Strategy for Financial Preparedness at PACICC

Technical Appendix

November 2004

Financial Capacity Assessment Model

PACICC has developed a Financial Capacity Assessment Model (FINCAM) to estimate the Corporation's liabilities and financial resources following an insolvency of a given size. The model estimates the movement of payments into PACICC from member insurers, through general assessment and the use of the Compensation Fund, to claimants and policyholders. The model provides PACICC with the capacity to estimate potential inflows and outflows of financial resources, identifying when members are likely to have to be assessed and how often. It is such cycles of inflows and outflows that determine PACICC's capacity to pay claimants.

FINCAM is a flexible model which provides PACICC with the capability to estimate payment outlays to claimants and policyholders under various scenarios through the adjustment of key parameters such as:

- Size of the failed insurer;
- Distribution of business lines;
- Size of the compensation fund; and
- Liability estimating parameters (claims and unearned premiums)

In addition, the model is sufficiently flexible to permit analysis with different/changing interest rates and restrictions on the use of the Compensation Fund.[1]

All of the cash flow payouts in the model are based on a "payout distribution curve". Annex A contains the payout distribution curves by line of business. The payout distribution curve is derived using historical data from prior insolvencies. The curve essentially defines when and how much, by line of coverage, is paid out to insureds during the winding-up process. There was insufficient data available on unearned premium payments to estimate a payout distribution function based on historical experience. Therefore a payout distribution function whereby all unearned premium payments are made within six months of the wind-up order was assumed. This is consistent with PACICC's goal of returning unearned premiums to policyholders as rapidly as possible.

It should be noted that the model incorporates both linear and non-linear functions. In some cases, the model assumes a linear relationship between an estimate parameter and input factors where in fact actual relationships may be non-linear. Linear functions were used where data limitations did not permit a more fulsome model or where a more complicated linear function did not add much additional explanatory power. In such cases, the linear estimates were tested against historical experience to ensure that confidence existed in the modeling. Descriptions of some of these confidence tests are included in the relevant sections of this Appendix outlining the model. Overall, the model performs well against the various confidence tests.

[1] For example, restricting the use of the Compensation Fund only to financing payment of unearned premiums.

Available Financial Resources

PACICC's financial resources for responding to insolvency consist of:

- a $34.5 million Compensation Fund;
- a $10 million line of credit; and
- member assessment, as required.

PACICC established a Compensation Fund of $30 million that will help the industry manage the failure of one or more members. The current market value of the Compensation Fund is $34.5 million. The Fund comprises cash and equivalents (10%) and fixed income products (90%) which primarily consist of short- and mid-term government bonds. In terms of accessibility, the compensation fund can be accessed within a quarter. Amounts removed from the compensation fund must be replenished through a special member assessment.

The amount of a General Assessment levy to be made by each contributing member in a contributing participating jurisdiction(s) is calculated in accordance with the formula established in the Memorandum of Operation, March 25, 2003. Assessments are equal to ¾ of one percent. PACICC's assessment capacity in 2003 is outlined in Annex B.

FINCAM's default setting is to access the compensation fund prior to utilizing funds from a general assessment. In addition, the model assumes that the compensation fund is not replenished until after the final general assessment to the industry reflecting the practical realities associated with assessing the industry for both the compensation fund assessment as well as the general assessment.

Maximum short-term capacity for PACICC to pay claims and expenses related an insolvency is equivalent to $44 million. PACICC's maximum available financial resources in the first year, with the compensation fund and member assessment, range from $35 million in Prince Edward Island to $148 million in Ontario. In subsequent years PACICC's capacity would depend upon assessment capacity until the compensation fund was restored.

PACICC has access to a $10 million line of credit through the Royal Bank of Canada. Payments on the line of credit would be executed through the administrative assessment. It should be noted that the line of credit is not included in an assessment of PACICC's financial capacity. While it does provide additional resources to the Corporation at the time of use, in subsequent periods it acts as a drain on capacity as PACICC would be required to make payments on it. FINCAM therefore assumes that the line of credit would be maintained in reserve in order to respond to a crisis where it was not feasible to mobilize resources from the compensation fund or assessment base.

FINCAM assumes that the failed insurer has no access to assets at the time of the winding-up order. As historically most claims and unearned premium expenses of liquidation are incurred early in the liquidation process, and recoveries from the insurer's capital generally occur late in the process, this is a plausible assumption for analysis of capacity over short- to mid-time horizons. Some jurisdictions are recognized for their earlier intervention with a failing company and in such cases, more assets may be

available during the liquidation process. In some recent insolvency cases from such jurisdictions, the liquidator has advanced PACICC financial resources against the assets of the failed company, mitigating the general assessment requirements. Nevertheless, for all practical purposes the size of the assets that could be applied and when those assets could be utilized to reduce the general assessment requirements is highly variable. Historically, the timing of recoveries has been highly variable but has rarely occurred before the third year of the liquidation process. For the failure of larger insurers there would be an initial need to pay out claims earlier in the process than assets may become available. While conservative, the assumption ensures that the protection of the interests of the policyholder is paramount but continues to retain sufficient flexibility to minimize costs to members should assets become available sooner.

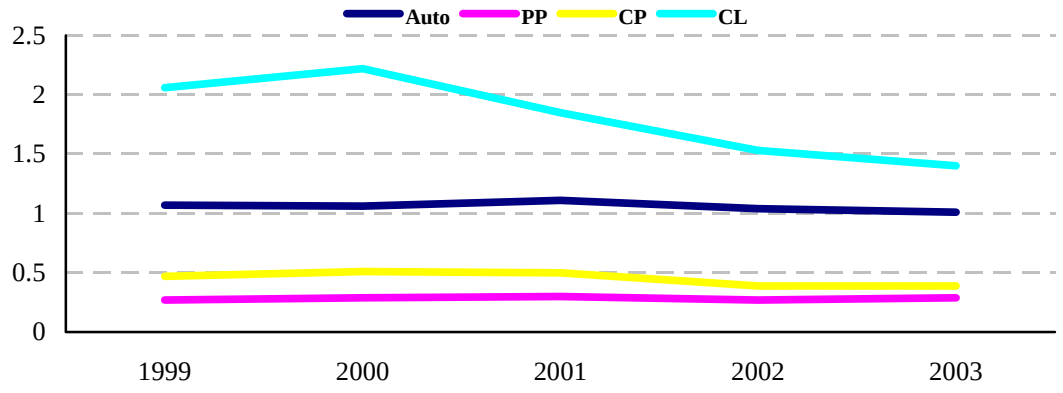
Estimated Claims Liabilities

Claims liabilities were estimated using a model parameter that was derived from industry aggregate unpaid claims liabilities relative to premium income, by line of business. The 2003 parameters for the automobile, personal property, commercial property and liability were used by FINCAM.

The appropriateness of utilizing this parameter was tested by reviewing the stability of the parameter and by running previous insolvencies through the model and comparing the model's prediction with the actual payments experienced by PACICC.

Parameter estimates experiencing volatility would be less reliable in estimating claims liabilities outside of the particular period to which the parameter applies. A parameter is defined as stable if its standard deviation is less than 10 percent of its average value over the period. The commercial liability parameter has experienced the greatest instability over the 1999 to 2003 period, with a standard deviation of 0.35. Claim liabilities parameters for auto insurance and personal property have generally been stable over the period of 1999 to 2003 with standard deviations of 0.04 and 0.01 respectively. The commercial property parameter modestly exceeds the definitional threshold of stability with a standard deviation of 0.06.

Claims Liability Parameter Stability



In addition to testing parameter stability, FINCAM was tested against six previous insolvencies that were administered by PACICC. In five of the six test cases, FINCAM was able to predict claims liabilities within 10 percent of actual claims-related payments.

In general, FINCAM more accurately predicted the claims liabilities for insolvencies that occurred closer to 2003, highlighting the importance of parameter stability.

Confidence Test of the FINCAM

	Maplex	**Hiland**	**GISCO**	**Reliance**	**Canadian Millers**	**Markham General**
Date of wind-up	March 1995	November 1994	June 2000	December 2001	December 2001	July 2002
Comparison of predicted to actual using year of wind-up data	1.64	2.28	0.93	0.99	0.64	1.03
Comparison of predicted/actual using data from 3-5 years prior to wind-up	1.10	1.64	n/a	n/a	0.95	n/a

Note: A ratio greater than one suggests that the model over-predicts claims liabilities. A ratio of less than one suggests that the model under-predicts claims liabilities. A prior-year data comparison was used only where the FINCAM prediction was widely off the actual claims payouts.

With regard to all cases, the FINCAM prediction was compared to the liquidation data available as of September 2004. The FINCAM prediction was greater than the initial liquidator estimate and more closely compares with the new revised estimate. In addition, it was noted that several of the insolvent insurers experienced other than normal activity in the year or so preceding the wind-up order. In some cases, these companies ceased writing new business or engaged in strategic activities to remain in operation. Such activity is consistent with A.M. Best's analysis of P&C insolvencies in the United States. In such cases, data reported in years prior to wind-up may more accurately reflect the company's true financial picture. For two of those three insurers where prior year data was used, FINCAM was able better to predict actual claims payments.

FINCAM was unable to accurately model Hiland's claims liabilities.

Estimated Unearned Premium Liabilities

For a typical wind-up situation, previous actuarial work on unearned premiums assumed that for every $100 in annual direct written premiums, there would be an unearned premium liability of $50, which would be approximately the case if the company wrote only annual policies, uniformly over time. This was further adjusted to $35 of unearned premium liability after accounting for the co-insurance deductible and cap per policy.

Noting the innovation to premium payment methods, for this analysis, unearned premium liabilities were estimated based on a survey of PACICC members on payment methods by policyholders. Fifty-five member companies representing 64% of PACICC total eligible premiums responded to the survey. Members were asked to provide data on

payment method by line of business: auto, personal property, commercial property and commercial liability. By line of business, survey respondents represented 74% (auto), 60% (personal and commercial property) and 41% (commercial liability) of PACICC eligible premiums.

The survey found the following payment option distribution:

Summary of PACICC Payment Survey

	Monthly	**Annual**	**Semi-annual**	**Quarterly**	**3 – pay plan**
Automobile	54%	32.6%	3.7%	2.7%	7%
Personal Property	41%	48%	0%	1%	10%
Commercial Property	26%	65%	0%	3%	5%
Commercial Liability	25%	68%	0.1%	1.3%	5%

Note: may not add to 100% due to rounding.

For a wind-up situation occurring six months into an average policy term and based on the results of this survey, for every $100 in annual direct written premium, there would be the following estimated unearned premium liability:

- $15.81 for an automobile insurance policy;
- $21.54 for a personal property policy;
- $22.50 for a commercial property policy; and
- $22.88 for a commercial liability policy.

This estimate accounts for the co-insurance deductible and cap. PACICC unearned premium liabilities increase by 12.8% (auto) to 48.5% (commercial liability) if the wind-up occurs three months into the average policy term. Alternatively, unearned liabilities would decrease by up to 62% on average if the wind-up was to occur nine months into an average policy term.

FINCAM is calibrated to the wind-up occurring at six months into an average policy term. There is insufficient historical experience with unearned premium payments at PACICC to test the model's estimated liabilities against experience.

Recognizing that the unearned premium liability estimates of the model are conservative, it is noted that the protection of the interests of policyholders is paramount. These liabilities may be reduced by knowledgeable brokers moving their clients' business from a troubled insurer prior to a wind-up to a stronger company. For a direct writer, particularly in the personal lines, this favourable adjustment may not be a factor. Direct writers account for one-third of the premiums written. To date, PACICC only has data on two insolvencies (both of which were broker companies) and the unearned premium liabilities were between 6% and 10% of direct written premiums. Experience in other jurisdictions however suggests that this could be considerably higher. Until further historical experience or data is developed to better calibrate the premium liabilities, the conservative element is utilized by the model.

Capacity Assessment Analysis

In considering PACICC's capacity to handle insolvency, it should be noted that PACICC could deal with an insolvency of virtually any size through continuous assessment of the industry. In practice, however, with a sufficiently large insolvency or series of insolvencies, PACICC could assess members indefinitely, although this may not be sustainable or healthy for the industry.

FINCAM can be used to evaluate PACICC's financial capacity by simulating whether or not PACICC actually has enough cash on hand or access to enough funds to appropriately cope with an insolvency. Financial capacity is evaluated using the criterion for ensuring that PACICC maintains its practical flexibility to handle the failure of an insurer as well as the failure of a subsequent small insurer. Explicitly, PACICC is defined as having capacity if it continues to have sufficient financial resources to handle another small failure 12 months after the initial failure.

Order of Magnitude Test

In addition to the confidence and parameter stability tests, FINCAM was reviewed against simple calculations to test the reasonability of its predictions.

DWP: $100 (industry aggregate profile), insurer fails halfway through the year.

FINCAM prediction:
Claims liabilities: $80
Unearned premium liabilities: $17
Total: $97

Simple calculations:
Loss ratio (CU statistical issue): 73.5%
Unearned premiums (OSFI year-end): 45.5% of DWP
Claims liabilities: $73.5
Unearned premium liabilities: $22.5 (45.5/2)
Total: $96

While FINCAM uses a more sophisticated methodology than the more intuitive calculations, the order of magnitudes are consistent.

In selecting the appropriate size profiles to be used in the financial capacity analysis, PACICC analyzed year end data from 215 companies using five tests (A.M. Best ratings, MCT scores, return on equity, change in net writings and underwriting results) that are used by solvency supervisory authorities and analysts to test the solvency of companies. There may be a variety of reasons for a company to be outside the norm (mergers, acquisitions, sales of books of business, premium increases, etc.) on any one of these indicators. However, companies that fall outside the parameters of several of these indicators may be at high risk of insolvency. Of the 215 companies that were included in the analysis, there were 27 companies that failed two or more of the tests. This is up from 21 in 2002.

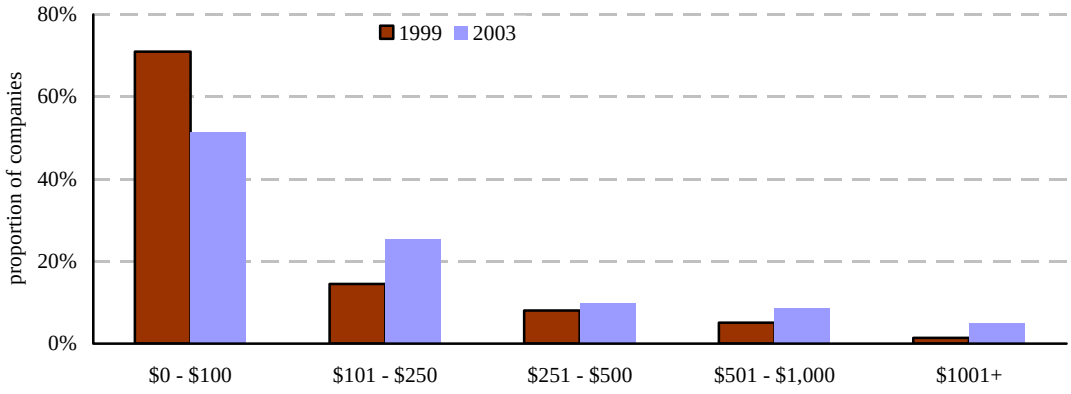
In particular, there were 17 PACICC members with results on two or more of these tests (particularly regulatory capital and financial strength ratings) during 2002 and 2003 that suggested a relatively high risk of insolvency. Among these, four provincial companies with written premiums totalling $680 million had MCT scores of less than 125%. These 17 vulnerable companies had a premium distribution as follows (average premium in brackets), in 2003:

▪ less than $100 million in DWP	9	($37 million)
▪ between $101 million and $250 million in DWP	4	($141 million)
▪ between $251 million and $500 million in DWP	2	($395 million)
▪ between $501 million and $1 billion in DWP	2	($738 million)
▪ more than $1 billion in DWP	0	

This distribution of identified vulnerable companies (which does not include a number of insurers which were staged by OSFI but had sufficient financial resources or support from a parent company to remain a low insolvency risk) suggests that it would be appropriate to review PACICC's financial capacity for a wide range of insurance company sizes.

In addition, PACICC reviewed the industry's size distribution and found that there is a trend toward the growth in the number of mid-sized and large insurers relative to the number of smaller insurers.

Size Distribution of P&C Insurance Companies in Canada



$ millions in PACICC eligible DWP

Source: PACICC, with data from MSA Research Inc.

Using FINCAM, various scenarios were run using theoretical companies under three profiles that permit evaluation of the implications of differing claims and unearned premium liabilities underlying general insurers (writing auto, personal & commercial property and liability) and those insurers who specialize in writing personal or commercial lines. A brief outline of the profiles is included in Annex C. These profiles were examined for insurers of the following size:

- $100 million in direct written premiums;
- $250 million in direct written premiums;
- $500 million in direct written premiums; and
- $1 billion in direct written premiums.

Companies of these sizes were selected to reflect the varying landscape of P&C insurance companies in the Canadian market and the growth in the number of mid-sized and large insurers relative to the number of smaller insurers.

These theoretical companies of each size and profile were analyzed under a variety of initial conditions including:

- the compensation fund being utilized as a general smoothing mechanism in support of the general assessment of members;
- the compensation fund being utilized as a general smoothing mechanism in support of the general assessment of members for own provincial liabilities;

- the compensation fund being utilized solely as a funding mechanism for unearned premium liabilities and the general assessment for funding claims liabilities for own provincial liabilities;
- the compensation fund being utilized solely as a funding mechanism for unearned premium liabilities and the general assessment for funding claims liabilities; and
- The above conditions with alternate compensation fund and assessment levels.

Finally, with respect to the lines analyzed, hail, boiler & machinery and legal are excluded from the analysis since they represent a small component of the total PACICC protected premium.

Summary Results

General Model

Under the general model, PACICC has the financial capacity to handle an insurer insolvency with the industry aggregate profile writing $267 million in direct written premiums. In addition, PACICC has the resources to adequately cope with an insurer insolvency with a personal lines profile of $280 million in direct written premiums and an insurer insolvency with a commercial lines profile of $288 million.

The following tables summarize FINCAM's analysis of PACICC's financial situation for various theoretical insurance company profiles under the current revenue sources. In these tables, the compensation fund is utilized as a general smoothing mechanism in support of the general assessment of members.

Industry aggregate profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments:	0.26	0.86	1.87	3.94
Compensation Fund exhausted	Y1, M9	Y1, M1	Y1,M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1, Y2	Y1, Y2, Y3, Y4

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Personal lines profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments:	0.29	0.93	2.01	4.22
CF exhausted	Y1, M7	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1, Y2, Y7	Y1, Y2, Y3, Y6

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Commercial lines profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments:	0.28	0.90	1.95	4.11
CF exhausted	Y1, M9	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1, Y2	Y1, Y2, Y3, Y4, Y7

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Own-Province Assessment

Recent insolvency experience has highlighted an apparent inequity in the general assessment mechanism. Currently, if an insurer underwrote policies within a province and it became insolvent, all insurers within those provinces in which the insolvent insurer underwrote policies become eligible for inclusion as contributing members in a general assessment to cover claims and unearned premium costs. Therefore it is possible that insurers in a province(s), where the insolvent insurer underwrote only a small number of policies, would disproportionately contribute to the financing of the outstanding liabilities. One proposed solution is to restrict the general assessment to own-province assessment where a general assessment could only be levied on insurers based on share of premiums in that jurisdiction.

The following table summarizes the analysis of PACICC's financial capacity by province for various theoretical insurance company profiles. For each province and profile, the maximum size company (in DPW) that PACICC could handle with a general assessment and the compensation fund are indicated. In these tables, the compensation fund is utilized as a general smoothing mechanism in support of the general assessment of members for own-provincial liabilities.

Various profiles, provincial insurer, $34 million compensation fund

	Capacity Threshold		**Capacity Threshold**	
	Industry aggregate	**# companies exceeding IA threshold capacity**	**Personal lines**	**Commercial lines**
Newfoundland & Labrador	$33.7 million	10.3%	$35.7 million	$36.4 million
Prince Edward Island	$31.8 million	0%	$33.8 million	$34.4 million
Nova Scotia	$37 million	9.8%	$39.2 million	$39.9 million
New Brunswick	$36.6 million	10.2%	$38.9 million	$39.5 million
Quebec	$71.6 million	26.3%	$76 million	$77.4 million
Ontario	$137.5 million	34%	$146 million	$148.6 million
Manitoba	$34.2 million	5.9%	$36.3 million	$37 million
Saskatchewan	$34.7 million	7.3%	$36.8 million	$37.5 million
Alberta	$60.9 million	24.7%	$64.6 million	$65.8 million
British Columbia	$66.2 million	14.9%	$70.3 million	$71.6 million
Yukon Territory	$31.2 million	0%	$33.1 million	$33.7 million
Northwest Territories	$31.3 million	0%	$33.2 million	$33.8 million
Nunavut	$31 million	0%	$32.9 million	$33.5 million

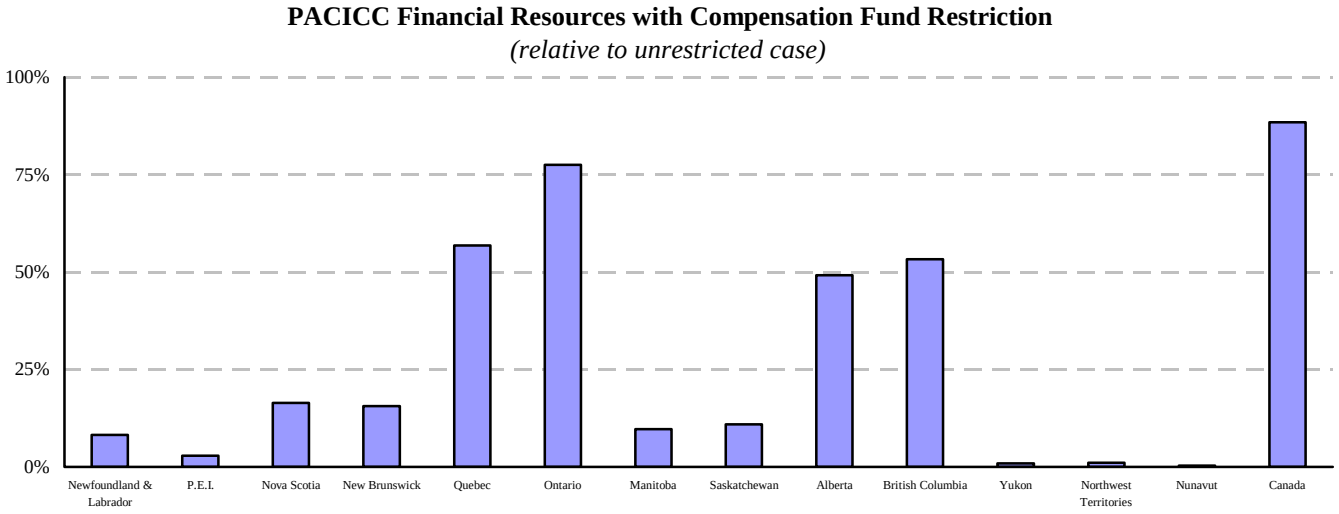
The following table summarizes the analysis of PACICC's financial capacity by province for various theoretical insurance company profiles. For each province and profile, the

maximum size company (in DPW) that PACICC could handle with a general assessment and the compensation fund are indicated. In these tables, the compensation fund is utilized solely as a funding mechanism for unearned premium liabilities and the general assessment for funding claims liabilities.

Various profiles, provincial insurer, restricted use $34 million compensation fund

	Capacity Threshold		**Capacity Threshold**	
	Industry aggregate	**Proportion of companies exceeding IA threshold capacity**	**Personal lines**	**Commercial lines**
Newfoundland & Labrador	$2.8 million	54%	$2.9 million	$3 million
Prince Edward Island	$0.9 million	100%	$1 million	$1 million
Nova Scotia	$6.1 million	39%	$6.4 million	$6.6 million
New Brunswick	$5.7 million	56%	$6.1 million	$6.2 million
Quebec	$40.7 million	39%	$43.2 million	$44 million
Ontario	$106.6 million	43%	$113.2 million	$115.2 million
Manitoba	$3.3 million	68%	$3.5 million	$3.6 million
Saskatchewan	$3.8 million	54%	$4 million	$4.1 million
Alberta	$30 million	42%	$31.8 million	$32.4 million
British Columbia	$35.3 million	31%	$37.5 million	$38.2 million
Yukon Territory	$0.3 million	100%	$0.3 million	$0.3 million
Northwest Territories	$0.4 million	100%	$0.4 million	$0.4 million
Nunavut	$0.1 million	100%	$0.08 million	$0.09 million

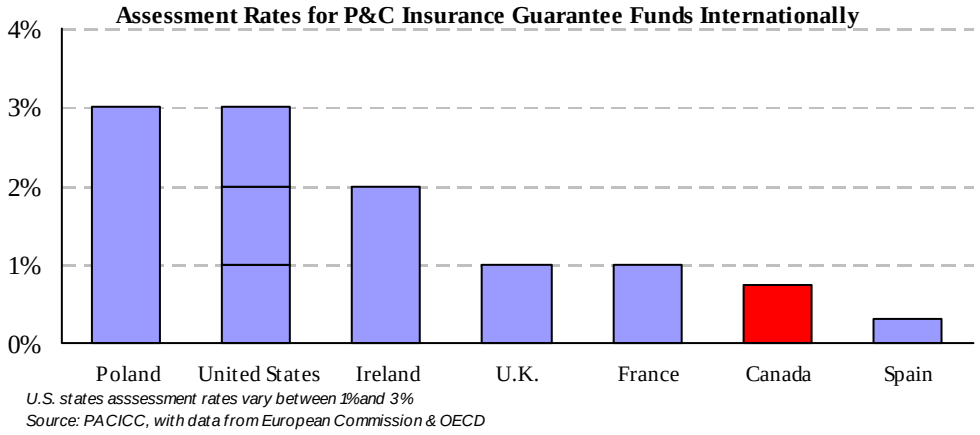
In general, the analysis finds that limiting the use of the Compensation Fund to funding the repayment of unearned premiums to policyholders restricts PACICC's financial resources by 25% to 99%, depending upon the jurisdiction of interest. The restriction would reduce financial capacity by a quarter to one-half among the larger provinces. Restricting the compensation fund to unearned premiums would have its greatest impact in the smaller provinces, limiting PACICC's financial capacity to respond to an insurer writing less than $6 million in direct written premiums in six provinces.



Alternate Assessment Levels

Under the current formula established in the Memorandum of Operation, assessments on the industry to support payments to policyholders and claimants may be equal to ¾ of one percent of an insurer's eligible written premium. PACICC assesses the membership by jurisdiction based on the contributing member's relative share of eligible written premiums.

PACICC's annual allowable assessment rate is low relative to that of guarantee funds in other jurisdictions. The norm among major industrial countries is between one percent and two percent of the premium base.



The following tables summarize FINCAM's analysis of PACICC's financial situation for various theoretical insurance company profiles under alternative assessment levels. In these tables, the compensation fund is utilized as a general smoothing mechanism in support of the general assessment of members.

Industry aggregate, national insurer with $100 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.26	0.20	0.13	0.10
CF exhausted	Y1, M9	Y1, M9	Y1, M9	Y1, M9
Years in which assessments occur	Y1	Y1	Y1	Y1

Industry aggregate, national insurer with $250 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.86	0.65	0.43	0.32
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1	Y1

Industry aggregate, national insurer with $500 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	1.87	1.40	0.94	0.7
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1, Y2	Y1, Y3	Y1	Y1

Industry aggregate, national insurer with $1 billion in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	3.94	2.95	1.97	1.48
CF exhausted	Y1	Y1	Y1	Y1
Years in which assessments occur	Y1*, Y2*, Y3*, Y4	Y1*, Y2*, Y3	Y1, Y2	Y1, Y3

** claims payments would have to be delayed as PACICC would run out of funds before year-end*

Personal lines, insurer with $100 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.29	0.22	0.15	0.11
CF exhausted	Y1, M7	Y1, M7	Y1, M7	Y1, M7
Years in which assessments occur	Y1	Y1	Y1	Y1

Personal lines, national insurer with $250 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.93	0.70	0.47	0.35
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1	Y1

Personal lines, national insurer with $500 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	2.01	1.51	1.01	0.75
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1, Y2, Y7	Y1, Y3	Y1, Y7	Y1

Personal lines, national insurer with $1 billion in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	4.22	3.17	2.11	1.58
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1*, Y2*, Y3*, Y4*, Y6	Y1*, Y2*, Y3*, Y6	Y1, Y2, Y6	Y1, Y2

** claims payments would have to be delayed as PACICC would run out of funds before year-end.*

Commercial lines, national insurer with $100 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.28	0.21	0.14	0.10
CF exhausted	Y1, M9	Y1, M9	Y1, M9	Y1, M9
Years in which assessments occur	Y1	Y1	Y1	Y1

Commercial lines, national insurer with $250 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	0.90	0.68	0.45	0.34
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1	Y1

Commercial lines, national insurer with $500 million in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	1.95	1.47	0.98	0.73
CF exhausted	Y1, M1	Y1, M1	Y1, M1	Y1, M1
Years in which assessments occur	Y1, Y2	Y1, Y3	Y1	Y1

Commercial lines, national insurer with $1billion in DWP, alternate assessment levels

	0.75%	**1%**	**1.5%**	**2%**
# of assessments	4.11	3.08	2.05	1.54
CF exhausted	Y1	Y1	Y1	Y1
Years in which assessments occur	Y1*, Y2*, Y3*, Y4*, Y7	Y1*, Y2*, Y3*, Y7	Y1, Y2, Y7	Y1, Y2

** claims payments would have to be delayed as PACICC would run out of funds before yea- end.*

In general, the analysis finds that increasing PACICC's assessment threshold would have little impact for an insolvency of an insurer writing less than $250 million as PACICC's current financial capacity is sufficient. For the failure of a larger insurer, higher assessment thresholds would increase PACICC's capacity to support policyholder and claimant demands earlier in the liquidation process rather than distorting the distribution function and delaying payment to policyholders and claimants.

In addition, increased assessment rates reduce the frequency of assessment but would increase the magnitude of the payments made by each insurer to the guarantee fund. Although, the amount of claims payout does not change at each successive threshold, the ability to assess the industry less often may have a positive impact on the industry in terms of minimizing the time horizon of the pressure on insurer revenue.

The following table outlines the by-province/territory effects of various alternate assessment levels by measuring the proportion of companies which are of sufficient size to exceed PACICC's financial capacity. Increased assessment rates have only a marginal impact on PACICC's practical capacity in the smaller provinces and territories but, in the

larger provinces, can reduce the number of companies exceeding PACICC's financial capacity by up to one half.

% of Companies Exceeding PACICC's Capacity under Alternative Assessment Levels

	0.75%	**1%**	**1.5%**	**2%**
Newfoundland & Labrador	10%	10%	10%	8%
Prince Edward Island	0%	0%	0%	0%
Nova Scotia	10%	10%	10%	5%
New Brunswick	10%	9%	7%	6%
Quebec	26%	23%	16%	13%
Ontario	34%	28%	21%	15%
Manitoba	56%	6%	6%	6%
Saskatchewan	7%	7%	7%	5%
Alberta	25%	21%	19%	15%
British Columbia	15%	13%	8%	6%
Yukon	0%	0%	0%	0%
Northwest Territories	0%	0%	0%	0%
Nunavut	0%	0%	0%	0%

Restrictions on the use of the Compensation Fund

A compensation fund serves to handle insolvency cases relatively quickly, as funds for compensations for policyholders are readily available. The OECD has identified this as being of particular importance in dealing with the insolvency of a larger insurer, for which a considerable amount of resources needs to be mobilized within a short period of time. An adequate compensation fund for policyholder protection ensures the visibility of a safety net and thus contributes to the maintenance of public confidence in the industry. Finally, the OECD has found that a compensation fund may provide better predictability for member companies concerning future financial burdens.

PACICC established its Compensation Fund following the broadening of its responsibilities to include payment of the unearned premium to policyholders. In 1997, PACICC recognized that it took a minimum of two months for funding from assessments to flow to consumers and that a compensation fund was required to cover shortfalls in the cash flow of PACICC related to payouts of unearned premiums. It was also recognized that, for small provinces, the fund would cover shortfalls for unpaid claims where maximum annual assessments could potentially be exhausted before PACICC fulfilled all of its financial obligations.

At its inception PACICC's compensation fund was designed to:

- ensure the rapid payment of unearned premiums to policyholders; and

- extend PACICC's capacity to handle larger or multiple small insolvencies.

Recently, there has been some discussion within the industry on whether the compensation fund should be dedicated solely to ensuring the rapid payment of unearned premiums to policyholders. The following tables summarize FINCAM's analysis of PACICC's financial situation for various theoretical insurance company profiles with a restriction on the use of compensation fund resources. In these tables, the compensation fund is utilized solely as a funding mechanism for unearned premium liabilities and the general assessment for funding claims liabilities.

Industry aggregate profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments	0.26	0.86	1.87	3.94
Compensation Fund exhausted	Not exhausted - $16 million balance remaining	Y1, M2	Y1	Y1
Years in which assessments occur	Y1	Y1	Y1, Y2	Y1, Y2, Y3, Y4

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Personal lines profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments	0.29	0.93	2.01	4.22
CF exhausted	Not exhausted - $17 million balance remaining	Y1, M2	Y1, M1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1, Y2, Y7	Y1, Y2, Y3, Y4, Y6

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Commercial lines profile, national insurer, $34 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments	0.28	0.90	1.95	4.11
CF exhausted	Not exhausted - $10.9 million balance remaining	Y1, M1	Y1	Y1, M1
Years in which assessments occur	Y1	Y1	Y1, Y2	Y1, Y2, Y3, Y4, Y7

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Comparing these results with those of the general model shows that restricting the compensation fund to the payment of unearned premiums for a national insurer operating in all provinces has only a limited impact on PACICC's financial capacity for such an insurer.

Alternate Compensation Fund Level

Among countries with a guarantee system for the P&C industry, Canada, France, Japan, Norway and Korea maintain a compensation fund as a component of the guarantee fund's financial resources. The size of these compensation funds varies dramatically[2],

	Size of Compensation Fund (national currency)	Size of Compensation Fund ($ million CAD)	Size of Compensation Fund as proportion of protected premium
Canada	CAD $33 million	$33	0.1%
France[3]	1.8 billion francs	$431.5	1.7%
Japan	¥ 50 billion	$588.5	0.5%
Norway[4]	1.5% of gross written premium	$107.2	1.5%
Korea[5]	0.3% of premium income	$69.2	0.3%

In 1997 when PACICC established its compensation fund, it conducted a review of the size of past insolvencies and its financial capacity to meet its financial obligations for unearned premiums while retaining a small additional capacity for unexpected events.[6] Following this review, PACICC found that it needed a compensation fund with capacity to handle the unearned premiums from the failure of an insurer with $100 million in direct written premium. The review also noted that a compensation fund of $30 million would increase PACICC's flexibility to respond to the failure of a small insurer (writing $30 million in direct written premiums) in a smaller jurisdiction. In 1997, the median size insurer in the industry wrote $30 million in direct written premiums. PACICC's compensation fund was initially established to have the capacity to respond to a failure of half the companies in the industry at the time.

Since the compensation fund was created, the industry's premium base has doubled, from $18.6 billion in 1997 to $37 billion in 2003, eroding the fund's capacity in real terms to respond to a failure of an insurance company. If the fund had grown at the same rate as the industry, it would now be nearly $70 million. In addition to premium growth, the industry has continued to experience consolidation since the fund was created in 1997. Since then, there have been 57 mergers in the Canadian P&C industry.[7] Since 1999, the average size of an insurance company in Canada has increased by 78%, from $135 million

[2] Currencies converted to Canadian dollars at market rates for September 15, 2004.
[3] The French guarantee fund for P&C is restricted to automobile and hunting accidents.
[4] 1.5% of PACICC eligible premiums in Canada would be $504 million.
[5] 0.3 % of PACICC eligible premiums in Canada would be $107.6 million.
[6] This was an actuarial review conducted by Exactor Insurance Services Inc. on behalf of PACICC.
[7] Source: IBC, with data from Swiss Re.

to $240 million in 2003. Further, the median size of an insurer has grown by 143%, from $35 million to $84 million in 2003. PACICC's compensation fund has the capacity to respond to 29.6% of insurance companies in the industry during 2003, down from 50% in 1997.

However, changing patterns of payment practice, from predominantly annual payment of premium to a greater diversity of premium payment plans, has reduced the unearned premium liability demand on the fund. The average unearned premium liability among PACICC eligible lines of business is $21, down from $35 in 1997.

Since the Compensation Fund was established, accounting for growth in the industry and changing liabilities, the fund's real practical effectiveness has declined by 25% through premium growth in the industry. PACICC would require a compensation fund of $41.4 million in order to meet the same level of policyholder protection of unearned premiums for which it had been established. Further, in order to meet its original mandate of being capable of responding to the median insurer, PACICC would need to increase its compensation fund to $84.3 million.

The following tables summarize FINCAM's analysis of PACICC's financial situation for various theoretical insurance company profiles where PACICC maintains a larger compensation fund. A $100 million compensation fund was used in the following tables because simple regression analysis suggests that the median insurer will write $100 million in premiums within five years. In these tables, the compensation fund is utilized as a general smoothing mechanism in support of the general assessment of members.

Industry aggregate profile, national insurer, $100 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments	0	0.59	1.60	3.66
Compensation Fund exhausted	89% of CF utilized	Y1, M12	Y1, M4	Y1, M1
Years in which assessments occur	No general assessment	Y2	Y1, Y3	Y1, Y2, Y3, Y4

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

Personal lines profile, national insurer, $100 million compensation fund

	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments:	0	0.66	1.73	3.94
CF exhausted	Y8	Y1, M10	Y1, M4	Y1, M1
Years in which assessments occur	No general assessment	Y1	Y1, Y2	Y1, Y2, Y3, Y4

For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

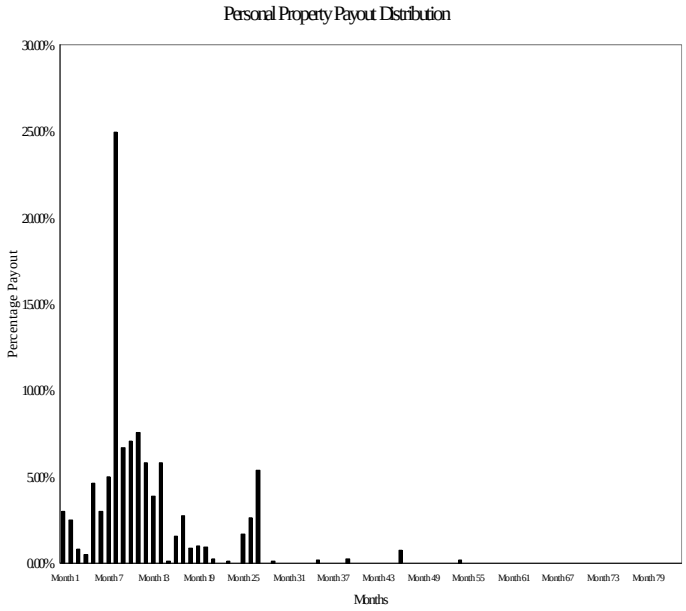
Commercial lines profile, national insurer, $100 million compensation fund

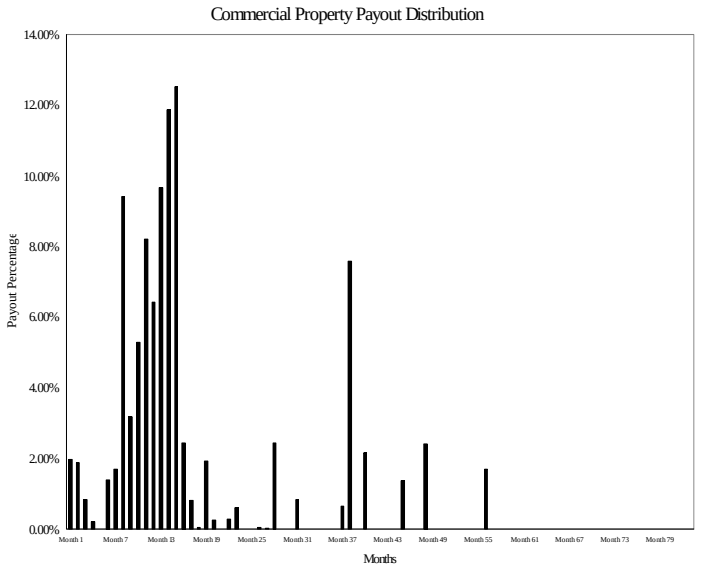
	$100 million in DPW	**$250 million in DPW**	**$500 million in DPW**	**$1 billion in DPW**
# of assessments	0	0.63	1.68	3.83
CF exhausted	93% of CF utilized	Y2, M1	Y1, M3	Y1, M1
Years in which assessments occur	No general assessment	Y2	Y1, Y4	Y1, Y2, Y3, Y4

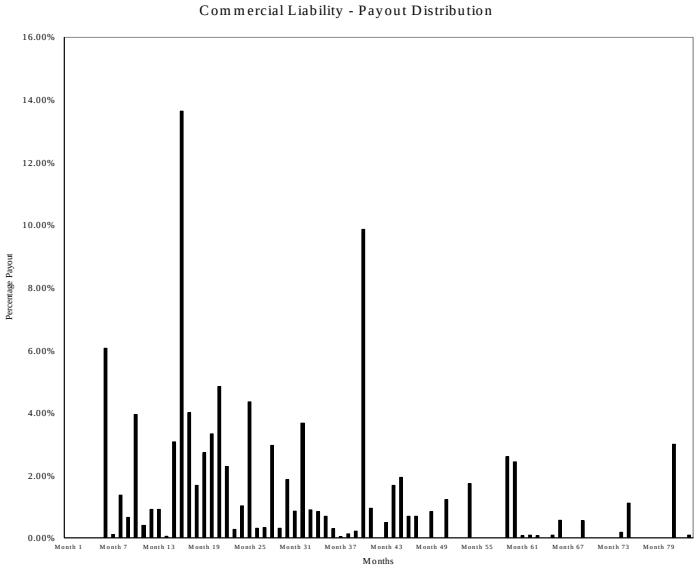
For an insurer with $1 billion in DWP, claims payments would have to be delayed as PACICC would run out of funds before year-end in each of Y1, Y2 & Y3.

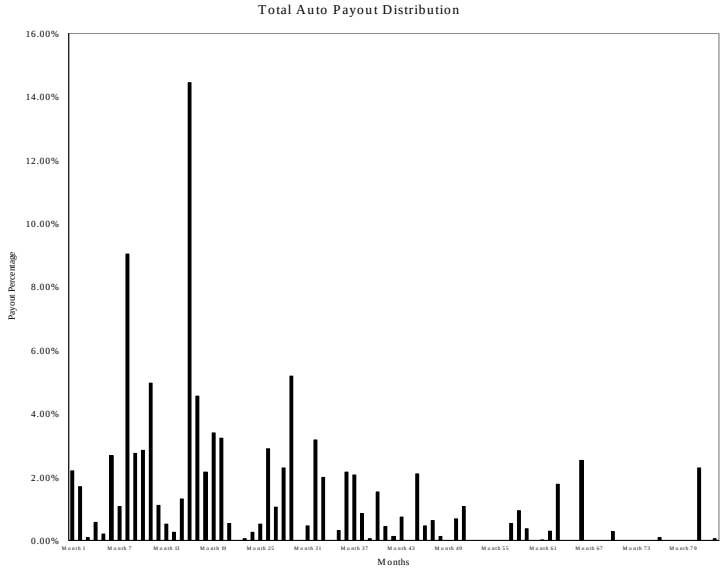
An increased compensation fund would permit PACICC to handle insolvency cases of mid-sized insurers relatively quickly, as funds for policyholder compensation would be readily available, particularly for repayment of unearned premiums. In general, the analysis finds that a larger compensation fund improves the predictability for member companies of future financial burdens as a fund postpones the need to assess member companies by up to a year or more. The model illustrates that there would be additional time for member companies to better incorporate future payments into their corporate financial planning process.

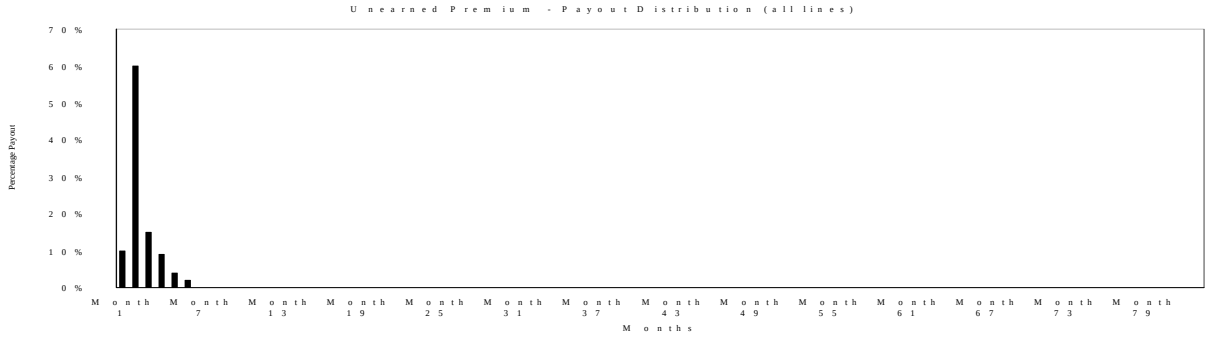
ANNEX A
PAYOUT DISTRIBUTION FUNCTIONS





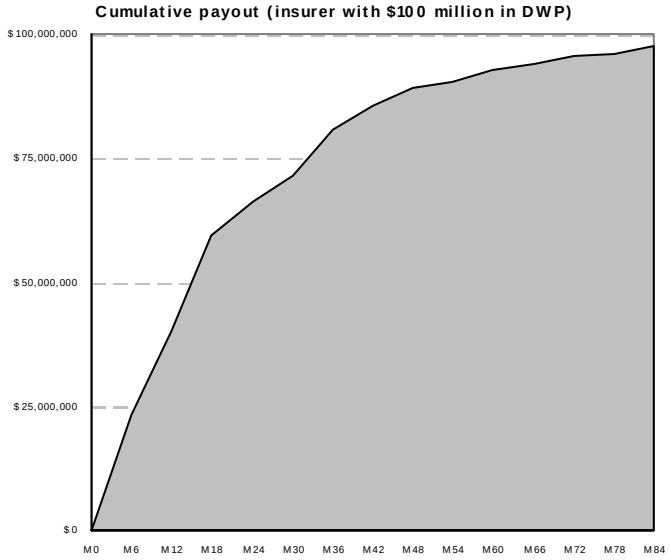


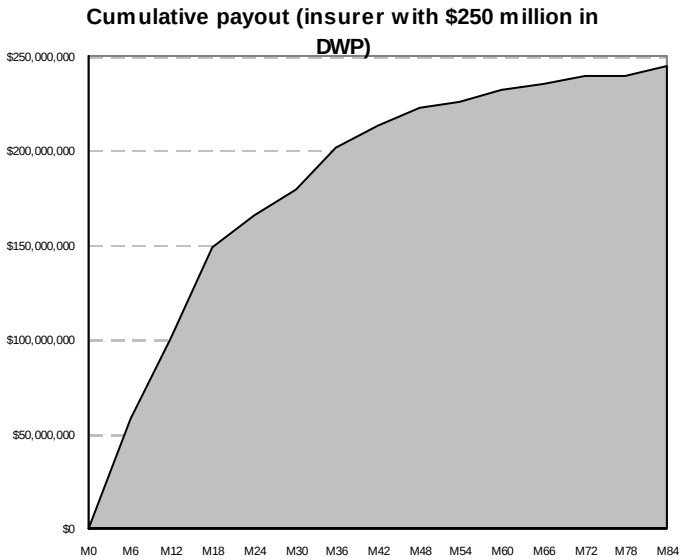


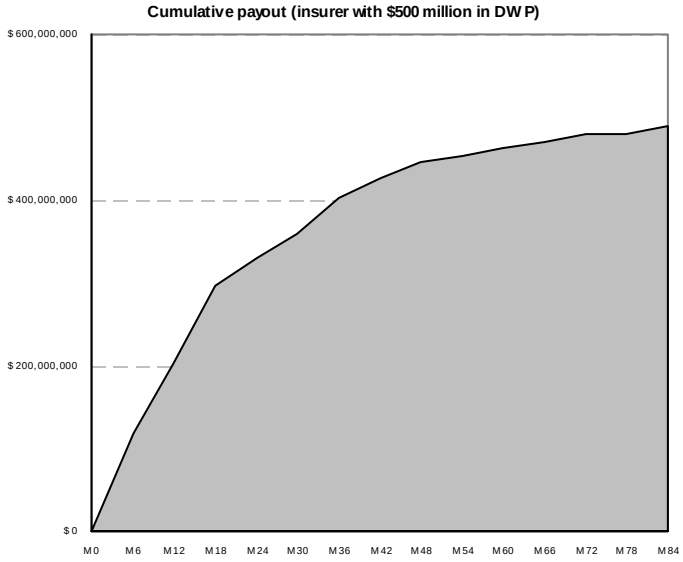


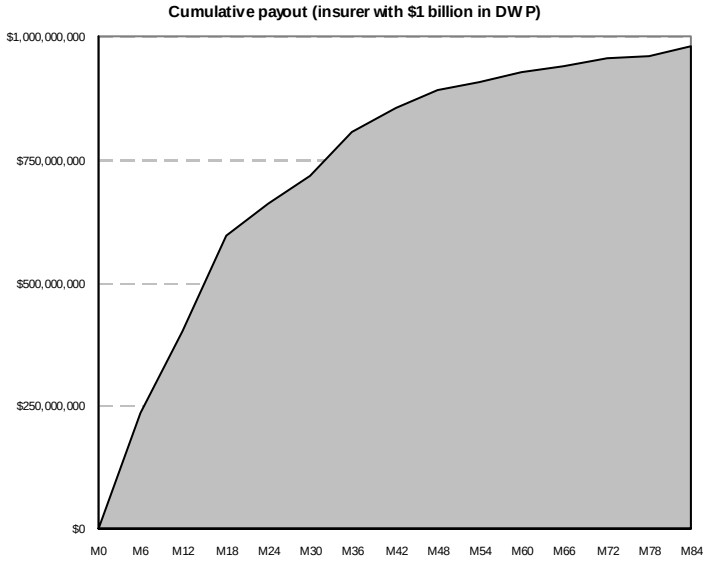
ANNEX A
PAYOUT DISTRIBUTION FUNCTIONS

Industry aggregate portfolio



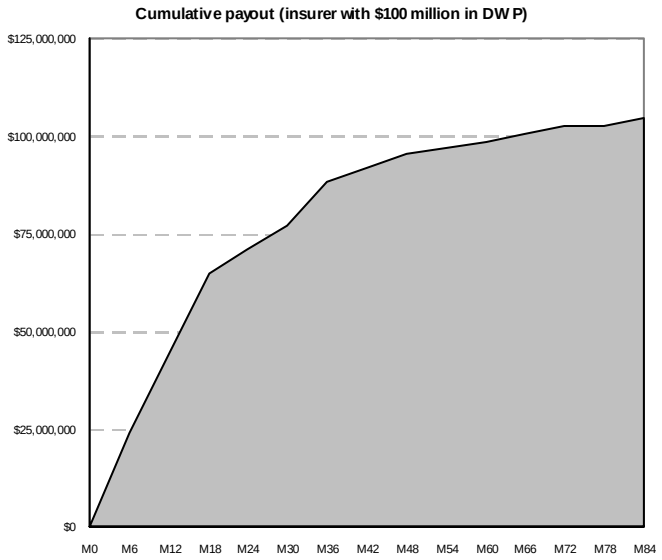


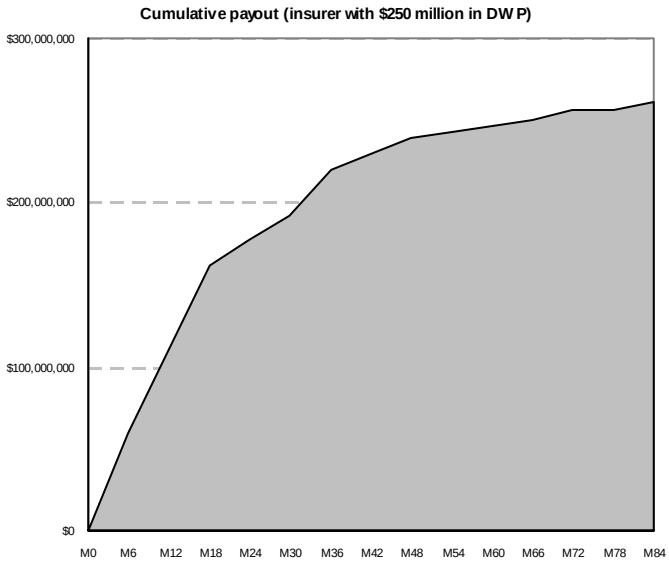


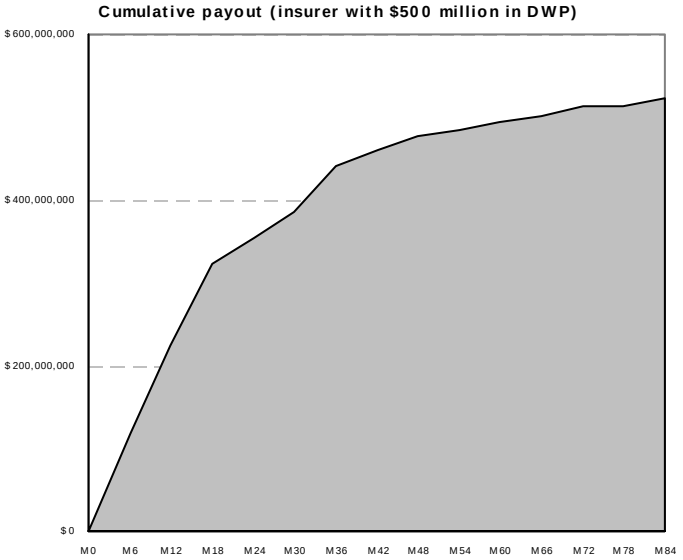


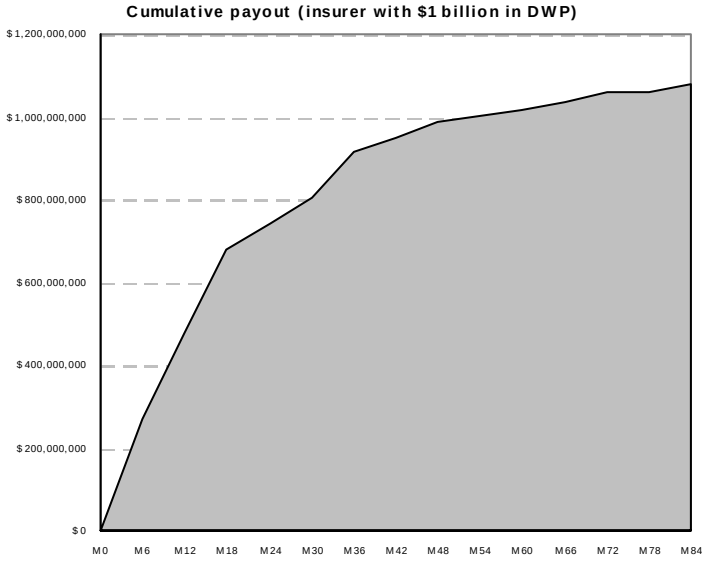
ANNEX A
PAYOUT DISTRIBUTION FUNCTIONS

Personal lines profile



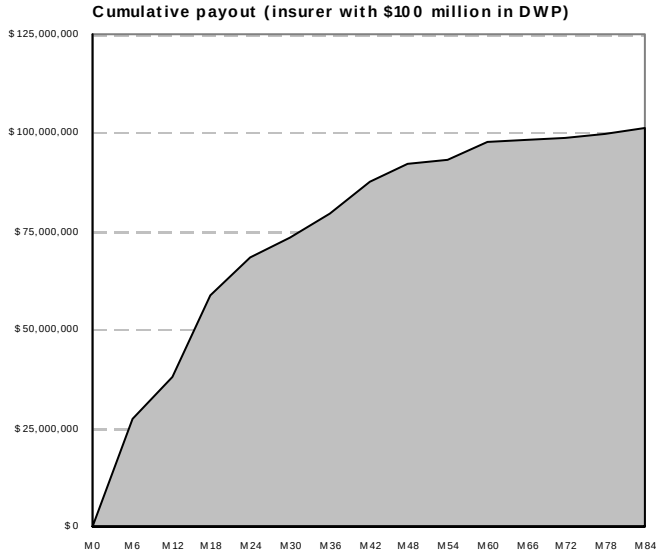


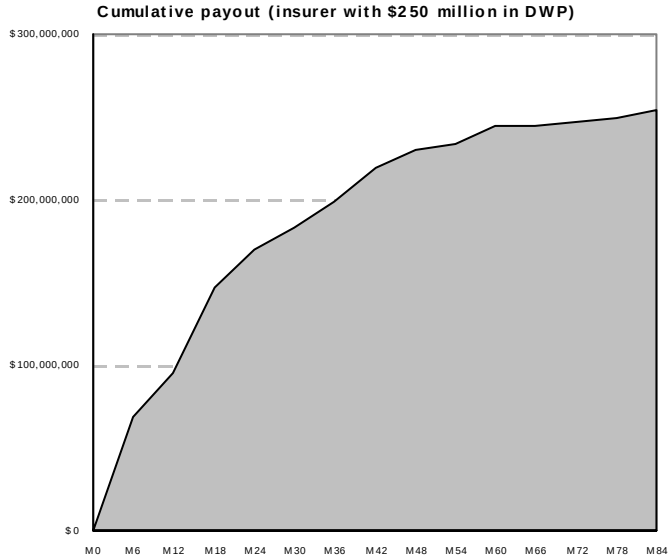


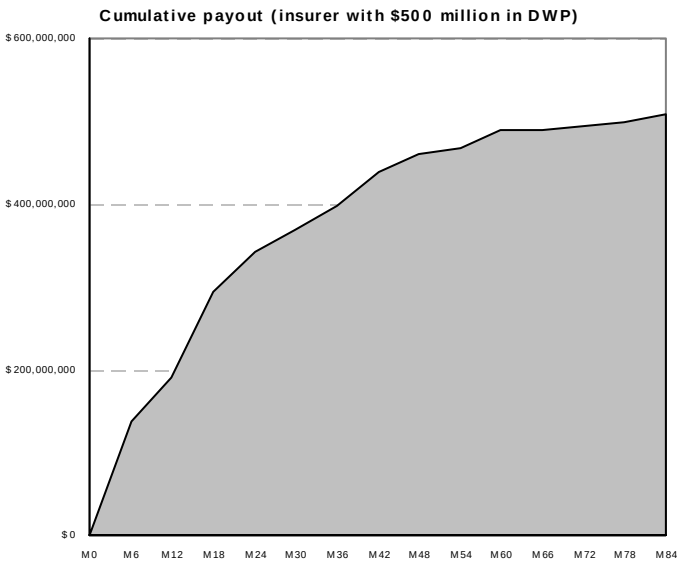


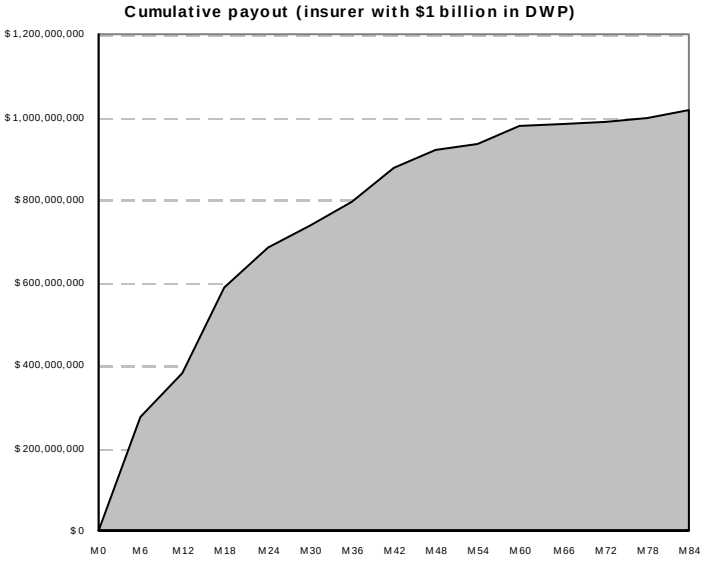
ANNEX A
PAYOUT DISTRIBUTION FUNCTIONS

Commercial profile









ANNEX B
ASSESSMENT CAPACITY (2003)

$ thousands

Province	Personal Property	Commercial Property	Automobile	Commercial Liability	Boiler and Machinery	Hail	Legal	Total
Newfoundland	446	349	1,892	236	26	0	0	**2,950**
Prince Edward Island	117	165	589	100	8	0	0	**980**
Nova Scotia	1,121	818	3,875	614	48	0	0	**6,476**
New Brunswick	796	771	3,967	492	66	0	0	**6,093**
Quebec	8,688	8,170	19,975	6,041	545	0	41	**43,460**
Ontario	14,638	12,431	69,934	15,695	1,148	9	12	**113,866**
Manitoba	1,228	1,317	78	845	52	30	0	**3,550**
Saskatchewan	1,074	1,331	875	614	86	49	0	**4,029**
Alberta	3,487	5,211	19,326	3,623	340	21	2	**32,010**
British Columbia	4,648	5,520	23,496	3,683	370	1	2	**37,720**
Yukon	38	76	133	46	2	0	0	**295**
Northwest Territories	36	139	137	60	5	0	0	**378**
Nunavut	6	38	23	15	4	0	0	**85**
Total	**36,325**	**36,336**	**144,300**	**32,064**	**2,700**	**109**	**58**	**251,892**

ANNEX C
INSURER PROFILE SUMMARY

Industry Aggregate Profile

The profile is a national profile based on industry-wide data from MSA Research Inc. The profile represents the relative distribution of premiums written in the four lines.

Premium distribution:	
Personal property	15.39%
Commercial property	16.56%
Automobile insurance	47.21%
Commercial liability	12.82%
Other	8.01%
Total	100.00%

Personal Lines Profile

The profile is a national profile based on industry-wide data from MSA Research Inc. The profile represents the relative distribution of premiums written in the personal property and automobile lines.

Premium distribution:	
Personal property	19.75%
Commercial property	0.00%
Automobile insurance	80.25%
Commercial liability	0.00%
Total	100.00%

Commercial Lines Profile

The profile is a national profile based on industry-wide data from MSA Research Inc. The profile represents the relative distribution of premiums written in the commercial property and liability lines.

Premium distribution:	
Personal property	0.00%
Commercial property	54.27%
Automobile insurance	0.00%
Commercial liability	45.73%
Total	100.00%