

# **General Loss Reserving Methodology**

## **Preface**

The primary purpose of this report is to help interested stakeholders better understand our loss reserving process and how it affects our financial results. Reserves in this report refer to our loss and loss adjustment expense reserves.

We offer this report as an overview of our loss reserving practices. It is not intended to be, nor is it, a comprehensive examination of our practices. Numbers used throughout this report are hypothetical and are for illustrative purposes only. For actual loss reserving values and outcomes, please refer to our periodic reports that are publicly filed with the Securities and Exchange Commission ("SEC").

Consistent with Progressive's culture of self-examination, our analysis of loss reserves demands regular review and improvement. Each section of this report focuses on a different aspect of our reserving process.

- Section I describes the role of loss reserving in our financial objectives and results, and explains why accurate reserving is important
- Section II defines our overall goal of the reserving process, the different types of reserves, how they are related and how we analyze them
- Section III defines reserve development and its influence on financial results
- Section IV describes how and why we estimate our required reserves by segment
- Section V defines many of the terms we use throughout the report

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**Safe Harbor Statement Under the Private Securities Litigation Reform Act of 1995:** Investors are cautioned that certain statements in this report not based upon historical fact are forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995. These statements often use words such as “estimate,” “expect,” “intend,” “plan,” “believe,” “goal,” “target,” “anticipate,” “will,” “could,” “likely,” “may,” “should,” and other words and terms of similar meaning, or are tied to future periods, in connection with a discussion of future operating or financial performance. Forward-looking statements are not guarantees of future performance, are based on current expectations and projections about future events, and are subject to certain risks, assumptions and uncertainties that could cause actual events and results to differ materially from those discussed herein. These risks and uncertainties include, without limitation, uncertainties related to:

- our ability to underwrite and price risks accurately and to charge adequate rates to policyholders;
- our ability to establish accurate loss reserves;
- the impact of severe weather, other catastrophe events, and climate change;
- the effectiveness of our reinsurance programs and the continued availability of reinsurance and performance by reinsurers;
- the secure and uninterrupted operation of the systems, facilities, and business functions and the operation of various third-party systems that are critical to our business;
- the impacts of a security breach or other attack involving our technology systems or the systems of one or more of our vendors;
- our ability to maintain a recognized and trusted brand and reputation;
- whether we innovate effectively and respond to our competitors’ initiatives;
- whether we effectively manage complexity as we develop and deliver products and customer experiences;
- our ability to attract, develop, and retain talent and maintain appropriate staffing levels;
- the impact of misconduct or fraudulent acts by employees, agents, and third parties to our business and/or exposure to regulatory assessments;
- the highly competitive nature of property-casualty insurance markets;
- whether we adjust claims accurately;
- compliance with complex and changing laws and regulations;
- litigation challenging our business practices, and those of our competitors and other companies;
- the success of our business strategy and efforts to acquire or develop new products or enter into new areas of business and navigate related risks;
- how intellectual property rights affect our competitiveness and our business operations;
- the performance of our fixed-income and equity investment portfolios;
- the impact on our investment returns and strategies from regulations and societal pressures relating to environmental, social, governance and other public policy matters;
- our continued ability to access our cash accounts and/or convert investments into cash on favorable terms;
- the impact if one or more parties with which we enter into significant contracts or transact business fail to perform;
- legal restrictions on our insurance subsidiaries’ ability to pay dividends to The Progressive Corporation;
- limitations on our ability to pay dividends on our common shares under the terms of our outstanding preferred shares;
- our ability to obtain capital when necessary to support our business and potential growth;
- evaluations by credit rating and other rating agencies;
- the variable nature of our common share dividend policy;
- whether our investments in certain tax-advantaged projects generate the anticipated returns;
- the impact from not managing to short-term earnings expectations in light of our goal to maximize the long-term value of the enterprise;
- the impacts of epidemics, pandemics, or other widespread health risks; and
- other matters described from time to time in our releases and publications, and in our periodic reports and other documents filed with the United States Securities and Exchange Commission, including, without limitation, the Risk Factors section of our Annual Report on Form 10-K for the year ending December 31, 2022.

*In addition, investors should be aware that generally accepted accounting principles prescribe when a company may reserve for particular risks, including litigation exposures. Accordingly, results for a given reporting period could be significantly affected when we establish reserves for one or more contingencies. Also, our regular reserve reviews may result in adjustments of varying magnitude as additional information regarding claims activity becomes known. Reported results, therefore, may be volatile in certain accounting periods.*

## **Section I – About Progressive**

### **Our Business**

The Progressive insurance organization began business in 1937. The Progressive Corporation, an insurance holding company formed in 1965, currently has insurance and non-insurance subsidiaries and affiliates.

The insurance subsidiaries and affiliates provide personal and commercial products. The personal products include auto insurance, residential property insurance, and other specialty property-casualty insurance and related services. The commercial products consist of commercial auto insurance, worker's compensation, and other general business and property insurance.

Our vehicle insurance products protect our customers against losses due to physical damage to their motor vehicles, uninsured and underinsured bodily injury, and liability to others for personal injury or property damage arising out of the use of those vehicles. Our residential property insurance products protect our customers against losses due to damages to their structure or possessions within the structure, as well as liability for accidents occurring in the structure or on the property. The worker's compensation offerings are primarily concentrated within the transportation industry, and the general business and property products are primarily for small-businesses. Our non-insurance subsidiaries and affiliates generally support our insurance and investment operations.

We operate our vehicle businesses throughout the United States and our Property business in most U.S. jurisdictions. For additional information regarding our current business and operations, our financial objectives, and risk factors affecting the Company, please refer to our periodic reports that are publicly filed with the SEC.

### **Relationship between Loss Reserving and Pricing Functions**

Loss reserving is an activity that is central to the achievement of our financial and business goals. It involves estimating the magnitude and timing of future claim payments (losses) and the expenses to settle those claims (loss adjustment expenses or LAE) for accidents that have already occurred. These estimates take into account not only claims that are in the process of being settled, but also claims on accidents that have occurred but have not yet been recorded by the Company. The latter is known as Incurred But Not Recorded, or IBNR claims.

Unlike most industries, insurers do not know their costs until well after a sale has been made. Thus, one of the most important functions for an insurance company is setting rates or pricing. The goal of our pricing function is to properly evaluate future risks the Company will assume but has not yet written. Estimates of future claim payments are essential for accurately measuring Progressive's underwriting profit and for determining whether pricing changes are needed to achieve the Company's underwriting target. Reserve estimates that are too low can lead to the conclusion that pricing is adequate when it is not, and additionally, we may experience unprofitable growth. Reserve estimates that are too high may lead to inflated prices, potentially limiting our ability to attract and retain customers.

Our product-focused business units continue to seek ways to advance the science of rate-making to achieve accurate cost-based pricing at the most detailed level our data will support. This allows us to more accurately match our rates with expected loss costs by risk classification.

The role of the pricing function is to determine rates that are adequate to achieve our profitability goals without being excessive or unfairly discriminatory to consumers. The Pricing Group develops their own projections of ultimate losses for the purposes of ratemaking. The Loss

Reserving Group's projections of ultimate losses may also be considered by the Pricing Group when they are generating these projections. Although the pricing function is very different from the loss reserving function, the data used is consistent between the functions. The Loss Reserving Group may share a wide range of information with the Pricing Group, including:

- Overall changes in the level of reserves by type of reserve
- History of claim development and selected ultimate losses by accident period
- Changes in selected ultimate loss amounts over time
- Selected severity by historical accident period and resulting trends
- Selected frequency by historical accident period and resulting trends
- Changes in actuarially determined case average reserves by age
- Changes in the level of average adjuster case reserve estimates
- Changes in claim closure rates
- Changes in the closed without payment (CWP) rate

Judgments made by both the Loss Reserving and Pricing Groups consider additional information. Growth and process changes may cause claims to settle faster or slower than previous experience. Changes to regulatory requirements made by state insurance departments, as well as changes in the mix of business and in the underwriting process, may also contribute to unexpected changes in the data.

Trend selections have a significant impact on how much the rates will change. Changes in the average cost of a claim (severity trend), in the proportion of insured cars or policies that have a claim (frequency trend), and in average premium (premium trend) are analyzed and selected to accurately price for the future.

The Loss Reserving Group meets regularly with the Product Management Group, Pricing Group and Claims Group to discuss these trends.

## **Section II – Overall Loss Reserving Goal, Key Definitions and Types of Reserves**

In order to understand Progressive's Reserving Practices, it is important to have an understanding of our overall goal and several definitions regarding the various types of reserves. Additional definitions can be found in our Glossary in Section V.

### **Definition and Stated Goals**

Reserves are liabilities established on our Generally Accepted Accounting Principles (GAAP) balance sheet as of a specific accounting date. They are estimates of the unpaid portion of what we ultimately expect to pay out on claims for insured events that occurred prior to the end of any given accounting period, regardless of whether or not those claims have been reported to and recorded by Progressive. These estimates are reported net of anticipated amounts recoverable from salvage and subrogation. Loss reserves are our best estimate of future payments to claimants, while LAE reserves are the estimated future expense payments related to claims settlement. The types of reserves are explained below.

We estimate the needed reserves based on facts and circumstances known at the time the loss and LAE costs are evaluated. There is inherent uncertainty in the process of establishing property and casualty loss and LAE reserves. This uncertainty can be compounded when there are changes in the Company's mix of business (by state, policy limit or deductible, etc.), changes in claims staffing and processes, general price increases (repairs, medical, etc.), changes in state legal and regulatory environments, unexpected judicial decisions regarding lawsuits, legal interpretation of insurance policy provisions, among other possible reasons.

**Progressive's goal is to ensure that total reserves are adequate to cover all loss and LAE costs while sustaining minimal variation from the time reserves are initially established until final settlement.**

The Corporate Actuary is responsible for the adequacy and accuracy of the reserves. The Loss Reserving Group reports to the Corporate Actuary and is part of the Corporate Finance department. The Loss Reserving Group works closely with Product Management, Pricing, and Claims to fully understand the underlying data used in our reviews. The Corporate Actuary uses this information to make reserving decisions independent of these business groups.

In order to make more accurate estimates, we divide our book of business into smaller groups of data known as segments. A segment is generally defined as a state, product, and coverage grouping with reasonably similar loss characteristics.

We separate reserves into two categories: loss and LAE. While each of these two reserve categories are reported in aggregate on the GAAP balance sheet, when we analyze the loss reserves, we further break them into two distinct types: Case and IBNR. There are also two categories of LAE: Defense and Cost Containment (DCC), and Adjusting and all Other (A&O) expenses. Loss Case reserves make up the majority of our total carried net reserves. Below, we discuss these reserve types and how we evaluate them.



## **Loss Reserves**

In general, we rely upon the fundamentals of the Chain-Ladder methodology to evaluate our total indicated loss reserve need by sorting and analyzing claims by accident date. This analysis is discussed in further detail in the Estimating Ultimate Losses section of this report.

## **Case Reserves**

Case reserves are estimates of amounts required to pay claims that have already been reported and recorded in Progressive's systems, but have not yet been fully paid. We evaluate our indicated case reserve need by sorting and analyzing claims by record date (the date the claim was recorded by the Company) and projecting to ultimate value through the use of the Chain-Ladder methodology.

For each open claim, the Company carries a financial case reserve on its books. The financial case reserve is either an **average reserve**, determined by the Loss Reserving group or the **adjuster reserve**, which is the assigned adjuster's estimate of the remaining cost for the claim. Whether a claim receives the average reserve or the adjuster reserve is determined largely by the circumstances encompassing the claim. At some point, the adjuster information is more valuable than statistical averages.

**Average Reserves:** The Loss Reserve group determines the average reserve, which vary by segment, for claims which we feel have a more predictable level of severity based upon key predictor variables. The key predictor variables are leveraged to compute the average reserve.

**Adjuster Reserves:** Our claims adjusters will often estimate the ultimate loss on a given claim. We call this estimate the **adjuster reserve**.

When a claim is first recorded by the Company, there may not be enough known about the claim for an adjuster to determine its cost. The use of average reserves allows claims personnel to concentrate their efforts on adjusting claims rather than accounting for them. Also, average reserves are not as affected by changes in claims processes, and they provide more accurate financial reporting in aggregate.

In the months that a segment is not reviewed, an inflation factor is applied to the average reserves to keep up with changing costs between reviews. The inflation factor is generally based upon a projected severity trend from our analysis.

For a given claim, the financial reserve is not static. As new information is made available, or previously determined information changes and is updated, the financial case reserves will generally adjust. For example, the age of a claim is defined as the length of time from the accident date to the current accounting date. In certain coverages, such as Bodily Injury, more severe claims tend to remain open longer than less severe claims and tend to be more expensive due to litigation, medical treatments, and other associated costs. In order to recognize this cost differential, the average reserve generally increases as the claim ages for such coverages.

## **Incurred But Not Recorded (IBNR) Reserves**

We establish a reserve for claims that have occurred but have not been reported by the claimants or recorded by the Company as of the accounting date. IBNR claims are sorted and analyzed by accident date and projected to ultimate through the use of the Chain-Ladder methodology.

There are a myriad of reasons as to why a claim may not be reported within the same accounting period of the accident. For example, it may take some time for the claimant to accurately assess

the monetary costs associated with the claim, thereby delaying the reporting process. Regardless, IBNR reserves are estimates of the amounts needed to pay these claims.

The IBNR reserve need is usually evaluated by a segmentation process similar to the process used for case reserves. Unlike case reserves, IBNR reserves are booked proportionally to earned premium in an effort to capture the relationship between IBNR claims and earned premium. Earned premium largely represents the size and cost of the business. In the long-term, the size and cost of the business should be indicative of IBNR claims.

### **Loss Adjustment Expense (LAE) Reserves**

In addition to loss payments (which indemnify claimants), the Company incurs expenses in the process of settling claims. Therefore, we need to establish a reserve liability to cover estimated LAE to be paid as loss reserves develop to closure. The two categories of LAE are DCC and A&O, which are defined<sup>1</sup> as follows:

***Defense and Cost Containment (DCC)*** includes all defense, litigation, and medical cost containment expenses, including in-house counsel.

***Adjusting & all Other Expense (A&O)*** includes all other claims adjusting expenses, whether internal or external to the Company. A&O consists of fees, salaries and overhead expenses of those employees involved in a claim adjusting function, as well as other related expenses incurred in determination of coverage.

Similar to loss reserves, we carry case reserves for DCC and A&O expenses by applying selected averages to each open claim. The case reserves will be a combination of statistical averages and adjuster estimates. Similar to loss IBNR reserves, carried DCC IBNR, and A&O IBNR are calculated as a percentage of earned premium for each respective segment for similar reasons.

Analysis of needed DCC and A&O expense reserves are performed independently.

We evaluate the DCC reserve need by sorting and analyzing these expenses by accident date, similar to how we review the needed loss reserves.

We evaluate our A&O reserve need by taking A&O charges to date and allocating them across states, products, coverages, and claim age. Based on this allocation, we are able to utilize the fundamentals of the Chain-Ladder methodology on an accident period basis.

### **Involuntary Market Operating Loss Reserves**

Progressive is required by the laws of most states to participate in involuntary market plans. Below we discuss the two major types of involuntary market plans in which we participate.

***Private Passenger Assigned Risk Plans:*** Certain state insurance regulations require us to participate in various assigned risk plans. Applicants who cannot obtain insurance in the voluntary market are assigned to insurers in proportion to the volume of written exposures or vehicles each insurer writes in that state. Historical data indicates an operating loss is to be expected on these assignments. Participation requirements in assigned risk plans differ from state to state. Reserves

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<sup>1</sup> The definitions are consistent with those prescribed by the NAIC under the Statutory Accounting Regulations

are established for these expected operating losses based on our current written exposures. Since the plans assign business to policy years two years in the future based on our current writings, we carry the reserves until we are actually assigned the risks.

The carried reserves for assigned risk plans represent a small percentage of our total net carried reserves. However, since this is a unique type of exposure, we evaluate it separately.

The process of determining the assigned risk reserve for a state is as follows:

- Determine Progressive's estimated portion of the assigned risk pool by multiplying our projected market share by the estimated future size of the assigned risk pool in that state
- Reduce this by any credits a state may allow such as voluntarily writing risks that generally populate the plans in a higher portion than in the general market
- Estimate the operating loss that we expect to incur from this business
- Factor in the impact when excess credits are sold to competitors along with charges from Limited Assigned Distribution (LAD) carriers when such agreements are in force

**Commercial Auto Insurance Procedure (CAIP):** In most states, Progressive is also required to share in the operating results of the involuntary CAIP plan. Due to the more complex nature of commercial business, these plans do not assign policies to specific insurance companies. Instead, Progressive services the business, but generally does not bear underwriting risk. Progressive transfers the insurance risk, or cedes 100% of the business, to the state pools. These pools then retrocede the loss experience of the plan to all companies in proportion to their respective shares of the commercial automobile voluntary market for the respective state.

### **Other Considerations to Reserves**

**Salvage and Subrogation:** GAAP requires loss reserves to be stated net of anticipated salvage and subrogation recoveries. Statutory Accounting Principles (SAP), which are mandated by state insurance departments or regulators, allows but does not require that reserves be reduced by the expected recovery amounts. We generally report our SAP loss reserves net of anticipated salvage and subrogation recoveries.

**Salvage:** Progressive generally assumes the title to a vehicle when it is declared a total loss. We may then sell the vehicle to a salvage dealer and these proceeds net of expenses are referred to as salvage recovery. Salvage is most relevant in analyzing the needed reserves for Collision claims.

**Subrogation:** When a Progressive policyholder is involved in an accident in which the other party is at fault or partially at fault, he or she may submit the claim to us. When we pay that claim, we obtain our policyholder's right to recover damages from the at-fault party or the at-fault party's insurance company. Subrogation is most relevant for Collision claims (damage to our insureds' vehicles) and Personal Injury Protection (PIP) claims.

As we collect salvage or subrogation from third parties, it reduces our net paid and incurred loss amount for that claim. We analyze our claims data net of these recoveries, so that our estimated ultimate loss amounts are net of anticipated salvage and subrogation. Since most of our recoveries are realized after claims have been closed, we may carry negative IBNR reserves on the Company's books for anticipated future recoverable salvage and subrogation.

**Catastrophes:** The United States does not allow insurance companies to set up reserves for potential catastrophes ahead of time due to accounting and tax principles. An event/storm is declared a catastrophe by an external agency if the industry wide total insured losses will amount

to more than \$25 million. The type of loss will vary depending on the type of event/storm. For example, losses from a hurricane will be different than losses from a hailstorm or a forest fire.

Progressive predicts its total comprehensive losses for a catastrophe by looking at data from prior events. Specifically, we will look at prior events with similar development patterns, frequency, and severity. In addition to relying on historical development models, we may also use external models such as Karen Clark, RMS, and AIR models.

For larger catastrophes or catastrophes that occur close to the end of an accounting period, we often need to put up IBNR reserves to cover the additional amount we think we will need for the total amount of losses. We also know that we will receive some amount of salvage, and we factor this into the projection for total losses.

## **Section III – About Reserves and Development**

In order to measure how well we are achieving our stated goals, we track the development of reserves from the time they are initially recorded until losses are fully developed. In order to understand how reserve development impacts Progressive's financial statements, it is important to understand the difference between calendar period and accident period data.

### **Calendar Period versus Accident Period**

**Accident Period Losses** consist of loss transactions (payments, recoveries, etc.) and reserves for all claims whose occurrence dates fall within a particular period (i.e., the accident period). Accident period results will generally change over time as new claim information continues to emerge and estimates of ultimate loss & LAE are revised. Given the inherent uncertainty in estimating reserves, these changes can persist long after the conclusion of the actual accident period.

**Calendar Period Losses** consist of all loss transactions and reserve changes that occur during a given period of time regardless of when the claims for those transactions occurred. Calendar period results do not change after the end of the period, even as new claim information develops.

Financial statements report data on a calendar period basis. A given calendar period would include paid losses and reserves for claims from the coinciding accident period as well as changes to ultimate loss estimates for claims from all prior accident periods. Therefore, current calendar period results may not provide an accurate picture of the performance of the currently insured business if there is a large impact due to a change in prior accident period estimated ultimate losses.

### **Paid Development Patterns**

Incurred losses consist of payments and reserve changes, so it is important to understand paid development patterns. The longer a claim is expected to stay open (not settled), the more difficult it is to establish an accurate reserve at the time the accident is reported. Since injury claims tend to take longer to settle than property claims, total reserve estimates for injury claims are more sensitive to the uncertainties mentioned above, such as changes in mix of business, inflation, legal, regulatory or judicial issues. As more information is obtained about open claims, the reserves are revised accordingly. However, the ultimate amounts are not known until the claims are settled and paid.

### **Reserve Development**

The ultimate paid losses and loss adjustment expenses may deviate, perhaps substantially, from point-in-time estimates of such losses and expenses, as reflected in the loss reserves included in our financial statements. The actual claims payments in subsequent calendar years may exceed or may be less than the year-end carried loss reserves, causing losses incurred in subsequent calendar years to be higher or lower than anticipated. Changes in the estimated ultimate cost of claims are referred to as development.

There are several ways for reserve development to occur, including:

- Claims settle for more or less than the established reserves for those claims.
- Reserves on open claims transition from the average reserve to the adjuster reserve once it is determined the adjuster reserve is more valuable than the average reserve (or vice versa)
- Average reserves set by Loss Reserving for open (reported) claims change

- Unrecorded claims emerge (i.e., they are recorded after the accounting date) at a rate greater or less than anticipated. This can be due to either or both of the following:
  - The actual number (frequency) of “late reported” claims differs from the estimate
  - The average amount (severity) of these claims differs from the estimate
- Loss Reserving’s estimates of future emergence patterns on unreported claims change
- Salvage and subrogation recoveries are greater or less than anticipated
- Changes in earned premium affect carried IBNR (incurred but not recorded) reserves which are booked as a percentage of earned premium

We make many projections in loss reserve analyses that may change as the claims mature. The least mature claims are those that occurred during the most recent accident year, so the Company believes that the estimated severity for the most recent accident year is more uncertain than older accident years.

For further discussion of the updated financial results and how they are affected by loss and LAE reserves, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the Company’s most recent *Annual Report to Shareholders*, which is attached as an appendix to the Company’s most recent *Proxy Statement*.

Reserve development influences our reported earnings. Reported earnings for any period may be lowered (relative to accidents that occur in that period) when either or both of the following items occur:

- There is unfavorable development of prior accident years during the current period
- Reserves for accidents that occur in the current period are underestimated (i.e., subsequent evaluation shows a higher estimate of ultimate incurred losses)

On the other hand, reported earnings for any period may be increased (relative to accidents that occur in that period) when the opposite of these items occurs.

Exhibit 3 illustrates how reported Earnings Per Share (EPS) is affected by the reserve development on a calendar year basis. This exhibit uses a hypothetical example for the Loss and Loss Adjusting Expense reserve development. For purposes of illustration, assume the number of outstanding shares remains fixed at 600 shares and the corporate tax rate is 21%. In the exhibit below, the Losses and Loss Adjusting Expenses from prior accident years developed favorably by \$403 (\$9,854 - \$10,257 = -\$403 ) in Calendar Year 5. Thus, the Calendar Year 5 Reported EPS is higher than the Year 5 EPS without development due to increased earnings of \$318 after tax. This increased EPS by \$0.53.

<b>Number of Shares: 600</b>					
<b>Corporate Tax Rate: 21%</b>					
<b>For Calendar years ending Dec 31,</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Loss+LAE reserves, net (millions)	\$8,398	\$9,074	\$9,659	\$10,257	\$11,167
Re-estimated reserves after 1-year	\$8,424	\$9,126	\$9,633	\$9,854	\$11,063
Dev on All Prior AYs (Fav) / Unfav	(\$325)	\$26	\$52	(\$26)	(\$403)
Change in Earnings From Development	\$257	(\$21)	(\$41)	\$21	\$318
<u>Change in EPS From Development</u>	0.43	-0.03	-0.07	0.03	0.53

### **External Reporting of Reserve Changes and Reserve Development**

Since reserve changes affect calendar period earnings, our monthly earnings release shows actuarial reserve changes by Personal Lines (Agency and Direct), Commercial Lines, and Property. We also report reserve development monthly, in addition to the quarterly and annual reporting requirements. This information for the current month and year-to-date is included in the "Supplemental Information" section of our monthly earnings release.

Each month, we perform actuarial reviews of the reserves and some reviews result in needed changes to the carried reserves. The total change is reported as Actuarial Adjustments. A reserve decrease is shown as a positive value on the earnings report because it increases our earnings for the reporting period.

The following table gives a hypothetical example, which is independent of the other examples in this report.

<b><u>December Calendar Year 2</u></b>	
(\$ in thousands)	
	<b><u>Total</u></b>
Net Premiums Earned	\$40,000.0
<u>Actuarial Adjustments</u>	
Reserve Decrease/(Increase)	
Prior accident year	\$140.0
Current accident year	<u>(\$20.0)</u>
Calendar year actuarial adjustment	<u>\$120.0</u>
<u>Prior Accident Years Development</u>	
Favorable/(Unfavorable)	
Actuarial adjustment	\$140.0
All other development	<u>(\$180.0)</u>
Total development	<u>(\$40.0)</u>
Calendar year loss/LAE Ratio	<u>73.1</u>
Accident year loss/LAE Ratio	<u>73.0</u>

The table shows that the total loss and LAE reserves decreased by \$120K during the year as a result of regularly scheduled actuarial reviews. Actuarial adjustments increased reserves for the current accident year by \$20K, while reserves for claims in prior accident years were decreased by \$140K. However, this actuarial reserve decrease of \$140K, which applies to claims in prior accident years, represents only one portion of the prior year development.

As stated earlier in this section, favorable or unfavorable development is due to a combination of factors. The favorable actuarial adjustment of \$140K includes changes to averages on open claims and the estimated emergence of claims that were unreported as of prior year-end. The \$180K of unfavorable development on the "All other" line includes claims settling for amounts different from the financial reserves, changes to case reserves, actual emergence of claims that was different than the expected emergence included in IBNR reserves, and salvage and subrogation recoveries greater or less than expected.

In Calendar Year 2, including Actuarial adjustments and all other development, the total prior accident years' development was unfavorable by \$40K. In other words, with updated information

as of December 31, Year 2, the reserves as of December 31, Year 1 should have been \$40K higher than they were.

The \$40K of unfavorable development attributed to prior accident years during Year 2 was included in the calendar results for Year 2. As a result, the calendar year 2 incurred loss and LAE ratio of 73.1% was higher than the accident year 2 incurred loss and LAE ratio of 73.0%. The difference of 0.1 points reflects the \$40K unfavorable development through December 31, Year 2 divided by the net earned premium of \$40 million for the same period.

Reserve changes made as a result of actuarial reviews are intended to keep our current reserve liability as accurate as possible for the segments reviewed. We change the reserves for the reviewed segments based upon current information and our projections of expected future development. This is not the same as the aggregate development of prior year-end reserves.

### **Internal Reporting of Reserve Changes and Reserve Development**

After completing each segment review, Loss Reserving analysts send summaries of the reviews to all affected areas of the Company. Loss Reserving meets with Product Management, Pricing, and Claims to discuss the current change, development, trend, and other issues that were considered in the reserve analysis and exchange information that may be considered in future reviews. The participation of these business units allows Loss Reserving to better understand changes in processes and business operations that may be affecting the underlying data.

The business units are also provided with updated information regarding the impact of prior accident years' development on their current calendar year results. We track the reserve development on prior accident years, which allow us to retrospectively test our prior assumptions and apply that knowledge in future judgments. It also helps the Product Managers to better understand how their calendar year earnings are affected by reserve development.



## **Section IV – Estimating Loss Reserves**

During a reserve review we generally estimate the ultimate loss amounts for the past ten accident years using up to six different projections. The number of accident periods taken into consideration depends upon how long it takes the claim to develop. As a result, the number of accident periods taken into consideration can vary by segment. We may use additional techniques if there are wide variations between the various projections or if underlying process changes make those projections less reliable. To estimate the required reserve balance (i.e., unpaid losses) for the segment, we subtract the payments we have already made on claims from the projected ultimate losses. This results in the indicated reserve level for that method. The indicated reserves across the utilized methods serve as a major component of any actuarial adjustment decisions.

In this section, we discuss segmentation and describe the projections we consider in the review. However, the application of judgment is a key component of our reserve analysis and decisions. This is especially true in dynamic environments such as those we have experienced at Progressive, in which changes in mix of business (e.g., by policy limit and geographic area) can be significant.

### **Segmentation of Reserves for Analysis**

Segments are identified depending on the size and homogeneity of the data, which allow us to review reserve need and provide us with the ability to identify and measure variances and trends in severity and frequency. Our objective is to achieve adequacy in the reserve levels with minimal variation for each segment. This enhances the accuracy of our financial reporting, supports the income statements of our business units, and allows us to make better business decisions.

The projection of frequency for the lines of business we write is usually stable even though actual frequency experienced will tend to vary depending on external factors. Examples include change in the mix of classes of drivers we insure, weather, or economic pressures like the price of gas. The severity experienced by the Company is more difficult to estimate, and it is affected by changes in underlying costs, such as medical costs, jury verdicts, etc. In addition, severity will vary based on the change in the Company's mix of business by policy limit or deductible.

Internal and external considerations are often better understood at the state level rather than at the countrywide level. Internal considerations that are process-related may result from changes in the claims organization's activities, including claim closure rates, the number of claims that are closed without payment, and the level of estimated needed case reserves by claim. External considerations include the litigation environment, regulatory and legislative actions, state-by-state changes in medical costs, and the availability of services to resolve claims.

We regularly look at ways to segment our reviews to add value to our process. Examples of additional value can include enhanced accuracy and information provided to our Product Management and Pricing groups.

For reserve reviews, we generally first segment data by Loss, DCC and A&O; then by Product; and then by Coverage due to different lengths of time to settle claims. We may also group data by distribution channel, regions, states, or territories within a state.

### **Projections of Ultimate Losses**

Our standard procedures are to review the results of the different projections in order to determine if a reserve change is required. Three of the six available projections use paid data, and the other three projections use incurred data (payments plus case reserves).

The six available standard projections to estimate ultimate losses all rely upon the fundamental mechanics from the Chain-Ladder methodology, and are as follows:

1. *Amount Paid*, in which we organize the total loss dollars paid by accident period and age of development into a triangular format and project them to estimated ultimate amounts. We base our selections of future expected loss development largely on the historical development of prior periods.
2. *Average Paid*, in which we organize the paid severity (average amount paid per claim) by accident period and age of development into a triangular format and project the severities to estimated ultimate levels. Ultimate loss amounts are then calculated as the ultimate severities multiplied by the estimated ultimate number of claims to be paid.
3. *Bornhuetter-Ferguson Paid*, which uses the paid loss development pattern to determine the percent unpaid. We apply the percent unpaid to the expected ultimate loss amount to arrive at the expected unpaid amount, which is added to actual losses paid-to-date.
4. *Amount Incurred*, in which we organize the total loss dollars incurred by accident period and age of development into a triangular format and project them to estimated ultimate amounts. We base our future expected loss development largely on the historical development of prior periods.
5. *Average Incurred*, in which we organize the incurred severity (average amount incurred per claim) by accident period and age of development into a triangular format and project the severities to estimated ultimate levels. Ultimate loss amounts are then calculated as the ultimate severities multiplied by the estimated ultimate number of claims to be paid.
6. *Bornhuetter-Ferguson Incurred*, which uses the incurred loss development pattern to determine the percent not yet recorded. We apply the percent unrecorded to the expected ultimate losses to arrive at the expected unrecorded amount, which is added to actual losses incurred-to-date.

The three paid projections – amount paid, average paid, and Bornhuetter-Ferguson paid – all use paid loss data. The paid projections estimate growth and development of claims in an accident period by looking at the paid development of earlier accident periods. This assumes that past paid loss development is a predictor of future paid loss development. The primary strength of using paid data is that it removes the potential for distortions that may be created by including estimated data (i.e., case reserves). The drawback is that it is more difficult to accurately project ultimate losses in the most recent periods under review. For example, with longer-tailed lines of insurance such as Bodily Injury, the early development periods are more volatile because a large proportion of the payments are made later. Accurate paid projections also depend heavily on consistent claims closure or settlement practices. If the closure rate changes, the paid projections could be misleading. In addition, shifts in the mix of business (e.g., changes by policy limit) are not as readily identifiable in the past paid development as in the incurred loss development.

The three incurred projections – amount incurred, average incurred, and Bornhuetter-Ferguson incurred – use paid losses plus adjuster case loss reserves in each accident period. They assume that historical incurred loss development will be predictive of our future incurred loss development. The primary strength of using incurred data is that we can make use of reserve estimates for open claims. Recall that the financial case reserve utilizes adjuster information and historical statistical averages. The incurred methods primarily use the adjuster reserve to remove the bias that may result in using our own statistical estimates of case reserves. The incurred case reserve estimates are based upon the judgment of claims adjusters, in addition to our prior actuarial reviews. This is especially critical when estimating ultimate losses for longer-tailed claims such as Bodily Injury.

The drawback of using incurred data for projection is that it depends heavily on adjusters using consistent reserving practices, which can vary over time.

We study changes in closure rates and average adjuster reserve levels through our segmentation of data and also through discussions with management. When we believe these changes are present, we consider and potentially adjust for them in our projections of losses.

## **Section V – Glossary of Terms**

**Accident Period Losses:** Losses for each accident are assigned to the period in which the accident occurred. Accident periods used in our analysis are generally three months (accident quarter), six months (accident semester), or twelve months (accident year). Payments and reserve changes, regardless of when they are made, are assigned to that same period in which the accident occurred. Therefore, accident period results will change over time as the losses develop and unreported losses become known.

**Adjusting & All Other Expense (A&O):** A component of loss adjustment expense. A&O expenses include all claims adjusting expenses (whether internal or external to the Company) that are not included in Defense and Cost Containment (DCC). This category includes fees and salaries of those involved in a claim's adjusting function, and other related expenses incurred in determination of coverage. Adjusting and Other expense reserves are a bulk reserve, meaning they are not attributable to any specific claim. A&O is sometimes called "AOE" outside of Progressive.

**Assigned Risk:** People unable to obtain auto insurance in the voluntary market apply for coverage in the state automobile plan. In most cases, the insurance coverage is not actually provided by the state but instead is "assigned" to an insurance company. Each insurance company is required in most states to accept a share of these risks proportionate to its volume of business in any given state.

**Bodily Injury (BI) Liability Coverage:** Covers legal liability arising from an insured who causes injury or death to another person while using the insured vehicle. In most states, this is a mandatory coverage. Each state mandates a minimum required limit. BI coverage pays when our insured is liable for an accident in which another party is injured.

**Bornhuetter-Ferguson Method:** The "BF" method is an actuarial methodology that calculates the projected ultimate losses using a blend of a pure incurred or paid development method and an expected loss ratio (or expected pure premium) method.

**Calendar Period Losses:** Payments and reserve changes which are recorded in the Company's financial system during the period in question, without regard to the period in which the accident occurred or was recorded. Calendar period results do not change after the end of the period, even as new claim information develops.

**Case Reserves:** Estimates of amounts required to settle claims that have already been recorded but have not yet been closed. Case reserves represent the largest portion of the reserves for automobile insurance products. The case reserves carried on the Company's financial records are called the **financial case reserves**.

- **Adjuster Reserves:** The claims adjuster's best estimate of how much a specific claim will cost (or the average reserve, if the claims adjuster does not make an estimate).
- **Average Reserves:** The Loss Reserve group determines the average reserve for claims which we feel have a more predictable level of severity based upon key predictor variables. The key predictor variables are leveraged to compute the average reserve.
- **Financial Case Reserve:** The reserve carried on the books for an open claim. This financial reserve utilizes both the average reserve and the adjuster estimate. When it is determined that the adjuster estimate is more valuable based upon the circumstances of the claim, the adjuster estimate is used as the financial case reserve. This, of course, assumes an adjuster estimate exists. In all other cases, the average reserve is used.

**Catastrophe:** A term applied to an incident, storm or series of related incidents resulting in a significant number of claims with a combined cost totaling more than \$25 million in property damage for the insurance industry.

**Cede:** To transfer liability, or a portion of it, in connection with a risk from the original or primary insurer to a reinsurance entity (e.g. a reinsurance company or Joint Underwriting Association).

**Chain-Ladder Methodology:** A long established actuarial methodology for projecting ultimate losses. The method is largely utilized to project ultimate losses, though it is not limited to the projection of losses. This method relies on triangles to sort and analyze loss development on the assumption that past loss development is indicative of future loss development.

**Claim:** A demand for payment by an insured or an alleged third party under the terms and conditions of an insurance contract.

**Claimant:** Usually refers to one who makes a claim.

**Closed Without Payment (CWP):** A claim that was reported, but was determined to not require a payment, and is now closed. Note that there can be loss adjustment expenses for a CWP claim.

**Closure Rate:** The number of claims from a specific accident period which are closed with payment at a specific evaluation date, divided by the estimated ultimate number of claims to be paid for that accident period.

**Collision Coverage:** A coverage of the automobile insurance policy that indemnifies the insured when his/her automobile is damaged due to physical contact with another object (except a bird or animal), or due to upset (e.g., overturning).

**Combined Ratio:** The sum of the loss and loss adjustment expense ratio and the expense ratio. This represents the percentage of each premium dollar an insurer spends on claims and expenses. A combined ratio less than 100% indicates an underwriting profit, while a combined ratio in excess of 100% indicates an underwriting loss.

**Comprehensive Coverage:** A coverage of the automobile insurance policy that pays for damages to the insured's vehicle due to any covered causes of loss that aren't collision. Examples include damage due to fire, windstorm, hail, theft, falling objects, explosion, riot, glass breakage and other causes of loss.

**Credibility:** A statistical measure of the ability to infer generalizations from a data sample. Credibility increases as sample size increases or variability within the sample decreases.

**Defense and Cost Containment (DCC) Expense:** A component of loss adjustment expense. DCC includes expenses related to defense, litigation and medical cost containment whether internal or external to the Company. DCC expenses include but are not limited to accident investigation, surveillance, litigation management, and fees of attorneys and others if working in defense of a claim.

**Development:** Change in the estimated or actual losses or reserves over subsequent evaluations. When compared to expectations or prior estimates, it is referred to as either favorable or unfavorable development, based on whether the estimate has decreased or increased.

**Earned Car Year:** An exposure unit that is the basic rating unit underlying an auto insurance premium. One automobile insured for a period of twelve months is one earned car year.

**Earned Premium:** That part of the premium proportional to the segment of time a policy has been in force. It is the premium for protection actually provided during the experience period.

**Emergence:** Generally used in the context of IBNR reserves, it refers to the recording of claims (or dollar amount of the claims) after the date of the accident, usually into at least the next quarterly or annual period. For example, if an accident occurred in October 2012 and it was recorded in February 2014. In this case, we say it emerged in the first quarter of 2014.

**Expense Ratio:** The sum of all underwriting and operational expenses divided by premium. These expenses include such items as commission, acquisition expenses, general expenses, and taxes, but not LAE.

**Exposure:** A measure of the risk of loss and the basic rating unit underlying an insurance premium. The unit of exposure will vary based upon the characteristics of the insurance coverage involved. For automobile insurance, one automobile insured for a period of twelve months is one earned car year or one exposure.

**Feature:** The smallest divisible part of a claim. This is a loss on one coverage for one person or one property. Often a claim will involve multiple features. It can involve multiple coverages, such as Bodily Injury (BI), property damage (PD), and Collision; and/or it can involve multiple claimants for the same coverage (e.g., two injured parties).

While "Claim" and "feature" are technically different, they are often used interchangeably depending on context. They are used interchangeably in this report.

**Frequency:** Number of claims divided by exposure count. If one exposure is defined as one earned car year, then frequency is a measure of the proportion of insureds that have a claim in a year.

**Incurred But Not Recorded (IBNR) reserves:** These are estimates at a given evaluation date of amounts that will be needed to settle claims that have already occurred but have not yet been recorded by the Company.

**Incurred Losses:** The sum of payments and case reserves.

**Indication:** An actuarial estimate, based upon analysis of the data.

**Loss Adjustment Expenses (LAE):** Expenses related to claim settlement.  
Total Loss Adjustment Expenses (LAE) =  
[Defense and Cost Containment (DCC) expenses] + [Adjusting & Other (A&O) expenses]

**Loss Adjustment Expenses (LAE) ratio:** LAE expenses divided by earned premium.

**Loss Ratio (Incurred Loss Ratio):** Incurred losses divided by earned premium.

**Net Loss Reserves:** Net indicates that we have deducted the expected reinsurance recoverable from the sum of case and IBNR reserves. It may also refer to reserves that have been reduced for expected salvage and subrogation recoveries.

**No-Fault Insurance:** A type of insurance contract under which an insured is indemnified for losses by their own insurer, regardless of fault in the accident generating the loss, and limited in the right to seek recovery through the civil-justice system for losses caused by other parties.

**Paid Losses:** Payments for claims.

**Parameters:** Variables that determine the characteristics or behavior of a statistical model and can be estimated by calculations from sample data. For example, the parameters of frequency and severity are estimated in the loss reserve analysis model.

**Personal Injury Protection (PIP) Coverage:** Coverage in which an insurer pays, within specified limits, the medical and funeral expenses, work loss benefits and essential services of the insured, others in his vehicles and pedestrians struck by him. The basic coverage is implemented under no-fault automobile statutes, which vary by state.

**Physical Damage:** Damage to the insured vehicle, which includes the comprehensive and collision coverages.

**Property Damage (PD) Coverage:** A coverage that pays the legal liability of the policyholder for damage to, or destruction of, property of others in an auto accident, including damage to other vehicles and structures such as buildings, telephone poles and fences.

**Pure Premium:** Loss dollars divided by exposure count. Pure premium is also equal to frequency times severity. The pure premium is equivalent to the loss component of the full policy premium.

**Record Period Losses:** Losses are assigned to the period in which the accident is recorded on the Company's financial records. Payments and reserve changes, regardless of when they are made, are assigned to that same period in which the accident was recorded. As a result, record period results will change over time as the losses develop, i.e., as the estimates of losses change due to payments and reserve changes for all accidents that were recorded during that period.

**Reopened Claim:** A claim that was closed (with or without payment) but opened again at a later date due to the discovery of additional information. We reserve for future reopened claims in the IBNR reserves.

**Reserves:** Estimates of the unpaid portion of what the Company ultimately expects to pay out for losses and loss adjustment expenses on claims that occurred by the accounting date, whether or not those claims have been reported to the Company. Total reserves are the sum of Case and IBNR reserves.

**Salvage:** The residual value of property in which an insurance company secures an ownership interest as a result of paying a claim for a total loss, when the damage exceeded the value of the vehicle before the loss occurred. Anticipated salvage on closed claims is included as negative IBNR reserves.

**Segment (Loss Reserving Segment):** Generally, a state/product/coverage combination with reasonably similar loss characteristics that is grouped together when assessing reserve adequacy.

**Severity:** Loss dollars divided by number of claims This indicates the dollar amount of the average feature.

**Subrogation:** An insurance company, upon payment of a loss to the insured, is entitled to the insured's legal rights against third parties. These rights are only those related to the loss, and the company is only entitled to the extent of the loss payment. Reserves for the future recoveries we expect to recover through subrogation may be included as negative IBNR reserves.

**Triangle:** The triangle is a tool used by actuaries to show how data has changed over time and to project ultimate values. Usually, the evaluation periods are columns organized from left to right, and the data periods are rows organized from top to bottom. The oldest data periods have been evaluated several times, while the more recent data periods have been evaluated the least number of times. Thus, the historical data forms a triangular shape.

**Ultimate:** The final selected value that we estimate by analyzing the data. For example, the selected ultimate loss amount for an accident period represents our estimate of the total cost of all claims for that accident period after they have all been paid and closed.

**Uninsured/Underinsured Motorist (UM or UMBI) Coverage:** Uninsured Motorist coverage pays our policy holder in the event of an accident caused by a driver who does not have liability insurance or does not have sufficient liability insurance to pay damages. Coverage requirements vary by state.

**Utilization (DCC Utilization):** Percentage of features for which we incur expenses for defense and cost containment.

**Written Premium:** The total amount charged to an insured for a policy during its full policy period.



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