

IN THE COURT OF APPEALS OF NORTH CAROLINA

No. COA15-402

Filed: 2 August 2016

Insurance Commissioner, Docket No. 1719

STATE OF NORTH CAROLINA EX REL. COMMISSIONER OF INSURANCE,  
Appellee,

v.

NORTH CAROLINA RATE BUREAU, Appellant.

IN THE MATTER OF THE FILING DATED JANUARY 3, 2014 BY THE NORTH  
CAROLINA RATE BUREAU FOR REVISED HOMEOWNERS' INSURANCE  
RATES & HOMEOWNERS' INSURANCE TERRITORY DEFINITIONS.

Appeal by the North Carolina Rate Bureau from order entered  
18 December 2014 and amended 22 December 2014 and 13 January 2015 by the  
North Carolina Commissioner of Insurance. Heard in the Court of Appeals  
5 November 2015.

*North Carolina Department of Insurance, by Sherri L. Hubbard, for appellee.*

*Young Moore and Henderson, P.A., by Marvin M. Spivey, Jr., and Glenn C.  
Raynor, for appellant.*

McCULLOUGH, Judge.

The North Carolina Rate Bureau ("Bureau") appeals from order entered by the  
North Carolina Commissioner of Insurance ("Commissioner") that rejected the

*Opinion of the Court*

Bureau's filed rate increases and imposed alternative rate changes. For the following reasons, we affirm the Commissioner's order.

I. Background

On 3 January 2014, the North Carolina Department of Insurance ("Department") received the Bureau's filing for revised homeowners' insurance rates and revised homeowners' insurance territory definitions (the "filing"). In the filing, the Bureau sought approval of an overall statewide average rate level change of +25.6%, with the filed rates varying between the newly defined territories.<sup>1</sup> Broken down into categories, the filing included the following statewide rate increases: 24.8% for owners, 54.9% for tenants, and 50.0% for condominiums. The Bureau requested that the filed rates be applied to all new and renewal policies becoming effective on or after 1 August 2014.

The same day the Department received the filing, the Commissioner issued a press release in which he noted that new homeowners' insurance rates went into effect just six months prior in July 2013, expressed his displeasure with the filing, and indicated that the insurance companies should expect a full hearing on the matter because he would not entertain settlement negotiations.

---

<sup>1</sup> As indicated in a letter from the Bureau to the Commissioner accompanying the filing on 3 January 2014, the overall statewide average rate level change initially sought in the filing was +25.3%. Yet, as indicated in a letter from the Bureau to the Commissioner accompanying amendments by the Bureau to the filing on 9 June 2014, noted *supra*, the overall statewide average rate level change slightly increased to +25.6% as a result of amendments. To avoid confusion, we refer only to the rate changes identified in the Bureau's amendments to the filing.

*Opinion of the Court*

On 19 February 2014, the Commissioner issued a notice of hearing in which he set the matter for hearing to begin 6 August 2014, scheduled a prehearing conference for 24 July 2014, and identified issues with the filing. The Bureau responded to the notice by submitting amendments to the filing. In addition to a slight increase in the overall statewide average rate level change, those amendments included changes to the filed territory definitions in order to address concerns of the Department. On 11 July 2014, the Commissioner granted a continuance pushing the commencement of the hearing back to 20 October 2014. Pursuant to the continuance, the Commissioner also issued amendments to the notice of hearing on 14 July 2014. Those amendments noted the change in the hearing date and rescheduled the prehearing conference for 10 October 2014.

Following the prehearing conference on 10 October 2014, the Commissioner entered a prehearing order with the consent of the Bureau and the Department. The matter came on for public hearing in Raleigh before Commissioner Wayne Goodwin on 20 October 2014. The hearing continued on 21, 27, 28, 29, 30, and 31 October 2014 and 3, 5, 6, 11, and 12 November 2014. During the hearing, over fifty exhibits of prefiled testimony and documentary evidence and over two thousand pages of live testimony were offered for consideration.

The Commissioner issued his order in the matter on 18 December 2014. The Commissioner subsequently amended the order on 22 December 2014 and

*Opinion of the Court*

13 January 2015 to correct non-substantive typographical errors, miscalculations in exhibits, and an incorrect citation to an exhibit. In the order, the Commissioner accepted the Bureau's amended revisions to the territory definitions, noting the Department had not objected to the amended revisions. The Commissioner, however, determined the Bureau failed to meet its burden of proof regarding its filed rate increases and, therefore, disapproved the filed rates. Instead of the Bureau's filed rates that resulted in an overall statewide average rate level change of +25.6%, the Commissioner ordered rates that resulted in an overall statewide average rate level change of 0%. In reaching the 0% change, the Commissioner ordered rate increases for tenants and condominiums and decreases for owners. The ordered rates were to be effective 1 June 2015.

The Bureau filed notice of appeal from the Commissioner's order on 16 January 2015.

II. Discussion

On appeal, the Bureau seeks to have the Commissioner's order declared null and void so that its filed rates and territory definitions become effective by operation of law. Yet, because the filed territory definitions were approved, the Bureau's arguments on appeal focus on the rates and the allocation of those rates.

Throughout the Bureau's arguments on appeal, the Bureau directs this Court's attention to the press release issued by the Commissioner on the day the Department

*Opinion of the Court*

received the filing. The Bureau contends “[t]he defining theme of the [o]rder is that every decision announced within it was consistent with [the Commissioner’s] rejection of the [f]iling the day it was filed.” Specifically, the Bureau claims

[t]he Commissioner rejected overwhelming and sometimes undisputed evidence of the Bureau. He repeatedly accepted as credible testimony of Department witnesses unsupported by competent or material evidence and chose factors based on matters outside the record, all of which in the aggregate led to the result foretold by his press release – that homeowners insurers are not entitled to and should not have requested a rate increase regardless of the evidence of rate inadequacy.

The Bureau further asserts that there are too many issues with the Commissioner’s order to address each issue on appeal; therefore, the Bureau asserts the following arguments challenging specific components of the ordered rates: (1) the Commissioner erred as a matter of law by ordering an underwriting profit provision that fails to meet legal and constitutional standards; (2) the Commissioner erred by rejecting the reinsurance provision filed by the Bureau and by selecting a provision that is unsupported by material and substantial evidence; (3) the Commissioner erred by reducing the filed value for modeled hurricane losses; and (4) the Commissioner erred by rejecting the filed allocation of the net cost of reinsurance and underwriting profit to geographic zones.

Before reaching the merits of the issues, we dispel the Bureau’s suggestion that the Commissioner rejected the filing on the day the Department received it. The Commissioner’s review of a Bureau filing is governed by statute.

*Opinion of the Court*

At any time within 50 days after the date of any filing, the Commissioner may give written notice to the Bureau specifying in what respect and to what extent the Commissioner contends the filing fails to comply with the requirements of this Article and fixing a date for hearing not less than 30 days from the date of mailing of such notice. Once begun, hearings must proceed without undue delay. At the hearing the burden of proving that the proposed rates are not excessive, inadequate, or unfairly discriminatory is on the Bureau. At the hearing the factors specified in [N.C. Gen. Stat. §] 58-36-10 shall be considered. If the Commissioner after hearing finds that the filing does not comply with the provisions of this Article, he may issue his order determining wherein and to what extent such filing is deemed to be improper and fixing a date thereafter, within a reasonable time, after which the filing shall no longer be effective. In the event the Commissioner finds that the proposed rates are excessive, the Commissioner shall specify the overall rates, between the existing rates and the rates proposed by the Bureau filing, that may be used by the members of the Bureau instead of the rates proposed by the Bureau filing. In any such order, the Commissioner shall make findings of fact based on the evidence presented in the filing and at the hearing. Any order issued after a hearing shall be issued within 45 days after the completion of the hearing. If no order is issued within 45 days after the completion of the hearing, the filing shall be deemed to be approved.

N.C. Gen. Stat. § 58-36-20(a) (2015). Although the Commissioner voiced his displeasure with the filing in the press release issued on the day the Department received the filing, it is clear the Commissioner did not reject the filing outright. The record shows the Commissioner followed the statutory procedure for reviewing the filing, which in the present case included a lengthy hearing and the consideration of extensive evidence. Even more telling, the Commissioner's review resulted in the

*Opinion of the Court*

approval of the filed territory definitions and changes to homeowners' insurance rates, although not the filed rates sought by the Bureau. Consequently, this Court's review is not influenced by the Commissioner's press release.

Standard of Review

Just as the Commissioner's review of the Bureau's filing is governed by statute, so is this Court's review of the Commissioner's order. Concerning judicial review of rates and classifications,

[a]ny order or decision of the Commissioner . . . may be appealed to the North Carolina Court of Appeals by any party aggrieved thereby. Any such order shall be based on findings of fact, and if applicable, findings as to trends related to the matter under investigation, and conclusions of law based thereon. Any order or decision of the Commissioner, if supported by substantial evidence, shall be presumed to be correct and proper. . . .

N.C. Gen. Stat. § 58-2-80 (2015). After an order or decision of the Commissioner is appealed to this Court,

[s]o far as necessary to the decision and where presented, the court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning and applicability of the terms of any action of the Commissioner. The court may affirm or reverse the decision of the Commissioner, declare the same null and void, or remand the case for further proceedings; or it may reverse or modify the decision if the substantial rights of the appellants have been prejudiced because the Commissioner's findings, inferences, conclusions or decisions are:

(1) In violation of constitutional provisions, or

*Opinion of the Court*

- (2) In excess of statutory authority or jurisdiction of the Commissioner, or
- (3) Made upon unlawful proceedings, or
- (4) Affected by other errors of law, or
- (5) Unsupported by material and substantial evidence in view of the entire record as submitted, or
- (6) Arbitrary or capricious.

N.C. Gen. Stat. § 58-2-90(b) (2015). This Court has further explained that,

[w]hen reviewing an order by the Commission, this Court must examine the whole record and determine whether the Commissioner's conclusions of law are supported by material and substantial evidence. The whole record test requires the reviewing court to consider the record evidence supporting the Commissioner's order, to also consider the record evidence contradicting the Commissioner's findings, and to determine if the Commissioner's decision had a rational basis in the material and substantial evidence offered. Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. It is more than a scintilla or a permissible inference.

The Commissioner determines the weight and sufficiency of the evidence presented during the hearing, including the credibility of any witnesses. It is not our function to substitute our judgment for that of the Commissioner when the evidence is conflicting. Instead, the Commissioner's order is presumed correct if it is supported by substantial evidence. The order must conform to the guidelines set out in [N.C. Gen. Stat.] § 58-36-10[.]

....

As long as the Commissioner's order meets the criteria of [N.C. Gen. Stat.] § 58-36-10 and is supported by material



and substantial evidence, the order should be upheld.

*State ex rel. Comm'r of Ins. v. N.C. Rate Bureau*, 160 N.C. App. 416, 420-21, 586 S.E.2d 470, 472-73 (2003) (“*2001 Auto*”) (internal quotation marks, citations, and alterations omitted), *aff’d per curiam on those issues raised in the dissent*, 358 N.C. 539, 597 S.E.2d 128 (2004). Relevant to this appeal, the following standards apply to the making and use of property insurance rates:

- (1) Rates or loss costs shall not be excessive, inadequate or unfairly discriminatory.
- (2) Due consideration shall be given to actual loss and expense experience within this State for the most recent three-year period for which that information is available; to prospective loss and expense experience within this State; to the hazards of conflagration and catastrophe; to a reasonable margin for underwriting profit and to contingencies; to dividends, savings, or unabsorbed premium deposits allowed or returned by insurers to their policyholders, members, or subscribers; to investment income earned or realized by insurers from their unearned premium, loss, and loss expense reserve funds generated from business within this State; to past and prospective expenses specially applicable to this State; and to all other relevant factors within this State: Provided, however, that countrywide expense and loss experience and other countrywide data may be considered only where credible North Carolina experience or data is not available.
- (3) In the case of property insurance rates under this Article, consideration may be given to the experience of property insurance business during the most recent five-year period for which that experience is available. . . .
- (4) Risks may be grouped by classifications and lines of

*Opinion of the Court*

insurance for establishment of rates, loss costs, and base premiums. Classification rates may be modified to produce rates for individual risks in accordance with rating plans that establish standards for measuring variations in hazards or expense provisions or both. Those standards may measure any differences among risks that can be demonstrated to have a probable effect upon losses or expenses. . . .

. . . .

- (6) To ensure that policyholders in the beach and coastal areas of the North Carolina Insurance Underwriting Association whose risks are of the same class and essentially the same hazard are charged premiums that are commensurate with the risk of loss and premiums that are actuarially correct, the North Carolina Rate Bureau shall revise, monitor, and review the existing territorial boundaries used by the Bureau when appropriate to establish geographic territories in the beach and coastal areas of the Association for rating purposes. In revising these territories, the Bureau shall use statistical data sources available to define such territories to represent relative risk factors that are actuarially sound and not unfairly discriminatory. The new territories and any subsequent amendments proposed by the North Carolina Rate Bureau or Association shall be subject to the Commissioner's approval and shall appear on the Bureau's Web site, the Association's Web site, and the Department's Web site once approved.
- (7) Property insurance rates established under this Article may include a provision to reflect the cost of reinsurance to protect against catastrophic exposure within this State. Amounts to be paid to reinsurers, ceding commissions paid or to be paid to insurers by reinsurers, expected reinsurance recoveries, North Carolina exposure to catastrophic events relative to other states' exposure, and any other relevant

*Opinion of the Court*

information may be considered when determining the provision to reflect the cost of reinsurance.

N.C. Gen. Stat. § 58-36-10 (2015).

1. Underwriting Profit

In the Bureau's first challenge to the Commissioner's order, the Bureau claims the underwriting profit provision adopted by the Commissioner violates applicable legal and constitutional standards. We disagree.

Our courts have long recognized the requirement that the Commissioner set rates to allow insurers to earn "a fair and reasonable profit" after the payment of losses and operating expenses. *See In re N.C. Fire Ins. Rating Bureau*, 275 N.C. 15, 34, 165 S.E.2d 207, 220 (1969) ("*1967 Fire*") (explaining "that the premium [must] be fixed at a level which will enable the insuring company . . . (1) to pay the losses which will be incurred during the life of the policies to be issued under such rates, (2) to pay other operating expenses, and (3) to retain a 'fair and reasonable profit' and no more"). "An insurance company's total profit is derived from two distinct parts of the insurance business – (1) profit earned by the insurance operations and (2) profits earned by investing capital and surplus funds." *2001 Auto*, 160 N.C. App. at 421, 586 S.E.2d at 473. Yet, in North Carolina, the total profit is not considered in determining whether rates allow insurers to earn a fair and reasonable profit; only the profit from the insurance operations is considered. *See State ex rel. Comm'r of Ins. v. N.C. Rate Bureau*, 300 N.C. 381, 444, 269 S.E.2d 547, 586 (1980) ("In determining whether an

*Opinion of the Court*

insurer has made a reasonable profit, the amount of business done rather than its capital should be considered, and profits should be determined by subtracting losses and expenses from the total of premiums actually received, *to the exclusion of profit on capital and surplus*, and excess commissions paid to agents *but considering interest on unearned premiums and related elements.*”) (emphasis in original) (quotation marks and citation omitted).

The profit from insurance operations includes both the underwriting profit and investment income from policyholder-supplied funds. The underwriting profit can be defined as the difference between insurance premiums collected and the amount the company pays out for losses and expenses. Policyholder-supplied funds are the amount of premiums paid to the insurance company. Policyholder-supplied funds are usually invested during the insurance coverage period.

*2001 Auto*, 160 N.C. App. at 421-22, 586 S.E.2d at 473. Although underwriting profit is a component of the profit earned by the insurance operations, which must be sufficient to allow insurers to earn fair and reasonable profit, there are no requirements specific to underwriting profit. “[A] reasonable margin for underwriting profit and to contingencies[]” is, however, among the factors that “shall” be considered in the making and use of rates. N.C. Gen. Stat. § 58-36-10(2).

In this case, the filing included an underwriting profit of 10.5% of premium. Upon review, the Commissioner rejected the Bureau’s underwriting profit provision in favor of an underwriting profit of 5.2% of premium. As stated above, the Bureau now claims this was error.

*Opinion of the Court*

The Bureau's argument that the Commissioner's underwriting profit provision violates legal and constitutional standards is founded on its assertion that a "fair and reasonable profit" must be equal to and determined using the cost of equity (also known as the "cost of capital" or the "cost of equity capital"). The Bureau claims the only evidence of the cost of equity in this case was in the prefiled testimony of James H. Vander Weide, a Bureau witness whom the parties stipulated was an expert in "economics and finance and profit as regards to the property/casualty insurance industry." Vander Weide testified the cost of equity for the average company writing homeowners' insurance in North Carolina is in the range of +9.1% to +12.8%. Therefore, the Bureau contends the Commissioner erred by rejecting the filed underwriting profit provision and by choosing an underwriting profit provision that did not produce a profit within the cost of equity range identified by Vander Weide.

Upon review of the cases cited by the Bureau, we are not convinced the cost of equity is a constitutionally mandated standard, as the Bureau asserts. Thus, we affirm the Commissioner's rejection of the filed underwriting profit provision.

The Bureau argues North Carolina law has long defined a "fair and reasonable profit" as the level of profit demanded by the investment market on business ventures of comparable risk, which the Bureau equates to the cost of equity. The Bureau then relies on *1967 Fire* and the older *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 88 L. Ed. 333 (1944) ("*Hope Natural Gas*"), and *Bluefield Waterworks and*

*Opinion of the Court*

*Improvement Co. v. Pub. Serv. Comm'n of W.V.*, 262 U.S. 679, 67 L. Ed. 1176 (1923) (“*Bluefield Waterworks*”), cases to support its assertion that a cost of equity analysis is compelled by the United States Constitution. Upon review of *1967 Fire*, we find no such requirement, nor mention, of the cost of equity. In that case, our Supreme Court explained that whether an amount is “a fair and reasonable profit, an excessive profit[,] or an insufficient profit must be determined by the Commissioner from evidence[, which] involves a projection into the future of past experience and present conditions.” *1967 Fire*, 275 N.C. at 39, 165 S.E.2d at 224. The Court then stated, “[i]t involves consideration of profits accepted by the investment market as reasonable in business ventures of comparable risk.” *Id.* The Court never mandated that a fair and reasonable profit be determined solely using a cost of equity analysis. Similarly, there is no mandate in *Hope Natural Gas* or *Bluefield Waterworks*. The Commissioner offered the following explanation for the absence of any references to the cost of equity in those decision:

255. These two early U.S. Supreme Court cases indicate that the proper rate of return for regulated industries is a return commensurate with the returns that could be earned by industries of comparable risk.

256. Both Vander Weide and Appel claim that *Hope Natural Gas* and *Bluefield Waterworks* require a cost of capital analysis. However, this cannot possibly be true because *Hope Natural Gas* was decided in 1944 and *Bluefield Waterworks* was decided in 1923. Vander Weide and Appel acknowledge that in the early days of regulation a comparable earning analysis, like the analyses proffered

*Opinion of the Court*

by Department witnesses Schwartz and O’Neil, was an accepted methodology until comparable earnings was abandoned in favor of market-based concepts like the cost of capital. O’Neil notes that from 1921 through approximately the mid-1960’s, The 1921 NAIC Profit Formula, which allowed a pre-tax 5% of premium without consideration of investment income, was in use. That 5% of premium has also been mentioned in an older North Carolina case as an amount “generally approved in the industry.” 278 N.C. 302[,] 315[,] 180 S.E.2d 155, 164 (1971). A cost of capital analysis, then, was not even utilized in regulatory matters when *Hope Natural Gas* and *Bluefield Waterworks* were decided.

(Citations to transcripts and exhibits in the present case omitted; emphasis in original). We find the Commissioner’s analysis supported by the evidence and case law and hold it persuasive. Furthermore, our Supreme Court has acknowledged that, “[i]n North Carolina, there is no prescribed methodology for calculating the return on profits (profit methodology), and [it] has specifically recognized that creativity is acceptable within the parameters of the applicable statutes.” *State ex rel. Comm’r of Ins. v. N.C. Rate Bureau*, 350 N.C. 539, 542, 516 S.E.2d 150, 152 (1999) (“1996 Auto”). “The Commissioner is considered an expert in the field of insurance and his reliance on various methods of analysis of the profit to which the insurance companies are entitled lies entirely within his discretion.” *State ex rel. Comm’r of Ins. v. N.C. Rate Bureau*, 124 N.C. App. 674, 687, 478 S.E.2d 794, 803 (1996) (“1994 Auto”) (internal quotation marks and citation omitted), *disc. rev. denied*, 346 N.C. 184, 486 S.E.2d 217 (1997). Accordingly, we hold the Commissioner did not violate any constitutionally mandated standard in refusing to accept the Bureau’s cost of equity profit

*Opinion of the Court*

methodology and in adopting an underwriting profit provision that did not return a profit within the range identified by Vander Weide.

The Bureau also challenges the legality of the profit methodology used by the Commissioner to reach his chosen underwriting profit provision. The Commissioner explained his selection of a comparable earnings profit methodology to determine the appropriate underwriting profit provision in findings 261 to 297. The Bureau claims the profit methodology used in the present case is erroneous as a matter of law because it is identical to the methodology rejected in *1996 Auto*.

In *1996 Auto*, our Supreme Court reviewed this Court's determination that the profit methodology used by the Commissioner in setting rates following the Bureau's 1996 auto filing was identical to the profit methodology previously rejected by this Court in *1994 Auto*. *1996 Auto*, 350 N.C. at 542-43, 516 S.E.2d at 152. For a complete understanding of our precedent, we briefly review those cases.

In *1994 Auto*, this Court remanded the Commissioner's order for recalculation of the underwriting profit provision upon concluding the Commissioner erred as a matter of law in considering investment income from capital and surplus in his ratemaking calculations. 124 N.C. App. at 684-86, 478 S.E.2d at 801-802. In that case, the error was evident because the Commissioner's "formula included a line item and calculation for 'Income from Capital and Surplus.'" *Id.* at 685, 478 S.E.2d at 802.



*Opinion of the Court*

In *1996 Auto*, the Commissioner attempted to distinguish his profit methodology and ratemaking calculations following the Bureau's 1996 auto filing from those rejected in *1994 Auto*. 350 N.C. at 543, 516 S.E.2d at 152. The Court summarized the Commissioner's calculations in *1994 Auto* in its *1996 Auto* decision as follows:

he calculated the target total return of the insurance industry based on the total returns of industries of comparable risk. He then subtracted the investment income on capital and surplus from this total return and arrived at a total return on insurance operations.

*Id.* The Court then explained the Commissioner's calculations being challenged in *1996 Auto* as follows:

the Commissioner began with a direct estimate and justification of the return on operations, rather than a total return, and derived his profit provisions from this estimated return on operations without explicitly including in his calculations investment income from capital or surplus. The Commissioner reasons that this method keeps the two calculations distinct, whereas the rejected method in the prior case combined the investment income from capital and surplus into the actual ratemaking calculation.

*Id.* Upon review in *1996 Auto*, this Court agreed with the Bureau's argument that "the Commissioner simply 'repackaged' his calculations by starting with a return on operations as his target in order to avoid the appearance of explicitly considering investment income on capital and surplus, but in essence accomplished exactly what we have previously disallowed." 129 N.C. App. 662, 666, 501 S.E.2d 681, 685 (1998).

*Opinion of the Court*

This was evident by the Commissioner's admission that the " 'return on operations may be tested to ensure it will result in a "total return" commensurate with the "total return" of businesses of comparable risk by adding the income from capital and surplus to the return on operations.' " *Id.* Thus, this Court, bound by *1994 Auto*, held "the Commissioner improperly considered income from capital and surplus in arriving at his total return[.]" *Id.* On further appeal to our Supreme Court based on a dissent from this Court's majority decision, our Supreme Court affirmed. 350 N.C. at 545, 516 S.E.2d at 153-54.

As stated above, the Bureau now claims the profit methodology in the instant case is identical to the methodology rejected in *1996 Auto*. In support of its argument the Bureau points to the following exchange during the testimony of Allan I. Schwartz, a Department witness whose underwriting profit provision the Commissioner adopted:

Q. Is it correct that your underwriting profit provision began with a direct estimate of a return on operations, rather than a total return, and you derive your underwriting profit provision from this estimated return on operations without explicitly including in your calculations investment income from capital and surplus?

A. Yes.

Because Schwartz answered affirmatively in response to the question framed in the precise language used to describe the profit methodology rejected by both this Court and our Supreme Court in *1996 Auto*, the Bureau claims we are bound by *1996 Auto*.

*Opinion of the Court*

*See In re Civil Penalty*, 324 N.C. 373, 384, 379 S.E.2d 30, 36-37 (1989) (“Where a panel of the Court of Appeals has decided the same issue, albeit in a different case, a subsequent panel of the same court is bound by that precedent, unless it has been overturned by a higher court.”)

Upon review of the Commissioner’s findings, we do not think the profit methodology used in the instant case was the same as that rejected in *1996 Auto*. First, there is no indication that either Schwartz or the Commissioner tested their underwriting profit provisions by adding the profit earned from investing capital and surplus to the profit earned by the insurance operations to compare total returns, as was held to be error in *1996 Auto*. Second, the Commissioner clearly indicates in the order that his profit methodology is in keeping with the Commissioner’s order following the Bureau’s 2001 auto filing, which this Court upheld in *2001 Auto*.

In *2001 Auto*, this Court recognized that “[t]he disagreement between the Bureau and the Commissioner regarding the legal significance of the [*1994 Auto* and *1996 Auto*] appeals forms the basis of the current appeal.” 160 N.C. App. at 419, 586 S.E.2d at 472. This Court then reviewed those prior cases and addressed whether the Commissioner improperly considered investment income from capital and surplus funds while calculating the ordered insurance rates. 160 N.C. App. at 421, 586 S.E.2d at 473. This Court explained that in *1994 Auto* and *1996 Auto*, “the Commissioner defined ‘business ventures of comparable risk’ as the total profit of the

*Opinion of the Court*

insurance industry[]” and then, “[i]n order to set a rate equal to comparable businesses . . . , the Commissioner subtracted capital investment income and investment income from policyholder-supplied funds from total returns to reach the underwriting profit[.]” 160 N.C. App. at 422, 586 S.E.2d at 474. This Court distinguished the Commissioner’s ratemaking formula in *2001 Auto* in that, “[r]ather than attempting to find a total return, the Commissioner set the return on insurance operations as his target.” 160 N.C. App. at 423, 586 S.E.2d at 474. This Court then identified the pertinent findings by the Commissioner, in which the Commissioner rejected the Bureau’s cost of equity methodology on the basis that it considered the total return of businesses of comparable risk in violation of North Carolina law prohibiting consideration of investment on capital and surplus, and instead adopted the comparable earnings methodology of Department witness Schwartz, the same witness relied on by the Commissioner in the present case, on the basis that Schwartz’s profit methodology only took the profit from insurance operations into account. 160 N.C. App. at 423-26, 586 S.E.2d at 474-76. Upon review, this Court affirmed the Commissioner’s order because “the Commissioner focused on the return on insurance operations as the appropriate target for his calculations.” 160 N.C. App. at 426, 586 S.E.2d at 476.

In further support of our holding that the cost of equity is not mandated, this Court explained as follows:

*Opinion of the Court*

In addition, we find the Bureau's argument that the Commissioner must set his target as the total rate of return to be unpersuasive. No statute or any case has required the Commissioner to focus on the total rate of return for the insurance industry. Instead, previous appellate court opinions have declared that the return on operations is the only portion of income the Commissioner can consider during the ratemaking process. If the Commissioner had compared total returns here, as he did in previous ratemaking orders, the Commissioner would have been required to add capital and surplus funds somehow. By using insurance operations as the comparable industry, the Commissioner did not need to consider investment income on capital and surplus funds. Accordingly, the investment income on capital and surplus funds has not been used in the 2001 ratemaking calculation. The Commissioner's underwriting profit provision comports with the requirements of [N.C. Gen. Stat.] § 58-36-10 as well as the holdings of *1994 Auto* and *1996 Auto*.

160 N.C. App. at 426-27, 586 S.E.2d at 476.

The comparable earnings profit methodology employed by the Commissioner in the present case appears the same as that which was upheld in *2001 Auto*. And, in the present case, the Commissioner issued findings and conclusions, all of which are supported by evidence in the record, that are similar to those issued in *2001 Auto*. Those findings and conclusions are to the effect that, first, the Bureau's underwriting profit provision, which sets the target return equal to the cost of equity, violates this State's prohibition on the consideration of investment income from capital and surplus in ratemaking and, second, the comparable earnings profit methodology used by the Department's witnesses to determine an appropriate underwriting profit

*Opinion of the Court*

provision adheres to North Carolina's legal requirements because it only takes into account the profit from the insurance operations.

The Bureau acknowledges the Commissioner's reliance on *2001 Auto*, but dismisses that reliance as error on the basis that *2001 Auto* is directly contrary to this Court's decisions in *1994 Auto* and *1996 Auto*. Therefore, the Bureau contends we are bound by those earlier cases. *See Graham v. Deutsche Bank Nat'l Trust Co.*, \_\_ N.C. App. \_\_, \_\_, 768 S.Ed.2d 614, 617 (2015) ("[W]here there is a conflicting line of cases, a panel of this Court should follow the older of those two lines.") (quotation marks and citation omitted). It is clear, however, from this Court's discussion in *2001 Auto* that the decisions are not contradictory.

Because the Commissioner's profit methodology in the present case is in accord with that upheld by this Court in *2001 Auto*, we overrule the Bureau's argument that the underwriting profit provision adopted by the Commissioner is legally erroneous.

As an aside, we note the filed underwriting profit provision championed by the Bureau fails by their own calculations to meet the cost of equity that the Bureau claims is a minimum standard. The Bureau's calculations show that the filed 10.5% of premium underwriting profit results in a post-tax total return from underwriting of 6.87% of premium. When the underwriting profit is considered with the net investment gain on insurance transactions, the Bureau's calculations show post-tax total returns of 7.67% of premium and 7.06% of net worth, which the Bureau

acknowledges is below the cost of equity. Thus, even if we were to accept the Bureau's assertion that cost of equity is a mandatory requirement, the Bureau's underwriting profit provision fails to meet that mandate.

2. Net Cost of Reinsurance

The Bureau next argues the Commissioner erred in determining the net cost of reinsurance to be included in rates, which the Commissioner addressed in findings 375 through 454.

Reinsurance is insurance purchased by primary insurers from other insurance companies, or reinsurers, to mitigate the risk of large payouts in excess of what a primary insurer could bear in the event of catastrophic losses. It does so by spreading the risk between primary insurers and reinsurers. Reinsurers are willing to accept portions of the risk associated with potential catastrophic losses in exchange for a share of the premiums paid by the insureds. Primary insurers, in turn, pass the expense of reinsurance to the insureds by including the net cost of reinsurance in the rates. A large portion of the exposure to catastrophic losses in North Carolina is due to hurricanes.

In this case, the Bureau's filing included a provision for a net cost of reinsurance of 17.5% of premium. The Bureau based its provision on an analysis performed by David Appel, who was stipulated as an expert in "economics and finance and profit as regards the property/casualty insurance industry." As he explained in

*Opinion of the Court*

his prefiled testimony, Appel “developed a procedure to include the ‘net cost of reinsurance’ as an expense in the direct homeowners rates in North Carolina.” Appel likened his “procedure” to what is used in Florida, “where insurers make rates using direct losses and expenses, but then add in a provision which covers the cost (to the primary insurer) of the reinsurer’s profit and expense.” Appel then explained his “procedure” in detail and expressed his beliefs that his calculations accurately reflected the net cost of reinsurance in North Carolina and that the net cost of reinsurance was appropriately included in homeowners’ insurances rates in North Carolina.

The substance of Appel’s prefiled testimony as it relates to determining the net cost of reinsurance can be summarized as follows: Appel adopted the ratemaking assumption “that there is a single aggregate company that is the composite of all carriers in the state.” Appel assumed the hypothetical company maintains a reinsurance program with specific provisions that Appel believed “reflect the types of reinsurance programs that insurers typically purchase to protect against the potentially catastrophic losses that are attendant to the hurricane risk to which the state is exposed.” Appel then used statewide aggregate loss distributions produced and provided by AIR Worldwide Corporation (“AIR”), a provider of risk modeling software and consulting services, which were based on AIR’s loss estimates from AIR’s warm sea surface temperature (“WSST”) model, as opposed to AIR’s standard



*Opinion of the Court*

(“STD”) model, and included the phenomenon of demand surge, to determine the amount of losses that would be subject to reinsurance coverage as a share of the total hurricane losses in the state. Based on the projected reinsured losses, Appel then developed a “competitive market” reinsurance premium. Appel testified that he calculated “the reinsurance premium is 23.9% of statewide direct premium, while the net cost of reinsurance is 17.5% of premium.”

To counter Appel’s testimony, the Department cross-examined Appel and put on its own evidence tending to show that the Bureau’s net cost of reinsurance provision was overstated and not reflective of the reinsurance market in North Carolina. Department witnesses Schwartz and Mary Lou O’Neil, both of whom were stipulated as “expert property/casualty insurance actuaries[,]” and Evan D. Bennett, who the Bureau stipulated was an expert in reinsurance, expressed concern that the Bureau’s provision was based on a hypothetical model and no documentation or data was presented to support the assumptions and methodologies underlying the model or Appel’s calculations.

Upon review of the evidence concerning net cost of reinsurance in this case, the Commissioner rejected the Bureau’s filed net cost of reinsurance of 17.5% of premium and ordered a net cost of reinsurance of 10% of premium. The Bureau now contends the Commissioner erred in doing so.

*Opinion of the Court*

At the outset, it is apparent from the Commissioner's order that the Commissioner fully considered the evidence on the net cost of reinsurance, as the Commissioner summarized both the Bureau's and the Department's cases and explained his reasons for rejecting the Bureau's filed net cost of reinsurance provision and adopting the 10% provision. Despite the Commissioner's detailed order, the Bureau claims the Commissioner erred.

The Bureau first challenges the Commissioner's rejection of the filed net cost of reinsurance provision. The Bureau contends the filed net cost of reinsurance provision based on the "procedure" developed by Appel, which the Bureau now refers to as an "economic model," was reasonable and supported by the evidence.

The Commissioner's rejection is concisely explained in the following findings:

446. . . . Basically what the Commissioner was presented with in regards to the net cost of reinsurance was a hypothetical model, poorly documented, that was developed by an economist with no discernible background in reinsurance other than vague associations with other professionals who may have some reinsurance experience. Although market information was produced on rebuttal to support model input, the model does not reflect the significant price decreases in the market over the past couple of years because the model is not market-based. Moreover, the reinsurance model utilizes the AIR WSST model to estimate losses; however, the scientific underpinnings of the WSST are debatable and the WSST results in significantly higher losses than the STD model, which produced losses in this filing that the Commissioner has already found excessive.

447. Given all of the issues . . . , and the fact that the

*Opinion of the Court*

proposed net cost of reinsurance represents 22.1% of the base rate for Owners, the Commissioner can only conclude that the Bureau has not met its burden of proof with regards to the reinsurance component of the indicated rates. . . .

. . . .

453. Thus, based on the foregoing, the Commissioner finds that the Bureau's proposed net cost of reinsurance is excessive and will result in excessive rates.

Although the Bureau acknowledges that the Commissioner has discretion in weighing the evidence, the Bureau contends the Commissioner abused his discretion in this case by disregarding evidence – both Appel's testimony and "real world" evidence that reinsurance costs actually incurred are consistent with the model results – that the Bureau claims supports its filed net cost of reinsurance provision.

Regarding Appel's testimony, the Bureau points to the Commissioner's finding number 446 and contends the evidence does not support the finding that Appel "had no discernable background in reinsurance." In support of its challenge, the Bureau highlights portions of Appel's testimony at the hearing which it claims demonstrate that Appel possessed the necessary experience in reinsurance to offer testimony on the subject; namely, that Appel developed the reinsurance model that was first used in a 2002 rate filing and, since that time, has been involved in other rate cases, has given presentations and lectures on the model, has rendered opinions in rate cases in which the net cost of reinsurance was included, has served as an arbitrator in rate cases, and has worked with various insurance companies. Because of these

*Opinion of the Court*

experiences, the Bureau claims “[t]he Commissioner’s disregard of Dr. Appel’s testimony and the Bureau’s reinsurance model is arbitrary and capricious and an abuse of discretion.”

Upon review of the Commissioner’s findings and the evidence, we hold the Commissioner did not abuse his discretion. First, upon review of finding 446, we disagree with the Bureau’s characterization of the Commissioner’s finding. When the finding is read in its entirety, it is clear the Commissioner was critiquing Appel’s development of the reinsurance model. The evidence in the record supports the finding that Appel had no discernable background in reinsurance when he developed his reinsurance model, as all of the experiences highlighted by the Bureau appear to have occurred since the model was developed and first used in 2002. Appel’s prefiled testimony was that he has had the opportunity to become aware of property reinsurance programs over the past several years because a substantial amount of his consulting work over the last dozen to 15 years involved property insurance matters. Appel also indicated it did not appear he gave any presentations or lectures on reinsurance or property-related matters before 2003 and, when he began doing so, they concerned the development of his model.

While it is clear Appel has increasingly gained experienced in reinsurance since the early 2000s, that experience does not refute the Commissioner’s finding that the “hypothetical model . . . was developed by an economist with no discernible

*Opinion of the Court*

background in reinsurance . . . .” Nor does Appel’s subsequent experience in reinsurance show the Commissioner erred by placing greater weight on the testimony of the Department’s witnesses, one of which was an expert in reinsurance; especially where there was evidence that Appel lacked the experience to develop a reinsurance model, the model lacked documentation, and the hypothetical model did not reflect reinsurance in North Carolina.

Regarding the “real world” evidence that the Bureau claims was improperly disregarded, the Bureau points to Exhibit RB-33, which was compiled by Appel and presented during the Bureau’s rebuttal case. Appel explained that RB-33 included the North Carolina Farm Bureau’s (“Farm Bureau”) insurance expenses for each of the years between 2001 and 2013 and showed the percent of Farm Bureau’s direct premium ceded to reinsurance. Appel used Farm Bureau’s data to test the reasonableness of his reinsurance model and concluded that the filed net cost of reinsurance was well below that of Farm Bureau.

The Commissioner addressed this “real world” evidence in finding 450 and determined its usefulness for comparison purposes was “nil” because the data included “quota share” reinsurance, or non-catastrophe reinsurance, in all but one of the years. The Bureau now contends the Commissioner’s disregard of the Farm Bureau data was in error because, although Appel acknowledged that, “[i]n some years, there’s quota share reinsurance in addition to catastrophe excess of loss

*Opinion of the Court*

reinsurance[]” and, therefore, the “percent ceded likely overstates to some extent the amount that is strictly catastrophe excess of loss[,]” Appel’s testimony was that in catastrophe prone areas such as North Carolina, “the quota share . . . is going to be priced much closer to catastrophe reinsurance than quota share would be in an environment which was not catastrophe prone because it bears a fair bit of the catastrophe exposure.” Thus, the Bureau claims Appel’s testimony shows the Farm Bureau data is relevant evidence of the cost of reinsurance in North Carolina.

While the Commissioner may have understated the relevance of the Farm Bureau data by assigning it zero usefulness for comparison purposes, we are hesitant to say that the Commissioner erred in disregarding the data where, on appeal, the Bureau has failed to direct this Court to any concrete evidence indicating what portion of the Farm Bureau data was not reinsurance to guard against the risk of catastrophe losses. Moreover, as found by the Commissioner in finding 451 and argued by the Department on appeal, our Supreme Court has recognized that “the loss experience data of a single carrier in this State does not establish the ‘composite’ of loss experience of all the carriers, which the establishment of the Bureau was intended to create.” *Foremost Ins. Co., Inc. v. Ingram*, 292 N.C. 244, 249, 232 S.E.2d 414, 418 (1977). This seems to hold particularly true where the single carrier, Farm Bureau in the present case, offers homeowners’ insurance extensively, but exclusively, in North Carolina. While the Bureau claims this makes Farm Bureau

*Opinion of the Court*

“uniquely reflective” of a single hypothetical company operating in North Carolina, both Bureau and Department witnesses acknowledged that many insurers in North Carolina are multi-state and multi-line carriers. Department witness Schwartz explained that he did not believe the Bureau’s calculation took into account that “the aggregate company in North Carolina . . . writes other lines of insurance in North Carolina, and writes business in other states, and has a substantial premium base and surplus amount which would allow for a higher retention.” Based on this evidence, we cannot hold the Commissioner abused his discretion in disregarding the Farm Bureau data as illustrative of reinsurance for the entire state.

In addition to arguing the Commissioner erred in rejecting its filed net cost of reinsurance provision, the Bureau also argues the Commissioner erred in selecting a 10% net cost of reinsurance provision. The Bureau claims the selected provision is unsupported by material and substantial evidence.

The Commissioner’s adoption of the 10% net cost of reinsurance is best explained in the following findings:

447. . . . Schwartz recommended that, in light of the Bureau’s failure to support its net cost of reinsurance provision, it would be appropriate to use a net cost of reinsurance of \$0 (zero). The Commissioner does agree that \$0 might be appropriate, *however, North Carolina is exposed to hurricanes* and, without a doubt, insurers have sought to protect themselves from hurricane claims in North Carolina by purchasing reinsurance, a fiscally prudent decision and sound business practice. Thus the Commissioner considers it reasonable to include some

*Opinion of the Court*

factor above \$0 in the rate for the net cost of reinsurance.

. . . .

448. Schwartz has proposed a factor of 10% of premium, based upon an analysis of historical countrywide data of the entire homeowners insurance industry over the last 28 years. . . .

449. Schwartz . . . testified that pursuant to [N.C. Gen. Stat.] § 58-36-10(2) countrywide data may be used where North Carolina experience is unavailable. . . .

. . . .

452. Schwartz provides a reasonable measure to set the net cost of reinsurance at 10% of premium given that we do not have actual composite North Carolina data available, and that the countrywide data . . . provides a reasonable benchmark to North Carolina because of similar measures of risk. . . .

. . . .

454. The Commissioner, taking into account the above and the undisputed fact that North Carolina is a coastal state prone (like its sister states in the southeastern United States) to hurricanes and tropical storms, finds that a net cost of reinsurance of 10% of premium is reasonable and will result in rates that are not excessive or inadequate.

The Bureau now contends the Commissioner erred in the above findings because Schwartz was not an expert on reinsurance and, therefore, not competent to provide testimony on the subject. The Bureau also contends the Commissioner erred in relying on countrywide reinsurance data.



*Opinion of the Court*

Regarding the testimony by Schwartz, the Bureau claims that Schwartz did not meet the requirements of Rule 702(a) of the North Carolina Rules of Evidence and *Daubert* for admissibility of expert testimony. See N.C. Gen. Stat. § 8C-1, Rule 702(a); *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 125 L. Ed. 2d 469 (1993). Specifically, the Bureau contends that because Schwartz testified that he has never been engaged on a professional basis by a reinsurer, reinsurance broker, or primary insurer to price a reinsurance policy, has not individually been involved in a transaction for the purchase of reinsurance, and has never in a professional capacity recommended or calculated hurricane average annual losses for use by a reinsurer or reinsurance broker, Schwartz “lacks the ‘knowledge, skill, experience, training or education’ in the field of reinsurance to be competent to testify on the cost of reinsurance . . . .” We disagree.

The Bureau ignores that Schwartz, an actuarial consultant, received the professional designation of Associate in Reinsurance from the Insurance Institute of America in 1998 (received the Reinsurance Association of America Award for Academic Excellence) after completing qualifying examinations and has been involved in numerous insurance rate cases in various states in recent years. Although Schwartz may not have been qualified to develop a reinsurance model, there is a significant difference between developing a model to project reinsurance costs and comparing modeled results to actual reinsurance data. Based on Schwartz’s

*Opinion of the Court*

reinsurance designation and experience as an actuary having participated in numerous rate cases, we hold Schwartz was competent to testify on the subject of reinsurance and the Commissioner did not abuse his discretion in considering or giving weight to Schwartz's testimony.

Regarding the Commissioner's consideration of the countrywide reinsurance data presented by Schwartz and included in Schwartz's prefiled testimony, the Bureau asserts the Commissioner's reliance on the data was error because the data does not reflect the hurricane risks in North Carolina and the costs that insurers will incur to purchase reinsurance in North Carolina. The Bureau specifically points to Schwartz's testimony and claims Schwartz acknowledged the data did not reflect catastrophe risks in North Carolina.

A review of the portion of Schwartz's testimony identified by the Bureau shows that Schwartz never acknowledged that the data was not reflective of North Carolina, but that the data is not that of North Carolina. To be exact, in response to the question, "Now, is it correct, Mr. Schwartz, that you cannot tell from the data . . . what the net cost of reinsurance is for catastrophe reinsurance in a state like North Carolina?" Schwartz responded, "Yeah[, the data] doesn't give catastrophe reinsurance data for North Carolina." We think testimony that data is not for North Carolina and testimony that data is not reflective of North Carolina are very different responses. Moreover, Schwartz went on to testify that he was "not aware of where to

*Opinion of the Court*

obtain [catastrophe reinsurance data for North Carolina].” Schwartz stated that he believed the Department requested such information from the Bureau for use in analyzing the filing, but the Bureau indicated they did not have such information. In setting forth the standards and factors in the making and use of rates, N.C. Gen. Stat. § 58-36-10(2) provides that “countrywide expense and loss experience and other countrywide data may be considered only where credible North Carolina experience or data is not available.” N.C. Gen. Stat. § 58-36-10(2). As found by the Commissioner in finding 449, Schwartz acknowledged N.C. Gen. Stat. § 58-36-10(2). Finding 449, together with the Commissioner’s finding that “it is not appropriate to set a provision for net cost of reinsurance . . . based upon data presented for only one company[]” in finding 451, supports the Commissioner’s consideration of countrywide data. Thus, the Commissioner did not err.

Even if the countrywide data was properly considered, the Bureau contends the Commissioner acted arbitrarily in selecting the 10% net cost of reinsurance provision from the data. Again, we disagree. While 10% may not be an exact calculation, Schwartz’s recommendation and the Commissioner’s selection of 10% for the net cost of reinsurance was based on a reasoned analysis with a rational basis in the evidence. Specifically, the data relied on by Schwartz shows that, for the years included, the net cost of reinsurance as a percent of direct earned premium ranges from an average of 4.6% on a calendar year basis to a maximum of 10.1% on a

*Opinion of the Court*

calendar year basis, and from an average of 7.8% on an accident year basis and to a maximum of 15.9% on an accident year basis. Schwartz used that data to recommend a range of 5% to 16%, considering both the accident year and calendar year bases. Schwartz then selected a 10% net cost of reinsurance from the middle of the range. Upon review, it is clear that Schwartz's analysis was well reasoned and constitutes material and substantial evidence. Furthermore, it supports the Commissioner's findings and conclusions. Thus, the Commissioner's selection of the 10% net cost of reinsurance was not arbitrary.

The Bureau looks to the same countrywide data and references numbers from the column providing the percent of "ceded/direct earned premium" and points out that the average and maximum on an accident year basis are higher than the percentages used by Schwartz – respectively 9.7% and 22.5%. The Bureau then asserts that Schwartz and the Bureau arbitrarily picked the lower percentages for net cost of reinsurance. To support its assertion, the Bureau contends that when Schwartz was asked on cross-examination which was the appropriate number for the Commissioner to use, Schwartz testified that "both provide information[]" and did not explain why he choose 10%. Upon review of both the countrywide data used by Schwartz and the testimony of Schwartz cited by the Bureau, it is clear the Bureau misconstrues the data and Schwartz's testimony. First, the percentages referenced by the Bureau are the result of a different calculation, "ceded/direct earned premium,"

*Opinion of the Court*

than the net cost of reinsurance as a percent of direct earned premium relied on in Schwartz's analysis. Second, the portion of Schwartz's testimony cited by the Bureau was not in reference to the difference between the figures identified by the Bureau and the figures relied on by Schwartz. Schwartz's testimony was in reference to the inclusion of net cost of reinsurance analysis on both an accident year basis and a calendar year basis. Schwartz explained the difference between the two bases and stated they provide different information. In determining the range for net cost of reinsurance, Schwartz considered both bases.

3. Modeled Hurricane Losses

In the third issue raised on appeal, the Bureau argues the Commissioner erred in reducing the modeled hurricane losses in the filing. The Commissioner addressed the modeled hurricane losses in findings 153 through 225.

The Bureaus' filed rates were based, in part, on long-term average annual hurricane losses of \$316.1 million. These hurricane losses included in the Bureau's filing were based on a report that was provided to the Bureau by AIR and entered into evidence as Exhibit RB-6A. The report includes an analysis of prospective hurricane losses based on AIR's STD model, which incorporates AIR's standard view of hurricane risk. In prefiled testimony, Bureau witness Robert Newbold, an expert in catastrophe modeling and Senior Vice President of AIR, explained that for the analysis requested by the Bureau, AIR ran 100,000 simulations or iterations of what

*Opinion of the Court*

could happen in the following year in order to derive average loss costs. Although Newbold admitted that, “[a]s with all models, [the] representation are not exact,” Newbold opined that “simulation methodology is the best available technique for estimating potential hurricane losses . . . .” Bureau witness Robert J. Curry, an expert property/casualty actuary who is responsible for managing and overseeing the operations of the Personal Property Actuarial Division of Insurance Services Office (“ISO”), echoed Newbold’s opinion and explained that using a simulated model to determine long-term average losses is a more accurate way of including the exposure than using actual hurricane losses.

In the order, the Commissioner accepted the use of simulation modeling, explaining in finding 153 that “[t]he purpose in utilizing . . . the hurricane loss model is to avoid inordinate shifts, both upward and downward, in indicated rate levels which would result from reflecting large hurricane and other wind loss events only in the year in which they occur.” The Commissioner, however, refused to blindly accept the modeled hurricane losses included in the Bureau’s filing and considered the testimony of Bureau and Department witnesses to determine the credibility of the model. Based on the evidence presented, the Commissioner found it necessary to reduce the modeled hurricane losses, finding as follows:

223. . . . The model provides useful information and certainly should be considered. However, models aren’t perfect; the problems and uncertainties of the model should be considered as well. The Commissioner finds herein that

*Opinion of the Court*

it is both necessary and appropriate to reduce the Bureau's value for the modeled hurricane loss costs to a level that recognizes the bias and inherent uncertainty in modeling in general and catastrophe modeling, specifically.

224. . . . The Commissioner finds that the average annual modeled hurricane losses of \$316.1 million used in support of the filed rates is excessive based on the evidence. He finds that a reduction in the modeled hurricane losses of 13.9% to 272.3 million is supported in the evidence.

225. Thus, the Commissioner finds herein that the modeled hurricane losses utilized in the Bureau's indicated rate calculation are excessive and will result in excessive rates. The +13.9% reduction in hurricane losses . . . will result in rates that are neither excessive nor inadequate.

The Bureau now claims the Commissioner's reduction of the modeled hurricane losses was arbitrary and capricious for several reasons.

First, the Bureau contends the Commissioner erred in reducing the modeled hurricane losses because there is no evidence that uncertainty in the model results in an overstatement of the losses. The Bureau claims the Commissioner "effectively assumed that 'uncertainty' in modeling equates to 'excessive losses[]' " without material and substantial evidence and contrary to the Commissioner's findings regarding the validity of the model. We disagree that the Commissioner made such an unfounded assumption.

While the Bureau is accurate in stating the Commissioner issued findings on the general acceptance of simulation modeling within the insurance industry to predict hurricane losses and noted verification procedures used to ensure that AIR's

*Opinion of the Court*

models are as up-to-date and accurate as possible, it is clear from the evidence of both the Bureau and the Department that modeling is not infallible. In fact, the Commissioner issued findings identifying specific testimony that modeling was not precise, had limitations, and that “glitches” had been discovered in the past. The Commissioner also devoted entire subsections of findings to the credibility of AIR’s models and both the Bureau’s and the Department’s cases, in which the Commissioner identified biases on all sides. The Bureau does not attack any particular finding and, upon review of the record, the findings appear to be supported by the record evidence. Because of the admitted uncertainty in modeling, it was not inconsistent for the Commissioner to scrutinize the modeled losses despite his recognition that AIR’s models are widely used and accepted.

Moreover, the Commissioner’s reduction of the modeled hurricane losses was not based on an unfounded assumption, it was based on the evidence, or the lack thereof, in the record. While the Bureau is correct in asserting that any uncertainty in the STD model may result in the understatement of losses as opposed to an overstatement of losses, the Bureau has not directed this Court to any evidence in the record that the modeled hurricane losses were understated; nor have we been able to find such evidence. Based on the evidence of record, it was well within the Commissioner’s discretion to weigh the competent evidence in the record and make adjustments as he deemed necessary.



*Opinion of the Court*

The Bureau, however, also takes issue with the evidence considered by the Commissioner in reducing the modeled hurricane losses. Specifically, the Bureau contends the Commissioner erred in relying on the testimony of O’Neil and Schwartz. The Bureau also contends the Commissioner erred in using benchmarks that are not based on material and substantial evidence. We are not convinced that the Commissioner erred in either respect. Nevertheless, it is important to note that, while the Commissioner did rely on the testimony of O’Neil and Schwartz and the benchmarks as evidence that the modeled hurricane losses included in the filing were overstated, “the Commissioner [did] not rely[] upon the specific numerical values of their calculations to set a rate[,]” as the Commissioner explained in finding 215.

The Bureau first contends the Commissioner erred in relying on testimony by O’Neil and Schwartz because they were neither offered nor qualified by knowledge, skill, experience, training, or education as experts in hurricane modeling. *See* N.C. Gen. Stat. § 8C-1, Rule 702(a); *Daubert*, 509 U.S. at 588, 125 L. Ed. 2d at 480. In support of its argument, the Bureau directs this Court’s attention to finding 218a, in which the Commissioner found that “neither he nor any of the consultants hired by the Department nor anyone on his staff has the expertise to evaluate the inner workings of the model.” While we acknowledge the Commissioner’s finding, we are not convinced the finding supports the Bureau’s argument. A review of finding 218a and the subsequent findings indicate the Commissioner was not commenting on the

*Opinion of the Court*

qualifications of O’Neil and Schwartz to provide testimony regarding the results of AIR’s STD model, but regarding the “inner workings of the model[,]” to which neither O’Neil nor Schwartz offered testimony. The Commissioner’s subsequent finding describing the type of review he was required to undertake because he lacked the expertise to analyze the inner-workings of the model adds perspective to finding 218a. The Commissioner explained that review as follows:

218b. The Commissioner instead must rely on benchmarks that are offered in sworn evidentiary testimony. These benchmarks can be against results from other models, or against actual history. Each of the various benchmarks in the record has different evidentiary force that must be weighed.

O’Neil and Schwartz, both of whom were stipulated as expert property/casualty insurance actuaries, were certainly qualified by knowledge, skill, and experience to review the results of the STD model and compare those results to the results of other models or historical losses. Thus, the Commissioner did not err in relying on their testimony.

The Bureau next takes issue with the Commissioner’s use of “benchmarks” to validate the STD model. The Commissioner recognized four benchmarks which he used to estimate that modeled hurricane losses should be 13.1% to 21.5% lower than filed. The Bureau contends three of those benchmarks are not supported by material and substantial evidence in the record and, therefore, the Commissioner’s reliance thereon was arbitrary and capricious.

*Opinion of the Court*

At the outset, we re-emphasize that the Commissioner specifically noted the actual reduction of the modeled hurricane losses was not based on the benchmarks.

In the first challenged benchmark, which the Commissioner explained in finding 218c, the Commissioner compared actual hurricane losses to modeled hurricane losses. That comparison was based off of AIR's own validation in Exhibit RB-6C, which used bar graphs to compare observed and modeled losses for seventeen hurricanes dating back to 1989. Because AIR was comparing observed losses from past years to current model losses, AIR adjusted the actual losses by a 7% annual trend factor to account for inflation and exposure growth. The Commissioner noted in finding 218c that the adjusted actual losses for hurricanes Hugo, Fran, and Isabel, three hurricanes that caused significant losses in North Carolina, are 7.9% higher than the modeled hurricane losses. The Commissioner, however, also tested a 5% annual trend factor and found the adjusted actual losses are 21% lower than the modeled hurricane losses when the 5% factor is used. The Commissioner then found in finding 218c that an annual trend factor of below 5% is shown from inflation and home price indices, which the Commissioner acknowledged were not discussed at the hearing.

The Bureau now contends the Commissioner's analysis using the 5% annual trend factor was in error because the 5% factor was not based on evidence in the record and because the 5% factor does not include the exposure growth component to

*Opinion of the Court*

AIR's validation. The Bureau claims the Commissioner picked the 5% factor because AIR's validation did not support his desired reduction of the modeled hurricane losses and, therefore, the Commissioner "rewrote the evidence to generate another 'benchmark' in his result-oriented effort to reduce modeled losses and ensure that there would be no rate increase." The Bureau is correct that the Commissioner's use of the 5% annual trend factor and the Commissioner's assertion that the annual trend factor is less than 5% are not based on evidence in the record. Thus, the portion of finding 218c indicating an annual trend factor between 3.5% and 4% is proper is error. We hold it was not error, however, for the Commissioner to test the 5% factor.

In response to the Bureau, the Commissioner contends the 5% annual trend factor was just a number selected by the Commissioner to test the sensitivity of AIR's 7% factor. Assuming that was the purpose of the Commissioner's calculations, it was useful and relevant for determining the sensitivity of the STD model. But even if that was not the intended purpose of testing the 5% factor, the Commissioner's analysis and the portion of finding 218c that the annual trend factor was below 5% were harmless because the Commissioner's ultimate reduction of the modeled hurricane losses was not based on the 5% factor.

The second challenged benchmark, described by the Commissioner in finding 218e, was based on the testimony of Department witness O'Neil. For the "O'Neil benchmark," O'Neil conducted a comparison of modeled hurricane losses of AIR and

*Opinion of the Court*

Risk Management Solutions (RMS), a competitor of AIR. O'Neil's comparison was of the WSST modeled hurricane losses of "Beach Plan"<sup>2</sup> properties that had been projected for reinsurance purposes. O'Neil found that AIR projected losses of \$247.4 million and RMS projected losses of \$141.0 million. O'Neil then determined that AIR's modeled losses were roughly 27.4% higher than the average of the two models. Based on O'Neil's testimony, the Commissioner found modeled hurricane losses could be 21.5% lower than filed. In rebuttal, Bureau witness Newbold took exception to usefulness of O'Neil's comparison, but offered the results if the STD versions of AIR's and RMS's models were considered. Newbold testified that using STD versions of their respective models, AIR projected losses of \$226.8 million and RMS projected losses of \$167.5 million; thus, AIR's modeled losses were roughly 14% higher than the average of the two models. Based on Newbold's testimony, the Commissioner found modeled hurricane losses could be 13.1% lower than filed.

The Bureau now contends O'Neil's analysis was not material and substantial evidence because the models she compared were different from the model used in the filing and because the comparison was based only on the Beach Plan's exposure, which makes up only a small portion of the entire state. Although the modeled hurricane losses compared by O'Neil were projected using WSST versions of AIR's

---

<sup>2</sup> The Beach Plan is a residual market created by the legislature to provide insurance to homeowners in beach and coastal counties at a surcharge because insurers are not willing to write insurance policies.

*Opinion of the Court*

and RMS's models and, therefore, different from the models used to project modeled hurricane losses in the filing, Newbold's testimony regarding the results of the STD versions of the models adds credence to O'Neil's testimony that AIR's estimates were significantly higher than the estimates of RMS. Although such comparison may not be relevant to the actual reduction of the modeled hurricane losses, it is relevant to show that other models produce more modest loss projections. Additionally, although the Beach Plan only includes those territories nearest the coast and is not representative of the entire state, the evidence from AIR was that those coastal territories in the Beach Plan are most vulnerable to hurricane losses and account for much higher shares of the loss than exposure. Thus, we do not entirely dismiss the consideration of the Beach Plan modeled losses. Lastly, and most importantly, while the Commissioner may have used the benchmark to set the outer bounds for a reduction of the modeled hurricane losses, the benchmark was not used by the Commissioner to calculate his reduction of the modeled hurricane losses.

The third benchmark challenged by the Bureau was based on the testimony of Department witness Schwartz. The Commissioner described his review of the "Schwartz benchmark" in finding 218f. The Schwartz benchmark was based on a comparison of modeled hurricane losses and actual hurricane losses from filings dating back to 1998. Schwartz's analysis showed that from 1992 to 2011 the ratio of actual to modeled hurricane losses was 53%. In finding 211, the Commissioner found

*Opinion of the Court*

that “Schwartz corrected for his perceived problems with the AIR model by judgmentally reducing the value of the projected losses in the filing by +10%.”

The Bureau contends the Schwartz benchmark is not material and substantial evidence. While we agree that Schwartz’s 10% reduction in the modeled losses is not material and substantial evidence, the Schwartz analysis is relevant, material, and substantial evidence to show the comparison between observed losses and modeled losses for purposes of demonstrating AIR’s STD model overstated modeled hurricane losses in the recent past.

The Bureau’s arguments against each of these benchmarks is that they are not material and substantial evidence. We disagree and hold the benchmarks were material and substantial evidence of the purpose for which they were recognized – to show that AIR’s modeled hurricane losses were not exact and were overestimated.

While the Commissioner may have considered the benchmarks for determining the modeled losses were not entirely reliable, the Commissioner indicated his eventual reduction of the modeled hurricane losses was not based on the benchmarks. In fact, the Commissioner noted deficiencies in the benchmarks by stating in finding 218g that “none of [the four benchmarks] on its own is completely reliable.” The Commissioner also recognized in finding 215 that O’Neil’s and Schwartz’s testimony may have contained some documentation issues and unsupported assumptions, but as we recognized above, the Commissioner overlooked those deficiencies because he

*Opinion of the Court*

was “not relying upon the specific numerical values of their calculations to set a rate.” The Commissioner correctly recognized in finding 215 that his duty was to determine “whether the Bureau met its burden of proof for this filing.” The Commissioner ultimately determined the Bureau failed to meet its burden of proof regarding three components of the modeled hurricane losses and determined it was proper to exclude those components from consideration, thereby reducing the modeled hurricane losses to be used in ratemaking. The Commissioner described his reduction as follows:

218i. The Commissioner finds it helpful to tabulate the STD model output in the following format. From here, it can be seen that eliminating three sources of losses that were disputed by the Department witnesses: 1) the demand surge component (\$17.0 million), 2) the losses arising from modeled CAT 5 events in North Carolina (\$14.0 million), and 3) the losses (\$12.8 million) arising from modeled hurricanes that make landfall somewhere other than the Carolinas, but which are presumed by the AIR model to continue into North Carolina with wind speeds below hurricane force, one would end up with an indicated average annual loss due to hurricanes of \$272.3 million, which is 13.9% below the filed amount, and within the range cited above. . . .

The Bureau’s last argument regarding the Commissioner’s review of the modeled hurricane losses is that the Commissioner’s 13.9% reduction removes losses that insurers are required to pay. The Bureau contends the removal of the three components was arbitrary and suggests that the only reason for their removal is because the combined effect caused the modeled hurricane losses to fall within the range of the benchmarks. We disagree with the Bureau’s assertion that the



*Opinion of the Court*

Commissioner's decisions to exclude CAT 5 hurricanes, demand surge, and losses incurred from winds below 74 miles per hour were arbitrary and capricious.

Concerning CAT 5 hurricanes, the Bureau asserts that the decision to remove the CAT 5 hurricanes from the modeled losses was arbitrary because the evidence was undisputed that it was statistically and meteorologically possible that a CAT 5 hurricane could impact North Carolina. Although the Bureau recognizes that there has never been a CAT 5 hurricane impact in North Carolina in the period of time for which consistent historical data has been collected, the Bureau's model hurricane losses include the admittedly extremely low probability events. In response, the Commissioner points to testimony from Newbold that there is less than a .1% probability a CAT 5 hurricane will strike North Carolina and indicating it is a very unlikely event. The Commissioner further points to prefiled testimony of Schwartz explaining that "[p]rojected hurricane events from the AIR model that have a probability of 0.1% or less . . . comprise about 7.7% of the overall projected modeled hurricane losses[,]" "projected hurricane events from the AIR model that have a probability of 0.5% or less . . . comprise about 22.7% of the overall projected modeled hurricane losses[,]" and "[m]ore than ½ of all the projected hurricane losses from the AIR model come from hurricane events that have a probability of 2.5% or less . . . ." After noting Schwartz's testimony, the Commissioner found in finding 209 that "[w]hile the very low probability events have a large impact on projected losses, these

*Opinion of the Court*

very low probability events have the most uncertainty about whether the results are accurate.” In finding 193, the Commissioner also recalled O’Neil’s testimony that “[al]though . . . Newbold may be correct from a technical modeling viewpoint that a Category 5 storm is possible, it does not follow that it is appropriate to generate losses from such an event for inclusion in North Carolina Homeowners’ rates. Homeowners should not be required to pay for losses from a hypothetical event which has no basis in actual historical observation.” We hold the Commissioner’s findings concerning CAT 5 hurricanes are supported by the evidence and demonstrate a reasoned decision to exclude the losses from those storms due to the very low probability and high comparative costs included in the modeled hurricane losses.

Concerning demand surge, the Commissioner recognized in finding 185 that “[d]emand surge accounts for the sudden and usually temporary increase in the cost of material, services, and labor due to increased demand following a catastrophe.” The Commissioner further noted in a footnote to that finding that, “[d]emand surge, *at best*, is a function of supply and demand . . . [and] *at worst*, is a function of price gouging.” The Commissioner then found in finding 187 that “[t]he analysis showed that there is an increase of 5.7% in gross losses when demand surge is applied.” In summarizing the testimony of O’Neil, the Commissioner indicated that O’Neil took issue with the inclusion of demand surge because the validation for demand surge was based on other states and there had not been an analysis for North Carolina

*Opinion of the Court*

events. O'Neil also contemplated that the North Carolina price gouging statute could limit demand surge. We find it significant that the Commissioner did not completely reject the possibility of demand surge, but instead disagreed with the Bureau's analysis as follows:

198a. The Commissioner agrees with O'Neil that the Demand Surge surcharge averaging 5.7% is not adequately supported by the Rate Bureau. He was able to review the demand surge impact on each of the 57,754 modeled losses. The Commissioner was surprised to find that nearly 40% of the modeled losses included additional losses due to demand surge. He finds that modeled events with loss amounts as low as \$6 statewide loss included demand surge.

198b. The Commissioner finds that nearly half of the total demand surge dollars . . . arise from modeled events that make landfall in states other than North Carolina. Presumably the North Carolina portion of losses excluding demand surge from events that make landfall elsewhere are only a fraction of the total, and yet, the formula provides the same percentage load in each state's losses. It is not clear to the Commissioner why a major event in Florida that tracks into North Carolina doing relatively minor damage there should entail supply and demand problems in North Carolina.

198c. Whatever study was done to develop the model, no details other than a table of factors were presented into evidence by the Rate Bureau.

198d. AIR testified that it commonly runs the model either with or without demand surge, implying that it is not regarded by its end users as a necessary component of the model.

*Opinion of the Court*

It is clear from these findings that the Commissioner's exclusion of demand surge was a result of the Bureau's failure to meet its burden of proof. We hold these findings are supported by the evidence and demonstrate a coherent analysis by the Commissioner.

Concerning losses from winds below 74 miles per hour, the Bureau contends the exclusion of those losses from modeled hurricane losses is arbitrary because "[t]he actual hurricane losses removed from the ratemaking data to prevent any duplication include all losses caused by winds of 40 mph or higher." We are not convinced. It is undisputed that hurricanes are classified as storms with sustained winds at least 74 miles per hour. As a result, O'Neil testified that "[she] didn't think it appropriate to consider [losses caused by winds below 74 miles per hour] as hurricane losses in the model." The Commissioner reflected O'Neil's opinion in his findings and adopted it, resulting in the exclusion of losses incurred from non-hurricane force winds from modeled hurricane losses. While there may be reasons for the inclusion of such winds, the Commissioner's determination is rationally based on the evidence presented and, therefore, was not arbitrary.

Upon full review of the Commissioner's analysis of the modeled hurricane losses, the Order shows the Commissioner performed a careful review of the evidence and did not arbitrarily reduce the modeled hurricane losses to be used in ratemaking.

*Opinion of the Court*

The Commissioner removed those sources of the modeled hurricane losses that he determined were questionable and not fully supported by the Bureau.

4. Allocation to Zones

Lastly, the Bureau argues the Commissioner erred in rejecting its filed allocation of the net cost of reinsurance and underwriting profit to zones. The Commissioner addressed the Bureau's allocation in findings 455 to 469.

The Bureau's filed allocation was based on a simulation model developed by Bureau witness Appel. Appel explained that he used his model to calculate the risks faced by different regions in North Carolina and, instead of using the revised territories in the filing, allocated the net cost of reinsurance and underwriting profit between four zones: beach, coast, central, and mountains. The Bureau now claims the filed allocation "did not change the overall filed rate level; it simply accomplished the fundamental goal of allocating the reinsurance costs across the state proportional to the risk and thereby collecting a greater portion of the premium from the exposures which present a correspondingly greater risk."

The Commissioner took exception to the Bureau's allocation; particularly regarding the inclusion of certain counties that are not afforded coverage under the Beach Plan in the "coast" zone, which is burdened by a greater share of the net cost of reinsurance and underwriting profit. The Commissioner also considered testimony of Department witness O'Neil, who took exception to Appel's allocation. O'Neil

*Opinion of the Court*

testified that she disagreed with the allocation of the net cost of reinsurance and underwriting profit to zones on the conceptual level because, “[f]rom an overall level, the Rate Bureau relates the amount of profit to the willingness of investors to supply capital. In that regard investors are only concerned with overall company profit, not the specific areas from which it may arise.” O’Neil also took exception to the inclusion of another level of simulation modeling to the Bureau’s filing and challenged the documentation and results of Appel’s model, noting that “the allocation of more than 40% of the nearly \$1 billion of underwriting profit, contingencies and Net Cost of Reinsurance to Zone 1a [was] unreasonable on its face.” In place of Appel’s model, O’Neil calculated the indicated rate level changes by territory.

It is clear from the Commissioner’s findings that the Commissioner did not find Appel’s model and the resulting allocation of the net cost of reinsurance and underwriting profit reliable. The Commissioner then rejected the Bureau’s allocation, finding as follows:

468a. The Commissioner finds that the filed distribution of the net cost is discriminatory in that it is based on a Monte Carlo simulation of losses that appears to understate significantly the loss variance in the less hurricane prone areas by means of significantly understating the assumed annual variance in non-hurricane losses. According to the simulation file that was provided to the Department by the Rate Bureau (*DOI-5, D.R 1.181-192*), the arbitrarily assumed ratio of the standard deviation to the mean (known in statistics as the coefficient of variation (C.V.)) is approximately 1% for non-hurricane losses. Data provided on *DOI-9, Schwartz*

*Opinion of the Court*

*prefiled testimony, AIS-18*, shows that the state with the smallest annual coefficient of variation in its loss ratio among the 50 states has a C.V. of approximately 12%. The Commissioner finds that a Monte Carlo simulation that assumes a standard deviation relative to the mean for non-hurricane losses of 1% produces results that cannot be relied upon in determining overall risk by zone.

469. Given Appel's lack of credibility on this particular issue and the Bureau's failure to recognize or address the fairness issue, the Commissioner herein orders that the net cost of reinsurance and underwriting profit will not be allocated to zones. Allocating the net cost and profit to zones as Appel recommends will result in rates that are unfairly discriminatory.

The Bureau now challenges the Commissioner's rejection of its allocation of the net cost of reinsurance and underwriting profit to zones because the Commissioner's analysis went outside the record. Specifically, the Bureau contends the Commissioner's comparison of the coefficients of variation in finding 468a was not based on evidence in the record. Upon review of Exhibit DOI-9, AIS-18, to which the Commissioner specifically referred in finding 468a, we agree with the Bureau that the finding is not supported by evidence in the record. In response, the Commissioner does not direct this Court to any evidence supporting finding 468a, but instead contends that the Commissioner "used his expertise to analyze the data provided through discovery to determine that Appel's simulation of losses cannot be relied upon." While that may be the case, without further findings regarding the Commissioner's analysis and where the data relied upon may be found, this Court

*Opinion of the Court*

cannot determine whether finding 468a is supported by evidence in the record and must hold that it is not.

We do, however, agree with the Commissioner's further assertion that even if finding 468a is not supported by the record evidence, the Commissioner's rejection of the Bureau's allocation of the net cost of reinsurance and underwriting profit to zones is supported by the Commissioner's other findings, which cast doubt upon the credibility of Appel's model. The concerns raised in those findings concerning Appel's credibility are supported by material and substantial evidence in the record. Thus, we affirm the Commissioner's rejection of the Bureau's filed allocation of the net cost of reinsurance and underwriting profit to zones.

III. Conclusion

Upon a full review of the Commissioner's order, we hold the order reflects a careful, thoughtful, and thorough consideration of the evidence. The evidence in the record supports the Commissioner's critical findings and ultimate conclusions. This Court will not second guess the Commissioner's determinations as to the credibility of the witnesses or the weight to be given their testimony. Therefore, the order of the Commissioner is affirmed.

AFFIRMED.

Judges DIETZ and TYSON concur.