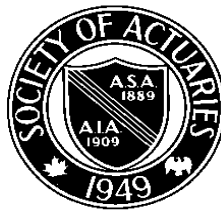# Caribbean 2002-2007 International Experience Study Report

September 2014
(*updated November 2014*)

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Introduction

The 2013 Caribbean experience study was undertaken as a joint research venture between the Caribbean Actuarial Society and the Society of Actuaries (SOA) International Experience Study (IES).

The study includes both mortality and persistency studies of policies in force any time during the 2002-2007 study period. The results are provided in two distinct periods, 2002-04 and 2005-2007. Portfolio data was provided by nine contributing companies. Both life insurance and annuity policies are included, but kept separate. The list of contributing companies is provided in Appendix A of this report.

The data contributions of three companies, one each for insurance mortality, annuity mortality and insurance persistency, were reduced in the study to limit the impact of their results on the overall results. All reported numbers include only the reduced values of those companies.

The "insurance" mortality portion of the study includes data from eight companies with a total of 5,437 claims and 2.3 million policy year exposures. The "annuity" portion includes data from three companies with 966 claims and approximately 570,000 policy year exposures.

The "insurance" lapse study includes data from seven companies. It includes 206,656 lapses and 2.4 million policy year exposures. There was insufficient data to produce an "annuity" lapse study.

The studies were performed based upon contract counts. It is not feasible to produce a "by insurance amount" study, since a number of currencies would be involved. Actual mortality was compared to two expected mortality bases, the SOA 1975-80 table and CIA 86-92 aggregate smoking table.

Each of the contributing companies prepared a policy file of all policies in force during the study period that including policy, demographic and status information. These files were processed directly by each company using the IES experience study tool and summary information was sent to the IES Working Group for compilation.

Since the data was compiled by each company, the study needs to rely on the work of the companies to ensure data quality. Nevertheless, members of the International Experience Study Working Group did review the data submissions for consistency at a high level. This study is the first one performed in the Caribbean insurance market. Although there were no known quality issues with the data used in the analysis, it is expected that data quality is likely to improve as subsequent studies are performed.

More detailed information underlying this study is provided in an accompanying Excel file. The file is included in the published study package. The file contains both mortality and lapse experience. It is in the form of a pivot table allowing for more granular analyses. The mortality

data includes two expected mortality tables, the SOA 75-80 table and the CIA 86-92 aggregate smoking table. Expected claims for both of these tables are calculated on both the "select and ultimate" and "ultimate only" mortality rate values.

Results

The figures below provide high level study results. All of the A/E results use the SOA 75-80 "ultimate only" table as the expected basis. Appendix B of this report provides the results using the CIA 86-92 ultimate table as the expected basis.

Figure 1 shows the exposure by attained age to mortality risk based upon the number of policy years. One policy year of exposure equals one policy in force for one year.

Figure 1 - Policy year exposures by attained age
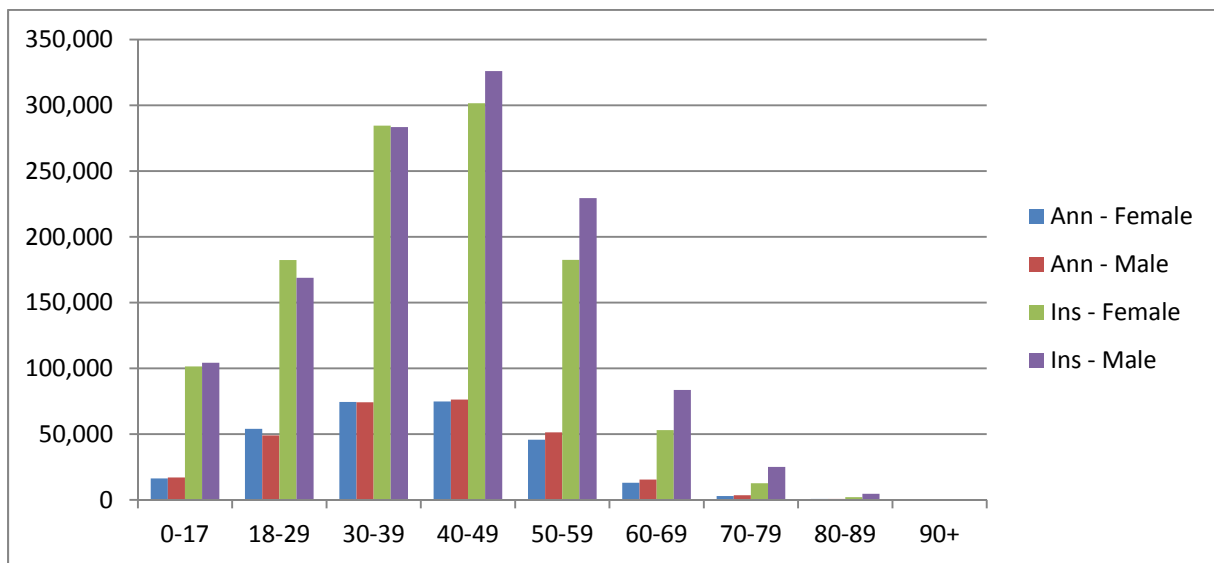
Figures 2 (insurance) and 3 (annuities) show actual to expected "by count" mortality ratios by attained age based upon the SOA 75-80 ultimate mortality table.

Figure 2 - Insurance A/E ratios by attained age (SOA 75-80 ultimate)
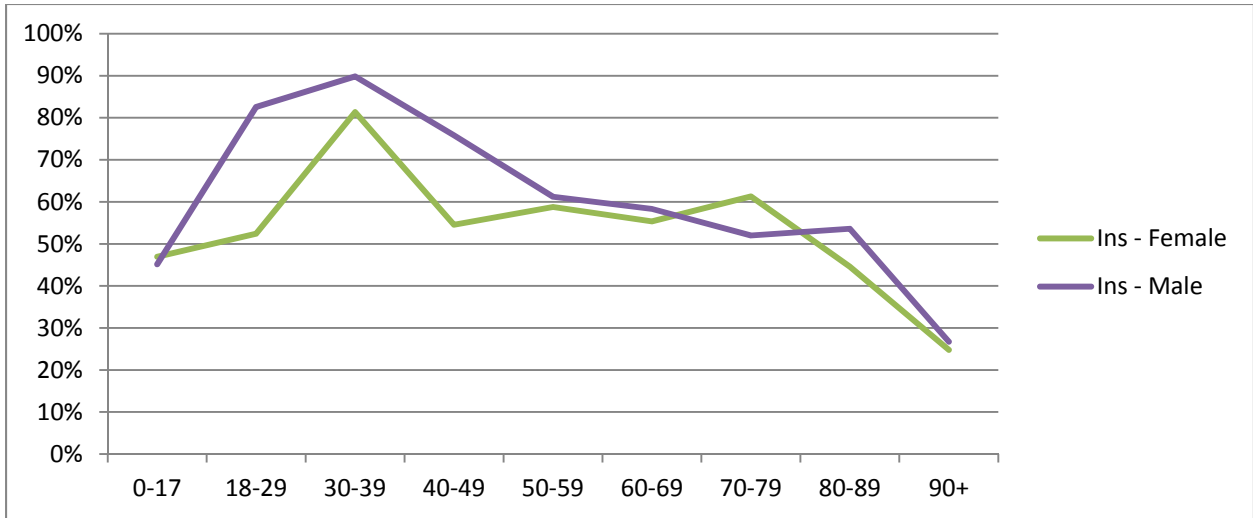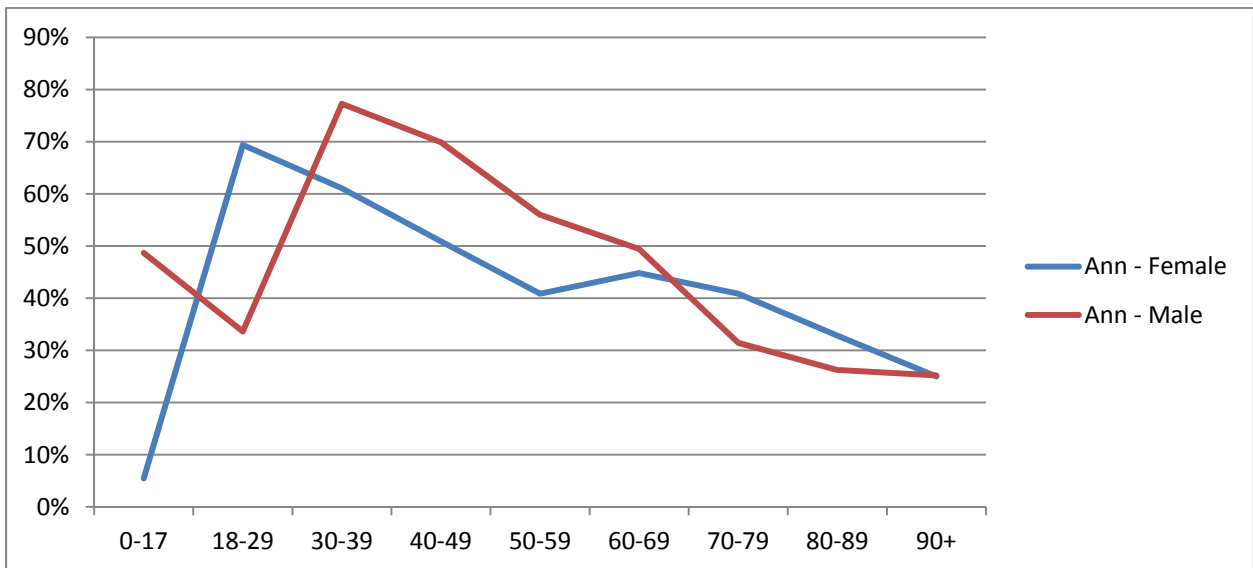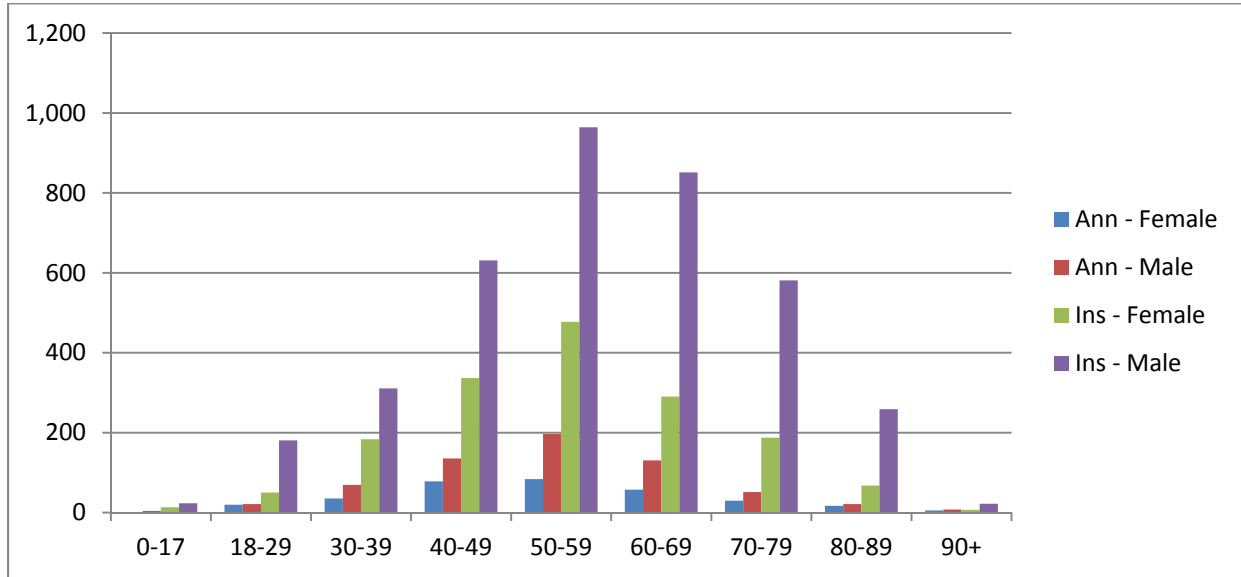

Figure 3 - Annuity A/E ratios by attained age (SOA 75-80 ultimate)

The actual number of claims within each attained age range is provided in figure 4 below.

Figure 4 - Number of actual claims by attained age

Figures 5 and 6 provide the A/Es by policy year duration for insurance and annuity products, respectively. The results indicate the presence of an average select period of about three years. Further analysis may be needed to determine where the select period varies by gender and age group.
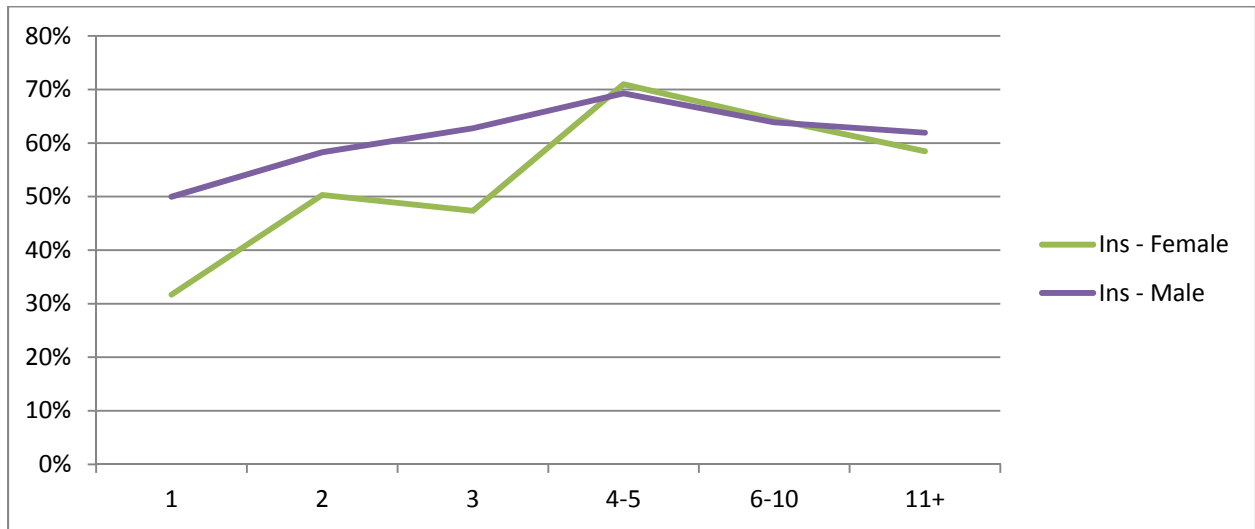
Figure 5 – Insurance A/E by duration (SOA 75-80 ultimate)

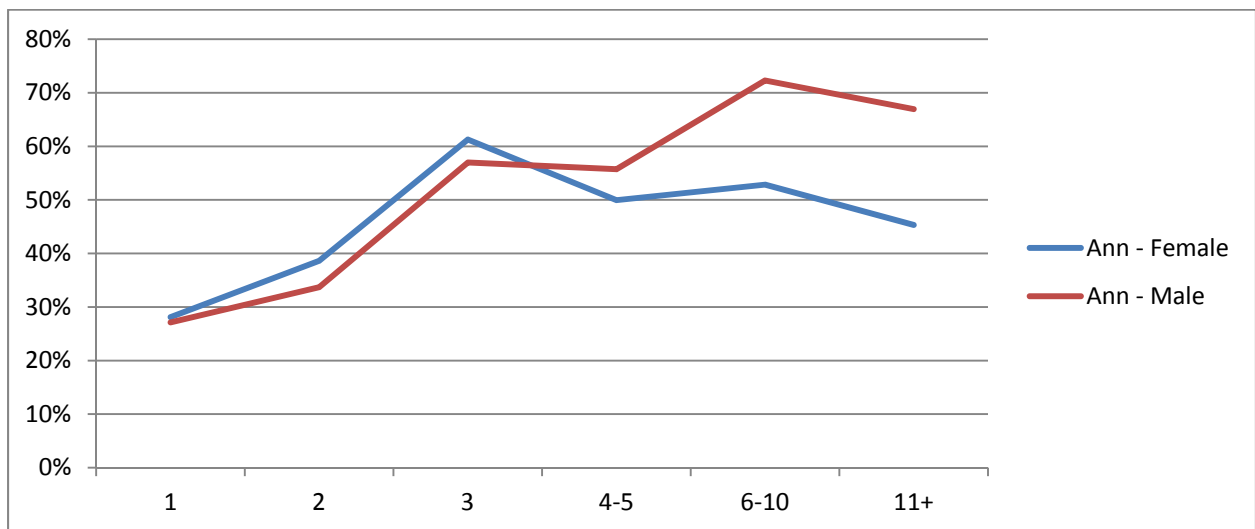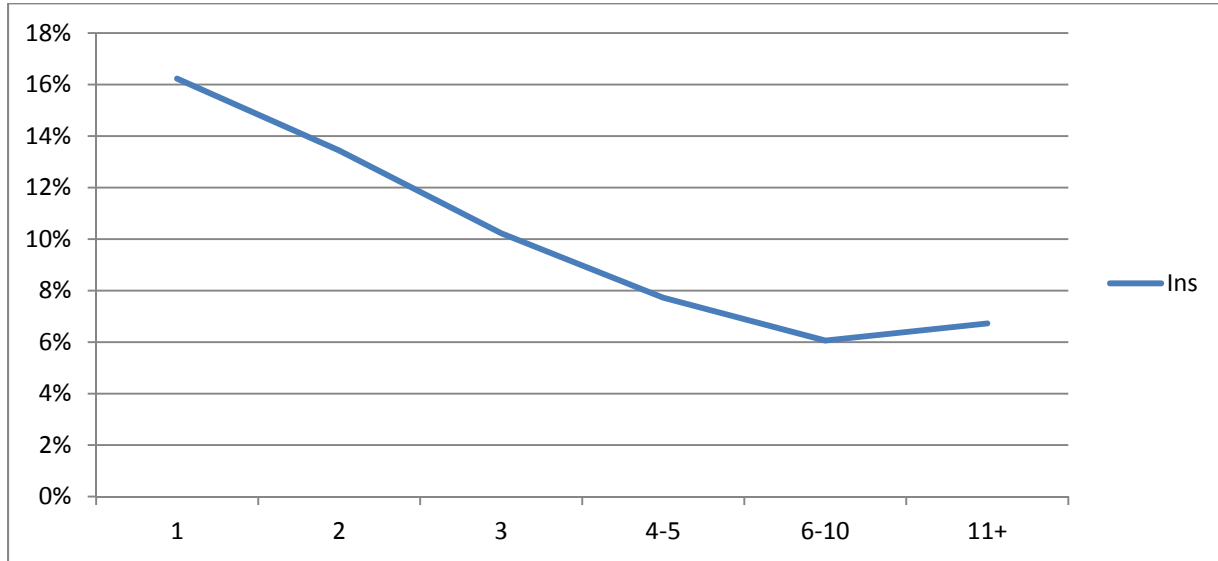**Figure 6 - Annuity A/E by duration (SOA 75-80 ultimate)**

Figure 7 provides persistency results by policy duration year for insurance policies.

Figure 7 - Lapse experience rates by duration

A few companies provided experience by smoking status. Because of the limited amount of information, this report can only provide very high level results by smoking status. On average, smoker mortality is in the range of 180% - 190% of that of non-smokers. The SM/NS ratios decrease with increasing age.

There are distinct differences in mortality by country. However, those results cannot be provided in this report because of the overlap of contributing companies and countries. There were insufficient companies within any single country to allow the publishing of results for any country.

Summary

The interpretation of the results does require some caution. The data may still contain some quality issues. This is common for companies' first compilation of experience data.

Appendix A: Contributing Companies

Assuria

BAICO

CLICO

COLINA

COSVI

Family Guardian

Guardian

NALIC

SAGICOR

Appendix B

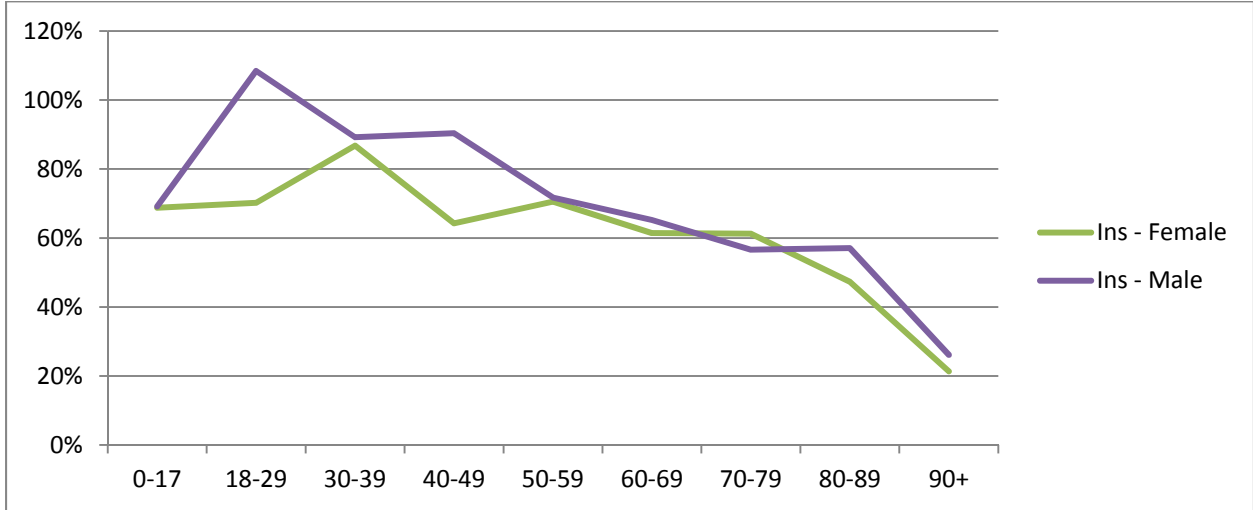**Figure 8 - Insurance A/E ratios by attained age (CIA 86-92 ultimate)**

Figure 9 - Annuity A/E ratios by attained age (CIA 86-92 ultimate)

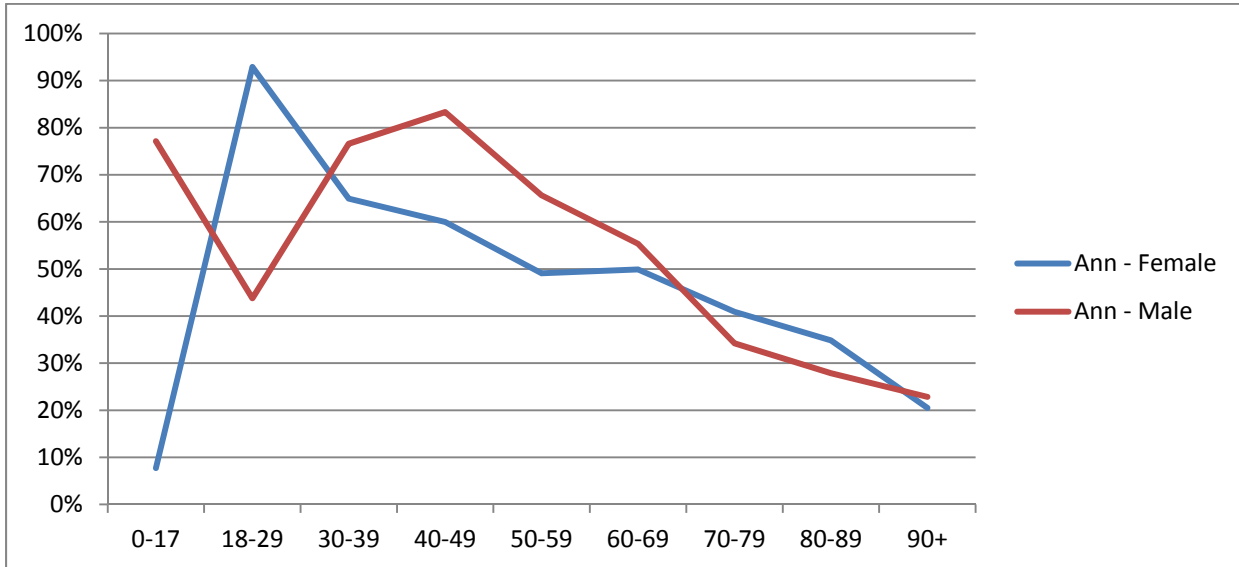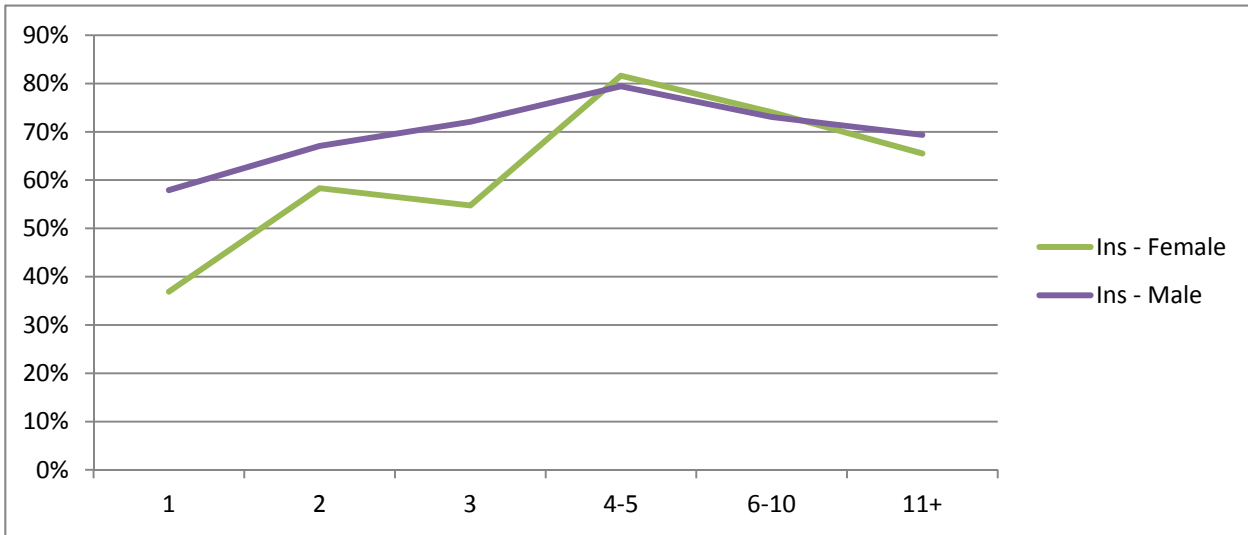## Figure 10 - Insurance A/E by duration (CIA 86-92 ultimate)

Figure 11 - Annuity A/E by duration (CIA 86-92 ultimate)