REFERENCE LIST
September 2017

Necessary adjustments of pensions under ageing societies

September 2017—Tomoyuki Kubo, PBSS/IACA Colloquium Cancun 2017

The purpose of this paper is to discuss necessary adjustment of pensions under aging societies.
In Section 1, I describe the philosophy of public pensions. Public pensions should be understood as a part of Intergenerational Care chain. In Section 2, I refer to the influence of aging on public pensions. Fewer children phenomenon would weaken future support for their parents while it would reduce burden of childhood care of them. Longer life expectancy phenomenon makes old age spending larger to emerge the pressure for increasing benefits. Prolonging active period (working longer) is the key solution for public pensions under aging situation. In Section 3, I refer to the influence of aging on private pensions that is somewhat different from that of public pensions. Fewer children would not directly affect to private pensions, but longer life expectancy would affect to them immediately by the increase of spending after retirement. Private pensions should be considered as the instrument that a part of one's earning will be distributed to his/her old age (after retirement). In Section 4, I mention the desirable adjustment of pensions under aging societies. I propose the combination of retirement savings and the Pension Payment Organization as a group insurance for the future of private pensions. And I state the burden sharing of employers, individuals and a government by dividing 3 phases. At the end.
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Long Term Care

September 2017—Sam Gutterman, PBSS/IACA Colloquium Cancun 2017

As populations age over the next several decades, the demand for long-term care (LTC) services (assisting individuals with their activities of daily life) will increase dramatically and is likely to reach crisis levels in many countries. Societies will have to confront this emerging need because historical methods for providing and funding LTC may not be adequate to address future LTC needs. The primary objective of this report is to provide information concerning some of the key issues associated with LTC, including: (1) the future use of LTC services, (2) alternative benefit designs and resulting incentives, (3) a range of approaches used around the world to provide LTC services and (4) financing LTC services by the individual, the community, private insurance or governments. The overall message of this report is that it is very important for individuals, societies and policy makers to address LTC issues in a timely manner before they become more severe.
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Investment of Pension Funds in Reforestation and Forestry

September 2017—Rodrigo Ibarra Jarrín, PBSS/IACA Colloquium Cancun 2017

This paper examines the feasibility of mitigating social and environmental problems through the implementation of reforestation and forestry investment programs for pension funds and social security systems. It addresses the issue of a rapidly growing unemployment rate, the collapse or deterioration of pension systems, global warming and other environmental consequences of economic activity. The presentation conducts the analysis by examining how these investment projects would impact the country´s responsible economic development, carbon footprint, employment situation, social security financing, among other key variables.

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Adapting to Changes in Life Expectancy in the Finnish Earnings-Related Pension Scheme

September 2017- Mikko Sankala, PBSS/IACA Colloquium Cancun 2017

In this article we discuss the policy choices made in order to adapt to changes in life expectancy in the Finnish earnings-related pension scheme and study different adaptation methods by using a rule-based simulation model. An automatic balancing mechanism called the life expectancy coefficient was introduced in the reform of 2005 to combat increasing pension expenditure. The life expectancy coefficient automatically adjusts the level of beginning pensions to changes in life expectancy. If life expectancy increases, monthly pensions are decreased and if life expectancy decreases, monthly pensions are increased. In 2014 the social partners reached an agreement on the content of the pension reform, which came into effect in 2017. One of its main goals is to increase the effective retirement age and lengthen working careers by introducing a link of the general retirement age to life expectancy. This link is also taken into account by mitigating the life expectancy coefficient, which will raise the size of future pensions if the prevailing trends in mortality continue. We have simulated three mortality scenarios (baseline, low and high mortality) and two legislation scenarios (with and without the link of the retirement age to mortality) to assess the effect that mortality has on the effective retirement age, pension benefit levels and pension expenditure. According to our simulations, the link postpones retirement as measured by the effective retirement age and increases the pensions of future retirees. As the effective retirement age rises, the size of the workforce and the wage sum also increase. The link of the retirement age to life expectancy reduces the effect that life expectancy has on benefit levels and the financial sustainability of the earnings-related pension scheme.

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Selecting Discount Rates for Assessing Funded Status of Target Benefits Plans

September 2017- Chung-Mung (George) Ma, PBSS/IACA Colloquium Cancun 2017

For the purpose of determining the going concern funded status of a defined benefit pension plan, the current actuarial practice is to determine the liabilities of the plan using a discount rate based on the expected investment return from the pension fund (the "traditional" approach). On the other hand, financial economists have advocated the use of a discount rate based on the market yields of investment grade bonds, with an appropriately low level of risk, whose cash flows reasonably match the expected benefit payments, regardless of how the plan assets are invested (the "financial economics" approach). This paper explores the issue of selecting discount rates for assessing the funded status of target benefit plans. A target benefit plan is a pension plan that aims to provide a target retirement income to its members through the pooling of economic and demographic risks, where the employer's funding obligation is predefined while members' benefits may be adjusted upwards or downwards relative to the target. From the viewpoint of managing the risk of intergenerational inequity, it is proposed that the only discount rate for assessing the funded status of a target benefit plan that serves the best interests of members is one based on the traditional approach. To support our proposition, we conduct Monte Carlo simulations on three model plans to demonstrate the impact on pension wealth distributions resulted from the two discount rate approaches.

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A Financial Assessment of the Chinese Pay-As-You-Go Pension System

September 2017-John Turner, PBSS/IACA Colloquium Cancun 2017

This paper analyses the Chinese pay-as-you-go (PAYG) pension system for urban areas over the 75-year period 2014-2088 using the actuarial approach used by the Social Security actuaries in the United States, and by a number of other countries, that takes into account projected values for relevant demographic and economic variables using current program parameters. The paper finds that very high contribution rates would be needed, if no other changes are made, in order to maintain the sustainability of the Chinese pension system. To provide perspective on the results, the paper compares these results to similar results for the Social Security program in the United States. A key factor in the high cost of the PAYG system for urban workers, compared to the cost in the United States, is the longer period in China that workers can expect to receive benefits, which is roughly 25 percent (5 years) longer in China than in the United States. The paper also analyzes parametric reforms that need to be immediately taken to restore the financial health of the Chinese pension system. We find that the Chinese social security pension system faces serious financing problems in the future that cannot be fixed solely by raising the contribution rate, and will require other changes, such as raising the benefit eligibility.

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Defining a Posteriori Distribution of an Actuarial Caluation Forecasting: A Mixed Approach

September 2017-Octavio Rojas, PBSS/IACA Colloquium Cancun 2017

COMPANY ABC wants to perform an early retirement program. Its aim is to use it as a rightsizing mechanism, applying it on a three year period. It has asked its Consulting Actuary to perform a 5-year estimate of what the expected obligations will be in such period should the program be applied. Due to budget and time issues an ALM approach is not feasible, neither is to perform a straight forward non-stochastic actuarial forecasting given the fact that the risk in which its Consulting Actuary could be involved once it provides its results could be large. The present paper presents a mixed approach set to avoid this problem. This mixed approach is set to define a posteriori statistical distribution for the valuation results that correspond to a particular year, by the means of producing many 5-year actuarial valuations in which each eligible participant under the program is set to retire or continue as active using Monte Carlo. Thus, instead of providing a sole figure, a range in which the possible outcome may fall and/or set of statistics related to the possible outcome of each valuation year can be provided2 . The present paper is divided in three parts. The first provides an overview of the normal and early retirement plan's definition and its related assumptions. The second explains the algorithm used. The third provides our view of what should be the next step.

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Investigation of Dependency Between Short Rate and Transition Rate on Pension Buy-outs

September 2017-Ayse Arik, PBSS/IACA Colloquium Cancun 2017

Solvency II regulations are in force for Pension Bulk Annuity Market since January 2016. These regulations encourage insurers to apply stochastic models for valuation of the contracts and to consider the dependency between finance and insurance markets for the examination of the capital adequacy requirements. In this study, we first employ affine structure for modeling the dependency between short rate and transition rate. For this aim, we utilize the methodology of dependent forward rates. After that, we show how to valuate a pension buy-out deal. We also examine the Solvency II capital requirement for a riskless portfolio.

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The Life Cycle Model with Recursive Utility: Defined Benefit vs. Defined Contribution

September 2017-Knut Aase, PBSS/IACA Colloquium Cancun 2017

We analyze optimal consumption and portfolio choice when the agent takes the market as given, with applications to pension insurance. First, we recall the results for the conventional additive and separable expected utility model. We demonstrate that this model is not viable in a temporal context. As a consequence, when confronted with real data this theory meets with several conflicting implications. Second, we consider recursive utility, which in contrast has an axiomatic underpinning in a temporal context. All the anomalies of the expected utility approach that we are aware of, disappear with recursive utility. This we find striking, as it calls for a shift in paradigm. The alternative theory explains why people prefer stable pension plans, like defined benefit, to a mere mutual fund, it removes anomalies in the conventional, optimal portfolio choice theory when confronted with market data, and it solves the celebrated equity premium puzzle. Since the recursive model fits market data much more convincingly than the conventional model, this leaves more credibility to the former representation, and more weight to recommendations based on it.

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NASRA Issue Brief: Employee Contribution to Public Pension Plans

September 2017-National Association of State Retirement Administrators

Unlike in the private sector, nearly all employees of state and local government are required to share in the cost of their retirement benefit. Employee contributions typically are set as a percentage of salary by statute or by the retirement board. Although investment earnings and employer contributions account for a larger portion of total public pension fund revenues, by providing a consistent and predictable stream of revenue to public pension funds, contributions from employees fill a vital role in financing pension benefits. Reforms made in the wake of the 2008-09 market decline included higher employee contribution rates in many states. This issue brief examines employee contribution plan designs, policies and recent trends.

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The Impact of Raising Children on Retirement Security

September 2017- Center for Retirement Research at Boston College

*The cost of raising children could make it harder for parents to save for retirement.

*On the other hand, if parents offset child-rearing expenses by spending less on themselves, they could still end up well prepared in retirement.

*The analysis uses the National Retirement Risk Index to look at what impact children actually have on retirement preparedness.

*The results show that children reduce household wealth and moderately increase the likelihood of retirement risk for older working households.

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Post/Retirement Experiences of Individuals 85+ Years Old

September 2017- Society of Actuaries

The Society of Actuaries' Committee on Post Retirement Needs and Risks is pleased to make available a research report summarizing sixty-two interviews of individuals 85 years and older. Interviews were conducted in the United States and Canada. The study seeks to understand how the habits and behaviors from earlier in life played out in the later years of retirement. A follow-up survey to the interviews is currently being conducted. Results will be posted on this page when available. The research is being conducted by Mathew Greenwald & Associates, Inc.

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Commentary: Appeal for a United States National Healthcare System

September 2017- The Buffin Fundation

Articles 22 and 24 of the United Nations Universal Declaration of Human Rights state: "Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international cooperation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality. Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control

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UPCOMING EVENTS

IAA Life Colloquium

23–24 October 2017, Barcelona, Spain

The seemingly unstoppable growth in human life expectancy, coupled with the current state of health and social services, has led to a remarkable rise in longevity across the globe.

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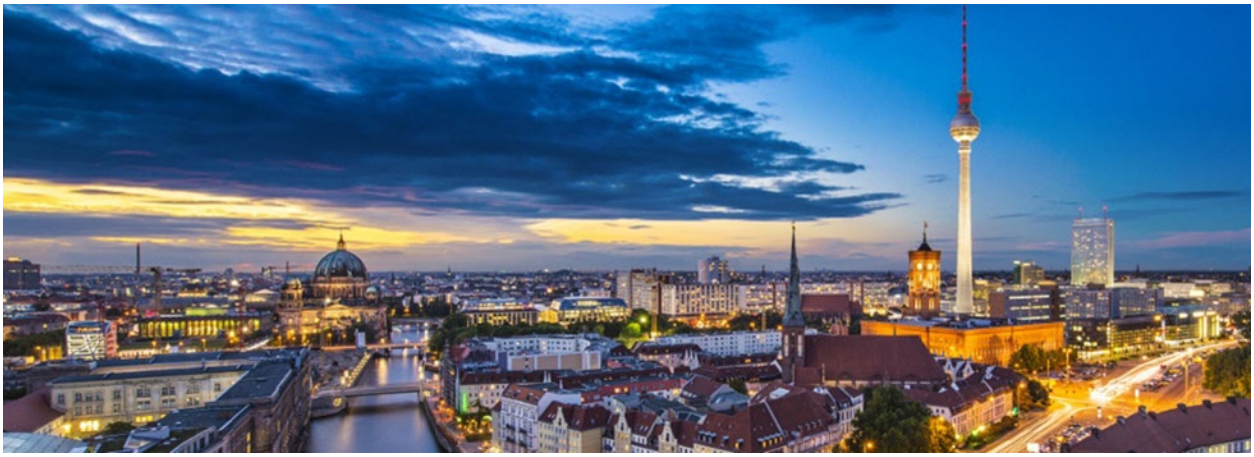

1st International Congress of Actuaries (ICA 2018)

4–8 June 2018, Berlin, Germany

Like no other metropolis in Europe, Germany's capital symbolizes the breakdown of old structures and the beginning of a new era of understanding and cooperation. May the unique atmosphere of a city that

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