DISCUSSION BY LESTER B. DROPKIN

Frank Harwayne's paper, which describes the methodology adopted by the National Council on Compensation Insurance with respect to the use of national experience indications, quite properly presupposes a fairly close familiarity with the structure of the Workers' Compensation ratemaking process. For those who have such a familiarity—whether by virtue of having carefully read Roy Kallop's recent paper[1], or by service on one or more of the committees of the National Council, or by other means—the present Harwayne paper will fall naturally into place.

A very valuable and necessary insight into the decisions and methods of the National Council has been provided, and undoubtedly will continue to be provided, for both the membership of the C.A.S. and that wider public readership of the Proceedings by the series of papers devoted to explaining and recording the ideas and concepts that constitute the standard Workers' Compensation ratemaking procedure.

It is, of course, well known that the Workers' Compensation ratemaking procedure has two quite distinct components. The first, concerned with developing the indicated overall rate level change, is today based on aggregate premium and loss experience, i.e. on financial data. The second, which may be referred to as the relativity portion of the rate revision, is concerned with the equitable and reasonable distribution of the otherwise determined overall rate level change to the individual classifications. While the process proceeds in terms of pure premiums—and thus suggests that we are dealing with absolute levels—in fact the process is one of determining the proper *relative* level among the classifications.

Although an actual rate revision proceeds by considering the Serious, Non-Serious and Medical components separately, Mr. Harwayne has found it convenient for illustrative purposes to refer to one component only, the Serious, since the concepts and procedures applying to the Serious component apply to the other components also. This review will also utilize the convenience of referring to only the Serious component.

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[1] Kallop, Roy H., "A Current Look at Workers' Compensation Ratemaking," P.C.A.S., LXII (1975).

For those classifications with a sufficiently large volume of (Serious) expected losses to receive full (Serious) credibility, the experience or "indicated" pure premium becomes the formula pure premium in accordance with what is meant by full credibility.

It is with respect to those classifications which do not develop the necessary volume of (Serious) expected losses for full (Serious) credibility that the present procedure, utilizing national relativities, differs from the former procedure.

Previously, for those classifications with such lesser amounts of (Serious) expected losses the formula pure premium was determined as the credibility weighted average of the indicated pure premium and the underlying or "present" on (rate) level pure premium. However, since there were many classifications in many National Council jurisdictions which were developing either zero or very modest credibilities, the application of the procedure meant that a large number of classifications were simply taking the overall rate level change or something very close to it. In looking at the classifications in a given state, the state was being viewed as though no other state existed, with a consequent loss of valuable information.

Introduction of the national relativity procedure means that the informational input of the relationships exhibited by the modified national experience will now be utilized as part of the process that determines proper classification relativities. Looking back, we can see in the adoption of the present procedure an almost classic example of Hegelian dialectic with its stages of thesis, antithesis and synthesis:

Thesis — Original, historical use of national experience.
Antithesis — Post Public Law 15 use of state experience.
Synthesis — Present, blended use of both state and national experience.

The new procedure posits the existence of an intrinsic, inherent relativity of hazard among classifications—which, of course, means among employments, operations and businesses—that is independent of state boundaries. To what extent are we willing to accept this premise? This reviewer, for one, has had no difficulty, although the question could be answered more readily perhaps, if we did not have the hundreds of classifications that, in fact, we do have in Workers' Compensation.

Incidentally, it would be interesting to know whether, and if so, how, the National Council adapts the procedure to the case of state special classifications and classifications whose definitions may vary somewhat from one jurisdiction to another.

I have no doubt that the paper should be, and will be, required reading for anyone with an interest in the Workers' Compensation ratemaking process. While the paper sets forth the formulae in a concise mathematical way, it may be useful to present part of the illustrative example in an alternative format which explicitly sets out the logical steps of the process, since the paper will surely also be read and referred to by persons less mathematically oriented than actuaries.

The basic information available to us is restated in Exhibit 1; the underlying logic of the steps used to determine the National Pure Premiums is given in Exhibit 2.

Since the relationships among the various classifications will be expressed, in part, by means of ratios to statewide, overall, all classifications combined pure premiums the first part of the process adjusts the Total Statewide Pure Premiums of states a and b to reflect the distribution by class of state k [Exhibit 2, Col. (6)]. The variation of these Total Statewide Pure Premiums from that of state k [Exhibit 2, Col. (7)] provides factors to be applied to the indicated classification pure premiums of states a and b to produce what may be called Indexed National Pure Premiums [Exhibit 2, Col (10)]. It is these Indexed National Pure Premiums which may be said to constitute the real heart of the process, in the sense that they have preserved the original relativities indicated by experience in states other than state k, yet have been expressed in terms of levels appropriate to state k. This may be seen from the following table:

	Classif. 1	Classif. 2	Ratio
Indicated Pure Premium—State a	3.034	.100	30.34
Indicated Pure Premium—State b	6.769	.210	32.23
Indexed National P. P.—State a	2.9305	.0966	30.34
Indexed National P. P.—State b	2.9350	.0911	32.23

While the illustrative example of the paper of course includes a comparison of the Formula Pure Premiums developed under the two procedures,

again it may be useful to exhibit the results in a way which emphasizes the basic concern of this part of a rate revision, viz. the relativities:

	Classif. 1	Classif. 2	Ratio
P. P. Underlying Pres. Rates—State k	2.750	.326	8.44
Indicated Pure Premium—State k	2.813	.250	11.25
National Pure Premium	2.932	.093	31.53
Formula Pure Premium—Prior Procedure	2.782	.326	8.53
—New Procedure	2.826	.214	13.21

Thus we see that while the prior procedure would have changed the present relativity but slightly, the new procedure has allowed a much larger shift, in accordance with the very desirable objective of incorporating the greater body of information provided by the classification experience of other states.

EXHIBIT 1

BASIC INFORMATION

State	Classification	Payroll	Losses	Indicated P.P.	Credibility	Present on Rate Level P.P.
	1	10,846,000	305,100	2.813	.54	2.750
k	2	8,304,000	20,760	.250	.09	.326
	State Total	19,150,000	325,860	1.702		
	1	7,250,000	220,000	3.034		
a	2	110,000,000	110,000	.100		
	State Total	117,250,000	330,000	.281		
	1	3,250,000	220,000	6.769		
b	2	210,000,000	440,000	.210		
	State Total	213,250,000	660,000	.309		

EXHIBIT 2

NATIONAL PURE PREMIUM CALCULATION

(1) State	(2) Classification	(3) Payroll (State k)	(4) Indicated Pure Premium	(5) Incurred Losses (3) × (4)	(6) Adjusted Total State Pure Premium (5) ÷ (3)	(7) Ratio: 1.702 (6)
	1	$10,846,000	3.034	$329,068		
a	2	8,304,000	.100	8,304		
	Total	19,150,000		337,372	1.762	.9659
	1	10,846,000	6.769	734,166		
b	2	8,304,000	.210	17,438		
	Total	$19,150,000		$751,604	3.925	.4336

(8) Classification	(9) State	(10) Indexed National Pure Premium (4) × (7)	(11) Payroll	(12) Incurred Losses (10) × (11)	(13) National Pure Premium (12) ÷ (11)
	a	2.9305	$ 7,250,000	$212,498	
1	b	2.9350	3,250,000	95,388	
	Total		10,500,000	307,886	2.932
	a	.0966	110,000,000	106,700	
2	b	.0911	210,000,000	191,100	
	Total		$320,000,000	$297,800	.093