NCRB-NCRF-NCIGA
north carolina
RATE BUREAU
REINSURANCE FACILITY
INSURANCE GUARANTY ASSOCIATION

August 30, 2013

The Honorable Wayne Goodwin
Commissioner
North Carolina Dept. of Insurance
P. O. Box 26387
Raleigh, NC 27611

Re: Workers Compensation Insurance
2013 Residual Market Rate Filing

Dear Commissioner Goodwin:

Pursuant to the provisions of Article 36, Chapter 58 of the General Statutes of North Carolina, enclosed is the filing for residual market workers compensation insurance rates, rating values and miscellaneous values to become effective in accordance with the following rule of application:

> Revised residual market rates shall become effective as of April 1, 2014 and shall be applied to all residual market policies as of the first normal anniversary rating date which is on or after April 1, 2014, but shall not otherwise be available to outstanding policies. No policy may be canceled and rewritten to take advantage of or to avoid the application of this rule.

The enclosed memoranda, exhibits, testimony and other supporting data explain the calculations supporting the Loss Cost Multiplier; this filing makes reference to the August 31, 2013 Loss Cost Filing for the voluntary market to support the change in Loss Costs. Combined, the two filings support an average increase in the overall premium for residual market workers compensation insurance of 9.0%.

This premium level change includes a 0.3% increase in loss costs detailed in the 2013 loss cost filing and an 8.7% increase in the loss cost multiplier detailed in this filing.

By industry group, the changes are: Manufacturing, 8.9% increase; Contracting, 6.5% increase; Office and Clerical, 7.7% increase; Goods & Services, 10.2% increase; and Miscellaneous, 10.4% increase. Within each industry group the change will vary from the average by classification depending upon the volume and character of the particular classification experience.

The residual market rates for classifications which contemplate exposure under the United States Longshore and Harbor Workers' Compensation Act ("F" classifications) are also included. This filing proposes a decrease of 3.3% to the overall residual market premium level of the "F" classifications.

The filing proposes no change in the expense constant of $250, the minimum premium multiplier of 200, or the maximum minimum premium of $1,250.

Information and statistical data required pursuant to NCGS §58-36-15 and 11 NCAC 10.1111 are submitted. Additionally, the prefiled testimony of (a) Raymond F. Evans, Jr., CPCU, General Manager - North Carolina Rate Bureau, (b) Jay A. Rosen, FCAS, MAAA - National Council on Compensation Insurance, Inc. (c) Mark Mulvaney, FCAS, MAAA - Milliman, Inc., (d) Dr. James H. Vander Weide - Fuqua School of Business, Duke University and (e) Dr. David Appel – Milliman, Inc. and exhibits referenced therein are enclosed.

As you are likely aware, the North Carolina Industrial Commission has proposed a number of new and revised rules and regulations pertaining to workers compensation insurance in North Carolina, and these proposals are currently in the promulgation process. Once any new rules and regulations are finalized, we will review them

to determine whether they impact the residual market rates and whether a separate filing to reflect any such impact is required.

Sincerely,

Raymond F. Evans, Jr., CPCU
General Manager

RFE:dms
Enclosures

NORTH CAROLINA - ASSIGNED RISK

SUMMARY

Proposed Effective Date April 1, 2014

I. Industrial Classifications

Overall Proposed Change in Rate Level

- New and Renewal Policies +9.0%

By Industry Group

Manufacturing	+8.9%
Contracting	+6.5%
Office and Clerical	+7.7%
Goods and Services	+10.2%
Miscellaneous	+10.4%
Overall	+9.0%

II. Federal Classifications

Overall Proposed Change in Rate Level

- New and Renewal Policies -3.3%

III. Summary of Miscellaneous Changes	Current	Proposed
A. USL&HW %	90%	92%
B. Minimum Premium Multiplier	200	200
C. Maximum Minimum Premium	$1,250	$1,250

NORTH CAROLINA - ASSIGNED RISK

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*Sections incorporated by reference to the Loss Cost Filing submitted 8/30/2013

NORTH CAROLINA

EXHIBIT I

Determination of Indicated Loss Cost Level Change

Section A - Policy Year 2011 Experience

Premium:

(1)	Standard Earned Premium Developed to Ultimate (Appendix A-II)	$973,627,556
(2)	Premium On-level Factor (Appendix A-I)	0.963
(3)	Premium Available for Benefit Costs = (1) x (2)	$937,603,336

Indemnity Benefit Cost:

(4)	Limited Indemnity Losses Developed to Ultimate (Appendix A-II)	$425,002,230
(5)	Indemnity Loss On-level Factor (Appendix A-I)	0.998
(6)	Factor to Include Loss Adjustment Expense (Exhibit II)	1.165
(7)	Composite Adjustment Factor = (5) x (6)	1.163
(8)	Adjusted Limited Indemnity Losses = (4) x (7)	$494,277,593
(9)	Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (8) / (3)	0.527
(10)	Factor to Reflect Indemnity Trend (Appendix A-III)	0.983
(11)	Projected Limited Indemnity Cost Ratio = (9) x (10)	0.518
(12)	Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II)	1.009
(13)	Projected Indemnity Cost Ratio = (11) x (12)	0.523
(14)	Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C)	1.005
(15)	Projected Indemnity Cost Ratio including Benefit Changes = (13) x (14)	0.526

Medical Benefit Cost:

(16)	Limited Medical Losses Developed to Ultimate (Appendix A-II)	$399,168,613
(17)	Medical Loss On-level Factor (Appendix A-I)	0.999
(18)	Factor to Include Loss Adjustment Expense (Exhibit II)	1.165
(19)	Composite Adjustment Factor = (17) x (18)	1.164
(20)	Adjusted Limited Medical Losses = (16) x (19)	$464,632,266
(21)	Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (20) / (3)	0.496
(22)	Factor to Reflect Medical Trend (Appendix A-III)	1.000
(23)	Projected Limited Medical Cost Ratio = (21) x (22)	0.496
(24)	Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II)	1.009
(25)	Projected Medical Cost Ratio = (23) x (24)	0.500
(26)	Factor to Reflect Proposed Changes in Medical Benefits (Appendix C)	0.981
(27)	Projected Medical Cost Ratio including Benefit Changes = (25) x (26)	0.491

Total Benefit Cost:

(28)	PY 2011 Indicated Change Based on Experience, Trend and Benefits = (15) + (27)	1.017

NORTH CAROLINA

EXHIBIT I

Determination of Indicated Loss Cost Level Change

Section B - Policy Year 2010 Experience

Premium:

(1)	Standard Earned Premium Developed to Ultimate (Appendix A-II)	$962,023,964
(2)	Premium On-level Factor (Appendix A-I)	0.934
(3)	Premium Available for Benefit Costs = (1) x (2)	$898,530,382

Indemnity Benefit Cost:

(4)	Limited Indemnity Losses Developed to Ultimate (Appendix A-II)	$411,497,721
(5)	Indemnity Loss On-level Factor (Appendix A-I)	0.985
(6)	Factor to Include Loss Adjustment Expense (Exhibit II)	1.165
(7)	Composite Adjustment Factor = (5) x (6)	1.148
(8)	Adjusted Limited Indemnity Losses = (4) x (7)	$472,399,384
(9)	Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (8) / (3)	0.526
(10)	Factor to Reflect Indemnity Trend (Appendix A-III)	0.979
(11)	Projected Limited Indemnity Cost Ratio = (9) x (10)	0.515
(12)	Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II)	1.009
(13)	Projected Indemnity Cost Ratio = (11) x (12)	0.520
(14)	Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C)	1.005
(15)	Projected Indemnity Cost Ratio including Benefit Changes = (13) x (14)	0.523

Medical Benefit Cost:

(16)	Limited Medical Losses Developed to Ultimate (Appendix A-II)	$364,328,063
(17)	Medical Loss On-level Factor (Appendix A-I)	0.994
(18)	Factor to Include Loss Adjustment Expense (Exhibit II)	1.165
(19)	Composite Adjustment Factor = (17) x (18)	1.158
(20)	Adjusted Limited Medical Losses = (16) x (19)	$421,891,897
(21)	Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (20) / (3)	0.470
(22)	Factor to Reflect Medical Trend (Appendix A-III)	1.000
(23)	Projected Limited Medical Cost Ratio = (21) x (22)	0.470
(24)	Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II)	1.009
(25)	Projected Medical Cost Ratio = (23) x (24)	0.474
(26)	Factor to Reflect Proposed Changes in Medical Benefits (Appendix C)	0.981
(27)	Projected Medical Cost Ratio including Benefit Changes = (25) x (26)	0.465

Total Benefit Cost:

(28)	PY 2010 Indicated Change Based on Experience, Trend and Benefits = (15) + (27)	0.988

NORTH CAROLINA

EXHIBIT I

Determination of Indicated Rate Level Change

Section C - Indicated Change Based on Experience, Trend and Benefits

(1) Policy Year 2011 Indicated Change Based on Experience, Trend, and Benefits	1.017	(+1.7%)
(2) Policy Year 2010 Indicated Change Based on Experience, Trend, and Benefits	0.988	(-1.2%)
(3) Indicated Change Based on Experience, Trend and Benefits = [(1)+(2)] / 2	1.003	(+0.3%)

Section D - Application of the Proposed Change in the Loss Cost Multiplier

(1) Indicated Loss Cost Level Change	1.003	(+0.3%)
(2) Proposed Change in the Assigned Risk Loss Cost Multiplier = [Exhibit I-A, Sheet 1, Line (9) / Exhibit I-A, Sheet 2, Line (9)]	1.087	(+8.7%)
(3) Indicated Assigned Risk Rate Level Change = (1) x (2)	1.090	(+9.0%)

Section E - Distribution of Overall Rate Level Change to Industry Groups

Industry Group Differentials (Appendix A-V):

Manufacturing	0.999
Contracting	0.977
Office & Clerical	0.988
Goods & Services	1.011
Miscellaneous	1.013

Applying these industry group differentials to the final overall rate level change produces the changes in rate level proposed for each group as shown:

Industry Group	(1) Final Overall Rate Level Change	(2) Industry Group Differential	(3) = (1) x (2) Final Rate Level Change by Industry Group	
Manufacturing	1.090	0.999	1.089	(+8.9%)
Contracting	1.090	0.977	1.065	(+6.5%)
Office & Clerical	1.090	0.988	1.077	(+7.7%)
Goods & Services	1.090	1.011	1.102	(+10.2%)
Miscellaneous	1.090	1.013	1.104	(+10.4%)
Overall	1.090	1.000	1.090	(+9.0%)

North Carolina Department of Insurance

Summary of Supporting Information Form
Calculation of INDICATED Assigned Risk Loss Cost Multiplier
Effective April 1, 2014

1.	Does this filing apply uniformly to all workers compensation classes? (If no, identify exception and provide justification for variations.)	Yes	
2.	Loss Cost Modification:		
	A. The insurer hereby files to adopt the prospective loss costs in the North Carolina Rate Bureau reference filing (Check one):		
	☐ Without modification (factor = 1.000)		
	☒ With the following modification(s): 1.401 (see attached) Cite the nature and percent modification. Attach supporting data and/or rationale for the modification(s).	Filed	
	B. Loss Cost Modification Factor:	1.401	See Exhibit I-A, Sheet 3
	Example (i): If your loss cost modification is -10%, the factor is .90 (1.00 - .10). Example (ii): If your loss cost modification is +15%, the factor is 1.15 (1.00 + .15).		
3.	Selected Expenses: (Attach Expense Provisions Exhibit)		See Exhibit II
	A. Commission and Brokerage	5.0%	
	B. Other Acquisition	23.9%	
	C. General Expenses	Incl. in B	
	D. Taxes, Licenses, Fees & Loss Based Assessments	2.95%	
	E. Profit, Contingencies and Investment Income	9.0%	
	F. Uncollectible Premium Provision	9.3%	
	G. Total (A + B + C + D + E + F)	50.2%	
4.	Development of Expected Loss & Loss Adjustment Expense (Target Cost) Ratio: (Expressed in decimal form: 1.000 - 3G)	0.498	
5.	Overall impact of expense constant & minimum premiums: (Expressed in decimal form: i.e., 1.2% overall impact would be 1.012)	1.184	See Exhibit II
6.	Overall impact of size-of-risk discounts plus expense gradation recognition in retrospective rating: (Expressed in decimal form: i.e., 8.6% average discount would be 0.914)	1.000	
7.	Provision for loss based assessments	0.000	
8.	Formula Loss Cost Multiplier : 2B x (1.0 - 7) / ((6 - 3G) x 5)	2.376	
9.	Selected Loss Cost Multiplier: (Explain any differences between 8 and 9, other than rounding)	2.376	
10.	Rate Level Changes for the Coverages to which this page applies	9.0%	
11.	Are you amending:		
	the minimum premium formula?	No	
	the expense constant(s) ?	No	
	the premium discount schedules?	No	
	If yes, attach documentation showing (i) premium level impact and (ii) current and proposed minimum premium formula, minimum premium multipliers, maximum minimum premiums, expense constants and/or premium discount schedules.		

North Carolina Department of Insurance

Summary of Supporting Information Form
Calculation of CURRENT Assigned Risk Loss Cost Multiplier
Effective April 1, 2013

1. Does this filing apply uniformly to all workers compensation classes?
   (If no, identify exception and provide justification for variations.)

2. Loss Cost Modification:

   A. The insurer hereby files to adopt the prospective loss costs in the North Carolina Rate Bureau reference filing (Check one):

   ☐ Without modification (factor = 1.000)

   ☒ With the following modification(s): 1.368
   Cite the nature and percent modification. Attach supporting data and/or rationale for the modification(s).

   B. Loss Cost Modification Factor: 1.368

   Example (i): If your loss cost modification is -10%, the factor is .90 (1.00 - .10).
   Example (ii): If your loss cost modification is +15%, the factor is 1.15 (1.00 + .15).

3. Selected Expenses: (Attach Expense Provisions Exhibit)

   A. Commission and Brokerage 5.0%

   B. Other Acquisition 24.3%

   C. General Expenses Incl. in B

   D. Taxes, Licenses, Fees & Loss Based Assessments 2.95%

   E. Profit, Contingencies and Investment Income 8.3%

   F. Uncollectible Premium Provision 9.2%

   G. Total (A + B + C + D + E + F) 49.8%

4. Development of Expected Loss & Loss Adjustment Expense (Target Cost) Ratio: 0.502
   (Expressed in decimal form: 1.000 - 3G)

5. Overall impact of expense constant & minimum premiums: 1.190
   (Expressed in decimal form: i.e., 1.2% overall impact would be 1.012)

6. Overall impact of size-of-risk discounts plus expense gradation recognition in retrospective rating: 1.000
   (Expressed in decimal form: i.e., 8.6% average discount would be 0.914)

7. Provision for premium taxes, licenses, fees and loss based assessments 0.000

8. Formula Loss Cost Multiplier : 2B x (1.0 - 7) / ((6 - 3G) x 5) 2.290

9. Selected Lost Cost Multiplier 2.186

North Carolina - Assigned Risk

Calculation of Loss Cost Modification Factor

1.	Current Assigned Risk Differential	1.539
2.	Proposed Change in Assigned Risk Differential (See Exh. II-E, Sheet 1)	1.026
3.	Proposed Assigned Risk Differential (1) x (2)	1.579
4.	Factor to Adjust Loss Costs to Avoid Double Counting Servicing Carrier LAE (See Exhibit II-A, Sheet 3)	0.887
5.	Loss Cost Modification Factor (3) x (4)	1.401

North Carolina - Assigned Risk

Summary of Expense Provisions

1. Standard Assigned Risk Commission and Brokerage (Res. Mkt. Plan Admin Rules)		5.0%
2. Loss Adjustment Expense (included in Loss Costs) (See Exhibit II-A, Sheet 1)		16.5%
Factor to adjust loss costs to avoid double counting Servicing Carrier LAE (See Exhibit II-A, Sheet 3)	0.887	
3. Other Acquisition, General Expense * (and LAE for Servicing Carriers) (See Exhibit II-B, Sheet 1)		23.9%
4. Uncollectible Premium Provision		9.3%
5. Underwriting Profit and Contingencies		9.0%
a. Underwriting Profit (See Exhibits RB-11 and RB-13)	9.0%	
b. Contingencies	--	
6. Taxes, Licenses, and Fees		
TLF Including Regulatory Surcharge (2.5% x 1.060)		2.65%
Miscellaneous Tax (judgmentally selected)		0.3%
Total Including Miscellaneous Tax		2.95%
7. Effect of Expense Constant and Minimum Premiums (See Exhibit II-D, Sheet 1) (Expense Constant of $250)		18.4%

* Excludes commission and brokerage, taxes, licenses and fees.

North Carolina

Derivation of Loss Adjustment Expense Provision

	COUNTRYWIDE			**NORTH CAROLINA**		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	Accident Year Developed LAE Ratio+	Accident Year Developed DCCE Ratio+	Accident Year Developed AOE Ratio+	Accident Year DCCE Ratio Adjusted to NC Relativity (3) x 0.718^	Accident Year LAE Ratio Adjusted to NC Relativity (4) + (5)	Calendar Year
2008	18.4%	11.3%	7.1%	8.1%	15.2%	16.4%
2009	19.4%	11.7%	7.7%	8.4%	16.1%	17.6%
2010	19.3%	12.0%	7.3%	8.6%	15.9%	18.1%
2011	19.5%	12.5%	7.0%	9.0%	16.0%	16.0%
2012	20.3%	12.9%	7.4%	9.3%	16.7%	16.3%

Current North Carolina Loss Adjustment Expense Provision 16.5%

Selected North Carolina Loss Adjustment Expense Provision 16.5%

+ Source: NCCI Call for Loss Adjustment Expense (See Exhibit RB-4).
^ Exhibit II-A, Sheet 2.

North Carolina

Derivation of North Carolina DCCE relativity

	(1) Calendar Years 2011 and 2012 Paid Losses* ('000s)	(2) Calendar Years 2011 and 2012 Paid DCCE* ('000s)	(3) DCCE Ratio (2)/(1)
(a) North Carolina	$1,637,285	$137,119	8.4%
(b) Countrywide	46,291,273	5,405,938	11.7%

North Carolina DCCE relativity (3a) / (3b)	0.718
Selected DCCE relativity	0.718

* Source: Annual Statement Statutory Page 14 data, excluding state funds, collected and aggregated by NCCI, Inc.

North Carolina - Assigned Risk

Derivation of Loss Adjustment Expense Removal Factor

1.	Selected loss adjustment expense provision (See Exhibit II-A, Sheet 1)	1.165
2.	Servicing carrier 2014 quota (See Exhibit II-B, Sheet 1)	0.7996
3.	Factor to adjust loss costs to avoid double counting servicing carrier LAE [(2) / (1)] + [1.0 - (2)]	0.887

North Carolina - Assigned Risk

Average Expense Provision
Other Acquisition, General Expense and Servicing Carrier LAE

1. Servicing Carriers (See Exhibit II-B, Sheet 2)

    a. Allowance and separate reimbursement (incl. LAE) 27.33%
    b. Quota (100% - 2b) 79.96%

2. Direct Assignment Carriers (See Exhibit II-B, Sheet 2)

    a. Other acquisition and general expense ratio 10.24%
    b. Quota 20.04%

3. Average expense provision, excluding taxes, licenses and fees and loss-based assessments and including servicing carrier LAE 23.9%
    (1a)x(1b) + (2a)x(2b)

North Carolina - Assigned Risk

Expense Ratios for Servicing Carriers

1. Weighted-Average of 1/1/2013 Three-Year Servicing Carrier Allowances* (Includes LAE)	24.99%
2. Pool Administration Expenses (See Exhibit II-C)	2.34%
Total Servicing Carrier Allowance and Separate Reimbursement	27.33%

Expense Ratios for Direct Assignment Carriers^

Calendar Year	Net Earned Premium Std. Basis	Commission & Brokerage	Other Acq. Field Super. Collection	General Expenses	Other Acq. Field Super. & Gen. Exp
2010	$297,798,039	$17,818,690	$13,854,247	$12,266,808	$26,121,055
2011	230,633,291	18,138,172	12,362,308	10,442,966	22,805,274
2012	275,209,866	17,400,351	11,504,789	11,256,649	22,761,438
Total	$803,641,196	$53,357,213	$37,721,344	$33,966,423	$71,687,767

Expense Ratio#	10.24%
Direct Assignment Carriers' Other Acquisition and General Expense Ratio	10.24%
Direct Assignment Carriers' 2014 Quota (See Exhibit II-B, Sheet 1)	20.04%

* Source: North Carolina Rate Bureau. Excludes commission and brokerage, taxes, licenses and fees.
^ Source: Data collected by NCCI, Inc. Based on data from current direct assignment carriers.
# Weighted by individual carrier direct assignment market shares.

North Carolina - Assigned Risk

Pool Expense Provision*

Data Valued as of 12/31/2012

Calendar Year	Gross Written Premium	Administrative Expense	Admin Expenses as a % of GWP
2010	28,209,061	486,545	1.72%
2011	26,656,338	381,012	1.43%
2012	44,339,357	490,408	1.11%
		Selected:	1.42%

Policy Year	Gross Written Premium	"Separately Reimbursable" Expense	Percent of Gross Written Premium
2009	$37,323,582	$505,291	1.35%
2010	27,292,058	292,272	1.07%
2011	30,406,301	101,676	0.33%
		Selected:	0.92%

Selected Pool Expense Provision	2.34%

* Source: Data collected by NCCI, Inc.

North Carolina - Assigned Risk

Effect of Expense Constant and Minimum Premiums

	Policy Year		
	2010	2011	2012
(1) Current Expense Constant (approved effective April 1, 2007)	$250	$250	$250
(2) Standard Premium Excluding Expense Constant Premium*	$24,545,886	$17,236,512	$26,222,855
(3) Standard Premium Excluding Expense Constant Premium and Balance to Minimum Premium = (2) x (1.000 - 0.061)**	23,048,587	16,185,085	24,623,261
(4) Number of Risks*	13,051	7,913	9,271
(5) Premium Generated from Expense Constant and Balance to Minimum Premium = (1) x (4) + (2) - (3)	4,760,049	3,029,677	3,917,344
(6) Effect of Expense Constant and Minimum Premiums = (5) / (3)	0.207	0.187	0.159
(7) Selected Effect of Expense Constant and Minimum Premiums			0.184

* Source: Policy Data collected by NCCI, Inc.
** See Exhibit II-D, Sheet 2, Line 9.

North Carolina - Assigned Risk

Effect of Minimum Premiums

Based on Assigned Risk Market Data*

Current Minimum Premium Program Parameters

(1)	Minimum Premium Multiplier (MPM)		200
(2)	Maximum Minimum Premium (MMP)	$	1,250
(3)	Standard Premium Generated by Current MPM and MMP	$	2,460,739
(4)	Standard Premium Including Additional Premium Generated by Current MPM and MMP	$	40,022,328

Proposed Minimum Premium Program Parameters

(5)	Minimum Premium Multiplier (MPM)		200
(6)	Maximum Minimum Premium (MMP)	$	1,250
(7)	Standard Premium Generated by Proposed MPM and MMP	$	2,460,739
(8)	Standard Premium Including Additional Premium Generated by Proposed MPM and MMP	$	40,022,328
(9)	Impact of Proposed MPM and MMP = (7) / (8)		0.061

* Source: Unit Statistical Data for policies expiring between 2006 and 2010.

North Carolina - Assigned Risk
Indicated Change in the Assigned Risk Differential
Based on Paid Losses

Policy Year	(1) Standard Pure Premium *	(2) Paid Losses **	(3) = (2) / (1) Ratio of Losses to Premium	(4) Indicated Assigned Risk Pure Prem. Diff.^ (Std Basis)
I. Residual Market Experience Valued as of 12/31/2012				
2007	$46,212,535	$66,434,417	1.438	
2008	29,691,121	35,615,273	1.200	
2009	20,745,442	24,218,232	1.167	
2010	16,641,601	22,250,764	1.337	
2011	16,163,484	25,844,178	1.599	
II. Statewide Experience Valued as of 12/31/2012				
2007	$1,002,859,258	$884,377,618	0.882	1.630
2008	930,309,517	800,888,602	0.861	1.394
2009	865,521,176	743,553,470	0.859	1.359
2010	898,779,586	783,587,484	0.872	1.533
2011	938,416,851	829,680,152	0.884	1.809
			Average Differential ^	1.545

(a)	Indicated Differential in Standard Pure Premium Based on Experience	1.545
(b)	Current Impact of Standard Pure Premium Programs@	1.577
(c)	Indicated Change in Assigned Risk Pure Premium Differential Based on Paid Losses = (a) / (b)	0.980
(d)	Indicated Change in Assigned Risk Pure Premium Differential Based on Paid+Case Losses [See Exhibit II-E, Sheet 4, Item (c)]	1.071
(e)	Selected Change in Assigned Risk Pure Premium Differential (Proposed Assigned Risk Pure Premium Differential = 1.579)	1.026

* Developed to fifth report and brought to the 4/1/2013 pure premium level.
** Developed to ultimate and brought to the 1/1/2013 benefit level.
^ This is the indicated pure premium differential based on loss experience, calculated by comparing the ratio of assigned risk losses to premium to the ratio of statewide losses to premium.
@ This is composed of an ARAP impact equal to 2.5% and a differential of 1.539. ARAP impact from Exhibit II-E, Sheet 9.

North Carolina - Assigned Risk

(Residual Market)

Policy Year	(1) Standard Premium*	(2) On-level Factor^	(3) Effect of Current Standard Premium Programs#	(4) = (1) x ((2) / (3)) Stand. Pure Prem. at Current Level
2007	$110,556,304	0.662	1.584	$46,212,535
2008	74,600,806	0.623	1.565	29,691,121
2009	51,993,588	0.626	1.567	20,745,442
2010	41,294,295	0.631	1.564	16,641,601
2011	40,816,879	0.624	1.576	16,163,484

Policy Year	(5) Ind. Losses Paid	(6) Development Factor	(7) On-level Factor^	(8) = ((5) x (6)) x (7) Adjusted Ind. Losses
2007	$28,302,821	1.226	0.997	$34,595,161
2008	14,388,509	1.331	0.993	19,017,047
2009	8,512,328	1.541	0.987	12,946,970
2010	6,485,304	2.043	0.985	13,050,734
2011	2,440,870	4.139	0.998	10,082,555

Policy Year	(9) Med. Losses Paid	(10) Development Factor	(11) On-level Factor^	(12) = ((9) x (10)) x (11) Adjusted Med. Losses
2007	$24,855,583	1.290	0.993	$31,839,256
2008	12,409,230	1.347	0.993	16,598,226
2009	7,943,119	1.429	0.993	11,271,262
2010	5,865,376	1.578	0.994	9,200,030
2011	7,505,899	2.102	0.999	15,761,623

* Developed to a fifth report. See Exhibit II-E, Sheet 7.
^ See Appendix A-I for the derivation of the factors for policy years 2010 and 2011. Factors for the remaining years are calculated in a similar manner.
# This is composed of a differential of 1.539 and year-specific ARAP impacts which are displayed on Exhibit II-E, Sheet 9.

North Carolina - Assigned Risk

(Statewide Market)

Policy Year	(1) Voluntary Standard Premium*	(2) Assigned Risk Standard Premium**	(3) = (1) + (2) Standard Pure Premum On-level
2007	$956,646,723	$46,212,535	$1,002,859,258
2008	900,618,396	29,691,121	930,309,517
2009	844,775,734	20,745,442	865,521,176
2010	882,137,985	16,641,601	898,779,586
2011	922,253,367	16,163,484	938,416,851

Policy Year	(4) Ind. Losses Paid	(5) Development Factor	(6) On-level Factor^	(7) = ((4) x (5)) x (6) Adjusted Ind. Losses
2007	$384,903,745	1.226	0.997	$470,476,315
2008	323,706,753	1.331	0.993	427,837,712
2009	261,893,388	1.541	0.987	398,331,201
2010	206,116,832	2.043	0.985	414,780,238
2011	104,989,179	4.139	0.998	433,681,112

Policy Year	(8) Med. Losses Paid	(9) Development Factor	(10) On-level Factor^	(11) = ((8) x (9)) x (10) Adjusted Med. Losses
2007	$323,115,532	1.290	0.993	$413,901,303
2008	278,901,748	1.347	0.993	373,050,890
2009	243,286,116	1.429	0.993	345,222,269
2010	235,128,927	1.578	0.994	368,807,246
2011	188,580,131	2.102	0.999	395,999,040

* Developed to a fifth report and on current premium level. See Exhibit II-E, Sheet 8.
** Developed to a fifth report and on current premium level. See Exhibit II-E, Sheet 2.
^ See Appendix A-I for the derivation of the factors for policy years 2010 and 2011. Factors for the remaining years are calculated in a similar manner.

North Carolina - Assigned Risk
Indicated Change in the Assigned Risk Differential
Based on Paid+Case Losses

Policy Year	(1) Standard Pure Premium *	(2) Paid+Case Losses **	(3) = (2) / (1) Ratio of Losses to Premium	(4) Indicated Assigned Risk Pure Prem. Diff.^ (Std Basis)
I. Residual Market Experience Valued as of 12/31/2012				
2007	$46,212,535	$77,589,171	1.679	
2008	29,691,121	34,017,567	1.146	
2009	20,745,442	25,551,141	1.232	
2010	16,641,601	20,359,282	1.223	
2011	16,163,484	31,027,509	1.920	
II. Statewide Experience Valued as of 12/31/2012				
2007	$1,002,859,258	$877,188,472	0.875	1.919
2008	930,309,517	777,137,614	0.835	1.372
2009	865,521,176	719,035,321	0.831	1.483
2010	898,779,586	751,347,216	0.836	1.463
2011	938,416,851	816,163,188	0.870	2.207
			Average Differential ^	1.689

(a)	Indicated Differential in Standard Pure Premium Based on Experience	1.689
(b)	Current Impact of Standard Pure Premium Programs@	1.577
(c)	Indicated Change in Assigned Risk Pure Premium Differential = (a)/(b)	1.071

* Developed to fifth report and brought to the 4/1/2013 pure premium level.
** Developed to ultimate and brought to the 1/1/2013 benefit level.
^ This is the indicated pure premium differential based on loss experience, calculated by comparing the ratio of assigned risk losses to premium to the ratio of statewide losses to premium.
@ This is composed of an ARAP impact equal to 2.5% and a differential of 1.539. ARAP impact from Exhibit II-E, Sheet 9.

North Carolina - Assigned Risk

(Residual Market)

Policy Year	(1) Standard Premium*	(2) On-level Factor^	(3) Effect of Current Standard Premium Programs#	(4) = (1) x ((2) / (3)) Stand. Pure Prem. at Current Level
2007	$110,556,304	0.662	1.584	$46,212,535
2008	74,600,806	0.623	1.565	29,691,121
2009	51,993,588	0.626	1.567	20,745,442
2010	41,294,295	0.631	1.564	16,641,601
2011	40,816,879	0.624	1.576	16,163,484

Policy Year	(5) Ind. Losses Paid+Case	(6) Development Factor	(7) On-level Factor^	(8) = ((5) x (6)) x (7) Adjusted Ind. Losses
2007	$30,233,027	1.080	0.997	$32,553,714
2008	16,524,935	1.118	0.993	18,345,553
2009	9,887,912	1.194	0.987	11,652,687
2010	8,717,071	1.379	0.985	11,840,528
2011	6,691,342	1.902	0.998	12,701,478

Policy Year	(9) Med. Losses Paid+Case	(10) Development Factor	(11) On-level Factor^	(12) = ((9) x (10)) x (11) Adjusted Med. Losses
2007	$39,993,763	1.134	0.993	$45,035,457
2008	13,629,094	1.158	0.993	15,672,014
2009	11,831,301	1.183	0.993	13,898,454
2010	7,088,648	1.209	0.994	8,518,754
2011	13,950,095	1.315	0.999	18,326,031

* Developed to a fifth report. See Exhibit II-E, Sheet 7.
^ See Appendix A-I for the derivation of the factors for policy years 2010 and 2011. Factors for the remaining years are calculated in a similar manner.
# This is composed of a differential of 1.539 and year-specific ARAP impacts which are displayed on Exhibit II-E, Sheet 9.

North Carolina - Assigned Risk

(Statewide Market)

Policy Year	(1) Voluntary Standard Premium*	(2) Assigned Risk Standard Premium**	(3) = (1) + (2) Standard Pure Premum On-level
2007	$956,646,723	$46,212,535	$1,002,859,258
2008	900,618,396	29,691,121	930,309,517
2009	844,775,734	20,745,442	865,521,176
2010	882,137,985	16,641,601	898,779,586
2011	922,253,367	16,163,484	938,416,851

Policy Year	(4) Ind. Losses Paid+Case	(5) Development Factor	(6) On-level Factor^	(7) = ((4) x (5)) x (6) Adjusted Ind. Losses
2007	$422,092,465	1.080	0.997	$454,492,282
2008	371,942,442	1.118	0.993	412,920,828
2009	321,793,619	1.194	0.987	379,226,700
2010	291,442,171	1.379	0.985	395,870,273
2011	218,430,204	1.902	0.998	414,623,340

Policy Year	(8) Med. Losses Paid+Case	(9) Development Factor	(10) On-level Factor^	(11) = ((8) x (9)) x (10) Adjusted Med. Losses
2007	$375,375,592	1.134	0.993	$422,696,190
2008	316,739,444	1.158	0.993	364,216,786
2009	289,268,004	1.183	0.993	339,808,621
2010	295,800,396	1.209	0.994	355,476,943
2011	305,659,156	1.315	0.999	401,539,848

* Developed to a fifth report and on current premium level. See Exhibit II-E, Sheet 8.
** Developed to a fifth report and on current premium level. See Exhibit II-E, Sheet 5.
^ See Appendix A-I for the derivation of the factors for policy years 2010 and 2011. Factors for the remaining years are calculated in a similar manner.

North Carolina - Assigned Risk
(Residual Market)

Section A - Assigned Risk Premium Development Factors

Policy Year	Standard Premium for Matching Companies		Development Factor
	1st Report	2nd Report	
2008	70,401,211	69,132,454	0.982
2009	52,282,104	52,269,741	1.000
2010	41,400,028	41,211,871	0.995
Average			0.992
	2nd Report	3rd Report	
2007	96,915,989	97,118,725	1.002
2008	74,416,822	74,534,116	1.002
2009	52,269,741	51,838,074	0.992
Average			0.999
	3rd Report	4th Report	
2006	106,314,453	106,191,638	0.999
2007	109,912,431	110,528,170	1.006
2008	74,534,116	74,526,280	1.000
Average			1.002
	4th Report	5th Report	
2005	110,671,941	110,580,554	0.999
2006	120,650,232	120,998,546	1.003
2007	110,528,170	110,556,304	1.000
Average			1.001

Three-year average premium development factors

1st/5th	2nd/5th	3rd/5th	4th/5th
0.994	1.002	1.003	1.001

Section B - Calculation of Developed Assigned Risk Standard Premium

Policy Year	Standard Premium	Development Factor	Developed Premium
2007	110,556,304	1.000	110,556,304
2008	74,526,280	1.001	74,600,806
2009	51,838,074	1.003	51,993,588
2010	41,211,871	1.002	41,294,295
2011	41,063,259	0.994	40,816,879

North Carolina - Assigned Risk
(Statewide Market)

Section A - Voluntary Premium Development Factors

Policy Year	Standard Premium for Matching Companies		Development Factor
	1st Report	2nd Report	
2008	992,769,336	983,708,893	0.991
2009	951,973,172	955,210,802	1.003
2010	911,212,617	920,812,093	1.011
Average			1.002
	2nd Report	3rd Report	
2007	1,010,204,509	1,009,831,337	1.000
2008	1,046,934,190	1,046,538,412	1.000
2009	955,815,822	955,807,858	1.000
Average			1.000
	3rd Report	4th Report	
2006	866,332,787	866,085,400	1.000
2007	1,075,115,276	1,075,201,371	1.000
2008	1,044,533,985	1,044,103,857	1.000
Average			1.000
	4th Report	5th Report	
2005	748,241,848	748,333,385	1.000
2006	926,073,602	926,157,371	1.000
2007	1,073,886,300	1,073,658,614	1.000
Average			1.000

Three-year average premium development factors

1st/5th	2nd/5th	3rd/5th	4th/5th
1.002	1.000	1.000	1.000

Section B - Calculation of Developed Voluntary Standard Premium

Policy Year	Standard Premium	Development Factor	Developed Premium
2007	1,074,883,958	1.000	1,074,883,958
2008	1,044,800,923	1.000	1,044,800,923
2009	955,628,658	1.000	955,628,658
2010	920,812,093	1.000	920,812,093
2011	931,591,642	1.002	933,454,825

Section C - Calculation of Developed and On-leveled Voluntary Standard Premium

Policy Year	Voluntary Premium*	Voluntary On-level Factor**	Voluntary Prem Dev't & On-level
2007	1,074,883,958	0.890	956,646,723
2008	1,044,800,923	0.862	900,618,396
2009	955,628,658	0.884	844,775,734
2010	920,812,093	0.958	882,137,985
2011	933,454,825	0.988	922,253,367

* Exhibit II-E, Sheet 8, Section B.
** See Appendix A-I for the derivation of the figures for policy years 2010 and 2011.

North Carolina - Assigned Risk

Impact of the Assigned Risk Adjustment Program*

Based on Assigned Risk Data for Policies with Effective Dates in 2012

Type of Risk	(1) Experience Modified Premium	(2) ARAP Premium	(3) ARAP Impact (2) / (1)
Risks with Credit Mods	$5,652,231	$5,652,231	1.000
Risks with Debit Mods	4,323,759	5,277,091	1.220
Risks with Mods of 1.00	8,795	8,795	1.000
Risks with No Mods	27,707,429	27,707,429	1.000
Totals	$37,692,214	$38,645,546	1.025

Historical Impacts of the Assigned Risk Adjustment Program

Policy Year	ARAP Impact
2007	1.029
2008	1.017
2009	1.018
2010	1.016
2011	1.024

* Source: North Carolina Rate Bureau

Effective April 1, 2014

APPLICABLE TO ASSIGNED RISK POLICIES ONLY

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
0005	6.27	1250	1.51	0.26	2002	5.94	1250	1.49	0.29	2702	46.17	1250	7.98	0.18
0008	5.44	1250	1.27	0.24	2003	6.94	1250	1.66	0.26	2705X*	118.30	1250	25.59	0.21
0016	21.38	1250	4.72	0.21	2014	11.36	1250	2.49	0.21	2709	25.52	1250	5.53	0.21
0034	9.41	1250	2.27	0.26	2016	4.18	1086	1.04	0.29	2710	20.69	1250	4.11	0.19
0035	6.32	1250	1.59	0.29	2021	5.35	1250	1.24	0.24	2714	10.81	1250	2.73	0.29
0036	8.81	1250	2.12	0.26	2039	5.63	1250	1.40	0.29	2727X	18.39	1250	3.97	0.21
0037	9.29	1250	2.16	0.24	2041	7.51	1250	1.88	0.29	2731	8.46	1250	1.85	0.21
0042	10.55	1250	2.45	0.24	2065	8.89	1250	2.13	0.26	2735	10.05	1250	2.52	0.29
0050	16.80	1250	4.04	0.26	2070	13.19	1250	3.16	0.26	2759	11.38	1250	2.85	0.29
0059D	0.93	–	0.08	0.18	2081	6.61	1250	1.60	0.26	2790	4.16	1082	1.05	0.29
0065D	0.21	–	0.03	0.21	2089	6.89	1250	1.66	0.26	2791X	3.80	1010	1.00	0.32
0066D	0.21	–	0.03	0.21	2095	10.10	1250	2.43	0.26	2797	14.73	1250	3.55	0.26
0067D	0.21	–	0.03	0.21	2105	6.34	1250	1.59	0.29	2799	6.39	1250	1.48	0.23
0079	8.65	1250	1.90	0.21	2110	4.35	1120	1.09	0.29	2802	9.65	1250	2.24	0.24
0083	8.22	1250	1.98	0.26	2111	10.83	1250	2.75	0.29	2812	–	–	1.97	0.26
0106	54.84	1250	10.87	0.19	2112	6.06	1250	1.52	0.29	2835	6.13	1250	1.60	0.32
0113	12.17	1250	2.94	0.26	2114	3.23	896	0.81	0.29	2836	5.16	1250	1.36	0.32
0170	8.58	1250	2.07	0.26	2121	3.85	1020	0.92	0.26	2841	9.15	1250	2.29	0.29
0251	10.98	1250	2.64	0.26	2130	5.06	1250	1.22	0.26	2881	6.34	1250	1.67	0.32
0400	17.15	1250	3.96	0.23	2131	5.65	1250	1.36	0.26	2883	8.20	1250	1.97	0.26
0401	20.77	A	4.14	0.19	2143	6.06	1250	1.53	0.29	2913	6.30	1250	1.66	0.32
0763FN	4.44	–	–	–	2157	11.55	1250	2.76	0.26	2915	5.65	1250	1.30	0.23
0771N	0.95	–	–	–	2172	4.70	1190	1.08	0.23	2916	6.77	1250	1.33	0.19
0908P	352.00	602	84.38	0.26	2174	8.10	1250	2.02	0.29	2923	4.51	1152	1.13	0.29
0913P	1026.00	1250	245.56	0.26	2211	18.94	1250	4.19	0.21	2942	4.56	1162	1.19	0.32
0917	11.17	1250	2.80	0.29	2220	6.20	1250	1.49	0.26	2960	8.58	1250	2.05	0.26
1005*	24.38	1250	2.81	0.19	2286	3.73	996	0.94	0.29	3004	3.52	954	0.76	0.21
1164	18.18	1250	3.12	0.18	2288	8.32	1250	2.07	0.29	3018	6.49	1250	1.41	0.21
1165XD	11.95	1250	2.32	0.19	2300	6.04	1250	1.58	0.32	3022	14.80	1250	3.70	0.29
1320	6.77	1250	1.34	0.19	2302	4.23	1096	1.01	0.26	3027	5.20	1250	1.13	0.21
1322	24.62	1250	4.83	0.19	2305	6.44	1250	1.48	0.23	3028	8.29	1250	2.00	0.26
1430	16.23	1250	3.56	0.21	2361	5.08	1250	1.22	0.26	3030	12.93	1250	2.82	0.21
1438	9.79	1250	1.93	0.19	2362	3.59	968	0.86	0.26	3040	14.30	1250	3.13	0.21
1452	6.08	1250	1.33	0.21	2380	5.18	1250	1.25	0.26	3041	11.38	1250	2.72	0.26
1463	21.43	1250	4.25	0.19	2386	3.07	864	0.77	0.29	3042	9.65	1250	2.23	0.23
1470X	9.17	1250	1.97	0.21	2388	5.08	1250	1.27	0.29	3064	11.59	1250	2.80	0.26
1473X	4.66	1182	1.01	0.21	2402	4.66	1182	1.02	0.21	3069	8.41	1250	1.84	0.21
1474X	5.61	1250	1.21	0.21	2413	5.54	1250	1.34	0.26	3076	7.82	1250	1.96	0.29
1624D	7.87	1250	1.54	0.19	2416	4.75	1200	1.15	0.26	3081D	9.18	1250	1.97	0.21
1642	7.29	1250	1.58	0.21	2417	4.30	1110	1.03	0.26	3082D	10.51	1250	2.26	0.21
1654	42.51	1250	9.23	0.21	2501	5.13	1250	1.23	0.26	3085D	11.16	1250	2.39	0.21
1655	10.43	1250	2.27	0.21	2503	3.52	954	0.88	0.29	3110	11.64	1250	2.80	0.26
1699	10.60	1250	2.31	0.21	2534	4.70	1190	1.19	0.29	3111	6.80	1250	1.63	0.26
1701	13.21	1250	2.87	0.21	2570	10.93	1250	2.72	0.29	3113	4.87	1224	1.17	0.26
1710	12.97	1250	2.84	0.21	2585	9.55	1250	2.40	0.29	3114	7.39	1250	1.78	0.26
1741D	6.91	1250	1.03	0.18	2586	6.77	1250	1.63	0.26	3118	4.92	1234	1.24	0.29
1747	4.51	1152	0.98	0.21	2587	9.39	1250	2.34	0.29	3119	1.90	630	0.50	0.32
1748	7.53	1250	1.65	0.21	2589	4.32	1114	1.04	0.26	3122	4.78	1206	1.20	0.29
1803D	20.08	1250	3.63	0.19	2600	5.18	1250	1.28	0.29	3126	6.58	1250	1.58	0.26
1852D	5.61	1250	0.95	0.18	2623	11.90	1250	2.75	0.24	3131	2.92	834	0.70	0.26
1853	3.02	854	0.69	0.23	2651	5.46	1250	1.37	0.29	3132	6.34	1250	1.53	0.26
1860	4.28	1106	1.07	0.29	2660	5.77	1250	1.45	0.29	3145	5.13	1250	1.23	0.26
1924	6.44	1250	1.62	0.29	2670	3.30	910	0.87	0.32	3146	5.18	1250	1.25	0.26
1925	7.22	1250	1.68	0.24	2683	3.26	902	0.82	0.29	3169	8.43	1250	2.03	0.26
2001	–	–	1.66	0.26	2688	7.56	1250	1.89	0.29	3175	9.10	1250	2.19	0.26

* Refer to the Footnotes Page for additional information on this class code.

Effective April 1, 2014

APPLICABLE TO ASSIGNED RISK POLICIES ONLY

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
3179	3.37	924	0.84	0.29	3830	2.92	834	0.68	0.23	4470	4.92	1234	1.18	0.26
3180	4.13	1076	1.04	0.29	3851	10.60	1250	2.66	0.29	4484	6.04	1250	1.45	0.26
3188	3.59	968	0.90	0.29	3865	4.28	1106	1.13	0.32	4493	6.70	1250	1.60	0.26
3220	5.63	1250	1.34	0.26	3881	8.96	1250	2.15	0.26	4511	1.07	464	0.25	0.23
3223	5.39	1250	1.42	0.32	4000	11.83	1250	2.34	0.19	4557	5.61	1250	1.40	0.29
3224	6.42	1250	1.60	0.29	4021	10.57	1250	2.30	0.21	4558	3.47	944	0.83	0.26
3227	6.87	1250	1.70	0.29	4024D	8.24	1250	1.78	0.21	4561	–	–	1.04	0.23
3240	5.61	1250	1.41	0.29	4034	12.64	1250	2.76	0.21	4568	5.99	1250	1.30	0.21
3241	6.89	1250	1.66	0.26	4036	5.51	1250	1.20	0.21	4581	2.45	740	0.49	0.19
3255	5.04	1250	1.32	0.32	4038	6.25	1250	1.64	0.32	4583	15.30	1250	3.04	0.19
3257	6.46	1250	1.56	0.26	4053	6.25	1250	1.51	0.26	4611	1.45	540	0.36	0.29
3270	6.53	1250	1.57	0.26	4061	8.39	1250	2.08	0.29	4635	6.58	1250	1.14	0.18
3300	8.74	1250	2.11	0.26	4062	4.37	1124	1.05	0.26	4653	4.99	1248	1.25	0.29
3303	5.65	1250	1.41	0.29	4101	6.25	1250	1.45	0.23	4665	19.32	1250	4.21	0.21
3307	7.75	1250	1.86	0.26	4109	1.43	536	0.36	0.29	4670	11.05	1250	2.42	0.21
3315	9.86	1250	2.47	0.29	4110	3.18	886	0.76	0.26	4683	6.27	1250	1.51	0.26
3334	10.67	1250	2.54	0.26	4111	3.92	1034	0.97	0.29	4686	4.80	1210	1.04	0.21
3336	6.75	1250	1.47	0.21	4112	–	–	0.76	0.26	4692	1.26	502	0.31	0.29
3365	18.53	1250	4.04	0.21	4113	4.28	1106	1.02	0.26	4693	1.88	626	0.45	0.26
3372	9.22	1250	2.14	0.24	4114	13.78	1250	3.28	0.26	4703	4.61	1172	1.11	0.26
3373	11.24	1250	2.70	0.26	4130	8.79	1250	2.12	0.26	4717	4.73	1196	1.24	0.32
3383	2.47	744	0.62	0.29	4131	10.15	1250	2.54	0.29	4720	3.90	1030	0.94	0.26
3385	2.11	672	0.53	0.29	4133	6.44	1250	1.63	0.29	4740	4.51	1152	0.99	0.21
3400	6.80	1250	1.58	0.24	4149	1.31	512	0.34	0.32	4741	3.85	1020	0.92	0.26
3507	5.63	1250	1.35	0.26	4150	–	–	0.34	0.32	4751	7.65	1250	1.70	0.21
3515	4.18	1086	1.01	0.26	4206	6.61	1250	1.59	0.26	4771N	5.39	1250	0.94	0.18
3516X	2.71	792	0.67	0.29	4207	2.80	810	0.61	0.21	4777	17.94	1250	3.13	0.18
3548	3.90	1030	0.94	0.26	4239	6.61	1250	1.44	0.21	4825	2.35	720	0.51	0.21
3559	4.68	1186	1.13	0.26	4240	5.94	1250	1.48	0.29	4828	4.28	1106	0.98	0.23
3574	1.78	606	0.44	0.29	4243	4.13	1076	0.99	0.26	4829	4.68	1186	0.93	0.19
3581	4.06	1062	1.01	0.29	4244	4.56	1162	1.09	0.26	4902	7.56	1250	1.89	0.29
3612	4.89	1228	1.13	0.23	4250	3.49	948	0.84	0.26	4923	2.66	782	0.64	0.26
3620	13.59	1250	2.96	0.21	4251	4.54	1158	1.09	0.26	5020	18.15	1250	3.95	0.21
3629	3.61	972	0.90	0.29	4263	8.53	1250	2.08	0.27	5022	15.02	1250	2.97	0.19
3632	6.63	1250	1.54	0.23	4273	5.68	1250	1.37	0.26	5037	67.22	1250	11.58	0.18
3634	3.73	996	0.93	0.29	4279	5.11	1250	1.23	0.26	5040	35.76	1250	6.15	0.18
3635	4.85	1220	1.17	0.26	4282	6.46	1250	1.59	0.28	5057	23.36	1250	4.04	0.18
3638	3.21	892	0.80	0.29	4283	7.15	1250	1.73	0.26	5059	63.87	1250	11.16	0.18
3642	2.64	778	0.63	0.26	4299	4.73	1196	1.18	0.29	5069	69.14	1250	11.79	0.19
3643	4.44	1138	1.07	0.26	4301X	2.73	796	0.67	0.28	5102	15.82	1250	3.12	0.19
3647	5.04	1250	1.16	0.24	4304	9.43	1250	2.19	0.24	5146	15.66	1250	3.40	0.21
3648	3.07	864	0.77	0.29	4307	3.56	962	0.94	0.32	5160	8.93	1250	1.76	0.19
3681	2.35	720	0.59	0.29	4351	2.76	802	0.66	0.26	5183	11.10	1250	2.41	0.21
3685	2.52	754	0.63	0.29	4352	2.90	830	0.73	0.29	5188	12.31	1250	2.68	0.21
3719	3.45	940	0.59	0.18	4360	3.80	1010	0.94	0.29	5190	10.74	1250	2.34	0.21
3724	9.98	1250	1.97	0.19	4361	2.95	840	0.74	0.29	5191	1.83	616	0.44	0.26
3726	17.01	1250	2.93	0.18	4362	–	–	0.94	0.29	5192	9.62	1250	2.31	0.26
3803	5.37	1250	1.29	0.26	4410	7.94	1250	1.91	0.26	5213	16.68	1250	3.31	0.19
3807	4.28	1106	1.07	0.29	4417X	5.58	1250	1.38	0.29	5215	9.20	1250	2.12	0.23
3808	6.25	1250	1.44	0.23	4420	18.44	1250	3.62	0.19	5221	9.77	1250	2.13	0.21
3821	13.40	1250	3.10	0.24	4431	3.14	878	0.82	0.32	5222	25.07	1250	4.97	0.19
3822X	11.55	1250	2.65	0.23	4432	2.92	834	0.76	0.32	5223	11.19	1250	2.45	0.21
3824X	9.15	1250	2.11	0.23	4439	4.51	1152	1.04	0.23	5348	10.95	1250	2.38	0.21
3826	2.23	696	0.53	0.26	4452	7.70	1250	1.86	0.26	5402	9.88	1250	2.48	0.29
3827	3.99	1048	0.92	0.24	4459	5.94	1250	1.43	0.26	5403	15.54	1250	3.07	0.19

* Refer to the Footnotes Page for additional information on this class code.

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
5437	14.16	1250	3.09	0.21	6826F	9.46	1250	1.75	0.20	7453N	1.81	–	–	–
5443	9.12	1250	2.19	0.26	6834	6.53	1250	1.51	0.23	7502	7.72	1250	1.68	0.21
5445	19.44	1250	3.84	0.19	6836	13.02	1250	2.85	0.21	7515	3.97	1044	0.69	0.18
5462	15.63	1250	3.40	0.21	6843F	28.49	1250	4.38	0.16	7520	8.67	1250	2.08	0.26
5472	11.50	1250	1.98	0.18	6845F	24.24	1250	3.75	0.16	7529X	29.84	1250	5.16	0.18
5473	23.33	1250	4.04	0.18	6854	12.81	1250	2.21	0.18	7538	29.44	1250	5.09	0.18
5474	15.44	1250	3.06	0.19	6872F	29.08	1250	4.42	0.16	7539	6.77	1250	1.33	0.19
5478	9.31	1250	2.01	0.21	6874F	44.98	1250	6.92	0.16	7540	14.40	1250	2.50	0.18
5479	16.04	1250	3.71	0.23	6882	11.26	1250	1.93	0.18	7580	7.82	1250	1.71	0.21
5480	13.38	1250	2.63	0.19	6884	17.96	1250	3.05	0.19	7590	12.90	1250	2.98	0.23
5491	7.82	1250	1.54	0.19	7016M	8.55	1250	1.45	0.19	7600	13.71	1250	2.99	0.21
5506	16.16	1250	2.80	0.18	7024M	9.50	1250	1.61	0.19	7601	–	–	2.99	0.21
5507	10.81	1250	2.13	0.19	7038M	12.76	1250	2.22	0.18	7605	6.51	1250	1.42	0.21
5508	30.27	1250	6.54	0.21	7046M	15.99	1250	2.76	0.18	7610	1.31	512	0.30	0.23
5535	17.01	1250	3.73	0.21	7047M	17.61	1250	2.77	0.19	7611	–	–	2.99	0.21
5537	13.16	1250	2.87	0.21	7050M	26.28	1250	4.26	0.18	7612	–	–	2.99	0.21
5551	40.51	1250	7.06	0.18	7090M	14.18	1250	2.47	0.18	7613	–	–	2.99	0.21
5606	4.44	1138	0.88	0.19	7098M	17.77	1250	3.06	0.18	7705	19.65	1250	4.55	0.24
5610	16.06	1250	3.87	0.26	7099M	32.93	1250	5.27	0.18	7710	11.95	1250	2.38	0.19
5645	33.50	1250	6.64	0.19	7133	13.90	1250	2.74	0.19	7711	11.95	1250	2.38	0.19
5651	–	–	6.64	0.19	7151M	16.89	1250	3.33	0.19	7720X	5.99	1250	1.31	0.21
5703	43.27	1250	9.38	0.21	7152M	34.76	1250	6.37	0.19	7723X	7.72	1250	1.34	0.18
5705	33.86	1250	7.50	0.21	7153M	18.77	1250	3.70	0.19	7855	12.28	1250	2.66	0.21
5951	0.81	412	0.20	0.29	7222	19.41	1250	4.20	0.21	8001	6.94	1250	1.74	0.29
6003	16.77	1250	3.63	0.21	7228	19.39	1250	4.20	0.21	8002	4.97	1244	1.20	0.27
6005	14.80	1250	3.16	0.21	7229	26.94	1250	5.28	0.19	8006	7.27	1250	1.74	0.26
6017	14.45	1250	3.11	0.21	7230	19.08	1250	4.41	0.23	8008	3.66	982	0.92	0.29
6018	8.93	1250	1.92	0.21	7231	20.29	1250	4.67	0.23	8010	3.40	930	0.85	0.29
6045	8.05	1250	1.74	0.21	7232	25.09	1250	4.91	0.19	8013	1.16	482	0.28	0.26
6204	26.87	1250	5.32	0.19	7309F	34.50	1250	5.33	0.16	8015	1.97	644	0.47	0.26
6206	10.36	1250	1.79	0.18	7313F	8.08	1250	1.24	0.16	8017	4.13	1076	1.04	0.29
6213	6.61	1250	1.30	0.19	7317F	19.51	1250	2.97	0.16	8018	5.87	1250	1.46	0.29
6214	7.53	1250	1.30	0.18	7323FNX	10.38	1250	1.51	0.17	8021	5.27	1250	1.28	0.26
6216	18.13	1250	3.11	0.18	7327F	32.81	1250	5.11	0.16	8031	8.53	1250	2.07	0.27
6217	16.54	1250	3.27	0.19	7333M	12.59	1250	2.14	0.19	8032	5.30	1250	1.33	0.29
6229	10.38	1250	2.05	0.19	7335M	13.99	1250	2.37	0.19	8033	5.13	1250	1.24	0.26
6233	10.00	1250	1.96	0.19	7337M	25.92	1250	4.08	0.19	8037	4.13	1076	1.04	0.29
6235	19.39	1250	3.33	0.18	7350F	24.14	1250	4.13	0.17	8039	6.04	1250	1.52	0.29
6236	27.59	1250	5.98	0.21	7360	9.50	1250	2.07	0.21	8044	9.05	1250	2.09	0.23
6237	4.63	1176	1.01	0.21	7370	15.18	1250	3.65	0.26	8045	1.38	526	0.35	0.29
6251D	28.52	1250	5.61	0.19	7380	11.83	1250	2.72	0.23	8046	7.13	1250	1.72	0.26
6252D	14.61	1250	2.48	0.18	7382	12.74	1250	3.06	0.26	8047	2.26	702	0.56	0.29
6260	13.09	1250	2.22	0.19	7390	11.98	1250	2.87	0.26	8058	7.96	1250	1.92	0.26
6306	14.68	1250	2.90	0.19	7394M	14.87	1250	2.52	0.19	8072	1.71	592	0.43	0.29
6319	14.92	1250	2.96	0.19	7395M	16.54	1250	2.80	0.19	8102	3.59	968	0.90	0.29
6325	13.69	1250	2.70	0.19	7398M	30.65	1250	4.82	0.19	8103	7.13	1250	1.65	0.24
6400	13.69	1250	3.16	0.23	7402	0.40	330	0.10	0.26	8105	6.01	1250	1.51	0.29
6503	5.94	1250	1.49	0.29	7403	10.41	1250	2.28	0.21	8106	11.19	1250	2.44	0.21
6504	5.94	1250	1.49	0.29	7405N	4.63	1250	1.01	0.21	8107	9.65	1250	2.10	0.21
6702M*	14.92	1250	3.23	0.21	7420	42.70	1250	7.20	0.19	8111	4.97	1244	1.19	0.26
6703M*	30.72	1250	6.19	0.21	7421	3.94	1038	0.77	0.19	8116	7.70	1250	1.85	0.26
6704M*	16.58	1250	3.60	0.21	7422	5.37	1250	0.92	0.18	8203	14.21	1250	3.43	0.26
6801F	7.18	1250	1.32	0.20	7425	9.81	1250	1.67	0.19	8204	7.51	1250	1.64	0.21
6811	15.37	1250	3.33	0.21	7431N	5.39	1250	0.91	0.19	8209	7.79	1250	1.87	0.26
6824F	19.79	1250	3.40	0.17	7445N	1.54	–	–	–	8215	8.62	1250	1.88	0.21

* Refer to the Footnotes Page for additional information on this class code.

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
8227	12.52	1250	2.16	0.18	8837	–	–	0.92	0.26	9600	5.04	1250	1.25	0.29
8232	9.96	1250	2.17	0.21	8842X	5.30	1250	1.28	0.26	9620	2.35	720	0.55	0.24
8233	7.89	1250	1.70	0.21	8848X	6.58	1250	1.58	0.26					
8235	12.31	1250	2.97	0.26	8849X	7.79	1250	1.87	0.26					
8236X	14.61	1250	3.17	0.21	8855	0.40	330	0.10	0.26					
8263	15.16	1250	3.51	0.24	8856	0.40	330	0.10	0.26					
8264	12.95	1250	2.82	0.21	8864X	3.83	1016	0.92	0.26					
8265	16.77	1250	3.34	0.19	8868	1.14	478	0.29	0.29					
8279	14.90	1250	2.96	0.19	8869	2.97	844	0.75	0.29					
8288	22.05	1250	4.85	0.21	8871	0.38	326	0.09	0.29					
8291	10.91	1250	2.54	0.24	8901	0.52	354	0.12	0.23					
8292	9.01	1250	2.16	0.26	9012	3.18	886	0.74	0.23					
8293	28.30	1250	6.15	0.21	9014	6.70	1250	1.61	0.26					
8304	11.31	1250	2.47	0.21	9015	8.41	1250	2.02	0.26					
8350	22.14	1250	4.38	0.19	9016	7.18	1250	1.74	0.26					
8380	6.39	1250	1.48	0.23	9019	5.92	1250	1.29	0.21					
8381	6.51	1250	1.52	0.24	9033	4.44	1138	1.07	0.26					
8385	7.22	1250	1.58	0.21	9040	6.82	1250	1.71	0.29					
8392	6.49	1250	1.57	0.26	9044	4.02	1054	1.01	0.29					
8393	4.35	1120	1.04	0.26	9052	4.89	1228	1.23	0.29					
8500	14.95	1250	3.27	0.21	9058	3.52	954	0.93	0.32					
8601	1.62	574	0.37	0.23	9059	–	–	0.75	0.29					
8602	1.76	602	0.41	0.23	9060	3.21	892	0.80	0.29					
8603	0.36	322	0.08	0.26	9061	2.95	840	0.78	0.32					
8606	7.96	1250	1.57	0.19	9062	3.37	924	0.89	0.32					
8709F	10.36	1250	1.61	0.16	9063	2.52	754	0.64	0.29					
8710X	5.70	1250	1.23	0.21	9077F	4.25	1100	0.83	0.25					
8719	8.08	1250	1.40	0.18	9082	3.11	872	0.83	0.32					
8720	4.66	1182	1.01	0.21	9083	3.42	934	0.90	0.32					
8721	0.76	402	0.17	0.21	9084	3.02	854	0.73	0.26					
8723	0.40	330	0.10	0.26	9089	2.54	758	0.64	0.29					
8725	5.25	1250	1.15	0.21	9093	3.16	882	0.80	0.29					
8726F	6.46	1250	1.20	0.20	9101	7.72	1250	1.94	0.29					
8734M	1.28	506	0.28	0.21	9102	6.61	1250	1.60	0.26					
8737M	1.16	482	0.25	0.21	9154	4.78	1206	1.15	0.26					
8738M	2.38	726	0.49	0.21	9156	6.82	1250	1.58	0.23					
8742	0.95	440	0.21	0.21	9170	9.86	1250	1.72	0.18					
8745	12.24	1250	2.86	0.24	9178	15.87	1250	4.22	0.32					
8748	1.64	578	0.38	0.23	9179	38.40	1250	9.71	0.29					
8755	1.05	460	0.23	0.21	9180	10.95	1250	2.41	0.21					
8799	1.38	526	0.33	0.26	9182	4.89	1228	1.19	0.27					
8800	2.61	772	0.68	0.32	9186	54.96	1250	11.00	0.19					
8803	0.21	292	0.05	0.21	9220	11.00	1250	2.54	0.23					
8805M	0.55	360	0.13	0.26	9402	14.99	1250	3.26	0.21					
8810	0.40	330	0.10	0.26	9403	19.74	1250	3.90	0.19					
8814M	0.50	350	0.12	0.26	9410	7.08	1250	1.70	0.26					
8815M	1.02	454	0.23	0.26	9501	6.44	1250	1.49	0.24					
8820	0.36	322	0.08	0.24	9505	6.49	1250	1.50	0.23					
8824	8.27	1250	2.08	0.29	9516	11.14	1250	2.43	0.21					
8825	4.18	1086	1.10	0.32	9519	9.69	1250	2.11	0.21					
8826	7.53	1250	1.81	0.26	9521	9.15	1250	1.99	0.21					
8831	3.21	892	0.78	0.27	9522	4.32	1114	1.04	0.26					
8832	0.90	430	0.22	0.26	9534	22.50	1250	4.43	0.19					
8833	3.75	1000	0.90	0.26	9554	31.34	1250	6.21	0.19					
8835	6.01	1250	1.44	0.26	9586	1.45	540	0.38	0.32					

* Refer to the Footnotes Page for additional information on this class code.

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FOOTNOTES

A Minimum Premium $100 per ginning location for policy minimum premium computation.

D Rate for classification already includes the specific disease loading shown in the table below. See ***Basic Manual*** Rule 3-A-7.

Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol
0059D	0.93	S	1624D	0.05	S	3082D	0.17	S
0065D	0.21	S	1741D	0.95	S	3085D	0.21	S
0066D	0.21	S	1803D	1.69	S	4024D	0.07	S
0067D	0.21	S	1852D	0.17	Asb	6251D	0.17	S
1165XD	0.12	S	3081D	0.17	S	6252D	0.12	S

Asb=Asbestos, S=Silica

F Rate provides for coverage under the United States Longshore and Harbor Workers Compensation Act and its extensions. Rate includes a provision for USL&HW Assessment.

M Risks are subject to Admiralty Law or Federal Employers Liability Act (FELA). However, the published rate is for risks that voluntarily purchase standard workers compensation and employers liability coverage. A provision for the USL&HW Assessment is included for those classifications under Program II USL Act. The listed codes of 6702, 6703, 6704, 7151, 7152, 7153, 8734, 8737, 8738, 8805, 8814, and 8815 under the Federal Employers' Liability Act (FELA) for employees of interstate railroads are not applicable in the residual market.

N This code is part of a ratable / non-ratable group shown below. The statistical non-ratable code and corresponding rate are applied in addition to the basic classification when determining premium.

Class Code	Non-Ratable Element Code
4771	0771
7323F	0763F
7405	7445
7431	7453

P Classification is computed on a per capita basis.

X Refer to special classification phraseology in these pages which is applicable in this state.

*** Class Codes with Specific Footnotes**

1005 Rate includes a non-ratable disease element of $7.94. (For coverage written separately for federal benefits only, $4.97. For coverage written separately for state benefits only, $2.97.)

2705 An upset payroll of $4.00 per cord shall be used for premium computation purposes in all instances.

6702 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection code rate and elr each x 1.215.

6703 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate x 2.502 and elr x 2.326.

6704 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate and elr each x 1.35.

For all class codes, ELRs and D-ratios are determined in accordance with the Revised Experience Rating Plan. See North Carolina Rate Bureau Circular C-11-15 dated 11/8/2011 regarding the approval of Item E-1402.

Effective April 1, 2014
APPLICABLE TO ASSIGNED RISK POLICIES ONLY

MISCELLANEOUS VALUES

Basis of premium applicable in accordance with ***Basic Manual*** footnote instructions for Code 7370 -- "Taxicab Co.":

Employee operated vehicle..... $62,600
Leased or rented vehicle..... $41,800

Catastrophe (other than Certified Acts of Terrorism) - (Assigned Risk)..... $0.01

Expense Constant applicable in accordance with ***Basic Manual*** Rule 3-A-11..... $250

Loss Sensitive Rating Plan (LSRP) - The factors which are used in the calculation of the LSRP are as follows:

Basic Premium Factor	0.40
Minimum Premium Factor	0.75
Maximum Premium Factor	1.75
Loss Conversion Factor	1.165
Tax Multiplier	1.030

Loss Development Factors	
1st Adjustment	0.20
2nd Adjustment	0.14
3rd Adjustment	0.10
4th Adjustment	0.07

Maximum Payroll applicable in accordance with ***Basic Manual*** Rule 2-E-1 -- "Executive Officers" and the ***Basic Manual*** footnote instructions for Code 9178 -- "Athletic Sports or Park: Non-Contact Sports," and Code 9179 -- "Athletic Sports or Park: Contact Sports"..... $1,600

Minimum Payroll applicable in accordance with ***Basic Manual*** Rule 2-E-1 -- "Executive Officers" $800

Per Passenger Seat Surcharge - In accordance with ***Basic Manual*** footnote instructions for Code 7421, the surcharge is:

Maximum surcharge per aircraft..... $1,000
Per passenger seat..... $100

Premium Determination for Partners and Sole Proprietors in accordance with ***Basic Manual*** Rule 2-E-3..... $41,800

Premium Reduction Percentages - The following percentages are applicable by deductible amount and hazard group for total losses on a per claim basis:

	Total Losses						
Deductible	**HAZARD GROUP**						
Amount	**A**	**B**	**C**	**D**	**E**	**F**	**G**
$100	0.6%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%
$200	1.1%	0.8%	0.7%	0.5%	0.4%	0.3%	0.2%
$300	1.6%	1.2%	1.0%	0.8%	0.6%	0.4%	0.3%
$400	2.0%	1.5%	1.2%	1.0%	0.8%	0.5%	0.4%
$500	2.3%	1.8%	1.5%	1.2%	1.0%	0.6%	0.5%
$1,000	3.6%	2.8%	2.4%	1.9%	1.6%	1.1%	0.8%
$1,500	4.5%	3.5%	3.0%	2.5%	2.0%	1.4%	1.1%
$2,000	5.2%	4.0%	3.5%	2.9%	2.4%	1.7%	1.3%
$2,500	5.7%	4.5%	3.9%	3.3%	2.7%	1.9%	1.5%
$5,000	8.0%	6.4%	5.6%	4.8%	4.1%	3.0%	2.3%

Terrorism - (Assigned Risk)..... $0.02

Effective April 1, 2014
APPLICABLE TO ASSIGNED RISK POLICIES ONLY

MISCELLANEOUS VALUES (cont.)

United States Longshore and Harbor Workers' Compensation Coverage Percentage applicable only in connection with ***Basic Manual*** Rule 3-A-4…….…….....……. 92%

(Multiply a Non-F classification rate by a factor of 1.92 to adjust for differences in benefits and loss-based expenses. This factor is the product of the adjustment for differences in benefits (1.79) and the adjustment for differences in loss-based expenses (1.07).)

Experience Rating Eligibility

A risk is eligible for intrastate experience rating when the payrolls or other exposures developed in the last year or last two years of the experience period produced a premium of at least $8,000. If more than two years, an average annual premium of at least $4,000 is required. The ***Experience Rating Plan Manual*** should be referenced for the latest approved eligibility amounts by state.

Effective April 1, 2014

TABLE OF WEIGHTING VALUES
APPLICABLE TO ALL POLICIES
Experience Rating Program - ERA

Expected Losses			Weighting Values	Expected Losses			Weighting Values
0	--	2,439	0.04	1,375,737	--	1,451,621	0.44
2,440	--	9,862	0.05	1,451,622	--	1,531,900	0.45
9,863	--	17,443	0.06	1,531,901	--	1,616,966	0.46
17,444	--	25,189	0.07	1,616,967	--	1,707,262	0.47
25,190	--	33,103	0.08	1,707,263	--	1,803,285	0.48
33,104	--	55,368	0.09	1,803,286	--	1,905,600	0.49
55,369	--	82,418	0.10	1,905,601	--	2,014,847	0.50
82,419	--	106,479	0.11	2,014,848	--	2,131,756	0.51
106,480	--	129,906	0.12	2,131,757	--	2,257,163	0.52
129,907	--	153,336	0.13	2,257,164	--	2,392,030	0.53
153,337	--	177,055	0.14	2,392,031	--	2,537,470	0.54
177,056	--	201,223	0.15	2,537,471	--	2,694,779	0.55
201,224	--	225,949	0.16	2,694,780	--	2,865,472	0.56
225,950	--	251,316	0.17	2,865,473	--	3,051,334	0.57
251,317	--	277,391	0.18	3,051,335	--	3,254,481	0.58
277,392	--	304,237	0.19	3,254,482	--	3,477,444	0.59
304,238	--	331,912	0.20	3,477,445	--	3,723,270	0.60
331,913	--	360,472	0.21	3,723,271	--	3,995,669	0.61
360,473	--	389,975	0.22	3,995,670	--	4,299,194	0.62
389,976	--	420,480	0.23	4,299,195	--	4,639,507	0.63
420,481	--	452,047	0.24	4,639,508	--	5,023,727	0.64
452,048	--	484,741	0.25	5,023,728	--	5,460,939	0.65
484,742	--	518,629	0.26	5,460,940	--	5,962,919	0.66
518,630	--	553,784	0.27	5,962,920	--	6,545,211	0.67
553,785	--	590,283	0.28	6,545,212	--	7,228,768	0.68
590,284	--	628,208	0.29	7,228,769	--	8,042,521	0.69
628,209	--	667,648	0.30	8,042,522	--	9,027,585	0.70
667,649	--	708,699	0.31	9,027,586	--	10,244,424	0.71
708,700	--	751,464	0.32	10,244,425	--	11,785,748	0.72
751,465	--	796,056	0.33	11,785,749	--	13,801,319	0.73
796,057	--	842,596	0.34	13,801,320	--	16,549,818	0.74
842,597	--	891,216	0.35	16,549,819	--	20,519,864	0.75
891,217	--	942,062	0.36	20,519,865	--	26,758,497	0.76
942,063	--	995,292	0.37	26,758,498	--	37,988,024	0.77
995,293	--	1,051,077	0.38	37,988,025	--	64,190,231	0.78
1,051,078	--	1,109,610	0.39	64,190,232	--	195,201,203	0.79
1,109,611	--	1,171,098	0.40	195,201,204		AND OVER	0.80
1,171,099	--	1,235,774	0.41				
1,235,775	--	1,303,892	0.42				
1,303,893	--	1,375,736	0.43				

(a) G	11.65
(b) State Per Claim Accident Limitation	$291,500
(c) State Multiple Claim Accident Limitation	$583,000
(d) USL&HW Per Claim Accident Limitation	$636,500
(e) USL&HW Multiple Claim Accident Limitation	$1,273,000
(f) Employers Liability Accident Limitation	$55,000
(g) Primary/Excess Loss Split Point	$13,500
(h) USL&HW Act -- Expected Loss Factor -- Non-F Classes	1.78

(Multiply a Non-F classification ELR by the USL&HW Act - Expected Loss Factor of 1.78.)

Effective April 1, 2014

TABLE OF BALLAST VALUES
APPLICABLE TO ALL POLICIES

Experience Rating Plan - ERA

Expected Losses	Ballast Values	Expected Losses	Ballast Values	Expected Losses	Ballast Values
0 -- 62,663	29,125	2,010,802 -- 2,069,018	233,000	4,048,961 -- 4,107,202	436,875
62,664 -- 107,849	34,950	2,069,019 -- 2,127,237	238,825	4,107,203 -- 4,165,444	442,700
107,850 -- 159,769	40,775	2,127,238 -- 2,185,457	244,650	4,165,445 -- 4,223,686	448,525
159,770 -- 214,540	46,600	2,185,458 -- 2,243,679	250,475	4,223,687 -- 4,281,928	454,350
214,541 -- 270,644	52,425	2,243,680 -- 2,301,903	256,300	4,281,929 -- 4,340,171	460,175
270,645 -- 327,452	58,250	2,301,904 -- 2,360,127	262,125	4,340,172 -- 4,398,414	466,000
327,453 -- 384,671	64,075	2,360,128 -- 2,418,353	267,950	4,398,415 -- 4,456,656	471,825
384,672 -- 442,149	69,900	2,418,354 -- 2,476,580	273,775	4,456,657 -- 4,514,900	477,650
442,150 -- 499,800	75,725	2,476,581 -- 2,534,809	279,600	4,514,901 -- 4,573,143	483,475
499,801 -- 557,573	81,550	2,534,810 -- 2,593,038	285,425	4,573,144 -- 4,631,386	489,300
557,574 -- 615,433	87,375	2,593,039 -- 2,651,268	291,250	4,631,387 -- 4,689,630	495,125
615,434 -- 673,360	93,200	2,651,269 -- 2,709,498	297,075	4,689,631 -- 4,747,874	500,950
673,361 -- 731,336	99,025	2,709,499 -- 2,767,730	302,900	4,747,875 -- 4,806,118	506,775
731,337 -- 789,353	104,850	2,767,731 -- 2,825,963	308,725	4,806,119 -- 4,864,362	512,600
789,354 -- 847,401	110,675	2,825,964 -- 2,884,196	314,550	4,864,363 -- 4,922,606	518,425
847,402 -- 905,474	116,500	2,884,197 -- 2,942,429	320,375	4,922,607 -- 4,980,851	524,250
905,475 -- 963,569	122,325	2,942,430 -- 3,000,664	326,200	4,980,852 -- 5,039,095	530,075
963,570 -- 1,021,681	128,150	3,000,665 -- 3,058,899	332,025	5,039,096 -- 5,097,340	535,900
1,021,682 -- 1,079,808	133,975	3,058,900 -- 3,117,134	337,850	5,097,341 -- 5,155,584	541,725
1,079,809 -- 1,137,947	139,800	3,117,135 -- 3,175,371	343,675	5,155,585 -- 5,213,829	547,550
1,137,948 -- 1,196,097	145,625	3,175,372 -- 3,233,607	349,500	5,213,830 -- 5,272,074	553,375
1,196,098 -- 1,254,256	151,450	3,233,608 -- 3,291,844	355,325	5,272,075 -- 5,330,319	559,200
1,254,257 -- 1,312,423	157,275	3,291,845 -- 3,350,082	361,150	5,330,320 -- 5,388,565	565,025
1,312,424 -- 1,370,597	163,100	3,350,083 -- 3,408,320	366,975	5,388,566 -- 5,446,810	570,850
1,370,598 -- 1,428,777	168,925	3,408,321 -- 3,466,558	372,800	5,446,811 -- 5,505,055	576,675
1,428,778 -- 1,486,963	174,750	3,466,559 -- 3,524,797	378,625	5,505,056 -- 5,562,875	582,500
1,486,964 -- 1,545,154	180,575	3,524,798 -- 3,583,036	384,450		
1,545,155 -- 1,603,348	186,400	3,583,037 -- 3,641,275	390,275		
1,603,349 -- 1,661,547	192,225	3,641,276 -- 3,699,515	396,100		
1,661,548 -- 1,719,749	198,050	3,699,516 -- 3,757,755	401,925		
1,719,750 -- 1,777,954	203,875	3,757,756 -- 3,815,996	407,750		
1,777,955 -- 1,836,162	209,700	3,815,997 -- 3,874,236	413,575		
1,836,163 -- 1,894,373	215,525	3,874,237 -- 3,932,477	419,400		
1,894,374 -- 1,952,586	221,350	3,932,478 -- 3,990,718	425,225		
1,952,587 -- 2,010,801	227,175	3,990,719 -- 4,048,960	431,050		

For Expected Losses greater than $5,562,875, the Ballast Value can be calculated using the following formula (rounded to the nearest 1):

Ballast = (0.10)(Expected Losses) + 2500(Expected Losses)(11.65) / (Expected Losses + (700)(11.65))

G = 11.65

NORTH CAROLINA - ASSIGNED RISK

APPENDIX B

Factor to Convert Loss Costs to Assigned Risk Rates

For all classification codes, the proposed loss cost multiplier of 2.376 is applied to the advisory loss costs (contained in the Rate Bureau's Loss Costs Reference Filing proposed effective April 1, 2014) in order to convert to assigned risk rates. Please refer to Exhibit I-A, Sheet 1 for more information on the development of this factor.

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
0005	6.67	6.27	-6.0%
0008	4.39	5.44	23.9%
0016	19.37	21.38	10.4%
0034	8.31	9.41	13.2%
0035	5.88	6.32	7.5%
0036	8.79	8.81	0.2%
0037	7.67	9.29	21.1%
0042	9.57	10.55	10.2%
0050	17.31	16.80	-2.9%
0059	0.85	0.93	9.4%
0065	0.20	0.21	5.0%
0066	0.20	0.21	5.0%
0067	0.20	0.21	5.0%
0079	7.37	8.65	17.4%
0083	7.65	8.22	7.5%
0106	50.39	54.84	8.8%
0113	12.15	12.17	0.2%
0170	7.32	8.58	17.2%
0251	9.49	10.98	15.7%
0400	15.08	17.15	13.7%
0401	16.85	20.77	23.3%
0763	4.37	4.44	1.6%
0771	0.87	0.95	9.2%
0908	334.00	352.00	5.4%
0913	885.00	1026.00	15.9%
0917	9.18	11.17	21.7%
1005	24.75	24.38	-1.5%
1164	18.69	18.18	-2.7%
1165	11.11	11.95	7.6%
1320	6.51	6.77	4.0%
1322	23.17	24.62	6.3%
1430	12.81	16.23	26.7%
1438	7.28	9.79	34.5%
1452	5.38	6.08	13.0%
1463	24.75	21.43	-13.4%
1470	8.42	9.17	8.9%
1473	4.31	4.66	8.1%
1474	5.31	5.61	5.6%
1624	8.31	7.87	-5.3%
1642	7.65	7.29	-4.7%
1654	30.80	42.51	38.0%
1655	11.02	10.43	-5.4%
1699	9.16	10.60	15.7%
1701	11.41	13.21	15.8%
1710	12.39	12.97	4.7%

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
1741	6.44	6.91	7.3%
1747	4.42	4.51	2.0%
1748	6.84	7.53	10.1%
1803	17.33	20.08	15.9%
1852	5.50	5.61	2.0%
1853	2.97	3.02	1.7%
1860	3.91	4.28	9.5%
1924	6.01	6.44	7.2%
1925	7.21	7.22	0.1%
2002	6.27	5.94	-5.3%
2003	6.14	6.94	13.0%
2014	11.02	11.36	3.1%
2016	3.96	4.18	5.6%
2021	5.60	5.35	-4.5%
2039	6.34	5.63	-11.2%
2041	7.76	7.51	-3.2%
2065	7.52	8.89	18.2%
2070	11.65	13.19	13.2%
2081	7.04	6.61	-6.1%
2089	6.69	6.89	3.0%
2095	9.09	10.10	11.1%
2105	5.38	6.34	17.8%
2110	4.44	4.35	-2.0%
2111	9.77	10.83	10.8%
2112	5.90	6.06	2.7%
2114	3.28	3.23	-1.5%
2121	4.63	3.85	-16.8%
2130	5.20	5.06	-2.7%
2131	5.44	5.65	3.9%
2143	5.62	6.06	7.8%
2157	10.67	11.55	8.2%
2172	4.24	4.70	10.8%
2174	7.28	8.10	11.3%
2211	15.56	18.94	21.7%
2220	6.19	6.20	0.2%
2286	3.41	3.73	9.4%
2288	6.32	8.32	31.6%
2300	5.38	6.04	12.3%
2302	3.61	4.23	17.2%
2305	6.16	6.44	4.5%
2361	4.26	5.08	19.2%
2362	3.63	3.59	-1.1%
2380	4.46	5.18	16.1%
2386	3.10	3.07	-1.0%
2388	5.16	5.08	-1.6%

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
2402	4.85	4.66	-3.9%
2413	4.74	5.54	16.9%
2416	3.50	4.75	35.7%
2417	4.31	4.30	-0.2%
2501	4.72	5.13	8.7%
2503	2.93	3.52	20.1%
2534	4.90	4.70	-4.1%
2570	8.04	10.93	35.9%
2585	8.07	9.55	18.3%
2586	5.64	6.77	20.0%
2587	9.42	9.39	-0.3%
2589	3.65	4.32	18.4%
2600	3.83	5.18	35.2%
2623	9.25	11.90	28.6%
2651	5.47	5.46	-0.2%
2660	4.74	5.77	21.7%
2670	3.26	3.30	1.2%
2683	3.21	3.26	1.6%
2688	7.30	7.56	3.6%
2702	36.11	46.17	27.9%
2705	90.96	118.30	30.1%
2709	23.98	25.52	6.4%
2710	20.40	20.69	1.4%
2714	10.76	10.81	0.5%
2727	15.94	18.39	15.4%
2731	8.11	8.46	4.3%
2735	9.33	10.05	7.7%
2759	11.08	11.38	2.7%
2790	3.93	4.16	5.9%
2791	3.69	3.80	3.0%
2797	12.79	14.73	15.2%
2799	5.79	6.39	10.4%
2802	8.28	9.65	16.5%
2835	5.47	6.13	12.1%
2836	5.09	5.16	1.4%
2841	8.11	9.15	12.8%
2881	6.45	6.34	-1.7%
2883	7.19	8.20	14.0%
2913	6.30	6.30	0.0%
2915	6.10	5.65	-7.4%
2916	6.86	6.77	-1.3%
2923	4.20	4.51	7.4%
2942	4.55	4.56	0.2%
2960	7.65	8.58	12.2%
3004	2.95	3.52	19.3%

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
3018	5.18	6.49	25.3%
3022	11.67	14.80	26.8%
3027	4.70	5.20	10.6%
3028	8.74	8.29	-5.1%
3030	12.53	12.93	3.2%
3040	12.57	14.30	13.8%
3041	10.76	11.38	5.8%
3042	8.98	9.65	7.5%
3064	10.43	11.59	11.1%
3069	10.30	8.41	-18.3%
3076	6.91	7.82	13.2%
3081	7.43	9.18	23.6%
3082	10.47	10.51	0.4%
3085	10.23	11.16	9.1%
3110	10.27	11.64	13.3%
3111	5.95	6.80	14.3%
3113	4.44	4.87	9.7%
3114	6.89	7.39	7.3%
3118	5.14	4.92	-4.3%
3119	1.90	1.90	0.0%
3122	4.94	4.78	-3.2%
3126	5.33	6.58	23.5%
3131	2.60	2.92	12.3%
3132	6.23	6.34	1.8%
3145	4.87	5.13	5.3%
3146	4.94	5.18	4.9%
3169	7.76	8.43	8.6%
3175	6.71	9.10	35.6%
3179	3.34	3.37	0.9%
3180	4.09	4.13	1.0%
3188	3.56	3.59	0.8%
3220	5.62	5.63	0.2%
3223	5.55	5.39	-2.9%
3224	6.21	6.42	3.4%
3227	6.78	6.87	1.3%
3240	4.33	5.61	29.6%
3241	7.10	6.89	-3.0%
3255	3.72	5.04	35.5%
3257	5.97	6.46	8.2%
3270	5.33	6.53	22.5%
3300	9.05	8.74	-3.4%
3303	4.68	5.65	20.7%
3307	7.32	7.75	5.9%
3315	9.49	9.86	3.9%
3334	8.63	10.67	23.6%

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
3336	6.30	6.75	7.1%
3365	18.84	18.53	-1.6%
3372	8.42	9.22	9.5%
3373	10.45	11.24	7.6%
3383	2.40	2.47	2.9%
3385	1.92	2.11	9.9%
3400	5.90	6.80	15.3%
3507	5.01	5.63	12.4%
3515	4.13	4.18	1.2%
3516	2.84	2.71	-4.6%
3548	3.39	3.90	15.0%
3559	4.96	4.68	-5.6%
3574	1.73	1.78	2.9%
3581	4.46	4.06	-9.0%
3612	4.26	4.89	14.8%
3620	12.02	13.59	13.1%
3629	3.28	3.61	10.1%
3632	5.62	6.63	18.0%
3634	3.45	3.73	8.1%
3635	4.61	4.85	5.2%
3638	3.13	3.21	2.6%
3642	2.10	2.64	25.7%
3643	4.24	4.44	4.7%
3647	4.68	5.04	7.7%
3648	3.02	3.07	1.7%
3681	2.60	2.35	-9.6%
3685	2.36	2.52	6.8%
3719	3.26	3.45	5.8%
3724	9.71	9.98	2.8%
3726	18.41	17.01	-7.6%
3803	4.74	5.37	13.3%
3807	4.46	4.28	-4.0%
3808	4.79	6.25	30.5%
3821	11.94	13.40	12.2%
3822	10.69	11.55	8.0%
3824	8.57	9.15	6.8%
3826	2.14	2.23	4.2%
3827	3.17	3.99	25.9%
3830	3.28	2.92	-11.0%
3851	8.57	10.60	23.7%
3865	3.89	4.28	10.0%
3881	8.02	8.96	11.7%
4000	11.48	11.83	3.0%
4021	10.62	10.57	-0.5%
4024	8.83	8.24	-6.7%

North Carolina

Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
4034	12.48	12.64	1.3%
4036	5.18	5.51	6.4%
4038	6.75	6.25	-7.4%
4053	6.10	6.25	2.5%
4061	9.49	8.39	-11.6%
4062	3.52	4.37	24.1%
4101	5.18	6.25	20.7%
4109	1.40	1.43	2.1%
4110	3.61	3.18	-11.9%
4111	3.56	3.92	10.1%
4113	3.98	4.28	7.5%
4114	13.31	13.78	3.5%
4130	9.31	8.79	-5.6%
4131	9.31	10.15	9.0%
4133	6.32	6.44	1.9%
4149	1.22	1.31	7.4%
4206	6.38	6.61	3.6%
4207	2.45	2.80	14.3%
4239	6.51	6.61	1.5%
4240	5.01	5.94	18.6%
4243	4.09	4.13	1.0%
4244	4.63	4.56	-1.5%
4250	2.95	3.49	18.3%
4251	4.07	4.54	11.5%
4263	6.36	8.53	34.1%
4273	5.14	5.68	10.5%
4279	4.72	5.11	8.3%
4282	5.12	6.46	26.2%
4283	7.78	7.15	-8.1%
4299	4.39	4.73	7.7%
4301	2.51	2.73	8.8%
4304	7.98	9.43	18.2%
4307	2.84	3.56	25.4%
4351	2.16	2.76	27.8%
4352	2.65	2.90	9.4%
4360	3.65	3.80	4.1%
4361	2.71	2.95	8.9%
4410	8.02	7.94	-1.0%
4417	5.16	5.58	8.1%
4420	16.94	18.44	8.9%
4431	3.19	3.14	-1.6%
4432	3.13	2.92	-6.7%
4439	4.18	4.51	7.9%
4452	7.56	7.70	1.9%
4459	5.14	5.94	15.6%

North Carolina

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
4470	4.94	4.92	-0.4%
4484	5.88	6.04	2.7%
4493	7.00	6.70	-4.3%
4511	0.94	1.07	13.8%
4557	4.55	5.61	23.3%
4558	3.67	3.47	-5.4%
4568	5.62	5.99	6.6%
4581	2.62	2.45	-6.5%
4583	13.82	15.30	10.7%
4611	1.40	1.45	3.6%
4635	5.84	6.58	12.7%
4653	4.85	4.99	2.9%
4665	16.68	19.32	15.8%
4670	8.13	11.05	35.9%
4683	5.42	6.27	15.7%
4686	4.02	4.80	19.4%
4692	1.22	1.26	3.3%
4693	1.88	1.88	0.0%
4703	3.63	4.61	27.0%
4717	4.42	4.73	7.0%
4720	3.45	3.90	13.0%
4740	5.53	4.51	-18.4%
4741	3.37	3.85	14.2%
4751	7.61	7.65	0.5%
4771	4.96	5.39	8.7%
4777	15.65	17.94	14.6%
4825	2.40	2.35	-2.1%
4828	3.93	4.28	8.9%
4829	4.26	4.68	9.9%
4902	5.97	7.56	26.6%
4923	2.27	2.66	17.2%
5020	17.36	18.15	4.6%
5022	13.05	15.02	15.1%
5037	78.32	67.22	-14.2%
5040	45.05	35.76	-20.6%
5057	22.54	23.36	3.6%
5059	70.56	63.87	-9.5%
5069	75.09	69.14	-7.9%
5102	14.43	15.82	9.6%
5146	14.27	15.66	9.7%
5160	8.90	8.93	0.3%
5183	10.73	11.10	3.4%
5188	10.60	12.31	16.1%
5190	10.56	10.74	1.7%
5191	1.79	1.83	2.2%

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
5192	9.14	9.62	5.3%
5213	16.11	16.68	3.5%
5215	8.39	9.20	9.7%
5221	9.31	9.77	4.9%
5222	22.36	25.07	12.1%
5223	10.65	11.19	5.1%
5348	9.62	10.95	13.8%
5402	7.61	9.88	29.8%
5403	15.76	15.54	-1.4%
5437	13.49	14.16	5.0%
5443	8.11	9.12	12.5%
5445	17.42	19.44	11.6%
5462	14.38	15.63	8.7%
5472	13.47	11.50	-14.6%
5473	19.19	23.33	21.6%
5474	14.08	15.44	9.7%
5478	9.31	9.31	0.0%
5479	13.03	16.04	23.1%
5480	14.12	13.38	-5.2%
5491	9.25	7.82	-15.5%
5506	13.60	16.16	18.8%
5507	9.49	10.81	13.9%
5508	33.25	30.27	-9.0%
5535	16.26	17.01	4.6%
5537	11.87	13.16	10.9%
5551	35.39	40.51	14.5%
5606	3.74	4.44	18.7%
5610	15.85	16.06	1.3%
5645	30.12	33.50	11.2%
5703	42.10	43.27	2.8%
5705	25.34	33.86	33.6%
5951	0.79	0.81	2.5%
6003	16.61	16.77	1.0%
6005	13.97	14.80	5.9%
6017	14.12	14.45	2.3%
6018	7.85	8.93	13.8%
6045	6.86	8.05	17.3%
6204	25.97	26.87	3.5%
6206	9.53	10.36	8.7%
6213	6.03	6.61	9.6%
6214	7.32	7.53	2.9%
6216	17.03	18.13	6.5%
6217	15.41	16.54	7.3%
6229	8.98	10.38	15.6%
6233	8.74	10.00	14.4%

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
6235	19.24	19.39	0.8%
6236	27.13	27.59	1.7%
6237	4.37	4.63	5.9%
6251	35.94	28.52	-20.6%
6252	17.36	14.61	-15.8%
6260	12.53	13.09	4.5%
6306	14.30	14.68	2.7%
6319	13.16	14.92	13.4%
6325	12.74	13.69	7.5%
6400	13.40	13.69	2.2%
6503	5.25	5.94	13.1%
6504	5.25	5.94	13.1%
6702	15.41	14.92	-3.2%
6703	31.17	30.72	-1.4%
6704	17.12	16.58	-3.2%
6801	7.49	7.18	-4.1%
6811	11.15	15.37	37.8%
6824	20.04	19.79	-1.2%
6826	10.72	9.46	-11.8%
6834	6.51	6.53	0.3%
6836	11.80	13.02	10.3%
6843	25.53	28.49	11.6%
6845	27.48	24.24	-11.8%
6854	13.44	12.81	-4.7%
6872	32.95	29.08	-11.7%
6874	47.68	44.98	-5.7%
6882	9.22	11.26	22.1%
6884	18.14	17.96	-1.0%
7016	8.44	8.55	1.3%
7024	9.38	9.50	1.3%
7038	12.07	12.76	5.7%
7046	14.65	15.99	9.1%
7047	17.07	17.61	3.2%
7050	24.40	26.28	7.7%
7090	13.40	14.18	5.8%
7098	16.26	17.77	9.3%
7099	29.62	32.93	11.2%
7133	13.66	13.90	1.8%
7151	16.59	16.89	1.8%
7152	33.58	34.76	3.5%
7153	18.45	18.77	1.7%
7222	19.13	19.41	1.5%
7228	17.84	19.39	8.7%
7229	23.83	26.94	13.1%
7230	14.30	19.08	33.4%

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Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
7231	19.56	20.29	3.7%
7232	21.99	25.09	14.1%
7309	30.53	34.50	13.0%
7313	8.24	8.08	-1.9%
7317	18.66	19.51	4.6%
7323	10.21	10.38	1.7%
7327	27.50	32.81	19.3%
7333	12.88	12.59	-2.3%
7335	14.30	13.99	-2.2%
7337	26.04	25.92	-0.5%
7350	23.75	24.14	1.6%
7360	9.31	9.50	2.0%
7370	13.66	15.18	11.1%
7380	10.27	11.83	15.2%
7382	12.31	12.74	3.5%
7390	9.79	11.98	22.4%
7394	17.03	14.87	-12.7%
7395	18.93	16.54	-12.6%
7398	34.47	30.65	-11.1%
7402	0.39	0.40	2.6%
7403	10.03	10.41	3.8%
7405	4.00	4.63	15.8%
7420	41.56	42.70	2.7%
7421	3.74	3.94	5.3%
7422	5.18	5.37	3.7%
7425	11.72	9.81	-16.3%
7431	5.29	5.39	1.9%
7445	1.33	1.54	15.8%
7453	1.77	1.81	2.3%
7502	8.79	7.72	-12.2%
7515	4.31	3.97	-7.9%
7520	8.18	8.67	6.0%
7529	23.30	29.84	28.1%
7538	32.02	29.44	-8.1%
7539	7.13	6.77	-5.0%
7540	14.38	14.40	0.1%
7580	7.28	7.82	7.4%
7590	12.02	12.90	7.3%
7600	11.67	13.71	17.5%
7605	6.27	6.51	3.8%
7610	1.14	1.31	14.9%
7705	14.82	19.65	32.6%
7710	10.21	11.95	17.0%
7711	10.21	11.95	17.0%
7720	5.42	5.99	10.5%

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Appendix E

Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
7723	7.61	7.72	1.4%
7855	12.68	12.28	-3.2%
8001	5.57	6.94	24.6%
8002	4.37	4.97	13.7%
8006	6.54	7.27	11.2%
8008	3.39	3.66	8.0%
8010	3.30	3.40	3.0%
8013	0.98	1.16	18.4%
8015	1.84	1.97	7.1%
8017	3.98	4.13	3.8%
8018	5.64	5.87	4.1%
8021	4.15	5.27	27.0%
8031	6.32	8.53	35.0%
8032	6.30	5.30	-15.9%
8033	4.37	5.13	17.4%
8037	3.98	4.13	3.8%
8039	5.47	6.04	10.4%
8044	7.87	9.05	15.0%
8045	1.51	1.38	-8.6%
8046	6.32	7.13	12.8%
8047	1.92	2.26	17.7%
8058	6.36	7.96	25.2%
8072	1.64	1.71	4.3%
8102	3.76	3.59	-4.5%
8103	6.58	7.13	8.4%
8105	6.36	6.01	-5.5%
8106	9.60	11.19	16.6%
8107	9.14	9.65	5.6%
8111	5.51	4.97	-9.8%
8116	7.39	7.70	4.2%
8203	11.76	14.21	20.8%
8204	6.84	7.51	9.8%
8209	7.02	7.79	11.0%
8215	7.80	8.62	10.5%
8227	11.52	12.52	8.7%
8232	9.49	9.96	5.0%
8233	9.29	7.89	-15.1%
8235	11.76	12.31	4.7%
8236	14.27	14.61	2.4%
8263	15.21	15.16	-0.3%
8264	11.52	12.95	12.4%
8265	16.37	16.77	2.4%
8279	13.77	14.90	8.2%
8288	16.11	22.05	36.9%
8291	11.96	10.91	-8.8%

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
8292	7.72	9.01	16.7%
8293	22.89	28.30	23.6%
8304	10.93	11.31	3.5%
8350	20.33	22.14	8.9%
8380	5.79	6.39	10.4%
8381	5.81	6.51	12.0%
8385	7.41	7.22	-2.6%
8392	5.95	6.49	9.1%
8393	4.00	4.35	8.7%
8500	14.25	14.95	4.9%
8601	1.71	1.62	-5.3%
8602	1.71	1.76	2.9%
8603	0.39	0.36	-7.7%
8606	7.78	7.96	2.3%
8709	10.42	10.36	-0.6%
8710	5.31	5.70	7.3%
8719	6.49	8.08	24.5%
8720	3.89	4.66	19.8%
8721	0.77	0.76	-1.3%
8723	0.39	0.40	2.6%
8725	3.89	5.25	35.0%
8726	7.05	6.46	-8.4%
8734	1.16	1.28	10.3%
8737	1.03	1.16	12.6%
8738	2.10	2.38	13.3%
8742	0.85	0.95	11.8%
8745	8.94	12.24	36.9%
8748	1.55	1.64	5.8%
8755	0.85	1.05	23.5%
8799	1.55	1.38	-11.0%
8800	2.12	2.61	23.1%
8803	0.17	0.21	23.5%
8805	0.52	0.55	5.8%
8810	0.39	0.40	2.6%
8814	0.48	0.50	4.2%
8815	0.96	1.02	6.3%
8820	0.35	0.36	2.9%
8824	8.02	8.27	3.1%
8825	4.13	4.18	1.2%
8826	6.65	7.53	13.2%
8831	3.02	3.21	6.3%
8832	0.79	0.90	13.9%
8833	3.52	3.75	6.5%
8835	5.62	6.01	6.9%
8842	4.44	5.30	19.4%

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
8848	5.81	6.58	13.3%
8849	6.82	7.79	14.2%
8855	0.39	0.40	2.6%
8856	0.39	0.40	2.6%
8864	3.59	3.83	6.7%
8868	0.98	1.14	16.3%
8869	2.51	2.97	18.3%
8871	0.46	0.38	-17.4%
8901	0.46	0.52	13.0%
9012	2.97	3.18	7.1%
9014	6.10	6.70	9.8%
9015	6.69	8.41	25.7%
9016	7.24	7.18	-0.8%
9019	5.09	5.92	16.3%
9033	4.37	4.44	1.6%
9040	6.47	6.82	5.4%
9044	3.74	4.02	7.5%
9052	4.26	4.89	14.8%
9058	3.41	3.52	3.2%
9060	3.10	3.21	3.5%
9061	3.04	2.95	-3.0%
9062	3.19	3.37	5.6%
9063	2.21	2.52	14.0%
9077	3.57	4.25	19.0%
9082	2.99	3.11	4.0%
9083	2.99	3.42	14.4%
9084	2.73	3.02	10.6%
9089	1.86	2.54	36.6%
9093	2.93	3.16	7.8%
9101	6.49	7.72	19.0%
9102	6.06	6.61	9.1%
9154	4.39	4.78	8.9%
9156	6.10	6.82	11.8%
9170	7.21	9.86	36.8%
9178	14.23	15.87	11.5%
9179	43.50	38.40	-11.7%
9180	10.25	10.95	6.8%
9182	4.46	4.89	9.6%
9186	65.65	54.96	-16.3%
9220	10.16	11.00	8.3%
9402	14.67	14.99	2.2%
9403	17.33	19.74	13.9%
9410	5.79	7.08	22.3%
9501	5.49	6.44	17.3%
9505	6.32	6.49	2.7%

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Assigned Risk Rates Comparison

Class Code	Current 04/01/13	Proposed 04/01/14	Percent Change
9516	8.15	11.14	36.7%
9519	7.52	9.69	28.9%
9521	8.83	9.15	3.6%
9522	3.67	4.32	17.7%
9534	22.01	22.50	2.2%
9554	29.82	31.34	5.1%
9586	1.29	1.45	12.4%
9600	4.24	5.04	18.9%
9620	2.21	2.35	6.3%

NORTH CAROLINA – ASSIGNED RISK

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Supplemental Material

North Carolina G.S. 58-36-15(h) specifies that the following information must be included in all policy form, rule and rate filings filed under Article 36. 11 NCAC 10.1111 specifies that additional detail be provided under each of these items.

*Sections incorporated by reference to the Loss Cost Filing submitted 8/30/2013

11 NCAC 10.1111 - WORKERS COMPENSATION

Item

8 For assigned risk rate filings, the filer shall include support for a reasonable margin for underwriting profit and contingencies and investment income, including realized capital gains.

Response

See the prefiled testimony and exhibits of J. Vander Weide and D. Appel (Exhibits RB-6 through RB-13).

11 NCAC 10.1111 - WORKERS COMPENSATION

Item

9 For assigned risk rate filings, the filer shall provide investment earnings on capital and surplus. Given the selected underwriting profit and contingencies provision contained in the filing, the filer shall indicate the resulting rates of return (including consideration of investment income) on equity capital, on statutory surplus, and on total assets. The filer shall show the derivation of all factors used in producing these calculations and justify the fairness and reasonableness of these rates of return.

Response

As respects this filing, after-tax investment earnings on capital and surplus (including an adjustment for prepaid expenses) are expected to be 2.38% of premium. Given the 9.0% underwriting profit provision and the other expenses shown in the filing, the pro forma return on net worth (equity capital), including underwriting profit and investment income on reserves and surplus, is shown in the prefiled testimony and exhibits of D. Appel (Exhibits RB-11 through RB-13). Also shown therein is the ratio of net worth to surplus of 1.15. Accordingly, the corresponding return on statutory surplus would be 12.14%. Based on data from A.M. Best's Aggregates & Averages, the 5-year average ratio of net worth to assets is .403. Accordingly, the corresponding return on assets would be 4.24%. If 9.0% is not in fact earned as underwriting profit, the resulting returns would be correspondingly lower.

See also the pre-filed testimony of D. Appel (Exhibit RB-11) and J. Vander Weide (Exhibit RB-6).

EXHIBIT RB-2

PRE-FILED TESTIMONY
OF
RAYMOND F. EVANS

NORTH CAROLINA WORKERS COMPENSATION INSURANCE
2013 RESIDUAL MARKET RATE FILING
BY THE NORTH CAROLINA RATE BUREAU

Q. Would you state your full name and business address?

A. Raymond F. Evans, Jr. CPCU, 2910 Sumner Boulevard, Raleigh, North Carolina.

Q. Are you employed by the North Carolina Rate Bureau ("Bureau")?

A. Yes.

Q. In what capacity?

A. I am the General Manager.

Q. How long have you been employed by the Bureau?

A. Since September 2000.

Q. Would you summarize your educational background?

A. I graduated from Ohio State University with a Bachelor of Science Degree in Accounting. I also have the designation of Chartered Property Casualty Underwriter.

Q. What was your work experience after graduation and prior to your employment by the Bureau?

A. From March 1966 to July 2000, I was employed by the State Auto Insurance Companies, Columbus, Ohio in various capacities, including the position of Executive Vice President of a subsidiary.

Q. Can you identify Exhibits RB-1 through RB-13?

A. Yes. Exhibit RB-1 is an exhibit setting forth the filed final rates for the workers compensation insurance residual market in North Carolina, as well as the data and calculations underlying those rates. RB-1 also includes the 11 NCAC 10.1111 data and exhibits required. Exhibits RB-2 through RB-13 contain the required accompanying prefiled testimony and exhibits. Together, these materials constitute a filing (the "Filing") that is dated August 30, 2013 submitted by the Bureau to the Honorable Wayne Goodwin, Commissioner of Insurance, with respect to workers compensation insurance assigned risk rates in North Carolina.

Q. Does the Bureau have actuaries on its staff?

A. Yes, the Bureau has an actuary on its staff. However, the Bureau continues to obtain actuarial expertise for preparation of the Filing from the Workers Compensation Committee, the National Council on Compensation Insurance, Inc. and from Milliman, Inc.

Q. Would you describe briefly the workers compensation insurance residual market mechanism for North Carolina?

A. Yes. North Carolina General Statute 58-36-1(5) requires every insurer that writes workers compensation insurance in North Carolina to insure and accept any eligible workers compensation insurance risk that has been certified to be "difficult to place" by a licensed fire and casualty insurance agent. The Commissioner of Insurance has approved the North Carolina Workers Compensation Insurance Plan which describes the rules and procedures for assigning applicant employers to an insurance company. The designated insurer must issue the standard Workers Compensation and Employers Liability Insurance Policy for each assigned employer and provide the usual and customary service to their insureds.

Q. Do all insurance companies receive assignments?

A. No. Many insurance companies have opted to meet their residual market participation requirements by becoming a member of the National Workers Compensation Reinsurance Association ("National Pool"). Under the pool arrangement all assignments for those members of the National Pool are made to insurers designated as "servicing carriers" of the pool. Insurers who do not elect to participate in the National Pool are designated as direct assignment carriers for North Carolina and applicant employers are assigned to the direct assignment carriers on the basis of their voluntary workers compensation insurance premium writings in North Carolina.

Q. How many servicing carriers are there and how are they selected?

A. There are currently two servicing carriers who were selected through a competitive bid process. The servicing carriers for the three year term beginning January 1, 2014 will be selected at the end of August 2013.

Q. How many direct assignment carriers are there?

A. At this time there are seven companies or company groups that have been approved as direct assignment carriers.

Q. What will be the residual market quota shares of the direct assignment carriers compared to the servicing carriers?

A. On the basis of 2012 premium writings, the direct assignment carriers will receive approximately 20% of the assigned risk premium during 2013 and the servicing carriers will be assigned approximately 80% of the premium.

Q. How many insurance companies were licensed to write workers compensation insurance in North Carolina during 2012?

A. Five hundred thirty (530) insurance companies.

Q. How many insurance companies were actually writing workers compensation insurance in North Carolina during 2012?

A. Three hundred fifty-four (354) companies.

Q. Does the Filing submitted to the Commissioner include, to the extent available, the information to be furnished in connection with filings under Article 36 of Chapter 58 of the General Statutes?

A. Yes. Those data that were available have been submitted to the Commissioner as part of the Filing. As shown and explained in that submission, some data were not collected or, if collected, were not retrievable from the statistical data in the form requested. The individual circumstances with respect to such data are explained in the submission.

Q. Does that conclude your prefiled testimony?

A. Yes.

EXHIBIT RB-3

PREFILED TESTIMONY
OF
JAY A. ROSEN

2013 NORTH CAROLINA WORKERS COMPENSATION
LOSS COST AND ASSIGNED RISK RATE FILINGS

Q. *Please state your name, title, employer, and position you hold.*

A. My name is Jay Rosen, and I am a Director and Actuary for the National Council on Compensation Insurance, Inc. ("NCCI") in Boca Raton, Florida. My current responsibilities include oversight of the actuarial function, including the preparation of rate filings and presentation of actuarial testimony, for six jurisdictions in NCCI's Eastern Region (including North Carolina).

Q. *Would you outline your academic and professional training?*

A. I have a Bachelor of Science degree and a Master of Science degree, both in Mathematics, from the University of Florida, in Gainesville, Florida. I am a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries and am in good standing with both of those organizations.

Q. *How long have you been employed by NCCI?*

A. I have been employed by NCCI since June of 1992.

Q. *Would you briefly describe the principal functions of NCCI?*

A. NCCI is the major data collector of workers compensation statistics, and is recognized as the expert organization in workers compensation data collection, ratemaking, and research. NCCI's principal functions are to collect and process statistical data, inspect and administer a detailed classification system and develop prices for workers compensation insurance that are not excessive, inadequate or unfairly discriminatory. It prepares manual loss costs, manual rates, rating plans and policy forms

for use by its members and subscribers and files same with various supervisory authorities on their behalf.

Q. *Who belongs to NCCI?*

A. NCCI is an organization of some 600 members and subscribers who are insurance companies and self-insured funds writing workers compensation insurance. These loss cost and rate filings are based on the data submitted to NCCI and the North Carolina Rate Bureau (NCRB) by insurance companies writing workers compensation business in North Carolina.

Q. *Are you familiar with the filings for revised workers compensation loss costs and assigned risk rates by the North Carolina Rate Bureau (the "Filings") of which this testimony is a part?*

A. Yes, I am.

Q Did you supervise the production of the Filings?

A. Yes, I did. NCCI has contracted with the North Carolina Rate Bureau as an actuarial services vendor in connection with these Filings.

Q What is the purpose and scope of your testimony?

A. I will provide testimony on the key actuarial issues and components in the Filings. Specifically, my testimony will discuss the (i) development of the overall average loss cost level indication, (ii) assigned risk differential analysis, and (iii) various expense components contained in the voluntary loss costs and assigned risk rates.

Q. *Could you briefly describe the purpose of the Filings that have been submitted to the North Carolina Department of Insurance?*

A. Sure. One of the Filings proposes revised loss costs and rating values for the voluntary market. The other Filing proposes revised rates and rating values for the Workers Compensation Insurance Plan, which is the assigned risk market.

Q. *What is the voluntary market and what is the assigned risk market?*

A. Those insurers electing to provide employers workers compensation coverage in North Carolina's competitive marketplace—incorporating their own underwriting guidelines and expense needs—constitute the "voluntary market."

An employer unable to secure workers compensation insurance in the voluntary market obtains coverage through the Workers Compensation Insurance Plan—also referred to as the assigned risk market. This market of last resort provides a method for those employers not written voluntarily to obtain coverage.

Q. *For the voluntary market, you mentioned a revision to the current loss costs has been filed. What is the difference between a loss cost and a rate?*

A. The term loss cost is used because, in general, it represents only that portion of the full rate that provides for loss and loss adjustment expenses. Loss costs are also referred to as "pure premiums" and both of these terms are used throughout the Filings. The North Carolina loss costs are not final rates because they do not include provisions for any of the remaining expenses (including production expenses, profit, contingencies, etc.) of an insurer.

In the North Carolina voluntary market, each carrier is responsible for considering their individual expense needs, developing a loss cost multiplier (LCM), and determining their final rates. The carrier-specific LCM is the expense loading (providing for all carrier expenses other than loss adjustment expense) an insurer applies to a set of loss costs to build its final rates. In this process, a carrier may elect to base their final rates on the loss costs in the Loss Cost filing.

Q. *If this loss cost revision were approved as filed, would all employers insured in the voluntary market receive a loss cost change equal to the overall average proposed change?*

A. No. The proposed loss cost indication represents the overall average change for the voluntary market. The actual percentage loss cost change

may vary between individual classification codes—both above and below this average.

The proposed overall average change is equitably distributed to the various industry groupings and then to the more than 600 individual classification codes during the ratemaking process. The final premium charged a particular employer not only depends on the specific class codes in which the employer conducts business, but also on the individual insurer issuing the policy. Since in the voluntary market each insurer is responsible for determining its final rates, after reviewing their own expense needs, underwriting guidelines, etc., the final premium charged to any particular employer may vary among insurers.

Q. *Please give us an overview of the process used to develop the Filings.*

A. The latest available premium and loss data is collected by NCCI and NCRB from insurance companies and verified. Using this data, the expected revenue need and costs associated with writing workers compensation insurance in North Carolina during the period April 1, 2014 through March 31, 2015 are determined. In this process, expenses are analyzed and provisions for these components are included. A comparison of this expected revenue need to the expected future costs determines the extent to which the currently approved overall loss cost and rate levels should change.

Q. *Do the Filings include data for all companies writing workers compensation business in North Carolina?*

A. No. There are several reasons that would prevent a carrier's data from being included in a filing, including (i) data that was not reported prior to the filing and (ii) quality issues that exist with the reported data. While it would clearly be preferable to include all carriers' data in the filing, it is critical that the data be of the highest quality possible. Carriers with a premium market share greater than 0.1% and whose data is not contained in the Filings' experience period are listed in Appendix A-IV.

NCCI has the following processes in place to provide all carriers the incentive to submit aggregate data in a timely and accurate manner:

(i) Aggregate Data Quality Incentive Program (ADQIP): In response to carriers reporting late and/or inaccurate data, they are subject to financial assessments levied by NCCI.

(ii) Financial Data Escalation Process: During the data collection and validation process, data issues are discussed with insurance carrier personnel at progressively increasing levels of authority until the issues are resolved.

The data goes through a series of three validation procedures implemented by NCCI: (i) arithmetic checks, (ii) reasonableness checks, and (iii) a reconciliation report.

The first check, the arithmetic check, is used to make sure that the data submitted to NCCI in the various rows and columns of the aggregate financial data reports sum to the correct totals as stated by the carriers in those submissions.

The second check, the reasonableness check, is used to make sure that all unusual fluctuations in a carrier's data are explained. For example, a company reporting $100,000 in premium in 2012 and then $10 million in 2013 would be questioned about the large change in premium amounts.

The third test is a reconciliation. The North Carolina data submitted to NCCI is reconciled with the NAIC Annual Statement data submitted by companies to the North Carolina Department of Insurance.

Q. *Are the data used in the Filings reasonable and reliable for determining voluntary loss costs and assigned risk rates in North Carolina?*

A. Yes, in my opinion, the data as collected and validated provides an actuarially appropriate, reasonable, and credible dataset on which to base the Loss Cost and Assigned Risk rate filings.

Q. *What overall average change does the Loss Cost filing propose?*

A. The Loss Cost filing seeks an overall average increase of 0.3% from the current loss cost level for the industrial classifications.

Q. *What overall average rate level change does the Assigned Risk filing propose?*

A. The Assigned Risk rate filing seeks an overall average rate level increase of 9.0% for the industrial classifications.

Q. *What is the proposed effective date for the Filings?*

A. The Loss Cost and Assigned Risk rate filings are both proposed to apply to new and renewal policies becoming effective on or after April 1, 2014. The actual use of the loss costs is subject to individual company actions to adopt the filed loss costs.

Q. *Would you please briefly describe the method used in the Filings to determine the overall average changes?*

A. Yes. In very general terms, the overall changes are determined by taking the latest available financial data experience and adjusting it to reflect conditions that are expected to exist during the period April 1, 2014 through March 31, 2015. The result indicates the adequacy of the current loss costs for policies to be written during that period. This process requires the application of actuarial judgment and projections simply because ratemaking is prospective in nature and future outcomes are unknown.

As presented in Exhibit I of the Filings, the process begins with two blocks of historical North Carolina aggregate financial data. The first block reflects the experience from all policies with effective dates during 2011 and is commonly referred to as "policy year 2011" data. The second block of data reflects the experience from all policies with effective dates during 2010 and is referred to as "policy year 2010" data. This data consists of earned premiums and losses during these periods reported to NCCI by those companies writing workers compensation insurance in North Carolina. "Losses" is simply another name for the benefits carriers provide to or on behalf of injured workers. They can be in the form of medical services or indemnity (lost wage) payments. While three years of data

were reviewed in connection with this year's actuarial analysis, data for policy years 2011 and 2010 serve as the selected experience period in the Filings.

Loss cost level indications were determined based on an average of (i) paid losses and (ii) paid losses plus case reserves for each of policy years 2011 (Exhibit I, Section A) and 2010 (Exhibit I, Section B). An average of the separate policy year 2011 and 2010 loss cost level indications (Exhibit I, Section C) serves as the basis for the Rate Bureau's filed overall average voluntary pure premium level change.

In calculating the overall pure premium level change, the premium from these two policy years is the first focus. The premiums that have been collected must be "developed" to reflect future payroll audits (line 1 of Exhibit I, Sections A and B). Since the final premium totals for the recent policy years will not be known until all payroll audits have been completed, the application of premium development factors provides a projection of the amount by which the currently reported premium totals will change when the final results are known.

Additionally, the premiums are brought to the current pure premium level and the portion that covers expenses is removed (line 2). These adjustments are necessary because we are trying to determine how much premium will be available for benefits, and the historical premium data still reflects old rates and includes the portion covering expenses. Since the current loss costs are being analyzed and updated, the reported historical premium is adjusted to this current pure premium level. Once the historical premium has been adjusted to what it would be if it had been earned under the latest approved loss costs, one may opine on the adequacy of the current set of loss costs in terms of providing for future losses.

Q. *Would you now describe the adjustments to the policy year indemnity and medical losses?*

A. Yes. The losses from these two blocks of data are reviewed. Indemnity and medical losses are analyzed separately. Initially, losses are limited to mitigate the impact of individual large workers compensation claims.

Medical reserves for example can extend into the multi-million dollar range on extremely severe cases. At this stage, limiting such claims is appropriate in determining future premiums.

Next, the limited losses must be developed to their ultimate level (lines 4 and 16). This is especially necessary for workers compensation insurance because it takes many years before some losses are finally paid. For example, depending on the nature and seriousness of a work-related injury, indemnity payments may extend many years into the future. Further, since even the conditions giving rise to some of these losses may take many years to manifest themselves, many years may pass before some claims are even known to the insurer—let alone settled. Asbestosis claims are an example of this type of loss.

Next, since we are trying to estimate future losses and the data reflects historical benefit levels, the reported losses are adjusted to reflect the impact of any subsequent changes in the level of workers compensation benefits. This is accomplished in two steps (lines 5, 14, 17, and 26). Note that NCCI's analyses of the benefit changes (for example, the medical fee schedule changes) were presented to and adopted by the Rate Bureau for use in the Filings. The losses are then increased by 16.5% so that the final loss costs will include a provision for loss adjustment expense (lines 6 and 18).

The resulting loss figures are compared to the total estimated premium that would be available to fund these losses (lines 9 and 21). Next, the indemnity and medical cost ratios data must be trended to account for inflationary pressures between the time period of the historical data and the period when the loss costs will be in effect (lines 10 and 22). Trend adjusts the historical data to account for the differential impact of inflation on losses and premiums. If losses were changing at the same rate as payrolls, trend would not be needed since the change in losses would be exactly matched by a corresponding change in payrolls and, therefore, premiums. On the other hand, if losses have been changing at a different rate than payroll, trend is necessary if historical data is to be used as a predictor of future losses.

The trend factors selected by the Rate Bureau and applied in these filings are -0.5% per year for indemnity losses and 0.0% per year for medical losses.

The final step is to adjust the developed limited cost ratios to an unlimited basis. This is accomplished in lines 12 and 24. The employed methodology involves replacing the amount of actual reported individual claim losses in excess of a North Carolina-specific dollar threshold with an excess loss provision. The excess provision represents the expected volume of losses in excess of the threshold. This procedure serves to smooth out the impact of large losses.

Q. *What are the final steps in determining the overall average voluntary loss cost level change?*

A. Indicated loss cost level changes for each of policy years 2011 and 2010 are calculated by summing the respective indemnity and medical cost ratios (line 28). These individual-year changes are then averaged, resulting in an indicated overall average increase of 0.3% to the current voluntary pure premium level (Exhibit I, Section C).

Q. *What loss development methodologies were analyzed and utilized in connection with the Filings?*

A. The financial data were analyzed in order to select the most actuarially sound loss development projection methodology to be used in determining experience indications. This analysis involves identifying changes in the level of reserve adequacy and trends in development that could skew the results of one or more of the loss development projection methods. In addition, the base to which the loss development factors will be applied is analyzed in conjunction with the factors themselves.

The loss development projection methods examined in this year's analysis were based on (i) paid losses and (ii) paid losses plus case reserves. Results based on an average of these two loss development methodologies were chosen as being most appropriate for this year's Filings.

Q. *After identifying the most appropriate loss development methodology, what is the next step in the process to compute the actual loss development factors?*

A. After identifying the most appropriate loss development methodology, the next step in the process is to compute the actual loss development factors. In calculating these factors, prior years' losses are examined to determine how they evolve from the time they are first reported to the time they are finally settled.

For inclusion in the Filings, (i) final paid loss development factors were derived based on an average of the two most recent historical factors at each loss age interval and (ii) final paid plus case loss development factors were derived based on an average of the five most recent historical factors at each loss age interval. Statewide loss development (tail) factors were used to develop losses from a nineteenth report to an ultimate basis. The tail factors used in the Filings are based on an average of the most recent five historical factors at a nineteenth report.

Q. *Please explain the tail factor methodology included in the Filings.*

A. In workers compensation, payments and loss reserve changes persist for extended periods of time. The ultimate losses of a policy year are determined by multiplying the current reported losses by the expected loss development factor. This expected loss development factor is calculated as the product of individual link ratios. However, due to data constraints, it is not possible to calculate all of the required individual link ratios. Therefore, it is necessary to aggregate all loss development that occurs after a nineteenth report into a single (tail) factor. Tail factors are calculated separately for indemnity and medical losses by comparing the changes in the volume of policy year paid plus case losses after a nineteenth report to the volume of policy year paid plus case losses as of a nineteenth report, along with the application of a growth adjustment factor.

Q. *Will you please describe how the final indemnity and medical annual trend factors were determined for the Filings?*

A. Yes. The final trend factors were judgmentally selected by the NCRB after reviewing the results of several different trend estimates, including (i) a North Carolina frequency/severity trend analysis and (ii) indicated annual loss ratio trend factors.

A North Carolina-specific frequency/severity analysis was performed to separately examine changes in the frequency of workers compensation claims being filed and changes in their average cost per case. Indicated loss ratio trend factors based on both paid and paid plus case losses were also examined in order to review trend estimates that are independent of possible fluctuations in carrier-reported claim counts from year to year.

Q. *For inclusion in these Filings, did the NCRB select the highest possible trend factors that result from the various actuarially accepted approaches?*

A. No. In fact, the final trend factors selected may be overly optimistic—that is, higher trend factors would also have been actuarially appropriate in view of the results of the various trending methodologies shown in the filing's Appendix A-III. All else equal, utilizing higher trend factors would result in a higher indicated loss cost level change than that filed.

Q. *Please explain how the loss adjustment expense provision was determined.*

A. Both historical North Carolina-specific and countrywide loss adjustment expense information was reviewed as part of this year's rate filing analysis (See Exhibit II-A, Sheet 1). Based on that information, the NCRB judgmentally selected a 16.5% loss adjustment expense provision for use in the Filings.

Q. *Did you review the process used to allocate the overall average loss cost level change to the five industry groups and to the individual classification codes?*

A. Yes.

Q. *Do the Filings contain a description of the manner in which the overall change is distributed to the individual classifications?*

A. Yes. Part II, Appendices B-I through B-V of the Loss Cost filing provide extensive descriptions and documentation of the methods that are used to distribute the overall change among the various classifications.

Q. *How was the overall average change for the Assigned Risk filing determined?*

A. The assigned risk filing begins with the loss costs resulting from the analyses just described. Then two additional analyses were performed. The first of these compares the assigned risk market experience to the statewide market experience. This analysis supported the proposed change to the current assigned risk loss cost differential. The second analysis involves the assigned risk expense need. Both of these analyses are documented in Exhibit II of the Assigned Risk filing.

The results of these two analyses are incorporated in the formula Loss Cost Multiplier (Exhibit I-A, Sheet 1 of the Assigned Risk filing). After combining the indicated change in the pure premium level and the proposed change in the Loss Cost Multiplier, the final Assigned Risk rate level increase of 9.0% results (Exhibit I, Section D of the Assigned Risk filing).

Q. *Please explain the purpose and concept of the assigned risk differential.*

A. The primary purpose of the differential is to ensure equity between the assigned risk and voluntary markets. In order to help ensure a self-funded assigned risk market—one that does not require subsidization by participants in the voluntary market—the adequacy of the assigned risk differential is reviewed.

In North Carolina, as is usually the case, the combined experience for those employers in the assigned risk market is worse than the combined experience for those in the voluntary market. Therefore, during the assigned risk ratemaking process, the assigned risk differential is applied to recognize this disparity.

Q. *Please explain how this year's proposed change in the assigned risk differential was determined.*

A. As documented in Exhibit II-E of the assigned risk filing, five years of indicated loss cost differentials based on each of (i) paid and (ii) paid plus case data were reviewed. The selected change to the current loss cost differential is based on an average of the changes indicated by both the paid and paid plus case experience (Exhibit II-E, Sheet 1, line (e)).

Q. *Please briefly describe the provisions for the various assigned risk expense components contained in the Assigned Risk filing.*

A. The underlying detail and supporting calculations in connection with the various expense provisions contained in this year's proposed assigned risk rates are fully documented in Exhibit II of the assigned risk filing.

As a summary, a brief description of each expense component is as follows:

(i) Commission and brokerage – The 5.0% provision is the commission payable on assigned risk business, as required by the Workers Compensation Insurance Plan.

(ii) Loss adjustment expense (LAE) – The selection of this component was discussed earlier in connection with the proposed voluntary loss cost level change.

(iii) Other acquisition and general expense – This category includes provisions for various carrier expense items such as premium collection, underwriting, policy processing, advertising, and company operational and administrative expenses.

(iv) Underwriting profit – The underwriting profit analysis was conducted by Dr. Vander Weide and Dr. Appel.

(v) Taxes, licenses, and fees – This includes a 2.65% provision for the premium tax, including the regulatory surcharge (equal to 6.0% of the premium tax), and 0.3% for miscellaneous tax.

(vi) Effect of expense constant and minimum premiums – It is expected that the $250 expense constant, a minimum premium multiplier of 200, and a maximum minimum premium of $1,250 will generate 18.4% of premium in the assigned risk market (Exhibit II-D, Sheet 1).

Q. *Are there any additional changes in miscellaneous rating values contained in the Filings?*

A. Yes. The pages summarizing the Filings by component identify additional changes, as do the miscellaneous values and retrospective rating plan sections of Exhibit III. The Table of Weighting Values and the Table of Ballast Values in Exhibit III were also updated.

Q. *Please describe what is meant by the term "F-classifications."*

A. The "F" or "Federal" classifications are those operations conducted on or about navigable waters for which benefit levels and related costs are determined by the United States Longshore and Harbor Workers' Compensation Act, rather than individual state laws. Typical F-classifications include those covering ship builders and stevedores.

Q. *What changes are proposed for the Federal classifications ("F-classes")?*

A. Based on the latest available North Carolina F-class experience (contained in Appendix B-V of the Loss Cost filing), the loss cost filing proposes an overall average change of -6.8% from the current loss cost level. The assigned risk filing proposes an overall average rate level change of -3.3% from the current assigned risk rate level.

Q. *What is your opinion as to whether the proposed loss cost changes for the voluntary market will result in loss costs that are not excessive, inadequate, or unfairly discriminatory?*

A. Based on my analysis, I believe the methodologies employed, the provisions used, and the resulting filed loss cost changes are actuarially sound and reasonable for the time period during which they are proposed to be in effect and will result in loss costs that are not excessive, inadequate, or unfairly discriminatory.

Q. *What is your opinion as to whether the proposed rate changes for the assigned risk market will result in rates that are not excessive, inadequate, or unfairly discriminatory?*

A. Based on my analysis and assuming the profit produced by the proposed rates is reasonable, I believe the methodologies employed, the provisions used, and the resulting filed assigned risk rate changes are actuarially sound and reasonable for the time period during which they are proposed to be in effect and will result in assigned risk market rates that are not excessive, inadequate, or unfairly discriminatory.

Q. *Does this conclude your testimony?*

A. Yes, it does.

NATIONAL COUNCIL ON COMPENSATION INSURANCE

2013 ANNUAL LOSS ADJUSTMENT EXPENSE REVIEW -- Evaluated as of 12/31/2012

LOSS ADJUSTMENT EXPENSE SUMMARY
Analysis Based on Private Carrier Data

Year	(1) Call # 19 DCCE Ratio (Avg. of Paid and Incurred Indications)	(2) Call # 19 AOE Ratio (Avg. of Paid and Incurred Indications) [1]	(3)=(1)+(2) Call # 19 LAE Ratio	(4) Calendar Year Incurred DCCE Ratio From IEE [2]	(5) Calendar Year Incurred AOE Ratio IEE [1,2]	(6)=(4)+(5) Incurred LAE Ratio IEE [2]	(7)=(3)-(6) Difference
2003	10.0%	7.5%	17.5%	9.9%	5.6%	15.5%	2.0%
2004	10.0%	7.0%	17.0%	10.2%	6.4%	16.6%	0.4%
2005	10.3%	7.5%	17.8%	10.4%	7.2%	17.6%	0.2%
2006	10.7%	7.8%	18.5%	12.6%	7.2%	19.8%	-1.3%
2007	10.8%	7.8%	18.6%	10.1%	7.3%	17.4%	1.2%
2008	11.3%	7.1%	18.4%	11.9%	7.1%	19.0%	-0.6%
2009	11.7%	7.7%	19.4%	11.3%	7.3%	18.6%	0.8%
2010	12.0%	7.3%	19.3%	11.9%	7.2%	19.1%	0.2%
2011	12.5%	7.0%	19.5%	11.4%	6.7%	18.1%	1.4%
2012	12.9%	7.4%	20.3%	12.2%	6.2%	18.4%	1.9%

Notes

Loss adjustment expense indications are displayed as a percentage of loss.

[1] Adjusted for impact of large deductibles.

[2] The IEE data is direct of reinsurance, excludes state funds and is from the NCCI Compiled IEE Validated Summary.

NATIONAL COUNCIL ON COMPENSATION INSURANCE

2013 ANNUAL LOSS ADJUSTMENT EXPENSE REVIEW -- Evaluated as of 12/31/2012

Analysis Based on Private Carrier Data

DCCE—PAID ANALYSIS

AY	(1) Paid Losses Excluding Large Deductibles @12/31/2012	(2) Paid DCCE Excluding Large Deductibles @12/31/2012	(3) Incremental Paid Loss Development Factors	(4) Incremental Paid DCCE Development Factors	(5) Cumulative Paid Loss Development Factors	(6) Cumulative Paid DCCE Development Factors	(7)=(1)x(5) Estimated Ultimate Losses	(8)=(2)x(6) Estimated Ultimate DCCE	(9)=(8)/(7) Estimated Ultimate DCCE Ratio
2003	13,507,513,405	1,369,666,448	n/a	n/a	1.181	1.163	15,952,373,331	1,592,922,079	10.0%
2004	12,739,093,577	1,267,670,398	1.017	1.018	1.201	1.184	15,299,651,386	1,500,921,751	9.8%
2005	15,104,566,062	1,541,669,824	1.021	1.022	1.226	1.210	18,518,197,992	1,865,420,487	10.1%
2006	15,944,254,249	1,710,546,612	1.026	1.028	1.258	1.244	20,057,871,845	2,127,919,985	10.6%
2007	16,787,900,142	1,795,084,382	1.037	1.041	1.305	1.295	21,908,209,685	2,324,634,275	10.6%
2008	16,772,521,769	1,886,963,456	1.054	1.062	1.375	1.375	23,062,217,432	2,594,574,752	11.3%
2009	14,369,110,412	1,638,848,816	1.085	1.100	1.492	1.513	21,438,712,735	2,479,578,259	11.6%
2010	13,150,819,344	1,508,164,432	1.152	1.179	1.719	1.784	22,606,258,452	2,690,565,347	11.9%
2011	10,300,226,172	1,188,768,992	1.320	1.398	2.269	2.494	23,371,213,184	2,964,789,866	12.7%
2012	4,270,833,777	414,358,283	2.199	2.692	4.990	6.714	21,311,460,547	2,782,001,512	13.1%

NATIONAL COUNCIL ON COMPENSATION INSURANCE

2013 ANNUAL LOSS ADJUSTMENT EXPENSE REVIEW -- Evaluated as of 12/31/2012

Analysis Based on Private Carrier Data

DCCE—INCURRED ANALYSIS

AY	(1) Incurred Losses Excluding Large Deductibles @12/31/2012	(2) Incurred DCCE Excluding Large Deductibles @12/31/2012	(3) Incremental Incurred Loss Development Factors	(4) Incremental Incurred DCCE Development Factors	(5) Cumulative Incurred Loss Development Factors	(6) Cumulative Incurred DCCE Development Factors	(7)=(1)x(5) Estimated Ultimate Losses	(8)=(2)x(6) Estimated Ultimate DCCE	(9)=(8)/(7) Estimated Ultimate DCCE Ratio
2003	15,694,732,871	1,539,814,699	n/a	n/a	1.038	1.060	16,291,132,720	1,632,203,581	10.0%
2004	14,990,331,326	1,476,204,607	1.000	1.002	1.038	1.062	15,559,963,916	1,567,729,293	10.1%
2005	18,184,095,419	1,843,652,985	1.000	1.004	1.038	1.066	18,875,091,045	1,965,334,082	10.4%
2006	19,815,680,020	2,078,529,943	0.998	1.001	1.036	1.067	20,529,044,501	2,217,791,449	10.8%
2007	21,277,226,070	2,267,708,182	0.995	1.001	1.031	1.068	21,936,820,078	2,421,912,338	11.0%
2008	22,157,713,624	2,397,645,465	0.995	0.996	1.026	1.064	22,733,814,178	2,551,094,775	11.2%
2009	20,809,303,482	2,334,265,302	0.984	0.988	1.010	1.051	21,017,396,517	2,453,312,832	11.7%
2010	21,762,588,172	2,503,864,406	0.990	0.990	1.000	1.040	21,762,588,172	2,604,018,982	12.0%
2011	22,456,960,995	2,639,069,386	0.993	1.002	0.993	1.042	22,299,762,268	2,749,910,300	12.3%
2012	22,246,245,682	2,611,682,070	1.002	1.030	0.995	1.073	22,135,014,454	2,802,334,861	12.7%

NATIONAL COUNCIL ON COMPENSATION INSURANCE

2013 ANNUAL LOSS ADJUSTMENT EXPENSE REVIEW -- Evaluated as of 12/31/2012

Analysis Based on Private Carrier Data

AOE—PAID ANALYSIS

AY	(1) Paid Losses Including Large Deductibles @12/31/2012	(2) Paid AOE Including Large Deductibles @12/31/2012	(3) Incremental Paid Loss Development Factors	(4) Incremental Paid AOE Development Factors	(5) Cumulative Paid Loss Development Factors	(6) Cumulative Paid AOE Development Factors	(7)=(1)x(5) Estimated Ultimate Losses	(8)=(2)x(6) Estimated Ultimate AOE	(9)=(8)/(7) Estimated Ultimate AOE Ratio*	
2003	15,752,376,404	1,893,600,353	n/a	n/a	1.210	1.122	19,060,375,449	2,124,619,596	7.6%	(1)
2004	15,539,087,542	1,808,294,972	1.020	1.013	1.234	1.137	19,175,234,027	2,056,031,383	7.1%	(2)
2005	15,753,334,960	1,905,666,283	1.024	1.015	1.264	1.154	19,912,215,389	2,199,138,891	7.6%	(3)
2006	16,557,459,378	2,088,005,071	1.029	1.020	1.301	1.177	21,541,254,651	2,457,581,969	7.9%	(4)
2007	17,286,807,644	2,110,391,458	1.039	1.028	1.352	1.210	23,371,763,935	2,553,573,664	7.9%	(5)
2008	17,278,328,146	1,915,080,812	1.057	1.042	1.429	1.261	24,690,730,921	2,414,916,904	7.1%	(6)
2009	14,684,711,305	1,779,701,793	1.088	1.057	1.555	1.333	22,834,726,079	2,372,342,490	7.6%	(7)
2010	13,375,761,923	1,595,577,708	1.153	1.089	1.793	1.452	23,982,741,128	2,316,778,832	7.1%	(8)
2011	10,466,873,174	1,341,880,703	1.319	1.149	2.365	1.668	24,754,155,057	2,238,257,013	6.6%	(9)
2012	4,345,014,672	891,723,196	2.194	1.459	5.189	2.434	22,546,281,133	2,170,454,259	7.1%	(10)

* Adjusted for Impact of Large Deductibles

(1) (Col.8/Col.7 + .007) x .64
(2) (Col.8/Col.7 + .004) x .64
(3) (Col.8/Col.7 + .007) x .65
(4) (Col.8/Col.7 + .008) x .65
(5) (Col.8/Col.7 + .009) x .67
(6) (Col.8/Col.7 + .008) x .67
(7) (Col.8/Col.7 + .008) x .68
(8) (Col.8/Col.7 + .007) x .69
(9) (Col.8/Col.7 + .005) x .69
(10) (Col.8/Col.7 + .005) x .70

NATIONAL COUNCIL ON COMPENSATION INSURANCE

2013 ANNUAL LOSS ADJUSTMENT EXPENSE REVIEW -- Evaluated as of 12/31/2012

Analysis Based on Private Carrier Only Data

AOE—INCURRED ANALYSIS

AY	(1) Incurred Losses Including Large Deductibles @12/31/2012	(2) Incurred AOE Including Large Deductibles @12/31/2012	(3) Incremental Incurred Loss Development Factors	(4) Incremental Incurred AOE Development Factors	(5) Cumulative Incurred Loss Development Factors	(6) Cumulative Incurred AOE Development Factors	(7)=(1)x(5) Estimated Ultimate Losses	(8)=(2)x(6) Estimated Ultimate AOE	(9)=(8)/(7) Estimated Ultimate AOE Ratio*	
2003	19,271,199,267	2,017,893,901	n/a	n/a	1.048	1.081	20,196,216,832	2,181,343,307	7.4%	(1)
2004	19,196,640,894	1,938,971,681	1.003	1.005	1.051	1.086	20,175,669,580	2,105,723,246	6.9%	(2)
2005	20,009,173,882	2,059,461,601	1.002	1.007	1.053	1.094	21,069,660,098	2,253,050,991	7.4%	(3)
2006	21,605,389,625	2,269,169,191	1.002	1.008	1.055	1.103	22,793,686,054	2,502,893,618	7.7%	(4)
2007	23,113,558,054	2,322,784,171	0.998	1.009	1.053	1.113	24,338,576,631	2,585,258,782	7.7%	(5)
2008	24,024,750,957	2,180,038,074	0.993	1.013	1.046	1.127	25,129,889,501	2,456,902,909	7.1%	(6)
2009	22,529,074,408	2,134,957,112	0.986	1.010	1.031	1.138	23,227,475,715	2,429,581,193	7.7%	(7)
2010	23,492,201,261	2,110,807,427	0.991	1.010	1.022	1.149	24,009,029,689	2,425,317,734	7.5%	(8)
2011	24,455,727,663	2,176,085,607	0.992	1.000	1.014	1.149	24,798,107,850	2,500,322,362	7.3%	(9)
2012	24,468,772,243	2,307,404,426	1.001	0.973	1.015	1.118	24,835,803,827	2,579,678,148	7.6%	(10)

* Adjusted for Impact of Large Deductibles

(1) (Col.8/Col.7 + .007) x .64
(2) (Col.8/Col.7 + .004) x .64
(3) (Col.8/Col.7 + .007) x .65
(4) (Col.8/Col.7 + .008) x .65
(5) (Col.8/Col.7 + .009) x .67
(6) (Col.8/Col.7 + .008) x .67
(7) (Col.8/Col.7 + .008) x .68
(8) (Col.8/Col.7 + .007) x .69
(9) (Col.8/Col.7 + .005) x .69
(10) (Col.8/Col.7 + .005) x .70

PRE-FILED TESTIMONY

OF

MARK MULVANEY

2013 NORTH CAROLINA WORKERS COMPENSATION

ASSIGNED RISK RATE FILING

Q. Please state your name and business address.

A. My name is Mark Mulvaney, my business address is Milliman, Inc., 1400 Wewatta Street, Suite 300, Denver, Colorado, 80202.

Q. Are you an actuary?

A. Yes, I am a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries and am a member in good standing of both organizations.

Q. Please describe your educational and professional background.

A. I graduated with a bachelor of science degree in Mathematics from Georgetown University in 1978. I spent the first 10 years of my career with the National Council on Compensation Insurance. My experience there included the management of the legislative evaluation unit, a division of the National Council responsible for the review and estimation of the cost impact of workers compensation legislation countrywide, management of the "F" classification ratemaking unit, and as regional actuary.

I joined Milliman over 25 years ago, and have remained focused on workers compensation issues, but have broadened my client base to include casualty actuarial consulting services to insurance companies, reinsurers, rating bureaus, insurance regulators, state funds, self-insurance groups and pools, and to individual public and private self-insured employers. Activities include ratemaking, reserving, company formation, merger and acquisition valuation, financial analysis and company modeling, software development, expert testimony, research, and special project work.

Q. What is Milliman?

A. Milliman is among the world's largest independent actuarial and consulting firms. Founded in Seattle in 1947 as Milliman & Robertson, the company currently has 55 offices in key locations worldwide. Milliman employs more than 2,600 people, including specialists ranging from clinicians to economists. The firm has consulting practices in healthcare, employee benefits, property and casualty insurance, life insurance, and financial services. Milliman serves the full spectrum of business, financial, government, union, education, and nonprofit organizations.

Q. Were you engaged to provide actuarial services to the North Carolina Rate Bureau (the "Rate Bureau") in connection with its 2013 workers compensation insurance Assigned Risk rate filing (the "Filing")?

A. Yes I was.

Q. What was the scope of that engagement?

A. Milliman was engaged for two aspects of this filing. Dr. David Appel of Milliman's New York Office was engaged to review the Underwriting Profit factor to include in the Assigned Risk Filing. For this year's filing, the Rate Bureau also engaged NCCI to provide the preliminary analysis of the loss data, including preliminary analysis of loss development, trends, and expense levels. My role was to conduct an independent review and work with NCCI to present the data to the Rate Bureau. The scope includes assisting the Rate Bureau in explaining the filing to regulators, and providing expert testimony concerning the filing.

Q. Are you providing expert testimony concerning the Underwriting Profit provision?

A. No, I am relying on the work and opinion of Dr. David Appel and Dr. James Vander Weide as to the Underwriting Profit factor. The scope of my analysis and testimony will concern the other aspects of the filing.

Q. Did you or your firm physically prepare the filing documents for the Rate Bureau?

A. No, NCCI prepared the filing based on the directions of the Rate Bureau; my role was one of input and review.

Q. Is your firm being compensated for this engagement?

A. Yes.

Q. Is that compensation in any way contingent on the provision of favorable testimony in support of the filing?

A. No it is not.

Q. Have you completed your review of the filing?

A. Yes I have.

Q. Were there any constraints placed on your review, such as limited or delayed access to data or limited time that may have impeded your complete review?

A. No, I was provided all the information that was necessary and had adequate time for a complete review. My review was not limited in any way.

Q. What are assigned risks?

A. Assigned risks refer to those North Carolina employers that cannot find an insurance company in the voluntary market willing to provide a policy of insurance. These employers may apply to the Rate Bureau and, if eligible, have an insurance company designated to provide a policy through the Workers Compensation Insurance Plan. All licensed workers compensation insurers must participate in this plan, either as a direct assignment carrier or as a member of a pool. A direct assignment carrier accepts a policy assigned to it on a direct basis, and writes and services it just as they would any other business, except that they must use the filed Assigned Risk rates and rating plans, and pay the agent a commission as designated in the Insurance Plan. For pool members, one or more servicing carriers will write the policy on a direct basis, again using the same filed Assigned Risk rates and rating plans and paying the same agent commission as the direct assignment carriers. The pool members have a reinsurance arrangement with the servicing carriers and each other whereby all members of the pool will share proportionately in the experience of the pool.

Q. Explain the difference between a Loss Cost Filing and a Rate Filing.

A. By definition, insurance rates (along with the associated rating plans) are to include provisions for all costs associated with the transfer of risk. These costs include losses, expenses, taxes, licenses and fees, and profit and contingencies. Since 1995 in North Carolina, the voluntary market workers compensation filings by the Rate Bureau have included provisions for losses, loss adjustment expenses, and loss based assessments only. These are called loss costs. They exclude provision for production expenses, general expenses, dividends, taxes, licenses and fees (since 1999), and profit and contingencies.

For the voluntary market, individual insurance companies will analyze their own books of business

along with the approved loss costs, and then make filings with the Insurance Department for loadings that represent an anticipated difference in loss costs (if any), along with their production and general expense, taxes, licenses and fees, and profit and contingency provisions.

For the assigned risk market, the Rate Bureau is responsible for analyzing the experience of the Assigned Risk market and filing for rates that include all costs: losses, expenses, and profit and contingencies.

Q. Does the Rate Bureau's Assigned Risk filing depend upon the Rate Bureau's voluntary market loss cost filing with the same effective date?

A. Yes, the starting point of the Rate Bureau's Assigned Risk rate analysis is the voluntary market loss cost filing it makes on the same date. This Assigned Risk filing calculates a factor to apply to the voluntary market loss costs to adjust them to the loss cost level of the Assigned Risk market, and to incorporate loadings for production and general expense, taxes, licenses and fees, and profit and contingency provisions consistent with the way rates are developed for individual companies in the voluntary market.

Q. Have you reviewed the loss cost filing upon which this Assigned Risk filing depends?

A. Yes I have. I provided my opinions on the loss cost filing in my pre-filed testimony included as Exhibit RB-5 in that filing. Rather than repeat that pre-filed testimony here, I will simply incorporate it in its entirety herein by reference.

Q. What were your conclusions concerning the Rate Bureau's loss cost filing?

A. My opinion was that the overall level of the loss costs as filed by the Rate Bureau reasonably reflects the expected level of loss costs for workers compensation insurance in North Carolina, and the loss costs by classification as contained in that filing are actuarially sound.

Q. What is the overall change in Assigned Risk rates the Rate Bureau is seeking in this filing?

A. The Rate Bureau is seeking a 9.0% increase in rate level for the industrial classifications, and a 3.3% decrease in rate level for the Federal ("F") classifications.

Q. Is the change in rates the same for each class code?

A. No, the change in rates arises from the change in the voluntary market loss costs which varies by class code, and the change in the selected loss cost multiplier, which does not. Although the overall rate level change is an increase of 9.0% for the industrial classifications and a decrease of 3.3% for the F classifications, different class codes will change by different amounts. The industrial classifications are further organized by industry group and the average changes are as follows:

Manufacturing 8.9% increase
Contracting 6.5% increase
Office and Clerical 7.7% increase
Goods and Services 10.2% increase
Miscellaneous 10.4% increase

Q. What is the proposed effective date of the filed Assigned Risk rates?

A. April 1, 2014.

Q. When did the current Assigned Risk rates take effect in North Carolina?

A. The current Assigned Risk rates became effective April 1, 2013.

Q. Can you briefly explain the overall theory underpinning the rate filing?

A. Yes, the first underlying assumption is that the loss costs filed with the voluntary market filing are adequate for the average North Carolina employer. The second assumption is that the collection of direct assignment carriers and servicing carriers is effectively the same as a single aggregate insurance company with a cost structure that is representative of their average. The Assigned Risk rate filing is then equivalent to a rate filing of this single aggregate company underwriting a book of business consisting of Assigned Risk employers.

Q. What is the advantage of looking at the Assigned Risk filing in this manner?

A. It results in considerable simplification. Instead of building each rate from the ground-up, all that is necessary is for the Rate Bureau to calculate a loss cost modification factor that adjusts for differences in loss costs for the Assigned Risk market as compared to the voluntary market, as well as loadings for production and general expenses, taxes, licenses and fees, and profit and contingencies in the exact same manner that insurance companies do for their voluntary books. The combined impact of these provisions results in a loss cost multiplier that is applied to the voluntary

loss costs to produce the Assigned Risk rates.

Q. What are the specific steps involved in the calculation of the loss cost multiplier?

A. There are seven steps:

1. Calculate a loss cost modification factor;
2. Determine the provision for Commission and Brokerage;
3. Determine the provision for Other Acquisition, Field Supervision and General Expenses combined;
4. Determine the provision for Taxes, Licenses and Fees;
5. Determine the provision for Underwriting Profit and Contingencies;
6. Determine the provision for Uncollectible Premiums; and
7. Determine the impact of the expense constant and minimum premiums.

Q. How is the Assigned Risk loss cost multiplier calculated?

A. The actual formula is somewhat complex, but the seven provisions above are entered into a formula provided by the North Carolina Insurance Department for use in determining loss cost multipliers. In essence, the loss cost multiplier is the loss cost modification factor (1) divided by the complement of the expense and profit and contingencies ratio (sum of (2)-(6)), with an offset for premium provided by the expense constant and minimum premiums (7). The Assigned Risk plan does not provide for premium discounts by size of insured and North Carolina state act losses do not have loss based assessments, so those parts of the Insurance Department's formula are not used.

Q. Is this identical to the approach taken with the prior filings?

A. It is identical in the sense of mathematical equivalency. However, I note that in prior filings, the provision for uncollectible premium was included within item (5) the provision for Profit, Contingencies, and Investment Income. In this filing, it is shown broken out separately as item (6). This is a difference in presentation only made to clarify that the provision for uncollectible premium is a separate cost item from that otherwise included in Profit, Contingencies, and Investment Income. The separate identification of the uncollectible premium provision has no impact on the loss cost multiplier or the rates and therefore is a difference in presentation, not in methodology.

Q. Is the Insurance Department's formula commonly accepted?

A. Yes, it has been used by voluntary market insurance companies in North Carolina for many years and functionally equivalent formulas exist in almost all the other states that have a similar loss cost rating law.

Q. Let's take the provisions one at a time. What is a loss cost modification factor and how is it calculated?

A. Assigned Risk employers usually experience a level of losses that is higher, on average, than the market as a whole. This makes sense in that insurance underwriters will decline to write an insurance policy where they view the potential losses as higher than the level at which their individual rates would compensate them. The fact that Assigned Risk loss experience is higher simply means that insurance company underwriters in the exercise of their independent judgment are successful in identifying high cost employers. The loss cost modification factor represents the amount by which the Assigned Risk loss cost level is expected to exceed the average as represented by the filed loss costs.

It is calculated using the concept of differentials. A differential is usually expressed as a ratio of ratios. The Rate Bureau first calculates a numerator ratio that is based solely on the experience of the Assigned Risk market. That numerator ratio is itself comprised of a numerator of losses developed to ultimate and adjusted to the current benefit level and a denominator consisting of the pure premiums developed to ultimate and adjusted to the 4/1/13 voluntary loss cost level. Essentially, the numerator ratio is the loss ratio that would have resulted if the Assigned Risks were not charged a fully loaded rate, but were instead charged the voluntary market loss costs. The numerator ratio thus represents as a factor the percentage by which Assigned Risk losses either exceed or are short of the voluntary market pure premiums at the 4/1/13 level.

The denominator ratio is comprised of the same elements as the numerator ratio, but is based on the experience of the entire market (both assigned risk and voluntary). This denominator ratio represents as a factor the percentage by which the total market losses either exceed or are short of the voluntary market pure premiums at the 4/1/13 level.

After taking the ratio of the ratios, the measurement unit in denominators of each are common, both representing pure premiums at the 4/1/13 level. They therefore cancel and we are left with a scaled factor representing the relative percentage amount that Assigned Risk losses either exceed or are short of the total market losses. As mentioned earlier, the differentials are expected to exceed 1.000, since Assigned Risk loss costs are anticipated to be higher than the average of all North Carolina employers.

The Rate Bureau calculates a differential as described above for each of the most recent complete five policy years, 2007 through 2011. Additionally, differentials are calculated using the paid loss development method and the case-incurred loss development method. The five year average

differential for each method is divided by the current impact of assigned risk pricing programs (the current differential of 1.539 and the impact of ARAP of 1.025) to determine an indicated change for each method. The Rate Bureau gives equal weight to the indicated changes for each method. The average indicated change (1.026) multiplied by the current loss cost differential results in an indicated loss cost differential of 1.579.

An adjustment is made to prevent a double counting of Servicing Carrier loss adjustment expenses. Voluntary market loss costs include a provision for loss adjustment expenses. Loss adjustment expense is also provided to Servicing Carriers through their servicing carrier allowance, and the servicing carrier allowance is included in the Assigned Risk rates in a different part of the formula (in the provision for Other Acquisition, Field Supervision and General Expenses). Therefore, an adjustment needs to be made to the loss cost modification factor to exclude the loss adjustment expenses that are provided through the Servicing Carrier allowance. This second adjustment is a factor of .887 and is calculated in Exhibit II-A, Sheet 3 of the filing. The indicated differential of 1.579 multiplied by the adjustment factor of .887 results in the proposed loss cost modification factor if 1.401 and is shown on Exhibit I-A, Sheet 3 of the filing.

Q. In your opinion is the resulting loss cost modification factor of 1.401 reasonable?

A. Yes.

Q. How is the provision for Commission and Brokerage determined?

A. The Workers Compensation Insurance Plan provides for a flat commission of 5% of premium to be used for all Assigned Risks, regardless of whether they are written by direct assignment carriers or servicing carriers.

Q. How is the provision for Other Acquisition, Field Supervision, and General Expenses determined?

A. Separate provisions are calculated for Servicing Carriers and Direct Assignment Carriers, and the resulting provision is the weighted average of the two, using their respective Assigned Risk market shares (called “Quotas”) as weights.

For the Servicing Carriers, the provision is the weighted average of the January 1, 2013 three year servicing carrier allowances (which include loss adjustment expenses), plus a provision for Assigned Risk Pool administration expenses, plus a provision for expenses which are separately reimbursed by the Pool. The Pool administrative expenses are based on the average of calendar years 2010 through 2012, and the separately reimbursed expenses are based on the average of Policy Years 2009 through 2011.

For direct assignment carriers, the provision is based on the three year sum of the actual expenses of the direct assignment carriers for Other Acquisition, Field Supervision, and General Expenses for calendar years 2010 through 2012 divided by the three year sum of net earned premium on a standard premium basis for the same carriers during the same period.

Q. In your opinion, is the provision for Other Acquisition, Field Supervision, and General Expenses reasonable?

A. Yes.

Q. How is the provision for Taxes, Licenses and Fees determined?

A. The provision for taxes, licenses and fees is based on the North Carolina premium tax rate of 2.5% multiplied by the regulatory surcharge factor (1.060) plus a provision of 0.3% for miscellaneous taxes, producing a total of 2.95%. These values are shown on Exhibit II of the filing.

Q. In your opinion, is the provision for Taxes, Licenses and Fees reasonable?

A. Yes.

Q. How is the provision for Underwriting Profit determined?

A. The Underwriting Profit provision was selected by the Rate Bureau based on a cost of capital analysis provided by Dr. James Vander Weide and a rate of return model provided by Dr. David Appel of Milliman. I have not reviewed nor have I been asked to provide an opinion concerning the Underwriting Profit provision. I am relying on these other experts and the Rate Bureau as to the reasonableness of this value.

Q. Is a Contingency provision included in the filing?

A. No, the Rate Bureau considered a Contingency provision, but elected not to include one in this filing.

Q. How is the provision for Uncollectible Premiums determined?

A. The provision for Uncollectible Premium is calculated in Exhibit RB-13. It is based on the unweighted ten year average of the policy year uncollectible premium ratios after development to a 22nd report.

Q. In your opinion, is the provision for Uncollectible Premium the Rate Bureau has included reasonable?

A. Yes it is.

Q. How is the impact of the Expense Constant and Minimum Premiums determined?

A. Expense constant and minimum premiums provide additional premium revenues apart from those produced by the rates. This additional revenue therefore reduces the rate need, and consequently the loss cost multiplier that would otherwise apply. The Rate Bureau calculates the impact of the expense constant and minimum premiums in Exhibit II-D, Sheet 1. The impact of the expense constant is based on the Assigned Risk premiums for policy years 2010 through 2012, along with the number of policies which had an expense constant charged. The impact of minimum premiums is calculated in Exhibit II-D, Sheet 2. The combined impact of the expense constant and minimum premiums is 18.4% of assigned risk premium excluding these items. This impact is expressed as a factor (1.184) and used as a divisor in the loss cost multiplier formula to reduce the rates on account of these alternate premium sources.

Q. Has the Rate Bureau changed the formula to determine the impact of the Expense Constant and Minimum Premiums from the prior Assigned Risk rate filing?

A. No.

Q. In your opinion, is the impact of the Expense Constant and Minimum Premiums that the Rate Bureau has calculated reasonable?

A. Yes it is.

Q. In your opinion, is the formula provided by the Insurance Department a reasonable method to determine the Assigned Risk loss cost multiplier?

A. Yes it is.

Q. What is the Assigned Risk loss cost multiplier filed by the Rate Bureau?

A. It is 2.376 as shown on Exhibit I-A, Sheet 1.

Q. How are the Assigned Risk rates calculated?

A. The filed loss cost multiplier (above) is multiplied by the loss costs by classification code as contained in the voluntary market loss cost filing.

Q. How is the overall change in Assigned Risk rate level calculated?

A. For the industrial classifications, it is derived from the product of the change in the voluntary market loss costs expressed as a factor and the change in the Assigned Risk loss cost multiplier. Since the change in the loss cost multiplier is a constant for each and every industrial class code, this will hold for each class code and each industry group in addition to the average overall change. The same approach is used to calculate the overall rate level change for the F classifications.

Q. I understand that you are not providing an opinion concerning the Underwriting Profit provision. If I ask you to assume that the Underwriting Profit provision is reasonable and actuarially sound, is the Assigned Risk loss cost multiplier as filed by the Rate Bureau reasonable in your opinion?

A. Yes, if I assume that the Underwriting Profit provision is reasonable, in my opinion, the Assigned Risk loss cost multiplier filed by the Rate Bureau also is reasonable and actuarially sound.

Q. Again, assuming the Underwriting Profit provision is reasonable, do you have an opinion whether the filed Assigned Risk Rates are actuarially sound and reasonably reflect the needed level to cover all costs for Assigned Risk workers compensation insurance in North Carolina?

A. Yes, if I assume that the Underwriting Profit provision is reasonable, it is my opinion that the overall level of the Assigned Risk Rates as filed by the Rate Bureau reasonably reflect the expected level of all costs for workers compensation Assigned Risk insurance in North Carolina, and the rates by classification as contained in that filing are actuarially sound.

Q. Assuming that the Underwriting Profit provision is reasonable, in your opinion are the Assigned Risk Rates included in the filing not excessive, inadequate, or unfairly discriminatory?

A. Yes, if I assume that the Underwriting Profit provision is reasonable, it is my opinion that the Assigned Risk Rates included in the filing are not excessive, inadequate, or unfairly discriminatory.

Q. Does this conclude your testimony?

A. Yes it does.

PREFILED TESTIMONY
OF
JAMES H. VANDER WEIDE

2013 WORKERS COMPENSATION INSURANCE
ASSIGNED RISK RATE FILING
BY THE NORTH CAROLINA RATE BUREAU

Q. WHAT IS YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS?

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to corporate clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PRIOR ACADEMIC EXPERIENCE.

A. I graduated from Cornell University with a Bachelor's Degree in Economics and then attended Northwestern University where I earned a Ph.D. in Finance. I joined the faculty of the School of Business at Duke University where I was subsequently named Assistant Professor, Associate Professor, Professor, and Research Professor. I have published research in the areas of finance and economics and taught courses in these fields at Duke for more than

thirty-five years. I am now retired from my teaching duties at Duke.

I have taught courses in corporate finance, investment management, and management of financial institutions. I also taught a graduate seminar on the theory of public utility pricing and lectured in executive development seminars on the cost of capital, financial analysis, capital budgeting, mergers and acquisitions, cash management, short-run financial planning, and competitive strategy.

I have served as Program Director and taught in numerous executive education programs at Duke, including the Duke Advanced Management Program, the Duke Management Challenge, the Duke Executive Program in Telecommunications, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union. I have also taught in tailored programs developed for corporations such as ABB, Accenture, Allstate, AT&T, Progress Energy, GlaxoSmithKline, Lafarge, MidAmerican Energy, Norfolk Southern, The Rank Group, Siemens, TRW, and Wolseley PLC.

In addition to my teaching and executive education activities, I have written research papers on such topics as portfolio management, the cost of capital, capital budgeting, the effect of regulation on the performance of public utilities, and cash management. My articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Accounting Research, Journal of Cash Management, Management Science, The Journal of Portfolio Management, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research.* I have written a book titled *Managing Corporate Liquidity: an Introduction to Working Capital Management*, a chapter for *The Handbook of Modern Finance*, "Financial Management in the Short Run," and a chapter for the book, *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques,* "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory."

Q. HAVE YOU PREVIOUSLY PRESENTED EVIDENCE ON THE COST OF CAPITAL AND OTHER REGULATORY ISSUES?

A. Yes. As an expert on financial and economic theory and practice, I have participated in more than four hundred regulatory and legal proceedings before the U.S. Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the public utility commissions of forty-three states and four Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. Tax Court, the U.S. District Court for the District of Nebraska; the U.S. District Court for the District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the Montana Second Judicial District Court, Silver Bow County; the U.S. District Court for the Northern District of California; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U. S. District Court for the Eastern District of Michigan.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by the North Carolina Rate Bureau to make an independent appraisal of the aggregate cost of equity capital for the companies writing workers compensation insurance in North Carolina and to recommend a rate of return on equity that is fair, that allows those companies in the aggregate to attract and retain capital on reasonable terms, that is commensurate with returns on investments of comparable risk, and that maintains the financial integrity of those companies in the aggregate.

Q. WHAT DO YOU MEAN BY THE PHRASE "COST OF EQUITY CAPITAL?"

A. A firm's cost of equity capital is the rate of return expectation that is required in the marketplace on equity investments of comparable risk. If an investor does not expect to earn a return on an equity investment in a firm that is at least as large as the return the investor could expect to earn on other investments of comparable risk, then the investor will not invest in that firm's shares. Thus, a firm's cost of equity capital is also the rate of return expectation that is required in the marketplace in order to induce equity investors to purchase shares in that firm.

Q. IS THE COST OF EQUITY CAPITAL THE SAME AS THE RETURN ON EQUITY?

A. No. The cost of equity capital is a market-based concept that reflects investors' future expectations, while the return on equity is an accounting concept that measures results of past performance. The return on equity is equal to income available for common equity divided by the book value of common equity.

Q. HAVE YOU FORMED AN OPINION REGARDING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA?

A. Yes.

Q. WHAT IS YOUR OPINION IN THAT REGARD?

A. The cost of equity capital for such a company is in the range 8.6 percent to 13.0 percent.

Q. WHAT ECONOMIC PRINCIPLES DID YOU CONSIDER IN ARRIVING AT THAT OPINION?

A. There are two primary economic principles relevant to my appraisal of the cost of equity capital. The first, relating to the demand for capital, states that a firm should continue to invest in its business only so long as

the return on its investment is greater than or equal to its cost of capital. In the context of a regulated firm, this principle suggests that the regulatory agency should establish revenue levels which will offer the firm an opportunity to earn a return on its investment that is at least equal to its cost of capital.

The second principle, relating to the supply of capital, states that rational investors are maximizing their total return on capital only if the returns they expect to receive on investments of comparable risk are equal. If these returns are not equal, rational investors will reduce or completely eliminate investments in those activities yielding lower expected returns for a given level of risk and will increase investments in those activities yielding higher expected returns. The second principle implies that regulated firms will be unable to obtain the capital required to expand service on reasonable terms unless they are able to provide investors returns equal to those expected on investments of comparable risk.

Q. DO THESE ECONOMIC PRINCIPLES APPLY TO THE SETTING OF INSURANCE RATES?

A. Yes. These are general economic principles that apply to investing in any business activity, including insurance.

Q. HOW DID YOU GO ABOUT DETERMINING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA?

A. I used two generally accepted methods to estimate the cost of equity: (i) the Discounted Cash Flow (DCF) Model, and (ii) the Risk Premium Approach.

Q. PLEASE DESCRIBE THE DCF MODEL.

A. The DCF Model suggests that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a

dollar received today. This is because, if they had the dollar today, they could invest it in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond suggests that investors should value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should be equal to:

Equation 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \ldots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;
i	=	The rate of interest the investor could earn by investing his money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

Equation 2

$$P_S = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_2 \ldots D_n$	=	Expected annual dividend per share on the firm's stock;
P_n	=	Price per share of stock at the time the investor expects to sell the stock; and
k	=	Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the Annual Discounted Cash Flow (DCF) Model of stock valuation.

Q. HOW DO YOU USE THE DCF MODEL TO DETERMINE THE COST OF EQUITY CAPITAL?

A. The "k" in the equation is the cost of equity capital. We make certain simplifying assumptions regarding the other factors in the equation and then mathematically solve for "k."

Q. WHAT ARE THE ASSUMPTIONS YOU MAKE?

A. Most analysts make three simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate ("g") into the indefinite future. Second,

they assume that the stock price at time "n" is simply the present value of all dividends expected in periods subsequent to "n." Third, they assume that the investors' required rate of return, "k," exceeds the expected dividend growth rate, "g."

Q. DOES THE ANNUAL DCF MODEL OF STOCK VALUATION PRODUCE APPROPRIATE ESTIMATES OF A FIRM'S COST OF EQUITY CAPITAL?

A. No. The Annual DCF Model of stock valuation produces appropriate estimates of a firm's cost of equity capital only if the firm pays dividends just once a year. Since most firms pay dividends quarterly, the Annual DCF Model produces downwardly biased estimates of the cost of equity. Investors can expect to earn a higher annual effective return on an investment in a firm that pays quarterly dividends than in one which pays the same amount of dollar dividends once at the end of each year. A complete analysis of the implications of the quarterly payment of dividends on the DCF Model is provided in Exhibit RB-9. For the reasons cited there, I employed the Quarterly DCF Model throughout my calculations.

Q. PLEASE DESCRIBE THE QUARTERLY DCF MODEL YOU USED.

A. The Quarterly DCF Model I used is described by Equation 10 on page 11 in Exhibit RB-9. This equation shows that the cost of equity is: the sum of the dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent dividend at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. HOW DO YOU APPLY THE DCF APPROACH TO OBTAIN THE COST OF EQUITY CAPITAL FOR THE COMPANIES WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA?

A. I apply the DCF approach to two groups of companies: Value Line's group of property/casualty insurance companies and the S&P 500.

Q. WHY DO YOU APPLY THE DCF APPROACH TO THE S&P 500 AS WELL AS TO VALUE LINE'S PROPERTY/CASUALTY INSURANCE COMPANIES?

A. As I noted previously, the cost of equity is defined as the rate of return investors expect to earn on investments in other companies of comparable risk. I apply the DCF approach to the S&P 500 because they are a large group of companies that, on average, are typically viewed as being comparable in risk to the property/casualty insurance industry. The use of a larger set of comparable risk

companies should provide an accurate estimate of the cost of equity for the companies writing workers compensation insurance in North Carolina.

Q. DO YOU INCLUDE ALL THE VALUE LINE PROPERTY/CASUALTY INSURANCE COMPANIES?

A. No. Among the Value Line property/casualty insurance companies, I delete any firm which has recently lowered its dividend and which has fewer than two five-year earnings forecasts available from I/B/E/S (formerly known as the Institutional Brokers Estimate System, now part of Thomson Reuters). The Value Line property/casualty companies I use are shown in Exhibit RB-7.

Q. WHAT CRITERIA DO YOU USE TO SELECT COMPANIES IN THE S&P 500?

A. I include those firms which pay dividends and which have at least three five-year earnings forecasts available from I/B/E/S. I exclude the insurance companies in the S&P 500, as identified by I/B/E/S Thomson Reuters, because I have already calculated DCF results for the Value Line property/casualty insurance companies. The S&P 500 companies I use are shown in Exhibit RB-8.

Q. WHY DO YOU ELIMINATE ANY COMPANY WHICH HAD RECENTLY LOWERED ITS DIVIDEND OR WHICH FAILS TO PAY DIVIDENDS?

A. I eliminate those companies because it is difficult to make a reliable estimate of the future dividend growth rate for companies that have recently lowered their dividends or do not pay dividends. If a company has recently lowered its dividend, investors do not know whether the company will again lower its dividend in the future, or whether the company will attempt to increase its dividend back toward its previous level. If a company does not pay a dividend, one cannot mathematically apply the DCF approach.

Q. HOW DO YOU ESTIMATE THE GROWTH COMPONENT OF THE QUARTERLY DCF MODEL?

A. I use the average of analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S. As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. The forecasts are used by investors who are contemplating purchasing or selling shares in individual companies.

Q. WHAT IS I/B/E/S?

A. I/B/E/S is a collection of analysts' forecasts for a broad group of companies expressed in terms of a mean forecast and a standard deviation of forecast for each firm. The mean forecast is used by investors as an estimate of future firm performance.

Q. WHY DO YOU USE THE I/B/E/S GROWTH ESTIMATES?

A. The I/B/E/S growth rates (1) are widely circulated in the financial community, (2) include the projections of a large number of reputable financial analysts who develop estimates of future growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors. For these reasons, I believe these estimates represent unbiased estimates of investors' expectations of each firm's long-term growth prospects and, accordingly, are incorporated by investors into their return requirements. Consequently, in my opinion, they provide the best available estimate of investors' long-term growth expectations.

Q. WHY DO YOU RELY EXCLUSIVELY ON ANALYSTS' PROJECTIONS OF FUTURE EPS GROWTH IN ESTIMATING THE INVESTORS' EXPECTED GROWTH RATE RATHER THAN LOOKING AT PAST HISTORICAL GROWTH RATES?

A. There is considerable empirical evidence that analysts' forecasts are more highly correlated with stock prices than are firms' historical growth rates, and, thus, that investors actually use these forecasts.

Q. HAVE YOU PERFORMED ANY STUDIES CONCERNING THE USE OF ANALYSTS' FORECASTS AS THE BEST ESTIMATE OF INVESTORS' EXPECTED GROWTH RATE, G?

A. Yes, I prepared a study in conjunction with Willard T. Carleton, Professor of Finance Emeritus at the University of Arizona, on why analysts' forecasts provide the best estimate of investors' expectations of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations: Analysts vs. History," published in *The Journal of Portfolio Management*.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR STUDY.

A. First, we performed a correlation analysis to identify the historically-oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the consensus analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations

containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area. These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. WHAT PRICE DO YOU USE IN YOUR DCF MODEL?

A. I use a simple average of the monthly high and low stock prices for each firm for the three-month period, March, April, and May 2013. These high and low stock prices are obtained from Thomson Reuters.

Q. WHY DO YOU USE THE THREE-MONTH AVERAGE STOCK PRICE, P_0, IN APPLYING THE DCF METHOD?

A. I use a three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings

forecast, it is appropriate to average stock prices over a three-month period.

Q. PLEASE EXPLAIN YOUR INCLUSION OF FLOTATION COSTS.

A. All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are paid from the proceeds of the stock sale and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between four percent and five percent of the proceeds from the issue. In addition to these costs, for large equity issues there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two percent to three percent.

These cost ranges have been developed and confirmed in a number of generally accepted studies. I believe a combined five percent allowance for flotation costs and market pressure is a conservative estimate that can be used in applying the DCF Model in this proceeding.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR APPLICATION OF THE DCF METHOD TO THE PROPERTY/CASUALTY INSURANCE COMPANIES AND THE S&P 500.

A. As shown in Exhibits RB-7 and RB-8, the average DCF cost of equity capital for my group of Value Line property/casualty companies is 11.1 percent; and for the S&P 500 companies, 13.0 percent.

Q. WHAT CONCLUSION DO YOU REACH FROM YOUR DCF ANALYSIS ABOUT THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA?

A. On the basis of my DCF analysis, I would conclude that for companies writing workers compensation insurance in North Carolina the cost of equity is in the range 11.1 percent to 13.0 percent.

Q. YOU NOTE THAT THE SECOND METHOD YOU USE TO ESTIMATE THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA IS A RISK PREMIUM APPROACH. PLEASE DESCRIBE THAT APPROACH.

A. I perform a study of the comparable returns received by bond and stock investors over the last eighty-seven years. I estimate the returns on stock and bond portfolios, using stock price and dividend yield data on the S&P 500 stock

portfolio and bond yield data on Moody's A-rated utility bonds.

My study consists of analyzing the historically achieved returns on broadly based stock and bond portfolios going back to 1926. For stocks, I use the S&P 500 stock portfolio; and for bonds, I use Moody's A-rated utility bonds. The resulting annual returns on the stock and bond portfolios purchased in each year from 1926 through 2012 are shown on Exhibit RB-10. The difference between the stock return and the bond return over that period of time on an arithmetic average basis is 4.4 percentage points.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR RISK PREMIUM ANALYSES?

A. My own studies, combined with my analysis of other studies, provide strong evidence for the belief that investors today require an equity return of at least 4.4 percentage points above the expected yield on A-rated long-term debt issues.

Interest rates on Moody's seasoned A-rated utility bonds during the three months March through May 2013 range from 4.0 percent to 4.2 percent. On the basis of this information and my knowledge of bond market conditions, I conclude that the long-term yield on A-rated utility bonds

is approximately 4.1 percent. Adding a 4.4 percentage point risk premium to the 4.1 percent expected yield on A-rated utility bonds, I obtain an expected return on equity of 8.6 percent.

Q. ARE THERE REASONS TO BELIEVE THAT THE RESULT OF YOUR EX POST RISK PREMIUM ANALYSIS MAY UNDERESTIMATE THE COST OF EQUITY AT THIS TIME?

A. Yes. The ex post risk premium model may produce an unrealistically low result because the model result is highly sensitive to the estimate of the bond yield. At this time, bond yields are unusually low, reflecting policy decisions of the U.S. government and the U.S. Federal Reserve Bank to keep interest rates low in order to stimulate the economy. Since the ex post risk premium cost of equity result is the sum of the risk premium and the bond yield, the use of an unusually low bond yield in the model may cause the ex post risk premium model result to underestimate the cost of equity. Because the cost of equity is a forward-looking concept, it would be reasonable to apply the ex post risk premium model using a forecast of the expected bond yield, rather than a recent bond yield. Because bond yields are expected to increase over the next several years, the use of a forecasted bond yield would

produce a significantly higher ex post risk premium estimate of the cost of equity. Thus, I consider my ex post risk premium model result to be conservative.

Q. BASED ON YOUR ANALYSES, WHAT IS YOUR OPINION AS TO THE COST OF CAPITAL FOR THE AVERAGE INSURANCE COMPANY WRITING WORKERS COMPENSATION INSURANCE IN NORTH CAROLINA?

A. Based on my review and studies, I believe that a conservative estimate of the cost of common equity capital for the average insurance company writing workers compensation insurance in North Carolina is in the range 8.6 percent to 13.0 percent.

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

LINE	COMPANY	D_0	P_0	GROWTH	MODEL RESULT	NO. OF I/B/E/S ESTIMATES
1	ACE Limited	0.490	89.190	8.13%	10.7%	4
2	Allstate Corp.	0.250	48.688	9.06%	11.3%	5
3	Berkley (W.R.)	0.090	42.986	9.50%	10.5%	2
4	Chubb Corp.	0.410	87.520	8.23%	10.4%	4
5	HCC Insurance Hldgs.	0.165	41.792	8.50%	9.9%	3
6	RLI Corp.	0.320	72.026	10.00%	12.1%	2
7	Travelers Cos.	0.460	84.427	10.05%	12.7%	4
8	Average, cos. with 3 or more estimates				11.0%	
9	Average				11.1%	

Notes:

d_0	=	Latest quarterly dividend.
d_1, d_2, d_3, d_4,	=	Expected next four quarterly dividends, calculated by multiplying the last four quarterly dividends per Value Line, by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending May 2013 per Thomson Reuters.
FC	=	Flotation costs.
g	=	I/B/E/S forecast of future earnings growth May 2013.
k	=	Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs and market pressure (selling costs) as shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1 - FC)} + g$$

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR
S&P 500 COMPANIES

LINE	COMPANY	P_0	D_0	GROWTH	MODEL RESULT
1	3M	106.31	2.54	8.95%	11.7%
2	ABBOTT LABORATORIES	35.91	0.56	12.33%	14.2%
3	ACCENTURE CLASS A	78.25	1.62	11.41%	13.9%
4	ADT	45.75	0.50	10.70%	12.0%
5	AGILENT TECHS.	43.01	0.48	8.32%	9.6%
6	AGL RESOURCES	42.23	1.88	4.53%	9.5%
7	AIR PRDS.& CHEMS.	88.13	2.84	8.85%	12.6%
8	AIRGAS	98.54	1.92	12.22%	14.5%
9	ALLERGAN	109.45	0.20	13.87%	14.1%
10	ALTERA	33.79	0.60	12.00%	14.1%
11	ALTRIA GROUP	35.37	1.76	7.47%	13.2%
12	AMERICAN EXPRESS	67.84	0.92	12.07%	13.7%
13	AMERISOURCEBERGEN	52.66	0.84	11.75%	13.6%
14	AMGEN	103.26	1.88	9.39%	11.5%
15	AT&T	36.85	1.80	5.35%	10.9%
16	AUTOMATIC DATA PROC.	65.84	1.74	8.97%	12.0%
17	BAKER HUGHES	45.59	0.60	11.74%	13.3%
18	BALL	45.55	0.52	9.77%	11.1%
19	BAXTER INTL.	70.50	1.96	9.05%	12.3%
20	BB&T	31.04	0.92	8.33%	11.7%
21	BEAM	63.97	0.90	11.70%	13.4%
22	BECTON DICKINSON	94.92	1.98	8.99%	11.4%
23	BEMIS	39.54	1.04	7.82%	10.8%
24	BLACKROCK	260.51	6.72	13.66%	16.8%
25	BOEING	88.73	1.94	13.92%	16.6%
26	BRISTOL MYERS SQUIBB	41.29	1.40	9.50%	13.5%
27	BROADCOM 'A'	34.82	0.44	15.00%	16.5%
28	BROWN-FORMAN 'B'	70.15	1.02	12.17%	13.9%
29	C R BARD	101.36	0.80	10.42%	11.3%
30	CABLEVISION SYS.	14.68	0.60	7.77%	12.5%
31	CARDINAL HEALTH	44.75	1.21	10.50%	13.7%
32	CBS 'B'	46.51	0.48	13.62%	14.9%
33	CH ROBINSON WWD.	58.41	1.40	12.41%	15.3%
34	CIGNA	64.12	0.04	10.45%	10.5%
35	CINTAS	44.46	0.64	9.97%	11.6%
36	CISCO SYSTEMS	21.53	0.68	8.33%	12.0%
37	CITIGROUP	46.21	0.04	14.00%	14.1%
38	CLOROX	86.44	2.56	7.47%	10.9%
39	CME GROUP	62.02	1.80	12.70%	16.2%
40	CMS ENERGY	28.05	1.02	5.90%	10.0%
41	COACH	53.84	1.35	11.80%	14.8%
42	COCA COLA ENTS.	36.80	0.80	10.13%	12.7%

LINE	COMPANY	P_0	D_0	GROWTH	MODEL RESULT
43	CONAGRA FOODS	35.01	1.00	12.10%	15.5%
44	COSTCO WHOLESALE	107.29	1.24	13.44%	14.8%
45	COVIDIEN	65.33	1.04	8.10%	9.9%
46	CSX	24.27	0.60	10.99%	13.9%
47	CUMMINS	113.60	2.00	9.67%	11.7%
48	CVS CAREMARK	56.21	0.90	13.57%	15.5%
49	DANAHER	61.30	0.10	11.55%	11.7%
50	DARDEN RESTAURANTS	50.52	2.00	5.37%	9.8%
51	DEERE	88.13	2.04	10.00%	12.7%
52	DOVER	72.81	1.40	13.85%	16.2%
53	DOW CHEMICAL	32.96	1.28	6.90%	11.3%
54	DR PEPPER SNAPPLE GROUP	47.12	1.52	7.70%	11.4%
55	DUN & BRADSTREET DEL.	87.19	1.60	10.00%	12.1%
56	E I DU PONT DE NEMOURS	51.71	1.80	7.16%	11.1%
57	EASTMAN CHEMICAL	69.80	1.20	9.03%	11.0%
58	EATON	61.92	1.68	10.82%	14.0%
59	ECOLAB	82.18	0.92	15.44%	16.8%
60	EMC	23.53	0.40	13.26%	15.3%
61	EMERSON ELECTRIC	56.23	1.64	9.78%	13.2%
62	EQUIFAX	59.14	0.88	12.44%	14.2%
63	EXPEDIA	60.57	0.52	9.68%	10.7%
64	FAMILY DOLLAR STORES	61.29	1.04	12.43%	14.5%
65	FEDEX	98.33	0.60	12.82%	13.5%
66	FIDELITY NAT.INFO.SVS.	40.91	0.88	12.00%	14.6%
67	FIRST HORIZON NATIONAL	10.66	0.20	8.33%	10.5%
68	FLOWSERVE	161.55	1.28	14.33%	15.3%
69	FLUOR	61.31	0.64	11.47%	12.7%
70	FMC	59.13	0.54	11.47%	12.5%
71	FORD MOTOR	13.53	0.40	10.50%	14.0%
72	FRANKLIN RESOURCES	152.33	1.16	15.18%	16.1%
73	GAMESTOP 'A'	31.03	1.10	10.00%	14.2%
74	GAP	37.09	0.60	10.97%	12.9%
75	GARMIN	34.55	1.80	5.42%	11.3%
76	GENERAL DYNAMICS	71.53	2.24	6.35%	9.9%
77	GENERAL ELECTRIC	22.97	0.76	11.03%	14.9%
78	GENERAL MILLS	48.66	1.52	7.77%	11.4%
79	HASBRO	44.71	1.60	9.67%	13.9%
80	HONEYWELL INTL.	74.09	1.64	10.32%	12.9%
81	HUMANA	74.30	1.08	9.27%	11.0%
82	ILLINOIS TOOL WORKS	64.18	1.52	7.92%	10.6%
83	INGERSOLL-RAND	54.79	0.84	11.07%	12.9%
84	INTEL	22.62	0.90	11.00%	15.7%
85	INTERNATIONAL BUS.MCHS.	204.84	3.80	10.49%	12.7%
86	INTERPUBLIC GP.	13.63	0.30	9.91%	12.5%
87	INTL.FLAVORS & FRAG.	76.26	1.36	9.25%	11.3%

LINE	COMPANY	P_0	D_0	GROWTH	MODEL RESULT
88	INTUIT	62.03	0.68	12.77%	14.1%
89	IRON MNT.	36.66	1.08	13.25%	16.8%
90	J M SMUCKER	100.48	2.08	8.48%	10.9%
91	JOHNSON & JOHNSON	82.90	2.64	6.33%	9.9%
92	JOHNSON CONTROLS	34.34	0.76	11.57%	14.2%
93	JOY GLOBAL	57.94	0.70	10.82%	12.2%
94	JP MORGAN CHASE & CO.	49.47	1.52	7.03%	10.5%
95	KANSAS CTY.STHN.	107.66	0.86	14.40%	15.4%
96	KELLOGG	63.89	1.76	7.74%	10.9%
97	KOHL'S	48.20	1.40	7.70%	11.0%
98	KRAFT FOODS GROUP	51.71	2.00	5.90%	10.3%
99	L BRANDS	47.71	1.20	10.93%	13.9%
100	LOCKHEED MARTIN	97.36	4.60	7.28%	12.7%
101	LYONDELLBASELL INDS.CL.A	61.14	2.00	10.97%	14.8%
102	M&T BANK	102.22	2.80	7.62%	10.8%
103	MARATHON PETROLEUM	83.38	1.40	11.00%	13.0%
104	MCCORMICK & CO NV.	71.45	1.36	8.32%	10.5%
105	MCDONALDS	99.44	3.08	8.76%	12.3%
106	MEAD JOHNSON NUTRITION	78.23	1.36	11.02%	13.1%
107	MICROSOFT	30.83	0.92	8.53%	12.0%
108	MOLEX	28.23	0.96	10.54%	14.5%
109	MONDELEZ INTERNATIONAL CL.A	30.11	0.52	12.14%	14.2%
110	MONSANTO	103.92	1.50	12.98%	14.7%
111	MURPHY OIL	62.19	1.25	7.14%	9.4%
112	NASDAQ OMX GROUP	30.93	0.52	12.57%	14.6%
113	NATIONAL OILWELL VARCO	67.70	1.04	14.33%	16.2%
114	NETAPP	34.93	0.60	11.67%	13.7%
115	NEWELL RUBBERMAID	25.90	0.60	9.00%	11.7%
116	NEWS CORP.'A'	30.95	0.17	15.23%	15.9%
117	NEXTERA ENERGY	77.71	2.64	6.35%	10.2%
118	NIKE 'B'	60.48	0.84	10.97%	12.6%
119	NORDSTROM	56.22	1.20	11.51%	14.0%
120	NORFOLK SOUTHERN	75.98	2.00	10.36%	13.4%
121	NORTHEAST UTILITIES	43.31	1.47	8.04%	12.0%
122	NUCOR	44.93	1.47	7.13%	10.9%
123	NVIDIA	13.27	0.30	12.00%	14.7%
124	OMNICOM GP.	59.81	1.60	8.86%	12.0%
125	ORACLE	33.54	0.24	10.66%	11.5%
126	PACCAR	49.94	0.80	10.34%	12.2%
127	PATTERSON COMPANIES	37.64	0.64	12.00%	14.0%
128	PENTAIR	53.66	0.92	14.90%	17.0%
129	PEOPLES UNITED FINANCIAL	13.34	0.65	7.50%	13.1%
130	PEPCO HOLDINGS	21.47	1.08	4.75%	10.4%
131	PEPSICO	80.45	2.27	9.00%	12.3%
132	PERKINELMER	32.81	0.28	10.82%	11.8%

LINE	COMPANY	P_0	D_0	GROWTH	MODEL RESULT
133	PERRIGO	117.20	0.36	11.80%	12.2%
134	PETSMART	66.04	0.66	15.42%	16.6%
135	PHILIP MORRIS INTL.	92.98	3.40	11.23%	15.6%
136	PNC FINL.SVS.GP.	67.01	1.76	7.80%	10.8%
137	PPG INDUSTRIES	143.42	2.44	8.75%	10.7%
138	PRAXAIR	112.84	2.40	12.28%	14.8%
139	PREC.CASTPARTS	193.08	0.12	13.74%	13.8%
140	PROCTER & GAMBLE	78.56	2.41	7.65%	11.2%
141	PVH	114.23	0.15	12.10%	12.3%
142	QUEST DIAGNOSTICS	57.90	1.20	10.18%	12.6%
143	RALPH LAUREN CL.A	176.42	1.60	12.89%	14.0%
144	REYNOLDS AMERICAN	45.99	2.52	7.60%	13.9%
145	ROCKWELL AUTOMATION	86.70	2.08	10.13%	12.9%
146	ROCKWELL COLLINS	62.61	1.20	9.18%	11.4%
147	ROPER INDS.NEW	123.39	0.66	14.60%	15.2%
148	ROSS STORES	61.76	0.68	12.10%	13.4%
149	SAFEWAY	24.75	0.80	6.73%	10.4%
150	SCRIPPS NETWORKS INTACT. 'A'	66.36	0.60	14.07%	15.2%
151	SHERWIN-WILLIAMS	175.78	2.00	13.75%	15.1%
152	SOUTHERN	46.47	2.03	4.84%	9.7%
153	ST.JUDE MEDICAL	42.30	1.00	9.56%	12.3%
154	STAPLES	13.41	0.48	6.40%	10.5%
155	STARWOOD HTLS.& RSTS. WORLDWIDE	63.56	1.25	7.67%	9.9%
156	STATE STREET	59.55	1.04	11.50%	13.6%
157	STRYKER	65.95	1.06	8.51%	10.4%
158	SYMANTEC	23.73	0.60	8.24%	11.1%
159	TARGET	68.49	1.44	11.77%	14.3%
160	TEXAS INSTS.	35.38	1.12	7.67%	11.3%
161	TEXTRON	28.03	0.08	15.05%	15.4%
162	THE HERSHEY COMPANY	87.61	1.68	9.50%	11.7%
163	THERMO FISHER SCIENTIFIC	80.08	0.60	10.37%	11.2%
164	TIFFANY & CO	72.59	1.36	11.70%	13.9%
165	TIME WARNER	58.09	1.15	12.43%	14.8%
166	TIME WARNER CABLE	93.84	2.60	12.70%	16.0%
167	TJX COS.	47.90	0.58	11.73%	13.2%
168	TOTAL SYSTEM SERVICES	23.95	0.40	10.97%	12.9%
169	UNION PACIFIC	144.99	2.76	14.25%	16.6%
170	UNITED PARCEL SER.'B'	85.20	2.48	11.28%	14.7%
171	UNITED TECHNOLOGIES	93.01	2.14	13.53%	16.3%
172	UNITEDHEALTH GP.	59.15	1.12	11.03%	13.3%
173	US BANCORP	33.84	0.78	9.71%	12.4%
174	V F	172.25	3.48	10.75%	13.1%
175	VALERO ENERGY	39.59	0.73	9.06%	11.2%
176	VERIZON COMMUNICATIONS	50.19	2.06	9.25%	14.0%
177	VIACOM 'B'	64.53	1.20	12.78%	15.0%

LINE	COMPANY	P_0	D_0	GROWTH	MODEL RESULT
178	WAL MART STORES	75.85	1.88	9.32%	12.2%
179	WALGREEN	47.10	1.10	13.60%	16.4%
180	WALT DISNEY	60.37	0.75	12.50%	14.0%
181	WELLS FARGO & CO	37.69	1.20	8.10%	11.8%
182	WESTERN UNION	14.96	0.50	10.83%	14.8%
183	WW GRAINGER	238.07	3.72	14.40%	16.3%
184	WYNN RESORTS	128.83	4.00	10.90%	14.6%
185	XEROX	8.61	0.23	6.67%	9.7%
186	XILINX	38.01	1.00	9.26%	12.3%
187	YUM! BRANDS	68.37	1.34	11.69%	14.0%
188	ZIMMER HDG.	75.92	0.80	9.45%	10.7%
189	Average				13.0%

Notes: In applying the DCF Model to the S&P 500, I include in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. In addition, I exclude all companies in the I/B/E/S group of insurance companies. I also eliminate those companies with DCF results that varied from the mean by one standard deviation or more.

Notes:

D_0 = Latest dividend per Thomson Reuters.

d_0 = Latest quarterly dividend.

P_0 = Average of monthly high and low stock prices March, April, and May 2013 per Thomson Reuters.

FC = Selling and flotation costs.

g = I/B/E/S forecast of future earnings growth May 2013.

k = Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs and market pressure (selling costs) as shown by the formula below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0(1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad (1)$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots, \qquad (2)$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k-g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,..., where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, ... This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad (3)$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\ S_n = a\ (1 - r^n) \quad .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1-r^n)}{(1-r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches $a \div (1 - r)$. Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \qquad \textbf{(5)}$$

Application to DCF Model

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1-r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1-\frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k-g} = \frac{D_0(1+g)}{k-g}$$

as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

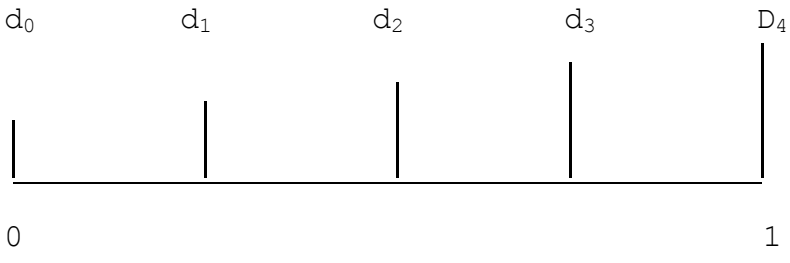
Figure 1

Annual DCF Model

$D_0 = 4d_0$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and ***k*** > ***g***, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for ***k***, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

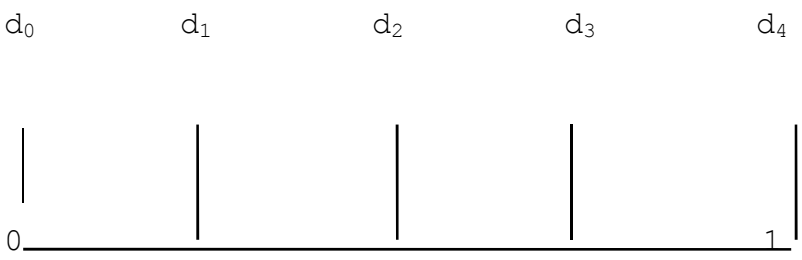
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

Quarterly DCF Model (Constant Dividend Version)

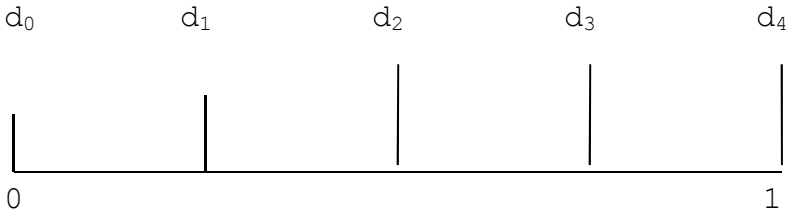
Case 1



Year

$$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$$

Case 2



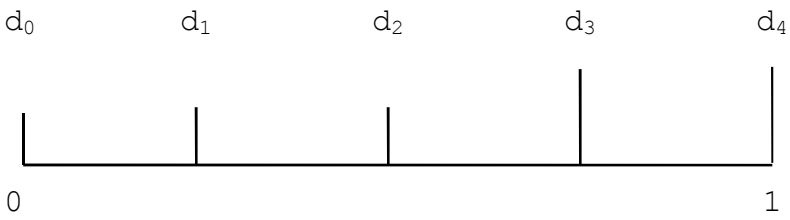
Year

$$d_1 = d_0$$

$$d_2 = d_3 = d_4 = d_0(1+g)$$

Figure 3 (continued)

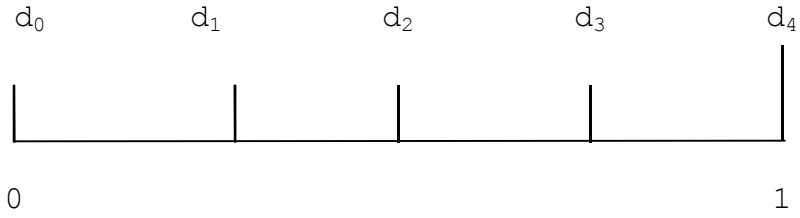
Case 3



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

Case 4



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1 (1+k)^{3/4} + d_2 (1+k)^{1/2} + d_3 (1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1 (1 + k)^{3/4} + d_2 (1 + k)^{1/2} + d_3 (1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k-g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \qquad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there

are at least two very important practical differences. First, since D_1* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2013

LINE	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
1	2013	1,481.11	0.0220		$97.45		
2	2012	1,300.58	0.0214	16.02%	$94.36	7.52%	8.50%
3	2011	1,282.62	0.0185	3.25%	$77.36	27.14%	-23.89%
4	2010	1,123.58	0.0203	16.18%	$75.02	8.44%	7.74%
5	2009	865.58	0.0310	32.91%	$68.43	15.48%	17.43%
6	2008	1,378.76	0.0206	-35.16%	$72.25	0.24%	-35.40%
7	2007	1,424.16	0.0181	-1.38%	$72.91	4.59%	-5.97%
8	2006	1,278.72	0.0183	13.20%	$75.25	2.20%	11.01%
9	2005	1,181.41	0.0177	10.01%	$74.91	5.80%	4.21%
10	2004	1,132.52	0.0162	5.94%	$70.87	11.34%	-5.40%
11	2003	895.84	0.0180	28.22%	$62.26	20.27%	7.95%
12	2002	1,140.21	0.0138	-20.05%	$57.44	15.35%	-35.40%
13	2001	1,335.63	0.0116	-13.47%	$56.40	8.93%	-22.40%
14	2000	1,425.59	0.0118	-5.13%	$52.60	14.82%	-19.95%
15	1999	1,248.77	0.0130	15.46%	$63.03	-10.20%	25.66%
16	1998	963.36	0.0162	31.25%	$62.43	7.38%	23.87%
17	1997	766.22	0.0195	27.68%	$56.62	17.32%	10.36%
18	1996	614.42	0.0231	27.02%	$60.91	-0.48%	27.49%
19	1995	465.25	0.0287	34.93%	$50.22	29.26%	5.68%
20	1994	472.99	0.0269	1.05%	$60.01	-9.65%	10.71%
21	1993	435.23	0.0288	11.56%	$53.13	20.48%	-8.93%
22	1992	416.08	0.0290	7.50%	$49.56	15.27%	-7.77%
23	1991	325.49	0.0382	31.65%	$44.84	19.44%	12.21%
24	1990	339.97	0.0341	-0.85%	$45.60	7.11%	-7.96%
25	1989	285.41	0.0364	22.76%	$43.06	15.18%	7.58%
26	1988	250.48	0.0366	17.61%	$40.10	17.36%	0.25%
27	1987	264.51	0.0317	-2.13%	$48.92	-9.84%	7.71%
28	1986	208.19	0.0390	30.95%	$39.98	32.36%	-1.41%
29	1985	171.61	0.0451	25.83%	$32.57	35.05%	-9.22%
30	1984	166.39	0.0427	7.41%	$31.49	16.12%	-8.72%
31	1983	144.27	0.0479	20.12%	$29.41	20.65%	-0.53%
32	1982	117.28	0.0595	28.96%	$24.48	36.48%	-7.51%
33	1981	132.97	0.0480	-7.00%	$29.37	-3.01%	-3.99%
34	1980	110.87	0.0541	25.34%	$34.69	-3.81%	29.16%
35	1979	99.71	0.0533	16.52%	$43.91	-11.89%	28.41%
36	1978	90.25	0.0532	15.80%	$49.09	-2.40%	18.20%
37	1977	103.80	0.0399	-9.06%	$50.95	4.20%	-13.27%
38	1976	96.86	0.0380	10.96%	$43.91	25.13%	-14.17%
39	1975	72.56	0.0507	38.56%	$41.76	14.75%	23.81%
40	1974	96.11	0.0364	-20.86%	$52.54	-12.91%	-7.96%
41	1973	118.40	0.0269	-16.14%	$58.51	-3.37%	-12.77%
42	1972	103.30	0.0296	17.58%	$56.47	10.69%	6.89%
43	1971	93.49	0.0332	13.81%	$53.93	12.13%	1.69%

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2013

LINE	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
44	1970	90.31	0.0356	7.08%	$50.46	14.81%	-7.73%
45	1969	102.00	0.0306	-8.40%	$62.43	-12.76%	4.36%
46	1968	95.04	0.0313	10.45%	$66.97	-0.81%	11.26%
47	1967	84.45	0.0351	16.05%	$78.69	-9.81%	25.86%
48	1966	93.32	0.0302	-6.48%	$86.57	-4.48%	-2.00%
49	1965	86.12	0.0299	11.35%	$91.40	-0.91%	12.26%
50	1964	76.45	0.0305	15.70%	$92.01	3.68%	12.02%
51	1963	65.06	0.0331	20.82%	$93.56	2.61%	18.20%
52	1962	69.07	0.0297	-2.84%	$89.60	8.89%	-11.73%
53	1961	59.72	0.0328	18.94%	$89.74	4.29%	14.64%
54	1960	58.03	0.0327	6.18%	$84.36	11.13%	-4.95%
55	1959	55.62	0.0324	7.57%	$91.55	-3.49%	11.06%
56	1958	41.12	0.0448	39.74%	$101.22	-5.60%	45.35%
57	1957	45.43	0.0431	-5.18%	$100.70	4.49%	-9.67%
58	1956	44.15	0.0424	7.14%	$113.00	-7.35%	14.49%
59	1955	35.60	0.0438	28.40%	$116.77	0.20%	28.20%
60	1954	25.46	0.0569	45.52%	$112.79	7.07%	38.45%
61	1953	26.18	0.0545	2.70%	$114.24	2.24%	0.46%
62	1952	24.19	0.0582	14.05%	$113.41	4.26%	9.79%
63	1951	21.21	0.0634	20.39%	$123.44	-4.89%	25.28%
64	1950	16.88	0.0665	32.30%	$125.08	1.89%	30.41%
65	1949	15.36	0.0620	16.10%	$119.82	7.72%	8.37%
66	1948	14.83	0.0571	9.28%	$118.50	4.49%	4.79%
67	1947	15.21	0.0449	1.99%	$126.02	-2.79%	4.79%
68	1946	18.02	0.0356	-12.03%	$126.74	2.59%	-14.63%
69	1945	13.49	0.0460	38.18%	$119.82	9.11%	29.07%
70	1944	11.85	0.0495	18.79%	$119.82	3.34%	15.45%
71	1943	10.09	0.0554	22.98%	$118.50	4.49%	18.49%
72	1942	8.93	0.0788	20.87%	$117.63	4.14%	16.73%
73	1941	10.55	0.0638	-8.98%	$116.34	4.55%	-13.52%
74	1940	12.30	0.0458	-9.65%	$112.39	7.08%	-16.73%
75	1939	12.50	0.0349	1.89%	$105.75	10.05%	-8.16%
76	1938	11.31	0.0784	18.36%	$99.83	9.94%	8.42%
77	1937	17.59	0.0434	-31.36%	$103.18	0.63%	-31.99%
78	1936	13.76	0.0327	31.10%	$96.46	11.12%	19.99%
79	1935	9.26	0.0424	52.84%	$82.23	22.17%	30.66%
80	1934	10.54	0.0336	-8.78%	$66.78	29.13%	-37.91%
81	1933	7.09	0.0542	54.08%	$79.55	-11.03%	65.11%
82	1932	8.30	0.0822	-6.36%	$70.67	18.23%	-24.59%
83	1931	15.98	0.0550	-42.56%	$84.49	-11.63%	-30.93%
84	1930	21.71	0.0438	-22.01%	$81.19	8.99%	-31.00%
85	1929	24.86	0.0336	-9.31%	$83.95	1.48%	-10.79%
86	1928	17.53	0.0431	46.12%	$86.71	1.43%	44.69%

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2013

LINE	YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
87	1927	13.40	0.0502	35.84%	$83.28	8.92%	26.92%
88	1926	12.65	0.0446	10.39%	$80.81	8.01%	2.38%
89	1926 - 2013			11.31%		6.88%	4.43%

Note: See Page 4 for an explanation of how stock and bond returns are derived and the source of the data presented.

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2013

RISK PREMIUM APPROACH

SOURCE OF DATA

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in thirty years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated Utility bond yield. The values shown on the ex post risk premium schedule are the January values of the respective indices.

CALCULATION OF STOCK AND BOND RETURNS

Sample calculation of "Stock Return" column:

$$\text{Stock Return}(2012) = \left[\frac{\text{Stock Price}(2013) - \text{Stock Price}(2012) + \text{Dividend}(2012)}{\text{Stock Price}(2012)} \right]$$

where Dividend (2012) = Stock Price (2012) x Stock Div. Yield (2012)

Sample calculation of "Bond Return" column:

$$\text{Bond Return}(2012) = \left[\frac{\text{Bond Price}(2013) - \text{Bond Price}(2012) + \text{Interest}(2012)}{\text{Bond Price}(2012)} \right]$$

where Interest = $4.00.

Exhibit RB-11

PREFILED TESTIMONY
OF
DAVID APPEL

2013 WORKERS COMPENSATION
ASSIGNED RISK INSURANCE RATE FILING
BY THE NORTH CAROLINA RATE BUREAU

AUGUST, 2013

I. QUALIFICATIONS AND SUMMARY

Q. Please state your name and present business address.

A. My name is David Appel, and my business address is 1 Pennsylvania Plaza, New York, NY.

Q. What is your occupation?

A. I am Director of Economics Consulting and a Principal with the firm of Milliman, Inc.

Q. What is Milliman, Inc.?

A. Milliman, Inc. (formerly Milliman & Robertson) is one of the nation's largest independently owned firms of actuaries and consultants. The company has more than 2600 employees, and operates offices in 55 cities in the U.S., Europe, Asia and Latin America. Our clients number in the thousands: they include insurers, self-insured entities, Federal and State Governments, private corporations, non-profit organizations, unions, and many others. I am a Principal with the firm, and I am in charge of its Economics Consulting practice.

Q. Please describe your educational and employment history.

A. A complete statement of my educational, employment and academic credentials is included as Exhibit RB-12 filed with this testimony.

To summarize, I have a B.A. in economics from Brooklyn College, City University of New York, and M.A. and Ph.D. degrees in economics from Rutgers University. Prior to joining Milliman, I was employed for nine years by the National Council on Compensation Insurance (NCCI), the nation's largest workers compensation insurance statistical, research and ratemaking organization. I joined NCCI as Research Economist in 1980, and held

progressively responsible positions as Senior Research Economist, Director of Research, Assistant Vice President and finally Vice President, beginning in July 1985. Prior to 1980, I was an instructor in economics at Rutgers University.

Q. Would you please describe some of your other professional activities?

A. Yes. Throughout my professional career, I have participated in a variety of academic and business activities related to insurance. I have twice been an elected member of the Board of Directors of the American Risk and Insurance Association, the leading learned society of insurance academics. I am also a member of the editorial board of the *Journal of Insurance Regulation* (the official research publication of the National Association of Insurance Commissioners). I act as a peer referee for a number of scholarly journals in economics and insurance, and I maintain an active program of research and publication on issues of current interest in insurance economics. In addition, I was, for twelve years, an Adjunct Professor of Economics at Rutgers University.

Q. Have you ever published any papers or books?

A. Yes. During my career, I have authored many papers on various aspects of insurance that have been published in refereed books or scholarly journals. In addition, I have published a large number of papers in non-refereed journals as well. I have also co-edited three volumes of research papers dealing with various aspects of workers compensation and property-casualty insurance. My refereed publications are listed in Exhibit RB-12 filed with this testimony.

Q. Are you a member of any professional associations?

A. Yes, I am a member of the American Risk and Insurance Association, and an elected fellow of the National Academy of Social Insurance. I am also a certified arbitrator and umpire with ARIAS, the world's largest insurance and reinsurance arbitration society, and a member of the panel of neutrals of the American Arbitration Association.

Q. Have you ever testified in insurance rate regulatory proceedings?

A. Yes. I have testified on many occasions in such proceedings, including several occasions in North Carolina in the past several years. A complete list is contained in Exhibit RB-12 filed with this testimony.

Q. What was the general nature of your testimony in these cases?

A. I have addressed a wide variety of insurance issues during public testimony, including such diverse topics as the impact of economic and demographic factors on insurance costs; the

effects of regulation on insurance availability; the use of econometric and statistical models in insurance forecasting; and the use of modern financial theory in developing insurance prices. In North Carolina, my testimony in recent years has focused primarily on the last of these issues, specifically on matters relating to the cost of capital and the expected returns attributable to insurance operations.

Q. Have you been retained by the North Carolina Rate Bureau as a consultant with respect to the subject of profitability in this rate case?

A. Yes. I have reviewed or considered the following specific matters in connection with this case:

1. Dr. Vander Weide's estimation of the cost of capital;

2. Whether other insurer characteristics suggest additional risk factors that should be considered in estimating the cost of capital in this case;

3. Whether there are any characteristics of workers compensation assigned risk insurance which render it more or less risky than the average line of business; and

4. The return insurers would expect to earn from underwriting workers compensation assigned risk insurance in North Carolina, assuming that the projected loss and expense provisions contained in the rate filing are realized.

I have performed various studies and analyses on these matters.

Q. Have you reached any conclusions in regard to these matters?

A. Yes. I will summarize them in bullet form here, and then discuss them each more fully later in the testimony.

1. I have reviewed Dr. Vander Weide's cost of capital estimates and find them to be reasonable. Dr. Vander Weide's estimates are based on the implicit assumption that insurers present investors with roughly average risk, relative to all possible investment activities. However, based on my analyses, I believe that investors in the property-casualty insurance industry are subject to an above average degree of risk. Thus, I think it would be prudent to view Dr. Vander Weide's estimates as a conservative estimate of the return to which insurers are entitled.

2. I have considered two additional characteristics that affect the degree of risk to which investors in property/casualty insurance stocks are exposed: One is the fact that insurers are subject to an unusual degree of interest rate risk, and the other is that insurers writing workers compensation in North Carolina tend to be smaller than those used in Dr. Vander Weide's cost of capital analysis. Since there is strong evidence that interest rate risk requires compensation in the form of higher returns,

and that small firms are also expected to yield higher returns, I believe Dr. Vander Weide's estimates are conservative, in that investors must be compensated for these risks in the form of an additional risk premium above that required for the average security.

3. I have also considered the specific characteristics of the workers compensation assigned risk business and have concluded that it is above average risk when compared with the average activity in which property casualty insurers are engaged. Thus, the cost of capital for this specific business activity will be higher than the average cost of capital for the industry as a whole.

4. I have tested the underwriting profit provision selected and filed by the NCRB to determine if it produces a fair and reasonable return for insurers. To do so, I estimated the returns insurers would expect to earn from North Carolina workers' compensation assigned risk insurance assuming that the projected loss and expense provisions contained in the rate filing are realized. I am aware that North Carolina law provides that insurers are entitled to expect to earn a return equal to the returns of industries of comparable risk, and that in calculating that expected return, investment income from capital and surplus funds is not to be considered. I refer to that operating return as the statutory return. However, as is evident from the attached exhibits, I have estimated insurer pro forma returns both including and excluding expected investment income from capital and surplus. I have done this to demonstrate that if the filed underwriting profit is actually realized, and even if investment income on surplus is considered, insurer returns will not be excessive. Obviously, if returns are not excessive including investment income from capital and surplus, they will be non-excessive excluding such income.

   Based on my calculations, the selected underwriting profit provision generates a statutory return on net worth of 8.3%. (In my testimony, I will use "net worth" to mean net worth according to Generally Accepted Accounting Principles.) In addition, the total return on net worth (i.e., including investment income on surplus) is approximately 10.5%. Since this return is below the midpoint of Dr. Vander Weide's range for the fair rate of return, I conclude that the selected underwriting profit provision complies with North Carolina law and is clearly not excessive.

II. COST OF CAPITAL REVIEW

Q. You indicated you had reviewed Dr. Vander Weide's estimate of the cost of capital. Are you familiar with Dr. Vander Weide's approach to estimating the cost of capital in insurance rate cases?

A. Yes. I am aware of the methodology which Dr. Vander Weide relies upon to estimate the cost of capital and have reviewed it on a number of occasions in the course of previous rate cases in North Carolina. Dr. Vander Weide has used what have traditionally been the most widely recognized and accepted models for this purpose, namely the Discounted Cash Flow (DCF) model and the risk premium method. These models, when taken together and

properly applied to a reasonably selected data set, provide acceptable estimates of the cost of capital for regulated insurers.

Q. What has Dr. Vander Weide concluded with respect to the cost of capital in this case?

A. Dr. Vander Weide has concluded that the fair rate of return for insurers is now in the range of 8.6% to 13.0% on net worth as determined under generally accepted accounting principles (GAAP).

Q. In your opinion, is this an appropriate estimate of the required rate of return?

A. Yes, however as I indicated a moment ago, I believe that Dr. Vander Weide may have been conservative in his calculation of the required rate of return. Dr. Vander Weide has assumed that the property-casualty industry presents investors with average risk. However, based on my studies, I conclude the following:

1. There is evidence that additional factors affecting the risk and required return for property casualty insurance stocks are not accounted for in Dr. Vander Weide's analysis. These factors – interest rate risk and the small size of the typical workers compensation insurer – suggest that the insurance industry is above average risk, and hence requires above average returns. I would note that these additional risks may be captured in alternative cost of capital models, in particular the variant of the risk premium model known as the Fama French Three Factor model (FF3F). My studies suggest that the FF3F model produces insurance cost of capital estimates that are up to several percentage points greater than those produced by the standard risk premium model used by Dr. Vander Weide.

2. To the extent that workers compensation assigned risk insurance is viewed as above average in risk when compared with other activities in which property casualty insurers are engaged, the cost of capital will be higher than average as well.

III. ADDITIONAL FACTORS AFFECTING RISK

Q. Your comments about additional risk factors suggest that Dr. Vander Weide's cost of capital may be conservative, or understated, for insurers writing workers compensation in North Carolina. Can you please elaborate on this?

A. Certainly. As mentioned earlier, I have considered whether other factors not addressed in the standard cost of capital analysis conducted by Dr. Vander Weide might indeed affect the risk and therefore the required return in this case. In fact, there were two such factors – interest rate risk and the small size of firms writing workers compensation in the state - that I have been studying for a number of years and which clearly increase the cost of capital, or required return, in this case. Based on analyses I have conducted for previous rate hearings

in North Carolina, I have concluded that both of these factors create additional risks that require additional compensation above that demanded for the average security.

Q. You have made reference to the term interest rate risk. Can you please define this term?

A. Yes. Interest rate risk refers to the risk that the value of fixed income investments (such as bonds) will fluctuate with changes in interest rates. This means that there is a risk associated with holding bonds, particularly those with a relatively long term to maturity. While investments in equities are still considerably riskier than investments in long term bonds, as evidenced by the fact that returns to large company stocks have had a much higher mean and standard deviation than returns on long term government bonds over the past 85 years, bond investments impose risk as well.

Q. Does interest rate risk affect investments in property-casualty insurance stocks?

A. Yes. Property-casualty insurance companies invest large amounts of funds in bonds issued by both corporations and governmental bodies. The risk that investors face is that when interest rates change, the values of the bonds also change, and hence their investments in property-casualty stocks are subject to interest rate risk. This fact is widely recognized by the financial community. Since investors cannot diversify away interest rate risk, only the prospect of higher returns will induce them to purchase interest-sensitive stocks. That is, investors must be compensated for purchasing interest-sensitive stocks because they are increasing their exposure to interest rate risk.

Q. Why is interest rate risk different from market risk?

A. Interest rate risk is a separate source of volatility for insurance stocks. Interest rates often change as a result of changes in expectations of future inflation. These changes primarily affect firms that hold what are called nominal assets and liabilities. Nominal assets and liabilities have cash flows that are fixed in nominal terms (for example, accounts receivable, most contracts, and bonds) and are thus subject to erosion in value due to inflation. On the other hand, the cash flows associated with manufacturing and service operations tend to fluctuate with the price level. Since most non-financial firms hold relatively few nominal assets and liabilities, their stocks are not particularly sensitive to changes in interest rates that are due to changes in expected inflation. Therefore interest rate risk adds additional risk to insurance stocks, above and beyond market risk, that is not diversifiable.

Changes in interest rates that are not associated with changes in expected inflation will affect all stocks. This accounts for the moderate degree of correlation between changes in long term interest rates and returns to common stocks. However, the fact that most stocks are not very sensitive to changes in interest rates that are due to changes in expected inflation means that interest rate risk is not fully captured in measures of market risk.

Q. Is it possible to measure interest rate risk?

A. Yes, and in the past I have conducted a number of studies designed specifically to address this issue. The principal conclusions of those studies is that since insurer assets on average have a substantially longer financial duration than insurance liabilities, when interest rates change, the value of insurer equity is subject to potentially wide fluctuation. While the market risk for insurers as measured by beta is roughly average, the degree of interest rate risk to which the industry is exposed is considerably higher than average. Since this risk cannot be entirely diversified away, the overall risk associated with an investment in property/casualty insurance is greater than average. As a consequence, insurers are entitled to a rate of return above that allowed for the average risk investment in the U.S. economy. I believe that there are three main reasons for this conclusion.

First, as noted, the high degree of financial leverage and mismatched durations of assets and liabilities contributes to the volatility of returns to investors in insurance stocks.

Second, the insurance industry is in the business of bearing risk. Individuals and corporations transfer to property-casualty insurers the potential liability for a wide range of possible adverse events, ranging from property damage to professional liability. In light of the unforeseen events that can occur, and, in the recent past, actually have occurred, investors in property-casualty insurance stocks are subject to considerable risk.

Finally, insurance is in the unique position of being a highly competitive industry that is also subject to a high degree of regulation. This combination of regulation and competition creates an environment in which insurers are subject not only to the demands of the market but also to the pressures of the political process. There is substantial evidence that regulation can increase risk for a regulated enterprise, and when that is combined with an aggressively competitive industrial structure, risk is increased.

Q. You said that the combination of regulation and competition increased risk for insurers. Can you describe what you mean?

A. Yes. Traditionally, direct price and rate of return regulation has been imposed on industries known as "public utilities," such as generation and transmission of electric power, distribution of natural gas, provision of local water and sewer service and the like. Because of the nature of the production process, these industries are characterized as "natural monopolies," meaning that it is most efficient for a single producer to provide the service in question. In such circumstances, the state normally grants a monopoly to a single provider and then regulates that firm directly to prevent abuse of monopoly power.

Property-casualty insurance differs dramatically from this model. Rather than a single firm providing service, there are in most states literally hundreds of firms competing in the market, none of which typically have significant market power. These firms compete aggressively to increase market share and attract the best insureds by offering a variety of price and quality combinations that are best tailored to their business objectives. This

vigorous competition provides discipline in the marketplace, and, when combined with direct rate of return regulation, the risk for insurers is increased.

I should note that historically, a number of competitively structured industries (such as airlines, trucking, and telecommunications) were subject to regulation, but in the past several decades there has been a movement to deregulate these activities. This is due in part to the widespread agreement that competition itself is an adequate regulator.

Q. You also said that you considered whether the size distribution of North Carolina insurers should impact the cost of capital in this case. Can you please describe this issue briefly and discuss its implications for this case?

A. Yes. It is a well established fact of empirical finance that small stocks tend to outperform large stocks. Ibbotson Associates, for instance, reports that firms in the ninth and tenth deciles of stocks listed on the principal U.S. stock exchanges have outperformed the market as a whole by approximately 3.8 percentage points over the period 1926 to 2012, even after accounting for the fact that these firms have above average betas. Therefore an adjustment should be made to the cost of capital to the extent that the property-casualty insurance industry is composed of small stocks.

Q. Have you conducted any studies with respect to the significance of the small stock effect?

A. Yes. As with interest rate risk, I have conducted a number of studies of this issue in previous years, and in each instance I found that (1) investors have earned higher returns from small stocks than from large stocks, and (2) the insurers in Dr. Vander Weide's cost of capital analysis are among the largest companies in the U.S. economy. The insurers in Dr. Vander Weide's analysis are larger, on average, than the companies in the property-casualty insurance industry, and they are larger, on average, than the companies writing workers compensation insurance in North Carolina.

These facts suggest that the cost of capital for insurers writing workers compensation insurance in North Carolina should be higher than for those firms contained in Dr. Vander Weide's cost of capital analysis. This reaffirms my conclusion that the cost of capital Dr. Vander Weide has presented is conservative.

Q. Can you please summarize your testimony on the cost of capital of the property-casualty insurance industry?

A. Yes. Dr. Vander Weide has assumed that the property-casualty insurance industry presents investors with risks comparable to the average investment in equities. My analysis has shown that property-casualty insurance stocks are subject to additional volatility due to interest rate sensitivity, and are relatively small when compared with the broad cross section of publicly traded firms in the U.S. economy. Since these additional risks require compensation in the form of a higher return, I conclude that Dr. Vander Weide has been

conservative in his calculation of the required rate of return on property-casualty insurance investments.

IV. RELATIVE RISK OF WORKERS COMPENSATION ASSIGNED RISK BUSINESS

Q. Will you please now turn to the issue of the relative risk of North Carolina workers compensation assigned risk insurance?

A. Yes. As I mentioned before, the cost of capital Dr. Vander Weide estimated is the return investors require for placing their capital at risk in a large, publicly traded property-casualty insurance company that writes at least some workers compensation insurance. This is best interpreted as the return required for the average risk activity of this set of companies. If the specific activity in question in this filing, North Carolina workers compensation assigned risk insurance, is perceived as riskier than the average activity of the firms in this sample, then the fair rate of return, or cost of capital, will be higher than the value Dr. Vander Weide has estimated.

Q. Do you have any reason to believe that North Carolina workers compensation assigned risk insurance is riskier than the average investment undertaken by these companies?

A. Yes. There are a number of characteristics peculiar to the workers compensation line of insurance which render it of higher than average risk among all lines of property-casualty insurance. In addition, there are aspects of workers compensation assigned risk insurance which render it more risky than the average workers compensation coverage.

Among the many relevant considerations relating to workers compensation in general are the following:

1. Workers compensation is subject to unlimited liability; there are neither per claim, per occurrence or aggregate loss limits under the policy terms. This is in contrast to the typical property-casualty insurance contract, in which all these limits may apply.

2. Workers compensation is a "long-tailed" line of business, meaning that the payment of losses may extend for many years beyond the sale date of the policy. It is a well known principle of statistics that the longer the time horizon of a forecast, the greater the expected error in the estimate. Thus the forecast of ultimate losses in this line is subject to greater risk than in many other lines of business.

3. Workers compensation has a substantial exposure to medical inflation, which has been more rapid and less predictable than general inflation.

4. Workers compensation is subject to the risk of occupational disease, which can lead to substantial and inherently unpredictable losses in the future.

5. Workers compensation is subject to the phenomenon of "benefit utilization." This term refers to the observation that as benefits become more generous, workers increase their utilization of the system.

   While the term has traditionally been applied to indemnity benefits (as benefits increase both claim frequency and duration increase), it is equally applicable to medical benefits as well. Since medical costs are covered with no deductibles or co-payments, workers compensation has become an increasingly attractive alternative to health insurance for coverage of any illness or injury.

All these characteristics suggest that workers compensation is of above average risk when compared with the other activities in which property-casualty insurers are engaged.

Q. In addition to these factors, which relate to the workers compensation line in general, are there any other considerations specific to North Carolina assigned risk business which render it riskier than average?

A. Yes. In the workers compensation line, assigned risk business is universally regarded as less favorable than voluntary market business. Participation in the assigned risk market, otherwise known as the involuntary or residual market, is not elective. Insurers have no opportunity to select insureds or underwrite the risks; as a consequence, they cannot apply business judgment to their underwriting activities.

In addition, compared with the voluntary market, assigned risk loss experience has been consistently worse than the average (i.e. combined voluntary and assigned risk) loss experience.

Q. How do these considerations affect your evaluation of the cost of capital applicable in this proceeding?

A. Based on the characteristics discussed earlier, I have concluded that: (1) workers compensation in general is riskier than the average line of property-casualty insurance business, and (2) assigned risk business is riskier than average workers compensation business. Because the risk of this activity is greater than average, the cost of capital is higher than average as well. Although it is difficult to quantify the incremental change in the fair rate of return, all the considerations noted earlier suggest that an upward adjustment would be necessary. Therefore, in my opinion Dr. Vander Weide's cost of capital must be considered to be the lower bound for the fair and reasonable rate of return in this case.

V. PROJECTED RETURN ATTRIBUTABLE TO INSURANCE OPERATIONS

Q. Earlier you said that you had calculated the statutory return insurers would expect from underwriting workers compensation assigned risk insurance in North Carolina. Would you describe your analysis?

A. Yes. I relied on the traditional insurance profitability analysis utilized by the NCRB for all lines of business, and have calculated the pro forma statutory returns on equity that would be expected to arise assuming that actual underwriting and investment results materialize exactly as projected in this filing. The results are contained in Exhibit RB-13 filed with this testimony. (I note that for long tailed lines of insurance such as workers compensation, insurers frequently rely on models that explicitly consider the time pattern of future cash flows, such as the internal rate of return model.)

Q. What do you mean when you use the term pro forma in connection with rate of return?

A. I use this term to indicate that the rate of return presented in this exhibit is based on a series of assumptions regarding such inputs as underwriting profit, investment gain, leverage, and the like. If these assumptions actually materialize, then the "pro forma" rates of return calculated in the exhibit will prevail. However, to the extent that these assumptions are not realized, the rate of return will differ from that calculated in the exhibit.

Q. Are you aware of the provisions of G.S. 58-36-10, providing that in making rates the NCRB is to consider investment income earned and realized on unearned premium and loss reserves?

A. Yes, and I understand that investment income on capital and surplus is not to be considered when making rates. As I have already indicated, I have estimated and presented the returns that can be expected, both excluding and including investment income on capital and surplus, and none of those returns approach even the midpoint of Dr. Vander Weide's range for the industry's fair rate of return. Since the NCRB's filed underwriting profit provision generates expected returns that are not excessive even if the investment income on capital and surplus is included, the expected returns which exclude that investment income cannot be excessive.

Q. Can you please now describe the components of the model you developed?

A. Yes. The model really consists of a single page which calculates the rate of return on equity attributable to undertaking the insurance activity. It includes estimates of revenues derived from underwriting and investment activities, and estimates of costs, comprised of losses, expenses, and taxes. This exhibit is supported by several other exhibits which provide calculations of investment yield rates, tax rates, premium to surplus and net worth to surplus ratios, and uncollectible premium. I will describe the principal elements of these exhibits below.

1. Underwriting profit is the difference between earned premiums (net of uncollectible premium) and incurred losses and expenses, expressed as a percent of premium. (In this filing I have displayed uncollectible premium as an expense, before calculating the underwriting profit. This is in contrast to prior filings, where uncollectible premium was displayed after calculation of the underwriting profit. The two approaches are arithmetically identical.)

2. Uncollectible premium is projected based on historical data from the North Carolina assigned risk pool.

3. Taxes are calculated assuming that the regular corporate tax rate applies to underwriting income and that an additional tax liability applies due to the reserve discounting and revenue offset provisions of the 1986 Tax Reform Act. Taxes on investment income are calculated assuming that the current statutory tax rates apply to the various classes of investment income earned.

4. Investment gain on the insurance transaction is estimated as the product of an investment yield rate and the investible funds available from loss, loss adjustment expense and unearned premium reserves (i.e., policyholder supplied funds). Investible funds are estimated using the well known ISO State-X calculation, modified as described below. The investment yield rate itself is derived as the average of the "embedded yield" and the "current yield," based on the actual portfolios of securities held by insurers. This estimated yield rate includes income from interest, dividends, real estate, and other assets, as well as realized capital gains.

5. In my estimates of the expected total return, investment gain on surplus is estimated as the product of the aforementioned investment yield rate and the amount of surplus attributable to the insurance transaction. The amount of surplus attributable to the transaction includes an adjustment to reflect the additional surplus required to support the prepayment of expenses. (In statutory accounting, the prepayment of expenses acts to reduce statutory surplus. Since prepaid expenses are already deducted from investible reserves in the investment income calculation, they are added back here to avoid deducting them from the investible balance twice.)

These components are each expressed as a percent of premium. To calculate the rate of return on equity, the components must be summed (before or after tax), and then multiplied by the ratio of premium to net worth.

Q. Can you describe how you have reflected agents' balances in the rate of return calculations?

A. Agents' balances, that is, delays in the collection and remission of premium to the companies, result in funds that are not available for investment. To estimate the level of agents' balances, I calculated the average date of premium collection using the distribution of North Carolina workers compensation assigned risk premium by size and the provisions of the assigned risk pool installment pay plan. The estimated average premium collection date is approximately 7.1 months. Given that the average policy sale date is 6 months, the average delay in remission is 1.1 months, which is 0.093 years.

Q. Could you please clarify how the underwriting profit provision contained in the rate filing was determined?

A. Yes. The issue of how that Rate Bureau determines the underwriting profit and contingency factor has routinely arisen in rate hearings in North Carolina over the past several years. Although it is evident from my exhibits that the Rate Bureau selects an underwriting profit provision to be included in the rates, there has been lengthy cross examination on this issue in every rate hearing in recent memory. Therefore, to clarify this matter, I will briefly discuss the procedure used by the Rate Bureau to determine the underwriting profit factor that is included in the proposed rates.

Each year, prior to making its rate filing, the Workers Compensation Committee of the Rate Bureau meets to review data and determine values for a number of the important components of the proposed rates. One of these components is the underwriting profit factor. To determine this value, a procedure is followed in which I provide the committee with the estimated returns on equity (both statutory returns as well as returns adjusted to include investment income on surplus) associated with alternative underwriting profit provisions, and the committee then selects a provision that is consistent with the cost of capital that has been developed by Dr. Vander Weide. Thus, the process is best described as one in which I test alternative underwriting profit provisions, and the committee selects a value based on these tests.

Q. How do you know what values of the underwriting profit provision to test?

A. I have been performing this type of analysis on behalf of the NCRB for many years, and I am quite familiar with the dynamics of these models. Therefore, it is relatively easy to know the general range of values around which the underwriting profit is likely to fall. Normally, for any particular line of business, I will select approximately five or six values of the underwriting profit provision to test, that comprise a range of perhaps two to four percentage points, and the committee typically selects a value within that range. Of course, if the committee is not satisfied with the range of values I propose, it is relatively straightforward to calculate returns associated with alternative values proposed by the committee.

As an example of this process, for this filing, I believe I tested underwriting profit provisions ranging from 7.0% to 11.0%, and the committee selected a value of 9.0%.

Q. From what you've said, it appears that the NCRB *selects* an underwriting profit provision, rather than *deriving* such a provision from the cost of capital. Is that correct, and if so, isn't it true that actuarial standards of practice require that the underwriting profit provision be *derived* from an underlying cost of capital?

A. It is correct that the Rate Bureau committee selects an underwriting profit provision and then tests whether that provision results in an expected rate of return on net worth that is consistent with the cost of capital. However, it is *not true* that actuarial standards of practice require that an underwriting profit be derived from the cost of capital. In fact, that issue is addressed explicitly in ASOP #30, entitled "Treatment of Underwriting Profit and Contingency Factors and the Cost of Capital in Property/Casualty Insurance Ratemaking." Section 3.1 of that ASOP states the following:

Estimating the Cost of Capital and the Underwriting Profit Provision – Property/casualty insurance rates should provide for all expected costs, including an appropriate cost of capital associated with the specific risk transfer. This cost of capital can be provided for by estimating that cost and translating it into an underwriting profit provision, after taking leverage and investment income into account. Alternatively, the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital. The actuary may use any appropriate method, as long as such method is consistent with the considerations in this standard.

The procedure utilized by the Rate Bureau is exactly the approach articulated in this section (i.e., "the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital").

Q. Although most of these calculations are self-explanatory, could you please clarify how you selected your investment yield rate and premium to surplus ratio?

A. Yes. To select the investment yield rate, I took the average of what are known as the "embedded" and "current" yields, where each was based on the actual asset portfolios insurers currently hold. The Commissioner adopted this approach in his 1994 automobile insurance rate case, and, in his decision in the 1996 auto case, he selected a yield which approximated the yield obtained from this approach. Since then, the Rate Bureau has consistently followed this approach.

To estimate the embedded yield, I calculated the ratio of the most recent available industrywide investment income to average invested assets and added to that an estimate of the ten year average ratio of realized capital gains to invested assets. The sum of these two is the estimated embedded yield.

To estimate the current yield, I determined the yields available in today's capital markets for the portfolio of securities currently held by the property-casualty insurance industry. I then calculated a weighted average of these yield rates, based on the proportion of assets held by the industry in each of the various securities such as stocks, bonds, real estate and the like.

As far as the premium to surplus ratio is concerned, I relied on information which reflects the actual degree of leverage for insurers writing workers compensation insurance in North Carolina over the past ten years. My selected premium to surplus ratio is based on the ten year average premium to surplus ratio for the top 30 insurers which wrote workers compensation in North Carolina over that time period.

Q. Can you please provide the results of your calculations regarding the projected rate of return to the insurance transaction?

A. Yes. Assuming that the inputs to the pro forma model materialize exactly as expected, I estimate that insurers would expect to earn a statutory return on net worth of 8.3%. If one

includes consideration of investment income on surplus, the total return on GAAP equity equals 10.5%.

The total return on GAAP equity is below the midpoint of Dr. Vander Weide's range for the industry's fair return on equity. The statutory return on net worth falls below the lower bound of Dr. Vander Weide's range for the industry's fair return on equity.

VII. CONCLUSION

Q. Based on the studies you have conducted, have you come to any conclusions regarding the selected underwriting profit provision of 9.0% that has been filed by the NCRB in this case?

A. Yes. Based on my evaluation of Dr. Vander Weide's cost of capital estimates, my consideration of insurer specific risk characteristics, and my estimation of the projected pro forma return associated with underwriting workers compensation assigned risk insurance in North Carolina, I believe that the selected underwriting profit provision, and the return expected to be realized by insurers, comply with North Carolina law.

Q. Does this conclude your testimony?

A. Yes, it does.

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PROFESSIONAL EXPERIENCE:

1989 to present	**MILLIMAN, INC.** Principal & Director - Economics Consulting Responsible for the formation, development and management of a national consulting practice in insurance economics.
1980 to 1989	**NATIONAL COUNCIL ON COMPENSATION INSURANCE** Economic and Social Research Division
1985 to 1989	Vice President
1983	Assistant Vice President Responsible for all economic and social research of NCCI
1982	Director of Economic and Social Research
1981	Senior Research Economist
1980	Associate Research Economist
1976 to 1997	**RUTGERS UNIVERSITY**
1981-97	Associate of the Graduate Faculty, Department of Economics, Newark, New Jersey
1981-93	Teach variety of graduate courses including: Microeconomic Theory, Industrial Organization, Public Finance
1978-80	Instructor, Department of Economics, New Brunswick, New Jersey
1976-78	Adjunct Instructor, Department of Economics, Newark, New Jersey

EDUCATION:

1980	Ph.D., Economics, Rutgers University
1976	M.A., Economics, Rutgers University
1972	B.A., Economics, Brooklyn College, CUNY
	Certified ARIAS Arbitrator and Umpire
	Member: AAA Panel of Neutrals
	Fellow: National Academy of Social Insurance

PAPERS AND PUBLICATIONS

"Comment on Jaffee and Russell" in Deregulating Property-Liability Insurance, J. David Cummins, Editor, Brookings Institution Press, Washington, DC, 2002

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"Survivorship and the Size Distribution of the Property-Liability Insurance Industry", Journal of Risk and Insurance, October 1985, (with John Worrall and Richard Butler).

"Regulating Competition-The Case of Workers' Compensation Insurance", Journal of Insurance Regulation, (with James Gerofsky), June 1985.

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"Property Damages", in Joseph Seneca and Peter Asch, The Benefits of Air Pollution Control in New Jersey, Center for Coastal and Environmental Studies, Rutgers University, 1979

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"Workers' Compensation Pricing: The Role of Policyholder Dividends" (with David Durbin)

"The Impact of Lifetime Work on Mortality: Do Unisex Pensions Matter?" (with Richard J. Butler)

"Regulatory Survival: Rate Changes in Workers' Compensation" (with Richard J. Butler and John D. Worrall)

"Framing, Firm Size and Financial Incentives in Workers' Compensation Insurance" (with Richard J. Butler and John D. Worrall)

"Application of NAIC Profitability Models to Long Tailed Lines of Insurance" (with James Gerofsky)

INVITED PRESENTATIONS

Huntington Beach, California, March 11, 2013
CAS RPM Seminar
"Risk Loads for Property Catastrophe Covers: Primary and Reinsurer Perspectives"

Huntington Beach, California, March 11, 2013
CAS RPM Seminar
"The Actuary as Expert Witness"

Philadelphia, Pennsylvania, March 20, 2012
CAS Ratemaking Seminar
"How Reinsurers Consider Risk Loads and Cost of Capital for Property Cat Covers"

Chicago, IL , March 17, 2010
CAS Ratemaking Seminar
"Logic, Fallacies and Paradoxes in Risk/Profit Loading in Ratemaking: A Socratic Dialogue"

Chicago, IL , March 16, 2010
CAS Ratemaking Seminar
"Quantifying Risk Loads for Property Catastrophe Exposure"

Las Vegas, NV, March 10, 2009
CAS Ratemaking Seminar
"Using Catastrophe Bonds to Infer Risk Loads/Profit Margins/Reinsurance Costs"

Boston, MA, March 17, 2008
CAS Ratemaking Seminar
"Using Catastrophe Bonds to Infer Risk Loads/Profit Margins/Reinsurance Costs"

Pinehurst, North Carolina, May 21, 2007
Workers Compensation Insurance Organizations Annual Meeting
"Enterprise Risk Management: What Is It and Why Is It Important?"

Salt Lake City, Utah, March 13, 2006
CAS Ratemaking Seminar
"Including Reinsurance Costs in Primary Insurance Rates"

New Orleans, Louisiana, March 11, 2005
CAS Ratemaking Seminar
"Including Reinsurance Costs in Primary Insurance Rates"

Philadelphia, Pennsylvania, March 11, 2004
CAS Ratemaking Seminar
"The Consideration of Risk Loads and Reinsurance Costs in Primary Insurance Ratemaking"

New York, New York, December 12, 2003
Goldman Sachs Insurance Conference
"Interest Rate Changes and Insurance Underwriting"

San Antonio, Texas, March 28, 2003
CAS Ratemaking Seminar
"The Consideration of Risk Loads and Reinsurance Costs in Primary Insurance Ratemaking"

San Antonio, Texas, March 27, 2003
CAS Ratemaking Seminar
"Rate of Return Models in Insurance Ratemaking"

San Diego, California, May 20, 2002
CAS Annual Meeting
“The Actuary as an Expert Witness”

Tampa, Florida, March 7, 2002
CAS Ratemaking Seminar
"Parameterizing Rate of Return Models in Insurance Ratemaking"

Chicago, Illinois, December 10, 2001
NAIC Meeting
“The Impact of Proposition 103 in California”

Kansas City, Missouri, April 30, 2001
NAIC Meeting
“Personal Lines Regulation”

Las Vegas, Nevada, March 12, 2001
CAS Ratemaking Seminar
"Parameterizing Rate of Return Models in Insurance Ratemaking"

Washington DC, January 18, 2001
Brookings Institution Conference on Insurance Regulation
“Auto Insurance Experience in California”

Bermuda, September 14, 2000
Ace Insurance Worldwide Actuarial Conference
“Rate of Return Models In Property Casualty Insurance Ratemaking”

Orlando, Florida, June 9, 1998
Florida Managed Care Institute Annual Conference
"Issues in Integrated Health Care"

Seattle, Washington, July 21, 1997
CAS Dynamic Financial Analysis Seminar
"Dynamic Financial Analysis of a Workers Compensation Insurer"

Boston, Massachusetts, March 14, 1997
CAS Ratemaking Seminar
"Discounted Cash Flow Models in Insurance Ratemaking"

East Lansing, Michigan, July 15, 1996
National Symposium on Workers Compensation
"Managed Care in Workers Compensation"

New Orleans, Louisiana, March 20, 1996
Global Business Research Seminar: Partnerships Between Insurers and Providers
"Integrating the Data Systems"

Orlando, Florida, November 15, 1995
Global Business Research Seminar: Documenting Savings From Managed Care
"Evaluating Savings From Managed Care"

Orlando, Florida, October 27, 1995
Self Insurance Association of America Annual Meeting
"Managed Care in Workers Compensation: A Magic Act or Humbug?"

San Diego, California, October 16, 1995
Global Business Research Seminar: Documenting Savings From Managed Care
"Technical Issues in Measuring Savings From Managed Care"

Durham, North Carolina, September 6, 1995
North Carolina HMO Association Annual Meeting
"Workers Compensation in North Carolina: Risks and Opportunities for HMO's"

Washington, DC, May 22, 1995
Global Business Research Seminar: Outcomes for Workers' Compensation Managed Care
"Measuring and Reporting the Savings"

Orlando, Florida, April 13, 1995
NCCI Annual Meeting
"Managed Care in Workers Compensation"

Phoenix, Arizona, April 3, 1995
Casualty Actuarial Society Seminar on Profitability
"Rate of Return Models - Selecting the Parameters"

New Orleans, Louisiana, March 16, 1995
Casualty Actuarial Society Ratemaking Seminar
"Discounted Cash Flow Models for Insurance Ratemaking"

Orlando, Florida, March 14, 1995
Standard & Poor's Rating Conference
"Consolidation in the Property/Casualty Insurance Industry"

Minneapolis, Minnesota, October 11, 1994
Casualty Actuarial Society Seminar on Medical Cost Containment
"Managed Care and Workers' Compensation"

Toronto, Ontario, August 22, 1994
American Risk and Insurance Association Annual Meeting
"Current Issues in Workers' Compensation"

Boston, Massachusetts, May 17, 1994
Casualty Actuarial Society Annual Meeting
"Standard Of Practice on Profit and Contingency"

Hartford, Connecticut, April 20, 1994
University of Connecticut Blue Cross/Blue Shield Symposium
"24 Hour Coverage - What Will It Involve"

Atlanta, Georgia, March 10, 1994
Casualty Actuarial Society Ratemaking Seminar
"Cash Flow Models for Insurance Ratemaking"

Cambridge, Massachusetts, March 2, 1994
Workers' Compensation Research Institute Health Care Reform Conference
"Early Results of the Florida Pilot Project"

Phoenix, Arizona, November 15, 1993
Casualty Actuarial Society Annual Meeting
"The Use Of Managed Care in Workers' Compensation"

New York, New York, October 20, 1993
Insurance Information Institute/Reinsurance Association of America Research Conference
The Impact of Health Care Reform on Casualty Insurance"

Somerset, New Jersey, July 13, 1993
National Symposium on Workers' Compensation
"Economic Analysis of Workers' Compensation Issues"

Boston, Massachusetts, June 30, 1993
Institute of Actuaries of Japan Special Meeting
"Health Care Costs in Workers' Compensation"

Dallas, Texas, June 15, 1993
Stirling-Cooke Workers' Compensation Seminar
"Workers' Compensation Medical Costs: Trends, Causes and Solutions"

New York, New York, June 3, 1993
New York Business Group On Health
"The Crisis in Workers' Compensation Health Care"

Mauna Lani Bay, Hawaii, May 3, 1993
Western Association of Insurance Brokers Annual Meeting
"Trends in Insurance Insolvency"

Kingston, Ontario, April 28, 1993
Queen's University Workers' Compensation Conference
"Exposure Bases for Workers' Compensation: Equity vs. Practicality"

Sanibel Island, Florida, March 29, 1993
Workers' Compensation Reinsurance Bureau Annual Meeting
"The Use of Managed Care in Workers' Compensation"

Baltimore, Maryland, March 23, 1993
CAMAR Annual Meeting
"Estimating the Cost of Capital in Insurance Ratemaking"

Philadelphia, Pennsylvania, December 1, 1992
Economic Issues in Workers' Compensation Seminar,
"Rate of Return Regulation in Workers' Compensation"

Seattle, Washington, October 16, 1992
Casualty Actuarial Society Seminar on Profitability
"Risk Based Capital Standards for Property Casualty Insurers"

Washington, DC, August 18, 1992
American Risk and Insurance Association Annual Meeting
"The Crisis in Workers' Compensation"

New York, New York, May 19, 1992
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Palm Beach, Florida, April 23, 1992
NCCI Annual Meeting
"Is the Workers' Compensation Industry Competitive?"

Philadelphia, Pennsylvania, March 20, 1992
University of Pennsylvania/Duncanson & Holt Special Seminar
"Current Issues in Workers' Compensation"

Dallas, Texas, March 12, 1992
Casualty Actuarial Society Ratemaking Seminar
"Profitability Models in Insurance Ratemaking: Estimating the Parameters"

Houston, Texas, December 11, 1991
NCCI/NAIC Commissioners Symposium
"Rate Adequacy: Solvency and Safety Implications"

New York, New York, November 17, 1991
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Philadelphia, Pennsylvania, November 12, 1991
Casualty Actuarial Society Annual Meeting
"The Impact of Medical Costs on Casualty Coverages"

New York, New York, May 17, 1991
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Kiawah Island, South Carolina, April 15 & 16, 1991
Casualty Actuarial Society Seminar on Profitability
"Cost of Capital Estimation: Lessons From Public Utilities"

Chicago, Illinois, March 14, 1991
Casualty Actuarial Society Ratemaking Seminar
"The Use of Profitability Models in Insurance Ratemaking"

Orlando, Florida, October 24, 1990,
Financial Management Association Annual Meeting,
"Current Issues in Insurance Rate Regulation: California Prop. 103 and Pennsylvania Act 6"

New Brunswick, New Jersey, May 18, 1990,
Joint Conference on Workers' Compensation,
"Current State Issues and Benefit Reforms"

Orlando, Florida, May 8, 1990,
National Association of Insurance Commissioners Southeast Zone Raters Conference,
"Loss Cost Rating for Workers' Compensation"

Orlando, Florida, April 3, 1990,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"Medical Costs in Workers' Compensation: Recent Trends in Cost Containment"

Philadelphia, Pennsylvania, March 15, 1990,
CAS Ratemaking Seminar,
"Rate of Return Models in Insurance Regulation: Return on Sales vs. Return on Equity"

Chicago, Illinois, November 10, 1989,
Alliance of American Insurers Research Committee,
"Recent Developments in Rate Regulation: California Proposition 103"

New York, New York, October 5, 1989,
NCCI Legal Trends Seminar,
"Medical Cost Containment in Workers' Compensation"

Philadelphia, Pennsylvania, September 7, 1989,
Workers' Compensation Congress,
"Medical Cost Containment in Workers' Compensation"

Denver, Colorado, August 21, 1989,
American Risk and Insurance Association Annual Meeting,
"Regulatory Survival: Rate Changes in Workers' Compensation" (with Richard J. Butler)

Hilton Head, South Carolina, April 4,1989,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"Prospects for Workers' Compensation in the 1990's"

Mountain Lakes, New Jersey, March 29, 1989,
St. Clares-Riverside Medical Center,
"Stress in the Workplace"

Dallas, Texas, March 16, 1989,
Casualty Actuarial Society Ratemaking Seminar,
"The Impact of Tax Reform on Insurance Profitability"

New Orleans, Louisiana, December 15, 1988,
NAIC-NCCI Commissioners School,
"A Forecast for Workers' Compensation"

Philadelphia, Pennsylvania, November 17,1988,
Economic Issues in Workers' Compensation Seminar,
"The Impact of Regulation on the Probability of Insolvency" (with John D. Worrall and David Durbin)

Boston, Massachusetts, November 14, 1988,
American Public Health Association Annual Meeting,
"Stress in the Workplace"

Atlanta, Georgia, September 14, 1988,
Casualty Loss Reserve Seminar,
"Estimating the Cost of Social Inflation in Workers' Compensation"

Reno, Nevada, August 15, 1988,
American Risk and Insurance Association Annual Meeting,
"Benefit Increases in Workers' Compensation"

New York, New York, June 13, 1988,
National Association Of Insurance Commissioners Annual Meeting,
"Alternative Rate of Return Models for Insurance Regulation"

Syracuse, New York, May 5, 1988,
Current Issues in Workers' Compensation Symposium,
"Workers' Compensation Stress Claims"

Hilton Head, South Carolina, April 22, 1988,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"A Forecast for Workers' Compensation Insurers"

Absecon, New Jersey, April 19, 1988,
Pennsylvania Coal Mine Rating Bureau Annual Meeting,
"The Use of Rate of Return Models in Insurance Rate Regulation"

Philadelphia, Pennsylvania, November 17, 1987,
Economic Issues in Workers' Compensation Seminar,
"The Transition to Permanent Disability Status" (with John D. Worrall and David Durbin)

Charlotte, North Carolina, October 20, 1987,
American Insurance Association Government Affairs Conference,
"Prospects for Workers' Compensation in 1988"

Minneapolis, Minnesota, September 29, 1987,
Minnesota Workers' Compensation Reinsurance Association Annual Meeting,
"Economic and Demographic Characteristics of Workers' Compensation Claims"

Airlie, Virginia, July 7, 1987,
National Symposium on Workers' Compensation,
"Forecasting Workers' Compensation Experience"

Santa Clara, California, June 30, 1987,
Symposium on Recent Advances in Ratemaking,
"Econometric Models of Workers' Compensation Losses"

Storrs, Connecticut, May 1, 1987,
University of Connecticut Symposium on Current Issues in Workers' Compensation,
"Current Research in Workers' Compensation"

Philadelphia, Pennsylvania, April 16, 1987,
Wharton School Graduate Seminar Series,
"Impact of Tax Reform on Workers' Compensation Profitability"

Boca Raton, Florida, December 4, 1986,
National Association of Insurance Commissioners/NCCI Commissioners School,
Panel Discussion on Current Issues in Workers' Compensation

Philadelphia, Pennsylvania, November 7, 1985,
Wharton School, University of Pennsylvania, Graduate Seminar Series,
"Litigation in Workers' Compensation"

Vancouver, British Columbia, August 19, 1985,
American Risk and Insurance Association Annual Meeting,
"Earnings Loss and Permanent Disability"

Washington, D.C., April 23, 1985,
Washington Conference on the Economics of Disability,
"Employment Effects of Workers' Compensation Insurance"

Schenectady, New York, January 18, 1985,
Union University Graduate Business Seminar Series,
"The Use of Modern Portfolio Theory in Insurance Regulation"

EXPERT TESTIMONY

New York, New York, July 10, 2013
Larry Arnett and Ronda Arnett, *et. al.* v. Bank of America, N.A., *et. al.*, Deposition

Austin, Texas, April 25, 2013
State Farm Lloyds Homeowners Rate Hearing

Tallahassee, Florida, October 4, 2012
NCCI Workers Compensation Insurance Rate Hearing

Boston, Massachusetts, May 14, 2012
Massachusetts Workers Compensation Rate Hearing

New York, New York, February 17, 2012
Temporary Services, Inc. *et. al.* v. American International Group, *et. al.*, Deposition

San Francisco, California, January 19, 2012
Mercury Insurance Company Homeowners Insurance Rate Hearing

Santa Fe, New Mexico, November 16, 2011
Biennial Title Insurance Rate Hearing

Tallahassee, Florida, October 11, 2011
NCCI Workers Compensation Insurance Rate Hearing

Tampa, Florida, September 13, 2011
Citizens Property Insurance Corporation Homeowners Insurance Hearing

Raleigh, North Carolina, July 25, 2011
Dwelling Fire and Extended Coverage Insurance Rate Hearing

Tallahassee, Florida, October 6, 2010
NCCI Workers Compensation Insurance Rate Hearing

Irvine, CA, April 21, 2010
Eastwood Insurance Services, Inc. *et. al*., vs. Titan Auto Insurance of NM, *et. al.* Deposition

San Francisco, California, March 9, 2010
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Santa Fe, New Mexico, November 18, 2009
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Tallahassee, Florida, October 29, 2009
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State Farm Florida Homeowners Insurance Hearing

Raleigh, North Carolina, July 1, 2008
Auto Insurance Rate Hearing

San Francisco, California, May 5, 2008
GeoVera Insurance Company Earthquake Rate Hearing

Tallahassee, Florida, January 23, 2008
Hartford Insurance Group Homeowners Insurance Rate Hearing

Boston, Massachusetts, January 9, 2008
Commerce Insurance Group Auto Insurance Rate Hearing

San Francisco, California, November 29, 2007
Explorer Insurance Company Automobile Rate Hearing

Santa Fe, New Mexico, November 19, 2007
Annual Title Insurance Rate Hearing

Reno, Nevada, June 14, 2007
Public Hearing Regarding Merger Between UnitedHealth Group and Sierra Health Systems

Austin, Texas, May 31, 2007
State Farm Lloyds Homeowners Rate Hearing

Reno, Nevada, October 26, 2006
Public Hearing Regarding Demutualization of Employers Insurance Group

San Francisco, California, August 30, 2006
Hearing on Proposed Title Insurance Rate Regulations

Austin, Texas, August 14, 2006
Biennial Title Insurance Rate Hearing

Raleigh, North Carolina, September 28, 2005
Auto Insurance Rate Hearing

Providence, Rhode Island, September 27, 2005
Norcal Medical Malpractice Insurance Rate Hearing

San Francisco, California, August 23, 2005
Safeco Insurance Company Earthquake Rate Hearing

Boston, Massachusetts, April 15, 2005
Massachusetts Workers Compensation Rate Hearing

Lawrence, Massachusetts, February 14, 2005
Highground, Inc. v. Mazonson

New York, NY, January 21, 2005

NFHA v. Prudential Deposition

Austin, Texas, July 13, 2004
Medical Protective Insurance Company Medical Malpractice Insurance Rate Hearing

Austin, Texas, December 16, 2003
Biennial Title Insurance Rate Hearing

Providence, Rhode Island, November 17, 2003
Norcal Medical Malpractice Insurance Rate Hearing

San Francisco, California, September 16, 2003
Century National Proposition 103 Rollback Hearing

Austin, Texas, September 11, 2003
Farmers Insurance Exchange Homeowner Rate Rollback Hearing

Austin, Texas, September 2, 2003
State Farm Lloyds Homeowners Rate Rollback Hearing

Austin, Texas, May 21, 2003
Farmers Insurance Group Settlement Hearing

Boston, Massachusetts, April 29, 2003
Massachusetts Workers Compensation Rate Hearing

Los Angeles, California, March 12, 2003
SCPIE Medical Malpractice Rate Hearing

Raleigh, North Carolina, July 17, 2002
Auto Insurance Rate Hearing

Tallahassee, Florida, February 25, 2002
NCCI Workers Compensation Insurance Rate Hearing

Austin, Texas, February 5, 2002
Biennial Title Insurance Rate Hearing

Raleigh, North Carolina, September 24, 2001
Auto Insurance Rate Hearing

Boston, Massachusetts, August 14, 2001
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, March 6, 2001
Texas Auto Benchmark Rate Hearing

Boston, Massachusetts, August 23, 2000
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, December 7, 1999
Texas Auto Insurance Plan Association Rate Hearing

Raleigh, North Carolina, December 3, 1999
Auto Insurance Rate Hearing

Austin, Texas, November 3, 1999
Biennial Title Insurance Rate Hearing

Austin, Texas, September 8, 1999
Texas Auto Benchmark Rate Hearing

Boston, Massachusetts, August 13, 1999
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, June 22, 1999
Texas Property Benchmark Rate Hearing

Honolulu, Hawaii, December 16, 1998
NCCI Workers Compensation Insurance Rate Hearing

Richmond, Virginia, November 15, 1998
NCCI Workers Compensation Insurance Rate Hearing

Boston, Massachusetts, October 9, 1998
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, May 19, 1998
Texas Auto Insurance Plan Association Rate Hearing

Austin, Texas, April 7, 1998
Auto Insurance Benchmark Rate Hearing

Austin, Texas, February 17, 1998
Property Insurance Benchmark Rate Hearing

Austin, Texas, November 18, 1997
Biennial Title Insurance Rate Hearing

Tallahassee, Florida, September 8, 1997
NCCI Workers Compensation Insurance Rate Hearing

Austin, Texas, April 8, 1997
Texas Auto Insurance Plan Association Rate Hearing

Austin, Texas, March 10, 1997
Auto Insurance Benchmark Rate Hearing

San Francisco, California, March 4, 1997
Insurance Department Hearing on Rating Factors

Raleigh, North Carolina, July 16, 1996
Auto Insurance Rate Hearing

San Francisco, California, March 11, 1996
Century National Proposition 103 Rollback Hearing

Sacramento, California, January 30, 1996
Hartford Steam Boiler Proposition 103 Rollback Hearing

San Francisco, California, January 8, 1996
SAFECO Insurance Company Earthquake Rate Hearing

Austin, Texas, December 21, 1995
Residential Property Insurance Benchmark Rate Hearing

Clearwater, Florida, December 8, 1995
Florida Windstorm Underwriting Association Rate Hearing

Austin, Texas, November 28, 1995
Private Passenger Auto Insurance Benchmark Rate Hearing

Austin, Texas, October 31, 1995
Texas Automobile Insurance Plan Association Rate Hearing

Sacramento, California, April 18, 1995
California Insurance Department Hearing on Auto Insurance Rating Factors

Portland, Maine, April 13, 1995
Workers Compensation Assigned Risk Pool Fresh Start Hearing

San Francisco, California, February 6, 1995
Farmers Insurance Group Earthquake Insurance Rate Hearing

Austin, Texas, January 6, 1995
Special Hearing on Classification Rules for Automobile Insurance

Austin, Texas, December 15, 1994
Residential Property Insurance Benchmark Rate Hearing

Austin, Texas, October 4, 1994
Texas Automobile Insurance Plan Association Rate Hearing

Austin, Texas, September 27, 1994
Private Passenger Auto Insurance Benchmark Rate Hearing

Raleigh, North Carolina, July 19, 1994
Private Passenger Auto Insurance Rate Hearing

San Francisco, California, December 22, 1993
Century National Homeowner's Insurance Rate Hearing

Raleigh, North Carolina, October 13, 1993
Homeowners/Farmowners Insurance Rate Hearing

Tallahassee, Florida, October 4, 1993
Workers' Compensation Insurance Rate Hearing

Boston, Massachusetts, September 9, 1993
Automobile Insurance Rate Hearing

Austin, Texas, March 4, 1993
Residential Property Insurance Benchmark Rate Hearing

Austin, Texas, February 10, 1993
Automobile Insurance Benchmark Rate Hearing

Honolulu, Hawaii, November 18, 1992

Liberty Mutual Insurance Automobile Rate Hearing

Raleigh, North Carolina, November 13, 1992
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, October 29, 1992
Workers' Compensation Insurance Rate Hearing

San Francisco, California, October 14, 1992
Workers' Compensation Insurance Rate Hearing

Atlanta, Georgia, September 24, 1992
Workers' Compensation Insurance Rate Hearing

Nashville, Tennessee, May 27, 1992
Workers' Compensation Insurance Rate Hearing

San Francisco, California, May 13, 1992
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, April 10, 1992
Mercury General Proposition 103 Rollback Proceedings

Austin, Texas, January 27, 1992
Texas Automobile Insurance Plan Rate Hearing

Austin, Texas, December 17, 1991
Automobile Insurance Rate Hearing

Raleigh, North Carolina, December 16, 1991
Workers' Compensation Insurance Rate Hearing

San Francisco, California, October 22, 1991
Workers' Compensation Rate Hearing

Los Angeles, California, May 23, 1991,
Proposition 103 RCD-2 Proceedings

San Francisco, California, April 9, 1991
California Workers' Compensation Rate Study Commission

Nashville, Tennessee, March 20, 1991
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, March 12, 1991,
California Workers' Compensation Rate Study Commission

Olympia, Washington, February 26, 1991,
House Financial Institutions/Insurance Committee Hearing on Rules for Insurance Regulatory Legislation

Olympia, Washington, November 27, 1990,
Insurance Department Public Hearing on Proposed Rules for Ratemaking

Harrisburg, Pennsylvania, November 12, 1990,
Allstate Insurance Company Automobile Insurance Rate Hearing

Tallahassee, Florida, November 1, 1990,
Scanlan v. Martinez, et.al., Superior Court of Leon County

San Bruno, California, October 1, 1990,
SAFECO Insurance Group Proposition 103 Rate Rollback Hearing

Austin, Texas, July 23, 1990,
Texas State Board of Insurance Special Hearing on Investment Income in Ratemaking

Harrisburg, Pennsylvania, July 18, 1990,
Pennsylvania National Mutual Insurance Company Automobile Insurance Rate Hearing

Harrisburg, Pennsylvania, June 28, 1990,
Harleysville Mutual Insurance Company Automobile Insurance Rate Hearing

Columbia, South Carolina, March 30, 1990,
Workers' Compensation Insurance Rate Hearing

San Bruno, California, March 19, 1990,
California Proposition 103 Generic Hearing

Denver, Colorado, December 12, 1989,
Workers' Compensation Insurance Rate Hearing

Tampa, Florida, October 23, 1989,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, October 17, 1989,
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, September 25, 1989,
SAFECO Insurance Company of America Proposition 103 Rate Hearing

Austin, Texas, August 29, 1989,
Texas Insurance Advisory Association Property Insurance Rate Hearing

Providence, Rhode Island, April 13, 1989,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, January 24, 1989,
Workers' Compensation Insurance Rate Hearing

Hartford, Connecticut, November 14, 1988,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 3, 1988,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, November 2, 1988,
Workers' Compensation Insurance Rate Hearing

Montgomery, Alabama, June 30, 1988,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, March 24, 1988,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, October 27, 1987,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, October 9, 1987,
Workers' Compensation Insurance Rate Hearing

Atlanta, Georgia, August 6, 1987,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, February 24, 1987,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 14, 1986,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, November 18, 1986,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, May 28, 1986,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, December 6, 1985,
Workers' Compensation Insurance Rate Hearing

Oklahoma City, Oklahoma, October 10, 1985,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, July 23, 1985,
Workers' Compensation Insurance Rate Hearing

Austin Texas, June 14, 1985,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 18, 1984,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, August 29, 1984,
Workers' Compensation Insurance Rate Hearing

Portland, Oregon, March 6, 1984,
NA IC Public Hearing on Investment Income and Insurance Profitability

Tallahassee, Florida, February 25, 1984,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, August 18, 1983,
Workers' Compensation Insurance Rate Hearing

Austin Texas, July 13, 1983,
Workers' Compensation Insurance Rate Hearing

Oklahoma City, Oklahoma, March 6, 1983,
Workers' Compensation Insurance Rate Hearing

Baton Rouge, Louisiana, March 16, 1982,

Louisiana Insurance Commission Public Hearing on Investment Income

Providence, Rhode Island, February 3, 1982,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, October 1, 1981,
Workers' Compensation Insurance Rate Hearing

NCRB - PRO FORMA STATUTORY RETURN

WORKERS COMPENSATION

	Pre-Tax	Tax Liability	Post-Tax
1. Premiums	100.00%		
Loss & Loss Adjustment Expense	49.89%		
Commissions & Brokerage	5.00%		
Taxes, Licenses and Fees	2.95%		
General & Other Acquisition Expenses	2.05%		
Servicing Carrier Allowance plus Other Expenses	21.85%		
Uncollectible Premium Income	9.26%		
2. Pro-Forma Underwriting Profit	9.00%		
3. Regular tax		3.15%	
4. Additional tax due to TRA		0.47%	
5. Total Return from Underwriting (post-tax)			5.38%
6. Investment Gain on Insurance Transaction	4.64%	1.16%	3.48%
7. Total Return as a % of Premium (post-tax)			8.85%
8. Premium-to-Net Worth Ratio			0.936
9. Total Return as a % of Net Worth (post-tax)			8.29%

Note: Lines (1) to (7) are all expressed as a % of premium.

Assumptions

(a) UW Tax Rate =	35.00%
(b) Inv. Income Tax Rate =	24.98%
(c) Inv. Yield =	3.11%
(d) P/S Ratio =	1.08
(e) NW/S Ratio =	1.15
(f) Uncollectible Premium Income	9.26%
(g) Additional TRA tax=	0.47%
(h) Prepaid Expense Ratio	28.47%
(i) Unearned Premium Reserve to Premium Ratio	33.66%

NOTES TO EXHIBIT RB-13, Page 1

1. Selected expense provisions, reflecting the average of servicing carrier and direct assignment carrier market shares and expense provisions.Servicing carrier share =79.96 %; direct assignment carrier share =20.04%. Therefore, General & OAE for direct assignment carriers = 10.24%*20.04%=2.05%, of total market premium, while the servicing carrier allowance plus other expenses = (24.99%+0.92%+1.42%)*79.96%=21.85% of total market premium Commission and brokerage expenses are the same for all carriers. For uncollectible premium, see RB-13, p. 13

2. Selected underwriting profit provision

3. (2) x (a.)

4. See RB-13, p. 3

5. [(2) - (3) - (4)]

6. See RB-13, pp.4-7

7. (5) + (6)

8. (d)/(e)

9. (7) x (8)

ASSUMPTIONS

(a) Internal Revenue Code

(b) See RB-13, pp. 8-10; 1-avg post-tax yield/avg pre-tax yield

(c) See RB-13, pp. 8-10; average of current and embedded yields

(d) See RB-13, p. 11

(e) See RB-13, p. 12

(f) See RB-13, p. 13

(g) See RB-13, p. 3

(h) See RB-13, p. 4

(i) See RB-13, p. 5

NCRB - PRO FORMA STATUTORY RETURN
ADJUSTED TO INCLUDE INVESTMENT INCOME ON SURPLUS
WORKERS COMPENSATION

	Pre-Tax	Tax Liability	Post-Tax
1. Premiums	100.00%		
Loss & Loss Adjustment Expense	49.89%		
Commissions & Brokerage	5.00%		
Taxes, Licenses and Fees	2.95%		
General & Other Acquisition Expenses	2.05%		
Servicing Carrier Allowance plus Other Expenses	21.85%		
Uncollectible Premium Income	9.26%		
2. Pro-Forma Underwriting Profit	9.00%		
3. Regular tax		3.15%	
4. Additional tax due to TRA		0.47%	
5. Total Return from Underwriting (post-tax)			5.38%
6. Investment Gain on Insurance Transaction	4.64%	1.16%	3.48%
7. Investment Gain on Surplus (Including Prepaid Expense Adjustment)	3.18%	0.79%	2.38%
8. Total Return as a % of Premium (post-tax)			11.24%
9. Premium-to-Net Worth Ratio			0.936
10. Total Return as a % of Net Worth (post-tax)			10.52%

Note: Lines (1) to (9) are all expressed as a % of premium.

Assumptions

(a) UW Tax Rate =	35.00%
(b) Inv. Income Tax Rate =	24.98%
(c) Inv. Yield =	3.11%
(d) P/S Ratio =	1.08
(e) NW/S Ratio =	1.15
(f) Uncollectible Premium Income	9.26%
(g) Additional TRA tax=	0.47%
(h) Prepaid Expense Ratio	28.47%
(i) Unearned Premium Reserve to Premium Ratio	33.66%

NOTES TO EXHIBIT RB-13, Page 1A

1. Selected expense provisions, reflecting the average of servicing carrier and direct assignment carrier market shares and expense provisions.Servicing carrier share =79.96 %; direct assignment carrier share =20.04%. Therefore, General & OAE for direct assignment carriers = 10.24%*20.04%=2.05%, of total market premium, while the servicing carrier allowance plus other expenses = (24.99%+0.92%+1.42%)*79.96%=21.85% of total market premium Commission and brokerage expenses are the same for all carriers. For uncollectible premium, see RB-13, p. 13

2. Selected underwriting profit provision

3. (2) x (a.)

4. See RB-13, p. 3

5. [(2) - (3) - (4)]

6. See RB-13, pp.4-7

7. (c) x [1/(d) + (h)x(i)]

8. (5) + (6) + (7)

9. (d)/(e)

10. (8) x (9)

ASSUMPTIONS

(a) Internal Revenue Code

(b) See RB-13, pp. 8-10; 1-avg post-tax yield/avg pre-tax yield

(c) See RB-13, pp. 8-10; average of current and embedded yields

(d) See RB-13, p. 11

(e) See RB-13, p. 12

(f) See RB-13, p. 13

(g) See RB-13, p. 3

(h) See RB-13, p. 4

(i) See RB-13, p. 5

NORTH CAROLINA
WORKERS COMPENSATION

CALCULATION OF TAXABLE INCOME

The Tax Reform Act of 1986 increased taxable income for property casualty insurers, by including in the tax base several items that were previously not considered taxable income. These items include:

1. Inclusion of 20% of the annual increase in unearned premium reserve as income.
2. The use of discounted loss reserves in the calculation of underwriting income.
3. Inclusion of 15% of tax exempt income and the deductible portion of dividends received from investments made after August 7, 1986.

Of these three items, the first two (revenue offset and loss reserve discounting) must be accounted for directly in the calculation of the underwriting profit tax. The third item must be accounted for in the calculation of the investment income tax rate. The calculations below assume annual premium growth of 5%.

(a)	Earned Premium (current year)	100.00%
(b)	UEPR (previous year)	32.84%
(c)	UEPR (current year)	34.48%
(d)	Increase = (c)-(b)	1.64%
(e)	20% of Increase = Taxable Income	0.33%
(f)	Tax Liability = (e)x.35	0.11%

The additional taxable income derived from treating unpaid losses on a discounted basis is given by the difference between unpaid losses and undiscounted unpaid losses in year N, minus the difference between unpaid losses and undiscounted unpaid losses in year N-1. Discounting is on the basis of payment patterns provided by NCCI.

(g)	Unpaid Losses (current year)	152.20%
(h)	Discounted unpaid losses (current year)	130.86%
(i)	Unpaid Losses (previous year)	144.95%
(j)	Discounted unpaid losses (previous year)	124.62%
(k)	Additional Income	1.02%
(l)	Tax Liability	0.36%

The sum of these two calculations results in the following:

Other Tax Liabilities

(m)	UEP	0.11%
(n)	Discounting of Loss Reserves	0.36%
(o)	Total	**0.47%**

NORTH CAROLINA
WORKERS COMPENSATION

CALCULATION OF TAXABLE INCOME

(1) AY Avg Acc Date	(2) AY Pay Pattern	(3) Percent Unpaid	(4) Volume as % of Premium	(5) Combined Weight	(6) AY at 12/31 of Current Yr.	(7) Discount Factor	(8) Discounted Weight	(9) AY at 12/31 of Previous Yr.	(10) Weight	(11) Discount Factor	(12) Discounted Weight
0.5	25.6%	74.4%	49.887	37.1	2012	87.5527%	32.5				
1.5	45.5%	54.5%	47.512	25.9	2011	85.7437%	22.2	2011	35.3	87.5527%	30.9
2.5	57.1%	42.9%	45.249	19.4	2010	84.4646%	16.4	2010	24.7	85.7437%	21.2
3.5	65.2%	34.8%	43.094	15.0	2009	83.8965%	12.6	2009	18.5	84.4646%	15.6
4.5	71.2%	28.8%	41.042	11.8	2008	83.6730%	9.9	2008	14.3	83.8965%	12.0
5.5	75.8%	24.2%	39.088	9.5	2007	83.1638%	7.9	2007	11.3	83.6730%	9.4
6.5	79.4%	20.6%	37.227	7.7	2006	84.1746%	6.4	2006	9.0	83.1638%	7.5
7.5	82.4%	17.6%	35.454	6.2	2005	85.5607%	5.3	2005	7.3	84.1746%	6.1
8.5	84.8%	15.2%	33.766	5.1	2004	86.3597%	4.4	2004	5.9	85.5607%	5.1
9.5	86.8%	13.2%	32.158	4.2	2003	88.0286%	3.7	2003	4.9	86.3597%	4.2
10.5	88.8%	11.2%	30.626	3.4	2002	89.8084%	3.1	2002	4.0	88.0286%	3.6
11.5	90.8%	9.2%	29.168	2.7	2001	91.7203%	2.5	2001	3.3	89.8084%	2.9
12.5	92.9%	7.2%	27.779	2.0	2000	93.7927%	1.9	2000	2.5	91.7203%	2.3
13.5	94.9%	5.1%	26.456	1.4	1999	96.0635%	1.3	1999	1.9	93.7927%	1.8
14.5	96.9%	3.1%	25.196	0.8	1998	98.5856%	0.8	1998	1.3	96.0635%	1.2
15.5	100.0%	0.0%	23.997	0.0	1997	98.5856%	0.0	1997	0.8	98.5856%	0.7
16.5	100.0%	0.0%	22.854	0.0	1996	98.5856%	0.0	1996	0	98.5856%	0.0
17.5	100.0%	0.0%	21.766	0.0	1995	98.5856%	0.0	1995	0	98.5856%	0.0
18.5	100.0%	0.0%	20.729	0.0	1994	98.5856%	0.0	1994	0	98.5856%	0.0
19.5	100.0%	0.0%	19.742	0.0	1993	98.5856%	0.0	1993	0	98.5856%	0.0
20.5	100.0%	0.0%	18.802	0.0	1992	98.5856%	0.0	1992	0	98.5856%	0.0
21.5	100.0%	0.0%	17.907	0.0	1991	98.5856%	0.0	1991	0	98.5856%	0.0
22.5	100.0%	0.0%	17.054	0.0	1990	98.5856%	0.0	1990	0	98.5856%	0.0
23.5	100.0%	0.0%	16.242	0.0	1989	98.5856%	0.0	1989	0	98.5856%	0.0
24.5	100.0%	0.0%	15.468	0.0	1988	98.5856%	0.0	1988	0	98.5856%	0.0
25.5	100.0%	0.0%	14.732	0.0	1987	98.5856%	0.0	1987	0	98.5856%	0.0
26.5	100.0%	0.0%	14.030	0.0	1986	98.5856%	0.0	1986	0	98.5856%	0.0
27.5	100.0%	0.0%	13.362	0.0	1985	98.5856%	0.0	1985	0	98.5856%	0.0
28.5	100.0%	0.0%	12.726	0.0	1984	98.5856%	0.0	1984	0	98.5856%	0.0
29.5	100.0%	0.0%	12.120	0.0	1983	98.5856%	0.0	1983	0	98.5856%	0.0
30.5	100.0%	0.0%	11.543	0.0	1982	98.5856%	0.0	1982	0	98.5856%	0.0
31.5	100.0%	0.0%	10.993	0.0	1981	98.5856%	0.0	1981	0	98.5856%	0.0
32.5	100.0%	0.0%	10.470	0.0	1980	98.5856%	0.0	1980	0	98.5856%	0.0
33.5	100.0%	0.0%	9.971	0.0	1979	98.5856%	0.0	1979	0	98.5856%	0.0
34.5	100.0%	0.0%	9.496	0.0	1978	98.5856%	0.0	1978	0	98.5856%	0.0
35.5	100.0%	0.0%	9.044	0.0	1977	98.5856%	0.0	1977	0	98.5856%	0.0
36.5	100.0%	0.0%	8.613	0.0	1976	98.5856%	0.0	1976	0	98.5856%	0.0
37.5	100.0%	0.0%	8.203	0.0	1975	98.5856%	0.0	1975	0	98.5856%	0.0
38.5	100.0%	0.0%	7.813	0.0	1974	98.5856%	0.0	1974	0	98.5856%	0.0
39.5	100.0%	0.0%	7.441	0.0	1973	98.5856%	0.0	1973	0	98.5856%	0.0
40.5	100.0%	0.0%	7.086	0.0	1972	98.5856%	0.0	1972	0	98.5856%	0.0
41.5	100.0%	0.0%	6.749	0.0	1971	98.5856%	0.0	1971	0	98.5856%	0.0
42.5	100.0%	0.0%	6.427	0.0	1970	98.5856%	0.0	1970	0	98.5856%	0.0
43.5	100.0%	0.0%	6.121	0.0	1969	98.5856%	0.0	1969	0	98.5856%	0.0
44.5	100.0%	0.0%	5.830	0.0	1968	98.5856%	0.0	1968	0	98.5856%	0.0
45.5	100.0%	0.0%	5.552	0.0	1967	98.5856%	0.0	1967	0	98.5856%	0.0
46.5	100.0%	0.0%	5.288	0.0	1966	98.5856%	0.0	1966	0	98.5856%	0.0
47.5	100.0%	0.0%	5.036	0.0	1965	98.5856%	0.0	1965	0	98.5856%	0.0
48.5	100.0%	0.0%	4.796	0.0	1964	98.5856%	0.0	1964	0	98.5856%	0.0
49.5	100.0%	0.0%	4.568	0.0	1963	98.5856%	0.0	1963	0	98.5856%	0.0
50.5	100.0%	0.0%	4.350	0.0	1962	98.5856%	0.0	1962	0	98.5856%	0.0
51.5	100.0%	0.0%	4.143	0.0	1961	98.5856%	0.0	1961	0	98.5856%	0.0
52.5	100.0%	0.0%	3.946	0.0	1960	98.5856%	0.0	1960	0	98.5856%	0.0
53.5	100.0%	0.0%	3.758	0.0	1959	98.5856%	0.0	1959	0	98.5856%	0.0
54.5	100.0%	0.0%	3.579	0.0	1958	98.5856%	0.0	1958	0	98.5856%	0.0
55.5	100.0%	0.0%	3.409	0.0	1957	98.5856%	0.0	1957	0	98.5856%	0.0
56.5	100.0%	0.0%	3.246	0.0	1956	98.5856%	0.0	1956	0	98.5856%	0.0
57.5	100.0%	0.0%	3.092	0.0	1955	98.5856%	0.0	1955	0	98.5856%	0.0
58.5	100.0%	0.0%	2.944	0.0	1954	98.5856%	0.0	1954	0	98.5856%	0.0
59.5	100.0%	0.0%	2.804	0.0	1953	98.5856%	0.0	1953	0	98.5856%	0.0
60.5	100.0%	0.0%	2.671	0.0	1952	98.5856%	0.0	1952	0	98.5856%	0.0
61.5	100.0%	0.0%	2.544	0.0	1951	98.5856%	0.0	1951	0	98.5856%	0.0
62.5	100.0%	0.0%	2.422	0.0	1950	98.5856%	0.0	1950	0	98.5856%	0.0
63.5	100.0%	0.0%	2.307	0.0	1949	98.5856%	0.0	1949	0	98.5856%	0.0
64.5	100.0%	0.0%	2.197	0.0	1948	98.5856%	0.0	1948	0	98.5856%	0.0
65.5	100.0%	0.0%	2.093	0.0	1947	98.5856%	0.0	1947	0	98.5856%	0.0
66.5	100.0%		1.993	0.0	1946	98.5856%	0.0	1946	0	98.5856%	0.0
Sum	Total Res @ 12/31 current year			152.20	Sum		130.86	Sum			124.62
	Total Res @ 12/31 previous year			144.95							

NOTES TO PAGES 3 AND 3A

Page 3

(a) - (c) Annual Statement, statutory page 14, for all companies writing workers compensation insurance in North Carolina, and assumed growth rate.

(d) Line (c) - line (b)

(e) Line (d) x .20.

(f) Line (e) x .35.

(g) Unpaid current-year losses at year-end as a percent of premium. Sum of Page 3A, Column (5).

(h) Discounted unpaid current-year losses at year-end as a percent of premium. Sum of Page 3A, Column (8).

(i) Unpaid prior-year losses at year-end as a percent of premium. Sum of Page 3A, Column (5) divided by 5% growth rate.

(j) Discounted unpaid prior-year losses at year-end as a percent of premium. Sum of Page 3A, Column (12).

(k) Line (g) - Line (h) - [Line (i) - Line (j)]

(l) Line (k) x .35

(m) Line (f)

(n) Line (l)

(o) Line (m) + Line (n)

Page 3A

1 Midpoint of number of years since end of accident period.

2 Accident year payout pattern developed from policy year developed losses.

3 1 - Column (2)

4 Losses, given a 5% historical growth rate.

5 Column (3) x Column (4)

6 Accident Year at December 31, current year.

7 Discount factor per IRS Regulations.

8 Column (5) x Column (7)

9 Accident Year at December 31, previous year.

10 Column (3), previous period x Column (4), current period.

11 Discount factor per IRS Regulations.

12 Column (10) x Column (11)

NCRB INVESTMENT INCOME CALCULATION
WORKERS COMPENSATION
Projected Investment Earnings on Loss, Loss
Adjustment Expense and Unearned Premium Reserves

A. UNEARNED PREMIUM RESERVES		
1. Direct Earned Premiums		1,000,000
2. Mean UEPR	33.66%	336,584
3. Deductions for prepaid expenses: % of Total Market Premium		
Total Market		
Commissions & Brokerage	5.00%	
Taxes, Licenses and Fees	2.46%	
Direct Assignment Carriers (=20.04% of the market)		
One-Half of General & Other Acquisition Expenses	1.03%	
Servicing Carriers (=79.96% of the market)		
Servicing Carrier Allowance	19.98%	
Total	28.47%	
4. Deduction for Prepaid Expenses: (2) x (3)		95,813
5. Net UEPR		336,584
6. Net UEPR Subject to Inv (5) - (4)		240,771
B. Delayed Remission of Prems (Ag Bals)		
1. Direct Earned Premium		1,000,000
2. Average Agents Balances		0.093
3. Delayed Remissions (1)x(2)		93,000
C. Loss and Loss Expense Reserves		
1. Direct Earned Premium		1,000,000
2. Expected Inc L & LAE to Premium Ratio	0.4989	498,871
3. Expected Mean L&LAE Reserve to Inc. L & LAE Ratio	2.694	1,343,715
D. Net PH Funds Subj to Inv (A6 - B3 + C3)		1,491,486
E. Average Rate of Return		3.11%
F. Investment Earnings from Net Reserves (D) x (E)		46,385
G. Average Rate of Return as a Percent of Direct Earned Premium (F) / (A1)		4.64%

NORTH CAROLINA
WORKERS' COMPENSATION INSURANCE
ASSIGNED RISK

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

All calculations are displayed per $1,000,000 of earned premium

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the unearned premium reserve to the collected earned premium for the current calendar year and assuming 5% annual growth in premiums for all companies.

(1)	Earned Premium (current year)	1,216,162,466
(2)	UEPR (previous year)	399,357,027
(3)	UEPR (current year)	419,324,878
(4)	Mean Unearned Premium Reserve (1/2)*[(2) + (3)]	409,340,952
(5)	Ratio (4) / (1)	**33.66%**

Line A-3

Deduction for prepaid expenses:

Servicing Carriers Market Share	79.96%
Direct Assignment Writers Market Share	20.04%

Commission and brokerage expenses are the same for all carriers.

General and other acquisition expenses for direct assignment writers are 10.24%, one half of which are prepaid. Since direct assignment carriers are 20.04% of the market, these account for .5*20.04%*10.24%=1.03% of the market as a whole.

For servicing carriers, the entire servicing carrier allowance is a prepaid expense. Since the servicing carrier allowance is 24.99% of premium, these account for 0.2499*0.7996 = 19.98% for the market as a whole.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in collection and remission of premium to the companies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus. Based on the distribution of North Carolina workers compensation assigned risk premiums by installment pay plan, the average date of premium collection is calculated.The difference between that date and 6 months is divided by 12 months to calculate the effect of delayed remission of premium.

Line C-2

The expected loss and loss adjustment ratio reflects the expense provisions used in this filing.

Line C-3

The mean loss & LAE reserve to incurred loss and LAE ratio is the weighted average of the ratios for direct assignment and servicing carriers:
(2.953*0.2004 + 3.062/1.165*.0.7996) = 2.694.

Line E

The average rate of return is calculated as the arithmetic mean of the embedded and current yields. The embedded yield is the sum of two ratios: the most recent ratio of investment income to invested assets from Best's Aggregates & Averages, plus the 10-year average ratio of capital gains to invested assets (see Exhibit RB-13, page 9).
The current yield is the estimated, currently available rate of return (including income and expected capital gains) on the property/casualty industry investment portfolio (see Exhibit RB-13, page 8).

Embedded yield	=	4.01%
Current Yield	=	2.21%
Average		**3.11%**

Reserve to Incurred Loss Ratio*

Year	(1) Loss Reserve	(2) LAE Reserve	(3) Incurred Loss	(4) Incurred LAE	(5) (L+LAER)/ (IL+ILAE)
2003	2.438	0.278	1.000	0.1396	2.384
2004	2.433	0.282	1.000	0.1500	2.361
2005	2.364	0.280	1.000	0.1345	2.331
2006	2.684	0.321	1.000	0.1656	2.578
2007	3.061	0.369	1.000	0.1721	2.926
2008	3.141	0.387	1.000	0.1634	3.032
2009	3.568	0.443	1.000	0.1756	3.412
2010	3.763	0.469	1.000	0.1836	3.575
2011	3.664	0.462	1.000	0.1596	3.558
2012	3.504	0.449	1.000	0.1714	3.375
10 - yr avg	**3.062**				**2.953**

* Columns (1) - (4) shown as ratio to incurred loss

Source: NCCI

PORTFOLIO YIELD AND TAX RATE - CURRENT YIELD

(1)	(2) Percent of Assets	(3) Estimated Prospective Pre-Tax Return	(4) Tax Rate	(5) Estimated Prospective Post-Tax Return
Bonds				
U.S. Govt	11.59%	0.76%	35.00%	0.49%
States & territories	11.82%	1.21%	5.25%	1.15%
Special revenue	22.30%	1.41%	5.25%	1.34%
Industrial	28.00%	1.34%	35.00%	0.87%
Preferred stock	0.92%	4.64%	14.18%	3.98%
Common stock	18.11%	8.52%	30.73%	5.90%
Mortgage Loans	0.39%	3.50%	35.00%	2.28%
Real estate	0.83%	4.03%	35.00%	2.62%
Cash & short-term invs.	6.04%	0.09%	35.00%	0.06%
Rate of Return Pre-Inv Exp	100.00%	2.56%	26.76%	1.87%
Investment Expenses		0.35%	35.00%	0.23%
Portfolio Rate of Return		**2.21%**	25.44%	**1.64%**

Sources:

Various issues of Federal Reserve Statistical Release, H.15(519).
Mergent Bond Record.
Standard & Poor's CreditWeek.
Value Line Investment Survey, Part II.
Ibbotson Associates, SBBI Valuation Edition 2013 Yearbook.
Ibbotson and Siegel, AREUEA Journal, 1984.
A.M. Best's Aggregates & Averages, 2012 edition.

PORTFOLIO YIELD AND TAX RATE
EMBEDDED YIELD

	Income	Tax Rate
Bonds		
Taxable	25,986,958	35.00%
Non-Taxable	13,575,785	5.25%
Stocks		
Taxable	4,850,078	14.18%
Non-Taxable	1,971,532	5.25%
Mortgage Loans	279,685	35.00%
Real Estate	1,802,464	35.00%
Contract Loans	458	35.00%
Cash / Short Term Inv.	182,216	35.00%
All Other	7,567,533	35.00%
Total	56,216,709	24.98%
Inv. Expenses	4,861,352	35.00%
Net Inv. Income	51,355,357	24.03%
Mean Invested Assets	1,366,568,026	
Inv. Inc. Yield Rate	3.76%	24.03%
Capital Gains (10 yr. avg) (% Of Inv. Assets)	0.25%	35.00%
Invest. Yield Rate (pre-tax)	**4.01%**	**24.72%**
Invest. Yield Rate (post-tax)	**3.02%**	

Source: Best's Aggregates and Averages, 2012 Edition, p. 12 (Exhibit of Net Investment Income, Col. 2 (Earned During Year)).

CAPITAL GAINS OR LOSSES
AS A PERCENT OF MEAN ASSETS
(All amounts in thousands of dollars)

Calendar Year	Mean Total Invested Assets	Realized Capital Gains	
		Amount	Percent
2002	815,037,267	2,770,997	0.34%
2003	908,024,056	6,280,196	0.69%
2004	1,018,810,319	9,113,199	0.89%
2005	1,120,112,663	12,194,908	1.09%
2006	1,217,432,187	3,587,228	0.29%
2007	1,297,478,130	9,031,778	0.70%
2008	1,288,393,875	(21,018,623)	-1.63%
2009	1,274,678,809	(8,079,575)	-0.63%
2010	1,330,998,082	8,100,143	0.61%
2011	1,366,568,026	7,563,305	0.55%
Total	11,637,533,412	29,543,556	0.25%

Source: "Best's Aggregates & Averages--Property-Casualty,"
various editions

NORTH CAROLINA
WORKERS COMPENSATION

PREMIUM-TO-SURPLUS RATIOS

Year	Premium to Surplus Ratio
2002	1.67
2003	1.43
2004	1.34
2005	1.18
2006	1.06
2007	0.93
2008	1.01
2009	0.72
2010	0.69
2011	0.77
Ten-Year Average	1.08
Selected	**1.08**

Notes:

Ratios based on net premium written and average surplus
Top 30 Groups in each year
From Best's DataBase Service and
Best's Aggregates & Averages.

NORTH CAROLINA WORKERS COMPENSATION
CALCULATION OF GAAP NET WORTH TO SURPLUS RATIO

	2006	2007	2008	2009	2010
Policyholder Surplus	486,231,429,443	517,875,621,253	457,293,555,877	511,396,566,997	559,247,073,797
+ Deferred Acquisition Costs	27,351,959,298	27,556,696,928	27,267,204,493	26,770,216,415	27,142,965,854
+ Non-Admitted DTA Provision	19,710,944,304	20,970,760,003	34,146,635,006	24,344,929,355	17,507,669,410
+ Non-admitted Assets (non-tax part)	25,215,840,687	28,591,349,752	28,634,028,619	31,004,819,190	33,948,822,530
+ Provision for Reinsurance	5,407,923,691	4,619,150,713	4,002,703,029	3,457,351,496	3,217,305,985
+ Provision for FASB 115(after-tax)	4,267,041,184	6,555,479,760	(14,840,617,729)	16,691,215,237	19,411,210,713
- Surplus Notes	(10,633,190,656)	(10,147,724,269)	(12,270,695,235)	(13,916,580,127)	(15,935,710,149)
GAAP-adjusted Net Worth	557,551,947,951	596,021,334,139	524,232,814,060	599,748,518,562	644,539,338,140
Ratio of GAAP Net Worth to Statutory Surplus	1.15	1.15	1.15	1.17	1.15
Five Year Average	1.15				

Source: ISO

NORTH CAROLINA WORKERS COMPENSATION
UNCOLLECTIBLE PREMIUM BY POLICY YEAR

A. REPORTED (UNDEVELOPED) EXPERIENCE

Policy Year	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1991	1.82	2.50	2.42	2.30	2.28	2.11	2.08	2.05	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03
1992	1.90	2.76	3.37	3.47	3.55	3.62	3.60	3.59	3.58	3.52	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	
1993	2.03	3.41	3.32	2.93	3.05	2.84	2.90	2.89	2.88	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87		
1994	2.16	5.98	5.85	5.36	5.02	5.04	5.02	5.01	4.98	4.98	4.98	4.98	4.99	4.99	4.99	4.99	4.99	4.99			
1995	3.63	5.38	4.59	4.33	4.26	4.24	4.23	4.15	4.15	4.15	4.15	4.14	4.14	4.14	4.14	4.14	4.14				
1996	4.63	6.09	7.34	7.30	7.01	6.88	6.85	6.84	6.64	6.65	6.65	6.65	6.64	6.64	6.64	6.64					
1997	2.48	4.63	4.72	5.03	4.82	4.76	4.76	4.76	4.76	4.76	4.76	4.75	4.75	4.75	4.75						
1998	2.94	5.83	7.02	6.69	6.62	6.61	6.58	6.59	6.59	6.59	6.57	6.57	6.57	6.57							
1999	3.05	6.96	6.52	6.53	6.46	6.41	6.40	6.39	6.39	6.38	6.37	6.37	6.37								
2000	2.70	10.77	11.03	10.72	10.46	10.43	7.93	7.67	8.00	8.03	8.20	4.88									
2001	3.27	4.74	4.33	4.26	4.44	4.45	4.38	4.33	4.33	4.31	5.93										
2002	3.16	5.37	5.80	5.42	5.34	5.25	5.29	5.25	5.37	5.37											
2003	3.21	6.74	5.83	5.63	5.56	5.57	5.57	5.57	5.57												
2004	5.42	7.00	6.65	7.50	7.44	7.41	7.39	7.50													
2005	5.25	7.10	7.84	7.62	7.74	7.67	7.75														
2006	5.99	9.86	10.42	10.59	10.64	10.77															
2007	8.34	16.58	17.63	17.80	17.62																
2008	6.72	12.73	13.24	12.77																	
2009	7.05	11.53	10.77																		
2010	6.01	8.82																			
2011	4.71																				

B. DEVELOPMENT FACTORS

Policy Year	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10 - 11	11 - 12	12 - 13	13 - 14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
1991	1.37	0.97	0.95	0.99	0.93	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1992	1.45	1.22	1.03	1.02	1.02	0.99	1.00	1.00	0.98	1.02	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1993	1.68	0.97	0.88	1.04	0.93	1.02	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
1994	2.77	0.98	0.92	0.94	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
1995	1.48	0.85	0.94	0.98	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
1996	1.32	1.21	0.99	0.96	0.98	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
1997	1.87	1.02	1.07	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
1998	1.98	1.20	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
1999	2.28	0.94	1.00	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
2000	3.99	1.02	0.97	0.98	1.00	0.76	0.97	1.04	1.00	1.02	0.60									
2001	1.45	0.91	0.98	1.04	1.00	0.98	0.99	1.00	1.00	1.38										
2002	1.70	1.08	0.93	0.99	0.98	1.01	0.99	1.02	1.00											
2003	2.10	0.86	0.97	0.99	1.00	1.00	1.00	1.00												
2004	1.29	0.95	1.13	0.99	1.00	1.00	1.01													
2005	1.35	1.10	0.97	1.02	0.99	1.01														
2006	1.65	1.06	1.02	1.00	1.01															
2007	1.99	1.06	1.01	0.99																
2008	1.89	1.04	0.96																	
2009	1.64	0.93																		
2010	1.47																			
Average	1.84	1.02	0.98	0.99	0.99	0.98	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Cumulative	1.76	0.96	0.94	0.96	0.96	0.97	0.99	1.00	0.99	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

C. DEVELOPED EXPERIENCE THROUGH 20TH REPORT

Policy Year	Developed Experience
2002	5.35
2003	5.54
2004	7.47
2005	7.68
2006	10.50
2007	16.98
2008	12.22
2009	10.11
2010	8.44
2011	8.28
10 year avg	**9.26**
Selected	**9.26**

Source: