Editorial

MALAYSIAN RE

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Dear Partners and Friends of Malaysian Re,

The world was recently shaken by the unprecedented COVID-19 pandemic which has affected more than 7 million people with total death toll reaching half a million. In order to flatten the infection curve, countries around the globe have imposed extended lockdowns with significant economic and social repercussions.

Nevertheless, the lockdowns have spurred innovations as businesses embracing the new normal by adopting extensive use of technology to ensure business continuity. As the lockdowns are being eased, insurance industry will now have to adapt to the changing consumers behaviour and challenging economic environment ahead.

In this second edition of Malaysian Re Foresights, we are delighted to share insightful articles penned by Malaysian Re team with topics covering Market Overview, Environment & Technology.

Stay safe and welcome back!

Yours Sincerely,

Malaysian Re Team

Market Overview

Malaysia – General Insurance and Takaful 2019

Malaysia General Insurance and Takaful industry recorded a stable growth with GWP & GWC rising by 1.8% in 2019. Whilst Motor has been showing steady growth over the years, Fire growth is slowing down, potentially due to the challenging phased liberalisation environment.

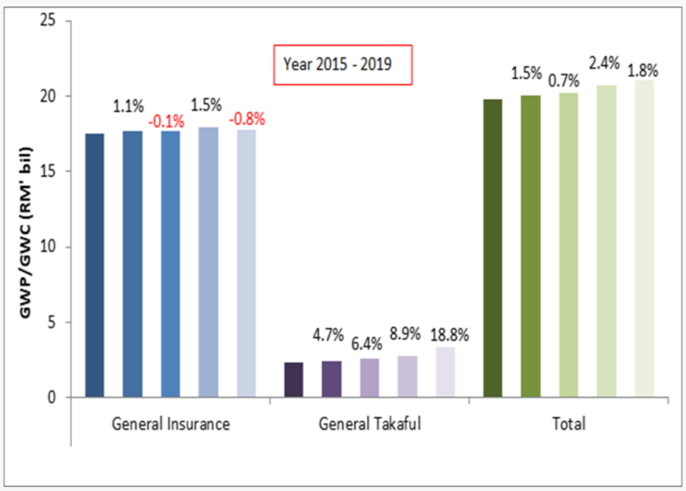


Chart 1 Development of Total Gross Written Premium and Contribution (GWP & GWC) from Year 2015 to 2019 for General Insurance and General Takaful

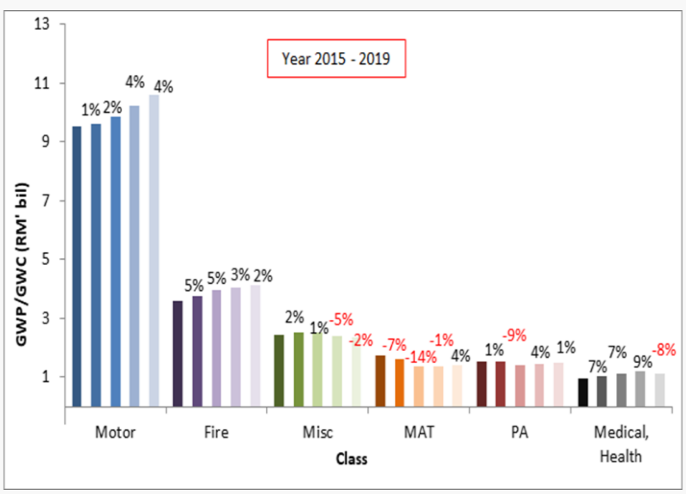


Chart 2 Development of Gross Written Premium and Contribution (GWP & GWC) by class of business from Year 2015 to 2019 for General Insurance and General Takaful Combined

There is a downward trend in Miscellaneous class, mainly from Engineering and Workmen Compensation / Employers' Liability (WC / EL) segments. For Engineering, the contraction in Malaysia construction sector has contributed to the negative growth. For WC / EL, the reduction is mainly due to the transfer of foreign workers' coverage from the Foreign Workers Compensation Scheme under the Department of Labour to Social Security Organisation (SOCSO) Employment Injury Scheme with effect from 1 January 2019, to be in line with the Equality of Treatment (Accident Compensation) Convention, 1925 (No.19) and Conference Committee on the Application of Standard under the International Labour Organization (ILO), which Malaysia has ratified.

Marine, Aviation and Transit (MAT) class started to show 4% positive growth in 2019 after 3 years of downturn. The increase was mainly due to the recovery from offshore oil-related sector which had been declining from -3% down to -28% in the past 3 years. Malaysian Re is of the view that one of the possible reasons for the downward growth in the past is due to the outflow of premium to offshore insurers, whereby designated insurer, e.g. offshore insurers, Labuan insurers and brokers are allowed to provide MAT insurance coverage in Malaysia.

Personal Accident (PA) class has shown a stable growth of 1%, whereas Medical & Health has shown its first significant reduction in 2019 after 3 years with positive growth. Malaysian Re has received feedback from the market players where some of the general insurance companies have reviewed and imposed stricter medical underwriting due to the undesirable past loss experience and compression in underwriting margin and profitability, thus resulting in lower written premium.

In 2019, in contrast to General Takaful contribution which has recorded a significant growth of 18.8%, General Insurance has recorded its lowest growth in the past 5 years at -0.8%. From Chart 3 & 4, we could see that the growth is mainly driven by the largest sector, Motor class of business where General Takaful has shown double digit growth as opposed to negative growth in General Insurance. The shift from conventional to Takaful could also be seen in Fire, PA and Medical & Health classes, hence resulted in higher growth in Takaful segment. The lower growth in Insurance segment is also supported by Malaysian Re's observation on its own Voluntary Cessions (VC) data, where it has shown downtrend in Motor, Fire and Miscellaneous classes.

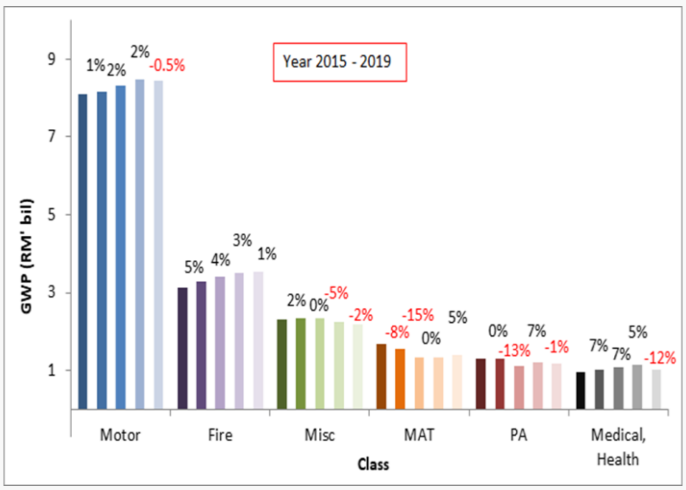


Chart 3 Development of GWP by class of business from Year 2015 to 2019 for General Insurance only

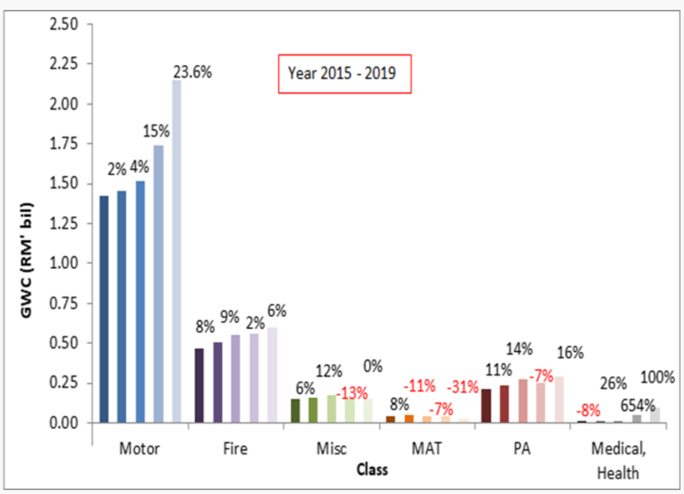


Chart 4 Development of GWC by class of business from Year 2015 to 2019 for General Takaful only

With the current COVID-19 crisis as well as the uncertainties in the development of Fire & Motor phased liberalisation due in June 2020, Malaysian Re anticipates that the market will continue to be stagnant, if not of lower growth, as the insurers / takaful operators have to keep striving to maintain their competitive positions in the face of challenging financial and economic environment.

In 2019, the industry recorded a similar NCI ratio as 2018's at 58%, however it was still on the high side compared to the prior years. From Chart 5, you may observe that the Miscellaneous and MAT class of businesses have shown increase in their NCI ratio, while other classes remain stable or achieved lower ratios.

Based on Malaysian Re's analysis on own data, the spike of NCI in Miscellaneous class is mainly from Engineering sector as there was a major explosion and fire loss to a construction project of refinery and petrochemical integrated plant in April 2019, coupled with some other construction losses.

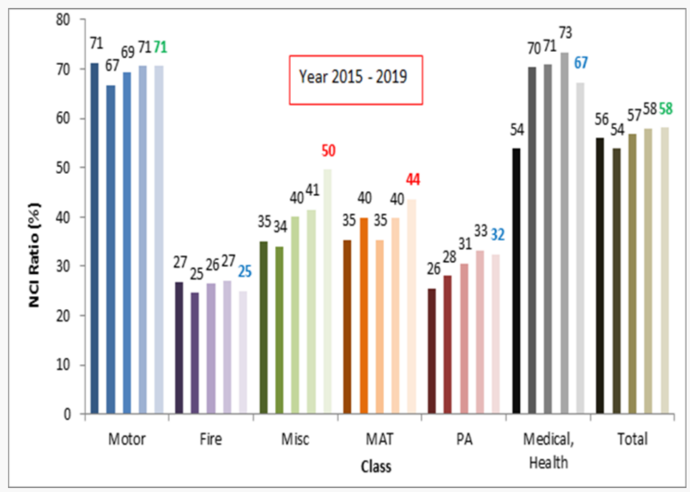


Chart 5 Development of Net Claim Incurred (NCI) Ratio by class of business from Year 2015 to 2019 for General Insurance and General Takaful Combined

MAT has recorded the highest NCI ratio at 44% as compared to the past 4 years, mainly contributed by aviation and offshore oil-related sectors. Whereas for Medical & Health, it has shown improvement in 2019 compared to the past 3 years, which could be due to the tightening in underwriting as mentioned in the earlier paragraph.

Data Source:

ISM Insurance Services Malaysia Berhad's (ISM) Statistical Bulletins 2019

Malaysia – Treaty January Renewal 2020

Since the outset of its operation in 1973, Malaysian Reinsurance Berhad (previously known as Malaysian National Reinsurance Berhad) has witnessed and participated in significant development and progress in the (re)insurance & (re)takaful industry over the years. As the market leader, we draw upon our expertise and experience to provide first-hand view of current Reinsurance & Retakaful market intelligence in Malaysia.

Non - Motor

Despite the occurrence of no single major loss from natural disasters, the highlights of 2019 were a number of medium-to-large-sized risk losses which negatively impacted some of the (re)insurers / (re)takaful operators.

Date of Loss	Market Loss Amount (MYR)	Description of Loss
Apr 2019	472,200,000	Explosion and fire loss to a construction project of refinery and petrochemical integrated plant
Apr 2019	118,847,637	Fire loss at a silicone synthesis plant
Jun 2019	83,000,000	Breakage of a third stage rotating blade at a power station
Jul 2019	61,709,000	Fire loss at a biomass plant
Feb 2019	57,000,000	Fire loss at a laminated boards and engineered hardwood flooring boards plant
Sep 2019	40,100,000	Fire loss at a beach resort
Aug 2019	28,026,430	Fire loss at a veneer and plywood factory
Mar 2019	24,585,000	Fire loss at a steel products manufacturer

Table 1 Non-Motor losses above MYR20million in 2019 as at December 31st, 2019

Subsequently, on the overall basis, the Excess of Loss treaties are seeing approximately 5% increase in premium rate. Loss affected programs have seen a price increase of +5% to +10%, whereas for well performing programs, the rate varies from flat to downwards of -8%.

Similar to Excess of Loss treaties, commissions given to Proportional treaties were mainly driven by the performance of the programs. Loss affected programs have seen reduction in commissions by up to 6 percentage points, whereas for well performing programs, commissions remained flat or adjusted upwards by 1 to 2 percentage points. Other conditions have mostly remained flat.

The treaty limit/capacity given to insurers remained stable with only marginal increase mainly to support business expansion. Reinsurers' appetite for excess of loss covers remained strong as they sought to balance exposure from Proportional treaties as profit generated from many Proportional treaties has been marginal and volatile.

Motor

Since 2018, there has been a significant uptrend in the severity of Third-Party Bodily Injury (TPBI) claims, mostly driven by the rising nursing care and medical costs. Changes in lifestyle and development in technology, such as advancement in assistive devices have also contributed in the increase in quantum of claims.

Claim Amount (MYR)	Number of Claims by Reporting Year									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1-2mil	42	48	36	44	53	29	60	59	58	93
2-3mil	7	5	9	8	1	14	12	2	22	25
3-4mil	2	3	0	2	4	1	3	8	7	14
4-5mil	1	0	2	5	3	2	0	2	9	0
5-6mil	1	1	2	2	1	1	0	0	6	0
6-7mil	0	0	0	0	1	0	0	0	0	0
7-8mil	0	0	0	0	0	0	0	0	1	1
Total	53	57	49	61	63	47	75	71	103	133

Table 2 Claims frequency and severity table by Loss Reporting Year

		Loss Year	Reporting Year for latest amount	Gross Loss Amount (MYR million)
1	Individual A	2013	2018	7.813
2	Individual B	2015	2019	7.702
3	Individual C	2008	2016	6.897
4	Individual D	2012	2014	5.874
5	Individual E	2012	2014	5.697
6	Individual F	2015	2018	5.653
7	Individual G	2016	2019	5.427
8	Company A	2010	2016	5.328
9	Individual H	2017	2018	5.322
10	Company B	2013	2014	5.300
11	Company C	2008	2013	5.168
12	Company D	2012	2013	5.150
13	Company E	2012	2018	5.132
14	Individual I	2018	2019	5.053
15	Company F	2013	2015	5.015

Table 3 TPBI claims above MYR5 million as at December 31st, 2019

From Table 2 & 3, it is shown that in Year 2018 and 2019, the number of claims more than MYR1 million has significantly increased. Reporting Year 2018 & 2019 comprises claims from various Underwriting Years (oldest back to 1994) and has been developing over the years.

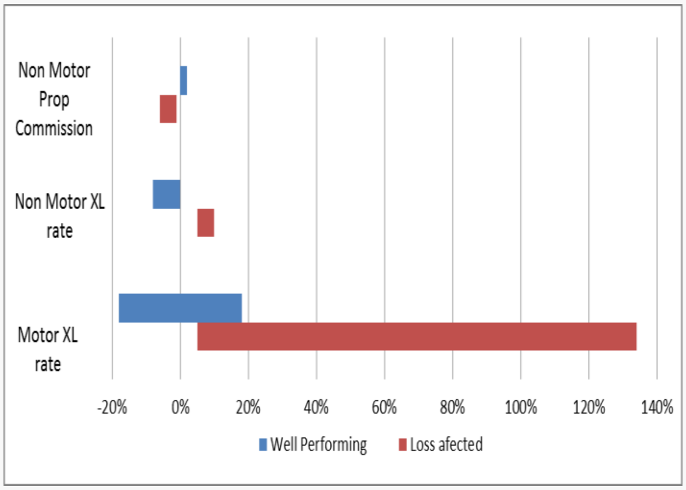


Chart 6 Summary Diagram - Pricing Rates Movement

Taking into account of the above development and the uncertainties from the recent amendment of the Civil Law Act 1956 effective September 1st, 2019, we have seen an overall increase in Motor Excess of Loss treaties rate at approximately 9%. The range of increase for loss affected programs varies from 5% up to more than 100%, depending on the degree of deterioration in the result, whereas for well performing programs, the rate varies from +18% to downwards of -18%. Based on our observation, Reinsurers' appetite for Motor excess of loss have been changing towards treaties with higher deductible, i.e. MYR1 million and above, from the present average of MYR0.5 million.

The UAE Insurance Market

The UAE insurance sector is governed by Federal Law No. (6) of 2007 concerning Establishment of the Insurance Authority & Organization of its Operations. It entrusts the Insurance Authority (IA) to enforce its provisions and there are 62 insurance companies in UAE. 35 are local insurance companies and the remaining 27 are foreign companies. In 2018, Gross Written Premium for Property & Liability class was AED 15.1 billion, a reduction of 4% as compared to 2017. Motor is the largest class of business with premium of AED 6.7 billion followed by Fire with AED 2.7 billion and Engineering & Energy AED 2.1 billion[2]. Marine & Aviation contribute AED 1.3 billion to the total premium and other classes was AED 2.1 billion. In 2018, market loss ratio for Motor stands at 67% and for Fire, it was 56%. For other classes, Marine & Aviation recorded 45% Loss Ratio, Engineering & Energy 93% and others 37%[3].

The UAE insurance industry is largely concentrated in Dubai and Abu Dhabi, accounting for more than 80% of the total general GWP[4]. The presence of mandatory health insurance in these Emirates supports the sub-segment's growth. Top 5 insurance companies in terms of gross premium are Orient Insurance Co, Abu Dhabi National Insurance Co & Oman Insurance Co, Al Ain Ahlia Insurance Co & Emirates Insurance Co. These 5 largest companies continue to control a substantial market share of about 55% of the premium[5].

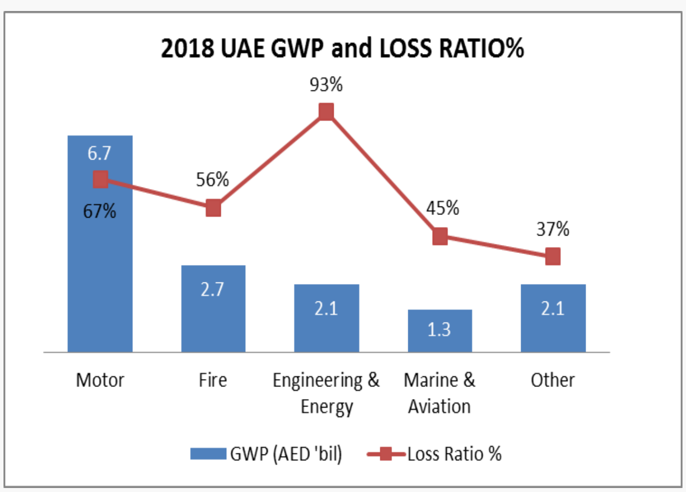


Chart 7 UAE Market Performance 2018

Brokers and direct-marketing channel including third party administrators dominate UAE general insurance industry. Domestic insurers have developed their own direct distribution channels, while foreign insurers largely use brokers and agents for distribution and pay higher commission than domestic insurers[6].

UAE has better penetration compared to its GCC peers due to higher awareness and the presence of mandatory classes in the market.

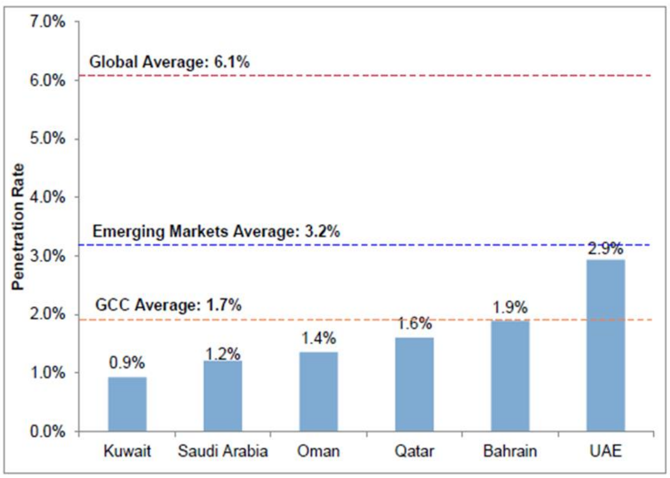


Chart 8 GCC - Insurance Industry Penetration[7]

UAE market is a challenging market with competitive pricing rates among direct insurer, overcapacity in terms of reinsurance but yet a market that can't be ignored due to size of premium volume. There have been few major losses in the market since 2010. Since UAE is a non-CAT country, most of losses are non-CAT loss which are caused by fire. These non-CAT losses are fire at warehouses i.e. Mag Group FZE and Aramex, hotels and residentials i.e. Torch Tower, Emaar Properties – Address Hotel and also oil refinery i.e. Ruwais refinery (ADNOC). As for CAT loss, there was a flood in Abu Dhabi and Dubai in March 2016 which caused significant claims due to damages in industrial areas, commercial properties and motor vehicles.

Being Malaysian Re (Dubai) Ltd's ("MRDL") second largest market after Turkey which represents 31.74% of total portfolio, UAE is one of our Primary Markets as outlined in Malaysian Re's T20 Business Plan segmentation strategy between primary and secondary markets. The plan has been executed since 2017 with other complementing strategies which has resulted in improvement to our bottom line since then.

Despite Motor being the largest class of business in UAE, our underwriting strategy is to focus on non-motor business and writing motor business on XOL basis only.

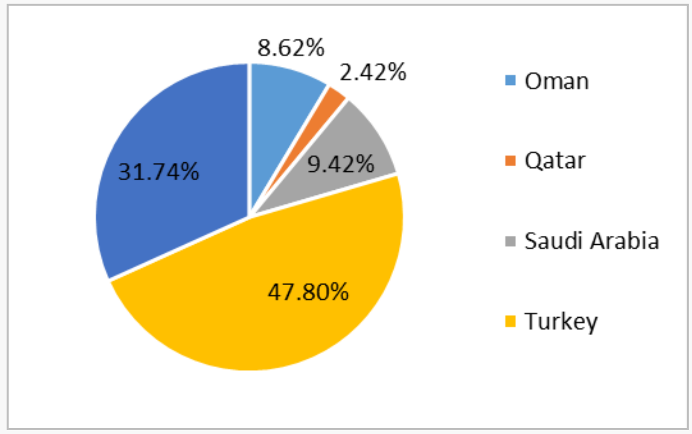


Chart 9 EPI by Countries for UWY 2019

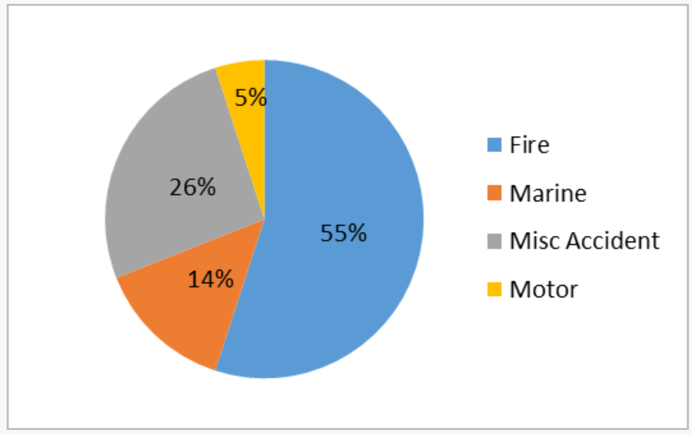


Chart 10 Booked Premium FY 2019/20

In terms of performance, UAE has been a profitable market for MRDL based on the past 10 year's result. Loss Ratio stands at 70% with profit margin of 3% with expenses such as brokerage, tax and retro cost being all taken into account.

In order to strengthen our relationship with the clients as well as to enhance our brand visibility in the market, MRDL conducts market training once a year which focuses on both insurance and reinsurance needs of our clients.

Being in the most competitive market in the region, MRDL underwriters continue to enhance knowledge, pursue selective growth under strict underwriting discipline and optimize our participation in well performing business supported by utilisation of analytics and actuarial assessment.

[1, 2, 3] UAE Insurance Authority website, Swiss Re report
[4, 6] GlobalData
[5] Middle East Review
[7] Alpen Capital, GCC Insurance Industry

Climate Change: A Dilemma to Insurance Industry

Australian bushfires, typhoons in Japan, flooding in Italy and hurricanes in Caribbean. All are natural catastrophe that were happening all around the world in 2019 alone. The Global Risk Report which is published by World Economic Forum annually have identified environmental related risk as top five global risks in terms of likelihood and impact since 2011. One aspect of environmental risk is the climate change, which has influenced multiple recent natural disasters. The report further stated risks related to the environment were becoming more prominent than ever where various risks that are connected back to the environment are often categorized as risks with high frequency and high severity (*World Economic Forum, 2019*). Generally, climate change would have a high potential impact to property and casualty insurance industry.

Climate change can lead to catastrophic events. The Global Risks Report states that on average, human emit up to 110 million tons of heat-trapping global warming pollutants into the atmosphere on daily basis. Pollutants trap extra heat energy that disrupts the hydrological cycle, resulting in evaporating water vapour from the oceans and leads to extreme weather events such as stronger storms, increase in extreme floods, longer droughts, declining crop yields and heat waves.

The impact of climate change could be enormous in that the amount of losses could be up to billions of dollars. Munich Re reported that for 2019 alone, there were 820 natural catastrophes that cost USD 150 billion, of which USD 52 billion being the amount of insured losses. Besides economic impact, natural event also cost human lives - for the last 30 years, 52,000 people have lost their lives per year due to natural catastrophes (*Munich Re, 2020*). These events caused property insurance industry to suffer financially. One example is in aftermath of the 2017 hurricanes in the US, the private US property & casualty insurance industry suffered a 30% decline in its net income after taxes (*Insurance Information Institutes, 2018*). Moreover, the insurers' combined ratio for 2017's nine-month period during which Hurricanes Harvey, Irma and Maria hit, also worsened to 104.1% compared to 99.5% for the previous year (*Fitzgerald and Gordon, 2018*). This shows how climate change can severely impact the insurance industry.

In addition, climate change could impact the property industry by causing the risk to become uninsurable. The rising global temperature caused the melting of ice in the Arctic and Antarctic region which caused the rising sea level. This raises a concern that the risk might become uninsurable in the near future. The rising sea level may lead to higher frequency of flood. Flood is also a disaster that could incur catastrophic loss. According to a report from Rhodium Group, Risk Management Solutions in 2016, higher sea levels and potential storm surges from hurricanes could inflict the US coastal areas up to $35 billion in annual losses over the next 15 years (*Ciccarelli, 2016*). Furthermore, floods can be caused by excess precipitation, premature snow, coastal storms and Tsunamis. The potential loss could be as big as two to three times the size of all catastrophic losses combined (*The Center for Insurance Policy and Research, 2017*). This contributes to the reasoning that flood is uninsurable in the point of view of the private insurers.

Climate change had been a hot topic for the past decade and people have different views on it. Some believe it is man-made whereas some believe it is a natural phenomenon (*Simon-Lewis, 2018*). There are 97% of climate scientists agree that climate change is happening due to human actions for the past centuries. NASA reported that the current warming trend of the earth is more than 95% likely to be the result of human activity since the mid twentieth century (*NASA*). The Intergovernmental Panel on Climate Change (IPCC) stated in its report that anthropogenic greenhouse gas had been emitted since the pre-industrial era. The emissions had been increasing due to population and economic growth. As a result, the greenhouse emissions were recorded as the highest in history in 2014 (*IPCC, 2015*).

Moreover, evidence collected for the past century from research done by thousands of scientists across more than one hundred nations found that human industrial activities that produce anthropogenic gases was rising and it correlates to the recent warming of the Earth (*Ocko, 2017*).

However, climate sceptics argue that climate change is a natural phenomenon because the Earth has always gone through the periods of cooling and warming. Two well respected Australian scientists, Dr Jennifer Marohasy and Dr John Abbot, stated the Earth's temperature would still have risen to the current level even without the industrial revolution. Dr Marohasy also claimed that global warming is a natural phenomenon which heats the world in a cycle throughout history just like how Earth cooled during the Ice Age (*Martin, 2017*). Another argument that climate change is a natural phenomenon was made by Patrick Moore, PhD, Chair and Chief Scientist of Greenspirit Strategies Ltd. He made a testimony in 2014 claiming that there is no scientific proof that emission of carbon dioxide from human activities are the main cause of the warming of the Earth for the past century. Dr Moore believed that the rising of the Earth temperature is a natural phenomenon because historical record shows that millions of years ago, the CO^2 level was ten times higher than today and the Ice Age still occurred even when CO^2 levels were 10 times higher (*Moore, 2014*).

Major insurance companies believe that climate change is due to human activities. American International Group (AIG) was among the first insurance companies to recognise the consensus that climate change is real and influenced by human actions. Berkshire Hathaway's General Reinsurance stated that commercial and residential property may be at risk due to climate change (*Lewis, 2011*). Climate change could cause the insurance industry enormous loss. Thus, the property and casualty insurance industry are promoting climate change adaptation and mitigation. One of the insurers' initiatives was to give a discount to customers who invest in risk control for their property. The discount incentivises customers to increase resilience precautions. As a result, the potential damage inflicted by climate change could be reduced or totally prevented (*Kahn, Casey, Jones, 2017*). Furthermore, insurers are now utilising the huge amount of data they possess to appropriately price climate risk using fine-grained data. The detailed data could help insurers to price the insurance premium based on the associated risk. For example, insurance company used topographical data to assess a property risk exposure and price the premiums based on the risk (*Kahn, Casey, Jones, 2017*).

Malaysian Re also suffered its own fair share of catastrophe losses for the non-MENA overseas portfolio in recent years. In 2017, Malaysian Re was affected by Hurricanes Harvey, Irma and Maria which occurred in North America region. The following year in 2018, Typhoons Jebi and Trami swiped across Japan - Typhoon Jebi remains the second largest loss for Malaysian Re after the Thai Flood in 2011. These events were unprecedented, and it affected the whole reinsurance market as it wiped out the entire profit from Japan for the last decade. Due to these catastrophe losses, Malaysian Re has reviewed the Company's portfolio and worldwide catastrophe exposure. Malaysian Re has made major changes to manage future events by significantly reducing its Japanese catastrophe exposed programs wherever possible and mitigating businesses of peak zone territories such as USA, Turkey and Taiwan. As result, though the Company's premium was somewhat affected, the measures have limited the claims from 2019 CAT events of Typhoon Hagibis and Typhoon Faxai to a manageable level. Malaysian Re's experience suggests that the frequency of these events is increasing year by year. Thus, concrete initiatives in managing the severity from such events are vital. As part of its efforts to contain large losses from natural disasters, Malaysian Re has actively used a third-party CAT modelling software by integrating it in the pricing tool for catastrophe exposed businesses. The Company is also exploring the possibility of arranging a quota share for the CAT exposed territories to reduce the catastrophes accumulation.

In conclusion, it is expected that the frequency and severity of disasters due to climate change would continue to increase. The property and casualty insurance industry face massive challenges from the potential impact from climate change. As such unmitigated disasters could threaten the solvency of insurance companies, insurers have been considering multiple solutions to reduce the negative financial impact of climate change. Ultimately, effective climate change adaptation and mitigation steps need to be carried out urgently.

Earthquake Pool Program Eases the Country's Financial Management

Natural catastrophe-related losses are large and unpredictable. Every year, natural disasters cost multiple lives and substantial damage to property. Despite advancement in scientific research, the unpredictability and randomness of natural hazards remains a particular challenge for earthquakes. The high payouts for insurance claims by insurance companies could go beyond what they could cover after a major earthquake; thus, the government shares insurance responsibility by reinsurance. If a major earthquake occurs, insurance companies can make substantial payouts for insurance claims. In order to avoid issues with the payment of insurance claims, the governments of Indonesia, Taiwan, Japan and Romania have formed a ministerial order covering the payment of earthquake insurance claims and promptly pays based on a rough estimate (Goda, Wenzel, & Daniell, 2015).

A permanent example of the disruptive forces of nature is the earthquake incident on 26 December 2004 off the coast of West Sumatra, which was widely covered by the international media. The Republic of Indonesia is extremely vulnerable to natural disasters such as earthquakes, volcanic eruptions and floods due to the geographical location of the Indonesian Archipelago. In response to the above situation and through the succession of administrative and regulatory directives, the Indonesia government requested that it is compulsory for all licensed general insurance and reinsurance companies operating in Indonesia to cooperate in the insurance of special risks through a joint venture of all companies called MAIPARK (*PT. Reansuransi MAIPARK Indonesia, 2016*). The objective is to form a community of insured who pay enough premiums to cover the cost of damage caused by a natural catastrophe. Moreover, the government has introduced and endorsed the mandatory earthquake tariff (*News Desk, 2019*).

Following the aftermath of the 1999 Chi-Chi Earthquake, Taiwan Residential Earthquake Insurance Fund (TREIF) was created by the Taiwan Ministry of Finance to facilitate a risk sharing mechanism between private insurance companies and the government covering insured residential earthquake losses. It is administered by Central Re (*Kuo, Chang, Wan, & Sarabandi, n.d.*). TREIF collects premium for the earthquake risk from the insurance companies and redistributes the premium to the various risk sharing entities. If losses occur, TREIF collects the appropriate funds from the risk sharing entities and reimburses the direct insurers for their payments to the policyholders. Furthermore, long term fire policies are replaced by annual fire policies with mandatory earthquake endorsement. Taiwan Ministry of Finance also created National Earthquake Scheme to create a risk sharing partnership among private insurance companies, TREIF and the government. The limit of the scheme is NT$70 billion. In the event that losses exceed this capped amount, policyholders would be paid on a pro rata basis (*Regulations Governing The Taiwan Residential Earthquake Insurance Fund, 2019*).

Similarly, in Japan, the government will reinstate the liabilities of earthquake insurance incurred by private insurance companies. Reinsurance premiums are collected and managed separately in the Special Account for Earthquake Reinsurance. The 1966 Earthquake Insurance Law which was enacted after the Niigata earthquake of 1964, established Japan Earthquake Reinsurance Co. Ltd (JER) as an earthquake reinsurance pool. It retains a part of the liability and transfers the balance portion to private insurers and the Japanese government via reinsurance arrangement (*White, 2016*). Reinsurance claims are paid out to private insurance companies at the time when massive earthquakes occur. The combination of government and private insurance ensures that earthquake risk to policyholders remains affordable. The total amount of reinsurance claims for a single earthquake to be paid by the government will fall within the limit of 11.5 trillion yen. In the event of an earthquake which causes damage beyond the limit, the government will make every effort to take prompt and appropriate policy decisions (*Mahul, 2014*).

In addition, in Romania, which is one of the countries in Europe which is heavily exposed to natural disasters, especially earthquakes and floods, causing loss of life and damage with major social and economic effects. The Insurance Pool against Natural Disasters (PAID) was created in November 2009 as an insurance and reinsurance agency formed by an alliance of 12 insurance companies to provide mandatory home insurance to Romanian homeowners (*Bulugea, 2011*). It is in accordance with the provisions of Law No. 260/2008. All insurance companies in Romania authorised to write catastrophe business are legally required to sell the compulsory policies on behalf of PAID (*CONCEATU, 2019*). All Romanian insurers licensed to write catastrophe businesses have direct access to the underwriting process of PAID and directly enter details of the policies sold on a real basis, allowing PAID to have fully updated records of all exposures within their portfolio (*About PAID, 2017*).

Malaysia as a country is not known to have direct exposure from natural catastrophe events such as earthquake or typhoon. Due to this, there is no requirement for the authority to set up a pool for the purpose. However, there are three pools that were established to cater for specific lines namely Energy (MERIC), Aviation (MAP) and Motor (MMIP). The latter is somewhat similar in intent that is to protect insured who are unable to secure motor insurance coverage. The participants of this pool are all the insurance player in Malaysia and the performance are being shared according to participants' market share in motor business. For MERIC and MAP, as Pool Manager, Malaysian Re underwrites business, manages claim, arranges reinsurance protection and handles other administrative roles on behalf of the pool members.

On the international front, Malaysian Re participated in the Taiwan Residential Earthquake Insurance Fund (TREIF) from 2017 to 2019. Besides providing capacity for such unfortunate events, this opportunity has been utilised by Malaysian Re to further understand the mechanics of an earthquake pool working in a different market. Our experience was positive as no major earthquake event occurred in Taiwan during our participation.

In conclusion, the participation of government in several countries in respond to natural catastrophe risk by adopting Earthquake Insurance Pool programs have adequately prepared them in compensating the victims as well as the insurance companies. The pools have also been effective in enabling disaster relief assistance be eefficiently carried out following major earthquakes.

The Unpopular but Necessary Case for Coal Fired Power Plant

Climate change has been a topic of intense discussion for many years. Change in weather patterns has been identified as one of the causes of increases in catastrophic flooding and typhoons which have disrupted the way of life. In late 2016, countries came together to sign what became known as the Paris Agreement. The objective was to combat climate change and to accelerate the actions and investments needed for a sustainable low carbon future. A timeline was set, that by 2030, the global temperature rise was to be limited to 1.5 degree Celsius.

Coal fire power plants were identified as one of the parties responsible for carbon emission that directly impacted the increase in global temperature. As a result, many signatories of the Paris Agreement have agreed to support the phasing out of reliance on fossil fuel, namely coal fired power plants as a source of power generation. To support this, many European based insurers and reinsurers have been reducing their portfolio, or in some extremes, even stopping the underwriting of coal fire power plants altogether. Among these are AXA XL, Scor, Zurich, Allianz, Swiss Re, Munich Re, Generali, Mapfre, QBE and Hannover Re. Over the pond, US based companies were not as determined like their European counterparts. To date, only Chubb has joined in the ranks to stay away from coal fired power plants.

The consequence of this action is the decreased supply of capacity in the power industry for coal fired power plants which in turn, has driven terms upwards. The average increase for a coal fired power plant, with clean loss on expiring, is about 15% to 20% from expiry terms. With the timeline set for 2030, and the limited players supporting coal, the window for this "hard market" will probably last until 2030. As clients still needed time to adjust to the new normal, balancing the need the support the Paris Agreement, as well as ensuring premium growth is not ignored, each company adopted different approaches with some only putting a stop to insuring new coal fired power plants. On the other hand, others have continued albeit a reduction in the overall power plant portfolio, limiting the percentage of coal fired power plants in their books, and having a plan to continually decreasing the percentage and allowing a softer exit from the market.

It is interesting to note, that in 2017, President Trump pulled out of the Paris Agreement, citing that the accord would undermine the US economy. The US needs power for growth in support of the economy. Very much so do countries in Asia, where the economy is still very much depended on fossil fuel for power generation.

The International Energy Agency (IEA) reports that South East Asia's electricity demand grows at an average of 6% per year, which is among the fastest in the world. Since 2000, the overall energy demand has grown by more than 80% and this is driven by fossil fuel use - oil is the largest element of power source, followed closely by coal. The IEA reports that oil and coal fired power plants will continue to be the main power generation in South East Asia region

The diagram below shows the demand for different types of power plants until 2040 as projected by IEA.

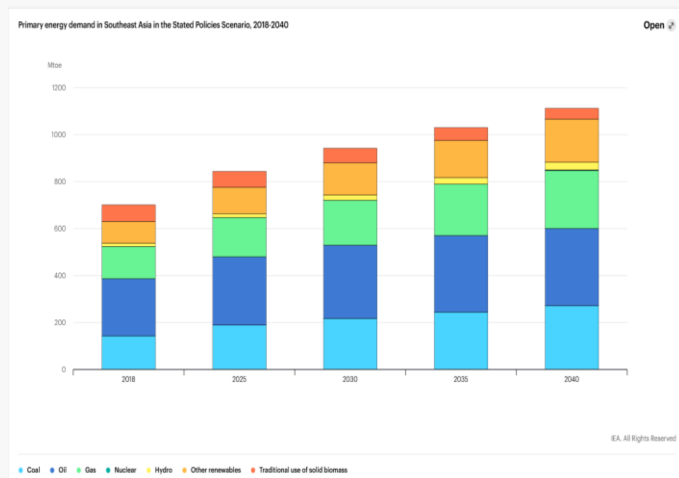


Chart 11 SEA's Demand for Power Plants 2018 - 2040

Production of electricity in South East Asia is still dominated by coal where coal power plants accounts for almost 40% of the region's power source, with Indonesia leading the way. Indonesia is the largest producer of coal in the region and 5th largest in the world. Malaysia and Thailand are the highest coal importers in the region and are ranked the 8th and 10th respectively in the world (*IEA 2019*). The popularity for coal power generator is due to its relatively cheaper cost to build and operate as compared to other renewal power sources such as solar and wind. Furthermore, it has been around for many years and the turbines are considered proven and reliable technology. Because of these two important factors, it is expected to continue to dominate the landscape of power generation for the next 20 years.

The source of investment into power in South East Asia is largely driven by the public sector, namely the state-owned power produces like Tenaga Nasional Berhad (TNB) in Malaysia and Perusahaan Listrik Negara (PLN) in Indonesia. With the uncertain economic outlook, especially after the deadly COVID-19 outbreak globally, South East Asian governments will continue to invest in coal as the most cost-efficient and most reliable power generation source.

With this in mind, Malaysian Re will continue to participate in coal fired power plants, more so in a hard market. Our portfolio remains largely Malaysian based in our role as the national reinsurer. Having said that, Indonesia, Thailand and Vietnam will be catching up as more new power generation projects have been introduced in these countries to support their growing economies.

The table below shows the premium shares by countries for our power portfolio. For FYE 2020, the power plant portfolio make up about 30% of Malaysian Re's facultative portfolio, contributed by declining terms in other LOBs and the detariffication of the Malaysian market.

Territory	Malaysian Re Share on gross premiums (MYR)	Malaysian Re Share on gross premiums (USD)
Malaysia	10,760,727	2,690,182
Philippines	661,013	165,253
Thailand	469,661	117,415
Pakistan	312,837	78,209
Indonesia	219,022	54,756
Vietnam	183,161	45,790
Myanmar	125,413	31,353
Laos	29,362	7,340
Total	**12,761,196**	**3,190,299**

Table 4 MRe's Power Portfolio 31 Mar 2020

The support for coal power plants will continue in the foreseeable future for the following reasons:

- ✓ Terms will continue to be hard as capacity decreases
- ✓ Electricity demand will continue to be met by coal in SEA
- ✓ With the drop in oil prices, coal prices will remain competitive and this will only increase the popularity of coal power plants in the region. Combined with negative economic outlook of most countries in SEA, regional governments will continue to invest in more coal power plants in the coming future.
- ✓ The projected capacity mix of energy source for power generation in Malaysia up to 2030 is shown below:

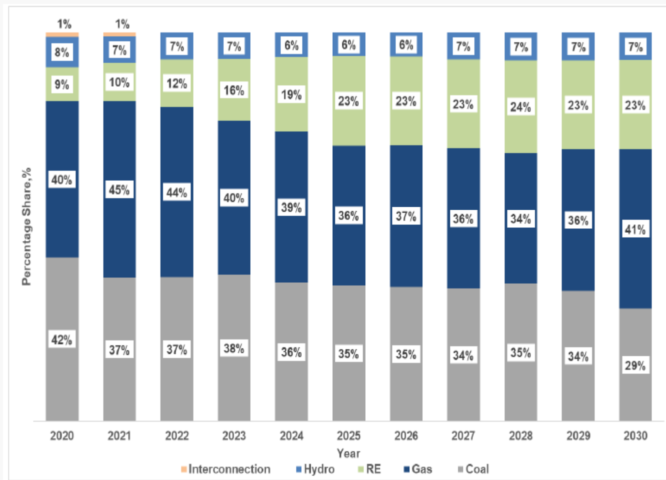
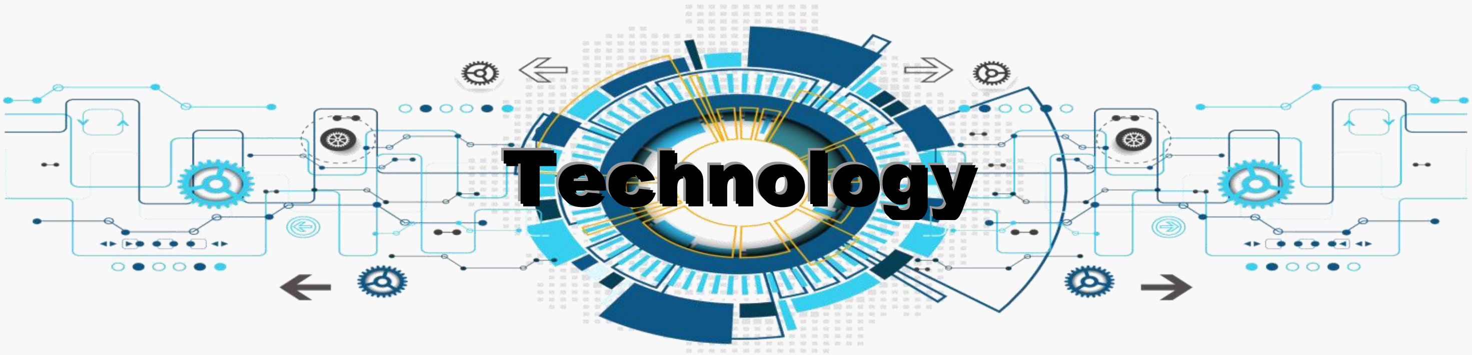


Chart 12 Malaysia's Capacity Mix of Power Generation 2020- 2030

Malaysian Re is fully cognizant of the role it should play to support the reduction of carbon emission. With this in mind, we are progressively expanding our portfolio to include renewal power generation, namely solar. We are supportive of the fact that many clients, such as the likes of TNB, have adopted a greener policy moving forward. In line with the Malaysian Government's support of green energy, renewal energy is targeted to be 20% of TNB's generation mix by year 2025.

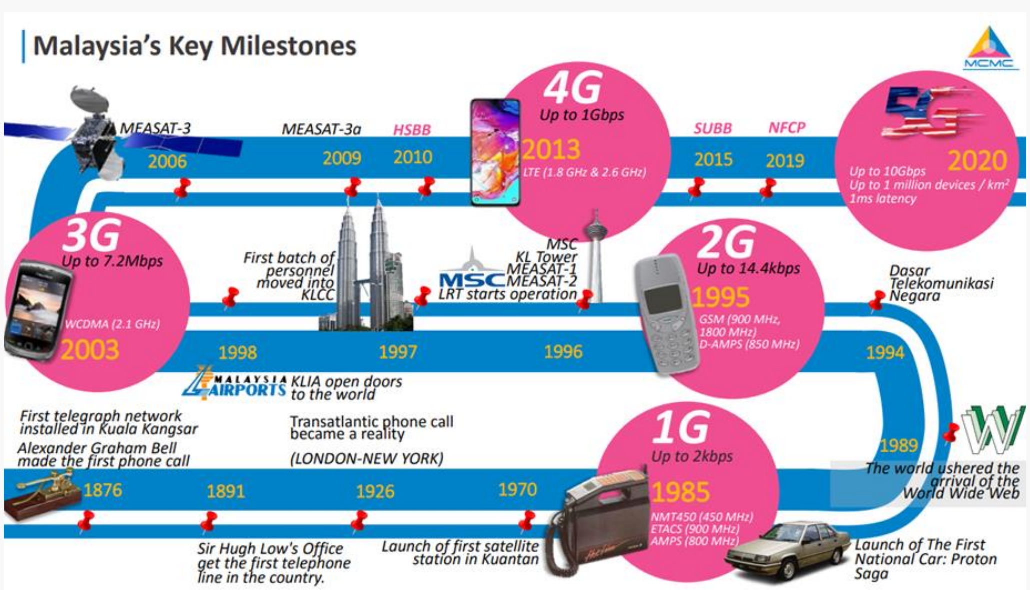


5G Network and The Future of Connectivity for Insurance and Takaful Industry

5G is the fifth generation of cellular network technology after wireless networks were first introduced thirty years ago. It is the most significant data network advancement to date which promises substantially faster upload and download speeds (up to 10 to 20 times faster than what we presently have), wider coverage, and more stable connections. The 5G technology will be paradigm-shifting for the world – as it enables robots, sensors, and other machines to communicate with each other, opening the world to new technologies.

The Malaysian government has embraced the rapid growth of digitalisation under the National Fiberisation and Connectivity Plan (NFCP) which aims to establish robust, pervasive, high quality and affordable digital connectivity for the welfare of the people and development of the country. Specifically, for 5G network, the government under the Malaysian Communications and Multimedia Commission (MCMC) has established a national 5G Task Force in November 2018 to study and recommend a holistic strategy for 5G deployment in Malaysia. Since then, many milestones have been achieved and Malaysia is currently already in the 5G Demonstration Phase (5GDP) whereby one of its aims is to grow the 5G ecosystem in Malaysia through tests conducted in a live but controlled environment.

The 5GDP is currently taking place after kicking off in October 2019 as industry partners are currently testing 5G network nationwide via various projects, and was initially scheduled for completion in March 2020 before COVID-19 outbreak emerged. These projects will cover various sectors (also called verticals), namely agriculture, digital healthcare, education, entertainment/media, manufacturing and process industries, oil and gas, smart city, smart transportation, and tourism. MCMC is also planning to commercialise some of these cases as early as the third quarter of 2020. As such, Malaysia is considered as one of the earliest ASEAN countries to deploy the fifth-generation network. Malaysia's progress in 5G can be demonstrated in the graphic below, as presented in MCMC's Media Briefing on 5G Malaysia Demonstration Projects in September 2019.



Paradigm Shift

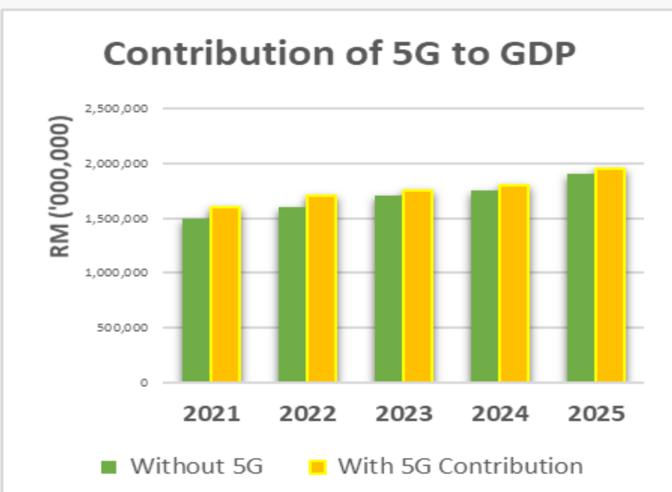
To demonstrate how paradigm-shifting 5G will be, just imagine these scenarios: A high definition movie can be downloaded within a minute or so. Mobile gamers are able to enjoy their gaming experience with high definition resolution and no lagging time. When you open a web page, you can view the page within one second instead of a few seconds loading time. These scenarios will be made possible due to 5G improving latency – which is the responsiveness between a request and a response. In other words, 5G will allow for instantaneous data transfer. In April 2019 at a "5G Malaysia" event conducted in Putrajaya by MCMC, the first 5G hologram video call was made and tested by the Prime Minister himself. 5G hologram video enables the capturing of the 3D image of a person at another location in real time and streamed at another location as a full-sized holographic image.

Internet of Things (IoT)

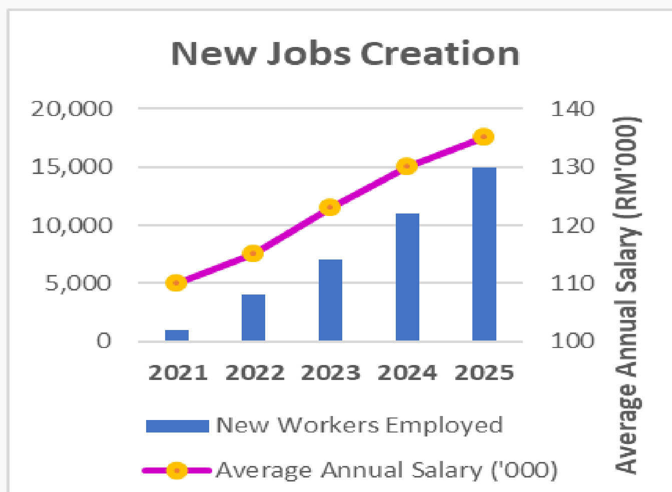
The discussion on 5G will be incomplete without the Internet of Things (IoT). IoT is the interconnection via the internet of computing devices planted in everyday objects, which enables them to send and receive data. An example would be the introduction of autonomous vehicles, more commonly known as self-driving cars. With computing devices embedded into this next-generation vehicle and the aid of 5G to reduce latency and provide stable and wider mobile network coverage, autonomous vehicles will eventually be common to see on the roads. Due to the safety features in autonomous vehicles, the world can expect to see a significant drop in motor accident cases, especially those involving bodily injuries and fatalities. Currently, research is underway to enable full self-driving cars, with various prototypes already being tested on the road. Once 5G comes into the picture, it will greatly aid the completion of this research. The expansion of IoT combined with intelligent data analytics spearheaded by 5G network, will greatly challenge the landscape of various industries – including the insurance industry.

Our Efforts and Aspirations

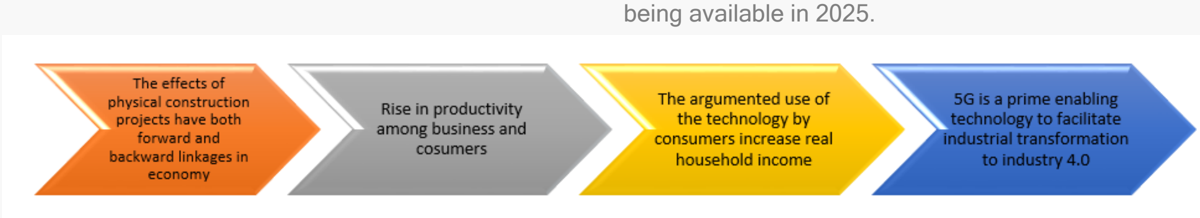
A study conducted by the Malaysian Institute of Economic Research (MIER) demonstrates how 5G will lead to jobs creation and contribution to the nation's GDP, demonstrated as follows:



5G related economic activities are estimated to contribute an additional RM12.7 billion to the GDP.



Between 2021 and 2025, almost 39,000 new jobs will be created in the economy, with almost 40 percent of the jobs being available in 2025.



Malaysian Re as the national reinsurer aspires to embrace and adapt to all the changes that the future 5G rollout will bring. Under the current fourth generation network, Malaysian Re has pioneered plenty of initiatives to embrace the technological changes. The Central Administration Bureau (CAB) was introduced and managed by Malaysian Re to facilitate the administration of facultative claims. In addition, Malaysian Re recently launched the eMacs system, a new system to replace its outdated predecessor for the submission of outstanding claims reports and statement of account for Voluntary Cession and Auto Facultative Claims. This system is currently in use industry-wide in Malaysia with key enhancements such as the notification, update information and settlement of large loss, coupled with relevant supporting documents will be launched soon. This is in line with the Company's VCP-T20 strategy of providing value-added services that would enhance our client experience.

Malaysian Re is currently looking into expanding the use of robotic process automation (RPA) which will leverage on new technology to optimise internal processes. RPA includes the use of virtual workers, or software robots, to execute business tasks similar to human users. Following the rollout of 5G, the main appeal for Malaysian Re will be handling of high-volume data actions at exponentially greater speed compared to the present.

Malaysian Re launched the Malaysian Insurance Highlight 2019 in December last year which offers an extensive and broad overview of the current opportunities and challenges facing Malaysia's general insurance market. One of the trends presented is digitalisation and how technology has actively reshaped the industry. MIH findings, however, shows that 84% of respondents find tangible impacts from insurance-related ecosystems irrelevant.

Malaysian Re also launched its third edition of ASEAN Insurance Pulse 2019 in October 2019. The 3rd edition highlights the impacts of digitalisation and one of key findings states that 50% of participating ASEAN insurers in the survey spend only between 1 to 2% of their gross premiums on digitalisation initiatives (excluding general IT expenditures).

Both Pulse and MIH findings point to a large number of insurers in the region are still bogged down by legacy systems, and hence unable to meet the data demands required for a meaningful migration to the sophisticated technologies. Perhaps a more concerning issue is the indication that a significant number of insurance executives in the region are still trapped in the legacy mindset and are unwilling to carry out greater investment in technology. Malaysian Re is of view that adequate investment in 5G technology holds the key for insurers to productively monetise their consumers' behaviour that is being increasingly shaped by digital technology, with opportunities for superior customisation and scaling up of product offerings.

Reinsurance Claims Management

Definition

Reinsurance claims management has a broad scope and involves not only processing but also the strategy, cost monitoring, service aspect and management of people handling the claim. Among the characteristic of an effective claims management are accurate assessment of the reserve associated with each claim, proactive recognition and payment of legitimate claims, monitoring of claims development with adequate reports, avoidance of a prolonged legal dispute, dealing with claimants considerately and handling claims expeditiously.

Reinsurance claims management includes the review of cedants' claims performance, monitoring of claims expenses, legal fees, settlement costs, analysis of cedants and overall claims pattern and trend, planning of future payments and avoidance of delay and dispute in the payment of claims. Reinsurers nowadays recognise that efficient claims management is fundamental to profitability and sustainability of the company. Proper management of claims is also an effective control tool to ward off potential fraud, and serves as a market differentiator. It involves arguably the most significant financial transactions for a reinsurer, and it is a strategic element in managing profits volatility and capital adequacy. In order to be competitive, reinsurers have to improve the efficiency of their claims process workflow so that handling claims costs can be reduced, and turnaround time can be improved.

Industry Practices

The relationship between a reinsurer and a cedant is highly influenced by the efficiency with which claims are settled. The claims process begins at underwriting function which is guided by structured losses experience data and other measurable performance metrics to underwrite reinsurance business. Poor underwriting may potentially result in adverse claims experience. Administering claims settlement and legal dispute are a part of reinsurance claims management and at the same time a tool to promote the company. A satisfied customer serves as a valuable promoter and will improve the company's reputation. On the other hand, a dissatisfied customer may potentially damage the company's reputation. The relationship between reinsurer and cedant can be exemplified by these four (4) principles:

- Follow the settlement
- Follow the fortunes
- Utmost good faith
- Claims corporation

First and foremost, reinsurers are to follow the settlement rule whereby reinsurers are obligated to pay the stipulated claims settlement with utmost good faith rather than contesting claims. Follow the fortunes of cedant provides that reinsurers are bound by the claims-handling decision of the cedant, as long as there are no elements of fraud. It allows the cedant the freedom to make claims decisions with utmost good faith without having to worry of legal disputes with the reinsurer. Claims corporation allows the reinsurers to have more control over how an original policy claims is being managed, it is especially important for risks which requires specific technical and expertise skills to manage claim.

Challenges faced by Reinsurers

One common challenge faced by reinsurers is a late notification. The cedant ought to notify the reinsurer of a potential loss in order for the reinsurer to set aside an adequate amount of reserve for future claims settlement. Reinsurance contract states the period of time that the cedant must notify the reinsurer in the form of preliminary loss advice (PLA) within a certain period of time stipulated in the reinsurance contract. Timeliness of reporting claims affects the capacity for exposure reserving and prompt payment. Besides, late notification will reflect on the price during renewal of contract as the frequency and severity of claims reported is a crucial factor in determining the price.

Reinsurance often grapples with claims demands which exceeds the stipulated limit because of a series or accumulation of losses in a period of time for instance, a year. Aggregate limit in reinsurance contract is a contract terms defining the maximum liability of a reinsurer for a series of losses in a period of time. It is also called annual aggregate limit (AAL). Another concern for reinsurers is inaccurate cession of claims. Insurance companies usually transfer their risk to several reinsurers for each risk at different proportions and claims settlement are to be shared proportionally by every participating reinsurer. Inaccurately ceded claims will result in delays in claims settlement. Inaccuracies in calculating the claim payable is another common problem among reinsurers. This stretches to incorrect dates of loss, deductibles or cedants own retention and even currencies involved. Further, the burden of conducting primary claims investigations lies with the cedant, however reinsurers have the right to assess the adequacy of these investigations. Unsatisfactory investigations tend to delay the reinsurance claims.

When it comes to disputes for claims settlement, one rule that comes to mind to most claims handlers is the Contra Proferentem. This universally practiced law described that any ambiguities in an insurance policy is strictly interpreted against the insurer. In layman's terms, when the cedant requests for a claims settlement, the reinsurer may deny the claims due to exclusion, limitations or conditions. The court will conduct the test of reinsurance policy language to decide the ambiguity of the policy language to ultimately determine whether the coverage is in favour of the cedant. The test of policy language is not on the intention of the reinsurer but what is understood by the cedant at the time the reinsurer and cedant came into the agreement.

Claims Management

Conventional / Takaful – Industry Claim Processing

Once a loss has occurred there are a few procedures that should be observed by the insurers in the claims processing:

- Claims notification
- Claims assessment
- Claims settlement

Claims notification

The insured must give an immediate notification to the insurer. Upon receiving the loss notification by the insured, the insurer is required to register it immediately within a stipulated number of days. Cedant or broker is then required to pass the initial loss advice (Preliminary Loss Advice) to the respective Reinsurers. The reinsurer is expected to acknowledge the receipt of the claims notifications. Reinsurer's claims handler shall ensure that there is no duplication in claims registration by verifying the details in the system with cedant, name of the insured, date of loss, cause of loss and gross loss amount. In the event where the policy coverage or limits are vague, the advice is to be referred to the underwriters for their opinion/confirmation.

All losses are to be notified within the period allowed as stipulated by the policy conditions. The time allowed depends upon the type of policy, nature of loss, circumstances of loss and quantum of loss. If any loss notified exceeds the time specified or after a reasonable time, the claims handler may inquire further clarification to the cedant/broker. Depending the status of the notification condition, the consequences of late notification could lead to a breach of insurance/ reinsurance contract.

A claim reserve must be maintained for each notified claim, pending full and final settlement. The reserve amount in the PLA can be taken as the initial reserve. Revised Loss Advice provides an update of claim development and additional details of claim such as quantum, description, loss adjuster's interim report etc. The outstanding reserve can be revised many times before the claim is fully settled.

Claims assessment

Upon receiving the claim settlement advice from cedant and broker, the claims personnel must ascertain the validity and correctness of the claim amount requested. The claims personnel will then obtain the supporting documentation such as adjuster reports and proof of settlement.

When the adjuster report is received, the policy coverage, items covered, and quantum of claim should be examined. The validity of the claim must be ascertained as to whether the insured is the rightful owner with an insurable interest and whether there is any breach of a policy condition precedent to liability.

Financial authority is in place as a checking measure before claim is approved. This takes place during the claim approval phase whereby the person responsible for reviewing claim assessment and ensuring claim processing is in order, does so based on their financial authority. Financial authority is established based on the quantum of a claim whereby persons authorizing claims can only approve for the claims within their respective quantum ranges.

Claims settlement

Upon partial settlement, the adequate reserve needs to be maintained for outstanding liability. In the case of a full settlement, it is to be confirmed whether fees and expenses are included in the settlement. Insurance companies are to comply with a stipulated turnaround time in settling claims as defined by the country's respective financial regulators. This acts as a control mechanism to ensure prompt claims settlement and protecting the interests of the insured. Prompt claims settlement is a reflection of a professionally managed company. The ultimate test of a responsible and efficient reinsurer is the promptness and fairness in the processing of claims. If payments are delayed or withheld without satisfactory reasons, the client will lose confidence in the company. For reinsurers, there are the retrocession programs, which work similarly as reinsurance claims recovery for insurers - whereby reinsurers seek recovery from other reinsurers, also known as retrocessionaires. As part of good claims management, sound retrocession programs must be in place and retrocession recovery must be performed and monitored effectively.

Reserves maintenance

An insurance company typically aims to assure retention ratio is at the highest level and loss ratio at the lowest level possible. This can be achieved by retaining higher on individual risks and involving reinsurance for high valued risks, and accounting for adverse annual fluctuation on a portfolio basis. A dedicated unit such as Legacy Management Unit (LMU) could be set up to optimise the operating costs ratio and improve profitability. A well performing LMU is a key driver in managing the legacy liability and technical reserves in an efficient and structured manner. LMU works on specific strategies for watchlist accounts – it analyses the commutation proposal received from clients which include identifying the contracts to be commuted, review and reconciliation of exposures with the cedant/broker and evaluating the portfolio to be commuted to secure the most favourable term for the Company.

Client experience

Insurance claims services are highly relevant to the reinsurer's ability to attract and retain business. To thrive in a highly competitive reinsurance market, reinsurers need to focus on not only acquiring but also keeping the valuable cedants and brokers by providing services that meet those expectations.

Some examples of cedant and broker's expectations on excellent quality claims services are as follows:

- ✓ Clear communications and elimination of errors
- ✓ Fair and prompt settlement
- ✓ Prompt response, both on initial acknowledgment and on subsequent inquiries

Management information

A management information system is how data is captured, processed, accessed and distributed to inform and facilitate management decision making. Due to the volume and complexity of insurance claims, the industry depends heavily use of on IT (information technology). With the goal of consolidating data into meaningful reports, Malaysian Re has adopted the usage of Business Intelligent Business Object (BIBO). The data generated in this system can be used for the following: -

- Identify and quantify processing backlogs to ensure that appropriate corrective action is taken
- Highlight large movement in claims reserving on particular claims
- Compare incurred loss with the eventual cost of settling claims
- Identify large claims
- Monitor claim statistics
- Monitor the overall level of settled and outstanding claims and the speed at which the claims are being reported

Conclusion

All in all, robust planning and execution as well as sufficient long-term investment are vital in developing operational infrastructure and relevant expertise for an effective reinsurance claims management system. This translates well into efficient cost management, high level of customers satisfaction and excellent industry's reputation which form sustainable competitive advantage for reinsurers.

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