	\$184,000	\$98	18,100
Arkansas	\$3	\$198	2,000,000	\$83,000	\$35	5,300
California	\$46	\$3,700	10,000,000	\$244,000	\$765	81,500
Colorado	\$8	\$588	2,000,000	\$206,000	\$97	16,000
Connecticut	\$16	\$553	2,000,000	\$250,000	\$79	33,100
Delaware	\$7	\$203	460,000	\$191,000	\$28	2,800
Florida	\$33	\$1,700	7,000,000	\$159,000	\$288	57,700
Georgia	\$11	\$1,000	5,000,000	\$124,000	\$154	33,200
Hawaii	\$2	\$132	570,000	\$161,000	\$26	2,000
Idaho	\$2	\$136	500,000	\$175,000	\$20	2,700
Illinois	\$20	\$1,500	6,000,000	\$144,000	\$239	44,400
Indiana	\$10	\$538	3,000,000	\$106,000	\$93	19,200
Iowa	\$7	\$336	2,000,000	\$128,000	\$56	24,900
Kansas	\$5	\$281	1,000,000	\$130,000	\$41	10,800
Kentucky	\$6	\$327	2,000,000	\$88,000	\$56	10,100
Louisiana	\$6	\$420	4,000,000	\$70,000	\$64	10,800
Maine	\$2	\$101	460,000	\$129,000	\$17	5,900
Maryland	\$10	\$678	4,000,000	\$112,000	\$115	12,900
Massachusetts	\$15	\$876	3,000,000	\$227,000	\$149	26,600
Michigan	\$18	\$867	4,000,000	\$128,000	\$133	19,100
Minnesota	\$12	\$698	3,000,000	\$173,000	\$95	21,300
Mississippi	\$2	\$220	2,000,000	\$74,000	\$32	5,200

State	Benefits Paid Out (billions)	Total Coverage In Force (billions)	Total Individual Policies In Force	Average Coverage Amount	Investments (billions)	Direct Jobs
Missouri	\$10	\$577	3,000,000	\$116,000	\$86	21,500
Montana	\$1	\$74	350,000	\$147,000	\$14	2,700
Nebraska	\$4	\$228	1,000,000	\$141,000	\$36	10,400
Nevada	\$4	\$202	720,000	\$192,000	\$43	5,300
New Hampshire	\$2	\$135	510,000	\$172,000	\$21	4,400
New Jersey	\$20	\$1,400	4,000,000	\$229,000	\$171	32,100
New Mexico	\$3	\$148	620,000	\$112,000	\$29	2,400
New York	\$37	\$2,300	8,000,000	\$208,000	\$482	58,800
North Carolina	\$21	\$1,000	5,000,000	\$109,000	\$145	22,200
North Dakota	\$1	\$78	400,000	\$139,000	\$16	3,000
Ohio	\$18	\$1,000	6,000,000	\$108,000	\$179	34,700
Oklahoma	\$4	\$277	1,000,000	\$120,000	\$56	9,400
Oregon	\$5	\$311	1,000,000	\$183,000	\$65	8,800
Pennsylvania	\$25	\$1,300	7,000,000	\$120,000	\$204	48,300
Rhode Island	\$2	\$105	380,000	\$179,000	\$16	2,800
South Carolina	\$6	\$398	3,000,000	\$81,000	\$58	11,500
South Dakota	\$1	\$108	500,000	\$165,000	\$15	3,700
Tennessee	\$9	\$652	3,000,000	\$111,000	\$90	17,700
Texas	\$29	\$2,400	10,000,000	\$138,000	\$472	81,200
Utah	\$4	\$300	800,000	\$253,000	\$47	7,800
Vermont	\$1	\$52	260,000	\$131,000	\$9	1,600
Virginia	\$12	\$965	4,000,000	\$135,000	\$148	14,700
Washington	\$9	\$661	2,000,000	\$209,000	\$133	13,500
West Virginia	\$2	\$111	890,000	\$64,000	\$24	2,900
Wisconsin	\$11	\$568	3,000,000	\$123,000	\$88	24,900
Wyoming	\$1	\$49	220,000	\$152,000	\$13	880
Washington, DC	\$2	\$179	270,000	\$178,000	\$44	1,400
Total	\$503	\$31,622	138,080	\$143,376	\$5,461	923,010

Source: ACLI State Fact Sheets (2016).

Note: "Benefits Paid Out" includes surrender payments and annuities.

IV. How Life Insurers Alleviate Pressure on Social Programs

In Section III, we examined from an individual's perspective how life insurance product lines supplement the government-sponsored OASDI program. We now discuss the relationship between Social Security and the private life insurance industry from a macroeconomic

perspective. More specifically, we show how private life insurers provide benefits to the government and taxpayers by relieving pressures on social security spending and helping some households avoid dependency on means-tested government welfare programs.

H. LIFE INSURERS REDUCE PRESSURE ON SOCIAL SECURITY

Since 1935, almost all U.S. citizens have been protected by the basic social safety net known as Social Security, which is effectively mandatory for all private sector employees and most public sector employees. Social Security is a pay-as-you-go system that is funded by mandatory payroll taxes. Private life insurance, funded by premium payments, still plays a critical role in the modern economy and society as a supplement to Social Security. At the macroeconomic level, the co-existence of the life insurance industry and Social Security represents a benefit to the government and taxpayers in part through additional strengthening of consumers' financial safety nets without an increase in government spending. An Organization for Economic Cooperation and Development (OECD) study highlighted this important point more than 25 years ago:⁴⁹

The fact that so many life insurance policies are purchased undoubtedly relieves pressure on the social welfare systems in many states. To that extent, life insurance is an advantage in the context of public finance, and, as a result, is generally viewed with favor by governments.

To examine the potential relief that life insurance provides to government spending, we consider a hypothetical scenario where 1) private life insurance does not exist and 2) demand for incremental insurance protection currently provided by life insurers is instead provided by an expanded Social Security program.⁵⁰ It is impossible to know what percentage of the private life insurance industry's liabilities the government would feel compelled to take on. At the low end, the answer is zero. At the high end, were the OASDI program to assume the responsibility for all payouts from the life insurance industry, total government spending would have to increase by 4 percent⁵¹ and payroll taxes would have to increase by at least 20 percent (Table 10).

⁴⁹ OECD, *Consumers and Life Insurance* (Paris, 1987), quoted from Black and Skipper (2000), p. 55.

⁵⁰ Section II shows that self-funded life insurance is costly and less reliable due to lack of risk pooling. So we assume in the hypothetical scenario that the government would step in.

⁵¹ Calculated as the total life insurance payouts divided by total federal government outlays from 2010 to 2016 (\$1,118 / \$25,099). ACLI Fact Book (2011-2017); Budget FY 2018, Table 1.1, last retrieved April 18, 2018 from <<https://www.govinfo.gov/app/details/BUDGET-2018-TAB/BUDGET-2018-TAB-2-1>>.

We start with a comparison of the payouts from the life insurance industry and the old-age, survivors, and disability insurance from the OASDI program (Table 10).

Table 10: Comparison of Life Insurance Contract Benefits and Social Security Cash Outlays

(\$ Millions)	2010	2011	2012	2013	2014	2015	2016	Total
Payouts from Social Security Programs								
Survivors	105,741	106,310	110,345	112,032	114,044	116,352	117,148	781,972
Old Age	471,505	489,699	527,403	559,942	592,578	626,378	651,280	3,918,785
Disability	124,191	128,935	136,878	140,071	141,622	143,282	142,703	957,682
Total	701,437	724,944	774,626	812,045	848,244	886,012	911,131	5,658,439
Payouts from Private Life Insurance Products (Excluding Surrender Value)								
Life insurance to beneficiaries	58,392	62,132	63,259	64,350	67,850	74,306	76,039	466,328
Annuity payments	70,090	74,518	74,039	78,751	73,840	77,778	79,120	528,136
Disability payments	16,243	16,870	17,353	17,827	18,215	17,978	18,757	123,243
Total	144,725	153,520	154,651	160,928	159,905	170,062	173,916	1,117,707
Private Life Insurance Payouts / Social Security Programs Payouts								
Life insurance payments	55%	58%	57%	57%	59%	64%	65%	60%
Annuity payments	15%	15%	14%	14%	12%	12%	12%	13%
Disability payments	13%	13%	13%	13%	13%	13%	13%	13%
Total	21%	21%	20%	20%	19%	19%	19%	20%

Source: Social Security Trustee Report (2017) for OASDI benefits, ACLI Fact Book (2011-2017) for life insurance and annuity payments, and data provided by ACLI concerning disability claims incurred.

The values in the last column show that from 2010 to 2016 total survivors' benefits from Social Security amounted to \$782 billion. Beneficiary payments from life insurance added another \$528 billion to insured families, about 60 percent of the aggregate survivors' benefits from the government.⁵² Retirement (old-age) benefits are the largest component of the OASDI program, with a seven-year cumulative payout of \$3,919 billion. Annuity payments from life insurance were an additional \$528 billion, about 13 percent of the Social Security payments. The seven-year disability insurance payouts from Social Security totaled \$958 billion. Private disability insurance payments were \$123 billion over the same seven-year period. Together, the three categories of OASDI program made a total payout of \$5,658 billion over the seven-year period. During the same period, the life insurance industry distributed \$1,118 billion in death benefits, annuities, and disability payments, 20 percent of the Social Security payouts. If 100 percent of the benefits now provided by life insurance were instead provided through and financed by Social Security, the payroll tax rate would have to increase by 20 percent.

⁵² On an individual level, the insurance death benefit (paid out in a lump sum) is not exactly comparable from the Social Security's Survivor benefit, which is paid over a number of years.

I. LIFE INSURERS REDUCE PRESSURE ON OTHER GOVERNMENT SPENDING

The private life insurance industry provides potential benefits to the government through another avenue – reducing the extent to which means-tested social welfare programs are accessed. The access to life insurance can affect whether and to what extent a family will require government means-tested welfare programs, including Medicaid, which are generally available to families near or below the poverty line. For these families, following the death of a primary wage earner, life insurance could provide temporary financial support and delay, or potentially prevent, dependents from slipping into poverty.⁵³

Since the Federal government’s spending on various social welfare programs is around \$550 billion annually,⁵⁴ any life insurance benefits available to the dependents could reduce the government’s welfare spending. Although we are not aware of any empirical studies quantifying the impact of life insurance on the savings to the government’s welfare program, our high-level analyses suggest that the annual cost savings to the government could be close to a billion dollars. In the following approximation (Table 11), we focus on households near poverty, because they are the most likely to fall into poverty after the death of a wage earner without life insurance.

⁵³ For example, Bernheim, *et al.* (2003b, p. 546) reports in their study of the SCF sample (adults of all ages) that “Taking into account actual levels of insurance coverage, poverty rates would have been 10.45% among surviving wives and 4.16% among surviving husbands ... Ignoring insurance, poverty rates would have been 13.17% among surviving wives and 4.26% among surviving husbands.” Thus, insurance keeps more than 2.5 (=13.17 – 10.45) percent of surviving wives and 0.1 (=4.26 – 4.16) percent of surviving husbands above the poverty level.

⁵⁴ In 2017, according to Office of Management and Budget, the Federal government’s spending on Medicaid (health care), food and nutrition assistance (including Supplemental Nutrition Assistance Program, or food stamps), public housing, and family support (Temporary Assistance for Needy Families) were \$380 billion, \$110 billion, \$45 billion, and \$17 billion, respectively. Office of Management and Budget, Historical Tables, retrieved from <<https://www.whitehouse.gov/omb/historical-tables/>>; Department of Health & Human Services, retrieved from <<https://www.hhs.gov/about/budget/fy2017/budget-in-brief/index.html>>. TANF is also jointly funded by the state governments.

Table 11: Savings to Government Welfare Spending Due to Life Insurance

Calculation Steps		
[1]	Number of households between 1.0 and 1.5 times the poverty line	6 million
[2]	Annual mortality rate (18-64)	0.3%
[3] = [1] × [2]	Total near-poverty households experiencing death of primary earner	18,000
[4]	Percent of relevant households with life insurance	45%
[5] = [3] × [4]	Number of households with life insurance	8,100
[6]	Insurance coverage (years of income)	3.8
[7]	Annual cost of welfare per household	\$25,000
[8] = [5] × [6] × [7]	Total savings to the government	\$0.8 billion

Sources:

[1]: Householders below 1.5x the poverty line minus Householders below the poverty line. Semega, Fontenot, and Kollar (2017), p.16.

[2]: Assumption based on Social Security Mortality Tables.

[4], [6]: Table 1 (bottom two quintiles).

[7]: Assumption.

Approximately 6 million households are between one and one-and-a-half times the poverty line in the U.S (measured as \$24,000 in household income for a family of four). Assuming a 0.3 percent annual mortality rate for individuals between 18 and 64, approximately 21,000 heads of households will die each year, putting their dependents at a high risk of falling below poverty. Table 1 suggests that of those families in the bottom two quintiles, around 45 percent have life insurance, and protection provided by that insurance on average covers 3.8 times annual income. Assume that such life insurance protection is sufficient to prevent a household from entering into poverty for three years, and that each of those families would otherwise cost the U.S. government \$25,000 in welfare a year, that total savings from life insurance delaying poverty is about \$0.8 billion.⁵⁵

V. Conclusion

Life insurance is an important component of the U.S. economy. It plays a unique role not only in the safety and security it provides to individuals, but in the stability and liquidity it provides to the financial markets and the overall economy. Furthermore, the life insurance industry

⁵⁵ The savings each year represent welfare benefits saved from three different cohorts—families who lost their primary wage earners in 1) the current year, 2) the previous year, and 3) two years before.

significantly alleviates the financial burden caused by mortality, longevity, and morbidity risks for individual households and the U.S. government.

Looking ahead, in addition to making the aforementioned contributions, life insurers will serve a more prominent role in retirement security. As more and more Americans retire with most of their workplace savings in defined contribution plans, which are typically not distributed as annuities, we expect that the life insurance industry will need to step forward with expanded and innovative product offerings to meet the demand from retirees for supplemental lifetime income streams.

References

- American Council of Life Insurers (ACLI), 2017, “Life Insurers Fact Book.”
- Amoroso, Anastasia and Ainsley Woolridge, “Living in a Less Liquid World: The Do’s and Don’ts for Bond Investors,” *J.P. Morgan Asset Management*, June 11, 2015.
- Arena, Marco, 2008, “Does Insurance market Activity Promote Economic Growth? A Cross-Country Study for Industrialized and Developing Countries,” *The Journal of Risk and Insurance* 75(4): pp. 921-946.
- Arena, Marco, 2011, “The Corporate Choice between Public Debt, Bank Loans, Traditional Private Debt Placements, and 144A Debt Issues,” *Review of Quantitative Finance and Accounting* 36(3): pp. 391-416.
- B20 Panel of Six International Accounting Networks, June 2014, “Unlocking Investment in Infrastructure.”
- Baily, Martin Neil., and Jacob F. Kirkegaard, *US Pension Reform: Lessons from Other Countries*, Washington, DC: Peterson Institute, 2009.
- Bernheim, Douglas, Lorenzo Forni, Jagadeesh Gokhale, and Laurence Kotlikoff, 2003a, “The Mismatch between Life Insurance Holdings and Financial Vulnerabilities: Evidence from the Health and Retirement Study,” *American Economic Review* 93(1): pp. 354-365.
- Bernheim, Douglas B., Katherine G. Carman, Jagadeesh Godkhale, and Laurence J. Kotlikoff, 2003b, “Are Life Insurance Holdings Related to Financial Vulnerabilities?” *Economic Inquiry* 41(4): pp 531-554.
- Black, Kenneth Jr. and Harold D. Skipper Jr., 2000, *Life and Health Insurance*, 13th edition.
- Blackwell, David W. and David S. Kidwell, 1988, “An Investigation of Cost Differences Between Public Sales and Private Placements of Debt,” *Journal of Financial Economics* 22(2): pp. 253-278.

- Brown, Jeffrey R., 2004, "The New Retirement Challenge," *Americans for Secure Retirement*.
- Brown, Jeffrey and Amy Finkelstein, 2011, "Insuring Long-Term Care in the U.S.," *Journal of Economic Perspectives* 25(4): pp. 119-142.
- Butrica, Barbara A., Howard M. Iams, Karen E. Smith, and Eric J. Toder, 2009, "The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers," *Social Security Bulletin* Vol. 69.
- Carey, Mark, Stephen Prowse, John Rea, and Gregory Udell, 1993, "The Economics of the Private Placement Market," *Board of Governors of the Federal Reserve System*.
- Chen, Hua, J. David Cummins, Krupa S. Viswanathan, and Mary A. Weiss, 2014, Systemic Risk and the Inter-Connectedness between Banks and Insurers: An Econometric Analysis, *Journal of Risk and Insurance* 81(3): pp. 623-652.
- Cummins, J. David and Mary A. Weiss, 2014, "Systemic Risk and the U.S. Insurance Sector," *Journal of Risk and Insurance* 81(3): pp. 489-528.
- Della Croce, Raffaele and Juan Yermo, 2013, "Institutional investors and infrastructure financing," *OECD Working Papers on Finance, Insurance, and Private Pensions*, No. 36.
- Deloitte, Society of Actuaries (2014), "Pension Risk Transfer: Evaluating Impact and Barriers for De-Risking Strategies" Society of Actuaries.
- Ericson, Michael, Q3 2015, "Group Annuity Risk Transfer Survey," *LIMRA Secure Retirement Institute*.
- Ernst & Young, February 2014, "Contributions of the Life Insurance Industry to the US Economy: Financial Protection of Families, Employment and Household Income, and Long-term Capital Investments."
- Ernst & Young, March 2016, "EY US Private Placement Market Survey 2016."
- Federal Insurance Office, September 2015, *Annual Report on the Insurance Industry*.
- Feldstein, Martin, 2005, "Rethinking Social Insurance," *American Economic Review* v95(1): pp. 1-24.
- Han, Liyan, Dongui Li, Fariborz Moshirian, and Yanhui Tian, 2010, "Insurance Development and Economic Growth," *Geneva Papers* 35, pp. 183-199.
- HIMCO, November 2013, "Private Placement Debt: Diversification, Yield Potential in a Complementary IG Asset."
- Impavido, Gregori, Alberto Musalem, and Thierry Tresselt, 2001, "Contractual Savings Institutions and Banks' Stability and Efficiency," *The World Bank Policy Research Working Paper*, No. 2751

- King, Robert G. and Ross Levine, 1993, "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics* 108(3): pp. 681–737.
- Lee, Chien-Chiang, Chi-Chuan Lee, and Yi-Bin Chiu, 2013, "The Link between Life Insurance Activities and Economic Growth: Some New Evidence," *Journal of International Money and Finance* 32: pp. 405-427.
- Levine, Ross, 2005, "Finance and Growth: Theory and Evidence," *Handbook of Economic Growth*, Volume 1A, edited by Philippe Aghion and Steven N. Durlauf, pp. 865-934.
- Lin, Yijia and Martin F. Grace, 2007, "Household Life Cycle Protection: Life Insurance Holdings, Financial Vulnerability, and Portfolio Implications," *The Journal of Risk and Insurance* 74(1): pp 141-173.
- National Research Council and National Academy of Public Administration, 2010, *Choosing the Nation's Fiscal Future*. Washington, DC: The National Academies Press.
- National Association of Insurance Commissioners and the Center for Insurance Policy and Research, August 2013, *State of the Life Insurance Industry: Implications of Industry Trends*.
- Neil Baily, Martin and Jacob Funk Kirkegaard, 2010, *US Pension Reform: Lessons from Other Countries*.
- O'Shaughnessy, Carol V., 2014, "National Spending for Long-Term Services and Supports (LTSS), 2012," *National Health Policy Forum*.
- Outreville, J. François, 2013, "The Relationship between Insurance and Economic Development: 85 Empirical Papers for a Review of the Literature," *Risk Management and Insurance Review*, 16(1): pp. 71–122.
- Poterba, James, Steven Venti, and David Wise, 2012, "Were They Prepared for Retirement? Financial Status at Advanced Ages in the HRS and AHEAD Cohorts," *Investigations in the Economics of Aging*.
- Prowse, Stephen, 1997, "The Economics of Private Placements: Middle-Market Corporate Finance, Life Insurance Companies, and a Credit Crunch," *Federal Reserve Bank of Dallas Economic Review* No. 3: pp. 12 – 24.
- Rajan, Raghuram G. and Luigi Zingales, 1998, "Financial Dependence and Growth," *American Economic Review* 88(3): pp. 559 – 86.
- Semega, Jessica L., Kayla R. Fotenot, and Melissa A. Kollar, September 2017, "Income and Poverty in the United States: 2016," United States Census.
- Skipper, Harold D., 1997, "Foreign Insurers in Emerging Markets: Issues and Concerns," *IIF Occasional Paper*, No. 1.

Social Security Administration, 2017, *The 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*.

Standard & Poor's, January 2014, "Global Infrastructure: How to Fill A \$500 Billion Hole."

Vaughan, Therese M., 2012, "Life Insurance: Providing Long-Term Stability in a Volatile World," *Risk Management and Insurance Review* 15(2): pp. 255-261.

Weaver, David A., 2010, "Widows and Social Security," *Social Security Bulletin* 70(3).

Yogo, Motohiro, 2009, "Portfolio Choice in Retirement: Health Risk and the Demand for Annuities, Housing, and Risky Assets." *AFA 2009 San Francisco Meetings Paper*.

CAMBRIDGE
NEW YORK
SAN FRANCISCO
WASHINGTON
TORONTO
LONDON
MADRID
ROME



THE **Brattle** GROUP