PACICC

Property and Casualty Insurance Compensation Corporation

Société d'indemnisation en matière d'assurances IARD

Technical Appendix:

Extent of Coverage Review

Options for protecting consumers when an insurance company becomes insolvent

November 2005

Extent of Coverage Analysis

PACICC is the national guarantee association that provides benefits for policyholders and claimants across Canada. For fifteen years PACICC has served Canadians well, providing protection to thousands of policyholders and claimants without undue strain on the industry. PACICC's coverage limits were last reviewed in 1996.

In considering PACICC's extent of coverage, it should be noted that PACICC has effectively responded to 12 insurance insolvencies since it was established, facilitating the payment of up to $150 million in claims. In practice, very few PACICC eligible claims have approached the coverage limits.

PACICC has conducted a review and analysis of it covered lines of business in order to identify the potential implications and benefits in connection with the coverage it provides to policyholders and claimants in the event an insurance company is wound up. The projections used are based on PACICC's analysis of data collected by Statistics Canada, MSA Research Inc., Canada Mortgage and Housing Corporation (CMHC), Municipal Property Assessment Corporation, the Insurance Information Division (IID) of the Insurance Bureau of Canada (IBC) and supplemented with special data surveys of member companies. Industry data from IID is drawn from provincial Automobile Statistical Plans, Commercial Property Statistical Plans and the Commercial Liability Statistical Plans.

PACICC constructed various models to simulate the potential impact of changes to its coverages. The results of the modeling can be viewed as representing the change in potential liabilities in connection with the relevant coverage just as if an insurer which was a microcosm of the industry was wound up.

PACICC's 1996 Review

PACICC was founded during a difficult time in the industry. The establishment of the Corporation was followed by a period of considerable turmoil as the industry was in the downward part of the cycle. Several insurance companies failed and rating agencies identified more than two dozen insurers that were vulnerable to insolvency. PACICC responded to these challenges and initiated a review of its coverage in 1996 in order to better respond to policyholder and claimants in the event of an insolvency.

The review investigated the effects of inflation and changes in insurance products to evaluate the appropriateness of the Corporation's coverage. Following that review PACICC introduced the following changes:

- repayment of unearned premiums with coinsurance and a maximum of $1,000
- increasing the loss claims limit to $250,000 from $200,000
- removed the special deductible.

Since then, PACICC has continued to serve policyholders and claimants well while keeping the costs of liquidation well below that of P&C guarantee funds in other jurisdictions.

System of Coverage

The current property and casualty insurance guarantee fund system in Canada provides extensive protection for consumers, with coverage extending to $35 billion in premiums. Non-covered lines, representing 4.2% of total premiums, include specialty lines focusing on particular commercial or financial risks.

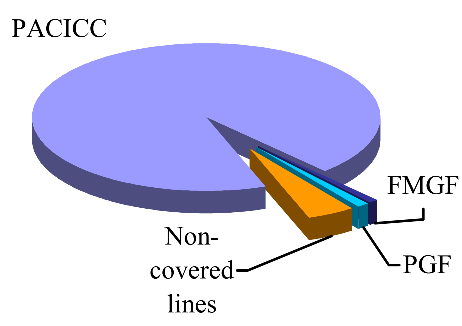
Table 1: P&C guarantee fund coverage (2003)

Covered lines		Non-covered lines	
automobile	$19.2 billion	aircraft	$0.3 billion
personal property	$5.0 billion	credit	$0.06 billion
commercial property	$4.8 billion	credit protection	$0.03 billion
liability	$4.1 billion	fidelity	$0.1 billion
legal expense	$0.01 billion	mortgage	$0.4 billion
boiler & machinery	$0.4 billion	surety	$0.3 billion
accident & sickness	$0.9 billion	title	$0.1 billion
hail	$0.01 billion	hail	$0.05 billion
		marine	$0.3 billion
total*	$34.8 billion	total	$1.6 billion

Source: MSA Research and provincial superintendent reports. Data are for 2003.
** includes an additional $0.4 billion in personal property and automobile insurance written by mutual insurance companies where only aggregate DWP is available.*

In Canada, the P&C guarantee fund system consists of three separate guarantee funds, PACICC, the Fire Mutuals Guarantee Fund and the Promutuel Guarantee Fund. These guarantee funds have historically worked together to ensure a seamless protection system for policyholders and claimants.

P&C Guarantee Fund Coverage in Canada



In general, guarantee fund systems are carefully designed to pursue their objective of providing protection for consumers while limiting the drawbacks of a guarantee system, such as the moral hazard problem. Guarantee fund systems seek to limit the moral hazard problem by carefully defining coverage and ensuring that resources are directed to those the guarantee fund is designed to protect.

The primary objective of a guarantee fund is to protect the interests of policyholders or depositors. Generally protecting individuals rather than corporate institutions is the primary objective of a guarantee fund. Policyholders or depositors are creditors of financial institutions. Creditors usually extend credit after checking the credibility of a debtor and are responsible for their credit decisions. Typically information asymmetry and relatively high research costs about the financial soundness of a financial institution make it difficult for individual consumers to adequately assess the creditworthiness of a financial institution.[1] The financial and managerial issues of financial institutions are much more technical and complex than for many other types of corporate entities.

Guarantee funds are therefore designed to be the final safety net (the supervisory system being the primary protection mechanism) for consumers in the event a financial institution fails. In an environment where there is a guarantee fund, sophisticated consumers may opt for the cheapest product irrespective of the risk associated with the insurer as they are protected to the extent of the guarantee funds limits, should the insurer become insolvent. The lack of risk averse behaviour on the part of some consumers provides incentives for some financial institutions to increase risk taking. The 2001 OECD review on guarantee funds notes that such financial institutions may try to expand high risk-high return investments in the use of the funds gathered by attractive (under priced) products. The review further notes that this is typical behaviour of financial institutions when they experience financial distress. [2]

Guarantee fund coverage is therefore generally carefully designed to specifically ensure protection for consumers and to limit the effects of moral hazard. Defined coverage and all-risk systems are two predominant design mechanisms for guarantee funds (coinsurance – discussed in a later section – is another key design mechanism). A defined coverage system identifies the specific elements of coverage that are to be provided and all else is excluded from coverage. An all-risks system provides coverage for all products with the exception of those that are specifically excluded.

In terms of the extent of coverage there is no *a priori* difference in the extent of coverage offered by either an all-risk or defined coverage system. In general, both types of systems are typically set up to protect consumers and the coverages that are defined to be protected or excluded reflect the desired level of protection. The differences between the two systems are primarily in their clarity for consumers and relative ease of maintenance. Defined coverage systems provide greater clarity for consumers who can identify immediately what is covered. All-risk systems, with complex lists of exclusions, multitude of definitions and exceptions are less transparent. Defined coverage systems are relatively easy to maintain in an environment where protected lines of business are uniformly defined, requiring little maintenance other than periodic reviews. In diverse product environments, particularly when involving multiple jurisdictions, defined coverage systems can potentially lead to disputes over coverage and potentially complex

[1] New Zealand is an exception where insurance companies are required to inform the consumer of their financial strength rating from a rating institution prior to the establishing a contract. New Zealand does not have a guarantee fund for insurance.
[2] Moral hazard is a common problem in insurance and deposit taking industries even without a guarantee fund. However, guarantee funds have been found to strengthen incentives for such behaviour.

rules. All-risk systems are flexible enough to address the concerns of diverse product definitions but add complexity. All-risk systems are however susceptible to 'coverage creep' whereby new products that are not excluded are automatically covered. This may result in some specialty lines of business being unintentionally covered by a guarantee fund, increasing the moral hazard risk. To mitigate moral hazard risk, all-risk systems require constant updating.

Table 2: Coverage System

Defined benefit system	All-risk system
Canadian Guarantee Funds	
CompCorp	PACICC
Canada Deposit Insurance Corporation (CDIC)	Fire Mutuals Guarantee Fund
Credit Union Deposit Insurance Corporation of British Columbia	
Alberta Credit Union Deposit Guarantee Corporation	
Saskatchewan Credit Union Deposit Guarantee Corporation	
Credit Union Deposit Guarantee Corporation (Manitoba)	
Deposit Insurance Corporation of Ontario (DICO)	
Autorité des marchés financiers	
Credit Union Deposit Insurance Corporation (PEI)	
Nova Scotia Credit Union Deposit Insurance Corporation	
New Brunswick Credit Union Deposit Insurance Corporation	
Newfoundland & Labrador Credit Union Deposit Guarantee Corporation	
International P&C Insurance Compensation Corporations	
U.S. state guarantee funds*	U.S. state guarantee funds*
Financial Services Compensation Scheme (U.K.)	
Consap (Italy)	
Fonds de Gerantie contre les Accidents de Circulation et de Chasse (France)	
Belgian Guarantee Fund (Belgium)	
Verkehrsopferhilfe e.V. (Germany)	
Non-Life Insurance Policy-holders Protection Corporation of Japan	
Consorcio de Compensación de Seguros (Spain)**	

** most U.S. state P&C systems are open coverage systems however several states have multiple guarantee funds for specific coverages (particularly workers compensation) and are therefore in effect defined coverage systems*
*** for compulsory automobile insurance defined coverage system. For non-compulsory coverages the CCS acts as the liquidator, paying out to all claims to the extent that the estate assets permit.*

PACICC's, when its guarantee system was designed, was set up to address the challenge of extending coverage across multiple jurisdictions with very different licencing systems and definitions for classes of insurance. In all, there were nearly 60 different classes of insurance around which to build a national industry guarantee fund. In order to address all the differences among jurisdictions, PACICC's coverage scheme was designed as an all-risk system in order to encompass all the various classes of insurance, with exclusions being developed as required to limit exposure to specialty risks that might arise as a result of product innovation.

In contrast, other guarantee fund systems in Canada and internationally, typically operate in a defined coverage system. Jurisdictions with a uniform licencing of classes of insurance typically have a defined coverage system. Jurisdictions with a heterogeneous system of licencing typically have an all-risk system.

In March 2002, the Canadian Council of Insurance Regulators (CCIR) completed the development of a nationally accepted set of standard insurance classes. The CCIR classes of insurance reduces the number of classes of insurance to 16 (15 in Quebec) and streamlines the licencing process for insurers. In August 2005, the CCIR classes were adopted federally (federal classes of marine, fire and loss of employment require legislative amendment before they can be harmonized).

Table 3: Status of Harmonization of Classes of Insurance

	Harmonized licencing forms	Harmonized classes of insurance
British Columbia	Yes	No. Currently maintains 48 classes of P&C insurance (B.C. Reg 337/90). Awaiting outcome of federal & Quebec review processes before implementing CCIR classes.
Alberta	Yes	Use of CCIR licencing forms containing CCIR classes of insurance. By regulation, currently maintains 39 classes of P&C insurance (Reg 121/2001). Regulation expires May 1, 2006.
Saskatchewan	Yes	Section 2 of the Saskatchewan Insurance Act (SIA) maintains 23 classes of insurance. The Saskatchewan Insurance Amendment Act (passed fall 2003) amending SIA reflecting CCIR classes of insurance is not yet in force.
Manitoba	No	Section 1 of the Insurance Act maintains 24 classes of P&C insurance. 2004 review of Act recommends adopting CCIR classes.
Ontario	Yes	CCIR harmonized classes incorporated into R.R.O. 1990 Reg. 666 (amended in 2004)
Quebec	Yes	The regulation respecting the application of the Act respecting insurance reflects the CCIR classes of insurance
New Brunswick	No	Insurance Act defines 20 classes of insurance
Nova Scotia	Yes*	Insurance Act defines class of insurance as per Insurance Companies Act (Canada).
Prince Edward Island	No	Insurance Act defines 20 classes of insurance P&C related insurance.
Newfoundland & Labrador	Yes	Insurance Act contains definitions of classes of insurance.
Yukon	Yes	Insurance Act regulations (Y.C.O. 1977/235) define classes of insurance consistent with that of the CCIR classes.
Northwest Territory		Insurance Act regulations (R.R.N.W.T. 1990 c.I-3) define classes of insurance consistent with that of the CCIR classes.
Nunavut		Insurance Act regulations (R.R.N.W.T. 1990 c.I-3) define classes of insurance largely consistent with that of the CCIR classes (with additional classes)

** Nova Scotia uses its own form rather than the CCIR form but the classes of insurance are harmonized with the CCIR classes.*

Table 3 outlines the adoption of the harmonized licencing forms (used to licence insurers) and the statutory/regulatory defined classes of insurance. Currently most jurisdictions have adopted the harmonized licencing forms for the classes of insurance. Many are now using the harmonized classes of insurance.

A defined coverage system where PACICC defined the classes of insurance that it did cover as: automobile insurance, boiler & machinery insurance, property insurance, legal expense insurance, liability insurance (subject to some specific exclusions) and accident and sickness would create a similar level of coverage as PACICC's current system.

Unearned Premium Repayment

The *Winding-Up and Restructuring Act* (WURA) governs the priority of payments for the insolvent insurer's estate assets. Part III, Section 161 of the Act, states that claims for unearned premiums rank below other policyholder claims. Therefore under WURA, unearned premiums are to be paid following the payout of preferred creditors and loss claims.

To better protect policyholders, PACICC introduced coverage for unearned premiums in 1997, providing up to a maximum repayment of $1,000 with a 30% coinsurance deductible. Effectively, PACICC ensures that eligible policyholders receive their unearned premiums in a timely manner in order to facilitate policyholder acquisition of alternate coverage despite their lower priority status under WURA.[3]

At that time, average earned premium for personal property and automobile insurance in all jurisdictions were below the $1,000 threshold.

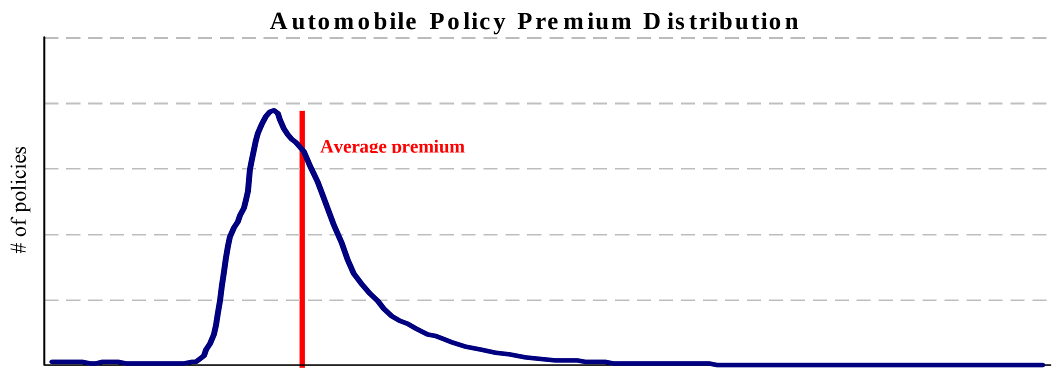
This analysis deals only with the automobile (private passenger, non-fleet), personal property, commercial property and commercial liability (excluding D&O, E&O and employer's liability) classes of insurance business in Canada. Survey results of PACICC's membership indicate that commercial property and liability coverages are generally incorporated into a single comprehensive policy. As a result, for this analysis, commercial property and liability have been combined and for most commercial insureds assumed to be contained in a single policy.

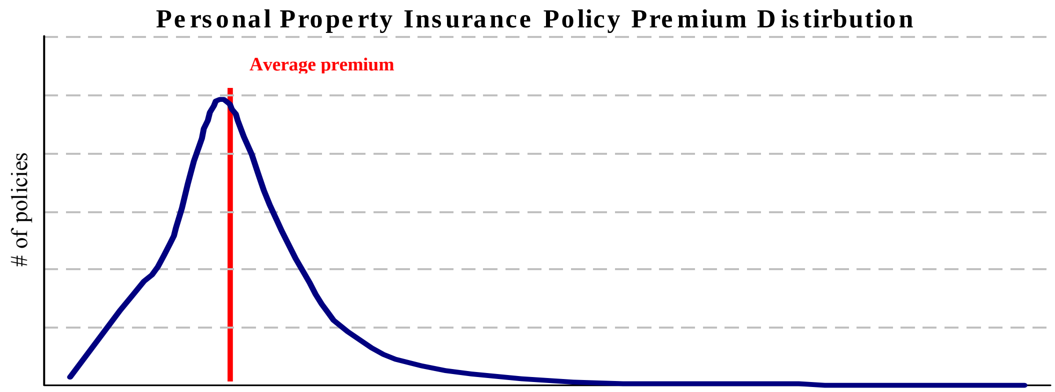
Facility Association policies were excluded from the analysis. In the event that a Facility Association carrier was to become insolvent, the Facility Association policies and claims would be transferred to another carrier and would not become the responsibility of PACICC.

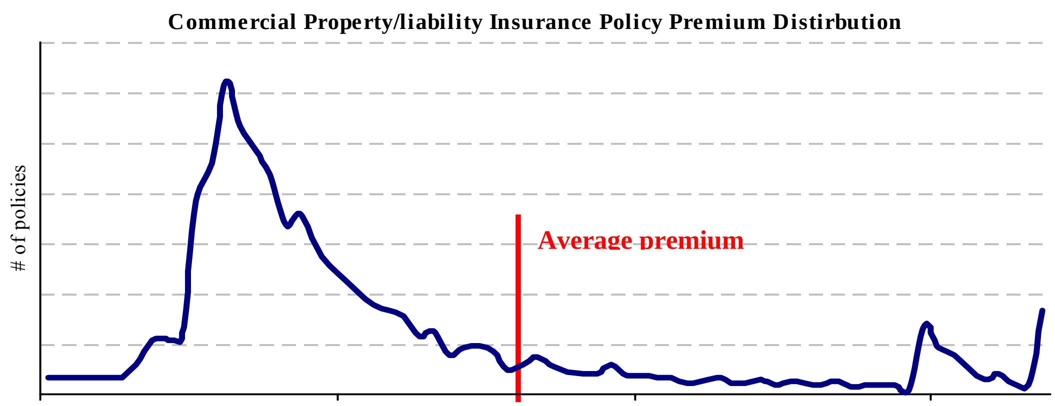
A simple MS Excel-based model was used to estimate the distribution of policy counts and average premium amounts by policy premium size range. Due to data limitations, these distributions were unavailable on a provincial basis. As a result, the model estimates provincial distributions based on the general statistical characteristics derived from the 2002 Exactor Insurance Services report on the projected cost impact to PACICC of proposed changes to PACICC's unearned premium coverage in Newfoundland &

[3] As a result PACICC accepts a greater degree of risk/ultimate liability as there may be potentially fewer assets to distribute to lower priority claims on the estate, such as unearned premiums.

Labrador, a small sample of insurers who confidentially provided such data and the general insurance statistical literature.[4] The estimated shapes of the distributions, by coverage type, shown in the charts below.







Automobile, personal property and commercial property distributions all exhibit skewness to varying degrees, suggesting the majority of policies are less than the mean.[5]

[4] The distributions from this report were based on a special run of IBC's Insurance Information Division statistical plans for Newfoundland. Company supplied data was national. The national and Newfoundland distributions were very similar. Overall, the model assumes that the distributions are unchanged from these sources but accounts for differences in the measures of central tendency, such as the mean.

[5] The skewness of the distribution characterizes the degree of asymmetry of a distribution around its mean. Normal distributions produce a skewness statistic that approximates zero. As the coefficient of skewness departs further from zero, a positive value indicates the possibility of a positively skewed distribution (that is, with scores bunched up on the low end of the score scale) or a negative value indicates the possibility of

Analysis based solely on the mean therefore inappropriately overestimates the restrictiveness of any given threshold.

The model estimates the unearned premium liability for the whole industry and can be used to derive estimates of unearned premium liabilities under different scenarios. These estimates can be viewed as representing what would be expected in terms of unearned premium liabilities if an insurer, reflective of the industry aggregate business, were wound-up. Overall, the model is dependent upon a number of parameters that can be adjusted. For the purposes of this analysis these parameters are as follows:

- contracts are assumed to be half way through the contract term
- there is a 30% coinsurance arrangement
- payment plans
- maximum payout

Noting the innovation to premium payment methods in recent years, for this analysis, unearned premium liabilities were adjusted based on utilization of various payment methods. The adjustment factors 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:

Table 4: 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.

The analysis further assumes that policies greater than $1,500 are primarily financed through monthly payment plans[6].

It should be noted that the analysis simulates an insurer that mirrors the distribution of the all-industry data. The results will also vary depending on whether or not an insurer writes only one vehicle per automobile policy, only one personal lines coverage form per

a negatively skewed distribution (that is, with scores bunched up on the high end of the scale). Skewness statistics for automobile, personal property and commercial property are: 2.35,2.14 and 1.98 respectively.

[6] This may not be reflective of actual practice if owners of high end vehicles with large premiums pay their premiums on an annual basis.

personal property policy or only one commercial lines coverage form per commercial lines policy. Results will differ for any actual insurance company.

The following table provides a high level summary of the number of policies that reach or exceed the various thresholds. PACICC's current threshold is highlighted.

Table 5: PACICC Unearned Premium Coverage for a Typical Company
% of Policies Affected by Cap

	Aggregate	**Private passenger automobile**	**Personal property**	**Commercial property/liability**
$1,000	18.8%	28.2%	2.9%	79.0%
$1,200	12.8%	18.4%	0.6%	79.0%
$1,500	9.2%	11.4%	0.5%	78.6%
$2,000	4.9%	3.2%	0.1%	77.8%
$2,500	3.5%	0.5%	0.0%	76.0%
$5,000	2.3%	0.0%	0.0%	53.6%

Table 6 provides detailed estimates, by province and type of coverage, of the proportion of unearned premium liabilities covered by PACICC. Currently PACICC provides near complete coverage for personal property and extensive coverage for personal automobile policies. Commercial property/liability policies are only modestly protected in all jurisdictions.

Unearned premium liabilities subject to the threshold cap are generally related to high value properties and vehicles or high risk drivers. In private passenger automobile, the rate changes being applied in various jurisdictions in late 2004 and 2005 will likely have an important impact on the proportion of policies affected by the limit.

Table 6: PACICC Unearned Premium Coverage Analysis

Estimated proportion of total potential unearned premium liabilities covered by province and selected thresholds, after applying 30% coinsurance. Therefore the table should be read as, for example total Canadian auto at the $1,000 limit: 83.4% of the unearned premium (after deducting 30% coinsurance) is refunded by PACICC. The remaining 16.6% exceeds the limit.

UEP limit	Newfoundland & Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
Automobile											
$1,000	87.7%	97.5%	92.3%	81.4%	99.6%	77.6%	n/a	n/a	82.5%	n/a	83.4%
$1,200	97.9%	97.9%	98.6%	94.0%	99.7%	89.1%	n/a	n/a	95.3%	n/a	92.7%
$1,500	98.6%	98.4%	99.0%	98.8%	99.8%	98.1%	n/a	n/a	98.7%	n/a	98.6%
$2,000	99.1%	99.0%	99.3%	99.2%	99.9%	98.8%	n/a	n/a	99.2%	n/a	99.1%
$2,500	99.5%	99.6%	99.7%	99.8%	100.0%	99.3%	n/a	n/a	99.6%	n/a	99.5%
$5,000	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	n/a	n/a	100%	n/a	100.0%
Personal property											
$1,000	99.8%	99.6%	99.8%	99.8%	99.0%	99.8%	99.6%	99.5%	99.8%	99.7%	99.7%
$1,200	99.8%	99.7%	99.8%	99.9%	99.1%	99.8%	99.7%	99.6%	99.9%	99.8%	99.8%
$1,500	99.9%	99.8%	99.8%	99.9%	99.3%	99.9%	99.8%	99.7%	99.9%	99.8%	99.8%
$2,000	99.9%	99.8%	99.9%	99.9%	99.5%	99.9%	99.9%	99.8%	99.9%	99.9%	99.9%
$2,500	100.0%	99.9%	99.9%	100.0%	99.8%	100.0%	99.9%	99.9%	100.0%	100.0%	100.0%
$5,000	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Commercial property											
$1,000	28.0%	26.45	23.1%	23.4%	19.1%	14.1%	19.1%	25.4%	17.1%	18.3%	17.1%
$1,200	32.5%	30.7%	26.8%	27.1%	22.0%	16.9%	22.0%	29.5%	19.6%	21.1%	19.9%
$1,500	34.4%	36.8%	32.1%	32.6%	26.4%	20.1%	26.4%	35.3%	23.4%	25.3%	23.8%
$2,000	43.9%	40.7%	40.6%	41.3%	33.3%	23.3%	30.4%	40.5%	27.6%	32.0%	28.7%
$2,500	53.5%	49.2%	44.1%	50.0%	35.7%	27.9%	36.3%	49.0%	32.9%	35.1%	33.0%
$5,000	100.0%	92.1%	81.7%	85.7%	64.8%	49.4%	66.1%	91.4%	59.4%	63.7%	59.4%

Note: proportions are rounded to the nearest tenth of a decimal place. In no jurisdiction is 100% of the potential unearned premium liability covered but may appear so due to rounding. Ex. 99.96% would appear as 100.0%.

Analysis of Alternate Thresholds

It has been nearly a decade since PACICC's current threshold was introduced and alternate thresholds for PACICC's unearned premium coverage have been discussed and suggested in several forums. This section provides a cost/benefit analysis of various alternative thresholds.

Cost/benefit analysis is a relatively simple and widely used technique for deciding whether to make a change. The technique simply adds up the value of the benefits of a course of action, and subtracts the costs associated with it. In the context of PACICC's unearned premium coverage the benefits include the incremental increase in coverage of a consumer's unearned premium liabilities. The costs associated with any change in the unearned premium threshold are primarily costs associated with incidence effects and the direct costs for policyholders of solvent companies who must bear the cost of the increased liabilities. Incidence effects occur when the unearned premium liabilities of personal lines policyholders are compensated by commercial policyholders and vice versa. Incidence effects recognize that some group must pay the costs associated with the unearned premium protection through assessments and measures whether there positive or negative transfers/impacts between groups.

PACICC's FINCAM model was utilized to simulate alternative thresholds in order to estimate the costs and benefits of increasing the threshold. The model was run for an insolvent insurer, with business reflective of the industry aggregate business, with $100 million in claims liabilities[7]. Table 7 provides the details of the simulation exercise.

Table 7: Alternate Threshold Impact Simulation

	$1,000	**$1,200**	**$1,500**	**$2,000**	**$2,500**	**$5,000**
UEP liabilities						
Automobile	$12,700,000	$14,113,195	$15,015,120	$15,089,965	$15,153,081	$15,226,459
Personal property	$3,600,000	$3,601,926	$3,603,758	$3,606,342	$3,608,926	$3,610,645
Commercial	$3,900,000	$4,557,912	$5,435,042	$6,567,989	$7,547,949	$13,576,581
Total	$20,200,000	$22,273,033	$24,053,921	$25,264,296	$26,309,955	$32,413,685
Incremental increase in benefits to policyholder						
Automobile	0%	11.1%	6.4%	0.5%	0.4%	0.5%
Personal property	0%	0.1%	0.1%	0.1%	0.1%	0.0%
Commercial	0%	16.9%	19.2%	20.8%	14.9%	79.9%
Total increase in cost	*0%*	*10.3%*	*8.0%*	*5.0%*	*4.1%*	*23.2%*
Required assessment rate	0.06%	0.06%	0.07%	0.07%	0.08%	0.09%
Assessments						
Automobile	$11,367,677	$12,534,289	$13,536,495	$14,217,641	$14,806,092	$18,241,005
Personal property	$3,041,544	$3,353,683	$3,621,834	$3,804,082	$3,961,528	$4,880,576
Commercial	$5,790,779	$6,385,061	$6,895,592	$7.242,573	$7,542,334	$9,292,104
Total	$20,200,000	$22,273,033	$24,053,921	$25,264,296	$26,309,955	$32,413,685
Transfers between policyholders *(benefit received less amount of assessment)*						
Automobile	$1,332,323	$1,578,906	$1,478,626	$872,324	$346,988	$(3,014,546)
Personal property	$558,456	$248,243	($18,076)	($197,740)	($352,603)	($1,269,931)
Commercial	($1,890,779)	($1,827,149)	($1,460,550)	($674,584)	$5,615	$4,284,477

[7] See PACICC's financial preparedness review for details on the FINCAM model.

Three important conclusions can be drawn:

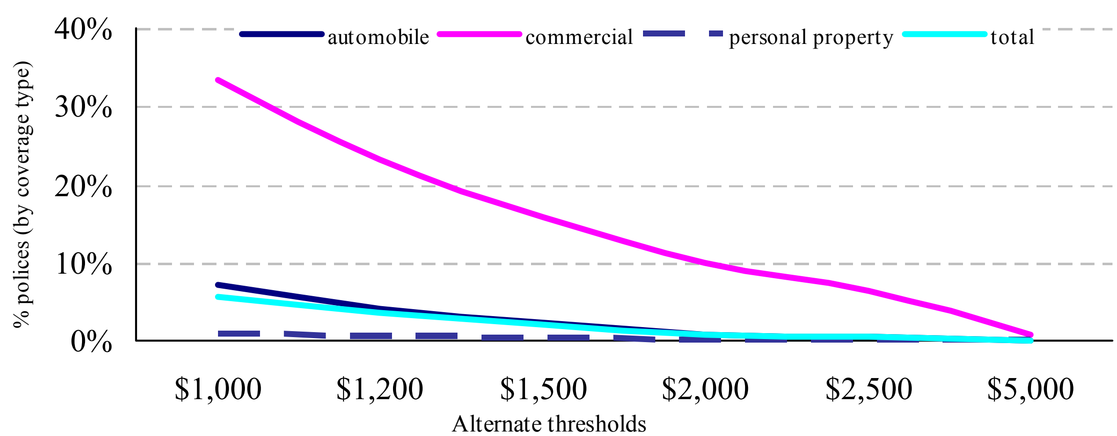
- Increasing the threshold provides no increase in benefits to personal property policyholders.
- Auto insurance policyholders receive an increase in benefits with a threshold increase to $1,200 and $1,500 but thresholds above this have marginal impact on benefits.
- Higher thresholds generally mean increased benefits to commercial policyholders, with a general acceleration of increasing benefits as the threshold increases.

Increasing the threshold increases the overall costs of the liquidation, costs that are borne by other policyholders. Raising the threshold to $1,200 would result in policyholders incurring 10.3% in increased assessment costs. Raising the threshold to $5,000 would increase assessments to other policyholders by 50.6%. Commercial insureds receive an increased level of benefits that is greater than their cost incurred, they would be subsidized by personal policyholders. Automobile insureds receive an increased level of benefits greater than their cost incurred only at the $1,200 level. Personal property insureds incur costs greater than any increased benefit they might receive from any higher threshold level.

The incidence effects are identifiable from the results on transfer between policyholders. At the lower thresholds, personal insureds as a class benefit by receiving more in benefits than they are assessed to pay. Commercial insureds subsidize the unearned premium repayments to personal insureds. After the $1,200 threshold, there is a net transfer from homeowners to commercial policyholders. Automobile insurance policyholders continue to receive transfers from commercial policyholders until after the $2,500 threshold where automobile insurance policyholders also begin to transfer resources to commercial policyholders.

In addition to the industry aggregate simulation, the alternate thresholds were applied to the Markham General Insurance Company (MGIC) and Advocate General Insurance Company (AGIC) data.[8]

MGIC Number of Policies Affected by Maximum Under Alternate Thresholds



[8] Data in this and subsequent from liquidated companies was evaluated in both current and constant dollar amounts. Claims severities were not adjusted.

For the MGIC liquidation, 343 policies (5.7%) were affected by the PACICC limit. Automobile insurance (241) and commercial policies (84) represented the majority of policies affected by PACICC's limits. On average, commercial unearned premium refunds were twice that of auto insurance premium refunds and four times those of personal property refunds. Overall, 62% of registered unearned premiums were returned to policyholders. With coinsurance, the maximum possible potential repayment is 70% of registered eligible unearned premiums.

Alternative thresholds would have had little impact on MGIC's personal property policies, but would have reduced the number of automobile and commercial policies affected by the limit. The following table summarizes the amount of registered unearned premium covered under each alternative threshold for MGIC.

Table 8: MGIC Estimated Unearned Premium Refund by Alternate Limit
($1,000 limit is actual refunds)

	$1,000	**$1,200**	**$1,500**	**$2,000**	**$2,500**	**$5,000**
Auto	$742,337	$769,016	$791,168	$806,485	$812,591	$823,379
Commercial	$102,530	$112,557	$122,347	$132,828	$139,791	$152,023
Personal property	$283,379	$285,014	$286,579	$287,322	$287,322	$287,322
Total	$1,128,246	$1,166,586	$1,200,094	$1,226,634	$1,239,704	$1,262,724
	% change in UEP refund/cost from current limit					
Auto	0%	3.6%	6.6%	8.6%	9.5%	10.9%
Commercial	0%	9.8%	19.3%	29.6%	36.3%	48.3%
Personal property	0%	0.6%	1.1%	1.4%	1.4%	1.4%
Total	0%	3.4%	6.4%	8.7%	9.9%	11.9%

Source: PACICC, with data from MGIC

In both dollar and relative terms, increasing the limit has little impact on personal property policies. Automobile insurance experiences modest increases in unearned premium refunds in both dollar and relative terms. In dollar terms, commercial insurance increased by only up to $50,000 across the alternative thresholds. In relative terms, commercial policies benefit the most from any increase in PACICC's unearned premium limits.

Advocate General was wound-up in 1989 prior to the introduction of PACICC's unearned premium coverage. However, as Advocate General is the largest insolvency to date, and a nationally licenced insurer, it was included in the analysis. After adjusting for inflation, 1,675 policies (6.3%) would have fallen outside of the PACICC limit. Similar to MGIC, automobile insurance (1,360) and commercial policies (224) represented the majority of policies falling outside of PACICC's limits. Table 9 summarizes the amount of registered unearned premium covered under each alternative threshold for Advocate General.

In both dollar and relative terms, increasing the limit would have had little impact on personal property policies. Automobile insurance would have experienced modest increases in unearned premium refunds. It should be noted that at the time Advocate General was wound-up, the use of payment plans was not widespread and hence most policies were annual. With a payment plan utilization similar to the current industry aggregate, the estimated increased unearned premium coverage for personal property and automobile coverages would be reduced. Commercial policies would have benefited the most from any increase in PACICC's limits.

Table 9: Advocate General Estimated Unearned Premium Refund by Alternate Limit

	$1,000	$1,200	$1,500	$2,000	$2,500	$5,000
Auto	$3,824,040	$3,979,152	$4,121,592	$4,234,314	$4,282,311	$4,323,451
Commercial	$417,054	$443,535	$474,178	$507,525	$528,715	$570,788
Personal property	$1,431,936	$1,441,634	$1,449,692	$1,456,447	$1,459,167	$1,465,858
Total	$5,673,030	$5,864,321	$6,045,462	$6,198,286	$6,270,193	$6,361,097
		% change in UEP refund/cost from current limit				
Auto	0%	4.1%	7.8%	10.7%	12.0%	13.1%
Commercial	0%	6.3%	13.7%	21.7%	26.8%	36.9%
Personal property	0%	0.7%	1.2%	1.7%	1.9%	2.4%
Total	0%	3.4%	6.6%	9.3%	10.5%	12.1%

Source: PACICC, with data from Advocate General Insurance Company (in liquidation). Data is inflation adjusted using Bank of Canada data.

Coinsurance

One of the chief concerns of all guarantee funds is the moral hazard problems that may occur for policyholders, insurers and supervisors. In addition, they may be less inclined to assess the financial situation of an insurer. Where there is a safety net, policyholders may seek the cheapest products available irrespective of the financial situation of the insurer because of the belief that they are protected should an insurer become insolvent.

The research literature on guarantee fund structures notes that the lack of risk averse behaviour on the part of consumers creates incentives to insurance companies for increased risk-taking. Insurers may try to expand high-risk return investments in the use of funds gathered by attractive (underpriced) insurance products. International and historical experience suggests that behaviour is typical of financial institutions when they experience financial distress. Recent research in peer reviewed journals has found that moral hazard is a real factor for guarantee funds[9]. In particular Grace et al, have found that guarantee fund coverage limits encourage consumers to pay greater attention to insurers' financial health. The effect is larger for commercial than personal insureds but is statistically significant for both types of policyholders.

Further, the OECD's review of guarantee fund design and practice notes that there may be moral hazard in the supervision of insurance. When a policyholder protection fund exists, insurance authorities may feel reduced pressure for strict supervision to avoid any possibility of insolvency, particularly in instances where there are competing supervisory objectives such as rate stability.

The European Commission Internal Markets Directorate has relied on the work of Dr. Andreas Horsch at the university Ruhr-Universităt Bochum in Germany, in its review of policyholder protection funds. This research highlights the importance of efficient guarantee fund design that incorporates features to limit the potential negative effects of moral hazard. The main

[9] So, Jacky, Wei, Jason Z., Deposit Insurance and Forebearance Under Moral Hazard, *Journal of Risk and Insurance*, December 2004. Also, Grace, Martin F., Klein, Robert W., Kleindorfer, Paul R., Homeowners Insurance Coverage Bundled with Catastrophe Coverage, *Journal of Risk and Insurance*, September 2004

conclusion of Dr. Horsch's research is that efficient policyholder protection and deposit insurance fund design and activity should include the use of coinsurance or deductibles.

Internationally the use of coinsurance for unearned premium coverage is common, although the approach varies considerably.

Table 10: International Comparison of Guarantee Fund Coinsurance Provisions

	Deductible level	
France	€300 abatement	
Japan	10% or more	Repayment depends upon level of capital of insurer being wound-up
Spain	Variable	Repayment depends upon level of assets of insurer being wound-up
United Kingdom	10% after claim of ₤2,000 on non-compulsory coverages	
United States	Fixed dollar deductibles	Varies by state.

Under the current formula established in the Memorandum of Operation, PACICC voluntarily pays to a policyholder 70% of the amount of the unearned premium up to a maximum of $700. The tables below summarize PACICC's analysis of the impact for an insurance company representative of the industry aggregate under alternative limits and coinsurance arrangements. The estimated proportion of unearned premium liability paid is the ratio of what PACICC would voluntarily pay, after coinsurance, but with the limit cap, to what it would pay, after coinsurance, if there were no limit cap.

Automobile Insurance

The following analysis utilizes average annual premiums estimated for 2004, based on data from MSA Researcher and IID Economic Reports. The analysis does not take into account any rate rollbacks or reductions that may result from product modifications or regulatory action. Figures for Quebec were estimated using data from SAAQ and MSA Researcher. As SAAQ is a government insurer, PACICC does not have the full liability associated with the average premium. Therefore, the PACICC proportion of unearned premium paid for Quebec is understated by these estimates. The average annual premiums utilized were:

Newfoundland & Labrador:	$956
Prince Edward Island:	$798
Nova Scotia:	$925
New Brunswick:	$1,085
Quebec:	$584
Ontario:	$1,250
Alberta:	$1,072

Table 11: 30% coinsurance from $500 - $1,000. Maximum payment $850

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$500	87.7%	90.0%	+31.5%
Prince Edward Island	$1,000	$500	97.5%	98.8%	+35.2%
Nova Scotia	$1,000	$500	92.3%	93.3%	+34.2%
New Brunswick	$1,000	$500	81.4%	83.9%	+35.4%
Quebec	$1,000	$500	99.6%	99.8%	+36.0%
Ontario	$1,000	$500	77.6%	79.8%	+25.1%
Alberta	$1,000	$500	82.5%	85.0%	+29..3%
Total (seven provinces)	$1,000	$500	83.4%	87.8%	+28.8%

Table 12: 30% coinsurance from $700 - $1,000. Maximum payment $910

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$700	87.7%	92.8%	+34.9%
Prince Edward Island	$1,000	$700	97.5%	99.1%	+38.2%
Nova Scotia	$1,000	$700	92.3%	98.9%	+37.5%
New Brunswick	$1,000	$700	81.4%	87.1%	+38.6%
Quebec	$1,000	$700	99.6%	99.9%	+37.5%
Ontario	$1,000	$700	77.6%	84.5%	+31.6%
Alberta	$1,000	$700	82.5%	88.3%	+33.4%
Total (seven provinces)	$1,000	$700	83.4%	88.4%	+33.6%

Table 13: 30% coinsurance from $700 - $1,200. Maximum payment $1,050

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,200	$700	87.7%	96.3%	+42.8%
Prince Edward Island	$1,200	$700	97.5%	97.9%	+45.1%
Nova Scotia	$1,200	$700	92.3%	97.6%	+45.1%
New Brunswick	$1,200	$700	81.4%	90.9%	+46.1%
Quebec	$1,200	$700	99.6%	99.7%	+40.9%
Ontario	$1,200	$700	77.6%	85.5%	+47.0%
Alberta	$1,200	$700	82.5%	92.8%	+43.1%
Total (seven provinces)	$1,200	$700	83.4%	90.8%	+44.9%

Personal Property
The following analysis utilizes average annual premiums estimated for 2003, based on data from the IID Personal Lines Statistical Exhibits. The statistical exhibits are voluntary and have a low participation rate which may affect the reliability of the results. The average annual premiums utilized were:

Newfoundland & Labrador:	$441
Prince Edward Island:	$385
Nova Scotia:	$438
New Brunswick:	$407
Quebec:	$475
Ontario:	$450
Manitoba:	$515
Saskatchewan:	$385
Alberta:	$423
British Columbia:	$423

Table 14: 30% coinsurance from $500 - $1,000. Maximum payment $850

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$500	99.8%	99.9%	+41.4%
Prince Edward Island	$1,000	$500	99.6%	99.7%	+41.7%
Nova Scotia	$1,000	$500	99.8%	99.9%	+41.4%
New Brunswick	$1,000	$500	99.8%	99.9%	+41.3%
Quebec	$1,000	$500	99.0%	99.0%	+41.4%
Ontario	$1,000	$500	99.8%	99.9%	+41.4%
Manitoba	$1,000	$500	99.6%	99.6%	+40.7%
Saskatchewan	$1,000	$500	99.5%	99.6%	+41.6%
Alberta	$1,000	$500	99.8%	99.9%	+41.3%
British Columbia	$1,000	$500	99.7%	99.8%	+41.3%
Canada	$1,000	$500	99.7%	99.8%	+41.4%

Table 15: 30% coinsurance from $700 - $1,000. Maximum payment $910

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$700	99.8%	99.9%	+42.9%
Prince Edward Island	$1,000	$700	99.6%	99.7%	+42.9%
Nova Scotia	$1,000	$700	99.8%	99.8%	+42.9%
New Brunswick	$1,000	$700	99.8%	99.9%	+42.8%
Quebec	$1,000	$700	99.0%	99.2%	+42.9%
Ontario	$1,000	$700	99.8%	99.9%	+42.9%
Manitoba	$1,000	$700	99.6%	99.7%	+42.9%
Saskatchewan	$1,000	$700	99.5%	99.6%	+42.9%
Alberta	$1,000	$700	99.8%	99.9%	+42.8%
British Columbia	$1,000	$700	99.7%	99.8%	+42.8%
Canada	$1,000	$700	99.7%	99.8%	+42.9%

Table 16: 30% coinsurance from $700 - $1,200. Maximum payment $1050

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,200	$700	99.8%	99.9%	+43.5%
Prince Edward Island	$1,200	$700	99.6%	99.8%	+43.4%
Nova Scotia	$1,200	$700	99.8%	99.9%	+43.4%
New Brunswick	$1,200	$700	99.8%	99.9%	+43.6%
Quebec	$1,200	$700	99.0%	99.3%	+43.5%
Ontario	$1,200	$700	99.8%	99.9%	+43.5%
Manitoba	$1,200	$700	99.6%	99.9%	+43.5%
Saskatchewan	$1,200	$700	99.5%	99.7%	+43.4%
Alberta	$1,200	$700	99.8%	99.9%	+43.4%
British Columbia	$1,200	$700	99.7%	99.8%	+43.4%
Canada	$1,200	$700	99.7%	99.9%	+43.5%

Commercial Property/Liability

The following analysis utilizes average annual premiums estimated for 2004, based on data from MSA Researcher and Industry Canada. The commercial lines statistical exhibit for Ontario was also utilized in the estimation. The statistical exhibits for the other provinces are voluntary and have a low participation rate.

Therefore, the Ontario exhibits were assumed to be reflective of commercial lines in other provinces. This may bias the results somewhat, in that Ontario has a larger large commercial population than other provinces. The bias would be expected to be upwards, so actual results for other provinces may be somewhat better than indicated by these estimates. The average annual premiums utilized were:

Newfoundland & Labrador:	$4,775
Prince Edward Island:	$5,364
Nova Scotia:	$6,274
New Brunswick:	$6,370
Quebec:	$8,094
Ontario:	$11,043
Manitoba:	$7,926
Saskatchewan:	$5,557
Alberta:	$8,951
British Columbia:	$8,274

Table 17: 30% coinsurance from $500 - $1,000. Maximum payment $850

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$500	28.0%	29.8%	+33.4%
Prince Edward Island	$1,000	$500	26.4%	28.3%	+34.7%
Nova Scotia	$1,000	$500	23.1%	25.3%	+35.1%
New Brunswick	$1,000	$500	23.4%	25.6%	+35.7%
Quebec	$1,000	$500	19.1%	20.5%	+36.4%
Ontario	$1,000	$500	14.1%	15.0%	+30.1%
Manitoba	$1,000	$500	19.1%	20.6%	+36.5%
Saskatchewan	$1,000	$500	25.4%	27.3%	+36.1%
Alberta	$1,000	$500	17.1%	18.2%	+31.6%
British Columbia	$1,000	$500	18.3%	19.6%	+35.8%
Canada	$1,000	$500	17.1%	18.3%	+32.7%

Table 18: 30% coinsurance from $700 - $1,000. Maximum payment $910

	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,000	$700	28.0%	33.1%	+36.8%
Prince Edward Island	$1,000	$700	26.4%	31.0%	+38.1%
Nova Scotia	$1,000	$700	23.1%	26.9%	+39.2%
New Brunswick	$1,000	$700	23.4%	27.3%	+38.9%
Quebec	$1,000	$700	19.1%	22.8%	+38.7%
Ontario	$1,000	$700	14.1%	17.0%	+35.1%
Manitoba	$1,000	$700	19.1%	22.8%	+40.0%
Saskatchewan	$1,000	$700	25.4%	29.8%	+39.4%
Alberta	$1,000	$700	17.1%	20.7%	+35.6%
British Columbia	$1,000	$700	18.3%	21.9%	+39.2%
Canada	$1,000	$700	17.1%	20.5%	+36.6%

Table 19: 30% coinsurance from $700 - $1,200. Maximum payment $1050

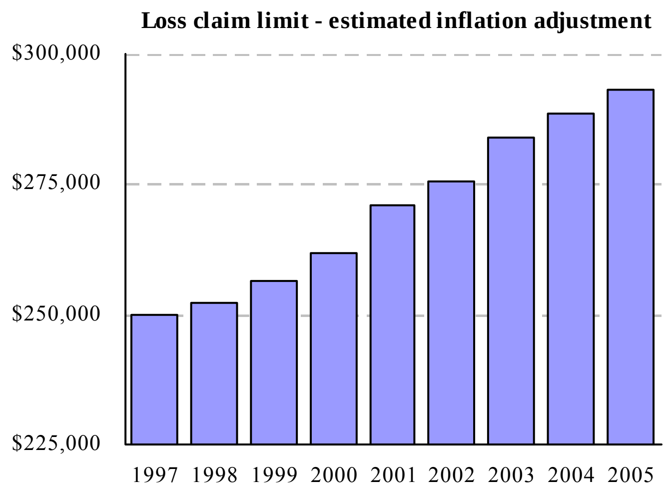
	Maximum Limit	Limit to which 100% of UEP refunded	Estimated % of UEP liability currently paid by PACICC	Estimated % of UEP liability paid under alternative threshold	Cost impact for PACICC members (% over current)
Newfoundland & Labrador	$1,200	$700	28.0%	39.8%	+43.9%
Prince Edward Island	$1,200	$700	26.4%	37.3%	+45.6%
Nova Scotia	$1,200	$700	23.1%	32.3%	+44.6%
New Brunswick	$1,200	$700	23.4%	32.8%	+45.6%
Quebec	$1,200	$700	19.1%	27.3%	+43.0%
Ontario	$1,200	$700	14.1%	21.1%	+45.9%
Manitoba	$1,200	$700	19.1%	27.3%	+44.8%
Saskatchewan	$1,200	$700	25.4%	35.8%	+45.5%
Alberta	$1,200	$700	17.1%	24.7%	+44.0%
British Columbia	$1,200	$700	18.3%	26.3%	+45.1%
Canada	$1,200	$700	17.1%	24.8%	+44.9%

In general the results suggest that there is little additional benefit for personal property policyholders from alternate coinsurance arrangements. As the average premiums of commercial policyholders generally exceed the PACICC limit, any extension of the maximum payment is fully captured by the commercial policyholder.[10] Automobile insurance policyholders benefit from alternate coinsurance arrangements by up to ten percentage points.

Loss Claims Benefits

The *Winding Up and Restructuring Act* (WURA) governs the priority of payments for the insolvent insurer's estate assets. Part III, Section 161 of the Act, states that policyholder loss claims rank above all other claims, expect those of the liquidation process and the preferred creditors (employees) outlined in section 72.

In 1996, PACICC adjusted its benefits for loss claims, increasing its maximum payment level to $250,000 per occurrence from $200,000. Accounting for inflation over the 1997 to 2005 (June) period would adjust PACICC's current limit from $250,000 to an estimated $293,296.



Source: PACICC, with data from Bank of Canada

To explore the implications of changes in the current limit, claims liabilities were estimated using models based on IID data. The structure of the models was largely consistent by line of business but somewhat different in reflection of the type of data available by line.
In the context of PACICC's loss claims coverage the benefits include the incremental increase in coverage of a claimant's loss claims liabilities. The costs associated with any change in the loss claims limit is primarily the cost associated with incidence effects and the direct costs for policyholders of solvent companies who must bear the cost of the increased liabilities.

In evaluating alternate loss claims limits, the following practical issues will important though difficult to quantify effects on PACICC eligible claims costs:

- limits are used by liquidators as negotiating points, so changing the limit changes the starting negotiating position;
- legal expenses are the largest growth factor in claims costs. Increased limits may largely be absorbed by legal expenses.

[10] Under a lognormal distribution with the estimated mean and assumed skewness, nearly all commercial policies in all jurisdictions exceed the alternate PACICC limits.

Automobile Insurance

Analysis of the impact of changes to PACICC's loss claim limit utilized IID's Size of Loss Distribution reports (AU 50) for 1998 to 2002.[11] The results reported are the average of the five years.

Table 20: Estimated Additional Gross PACICC % Costs Over Base (current) for Alternative Change to Coverage				
Increase PACICC limit to:	% increase in PACICC costs over Base (current)			
	Ontario	Alberta	Atlantic	Total (6 provinces)
$300,000	3.6%	2.2%	2.7%	3.3%
$350,000	5.3%	3.5%	4.2%	4.9%
$400,000	7.0%	4.8%	5.7%	6.5%
$500,000	9.8%	7.4%	8.1%	9.2%
Total of 6 provinces is a weighted average of Ontario, Alberta & Atlantic Canada				

The incremental cost is expected to drift upward over time as average claims severity also trends upward. The following tables outline the estimated additional gross costs over the current coverage by province.

Examination of claims data from the Markham General Insurance Company liquidation found ten automobile insurance claims with a maximum potential exposure greater than PACICC's current limit. Alternative PACICC limits would have increased claims exposure up to 8.3% ($1.1 million) on estimated PACICC eligible liabilities of $16 million.

Table 21: **Estimated Change in PACICC Eligible Exposure to Alternate Limits in the MGIC Liquidation**			
	# of claims brought under limit	$ of increased PACICC exposure	% increase in PACICC exposure
$300,000	4	$422,832	3.2%
$350,000	6	$679,108	5.2%
$400,000	7	$841,275	6.4%
$500,000	8	$1,081,897	8.3%
Source: PACICC, with data from MGIC (in liquidation)			

Due to how the automobile insurance system functions, raising the coverage limit increases PACICC's claims liabilities but does not necessarily change the benefits received by claimants. When an insurer becomes insolvent, automobile insurance claims are paid by the uninsured motor vehicle (UM) carrier up to the limits of that coverage.[12] The UM carrier is a creditor of the estate of the insolvent company and may recover the claim amount up to the limit from PACICC.[13] With the potential exception in the case of some very large claims, automobile

[11] The data in the AU50 are on an as reported basis and therefore have averages which are too low and with too few large claims. Therefore, the estimates may include a bias toward understating actual exposure.

[12] In 1980, the Ontario Motions Court, upheld by the Ontario Appeal Court (1982), in the case of Barton v. Aitchison (a case involving an insured and an insolvent company – Pitts Insurance Company) found that a claimant had the right to claim under the uninsured motorist cover of their auto policy.

[13] The UMC may also have a claim against the estate for amounts above the PACICC limit.

insurance claimants receive the same level of benefits irrespective of PACCIC's level of coverage.

For automobile insurers, increasing the PACICC limit increases their recoverable for UM claims that exceed the current PACICC limit but also increases the amount that they are assessed in order to provide PACICC coverage. The following table estimates the increase in assessment that would be required of companies writing the specified automobile direct written premium for $16 million in automobile claims liabilities (roughly the size of Markham General) and the Ontario market. Assessed amounts would be greater for other jurisdictions.

Table 22:

Increase in Insurer Assessment to Cover Alternative PACICC Limits

	Alternative PACICC limits			
Profile (DWP)	$300,000	$350,000	$400,000	$500,000
$100 million	$6,337	$9,473	$12,609	$17,842
$250 million	$15,842	$23,682	$31,522	$44,606
$500 million	$31,684	$47,364	$63,044	$89,212
$1 billion	$63,368	$94,728	$126,088	$178,425

Source: PACICC using data from MSA Researcher

In the Markham General liquidation, 114 assessed insurers would have transferred up to $1.1 million to a few UM carriers.

Personal Property

There are a variety of policy forms used in the industry which may affect PACICC's ultimate liability under any limit. Most claims on homeowner policies are paid on a replacement cost basis, meaning that the insurance pays the cost of replacing the damaged or lost item with a new one that is as close to the original as possible in functionality and quality. However, some policies may pay only actual cash value, or replacement cost less depreciation.

Under a basic/named perils policy, coverage includes the building and contents only for those perils that are specified in the policy, and they may be subject to payout limits and conditions. Generally this is called a "Standard Homeowners" policy. A comprehensive policy covers both building and contents for all risks that are not specifically excluded. A broad policy generally covers the building against all risks that are not specifically excluded, but the contents are insured only against named perils.

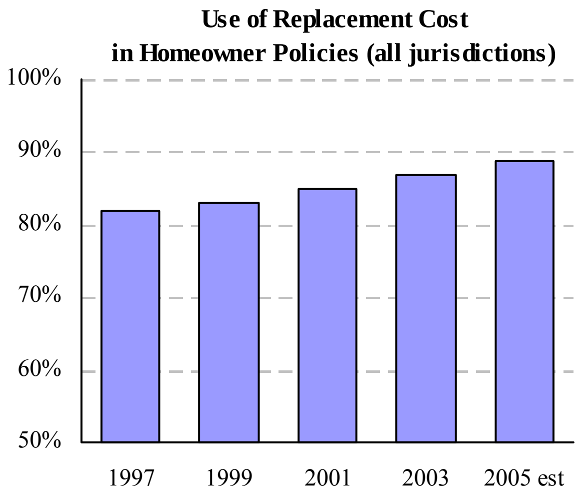
Replacement comprehensive and broad forms have full (full value rebuilding) replacement coverage built into the wordings. According to IID data (PL-15C), these types of forms are used by an estimated 90% of policyholders. Nevertheless, some companies have a limit built into their policies. A policy containing a limit may be subject to some threshold, for example, the policy may state that the amount payable on a claim may not to exceed 120% of the amount shown on the "declarations page" of the policy. The IBC wordings do not have a limit. While replacement cost policies are broadly in use, utilization rates vary by province.

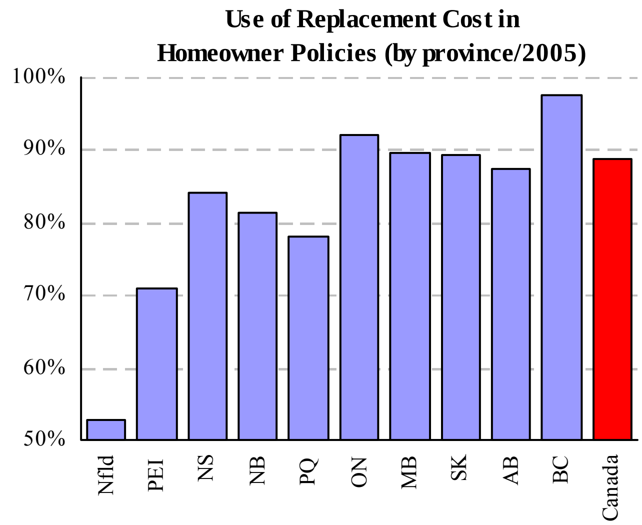
Size of loss distribution data for personal property coverages is not available from IID statistical exhibits, making it difficult to estimate the impact of alternative PACICC loss claim limits.

PACICC utilized two methods to estimate the order of magnitude of the impact from alternative loss claims limits:

i. a mix of CMHC housing value data (as a proxy value for probable maximum loss and statistical inference given an assumed loss claim distribution) and average claim data from IID

ii. data from actual insolvencies.





Source: PACICC, with data from IBC

Both methods have limitations. CMHC data incorporates the value of land and property and does not include the value of contents. Insurance claims would replace property and contents. Land may require clean up costs but would not likely be replaced by an insurance policy. According to data from CMHC Housing Information Monthly, house price distributions in many CMA's appear to be normally distributed, while others appear to be skewed. In addition, resale value is the basis of CMHC valuations and may be a weak proxy for replacement cost. Data from actual insolvencies are a relatively small claims sample and may not be representative.

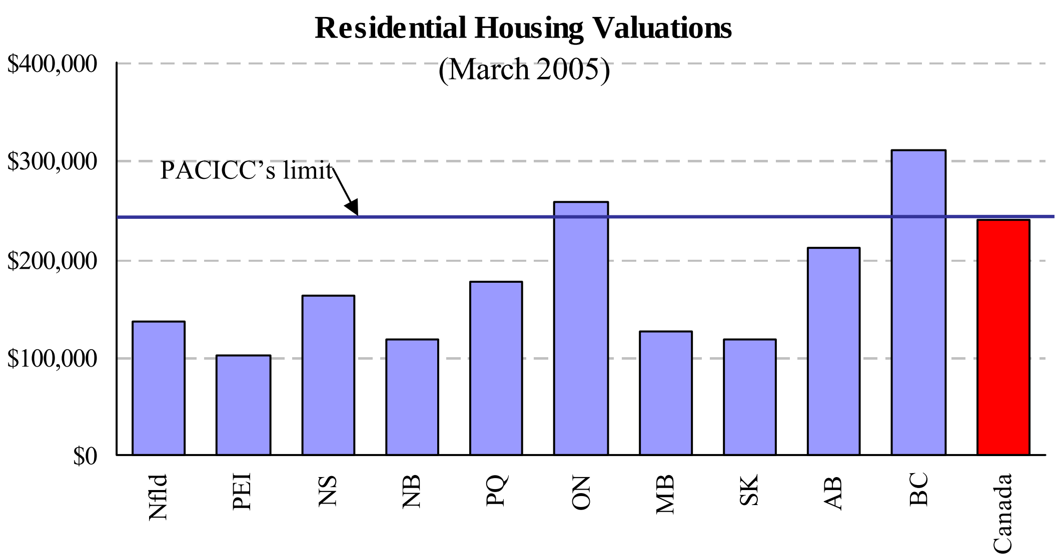
Housing price indicators compiled by Statistics Canada indicate that the increased value of housing is largely due to higher values attached to structures. However, there are important differences by province. In Newfoundland & Labrador, New Brunswick and British Columbia, changes in land and housing valuation contributed about equally to changes in total property values. In PEI, changes in the value of land were a greater factor in 2005 total valuations than structures. In Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and Alberta, the price of structures was the dominant factor in changes in total price.

Ultimately, separating the value of land and structures from the total value is a subjective exercise and can vary significantly from municipality to municipality. The Municipal Property Assessment Corporation (MPAC) in Ontario does not separate values for this reason. Other jurisdictions (such as British Columbia) may separate land and structures. For PACICC estimates, the total CMHC/MLS valuation was utilized as a proxy for the value of the structure based on the following:

- land-to-total-value ratios of 50% (may be as high as 65% in some high density areas)
- allocating 15% of home valuation to contents replacement[14]
- allocating 18% of home valuation to site clean up in the event of a total loss
- allocating 10% of home valuation to alternate living arrangements for the policyholder.

Home valuation was used as a basis of allocating other coverage costs on the assumption that more expensive homes are generally located in higher cost areas.

CMHC publishes data on average housing prices (generated through the MLS service) by province and selected markets. In all provinces except Ontario and British Columbia, CMHC average valuations were below the current PACICC limits. Among 26 census metropolitan areas only Toronto, Calgary and Vancouver had average valuations greater than PACICC's current $250,000 limit.[15]



Source: PACICC, with data from CMHC

A profile of an insurance company was run through a simple model containing assumptions of the loss claim distribution.[16] This profile is of a large insurer with a ten percent market share, insuring 103,000 homes. The model utilizes data from IID's personal lines statistical exhibits

[14] Although average claims costs may not be a good proxy for proportional allocation claims costs, according to IID personal lines statistical exhibits for homeowners, average claim costs for contents from 1999 to 2003 ranged from 15% to 84% of average claims costs for structures.
[15] CMA's included: Calgary, Edmonton, Greater Sudbury, Halifax, Hamilton, Kingston, Kitchener, London, Montreal, Oshawa, Ottawa, Quebec City, Regina, Saugenay, Saint John, Saskatoon, Sherbrooke, St. Catherines, St. John's, Thunder Bay, Toronto, Trois-Rivieres, Vancouver, Victoria, Windsor and Winnipeg.
[16] Given an average loss claim of between $5,000 and $12,000 for individual jurisdictions and given different assumptions of the standard deviation and distribution, very few claims are for catastrophic loss. For the purposes of this analysis PACICC assumes 1% of personal property claims would approach the current limit. It is believed that this estimate is conservative. Better data would improve estimate accuracy.

(PL15-C) to estimate the probability of a claim and maps the estimated high level loss or catastrophic claims onto a distribution of property values for the Greater Toronto Area.[17]

The following table outlines the estimated costs of alternate coverage levels for the profile. Please note that the estimated impact would be less for other urban centres as the GTA is among the highest cost areas in Canada.

Table 23
Estimated Change in PACICC Personal Property Exposure under Alternate Limits

Alternate Limits	**Profile results**	**Markham General**
$300,000	0.14%	3.0%
$350,000	0.29%	6.0%
$400,000	0.53%	9.0%
$500,000	1.12%	9.0%

In addition to reviewing CMHC property valuations to identify probable maximum losses by jurisdiction, loss claim data from Markham General Insurance Company (in liquidation), Maplex General Insurance (in liquidation) and Reliance Insurance Company (in liquidation) were examined. Markham General has to date incurred 2,328 claims, of which 443 were personal property claims. Of these, there is only one personal property claim at or in excess of PACICC's current limit. Under alternative limits, PACICC's additional personal property exposure would have increased by an estimated 3.0% to 9.0%.

Maplex has incurred 2,572 claims (open/reserved and closed), of which 718 were personal property claims. There were no personal property claims at the current PACICC limit.[18] Reliance Insurance Company has no incurred property claims out of 649 total claims.

Commercial Property

Size of loss distribution data for commercial property coverages is not available from IID statistical exhibits, making it difficult to estimate the impact of alternative PACICC loss claim limits. PACICC utilized two methods to provide an order of magnitude estimate of the impact from alternative loss claims limits:

i. a mix of Municipal Property Assessment Corporation (MPAC) commercial property value data and Industry Canada commercial entity data (to generate a proxy value for probable maximum loss and statistical inference given an assumed loss claim distribution) and average claim data from IID.
ii. data from actual insolvencies.

Both methods have limitations. MPAC data incorporates the value of land and property and does not include the value of contents. Insurance claims would replace property and contents. Land may require clean up costs but would not likely be replaced by an insurance policy. In addition resale value is the basis of MPAC valuations and may be a weak proxy for replacement cost. Data from actual insolvencies are a relatively small claims sample and may not be representative.

[17] Data on house price distribution are for 2004, from the Toronto Real Estate Board "Market Watch" publication.
[18] There were also no personal property claims at PACICC's previous limit of $200,000, under which the Maplex liquidation operated.

Ultimately, separating the value of land and structures from the total value is a subjective exercise and can vary significantly from municipality to municipality. MPAC does not separate values for this reason. For purposes of PACICC estimates, the total MPAC valuation was utilized as a proxy for the value of the structure and contents.

A profiles of an insurance company was run through a simple model containing assumptions of the loss claim distribution. [19] The profile is of a large insurer with a ten percent market share, insuring 2,400 business establishments. The model utilizes data from IID's commercial lines statistical exhibits (CL10-C) to estimate the probability of a claim and maps the estimated high level loss or catastrophic claims onto a distribution of property values for Ontario. The following table outlines the estimated costs of alternate coverage levels for the profile.

Table 24

Estimated Change in PACICC Commercial Property Exposure under Alternate Limits

Alternate Limits	Profile estimate	Markham General	Maplex General	Reliance Insurance
$300,000	1.1%	15.6%	0.9%	8.4%
$350,000	2.2%	31.3%	1.9%	16.5%
$400,000	3.2%	46.9%	2.8%	23.8%
$500,000	4.9%	78.1%	4.7%	35.9%

In addition to reviewing MPAC property valuations to identify probable maximum losses, loss claim data from Markham General Insurance Company (in liquidation), Maplex General Insurance (in liquidation) and Reliance Insurance Company were examined. Markham General has to date incurred 2,328 claims, of which 145 were commercial property/liability claims. Of these, there is only two commercial property claim at or in excess of PACICC's current limit.

Under alternative limits, PACICC's additional exposure would have increased by an estimated 0.6% to 3.1%. It should be noted that Markham General was primarily a personal lines insurer and so the commercial property impacts may be understated for an insurer that was more engaged in the commercial insurance market.

Maplex has incurred 2,572 claims (open/reserved and closed), of which 374 were commercial property claims. There was one commercial property claim at the current PACICC limit. Reliance has incurred 649 claims, of which 178 were commercial property claims. There have been ten commercial property claims (5.6%) at the current PACICC limit.

Commercial Liability

Analysis of the impact of changes to PACICC's loss claim limit utilized IID's Size of Loss Distribution reports (LI50-N) for 1998 to 2003[20]. The results reported are the average of the six years.

[19] Given an average loss claim of between $14,000 for Ontario, and given different assumptions of the standard deviation and distribution, there are relatively few claims for large or catastrophic loss. We've assumed that 5% of commercial property claims would approach the current limit. The results are sensitive to the average severity but it is believed that this estimate is conservative.. Better data would improve the estimate accuracy.

[20] The data in the LI50-N are on an as reported basis and therefore have averages which are too low and with too few large claims. Therefore, the estimates may include a bias toward understating actual exposure.

Table 25: Canada Estimated Additional Gross PACICC % Costs Over Base (current) for Alternative Change to Coverage	
Increase PACICC limit to:	% increase in PACICC costs over Base (current)
$300,000	0.4%
$350,000	1.2%
$400,000	2.5%
$500,000	5.1%
Comprehensive liability (with & without products only)	

In addition to reviewing commercial liability statistical plan data, loss claim data from Markham General Insurance Company (in liquidation), Maplex General Insurance (in liquidation) and Reliance Insurance (in liquidation) were examined. Markham General has to date incurred 2,328 claims, of which 145 were commercial property/casualty claims. Of these, only one commercial liability claim was at or in excess of PACICC's current limit. Under alternative limits, PACICC's estimated exposure would have increased by 0.3% to 1.6%. It should be noted that Markham General was primarily a personal lines insurer, so commercial property impacts may be understated compared to insurers more engaged in the commercial insurance market.

Table 26 **Estimated Change in PACICC Commercial Liability Exposure under Alternate Limits**			
Alternate Limits	**Markham General**	**Maplex General**	**Reliance**
$300,000	7.8%	0%	9.6%
$350,000	15.6%	0%	16.9%
$400,000	23.4%	0%	22.8%
$500,000	39.1%	0%	32.2%

Maplex has incurred 2,572 claims (open/reserved and closed), of which 230 were commercial casualty claims. No commercial liability claims were at or in excess of the current PACICC limit. Reliance has incurred 649 claims, of which 343 were commercial liability claims (16 of these were at or in excess of the current PACICC limit).

Aggregate Loss Claim Impact

The total loss claim impact for alternate PACICC coverage limits is the sum of the individual by-line impacts.

Table 27: **Estimated Aggregate Change in PACICC Exposure under Alternate Limits**				
Alternate Limits	**Estimate**	**Markham General**	**Maplex General**	**Reliance Insurance**
$300,000	2.2%	3.89%	0.50%	9.9%
$350,000	3.4%	6.74%	0.90%	18.3%
$400,000	4.8%	9.01%	1.10%	25.6%
$500,000	7.1%	12.39%	1.50%	37.8%

In the Markham General case, the estimated alternative PACICC limits would have increased claims costs (and hence assessment costs) by at least $610,000 to as much as $2 million. Of these amounts, only $50,000 to $150,000 would have gone directly to individual policyholders. The remaining claims benefits would have gone to commercial entities (both UM carriers and commercial policyholders).

The estimated results are subject to several potential biases in the data that may lead to under- or over-statement of the estimated PACICC exposure under alternate limits. For example, the use of as reported data in the size of loss estimates may generate an understatement of PACICC's exposure. It is unclear what the net effect of these issues with the data might be. Comparison with the claims experience (actual and estimated at alternate limits) of actual liquidations suggests that the results are conservative for personal lines but are understated for commercial lines.

Commercial Risks

To limit guarantee system protection to those who really need it, many systems provide either restricted coverage or do not provide any coverage for commercial risks.

Research on insurance guarantee funds has concluded that, while they generally perform well in meeting their primary objective of protecting policyholders and other claimants, increased risk-taking behaviour may occur for commercial coverage – a moral hazard problem. In particular, researchers at Georgia State University, the Wharton School at the University of Pennsylvania, Sejong University (Korea) and the University of South Carolina have found that moral hazard effects are greater for commercial than personal property coverage.

The research is consistent with the principle that individual policyholders or small businesses have less capacity to evaluate the financial condition of an insurer. Commercial risks are generally better equipped than individual consumers to evaluate the financial condition of insurance companies. They often have the in-house expertise to evaluate an insurer's financial data, or they receive assistance from large sophisticated commercial brokers.

Research also suggests that guarantee fund design and best practices should provide a balance between incentives for financial safety and protecting consumers from losses in the event of insolvency. This could be achieved by reducing or even eliminating the scope of guarantee-fund protection for commercial insurance. This would increase incentives for commercial buyers to deal with financially sound insurers and would discourage policyholders from buying coverage that is underpriced.

A wide range of mechanisms are utilized by guarantee funds to limit commercial risk coverage.

Table 28:

International Guarantee Fund Practices
Regarding Commercial Coverage

Restrictions on Commercial Coverage	**No Restrictions on Commercial Coverage**
Net worth provisions:	Canada
United States	Spain
	Norway
Definition of small business	
United Kingdom	
Japan	
Natural person provision	
France	
Ireland	
United Kingdom	
Exclusions	
France	
Italy	

Source: PACICC, with data from individual guarantee funds

Restricting commercial coverage improves the fairness in financing an insolvency. For example, in two of Canada's larger and more recent insolvencies – Markham General and Maplex – commercial policies represented less than 18% of total eligible premiums but were 33% of the claims costs to PACICC. Given that personal insurance lines represent nearly three quarters of the assessable premium, this imbalance results in a net transfer from personal policyholders to commercial policyholders following an assessment.[21] The size of this net transfer varies depending upon the mix of commercial and personal business.

Responding to the argument that the claims of large, sophisticated commercial policyholders should not be covered by insurance guarantee funds, many countries have adopted mechanisms to protect individual and small business policyholders while limiting exposure to commercial coverage for larger corporate entities. Many jurisdictions utilize more than one mechanism.

Net worth provisions

In the United States, the NAIC has adopted a model law that incorporates a net worth provision to reduce coverage for commercial risks. Currently, 35 states have net worth provisions to determine eligibility for guarantee fund coverage, and other states have been considering similar measures (although not necessarily as set out in the NAIC Model Act). Net worth exclusions among states range from $3 million to $50 million, with the majority having exclusions for policyholders with a net worth in excess of either $10 million or $25 million. In the United States, net worth provisions have proven difficult and costly (in terms of legal expenses) to enforce. The National Conference of Insurance Guaranty Funds (NCIGF) notes that the majority of state statutory provisions call for the guarantee fund to adjust the claims and then recover from insured subject to the net worth restriction. With few exceptions, guarantee funds recover their loss payments, but do not recover their adjusting expenses.

[21] PACICC estimates the net aggregate subsidy from personal lines policyholders to commercial policyholders for the Markham General and Maplex insolvencies to date at $1.1 million.

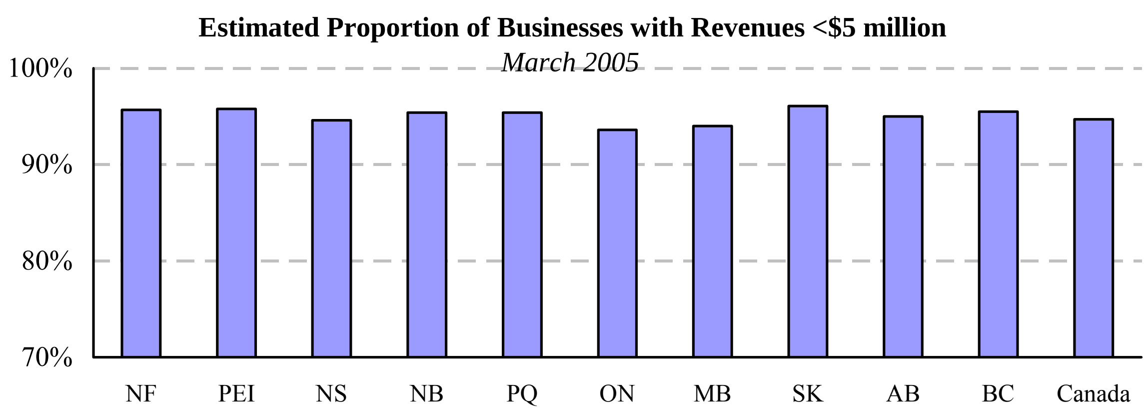
In Canada, an effective definition of net worth of a large corporation is set out in the *Income Tax Act* under provisions for the large corporations tax. This tax is levied on the amount by which a corporation's taxable capital employed in Canada exceeds $10 million. Members of a related group of corporations must share the $10-million threshold.

Natural person provisions
In some legal systems, persons are generally of two classes – natural persons and legal persons. A natural person is a human being, and a legal person is that to which the legal system gives legal or fictional existence (such as a corporation). Currently Ireland and the United Kingdom also use concepts of natural persons. Guarantee funds in France may also exclude certain legal persons from coverage.

Using natural person provisions to exclude large commercials would also exclude small commercial entities.

Small business provisions
Some jurisdictions provide commercial coverage for entities that meet an explicit definition of a small business. In the United Kingdom, a small business is defined as a partnership, body corporate, unincorporated association or mutual association with an annual turnover of less than ₤1 million ($2.3 million Canadian dollars). In Japan a threshold of number of employees is utilized. The size of a small business can be defined in many ways: the value of its annual sales, annual gross or net revenue, size of its assets or the number of employees. Various government institutions define small business according to their own needs and criteria. Industry Canada often uses a definition based on the number of employees. Goods-producing firms are considered small if they have fewer than 100 employees, while for service-producing firms, the cut-off point is seen as 50 employees. The Canada Customs and Revenue Agency has further definitions for tax purposes. The Canadian Federation of Independent Business (CFIB) uses a threshold of 50 employees or less to define a small business. Internationally, the International Labour Organization (ILO) defines a small business as employing between ten and fifty people. A micro-enterprise is defined by the ILO as employing less than ten persons. In practice, reporting on small businesses is difficult due to data limitations.

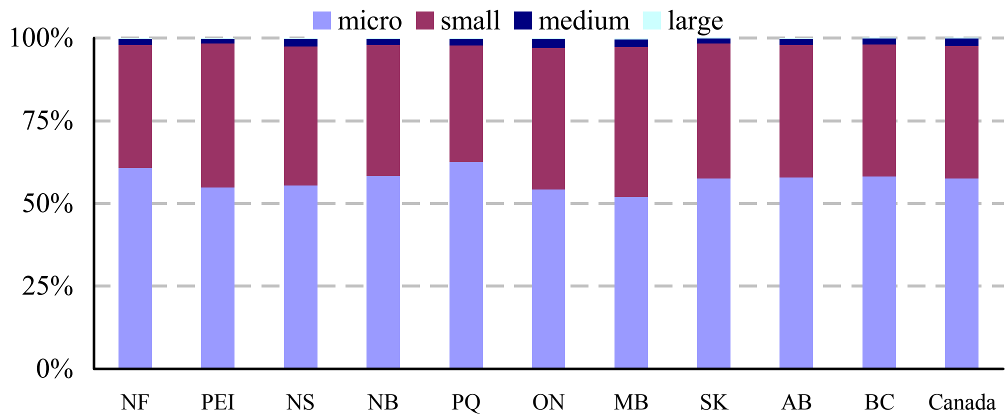
The *Canada Small Business Financing Act* (CSBFA) defines small and medium-sized enterprises (SMEs) in Canada with revenues of up to $5 million per year. Provincial government economic



Source: PACICC, with data from Industry Canada development and human resources programs often use this or a similar definition of a small business.

In addition to using a revenue-based definition of SME's, Industry Canada and Statistics Canada also use an employee-based definition: business with less than 100 employees are considered to be small- or micro- (less than 5 employees) sized businesses. Small businesses, defined as less than 50 employees, consisted of 94.7% of all business establishments. When defined as less than 100 employees, small businesses represented 97.7% of all business establishments.

Proportion of Business Enterprises by Size Category (June 2004)



Source: PACICC, with data from Statistics Canada

Further, the *Income Tax Act* defines a small business corporation as a Canadian controlled private corporation in which all, or substantially all, of the fair market value of the assets are used in an active business carried on primarily in Canada. The assets may include shares or debt of one or more other connected small business corporations. In practical terms, the CCRA permits a small business deduction for business with a net income of less than $300,000 in 2005.

Coverage exclusions

Many jurisdictions have guarantee funds that cover a single or narrow set of specified lines of business, excluding coverage for other lines. Most European jurisdictions – including Italy and France – exclude non-compulsory commercial coverage.

Among industrial countries with P&C insurance guarantee funds, only Canada, Spain and Norway do not exclude or limit large commercial claims from their guarantee fund system.[22]

[22] In the case of Spain, total exposure is limited to the assets available from the wind-up. As a government-run system, some flexibility exists to ensure that individual policyholders are protected.