AMERICAN ACADEMY of ACTUARIES

To: Lou Felice, Chair, NAIC Risk-Based Capital Task Force

From: Academy Joint RBC Task Force

Re: Comparison of the NAIC Life, P&C and Health RBC Formulas

Date: February 12, 2002

As requested, the following is a current draft to update our comparison dated December 1, 1999 of the three NAIC RBC formulas (Life, P&C and Health). The purpose of this comparison is to document where the formulas are substantially similar, where they differ, and the reasons for any differences that exist (as understood by one or more of the actuaries). The first comparison was provided to the NAIC in December of 1998. In several places we have noted work in progress on one or more of the formulas.

This report is structured into three sections as follows:

I. **Overview** - outlining the three formulas, side-by-side

II. **Summary of differences** - describing, in brief, the principal differences between the three formulas, and the reasons behind those differences (our understanding of the reasons). This is based on the 2001 formulas as adopted in July 2001.

III. **Detailed grids** - delineating how each of the three formulas handle the various risk elements faced by Life, P&C or Health companies. Identified risks and risk factors which are not reflected in any of the three formulas have been noted in footnotes to the Insurance Risk, Credit Risk and Miscellaneous Risk grids in the same way as the December 1999 Report. We are aware of the "Branded Risk Classifications" being used by the Risk Assessment Working Group (see attached) and the attempt to compare the Fed risk classifications to those identified by the NAIC. We do not believe that review of these items is appropriate by our Joint Task Force. Please be aware that the list of risk factors in these grids is not exhaustive.

Any questions regarding the attached material should be directed to the Academy through Meredith Detweiler, Financial Reporting Policy Analyst at the Academy at (202) 223-8196 or detweiler@actuary.org.

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Comparison of the NAIC Life, P&C and MCO RBC Formulas
Summary of Differences

Risk category	Life	P&C	Health
	Where found in the NAIC RBC formula (in whole or in part)		
(Invested) Asset			
Fixed Income	C1o	R1	H1
Equity	C1cs[1], C1o	R2	H1
Derivatives/replications	C1	-	-
Credit (non-invested assets)			
Reinsurance[2]	C1	R3, R4	H3
Heath Provider	C3b	-	H3
Other (misc. rcvbles)	-	R3	H3
Insurance			
Amount at risk	C2 (Life)	-	-
Premium	C2 (A&H)	R4	H2
Reserve	C2 (A&H)	R5	-
Interest rate risk	C3a	-	-
Business risk [3]			
Expenses	C4b	R5	H4
Separate Accounts	C4a	-	-
Guaranty fund	C4a	-	H4
Growth	-	R4, R5	H4
Other	C4a	R4, R5	-
Off balance sheet risk	C0	R0	H0
Investments in Insurance affiliates[4]	C0,C1o	R0,R2	H0,H1

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[1] Non-affiliated common stock plus common and preferred stock of non-insurance affiliates are in C1cs. Other types of equity (or non-fixed income) assets are in C1o.

[2] This chart lists the predominant location of reinsurance risk in the P&C RBC formula. Under certain conditions (e.g. that found in a company that cedes 100% of its business), all the reinsurance credit risk would be in R3.

[3] Depending how one defines business risk, the use of company experience adjustments (R4, R5) and the company expense ratio (R5) in the P&C RBC calculation may be considered a reflection of business risk.

[4] When the asset is held at market value and the market value exceeds the statutory book value, RBC on the allowed excess is included in C1o, R2 and H1.

Comparison of the NAIC Life, P&C and MCO RBC Formulas
Summary of Differences

Description of RBC components

Life RBC

C0	Insurance affiliate investment and (non-derivative) off-balance sheet risk
C1cs	Invested common stock asset risk
C1o	Invested asset risk, plus reinsurance credit risk except for assets in C1cs
C2	Insurance risk
C3a	Interest rate risk
C3b	Health provider credit risk
C4a	Business risk - guaranty fund assessment and separate account risks
C4b	Business risk - health administrative expense risk

Company action level RBC =

$$C0 + \left[(C1o + C3a)^2 + (C1cs)^2 + (C2)^2 + (C3b)^2 + (C4b)^2 \right]^{1/2} + C4a$$

P&C RBC

R0	Insurance affiliate investment and (non-derivative) off-balance sheet risk
R1	Invested asset risk - fixed income investments
R2	Invested asset risk - equity investments
R3	Credit risk (non-reinsurance plus one half reinsurance credit risk)
R4	Loss reserve risk, one half reinsurance credit risk, growth risk
R5	Premium risk, growth risk

Company action level RBC =

$$R0 + \left[(R1)^2 + (R2)^2 + (R3)^2 + (R4)^2 + (R5)^2 \right]^{1/2}$$

Health RBC

H0	Insurance affiliate investment and (non-derivative) off-balance sheet risk
H1	Invested asset risk
H2	Insurance risk
H3	Credit risk (health provider, reinsurance, misc. receivables)
H4	Business risk (health administrative expense risk, guaranty fund assessment risk, excessive growth)

Comparison of the NAIC Life, P&C and MCO RBC Formulas
Summary of Differences

Company action level RBC =

$$H0 + \left[(H1)^2 + (H2)^2 + (H3)^2 + (H4)^2 \right]^{1/2}$$

Comparison of the NAIC Life, P&C and Health RBC Formulas
Summary of Differences

Invested Asset Risk

The risk factors for investment grade bonds are the same for the P&C and Health formulas. The Life formula reflect new pre-tax factors as well as tax adjustment factors which recognize the more immediate impact of the tax effect (based on deferred tax accounting per SSAP No. 10 *Deferred Taxes*) starting in 2001. For other investments, there is one set of risk factors in the Life RBC formula, and a different set in the P&C and Health RBC formulas. The factors differ for the following reasons:

- Different accounting bases (e.g. for bonds class 3-5, P&C and Health use market, Life uses amortized cost and Life has a requirement for AVR.)
- Different level of significance to the industry (e.g. mortgage investments are much more common for Life insurers than P&C insurers or Health entities, hence the risk factors are much more detailed for Life than P&C or Health. Also, property can be much more important for a Health entity than a Life or P&C insurer when that property is a hospital or other part of the health-care delivery system, hence the greater Health focus on property.).
- Different risk assessment assumptions (e.g. the Life common stock risk factor of 30% pre-tax assumes a two year holding period, effect of losses at any time and a 5% probability of ruin. The P&C and Health common stock risk factor of 15% assumes a one year holding period, recognizes only losses at the end of the first quarter and a 1% expected policy holder deficit.)

The Life and P&C formulas have invested asset default risk[1] split into two covariance terms. For P&C the split is between fixed income risk and equity risk. This P&C split is based on an analysis of common stock versus bond risk correlation. For Life the split is between common stocks (all unaffiliated plus non-insurance affiliated common and preferred) and all other asset default risk. The Health formula includes all invested asset risks in one covariance term. The Health RBC Working Group received an Academy proposal to separate assets in a slightly different manner during 2001. Review of this proposal did not occur in 2001.

The Health formula contains asset risk charges for furniture and equipment, due to their importance in health care delivery (e.g. MRI machines, hospital beds). These factors also apply to admitted asset values for EDP equipment and software. The other formulas instead rely exclusively on admitted/non-admitted asset rules for these items.

The Life RBC formula contains asset risk charges for derivatives and replications (synthetic assets). The P&C formula will have special treatment of replications beginning in 2002. It also

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[1] Asset default risk includes both the risk of default interest and principle and the potential for a change in market value due to a lower credit rating.

applies new rules to Modified Coinsurance and Funds Withheld Reinsurance so that the assuming carrier will apply RBC factors (C1cs, C1o and C3) to the assets related to the coinsurance/reinsurance.

Credit Risk

The three formulas treat credit risk very differently. The items that get risk charges differ, the sizes of the risk charges differ, their placement in the covariance formula differs, and the treatment of ceded amounts ("cedes") to affiliates differs.

The LRBC formula reflects only reinsurance credit risk and health provider capitation credit risk (starting in 1998), with no credit risk charge for other receivables. The reinsurance credit risk charge is 0.8% pre-tax (with the tax adjustment factor of .35, the post-tax value remains 0.5%) of ceded balances, based on the understanding that this risk is comparable to a class 1 or class 2 bond, with an offset for funds held. The resulting risk charge is included in C1o, typically the biggest item for life insurers. There is no charge for cedes to affiliates if the affiliate is 100% owned by the company in question. All other affiliate cessions are treated the same as cedes to unrelated entities. (The capitation credit risk charge is by itself in the Life covariance formula, and uses the same format and factors as the HRBC formula. See the Health discussion below for more details.)

The P&C formula applies a risk charge to most receivable items from the balance sheet that are not already reflected via non-admitted asset rules. The charge for ceded reinsurance is 10% of ceded balances, with the 10% based on judgement, and with no offset for funds held. The resulting reinsurance credit risk charge is split evenly between R3 and R4 (the latter is frequently the biggest covariance item for P&C insurers). There is no charge for cedes to any U.S. affiliates, regardless of ownership percentage or hierarchy, or certain pools. The risk charges for non-reinsurance related credit risk are generally smaller than the reinsurance credit risk charges, and are all in R3.

The HRBC formula generally follows the Life formula for reinsurance credit risk charges, the P&C formula for non-reinsurance credit risk charges and adds two additional types of credit risk charges: one for credit risk arising from capitation[2] and another for credit riak arising from health care receivables. The capitation charge is a percentage of capitations paid to providers (roughly equal to two weeks of paid capitations[3]), or a larger percentage of capitations paid to intermediaries and other Health entities, reduced for any security pledged by the receiving entity.

[2] Capitation payments to providers or intermediaries are effectively advance payments for service to insureds. The credit risk is that the provider or intermediary will not be able to provide the prepaid service, requiring the insurance company to pay again for providing the service to insureds.
[3] The implication here is that, on average, two weeks of capitation payments will be lost before realizing that the provider has stopped fulfilling its obligations and capitation payments are ceased.

The total credit risk charge is by itself in the covariance formula. (The capitation risk charge was also introduced into the Life formula, starting in 1998).

Insurance Risk

Since the insurance products are different[4] for Life, P&C and Health companies, the insurance risk formulas are different.

The LRBC formula essentially has two different approaches to insurance risk, one for life products and one for health products. The life insurance risk charges are based on the net amount at risk. The health insurance risk charges are based on (Exhibit 9 claim[5]) reserves and premiums, and have been modified to bring them in line with the Health formula[6]. There is recognition of the insurer's size (measured by the amount of exposure), but not its experience. All the resulting risk charges are included in one covariance item. The Life formula does not include any factor for the risk of increased growth. The Life formula does not include any factor for growth. There is no C-2 charge for annuities or surrender-value portion of life products, due to the understanding that statutory reserves for companies with these products already provide for this risk.[7] The C-2 factors for 2001 for life insurance and LTC are unchanged. Higher “pre-tax” factors have been also determined such that after applying a tax-adjustment factor of .35, the post-tax RBC values for 2001 are essentially the same as the direct use of 2000 factors. See below for details of the combined insurance/asset risk under Interest Rate Risk

The P&C RBC formula has factors applied to (loss and loss expense) reserves and premiums. There is no recognition of the insurer's size, but there is recognition of its own experience. The resulting risk charges are split into two covariance terms, one for reserve risk and one for premium risk. There is also a growth charge, based on the group's (not just the company's)

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[4] The health insurance risks being the one exception.

[5] Exhibit 9 claim reserves represent reserves for existing obligations, but for which the underlying service has not been provided or payment due. For example, for the 12/97 statement, the reserve for a medical claim that has yet to be presented but for which the treatment date was 11/97 would be included in Exhibit 11, while the disability income payments due in 1998 resulting from a covered 1997 disabling event would be included in Exhibit 9.

[6] The LRBC formula retains a surcharge for certain Individual Medical premiums relative to the "standard" risk factor for Group premiums. The HRBC formulas never had a surcharge.

[7] This reflects a major difference in reserving philosophy between life insurance and casualty insurance. Life insurance reserves are set so as to accommodate a normal range of variation in results. Property & casualty insurance reserves are set on a best estimate basis, such that half the time the ultimate payouts will be greater than the reserve, and half the time they will be less than the reserve. Therefore, statutory surplus for life companies is sometimes thought of as protecting against unusual (unfavorable) variation in results, with reported reserves (including additional actuarial reserves if considered necessary as part of the actuarial opinion) covering normal variation, while statutory surplus for P&C companies is thought of as protecting against all unfavorable variation in results. This major difference in reserving philosophies is beyond the scope of this summary / comparison.

written premium growth for the last three years, which increases both the reserve and the premium risk charges for growth over 10%.

The HRBC formula has factors applied to premiums but not reserves (the health products usually written by a Health entity are not believed to generate Exhibit 9-type reserves). There is recognition of the insurer's size but not its experience. Insurance risk is included in a single covariance item. A growth charge is included in the HRBC formula, but it is treated as a business risk, not an insurance risk since it relates to relative changes in RBC to changes in premium - suggesting a change in types of risks accepted.)

Changes in 2001 were made to the LRBC formula to recognize the risks of different types of disability income insurance products and use a new set of factors based on updated data and a new model for evaluating the risk of ruin. The HRBC Working Group plans to review any changes implemented for the LRBC formula for inclusion in the 2002 HRBC formula.

Interest Rate Risk/Cash Flow Needs

This risk is currently reflected only in the Life RBC formula. A more robust approach for the Life RBC formula was adopted in 2000 for companies with specific risk characteristics (highly interest sensitive product and selected investments). The after-tax factors for 2001 are essentially unchanged. Pre-tax factors were developed such that after a tax adjustment factor of .35, post-tax RBC in 2001 is comparable to that for 2000.

A proposal for reflecting P&C interest rate risk was turned down as too complicated, especially relative to its perceived significance to P&C solvency regulation. For Health entities, concerns for developing liquidity risk measures are being addressed by the Health Entities Working Group.

Business Risk

This risk is recognized explicitly in the LRBC and HRBC formulas but not in the P&C formula.

The LRBC business risk factor was based primarily on litigation and guaranty fund risk, a factor applied to separate account reserves was added in 1999. A charge related to Health Administrative Expenses is included to keep that Life formula in line with the Health formula. The Health Administrative Expense charge is included under the radical in the covariance formula, a separate item. The RBC for other business risk is outside the radical in the Life RBC formula.

The HRBC business risk calculation generally follows the Life formula approach mentioned above, except that the risk related to guaranty fund assessments is applied against premiums subject to assessment and all business risk is in a single covariance item, under the radical. In addition, HRBC business risk (found in H4) includes a growth charge based on the one year growth in a component of H2, where this growth is greater than the growth in the underlying revenue plus 10%.

The P&C RBC formula does not explicitly recognize business risk, except that the reserve and premium risk items reflect company loss experience, and the premium risk item incorporates the company's expense ratio.

Off Balance Sheet Risk

All the formulas follow essentially identical approaches for these risks.

Investments in Insurance Affiliates

All the formulas now follow an approach for common and preferred stock investments in insurance affiliates that potentially applies different risk factors to the book value of affiliates and to the excess (based on market value), if any. There are subtle but important differences.

The risk charge relating to the book value is included in the C0, R0 and H0 components. Only the P&C formula recognizes investments in affiliates' bonds as affiliate investments. None of the formulas provide special treatment to investments in affiliates that show up in the Other Invested Asset schedule (e.g. Texas Lloyds companies common in P&C insurance). Both the P&C and Health formulas cap the charge at the carrying value for the subsidiary, with no such cap in the Life formula. For insurance affiliates not in the US or Canada, the Life RBC and Health RBC formulas apply a charge of 100% while the P&C RBC formula applies a charge of 50%. For 2001 the Life RBC formula does not recognize Health RBC filers as insurance affiliates (they are treated as non-insurance affiliates[8]).

Beginning in 2000, there is also a charge for insurance subsidiaries held at market value. The excess of carried market value over book value has a 22.5% charge applied (for Life RBC this is the after tax charge), to be placed in the C1o[9], R2 and H1 components of the respective RBC formulas.

Investments in Non-Insurance Affiliates

All of the formulas apply a similar approach for this risk but the factors differ: 22.5% for P&C RBC, 30% for Health RBC and 30 % pre-tax factor for Life RBC.

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[8] We believe that this is an inadvertent error due to not having a specific live or instruction to report the Health RBC amount.
[9] The 22.5% represents the post-tax value.

Covariance Adjustment

All the formulas contain a covariance adjustment. (This adjustment reflects the fact that the cumulative risk of several independent, i.e. uncorrelated, items is less than the sum of the individual risks[10].) All the formulas keep insurance affiliate equity investment risk and off-balance sheet risk out of the covariance adjustment. The formulas vary, however, in which items within the covariance adjustment are assumed to be uncorrelated to each other.

The LRBC formula combines reinsurance credit risk, interest rate risk and most asset default risks in a single covariance item, i.e. it treats these risks as if they are correlated. The remaining piece of credit risk (health provider credit risk) and the non-affiliated common stock asset risk are treated as two separate covariance items. All insurance risk is combined into a single covariance item. Business risks are split into two covariance items, one piece (health administrative expense risk) inside the covariance formula, and the remainder outside the covariance formula. In a number of items under the radical varies.

The P&C RBC formula separates asset risks into two separate covariance components, fixed income asset risk and equity asset risk. Credit risk is also usually split[11], with half of reinsurance credit risk included with other credit risk in a single covariance item, and the other half of reinsurance credit risk added to reserve risk[12]. Insurance risk is split into two covariance items (reserve risk and premium risk). Business risk is only reflected to the extent it is associated with premium or reserve adequacy, hence it is combined with the premium and reserve risk items. Interest rate risk is not reflected.

The HRBC formula includes all of asset risk in one covariance item, all insurance risk in another covariance item, all credit risk in a third covariance item, and all business risk in a fourth covariance item.

[10] The adjustment follows these steps:

a. Add together items that are believed to be correlated, so that what is left is groups of risk items believed to be substantially uncorrelated to each other.
b. Square these resulting groups.
c. Add the resulting squares together.
d. Take the square root of the result.

[11] The word "usually" refers to the fact that credit risk treatment under the P&C formula can vary, depending on the relationship of reserve risk to reinsurance credit risk. Under the formula, most companies will see the covariance treatment described above, but shell companies or companies that cede substantially all their business will see all credit risk included as a single covariance item.

[12] The split of reinsurance credit risk in the P&C formula was a compromise between the desire for the charge to remain significant after covariance (accomplished by adding the charge to frequently the largest item in the P&C covariance calculation - reserve risk), and the acknowledgement that many reinsurer insolvencies are caused by things other than reserve risk.

Comparison of the NAIC Life, P&C and Health RBC Formulas
Summary of Differences

The covariance adjustment drastically reduces the importance of the smaller items, and increases the dominance of the biggest items affected by the adjustment[13]. The dominating items vary for Life, P&C and Health companies. In addition, the number of items and how they are combined under the radical effects the impact. Life insurers tend to have asset risks (other assets in C1o) dominate their covariance adjustment. Health entities tend to have underwriting risk (H2) dominate. P&C insurers tend to have insurance risk dominate, with reserve risk (R4) dominating for commercial lines companies, a mix of premium (R5) and reserve risk for personal lines companies, and premium risk dominating for start-ups. The number of items under the radical is 5 for Life, 4 for Health, and 5 for P&C.

Taxes

As noted throughout, the Life RBC formula has tax factors to adjust all risk values to consistent after-tax values. Most were already on an after-tax basis in 2000. The P&C and Health RBC formulas did not change any risk factor for changes in deferred tax accounting under codification for 2001, hence the current changes for these two formulas still retain the same implicit tax assumptions they have in the past.

The Life RBC formula includes an expanded "sensitivity test" reporting pre-tax RBC values and modified TAC (without DTAs and DTLs). This allows the regulator to analyze the full sensitivity test or anything in between which may be appropriate depending on taxes paid, tax-sharing agreements, splits between income tax and capital gain tax for carrybacks, etc. The other two RBC formulas can also be reviewed using modified TAC to exclude all or part of DTAs and DTLs but there is no adjustment to the RBC values available.

All three formulas include the values of DTAs and DTLs in TAC.

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[13] This can be seen from the following simplified example, where only two items are contained in the covariance adjustment.

A	B	A+B		$(A^2+B^2)^{0.5}$	% reduction in B's influence
10	1	11	vs	10.05	95%
10	5	15	vs.	11.18	76%
10	9	19	vs.	13.45	62%

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed Grid – 2001 Asset Risk Factors

	L&H Ins. Cos. Statement Value	Pre-Tax RBC %	Tax Adjustment %	P&C Ins. Cos., Health Entities Statement Value	After-tax RBC %[1]
1. **Bonds** (Long-Term & Short-Term) Class 1 - U.S. Govt. Backed	Amort. Cost	0.0%	n/a	Amort. Cost	0.0%
Class 1 - Other	Amort. Cost	0.4%	26.25%	Amort. Cost	0.3%
Class 2	Amort. Cost	1.3%	26.25%	Amort. Cost	1.0%
Class 3	Amort. Cost	4.6%	26.25%	Lower Amort. Cost/Mkt.	2.0%
Class 4	Amort. Cost	10.0%	26.25%	Lower Amort. Cost/Mkt.	4.5%
Class 5	Amort. Cost	23.0%	26.25%	Lower Amort. Cost/Mkt.	10.0%
Class 6	Lower Amort Cost/Mkt.	30.0%	35.0%	Lower Amort. Cost/Mkt.	30.0%
U.S. Gov Agency Class 1	Amort. Cost	0.4%	26.25%		
Affiliated					
U.S. Insurers	Same		Same based on Class	Same based on Class	RBC of Sub[1]
Other Insurers	Same		Same based on Class	Same based on Class	50.0%
Investment	Same		Same based on Class	Same based on Class	RBC of Sub[1]
Other	Same		Same based on Class	Same based on Class	22.5%
Bond size factor		Based on # of bonds			Based on # of bonds
2. **Preferred Stocks**					
a. Sinking Fund (unaffiliated)					
Class 1	Amort. Cost	1.1%	26.25%	Amort. Cost	2.3%
Class 2	Amort. Cost	3.0%	26.25%	Amort. Cost	3.0%
Class 3	Amort. Cost	7.2%	26.25%	Lower Amort. Cost/Mkt.	4.0%
Class 4	Lower Amort. Cost/Mkt.	15.0%	26.25%	Lower Amort. Cost/Mkt.	6.5%
Class 5	Lower Amort. Cost/Mkt.	25.0%	26.25%	Lower Amort. Cost/Mkt.	12.0%
Class 6	Lower Amort. Cost/Mkt.	30.0%	35.0%	Lower Amort. Cost/Mkt.	30.0%

[1] These are approximate rounded values. The formula uses the unrounded result of the Pre-Tax RBC% times (1 minus the Tax Adjustment %).

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed grid - Asset Risk Factors

b. Perpetual (unafffiliated)					
Class 1	Cost	1.1%	26.25%	Mkt. Val.	2.3%
Class 2	Cost	3.0%	26.25%	Mkt. Val.	3.0%
Class 3	Cost	7.2%	26.25%	Lower Cost/Mkt.	4.0%
Class 4	Lower Cost/Mkt.	15.0%	26.25%	Lower Cost/Mkt.	6.5%
Class 5	Lower Cost/Mkt.	25.0%	26.25%	Lower Cost/Mkt.	12.0%
Class 6	Lower Cost/Mkt.	30.0%	35.0%	Lower Cost/Mkt.	30.0%
c. Affiliated					
U.S. Insurers	Cost	RBC of Sub	0	Cost	RBC of Sub[1]
Other Insurers	Cost	100.0%		Cost	50.0% (100% Health)
Investment Subs	Cost	RBC of Sub	0	Cost	RBC of Sub[1]
Other	Cost	20.0%	0	Cost	22.5%(30% Heatlh)
3. **Common Stocks**					
Unaffiliated					
Non- Government					
MM Funds	Mkt. Value	0.4%	35.0%	Mkt. Value	0.3%
Fed Home Ln Bnk	Mkt. Value	1.1%	35.0%	Mkt. Value	15.0%
Private Common	Mkt. Value	30.0%	35.0%		
Net Other Common	Mkt. Value	22.5% - 45.0%[2]	35.0%	Mkt. Value	15.0%
Affiliated (non-0 component)					
U.S. Insurers	Excess of Adj. Mkt Value over Stat B.V.	34.6%	35.0%	Excess of Adj. Mkt Value over Stat B.V.	22.5%
Investment Subs	Various	Adjusted RBC of Sub[3]		Various	RBC of Sub[1]
Investment in Parent		46.2%	35.0%		
Other	Various	46.2%	35.0%	Various	22.5%
Affiliated (0 component)					
U.S. Insurers	Stat. B. V.	Adjusted RBC of Sub[3]	35.0%		
Canadian Life Subs.		Adjusted MCCSR[4]	35.0%		
Other Insurers	Stat. B.V.	100.0%	0.0%	Stat. B.V.	50.0%
4. **Mortgage Loans**					
a. In good standing		Min Base Max			
Original (unrestructured):					
Govt. Insured	O/S Principal	0.14%	26.25%	O/S Principal	5.0%
OtherResidential (1-4)	O/S Principal	0.68%	26.25%	O/S Principal	5.0%
Farm/Agricultural	O/S Principal	2.60%	26.25%	O/S Principal	5.0%
Other Commercial	O/S Principal	2.60%	26.25%	O/S Principal	5.0%

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed grid - Asset Risk Factors

Restructured (all)	Adj O/S Principal	9.0%[5]	26.25%	Net O/S Principal[6]	5.0%
). In Default - Not in Process					
Govt. Insured	O/S Principal***	0.27%[7]	26.25%	Net O/S Principal[6]	5.0%
Other Residential (1-4)	O/S Principal***	1.40%[7]	26.25%	Net O/S Principal[6]	5.0%
Farm/Agricultural	O/S Principal***	18.0%[7]	26.25%	Net O/S Principal[6]	5.0%
Other Commercial	O/S Principal***	18.0%[7]	26.25%	Net O/S Principal[6]	5.0%
. In Process of Foreclosure					
Govt. Insured	O/S Principal***	0.54%[7]	26.25%	Net O/S Principal[6]	5.0%
Other Residential (1-4)	O/S Principal***	2.70%[7]	26.25%	Net O/S Principal[6]	5.0%
Farm/Agricultural	O/S Principal***	23.0%[7]	26.25%	Net O/S Principal[6]	5.0%
Other Commercial	O/S Principal***	23.0%[7]	26.25%	Net O/S Principal[6]	5.0%

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed grid - Asset Risk Factors

	L&H Ins. Cos. Statement Value	2001 Pre-Tax RBC %	Tax Adj %	P&C Ins. Cos., Health Entities Statement Value	2001 RBC %
Real Estate					
Acquired by Foreclosure	Depr. Cost Net of Encumb.	23.0% on Net plus 20.0% on Encumb*	35.0%	Depr. Cost Net of Encumb.	10.0% on Net plus Encumb.
Other - Incl. Co. Occupied	Depr. Cost Net of Encumb.	15.0% on Net plus 12.0% on Encumb*	35.0%	Depr. Cost Net of Encumb.	10.0% on Net plus Encumb.
Other Invested Assets (Sch. BA)			(some sub-categories may be at 35.0%)		
Like Bonds - with Ratings	Various	Same as Bonds	26.25%	Various	20.0%
Surp&Cap Notes - Rated	Various	Same as Pref. Stk.	26.25%	Various	20.0%
Like Pref. - with Rating	Various	Same as Pref. Stk.	26.25%	Various	20.0%
Like Mortgages	Various	Same as Mortgages	26.25%	Various	20.0%[8]
Like Real Estate	Various	Same as Foreclosed RE	35.0%	Various	20.0%[8]
Collateral Loans	Various	6.80%	26.25%	Various	5.0%
All Other	Various	30.0%	35.0%	Various	20.0%[8]
Other Cash & Investments					
Cash		0.4%	26.25%		0.3%
Other S-T Investments		0.4%	26.25%		0.3%
Derivative Instruments		Same as Bonds	26.25%		5.0%
Premium Notes		6.80%	26.25%		5.0%
Misc. Investments		6.80%	26.25%		5.0%
Asset concentration factor					Additional 100% charge for 10 largest exposures[9]
Common Factor					
Common Stock Factor		Additional 50% charge for 5 largest exposures			
Other than Common Factor		Additional 100% charge for 10 largest exposures[10]			

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[1] For P&C Ins. Cos. Only, RBC of subsidiary assigned first to common, then excess, if any, to preferred, then excess, if any, to debt.

[2] The average pre-tax factor of 30.0% is adjusted up or down by the weighted average beta for the portfolio subject to the minimum and maximum values shown. The beta adjustment is the same as the adjustment in the AVR calculation.

[3] Adjusted RBC is RBC of Subsidiary after covariance divided by 1 minus .35 (current tax rate).

[4] Adjusted MCCSR is the MCCSR of Subsidiary divided by 1 minus .35.

[5] Or 2.60% times experience adjustment factor plus 2.0% if greater.

[6] Value net of write-downs.

[7] Calculated on a mortgage by mortgage basis using the value plus write-down times factor less full write-down or the “in-good standing” RBC if greater.

[8] For HMDI & HMO, factor is 10%, for Health Care Delivery Assets (included with Real Estate).

[9] Excluding those with 30% pre-tax charge already. Bonds and stocks issued from same entity are grouped together as one exposure.

[10] Excluding those with 30% pre-tax charge already.

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed Grid – Comments on Asset Risks

Note: Health asset factors have generally adopted the P&C values for invested assets. The primary difference, as noted, is in Real Estate.

Bonds (unaffiliated):

- The P&C and Health factors were set at the same level as the 2000 L&H factors except for Classes 3, 4 and 5 which were set at ½the L&H factors to take into account the difference in valuation basis – Lower of Amortized Cost or Market Value vs. Amortized Cost. 2001 Life factors are higher pre-tax and lower after-tax to reflect the impact of deferred tax recognition in updated underlying models. The results of the updated models for these Life factors also recognize current AVR treatment.

Preferred Stocks (unaffiliated):

- The P&C and Health factors were set at the bond factor plus 2% for each Class except Class 6 which was held at 30%. This is the same basis used for the L&H factors through 1997.
- New factors were used starting in 1998 for Life preferred stocks based on study of preferred stocks. A further change was made in 2001 to recognize deferred taxes.
- The P&C preferred stock factors were not changed to reflect the 1998 study results. Different risk factors can be justified by different accounting treatment (statutory accounting relies more on market values for P&C and Health than Life), the overall importance of preferred stocks and the size of any potential change.

Common Stocks (unaffiliated):

- The P&C factor of 15% is based on different assumptions than the L&H factor of 30% pre-tax. For P&C, a one-year holding period was assumed, and historic market fluctuation from quarter-end to quarter-end was analyzed. For L&H, a two-year holding period was assumed, and historic fluctuation data included interim losses. The relatively higher significance of common stock holdings to P&C companies played a role in arriving at the 15% factor which is higher than the studies deemed necessary. The L&H after-tax factor is approximately 20%.
- Starting in 2001, the Life RBC after-tax factor is 19.5% and the RBC for most common stocks is further up or down by the weighted average beta for the portfolio. The beta adjustment is the same as the adjustment in the AVR calculations.

Investments in Affiliates:

Bonds:

- The L&H formula applies the same RBC factors to affiliated bonds as to unaffiliated bonds. The P&C formula treats RBC for an affiliated bond as covered by total RBC of the affiliate. If Total RBC of the affiliate is less than the total preferred and common equity of the affiliate, no RBC is ascribed to the debt of the affiliate.

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed Grid – Comments on Asset Risks

Preferred and Common Stocks:

- RBC requirements for investments in U.S. and Canadian Insurers and for Investment Subsidiaries are essentially the same.
- There is a difference between the L&H and P&C requirements for Other Alien Insurers and Other types of affiliates. The Life formula assumes that the surplus of Other Insurers is the amount necessary - i.e. it applies a 100% RBC factor to the value of these investments (the Other Insurer's capital and surplus). The P&C formula assumes that some portion of the surplus can support the parent's other risks, resulting in a 50% charge. For Other types, the P&C formula applies a 19.5% RBC factor for this common stock. The Life formula applies a 34.5% RBC factor (pre-tax) and 19.5% after-tax.

Mortgage Loans:

- The P&C factor of 5% for all mortgage loans was used primarily because mortgage loans are a relative insignificant holding of these insurers, and the P&C investment schedules did not provide all the detailed groupings available in the L&H investment schedules. The 5% factor was set without significant analytical justification. The L&H factors are based on studies and are subject to an Experience Adjustment relative to the Industry experience which creates the range of factors. The L&H factors are, therefore, continually revised based on evolving company and industry default data.

Real Estate:

- The P&C factor is 10% for all real estate and the factor is applied to the statutory carrying value[1], plus encumbrances. There are separate L&H factors for real estate acquired by foreclosure vs. all other as well as different factors applied to the statutory carrying value and the encumbrances. The Health formula calls this category "Property & Equipment" and includes items such as furniture and medical equipment (e.g. MRI machines). This reflects the importance of these items to the delivery of health care, and the different non-admitted asset rules for these items those for Health Entities versus P&C and L&H companies.

Other Invested Assets (Schedule BA):

- A flat 20% factor was set for P&C companies. A 30% factor was set for L&H companies except for investments with the underlying characteristics of bonds, preferred stocks, mortgages or real estate if established by an independent rater. One exception which is consistent for all three formulas is that Collateral Loans use a 5% factor.

Asset Concentration

[1] Statutory carrying value is generally cost reduced for depreciation and encumbrances.

Comparison of NAIC Life, P&C and Health RBC Formulas
Detailed Grid – Comments on Asset Risks

- For P&C and Health, the calculation is still based on the top 10 issuers (i.s., entities/corporations) that the insurer is exposed to, with the charge for each asset from that issuer doubled (to maximum total charge of 30% for each asset). These increased charges for each asset are assigned to the same location in the covariance formula that the base charge was assigned (e.g., all to H1 for the Health formula, and to either R1 or R2 for the P&C formula depending on whether the asset was fixed income or equity).
- In 2001, the Life formula separates the asset concentration risk calculation into two parts. The one for C-1o is unchanged – applying an extra 100% of RBC (not to exceed a total of 30% pre-tax) to the largest 10 assets (by statement value). A new concentration risk calculation for C1-cs adds 50% of the RBC after an adjustment for the stock's beta value to each of the 5 largest common stock holdings (on a consolidatied basis including insurance and investment subsidiaries). There is a minimum addition (11.25%) of each stock's RBC and maximum (22.5%).

		P&C	Health	Life
A.	General			
1	Pricing/Underwriting Risk			
Risk:	Future Pricing risk (I.e. business that will be priced in the future)	factor x Written Premium	Not reflected	Not reflected directly. Considered as a part of C-4.
Risk:	Past pricing, future event risk	To the extent captured by the Unearned Premium reserve (UPR), there is no RBC reflection. The reason is that acquisition costs are incurred up front under P&C statutory accounting, but the UPR reserve does not reflect this. Therefore the conservative accounting for prepaid expenses and the UPR already covers this risk, and any added RBC load would have been redundant. For contracts with delayed booking of written premium, the charge applied to WP does provide a nominal charge for this risk.	("Tiered" factor) times (EP) times (Loss Ratio) times (1 - Managed Care credit) for major Health lines. ["Tiered" factor refers to a factor that varies with successive layers of EP volume, e.g. one factor for first $X million of EP, and a different factor for next $Y million, etc..]	Health: factor x EP. (Details same as Health for Health lines, but tiered factor x EP without further adjusting for DI, LTC, and some supplemental coverage.) Life: factor times amount at risk. Annuity: na The factors used are "tiered", such that one factor applies to the first $X million, a different factor applies to the next $Y million, etc..
2	Reserving Risk			
Risk:	Past events - estimation (and process?) risk	factor x Loss Reserve	Not reflected.	factor x (Health) claim reserve

	P&C	**Health**	**Life**
3 Risk Variations by Line/Product to Reflect product (i.e. line) risk differences:			
How:	factors vary by line	factors, tiering vary by "line".	factors, tiering vary by "line"
Line/product definitions:	There are 18 lines. These lines follow the line structure in Schedule P of the P&C blank, except that: (1) the claims made vs. occurrence split is only recognized for Med. Malpractice, (2) and the Reinsurance A and Reinsurance C lines are combined	There are separate factors or factor sets for 9 different "lines" (Medical Coverages, Dental Coverages, Medical Supplemental, Disability Income, LTC, Stop-Loss/Minumum Premium, HI/Specified Disease, AD&D and Other Accident). There is also special recognition for FEHBP and for other types of coverage that do not fit into one of the above lines.	Same as Health for Health lines. All life exposure is combined to determine net amount at risk.
Line/Product overlap			
4 Risk variations by Licence/Blank Used			
Accident & Health	All A&H lines lumped in "Other", along with Credit insurance, if A&H premium is under 5% of total premium for all three of the latest years (including the current year). If 5%, or more, the formula brings in the Life formula factors and formulas for this business, although it retains the P&C covariance structure.	These are the lines the formula is designed to cover. Generally the NAIC had tried to keep the Health H-2 factors and the Health factors for C-2 in Life RBC formula the same. Formula change timing and covariance rules can produce some differences.	See Health. For 2001 the Life formula incorporates pre-tax factors and non-zero tax-adjustments for some health lines which are not in the Health formula. New DI factors is used in 2001 as well.
Group Health Stop Loss	Recorded under the "Other Liability" line, where the reserve charges (in percentage terms) generally run in the mid to upper 20's.	Separate line of business effective in 1999 with factor of 25% of premium.	A portion of Group A&H with unique RBC factor. Instructions provide a definition of coverage for which the premium is to be reported as stop-loss. Same factor as Health.
Structured settlements (arising from Liability and WC claims)	A tabular discounted reserve is held under the line which generated the initial P&C claim. Hence RBC charges (before covariance) generally run between 10% and the mid 35's after covariance.	NA	Coded as annuities, which receive no ins. risk charge under the Life formula. Annuities do receive an Interest rate risk charge (C3) of 1 to 1.5%. Charges also apply to the underlying assets.
Excess Workers' Compensation	The charge for the ceding company is roughly 5% after covariance (see reinsurance discussion below). The assumed charge is in the mid 30's, since it would be coded as "Reinsurance B". The charge for retained reserves from excess WC cover of a self-insured is in the mid to upper 20s, since it would be coded as "Other Liability".	N/A	To the extent coded in Group A&H, it is treated like any other Group A&H. Reserves placed in Exhibit 11, including those categorized as IBNR, do not get an RBC charge. Reserves placed in Exhibit 9 get a 5% charge, placed in C2. Any retrocession of this business gets the same treatment as any other ceded amounts (i.e. a 0.5% charge), placed in C1.

5 Risk Variations by Company

	P&C	Health	Life
RBC Factor based on company-related adjustment to "base" factor	Adjust factors based on company vs. industry experience. All companies with enough history (at stable volume) get 50% credibility.	For certain health lines (Medical coverage, Dental coverage, Medicare Supplement, and other) the health premium is multiplied by the company's loss ratio before the RBC factor is applied.	For certain health lines (Medical coverage, Dental coverage and Medicare Supplement) the health premium is multiplied by the company's loss ratio before the RBC factor is applied.
Pricing risk for expenses	Premium risk incorporates company expense ratio.	Reflected in Business Risk	Reflected in Business Risk for health
Risk of significant growth	If gross 3 year average group WP growth is over 10%, factor times latest year WP added to R5, and different factor times total reserve added to R4.	If component of insurance risk shows one year growth greater than associated revenue growth plus 10%, then half of this excess growth is added to business risk charge (H4).	Not reflected
New Company	Not reflected,other than through use of a high 1st yr growth rate and lack of company experience adjustment.	Not reflected, other than through use of "tiered" factors.	Not reflected, other than through use of "tiered" factors applying higher charges to the amounts (premium, net amount at risk) up to the stated amounts with lower factors for the amounts in excess of the limit.
Small Company	Not reflected	Reflected through the use of "tiered" factors by line. Companies with low volume in a line end up with a higher average risk factor for the line. In addition, an alternative minimum risk calculation exists based on the net retention on an individual risk basis, for some health issues.	Reflected through the use of "tiered" factors by line. Companies with low volume in a line end up with a higher average risk factor for the line. Alternative minimum risk calculation applies to some health lines.

B **Treatment of risk mitigation strategies**

1 **Risk Transfers**

	P&C	Health	Life
Reinsurance For further details, see the Reinsurance receivables/recoverables section of the Credit risk grid.	Factors applied to amounts net of reins. Half the related reinsurance credit risk charge is added to a portion on insurance risk (i.e. reserve risk, or R4) under covariance, with the other half in with other credit risk (R3) under covariance.	Factors applied to amounts net of reinsurance. The related credit risk is in a separate category under covariance (H3).	Factors applied to amounts net of reinsurance. The related credit risk is included in C1o, with other asset risk.
Deductibles	Factors applied to amounts net of deductible.		Factors applied to amounts net of deductible.
Loss-sensitive contracts and other policy experience credits	Percent credit applied to extent WP or loss reserve is from loss sensitive business. Credit is 30% of the charge for primary lines, 15% for reinsurance lines.	same as Life	Partial (50%) credit for premium stabilization reserves.
Dividends	Not reflected as a risk item. In addition, neither the premium base (for R5) nor the expense ratio include the impact of dividends.	Not reflected	Partial (50%) credit for future dividend reserves applied to "adjusted capital." Not otherwise reflected.
Policy Limits	Not reflected, other than to extent reflected in company experience adjustment through historic loss ratio or reserve development impacts.	The net retention on an individual risk basis is used in calculating the alternative minimum insurance risk charges unless retention exceeds the formula cap.	For life products, the charge is based on net amount a of insurance, net of reinsurance, less net reserves. For health products, same as Health.
Other		Managed Care credits reflect transfer of insurance risk to other Health Entities or providers. Credit risk from providers accepting capitation risk is provided for in H3. The non-zero credits range from 10% to 50%.	Same as Health, but with the risk placed in C3. Managed care credits not allowed where the intermediaries are non-regulated affiliates.

2 Diversification

	P&C	Health	Life
Across Product Lines	Concentration factor gives credit for prem or res diversification across lines. Maximum credit is theoretically 30% for uniform spread across lines. Credit calculated separately for premium (R5) and reserve (R4) risk.	Not reflected	Not reflected
Multi-company Pooling	For a pool member, company experience adjustment is based on data of the entire multi-company pool due to the use of Schedule P data.		

		P&C	Health	Life
3	Covariance			
a	Relating solely to Insurance Risks	Two separate covariance items, R4 and R5. Related credit risk is split 50/50 between R3 and R4 (except for shell or "fronting" company).	One covariance item, H2, with related credit risk in H3.	One covariance item, C2, with related credit risk in C1 (reinsurance) and C3b (capitation).
b	Covariance for the Formula in Total - The impact of any factor is reduced less if that risk dominates. The "normal" or expected dominate risk varies for 3 formulas.	For vast majority of companies, R4 and/or R5 dominate, making other risk components relatively immaterial for RBC. .	In general, the H2 factor dominates the calculation, making other items in the covariance formula relatively immaterial.	For life insurers, the C1 factor dominates the calculation, making other items in the covariance formula relatively immaterial. For Life companies with A&H lines, the C2 factor can dominate the covariance calculation.
c	Interest rate risk	Not reflected - not considered to be significant	Not reflected - not considered to be significant	For Annuities and Single Premium Life Insurance products: factors are developed using asset/liability cash flow models under scenerios designed to test interest rate tail risk. Companies are required to perform this scenerio testing approach only if either a predefined significance test or a stress test indicates they must. Otherwise, they follow the "factor x liability"approach. Factor x Liability approach: an interest rate risk factor is applied to the reserve or liability for product lines sensitive to this risk. Some products not subject to the cashflow testing approach have factors as well. Affected products lines are separated into low, medium and high risk categories, with separate factors for each category. 1/3 credit for companies with unqualified "Section 8" actuarial opinion. (Charge is based on an assumed duration mismatch and interest rate shock. Comany situation reflected only via "Section 8" opinion.) The separate covariance component (C3), is combined with asset risk (c1o) in the covariance formula.
	Interest rate risk--callable assets	Not reflected	Not reflected	For callable assets (including IOS and similar investments) supporting untested products and surplus, the C-3 factor is 50% of the excess, if any, of statement value above current call price (calculated on asset by asset basis).

		P&C	Health	Life
C	Basis for NAIC Formula Value			
	Parameterization	Base reserve and premium risk factors are based on discounted worst case scenario for a 10 year history, using arithmetic averages of individual company results. Discounting for worst case scenario uses a 5% interest rate.	The recommended Academy factors were based on a 5% probability of ruin over a 3 to 5 year period for each line. The final factors incorporated NAIC modifications to these recommendations.	The recommended Academy factors were based on a 5% probability of ruin over a 3 to 5 year period for each risk. The overall probability of ruin for a company with a broad spread of risks in assumed to be 1%. The final factors incorporated NAIC modifications to these recommendations.
		Base reserve charges were kept above 10%, so that charge for retaining a reserve was always greater than credit risk charge from ceding a reserve.		
		Underlying concept of "expected policyholder deficit" used in the parameterization discussion, but not clear how implemented in practice.		
	Calibration	As insurance risk is the major risk affecting P&C companies, the final calibration of the formula was probably done exclusively through the insurance risk factors, with no changes made to the asset risk factors.	Since the vast majority of risk for MCOs is in the H2 term, calibration would generally be done by adjusting H2 factors or managed care credits.	Since the vast majority of risk for most life companies in in the invested assets, calibration would generally be done by adjusting the asset changes.

The following risks and risk factors have been identified as not reflected in any of the three formulas at this time:

Concentration of Insurance Risk
Liquidity
Geographic Region
New versus renewal business
Distribution Systems
Customer size — There is a disclosure if any exposure is over 5% of surplus.
Ability to reduce future dividend scales

Some of these can be aggrravating or mitigating risk factors within the total circumstances of a particular company.

A Risk (non-payment of entire booked asset):

	P&C	Health	Life
Reinsurance receivables / recoverables	10% charge, half in R3, half in R4. Excluded from the charge are cedes to U.S. affiliates, mandatory pools, and certain voluntary pools (based on purpose and spread of the pools). Credit given for overdue authorized reinsurance and unauthorized reinsurance penalty amounts.	0.5% charge in H3, excluding cedes to affiliates the company owns 100%.	0.5% charge in C1, excl. cedes to affiliates the company owns 100%, with offsets for funds held and unauth. reins. penalties booked elsewhere in the blank. A negative charge also exists for some assumed reins. balances from affilates.
FIT*	5% charge, in R3 for recoverable, including any deferred tax asset, recorded on the FIT recoverable line of the annual statement	Not reflected	While no specific factor applies to an FIT asset, the 2001 formula incorporates tax adjustments to RBC values to allow use in a sensitivity test with pre-tax values.
Guaranty funds receivable or on deposit	Not reflected.	same as Life	Not reflected. (There is a business risk charge related to guaranty fund exposure, but it does not consider this asset.)
Interest, dividends, real estate income	1% charge, in R3	1% charge, in H3	Not reflected
Health Care Receivables	N/A		N/A
Receivables from affiliates	5% charge, in R3	5% charge, in H3	Not reflected
Amts rcvble relating to uninsured A&H plans	5% charge, in R3	5% charge, in H3	Not reflected
Write-ins	5% charge, in R3	5% charge, in H3	Not reflected

* Effect of Deferred Federal Income Taxes from codification will need to be reflected for 2002 and later.

B Risk (residual risk from payments for transfer to providers or intermediaries):

	P&C	Health	Life
Capitations	The credit risk for certain managed care credits applies if the Life RBC formula applies to A&H business	2% for unsecured amt to providers, 4% for unsecured amt to intermediaries	same as Health

		P&C	**Health**	**Life**
C	Treatment of risk mitigation strategies Risk Transfers			
	Funds held / escrows	Uses offset allowed in Life formula if Life formula applies to A&H buisness	same as Life	Credit given under reinsurance. Capitation credit risk offset by line-of-credit or available funds held.
	Diversification			
	Covariance	In most cases, reinsurance credit risk is split evenly between R3 and R4, while all other credit risk is wholly in R3. After covariance, usually only the R4 piece materially affects the final result. For companies with minimal R4 risk, all credit risk is in R3.	In H3, by itself under the radical, so generally of minor importance	Reinsurance credit risk is in C1, typically the biggest item for life insurers. Capitation credit risk is in C3b, by itself under the radical so generally of minor importance.
D	Basis For NAIC Formula Values			
	Parameterization	Judgmental selections. Reinsurance charge reflected concern with "recent" reinsurer insolvencies and underestimation of ceded balances.	Same as life formula	Reinsurance credit risk deemed to be comparable to bonds between class 1 and 2, so risk factor is between these two bond classes.
	Calibration	As insurance risk is the major risk affecting P&C companies, calibration of the formula would generally done through the insurance risk factors, with no changes made to the credit risk factors.	Since the vast majority of risk for MCOs is in the H2 term, calibration would generally be done by adjusting H2 factors or managed care credits.	Since the vast majority of risk for most Life companies is in the invested assets, calibration would generally be done by adjusting these asset charges, not the reinsurance credit risk charge.

The following identified risks and risk factors are not reflected with specific RBC changes in any of the three formulas at this time:

Premium balances receivable
Funds held by reinsured
Bills receivable
Equities in pools and associations
Liquidity
Diversification or
concentration among creditors

In some of these situations there are statutory rules relating to non-admitted assets.

Comparison of NAIC Life, P&C and Health RBC formulas
Detailed Grid - Misc.
(business, off-balance sheet, downward trend in financial strength) Risk

		P&C	Health	Life
Risk:	Business risks such as competitive markets, lawsuits (e.g. bad faith or unfair trade practices) effects of legislative/tax/court changes, economic or social changes, mismanagement or fraud, troubled parent or affiliate, non-ins. Liabilities, etc.	Generally considered to be already reflected in the insurance risk charges (R4 and R5), to the extent reflected in industry and/or company loss development histories, loss ratio histories or expense ratios. Note that no reflection is made for risk in estimating non-insurance liabilities.	same as Life	Factor times income ("premium income or annuity considerations" for Life & Annuity, "premium" for A&H). This is meant to reflect exposure to guaranty fund assessments and litigation. Also charge exists related to health administration expenses and separate accounts.
Risk:	Off-balance sheet risks (contingent liabilities, non-controlled assets, guarantees for affiliates, derivatives off-balance sheet exposure)	1% charge for contingent liabilities, guarantees for affiliates, non-controlled assets. No reflection of derivative off-balance sheet exposure for 2001.	same as P&C	1% charge for contingent liabilities, guarantees for affiliates, non-controlled assets. Derivative exposure handled in asset risk.
Risk:	Trend in RBC ratios over time	Not reflected. The life RBC trend test was evaluated for possible inclusion in P&C RBC and it was found not to be a reliable predictor of a company's future RBC position, hence it was not adopted for P&C.	Not reflected, other than through the growth charge. Growth is defined by growth in a component of insurance risk RBC which exceeds the growth in underlying revenue by more than 10%.	Model law contains a trend test whereby if RBC score is trending down, and RBC ratio is between 2.5 and 2.0, the company may be deemed to be at the Company Action Level.

Comparison of NAIC Life, P&C and Health RBC formulas
Detailed Grid - Misc.
(business, off-balance sheet, downward trend in financial strength) Risk

Reflect product (i.e. line) risk differences:

	P&C	**Health**	**Life**
How:	Where Health premiums are greater than 5% or more of premiums for any of the last three years, same as Health.	Health Administrative Expense risk charge varies by type of Administrative Expense arrangement (e.g. ASO vs. non-ASO)	For (guaranty fund) business risk, a separate factor is applied for Life & Annuity versus A&H business. Health Administrative Expense risk follows Health formula.

Treatment of risk aggravation items

Small company	Not reflected	Tiered charge for Health Administrative Expense risk for non-ASO contracts.	Same as Health

Covariance	Off-balance sheet risk is in R0, outside covariance. Business risk items imbedded in insurance risk are in the items that generally are the most significant going into the covariance formula, hence they remain significant after covariance.	All in H4, a separate item under the radical so generally of minor importance	Business risk associated with Health Admin Expenses is inside the covariance radical (C4b). The rest of business risk in outside the covariance radical (C4a). Off-balance sheet risk is in C0. The trend test is part of the model law, not the RBC formula.

Comparison of NAIC Life, P&C and Health RBC formulas
Detailed Grid - Misc.
(business, off-balance sheet, downward trend in financial strength) Risk

	P&C	Health	Life
Parameterization	Off-Balance sheet charge same as Life.	Off-Balance sheet charge same as Life.	Off-Balance sheet charge of 1% was judgementally selected.
Calibration	As insurance risk is the major risk affecting P&C companies, the final calibration of the formula was probably done exclusively through the insurance risk factors, with no changes made to the other risk factors.	Since the vast majority of risk for Health's is in the H2 term, calibration would generally be done by adjusting H2 factors or managed care credits.	Since the vast majority of risk for most Life companies is in the invested assets, calibration would generally be done by adjusting the asset changes.

The following identified risks and risk factors are not reflected in any of the three formulas at this time:

- Reinsurance company variations as a business risk to ceding company
- New Company
- Concentration

To the extent they reflect business risks different from the risk a similar exposure would provide to a company not subject to the particular risk noted.