

Updated Simulation Results

As used in this report, references to “we,” “us,” or “our,” refer to the consolidated operations of Arch Capital Group Ltd. and its subsidiaries.

In order to illustrate the potential volatility in our reserves for losses and loss adjustment expenses (“Loss Reserves”), we used a Monte Carlo simulation approach to simulate a range of results based on various probabilities. Both the probabilities and related modeling are subject to inherent uncertainties. The simulation relies on a significant number of assumptions, such as the potential for multiple entities to react similarly to external events, and includes other statistical assumptions. The simulation results shown for each segment do not add to the total simulation results, as the individual segment simulation results do not reflect the diversification effects across our segments.

At December 31, 2019, our recorded Loss Reserves by underwriting segment, net of unpaid losses and loss adjustment expenses recoverable, and the results of the simulation were as follows:

(\$ 000's)	Insurance Segment	Reinsurance Segment	Mortgage Segment	Total
Loss Reserves (1)	\$5,004,678	\$3,275,767	\$423,742	\$8,704,187
Simulation results:				
90th percentile (2)	\$6,020,835	\$4,117,091	\$507,130	\$10,173,177
10th percentile (3)	\$3,975,992	\$2,548,680	\$346,009	\$7,267,104

- (1) Net of reinsurance recoverables. Excludes amounts reflected in the ‘other’ segment. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Comment on Non-GAAP Financial Measures” of our Annual Report on Form 10-K for discussion of “non-GAAP financial measure” as defined in Regulation G.
- (2) Simulation results indicate that a 90% probability exists that the net reserves for losses and loss adjustment expenses will not exceed the indicated amount.
- (3) Simulation results indicate that a 10% probability exists that the net reserves for losses and loss adjustment expenses will be at or below the indicated amount.

For informational purposes, based on the total simulation results, a change in our Loss Reserves to the amount indicated at the 90th percentile would result in a decrease in income before income taxes of approximately \$1.47 billion, or \$3.55 per diluted share, while a change in our Loss Reserves to the amount indicated at the 10th percentile would result in an increase in income before income taxes of approximately \$1.44 billion, or \$3.47 per diluted share. The simulation results noted above are informational only, and no assurance can be given that our ultimate losses will not be significantly different than the simulation results shown above, and such differences could directly and significantly impact earnings favorably or unfavorably in the period they are determined. We do not have significant exposure to pre-2002 liabilities, such as asbestos-related illnesses and other long-tail liabilities. It is difficult to provide meaningful trend information for certain liability/casualty coverages for which the claim-tail may be especially long, as claims are often reported and ultimately paid or settled years, or even decades, after the related loss events occur. Any estimates and assumptions made as part of the reserving process could prove to be inaccurate due to several factors, including the fact that relatively limited historical information has been reported to us through December 31, 2019.