Role of reinsurance and risk sharing facilities in stimulating markets and innovation

Philippines Home Owners/SME Disaster Insurance Scheme

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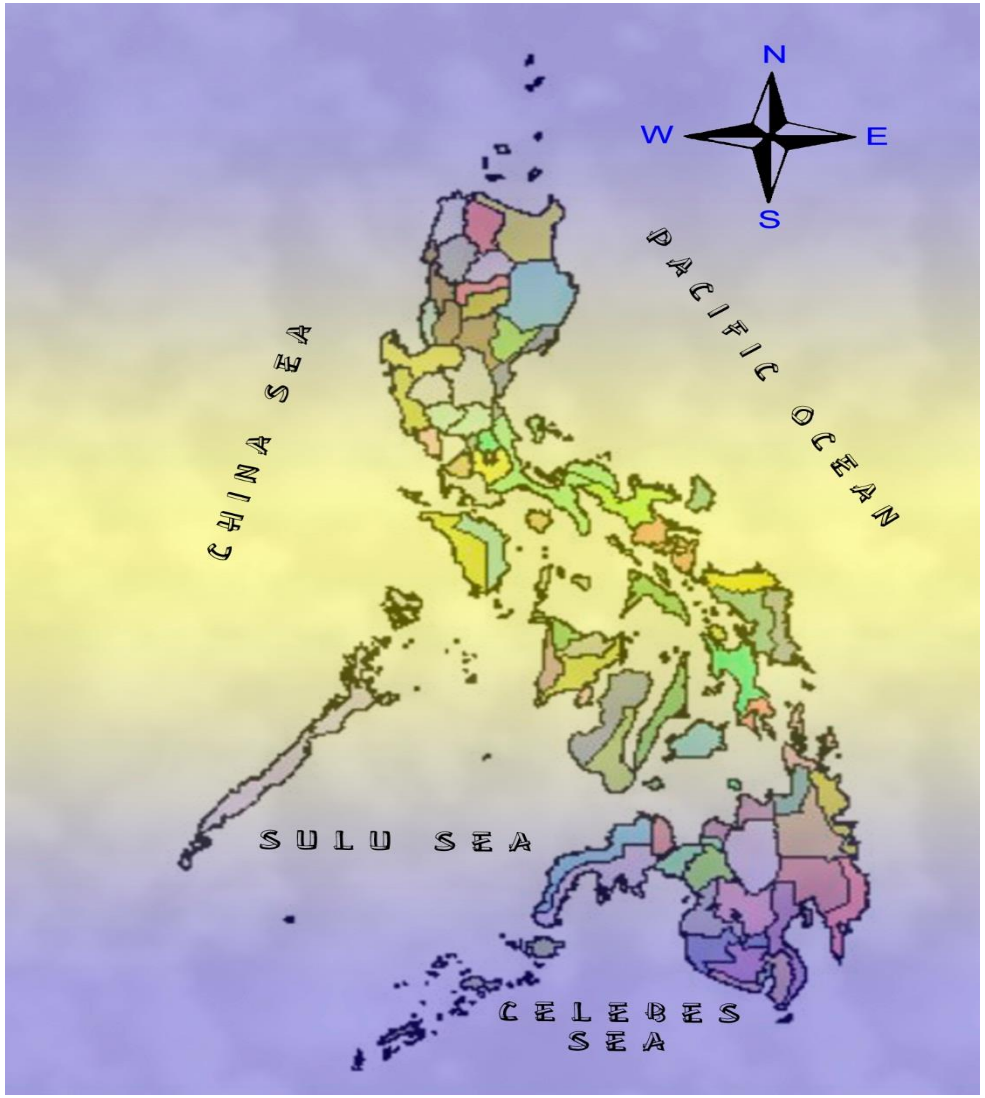


Climate

- high maximum and minimum temperatures
- heavy annual rainfall : 1000 mm to 5000 mm
- mean tropical cyclone occurrences : 20 per year

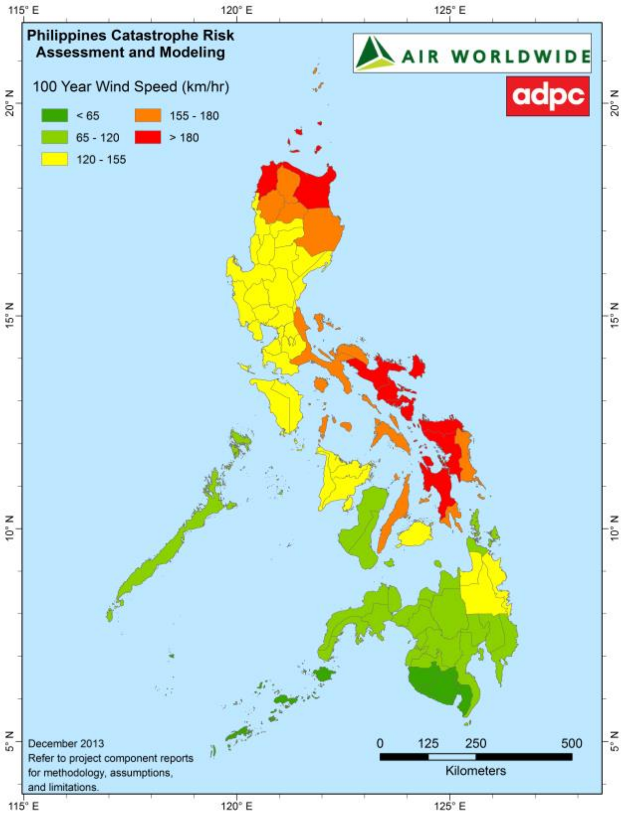
2012 World Risk Index

Rank	Country	Risk
1	Vanuatu	36.31%
2	Tonga	28.62%
3	Philippines	27.98%
4	Guatemala	20.75%
5	Bangladesh	20.22%
6	Solomon Islands	18.15%
7	Costa Rica	17.38%
8	Cambodia	17.17%
9	Timor-Leste	17.13%
10	El Salvador	16.89%

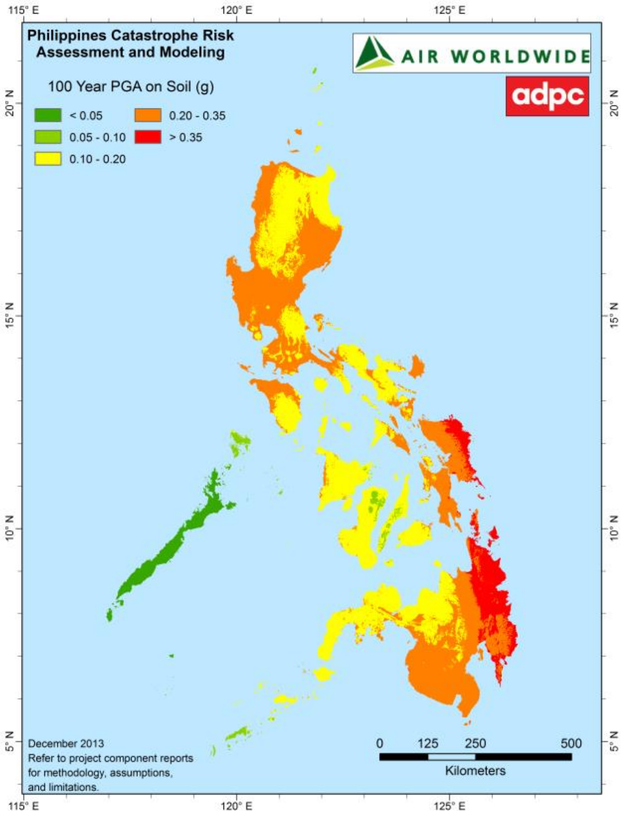
Source: UNU-EHS

The Philippines is vulnerable to …

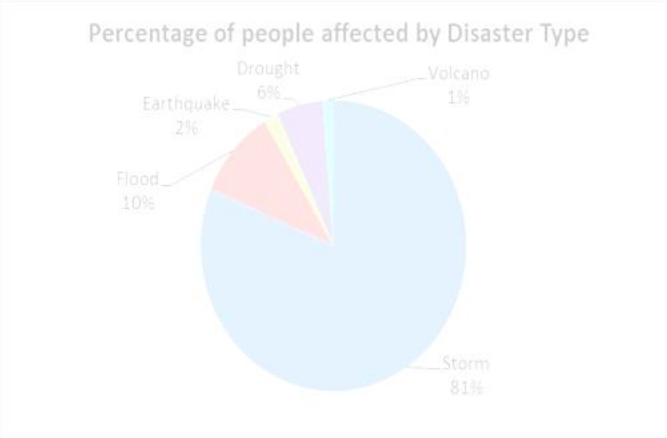
Typhoon Hazard

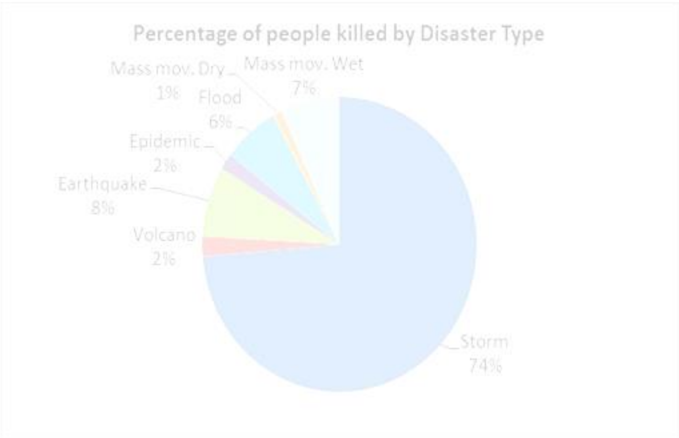


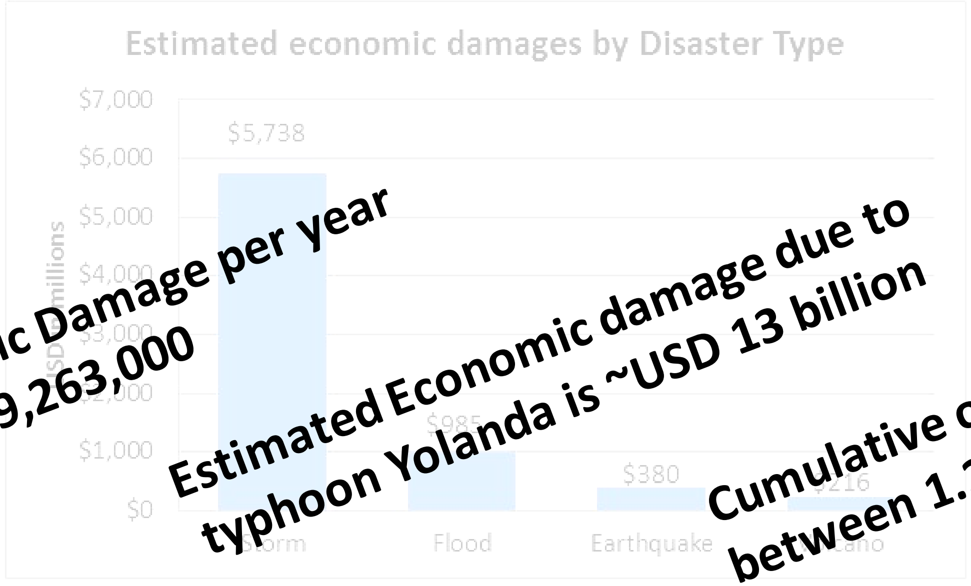
Earthquake Hazard



Impact of Natural Disasters in the Philippines (1980 – 2010)







Estimated Economic Damage per year US$ 239,263,000

Estimated Economic damage due to typhoon Yolanda is ~USD 13 billion

Cumulative output loss estimated between 1.25% and 4.03% of GDP

Source: PreventionWeb

Significant impact felt by the private sector…

- share of private sector damage and losses is equivalent to 90 percent of the total
  - *Typhoon Yolanda (2013)*: 95% of the damage sustained by productive and social sectors (primarily housing)
  - *Typhoon Ondoy and Pepeng (2009)*: resulted in US$2.34 billion in damage and losses (>50 percent total losses) to the enterprise sector (industry, commerce, and tourism)
- between 2000 and 2012, **agriculture (including SMEs) was the most affected by natural disasters - 58% of the registered total damages** (Source: National Disaster Risk Reduction and Management Council, Philippines)

Insured losses are insignificant compared to total losses incurred …

Number of insurance policies

Year	EARTHQUAKE	TYPHOON AND FLOOD	FIRE@
2012	167,000	158,000	930,000
2011	109,000	106,000	806,000
2010	136,455	228,043	856,599
2009	105,043	142,872	764,249
2008	104,182	144,545	733,177

Source: PhilNaRe

TYPHOON YOLANDA (2013)

- Damaged more than 1.1 million homes (~25% of total housing stock in typhoon affected regions)
- 48% (528,000 homes) were totally damaged
- Insured losses estimated < US$1 billion, includes two large commercial risk (fertilizer plant and power generator/transmission…)

Proposed Solution

Set-Up PHILIPPINES CATASTROPHE RISK INSURANCE POOL (PCRIP) FOR HOMEOWNERS & SMEs

POVERTY REDUCTION AGENDA: Phil Gov can speed recovery, transfer P2.5B of annual disaster rebuilding costs from voters to private sector

BENEFIT

↓

FEATURES

↓

DESCRIPTION

↓

PROCESS/ STRUCTURE

↓

STARTUP CAPITAL

1. **Benefit:** Phil Gov can transfer P317m-P2.5b in post disaster homeowners and SME reconstruction costs to private sector. Voters can rebuild faster and better post-disaster.
2. **Features:** Indemnity contract with a quick pay parametric trigger. Governance via Trustees.
3. **Description:** nationwide, integrated mechanism to reduce post-disaster poverty for self-insured homeowners, SMEs through disaster risk financing and insurance.
4. **Process:** create a Philippine mutual insurance co (PCIP) to write EQ, Typhoon insurance. Trustors led by Phil Gov entrust capital to PCIP (trustee). Trustors' establish governance mechanisms (Board of Trustees), and appoint a management company to operate the mutual insurance co. PCIP policyholders to be trust beneficiaries. Phil Gov implements measures to make 10m (NSO 2010) currently self insured homes under 1m value purchase EQ and WS insurance from PCIP. PCIP operates to meet all government regulations, particularly in respect of solvency. PCIP distribution and claims handling via 67 local insurers. PCIP risk transfer via gross excess of loss reinsurance bought on free market from local and foreign reinsurers.
5. **Startup Cost:** \$50-\$60mn enables annual claims payments of over \$5m in year 1, increasing to over \$50m starting year 5, with a solvency probability of 99.5% in year 3.

Homeowners, SMEs receive funds to rebuild: P317m in year 1 and over P2.5b from year 5

BENEFIT → FEATURES → DESCRIPTION → PROCESS/ STRUCTURE → STARTUP CAPITAL

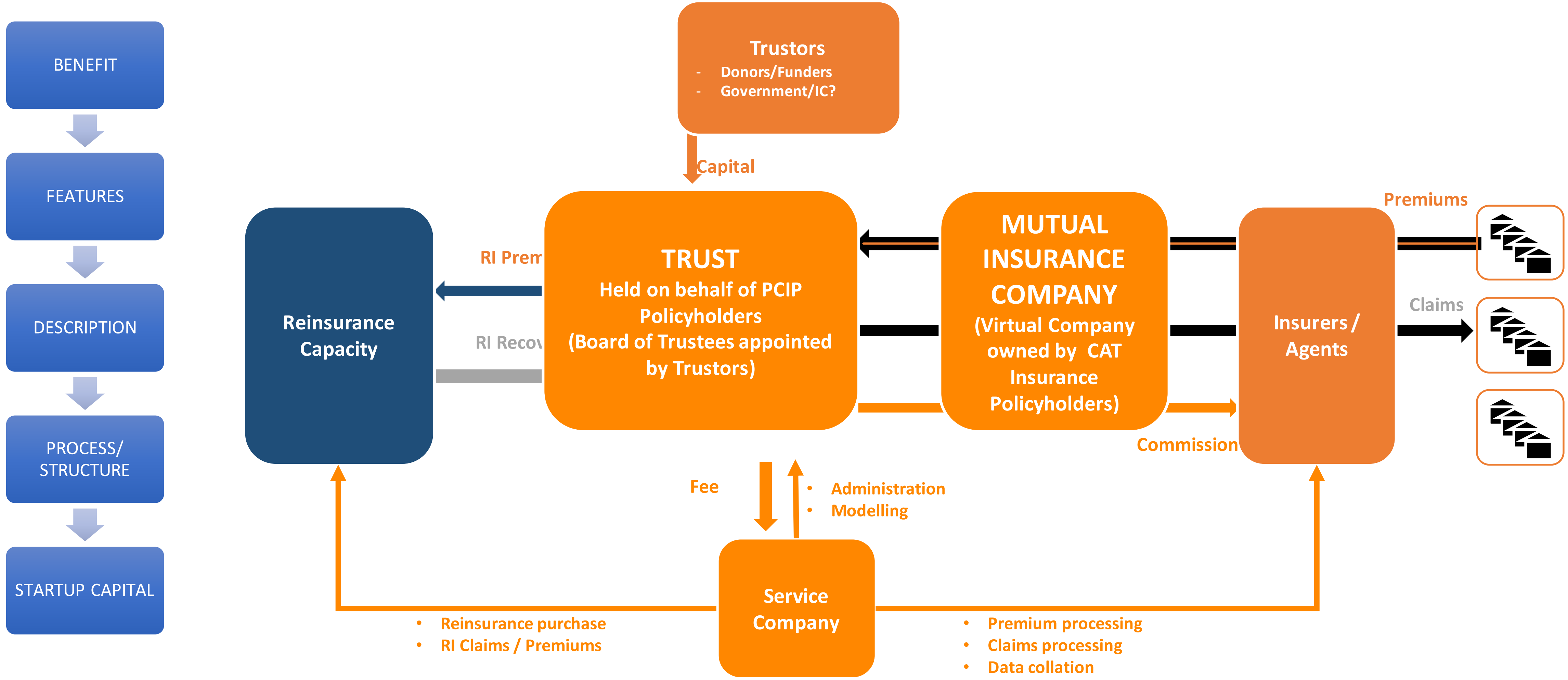
- Prepared a 5-Year business plan
- Business Plan incorporates the costing for reinsurance, commissions, operational & start-up expenses
- Start-up costs aside, average net profit driven by build-up margin within proposed 0.27% premium rate
  - Combined ratio in earlier years affected by start-up expenses but thereafter stabilizes at 88%
  - Expected net profit PHP 12.7m in Year 1, increasing to PHP 503.8m in Year 5 reflecting growth in penetration

Feature: Quick Pay Trigger

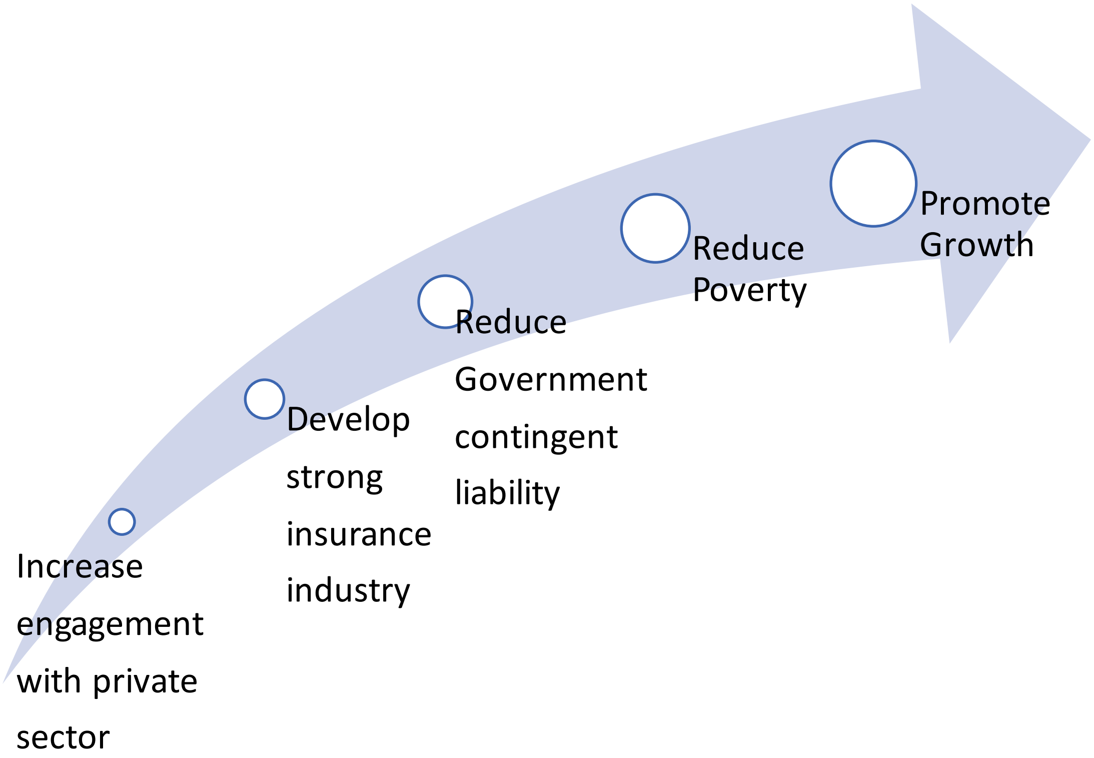
- BENEFIT
- FEATURES
- DESCRIPTION
- PROCESS/ STRUCTURE
- STARTUP CAPITAL

- Consumer buys policy from an insurance company at a fixed annual premium
- A defined Cat event (see following slide) will trigger an initial **automatic immediate partial payment** of 20% of policy limit to all policyholders in the designated area, 'Positive' basis risk exists for policyholders who get a partial payment but no actual loss
- The partial payment is an efficient way to alleviate suffering by providing immediate aid to the recovery process, without waiting for the adjustment process
- Thereafter, insurance company loss adjusters provide on-site assessment of actual damage to each property. Policyholders impacted by the loss but not covered under the parametric trigger would receive payment post adjustment
- Any remaining payment is then made on an indemnity basis, capped at the policy limit
- In summary:
  1. Trigger Event occurs
  2. Partial payment made by Insurance company on behalf of the Pool
  3. Loss adjustors appointed to make on-site assessment
  4. Any remaining valid claim settled on an Indemnity basis on behalf of the Pool
  5. Disputes regulated and assessed by Pool

Feature: Trustee structure builds trust



Why? Post - EQ and -Typhoon finance/insurance requires nationwide integrated structure and process



- Natural Disaster self-insured Losses ↓GDP between 1.25% and 4.03%
- Impact of catastrophes is highest on homeowners and SMEs, WHERE insurance penetration is lower than 0.53% national average.
- Solution:
  - ✓Active National Compulsory Catastrophe Insurance Pool.

Process: Scheme Overview

BENEFIT → FEATURES → DESCRIPTION → PROCESS/ STRUCTURE → STARTUP CAPITAL

- Operational Structure
  - PCIP operates as a **Trust on behalf of policyholders** under a **Trust Agreement** with operational management outsourced to a service company
- Loss Assessment and Claims Protocol
  - PCIP operates as a **compulsory** scheme to avoid anti selection and promote sustainability
  - To ensure maximum speed and ease of claims payment, PCIP's policy coverage be based on a simple **Parametric Trigger** for initial pay-out followed by adjustment on an indemnity basis
  - Adjustment of original policies on First Loss (or Proportional basis?)
- Premium Rating & Rate Relativity
  - To ensure long term sustainability a dynamic build up of reinsurance protection based on an original policy rate of **0.27%** (on Proportional basis) **or 0.36%** (on First Loss basis) **of Policy Limit**
- Initial Capitalisation & Reserve build up
  - An initial capitalisation of PHP 2bn – PHP 2.85bn, which modelling assumptions will build up to PHP 3bn – PHP 4bn after 5 years

Option	Proposal
(Re)insurance	Insurance
Outsourced	Service Company
Structure	Trust
Obligation	Compulsory
Coverage	Proportional
Policy Limit	PHP 1m
Perils	EQ / Typhoon / + Flood caused by Typhoon
Partial Payment	Parametric Trigger
Final Adjustment	Indemnity
Rate	0.27% of Policy Limit

Capital: with zero startup capital, you have 99.5% chance to be -2b in debt by year 3

BENEFIT

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DESCRIPTION

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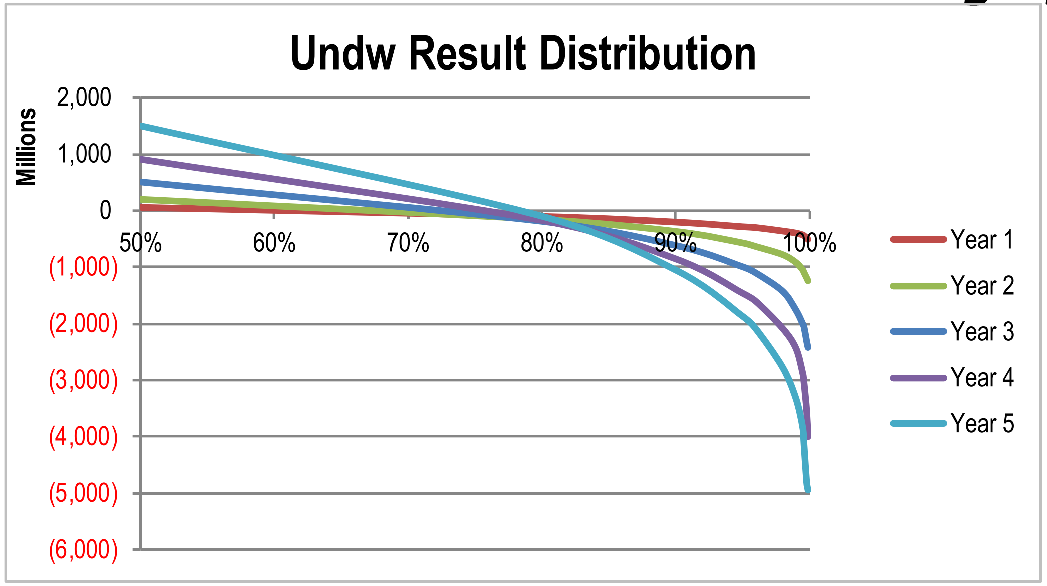
STARTUP CAPITAL



Undewriting Result Distribution

	Year 1	Year 2	Year 3	Year 4	Year 5
5.0%	(280,738,901)	(566,968,340)	(998,981,822)	(1,461,858,329)	(1,870,602,893)
4.0%	(295,713,610)	(631,280,550)	(1,109,300,706)	(1,607,576,601)	(2,094,641,925)
2.0%	(357,571,436)	(774,185,423)	(1,432,211,410)	(2,087,093,571)	(2,774,298,570)
1.0%	(394,049,374)	(914,357,407)	(1,768,753,129)	(2,443,078,047)	(3,328,819,167)
0.5%	(426,428,469)	(1,043,979,999)	**(2,009,568,147)**	(2,881,491,612)	(3,834,331,699)
0.4%	(440,682,324)	(1,091,854,524)	(2,062,863,266)	(3,048,216,823)	(4,132,737,165)
0.2%	(480,514,615)	(1,187,593,445)	(2,321,235,796)	(3,547,345,720)	(4,807,317,150)
0.1%	(508,008,033)	(1,239,129,179)	(2,430,482,178)	(4,015,776,132)	(4,946,707,938)
Average	12,747,442	123,832,755	368,993,257	743,210,941	1,246,970,019
Comb Ratio	97.6%	89.7%	88.6%	88.5%	88.3%

- Charts illustrate the modelled cumulative net distribution, without initial capital outlay
- Pool sustainability objectives dictate the level of initial capital outlay required
  - A longer time horizon entails greater potential downside due to cumulative loss experience over time
  - A medium term of 3 years is not an unreasonable horizon for setting initial capitalisation
  - Adequacy to 1 in 200 year over 3 year time horizon suggests **initial capital of circa PHP 2bn**

Capital: if you start with >P2b capital, you have 99.5% chance to be solvent in year 3

BENEFIT

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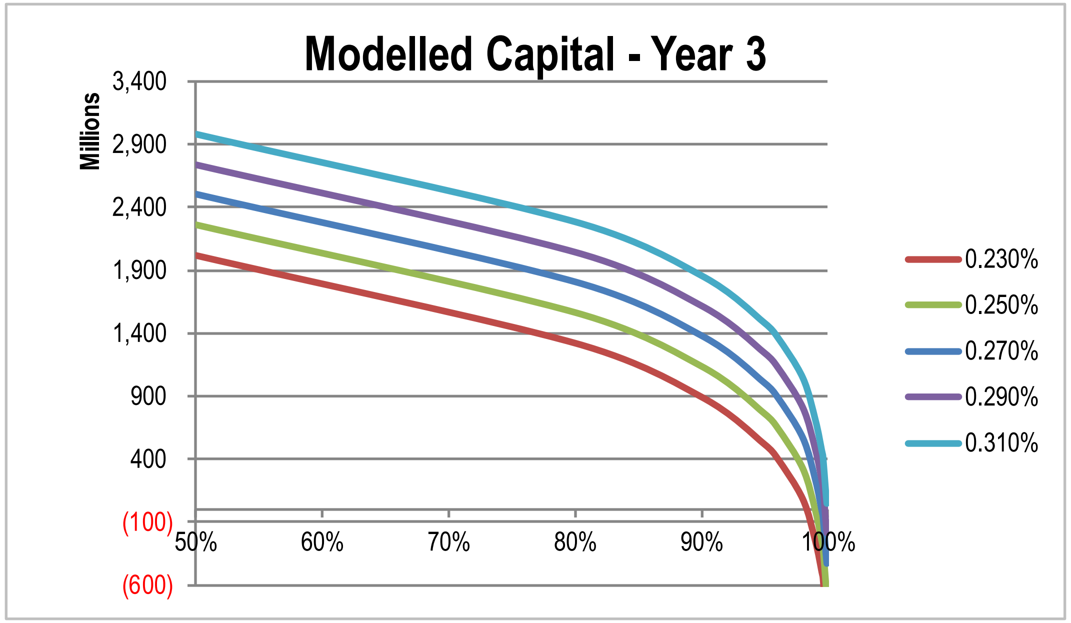
STARTUP CAPITAL



Probability of Capital Ruin in Year 3

	Rate	0.230%	0.250%	0.270%	0.290%	0.310%
PERCENTILES	5.0%	519,418,178	760,218,178	1,001,018,178	1,241,818,178	1,482,618,178
	4.0%	409,099,294	649,899,294	890,699,294	1,131,499,294	1,372,299,294
	2.0%	86,188,590	326,988,590	567,788,590	808,588,590	1,049,388,590
	1.0%	(250,353,129)	(9,553,129)	231,246,871	472,046,871	712,846,871
	0.5%	(491,168,147)	(250,368,147)	(9,568,147)	231,231,853	472,031,853
	0.4%	(544,463,266)	(303,663,266)	(62,863,266)	177,936,734	418,736,734
	0.2%	(802,835,796)	(562,035,796)	(321,235,796)	(80,435,796)	160,364,204
	0.1%	(912,082,178)	(671,282,178)	(430,482,178)	(189,682,178)	51,117,822
	Average	**1,887,393,257**	**2,128,193,257**	**2,368,993,257**	**2,609,793,257**	**2,850,593,257**
	Comb Ratio	101.6%	94.6%	88.6%	83.5%	79.0%

- We tested the sensitivity of results to varying original rates against the Year 3 capital position
- Based on current assumptions and modelling, and initial capital of PHP 2bn the proposed rate of 0.27% best meets:
  - Probability of ruin in Year 3 circa 1 in 200 years
  - Running combined ratio within 90%
- Lower/higher rates would lead to:
  - Higher/lower ruin probability
  - Lower/higher combined ratio and resulting capital build-up

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Thank You

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