Swiss Re Institute

April 2019

Japan's commercial insurance market

Executive summary

The near-term premium outlook remains positive, but claim costs are rising.

We expect Japan's commercial insurance premiums to grow by 4.4% this year, after estimated 1.6% growth in 2018 and average 3.1% annual growth over the last three years. Last year's growth was supported by higher premium rates on property lines hit by natural catastrophe events. Motor premiums will be volume driven, but premium rates will be lower. While prices are low, as a means of attracting business, motor insurers have expanded the scope of coverage they offer. At the same time, however, the cut in the statutory interest rate from 5% to 3% due in April 2020 will affect the estimation of liability insurance claims based on present value. A lower statutory interest rate will result in higher expected liability claims[1], as most commercial insurance payments are for vehicle, property damage and third party liability covers. Moreover, higher costs associated with the expected consumption tax hike in October 2019 will have a negative impact on insurers' profits.

Japanese firms are underinsured for business disruption risk. We see this as a growth area for commercial insurers over the longer term.

Japan's commercial insurance market is the third largest in the world, with premiums of USD 40 billion in 2017. Despite its ranking, we see significant scope for strengthening of business sector risk management. Disruption to operations is one of the key risks facing business today and an area where many Japanese firms, particularly small and medium-sized enterprises (SMEs), are underinsured. For example, according to a study by Japan's Cabinet Office, more than 40% Japan's large corporation and close to 90% of SMEs have no protection against earthquake risk.[2] Even among large corporates, few have business interruption (BI) cover. And, according to Japan Ministry of Economy, Trade and Industry's (METI) 2018 white paper on SMEs, less than 30% of SMEs have business continuity plans.[3]

Japanese companies' increasing overseas interest further complicate BI exposure scenarios.

Concern about BI among risk managers has also risen as a result of globalisation. Most multinationals and even mid-sized firms have agreements with a number of input and service providers across the world, and thus more supply-chain vulnerabilities. In 2017, total outbound investment from Japanese business was USD 1 551 billion. However, the risk perception of headquarter and the needs of overseas subsidiaries sometimes may not fully align, a survey has found.[4] This has further increased attention on BI and related risk management processes.

Innovative insurance solutions can make risk transfer more efficient, and reduce earnings and cash flow volatility.

Innovation is offering new ways to mitigate risks. There is also rising interest in parametric insurance products. In our view, non-physical damage business interruption (NDBI) is the next step in the evolution of solutions for exposures that have been difficult to insure. Over time, the nature of insurable property risks has broadened from traditional property damage (ie, buildings and machinery) to BI and contingent business interruption. Innovative NDBI insurance solutions can further expand the scope of insurability by helping improve the efficiency of risk transfer, and also reduce earnings and cash flow volatility.

1 *Overhaul of Japanese Civil Code*, GreenbergTraurig, 22 August 2018, https://www.gtlaw.com/en/insights/2018/8/overhaul-of-japanese-civil-code; "Japan: Fire premium hike to be offset by tax increase and interest rate cut", *Asia Insurance Review*, 24 August 2018, http://www3.asiainsurancereview.com/News/View-NewsLetter-Article/id/43936/type/eDaily/Japan-Fire-premium-hike-to-be-offset-by-tax-increase-and-interest-rate-cut

2 *Towards improvement of disaster risk management capacity of Japan's economy*, Japan Cabinet Office, 2 April 2017, http://www.bousai.go.jp/kaigirep/gekijin/pdf/honbun.pdf (Japanese only)

3 *Survey on Risk Management Initiatives at SMEs*, Mizuho Research Institute, December 2015; *White paper on Small and Medium Enterprises in Japan*, METI 2018, http://www.chusho.meti.go.jp/pamflet/hakusyo/H30/PDF/2018hakusho_eng.pdf

4 *White paper on international economy and trade (outline)*, METI, 2015, http://www.meti.go.jp/english/report/downloadfiles/2015WhitePaper/outline.pdf

Introduction: corporate risk management

Risk management is the dynamic process of controlling and mitigating a company's exposure to losses.

Corporate risk management is the control and mitigation of an organisation's exposure to losses, and is an inherent part of a company's economic activity. How companies manage risk impacts their market value, their financial strength and their ability to fund projects. They face a wide array of risks which change as the economy and the legal environments evolve, and as new risks emerge due to technology advances, globalisation and geopolitical events, among others.

Companies need to constantly reassess whether to insure or to take on retain risks.

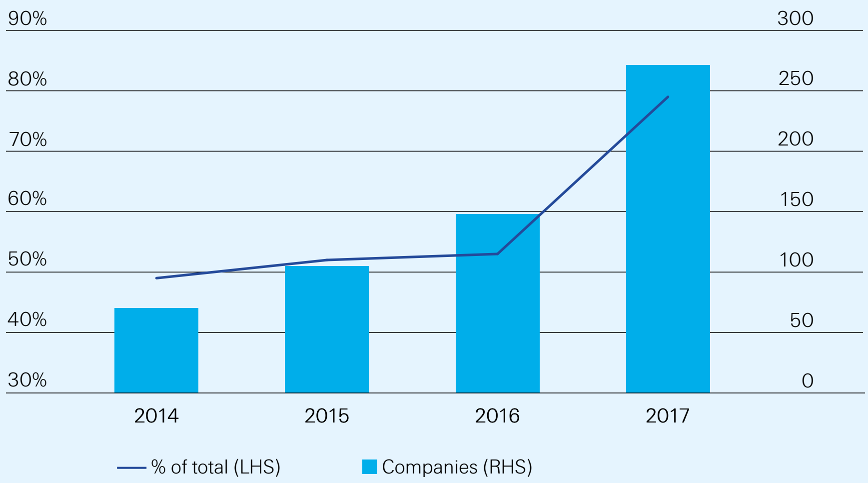
Given the diversity and changing nature of exposures, companies must constantly reassess whether to insure or retain risks. A deeper understanding of the extent and composition of risk can deliver significant strategic advantages. Some risks are part of a company's core business and can be sensibly retained, while others are well-suited for transfer to the insurance market. Larger companies facing multiple risks are more likely to have a more established and holistic risk management approach. Japanese firms' increasing interests overseas further complicates the related risk management process, particularly where the risk perception at headquarters and needs of overseas subsidiaries do not fully align.

Larger Japanese companies increasingly address risk management.

Awareness of commercial risk

Surveys indicate that large companies in Japan are becoming more tuned in risk management. For example, a survey of listed companies revealed a low incidence of specialised board committees across OECD countries to deal with risk management. In Japan, very few companies had a committee with any title reference to risk management.[5] Encouragingly, a more recent survey finds increasingly Japanese companies provide risk information in their integrated reports, 79% in 2017 versus 49% in 2014 (see Figure 1).[6] Among SMEs, however, risk awareness remains low. A white paper from METI in 2018 says that less than 30% of SMEs have business continuity plans.[7]

Figure 1
Degree of corporate risk disclosures in Japan



Source: Survey of integrated reports in Japan in 2017, KPMG, May 2018.

[5] *Risk Management and Corporate Governance*, OECD, 2015, https://read.oecd-ilibrary.org/governance/risk-management-and-corporate-governance_9789264208636-en#page1
[6] *Survey of integrated reports in Japan in 2017*, KPMG, May 2018, https://assets.kpmg.com/content/dam/kpmg/jp/pdf/jp-en-integrated-reporting-20180323.pdf
[7] *White paper on Small and Medium Enterprises in Japan*, METI, 2018, http://www.chusho.meti.go.jp/pamflet/hakusyo/H30/PDF/2018hakusho_eng.pdf. See also Survey on *Risk Management Initiatives at SMEs*, Mizuho Research Institute, December 2015.

Many Japanese companies are underinsured, especially for business interruption risk.

Market overview and outlook

The near-term outlook for commercial insurers in Japan is positive.

We forecast that commercial insurance premiums in Japan will grow by 4.4% in 2019, after estimated 1.6% growth in 2018 and average annual growth of 3.1% over the last three years. We expect premium rates in property lines hit by last year's natural disaster events will harden. Motor premium volumes will continue to grow, but premium rates will be low.

There could be some pressures on profits.

Economic activity and growth are key drivers for insurance demand. Japan's real GDP contracted by 2.5% in the third quarter of last year, affected by extreme weather events including Typhoon Jebi, but near-term economic performance will be boosted by fiscal stimulus. In its 2019 Budget, the government committed about JPY 2 trillion to econmic support growth. At the same time, however, we expect claims to trend higher, given recent wage growth acceleration. We also expect insurers to see higher operating costs associated with the expected consumption tax hike in October 2019, and this will have a negative impact on sector profits.

The world's third largest commercial insurance market

Sector premiums totalled USD 40 billion in 2017.

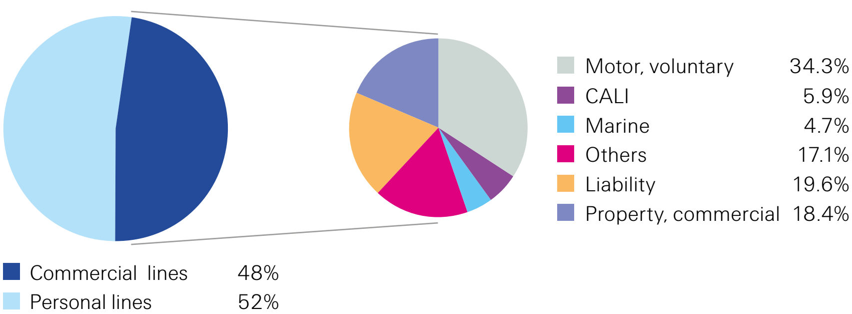
In 2017, direct premiums written (DPW) in Japan's commercial insurance were estimated to be USD 40 billion, making the market the third largest in the world (see Table 1). The commercial segment accounts for 48% of the country's total non-life insurance premiums. The largest line of commercial business is motor, followed by liability and property (see Figure 2).

Table 1
The world's 10 largest commercial insurance markets in 2017

Rank	Country	Commercial insurance DPW (USD bn)	Commercial share of non-life market	Commercial premiums as % of GDP
1	US	309	49%	1.6%
2	China	57	37%	0.5%
3	Japan*	40	48%	0.8%
4	Germany	28	32%	0.8%
5	UK	28	32%	1.1%
6	France	23	35%	0.9%
7	Italy	14	42%	0.7%
8	Canada	14	29%	0.9%
9	South Korea	11	18%	0.7%
10	Australia	10	36%	0.8%
	World	**734**	**43%**	**0.9%**

Notes: Estimates of total non-life premium written in 2017 (excluding health).
*Japan data refers to year ending March 2018
Source: Swiss Re Institute.

Figure 2
The business mix of Japan's commercial insurance market in 2017*



Note: * 2017 refers to year ending March 2018
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

However, many businesses in Japan are less well insured than in many advanced-market peers.

Even though it is third largest commercial insurance market in the world, Japanese companies are underinsured relative to firms in the US the UK, Canada and France, as shown by respective segment penetration rates in Table 1.[8] In 2017, commercial insurance penetration in Japan was 0.8% of gross domestic product (GDP), compared to 1.6% in the US, 1.1% in the UK and 0.9% in Canada and France. Table 2 shows segment penetration rates by line of business in Japan.

Table 2
Penetration of major commercial business lines in Japan, 2017*

Premiums as % of GDP	
Motor, commercial (voluntary and compulsory)	0.33%
Property, commercial	0.15%
Liability (excluding motor liability)	0.16%
Workers' compensation	0.04%
Marine	0.04%
Others	0.14%
Total commercial insurance	**0.81%**

Note: * 2017 refers to year ending March 2018

Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

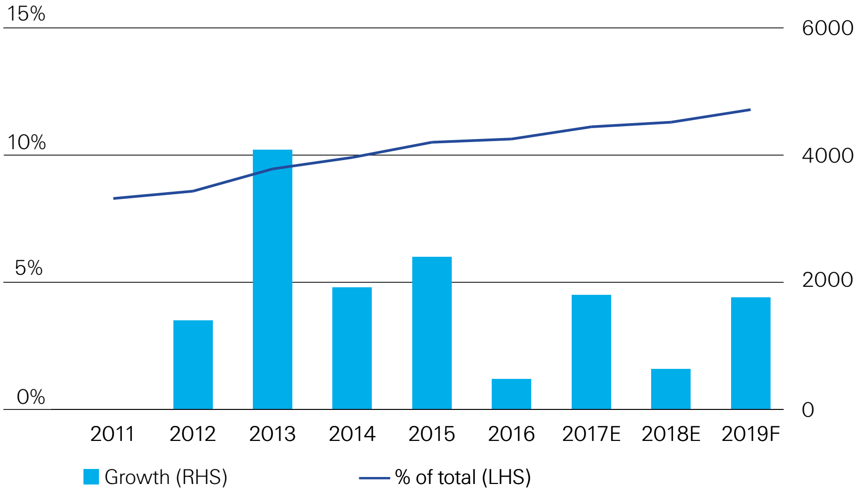
Note, the penetration rate is typically used to gauge the level of insurance market development in a country. By design, the penetration rate is not able to tell the share of business that is insured (or uninsured), nor the contribution of insurance to risk management or reducing earnings volatility.

Rate cuts in key lines have dented premium growth

Commercial insurance premium growth was sluggish in 2018.

Premium growth in commercial lines in Japan was sluggish in 2018, after having increased by 4.5% in 2017 (see Figure 3). Liability premiums increased significantly driven largely by worker compensation, a line of business that tends to be volatile. Marine remained strong, non-catastrophe risk property lines saw some rate softening and there were rate cuts in motor.[9]

Figure 3
Commercial insurance premiums growth rate and premiums earned



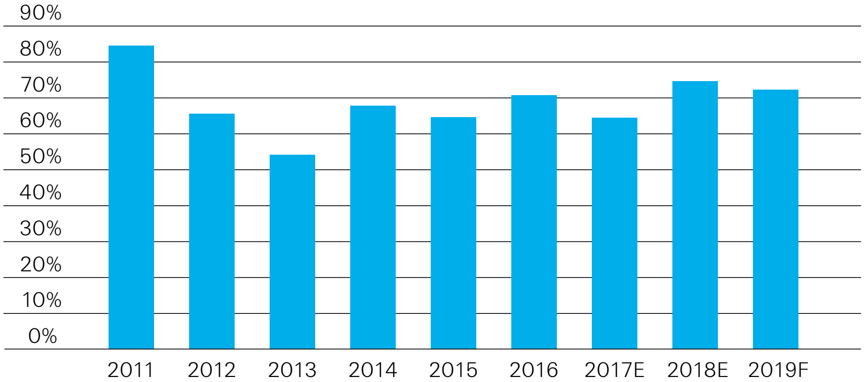
Note: Figures in the chart refer to year ending March. For example, 2018 refers to year ending March 2019; E = estimates; F = forecast
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute.

8 The penetration rate is defined as commercial insurance premium as a percentage of GDP.
9 *Announcement on the revision of the reference loss cost rates for voluntary automobile insurance,* GIROJ, 9 June 2017, http://www.giroj.or.jp/english/press_2017/20170609.pdf; "Safety tech sends auto insurance rates into reverse in Japan", *Nikkei Asian Review*, 5 August 2018, https://asia.nikkei.com/Business/Safety-tech-sends-auto-insurance-rates-into-reverse-in-Japan

We expect rate hardening in property catastrophe risk lines in 2019.

Major non-life insurers reported improved underwriting results for the April-June 2018 quarter relative to the same quarter the previous year, according to the latest data from the General Insurance Association of Japan. Losses from a number of large natural catastrophe events (earthquakes in Osaka in June and Hokkaido in September, heavy rains in July, and Typhoon Jebi in September) are yet to show up in insurers' P&L. We estimate that the full-year 2018 commercial lines loss ratio will increase to 74.6% from 64.4% in 2017 (see Figure 4).

Figure 4
Commercial insurance combined ratio



Note: Gross combined ratio = gross claims paid/gross premium written. Figures in the chart refer to year ending March. For example, 2018 refers to year ending March 2019;
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Outlook remains favourable

We estimate that commercial insurance premiums will grow by 4.4% in 2019...

We expect there will be premium rate increases in 2019 for property lines that were heavily hit by last year's natural catastrophe events. Motor will continue to be volume-drive, but at lower rates. Overall, we expect that commercial insurance premiums will grow by 4.4% in 2019 after the rate adjustments.

,,,but the expected consumption tax rate hike in October will weigh on profits.

Even so, higher costs associated with the expected consumption tax hike in October 2019 will have a negative impact on insurers' profits. Major insurers expect the consumption tax to raise the combined ratio by 1-2 percentage points. Moreover, expected liabilities will increase alongside the cut in the statutory interest rate from 5% to 3% in April 2020.[10] This is the rate used to calculate the net present value of liability insurance claims, which is measured based on present value. A lower statutory interest rate will result in higher expected liability. Overall, we expect the commercial lines loss ratio to improve slightly to 72.3% in 2019.

[10] *Overhaul of Japanese Civil Code*, GreenbergTraurig, 22 August 2018, https://www.gtlaw.com/en/insights/2018/8/overhaul-of-japanese-civil-code; "Japan: Fire premium hike to be offset by tax increase and interest rate cut", *Asia Insurance Review*, 24 August 2018, http://www3.asiainsurancereview.com/News/View-NewsLetter-Article/id

Table 3
Japan macro and commercial insurance outlook trends

	2016	2017E	2018E	2019F	2019–2020 trend
Commercial lines, direct premiums written, JPY billion	4 253	4 445	4 517	4 714	
Liability	711	872	911	930	
Property	770	816	830	867	
Motor	1 772	1 787	1 781	1 786	
Marine	197	210	225	236	
Others	802	759	770	895	
Credit & surety	44	26	29	30	
Commercial lines, yoy %	1.2	4.5	1.6	4.4	↑
Liability	4.1	22.6	4.4	2.1	↑
Property	–6.3	5.9	1.7	4.5	↑
Motor	3.1	0.8	–0.3	0.3	↑
Marine	–12.4	6.5	7.2	5.0	↑
Others	6.6	–5.3	1.4	5.0	N.A.
Real GDP growth	1.0	1.7	1.1	0.6	→
Inflation	–0.1	0.5	0.8	1.2	↑

Note: E = estimate; F= forecast; *Figures in the table refer to year ending March. For example 2018 refers to year ending March 2019.

For premium trend growth forecasts, the direction of the arrow indicates expected average growth over the next two years, compared with the previous 10-year average. Green arrows indicate growth expected to be above previous 10-year average. Orange arrows indicate growth expected to be below previous 10-year average.

GDP growth: → stable, below 10-year average; Inflation ↑ increase, within central bank's inflation target.

Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

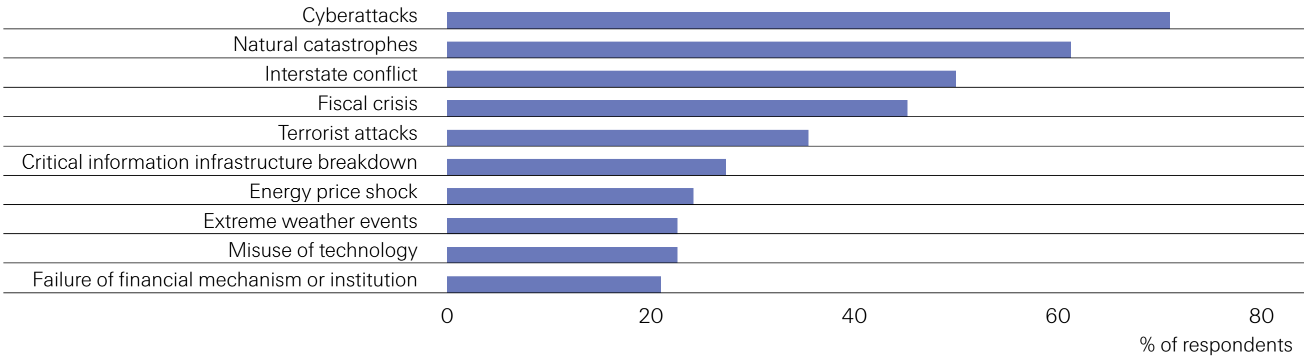
Natural catastrophes and fire are at the core of business interruption risk scenarios.

Growth drivers of future demand

Business disruption is set to be an important area of growth for commercial insurers over the longer term.

Over the longer term, we expect BI covers to be a source of growth for commercial insurance. Many firms in Japan, particularly SMEs have little BI coverage in place. The increasing digitisation of business activities and also globalisation have increased the disruption exposures companies are facing. According to responses to a survey conducted by World Economic Forum in 2018, cyberattacks and natural catastrophes are the top risk concerns for Japanese companies (see Figure 5).[11]

Figure 5
Top risk concerns doing business in Japan, 2018



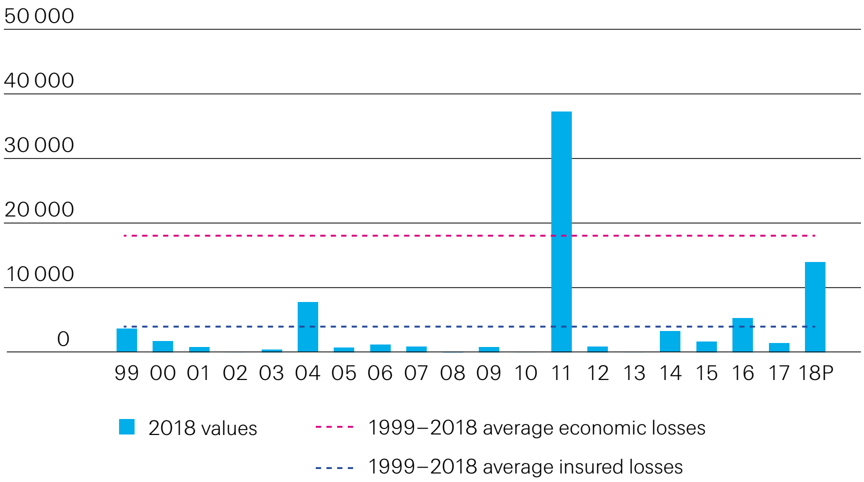
Source: World Economic Forum

Natural catastrophe risk

Commercial property is heavily exposed to catastrophe risk in Japan

We forecast property premiums to increase by 4.5% in 2019, partly supported by higher premium rates after last year's high natural catastrophes losses. In 2018, the preliminary estimates of the aggregate natural catastrophe insured losses in Japan were USD 14 billion, well above the 20-year average of USD 4 billion (see Figure 6).

Figure 6
Natural catastrophe insured losses in Japan (USD million)



Note: *all losses are inflation adjusted to 2018 values. P = preliminary estimates
Source: Swiss Re Institute

[11] *Global Risks of Highest Concern for Doing Business*, World Economic Forum, 2018 http://reports.weforum.org/global-risks-2018/global-risks-of-highest-concern-for-doing-business-2018/#-country/JPN

In 2018, the natural catastrophe property protection gap in Japan was an estimated USD 10 billion.

Natural catastrophes remain at the core of property risks. Japan is exposed to the full range of natural perils including earthquakes, typhoons, windstorms and floods. Asset losses or disruption to production resulting from a disaster event can reduce a firm's creditworthiness and even lead to bankruptcy. Generally most Japanese businesses and households are insured for property damage, but the level of cover is often insufficient. For instance, in 2018 natural catastrophe events in Japan caused total economic losses of at least USD 24 billion, of which only USD 14 billion were insured, leaving a protection gap of USD 10 billion. Over the last 20 years, the annual property protection gap averaged of about USD 13 billion. Low uptake of cover is due to many factors, including risk perceptions and undervaluation of commercial property.

Business interruption (BI) risk

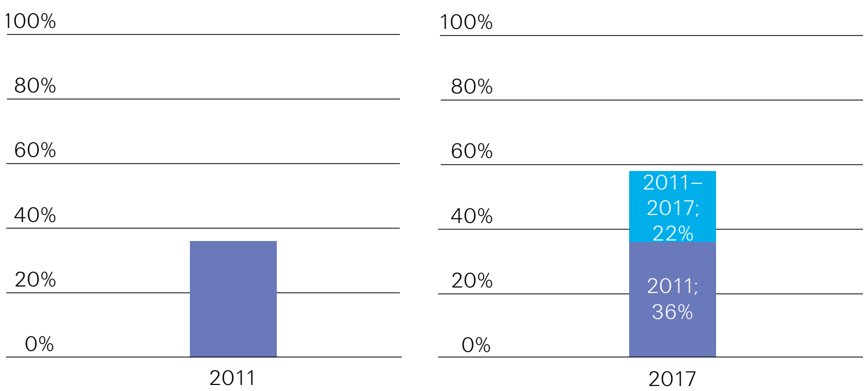
Natural catastrophes also cause business disruption…

In addition to human loss and damage to buildings, equipment and infrastructure, natural catastrophes can also inflict disruption to business operations and loss of output. BI risk as a result of natural disasters has become a major concern for businesses all around the world following a number of recent large loss-making events. Experience shows that across the world, the BI proportion of property claims typically account for well over 50% of the incurred loss. It is now not uncommon to see single risk claims exceed USD 100 million, and in some cases even approach the USD 1 billion mark.[12]

…but many Japanese companies do not have associated insurance cover.

However, in Japan many companies – particularly SMEs – do not have BI cover, a source of premium growth potential for insurers. According to a survey conducted by Japan Cabinet Office in 2017, at the time of the 2011 earthquake only 36% of large Japanese corporations had earthquake insurance coverage, and only 13% of the policies came with earnings protection cover.[13] This implies that less than 5% of large companies had earning protection covers. In the SME sector, less than 10% of firm said they had earthquake cover (see Figure 8).[14] This explains why, of the USD 210 billion in economic losses resulting from the 2011 earthquake, only 17% were covered by insurance (including that by the government's earthquake reinsurance scheme). After the 2011 disaster, 22% more firms bought earthquake insurance, but that still leaves many without protection (see Figure 7).[15]

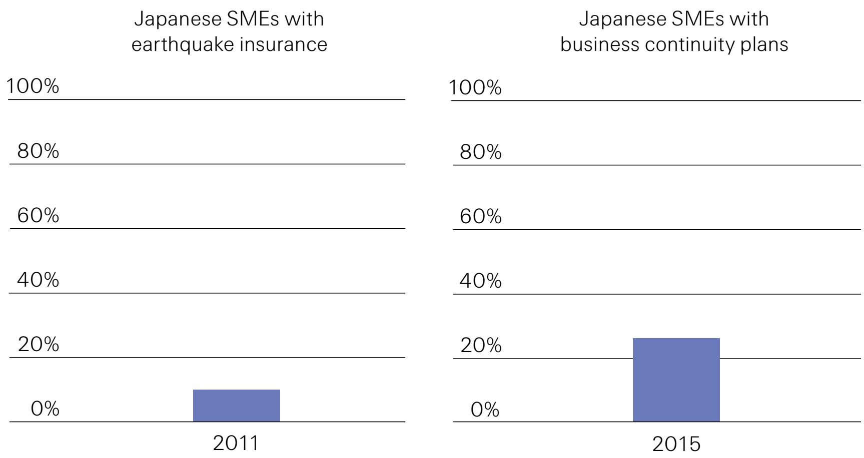
Figure 7
Proportion of large Japanese companies with earthquake insurance coverage



Source: Japan Cabinet Office, Swiss Re Institute

[12] *Lessons learnt in business interruption*, Swiss Re Corporation Solutions and PARIMA, June 2018, https://media.corporatesolutions.swissre.com/documents/pub_CorSo_Lessons_Business_-Interruption.pdf
[13] *Towards improvement of disaster risk management capacity of Japan's economy*, Japan Cabinet Office, 2 April 2017, http://www.bousai.go.jp/kaigirep/gekijin/pdf/honbun.pdf (Japanese only)
[14] Ibid.
[15] Ibid.

Figure 8
Japanese SMEs' earthquake insurance coverage and business continuity plans



Source: Japan Cabinet Office, Mizhuho Research Institute, Swiss Re Institute

The business activities that firms are involved in shape their type and degree of demand for commercial insurance covers.

Characteristics of private companies in Japan

Demand for commercial insurance is strongly linked to companies' activities. A deeper understanding of the extent and composition of risk can deliver significant strategic advantages. For instance, demand for commercial property insurance is linked with manufacturing activity and companies' accumulation of industrial assets. On the other hand, service-sector companies are relatively more exposed to liability and financial risks. Japan's large corporates are mostly engaged in manufacturing, financial services and the wholesale and retail trades (see Table 4). In 2014–15, they collectively contributed JPY 94 trillion or 45.5% of the output value of Japan's industry and services sectors, and employed 34.8% of the private sector workforce. In terms of contribution to aggregate economy value, a significant portion comes from SMEs. In Japan, small business refers to a company that employs 100–300 people and has capital of JPY 100–300 million.[16] The country's SMEs are mostly engaged in manufacturing, wholesale, retail trade and construction (see Table 5). In 2014-15, they collectively contributed JPY 113 trillion or 54.5% of the national industry and services sector output, and employed about 65.2% of the private sector workforce.

Table 4
Large corporate Japan, 2014–15

	Value-added (JPY trillion)	Share (%)	Employ-ment ('000)	Share (%)
Manufacturing	27 847	29.5%	3 488	24.7%
Finance and insurance	13 156	13.9%	1 011	7.1%
Retail trade	9 468	10.0%	2 707	19.1%
Wholesale trade	8 050	8.5%	876	6.2%
Information and telecommunications	7 662	8.1%	574	4.1%
Transport and postal activities	6 330	6.7%	800	5.7%
Scientific research, professional and technical services	4 314	4.6%	373	2.6%
Other services (not elsewhere classified)	3 617	3.8%	1 198	8.5%
Construction	3 397	3.6%	410	2.9%
Electricity, gas, water and waste services	2 511	2.7%	165	1.2%
Real estates and goods rental and leasing	2 431	2.6%	221	1.6%
Accommodation, easting & drinking services	2 300	2.4%	1 248	8.8%

[16] *Small and Medium-sized Enterprise Basic Act*, Japan Ministry of Economy, Trade and Industry, http://www.chusho.meti.go.jp/sme_english/outline/08/01_01.html

Living-related and personal services and amusement services	1 562	1.7%	383	2.7%
Compound services	669	0.7%	407	2.9%
Medical, health care and welfare (private)	587	0.6%	182	1.3%
Education, learning support (private)	400	0.4%	99	0.7%
Mining	25	0.0%	4	0.0%
Large	**94 324**	**100.0%**	**14 147**	**100.0%**
Subtotal	**207 520**	**45.5%**	**40 613**	**34.8%**

Note: The above table includes only private sector valued added and employment
Source: Japan Ministry of Economy, Trade and Industry, Swiss Re Institute

Table 5
SME Japan, 2014–15

	Value-added (JPY trillion)	Share (%)	Employ-ment ('000)	Share (%)
Manufacturing	28 446	25.1%	5 682	21.5%
Wholesale trade	14 043	12.4%	2 091	7.9%
Retail trade	12 311	10.9%	3 552	13.4%
Construction	12 174	10.8%	2 468	9.3%
Transport and postal activities	7 616	6.7%	2 085	7.9%
Other services (not elsewhere classified)	6 316	5.6%	2 197	8.3%
Real estates and goods rental and leasing	5 690	5.0%	685	2.6%
Scientific research, professional and technical services	5 163	4.6%	752	2.8%
Information and telecommunications	4 994	4.4%	881	3.3%
Accommodation, easting & drinking services	4 988	4.4%	2 738	10.3%
Living-related and personal services and amusement services	4 660	4.1%	1 345	5.1%
Medical, health care and welfare (private)	3 985	3.5%	1 356	5.1%
Finance and insurance	1 562	1.4%	170	0.6%
Education, learning support (private)	839	0.7%	413	1.6%
Electricity, gas, water and waste services	284	0.3%	32	0.1%
Mining	114	0.1%	15	0.1%
Compound services	14	0.0%	4	0.0%
Large	**113 196**	**100.0%**	**26 467**	**100.0%**
Subtotal	**207 520**	**54.5%**	**40 613**	**65.2%**

Note: The above table includes only private sector valued added and employment
Source: Japan Ministry of Economy, Trade and Industry, Swiss Re Institute

Overseas interest of Japanese companies

Globalisation has led to more complex supply chains …

Another reason for heightened concerns about BI risk is globalisation, which has resulted in longer and more complex supply chains for most multinationals and even mid-sized companies. Many companies have outsourced and diversified their operations, and are now connected to a number of suppliers across the globe. As a consequence, they also face more supply-chain vulnerabilities.

…and widened the scope of business disruption risk exposures.

Sometimes, however, the risk perceptions at the home HQ and the needs of overseas subsidiaries may not fully align.[17] In 2017, the total value of outbound investment from Japanese business was USD 1 551 billion, up from USD 271 billion in 1999 (see Figure 9). Yet, according to a survey commissioned by METI, among Japanese listed companies with an overseas sales ratio of 20% or more in 2013, only 25% had a dedicated risk management division (see Figure 10).[18] These overseas business exposures are another source of growth for the insurance sector. In recent years,

[17] *White paper on international economy and trade (outline)*, METI, 2015, http://www.meti.go.jp/english/report/downloadfiles/2015WhitePaper/outline.pdf
[18] *White paper on international economy and trade*, METI, 19 October 2016, http://www.meti.go.jp/english/report/data/WP2015/wp2015.html

net investment statistics show that Japanese overseas investments are increasingly flowing into the services sectors (see Table 6). Increasing exposure to liability risks in foreign markets will generate more demand for global liability cover from Japanese corporates.

Figure 9
Japanese overseas investment stock (USD billion) and year-on-year change %)

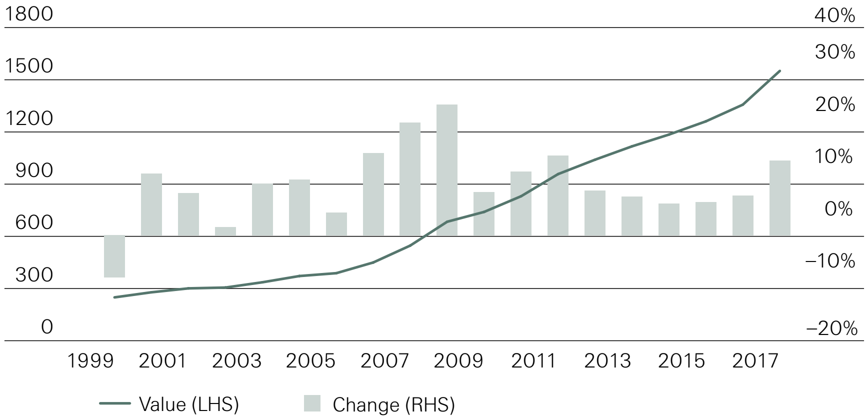
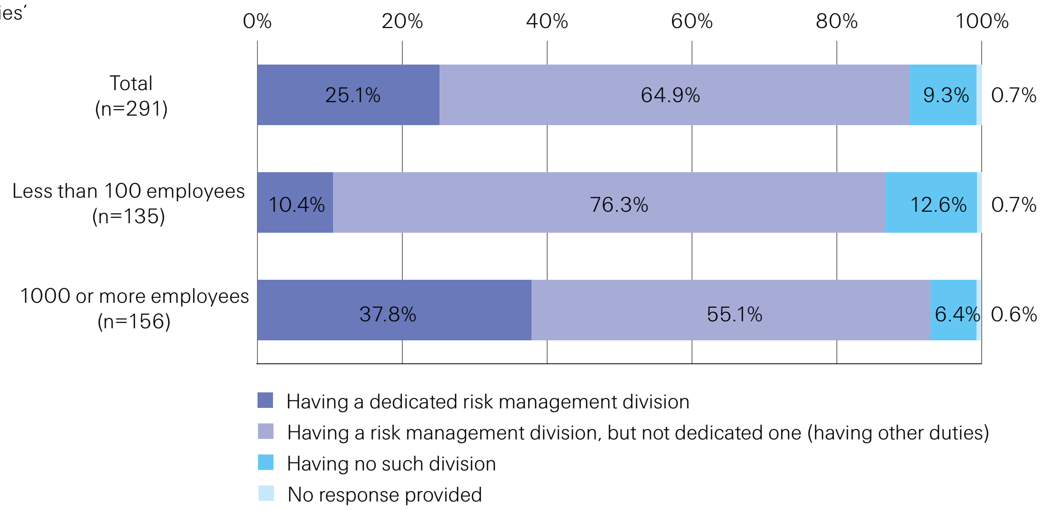


Figure 10
Status of Japanese companies' risk management, 2013



Source: R*isk Management Doko Chosa*, Tokio Marine & Nichido Risk Consulting, 2013

Table 6
Japanese annual net overseas investment by industry (JPY billion)

	2014	2015	2016	2017
Manufacturing	**6934**	**6176**	**5756**	**6165**
Chemicals & pharmaceuticals	692	1069	767	1182
Transportation equipment	1029	1561	1361	1067
General Machinery	771	964	738	1034
Food	1992	431	324	987
Electric Machinery	639	1028	1104	676
Iron, non-ferrous & metal	714	301	401	328
Precision machinery	74	106	137	328
Glass & ceramics	196	190	114	176
Rubber & leather	337	238	371	157
Textile	130	49	171	77
Lumber & pulp	167	123	129	19
Petroleum	54	–12	6	14
Non-manufacturing	**6928**	**10316**	**10705**	**11832**
Finance & insurance	2035	4189	925	4025
Wholesale & retail	1971	1646	2042	3180
Communications	821	1429	1839	2306
Real estate	162	450	557	694
Transportation	167	980	249	206
Construction	43	47	177	181
Fishery & marine products	153	11	19	0
Farming & forestry	23	23	–13	–10
Mining	572	582	440	–399
Other services	696	657	4088	940

Source: Bank of Japan, CEIC, Swiss Re Institute

Cyber risk

BI is increasingly being linked to cyber risks

Today BI is increasingly linked to cyber risks. A WEF survey in 2018 found that cyberattack is the top concern of businesses in Japan.[19] As an example, in June 2017 Honda Motor halted production at its Sayama plant for a day after finding the WannaCry ransomeware affected the company's computer network.[20] In 2017, there were 386 cases of cyber resulting in an estimated losses of JPY191 billion, according to survey by the Japan Network Security Association.[21] To date, global premiums from cyber insurance remain small relative to total exposures. The main challenges in the development of protection solutions for cyber risk are uncertainty about the frequency and severity of losses, and the potential correlation of risks. Richer data about cyber incidents will support further development of a dedicated cyber insurance market, including in Japan.[22]

[19] *Global risk of highest concern for doing business*, World Economic Forum, January 2018. http://reports.weforum.org/global-risks-2018/global-risks-of-highest-concern-for-doing-business-2018/#-country/AUS
[20] "Honda plant hit by WannaCry ransomeware attack" *Financial Times*, 21 June 2017 https://-www.ft.com/content/a0f5d047-2e20-3db9-b258-565d3be17bba
[21] *2017 Survey report of information security incident* (Japanese only), Japan Network Security Association, 14 June 2018. https://www.jnsa.org/result/incident/
[22] For more about cyber risk, see *sigma* 1/2017 – Cyber risk: getting to grips with a complex risk, Swiss Re Institute.

Innovative insurance solutions can improve the efficiency of risk transfer, reduce earnings volatility and expand the scope of insurability

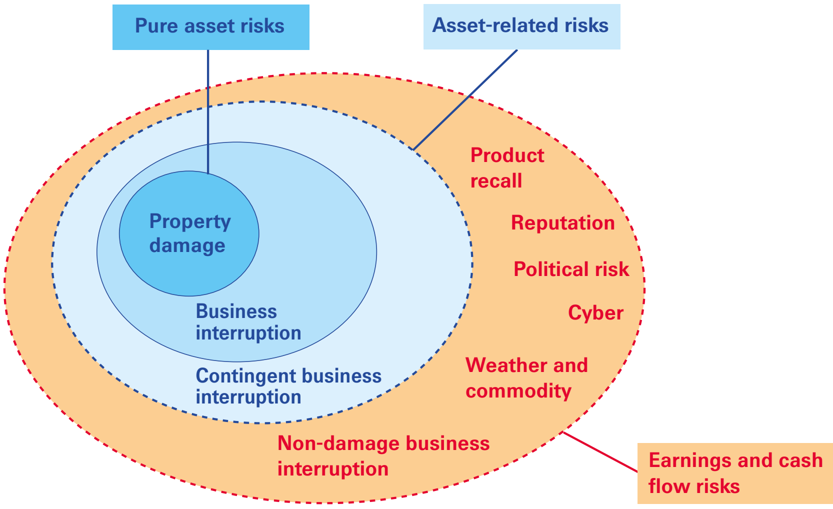
Innovation in insurance solutions

Innovative insurance solutions[23]

Innovative risk covers are being developed to meet the needs of new types of business model.

Rapid technological progress, in particular digital transformation, is changing the nature of business. There has been a rise of new types of company and business model, for example in the sharing economy. New transportation firms like Uber own no cars, and Airbnb owns no rental units, yet they are overtaking traditional players in their respective sectors in terms of growth and market capitalization. In Japan, a new law (minpaku) came into effect in June 2018 providing a legal framework for home-sharing type services.[24] Business has also transformed from being rich in physical assets to deriving more value from intangibles and services. These changes have seen a concurrent emergence of new and innovative insurance solutions, moving from asset and balance sheet covers, to protection for earnings and cash flow risks.

Figure 11
Expanding the scope of first-party insured risk



Source: Swiss Re Institute

Non-physical damage business interruption is the next step in the evolution of BI risk protection covers.

Over time, the nature of insurable commercial property risks has broadened from traditional property damage, such as damage to buildings and machinery, to BI and CBI. Non-physical damage business interruption (NDBI) is the next stage in this evolution. With NDBI, the insured risk is detached from traditional asset-related property risk, as the cover protects earnings even when there is no physical damage at an insured's or a third-party property. Potential NDBI events can include electricity blackouts, strikes, organised blockades, withdrawal of regulatory approval or product license (eg, due to quality or safety issues), and bankruptcy at a key supplier. Digitalisation is another key driver of NDBI losses, as data is increasingly turning into a critical asset and firms are becoming more vulnerable to events that prevent data from being used. These can include cyber-attacks, software errors and cuts to internet access, among others.

NDBI solutions can improve the efficiency of risk transfer and enhance extend the boundaries of insurability.

Events that cause NDBI can result in significant economic damage but traditionally, these have been difficult to insure or hedge. As exposures can vary in each case, there is no standard NDBI solution. Moreover, the disconnect of NDBI risk from traditional property risk factors gives rise to asymmetric information and data availability issues, rendering traditional insurance covers inappropriate. Instead, parametric products can be used to expand the limits of insurability and facilitate NDBI covers, as long as the solution provider is able to model the indices used for a trigger, the correlation of the exposure and the damage resulting from a triggering event, and there is a sufficiently high correlation of the index with an insured's loss scenarios. The following are some examples of innovative trigger-based commercial insurance solutions in Japan that have helped address NDBI risks.

[23] For more about product development and innovation, see *sigma* 5/2017: Commercial insurance: innovating to expand the scope of insurability, Swiss Re Institute.
[24] "Japan Prime Minster and His Cabinet", *Policy News*, 15 December 2017 https://www.kantei.go.jp/-jp/singi/keizaisaisei/miraitoshikaigi/4th_sangyokakumei_dai3/sankou7.pdf (Japanese only)

Mortgage-linked insurance cover for banks

A bank with a substantial mortgage business differentiates its product with optional disaster relief cover.

Background: The mortgage business in Japan is highly competitive. A large bank with substantial mortgage portfolio wanted to differentiate its product and enhance client loyalty by offering optional disaster relief cover with home loans.

Insurance solution: A unique cover with disaster relief for the bank. A mortgage holder can get loan repayment relief in the event of property damage in a natural disaster. Depending on the severity of damage, the relief (principal plus interest) can extend for up to 24 months. To be able to offer this cover, the bank charges a slightly higher interest rate on mortgages.

Benefits: Disaster relief to both the bank and the mortgage borrower. It also covers earthquake risk, which most private home insurance policies do not and which cannot be fully secured by a government scheme. The borrower enjoys a relief period in case of a disaster, thus increasing financial resilience and helping loss recovery while also maintaining the property. The bank, meanwhile, can offer a more compelling mortgage product, differentiate itself in the market and strengthen existing relations with borrowers without taking on additional risks.

Parametric cover for non-damage business interruption for retail shops

An index-based solution to protect against significant drop in shop business after a major earthquake.

Background: A luxury goods company has concerns about significant drop in retail trade and thus revenue in the aftermath of a major earthquake. The company's traditional property damage policy provides BI cover in the event its store is damaged. However, the policy does not provide cover for "non-damage" events.

Insurance solution: A multi-year insurance policy that pays out (indexed) pre-agreed amounts based on the level of earthquake-shake intensity.

Benefits: The index-based solution is simple, speeding up claims the handling process. It also offers protection against earnings volatility, including NDBI cover.

Parametric cover for NDBI for a utility company

An index-based solution for quick claims statement and access to liquidity.

Background: A large electricity utility company in Japan suffered substantial property and financial losses caused by the 2011 Tohoku earthquake. It had a traditional insurance, but the claims investigation and settlement process took years to complete, delaying the company access to liquidity.

Insurance solution: An insurer designed a parametric earthquake solution to ensure quick and transparent claims settlement. The pay-out pattern was specifically tailored to reflect the seismic resistance and protection level of the company's asset base. The pay outs are based on shake intensity provided by several Japan Meteorological Agency (JMA) stations. The solution is used as a liquidity enhancer, and complements traditional earthquake coverage.

Benefits: This index-based solution is simple, transparent and speeds up the claims settlement process substantially and with a tailored pay-out structure. The solution gives the company quick access to liquidity after a disaster event.

Conclusion

We forecast commercial insurance premiums in Japan will grow by 4.4% in 2019. We expect claims to rise.

We forecast that commercial insurance premiums will grow by 4.4% in 2019. Premium rates for property lines that were heavily hit by last year's natural catastrophe events are expected to harden further. Motor lines will be supported by additional coverage and increase in sales of policies, although motor premium rates will be lower. The lower statutory interest in April 2020, meanwhile, will raise auto claims. Profitability in the segment overall will come under pressure from higher costs associated with the expected consumption tax hike in October 2019.

Japanese businesses have insurance for their property assets, but many – in particular SMEs – are underinsured for business disruption scenarios.

Japanese firms are generally underinsured relative to their peers in the US and the UK. Many have yet to develop best practices in risk assessment and preparation for the appropriate risk mitigation response. While most firms have conventional insurance for their property assets, many – particularly SMEs – are underinsured for business disruption scenarios. Risk barometers, risk reports and global risk management surveys all indicate BI as one of the main risks companies face today.

We think demand for BI covers will be a main source of overall commercial insurance sector growth in Japan.

Natural catastrophes remain at the core of property risks in Japan given the country's high exposure to the full range of natural perils, including earthquakes, snowstorms, heat waves, typhoons and floods. Globalisation and digital technology have broadened the scope of BI risks facing companies. We think BI risk covers will be an important area of commercial insurance segment growth over the longer term, as more and more Japanese companies become aware of their vulnerabilities and scrutinise their business continuity plans more closely.

NDBI covers are set to be the next stage in the extension of the boundaries of insurability.

Another area of growth for commercial insurance will be parametric solutions, in particular non-physical damage business interruption covers. In our view, these are the next step in the evolution of covers for exposures that have been difficult to insure, such as cash flow and earnings volatility. In addition to pay-outs, a main benefit of NDBI solutions is that they improve the efficiency of risk transfer.

Appendix: performance by line of business

Commercial motor insurance

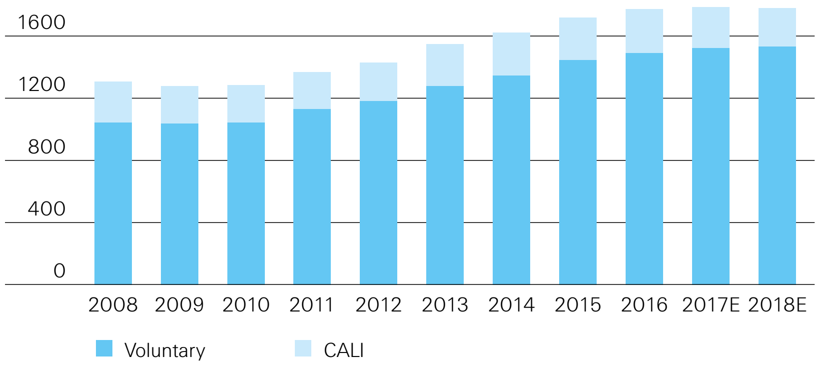
Motor is the biggest line of commercial insurance business in Japan.

Motor is the main line of business in Japan. In 2017, commercial motor premiums were 40.2% of total commercial insurance premiums. Automobile insurance protects companies against liability claims and property damage involving the vehicles they own. Liability insurance is mandatory for all accredited vehicles. Most motor liability claims are of high-frequency and low-severity nature. In many advanced markets, larger firms do not insure the property part of the risk. In Japan, however, many corporations still do insure their fleet's own-damage risks.

Premium growth has been sluggish, reflecting continue rate cuts.

Motor premiums are estimated to have contracted by 0.3% to JPY 1781 billion in 2018, after a sluggish 2017 (see Figure 12). Lower premium rates and slow sales of commercial fleet vehicles continued to impact the segment. Compulsory motor premium rates were cut by on average 6-7% in April 2017. For voluntary motor, major Japanese non-life insurers lower premium rates by an average of 2-3% starting January 2018. This came after the General Insurance Rating Organisation (GIROJ) set lower guiding rates for voluntary automobile insurance to reflect lower claims due to widespread use of advanced safety technologies such as automatic brakes.[25] In the near term, motor business will remain volume-driven at lower price. Commercial motor insurance penetration rate is estimated to have been 0.33% and 0.32% of GDP in 2017 and 2018 (see Figure 13).

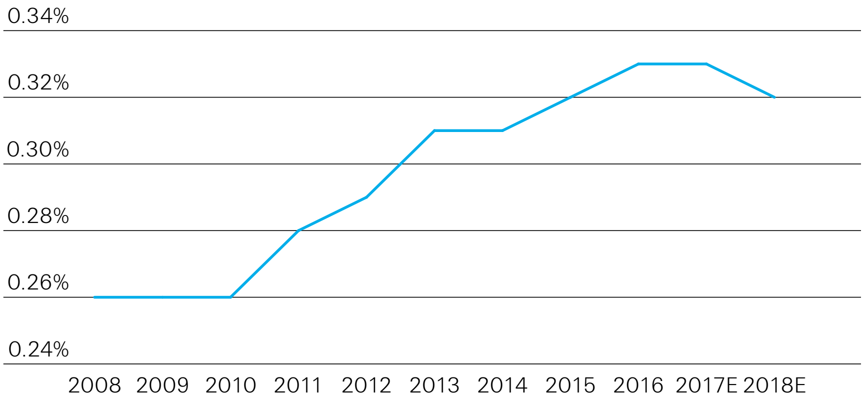
Figure 12
Commercial motor insurance direct premiums written (JPY billion)



Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

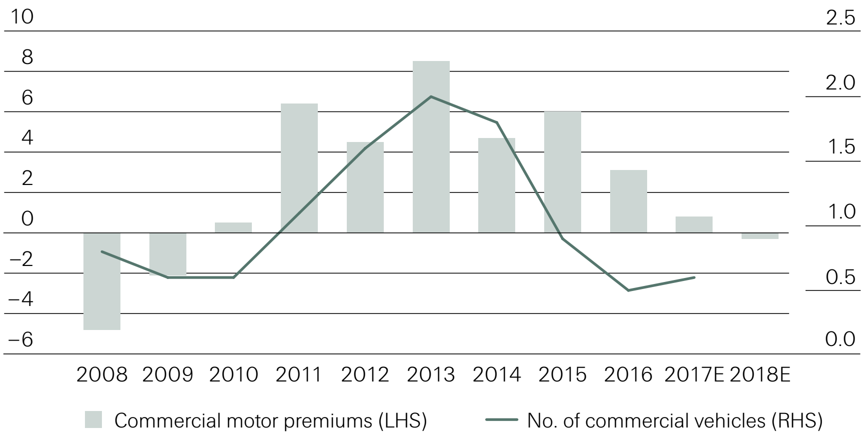
[25] The General Insurance Rating Organisation of Japan (GIROJ) calculates two types of premium rates: (1) reference loss rates for voluntary motor insurance; and (2) standard full rates for CALI. For voluntary motor insurance, insurers can adopt the GIROJ reference rates and add expense costs to decide the premium rate, or calculate their own rates. Insurers are required to file their own premium rates for FSA approval. If the insurer uses the GIROJ rates, no FSA review is required. If insurers use their own rates, the FSA will review the difference. The standard full rates for CALI are determined on a "no-loss, no-profit" basis. All non-life insurance companies are required to adopt the standard full rates. See Announcement on revision of standard full rates for compulsory automobile liability insurance, GIROJ, 3 February 2017, http://www.giroj.or.jp/english/press_2017/20170203.pdf; and Announcement on the revision of the reference loss cost rates for voluntary automobile insurance, GIROJ, 9 June 2017, http://www.giroj.or.jp/english/press_2017/20170609.pdf

Figure 13
Penetration rate in commercial motor insurance (% of GDP)



Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute.

Figure 14
Growth of commercial motor premiums and commercial vehicles (year-on-year, %)



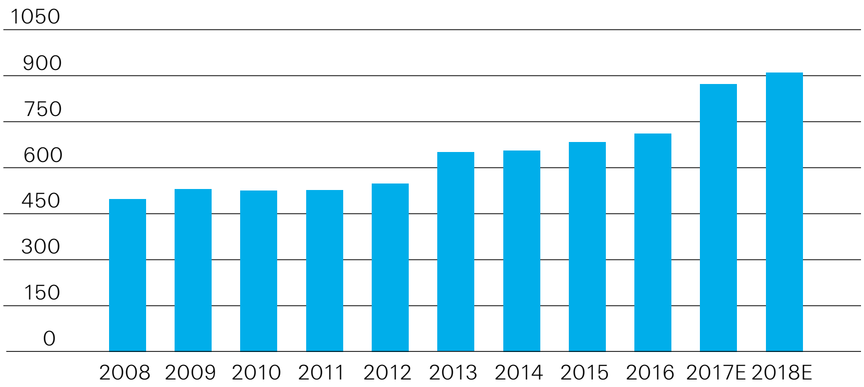
Source: CEIC, the Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Liability insurance

Japanese firms spend less on liability cover than advanced-market peers.

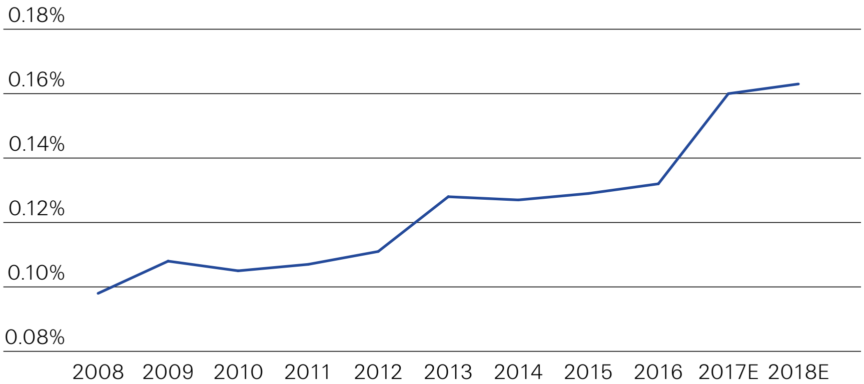
Liability is the second largest commercial line of business in Japan. In 2017, commercial liability premiums were 19.6% of total commercial insurance premiums. Liability direct premiums are estimated to have increased by 4.4% to JPY 911 billion in 2018, driven mainly by workers' compensations (see Figure 15). Compared with other advanced markets, Japanese companies underspend on liability insurance, which reflects the country's benign litigation culture. In Japan, companies prefer to settle out of court. Moreover, Japan's liability market is highly concentrated and only a few large firms purchase global coverage. Liability penetration is estimated to have been 0.16% of GDP in 2018 (see Figure 16).

Figure 15
Liability insurance direct premiums written (JPY billion)



Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Figure 16
Liability insurance penetration rate (% of GDP)



Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Commercial property insurance

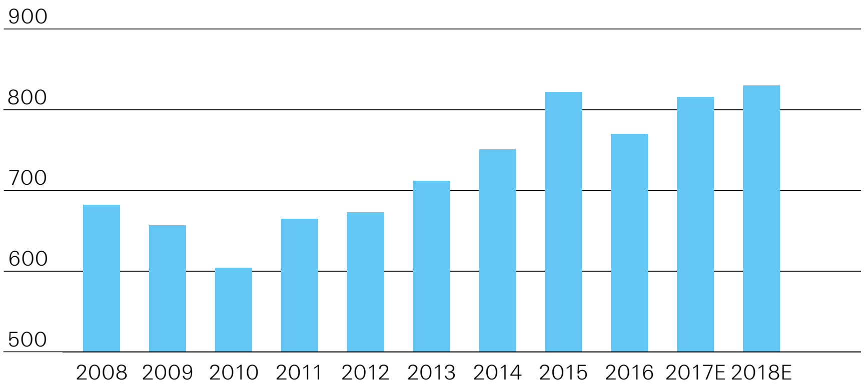
Commercial property insurance premiums grew by 1.7% in 2018,

Property is the third largest line of business in Japan. In 2017, commercial property premiums were 18.4% of total commercial insurance premiums. In Japan, most corporate earthquake and BI cover is included as a rider to fire insurance policies. Many large corporations insure their property on an indemnity basis and do not buy loss-of-business or earthquake cover, while many smaller enterprises are largely uninsured.

We expect property cat risks to harden further in 2019.

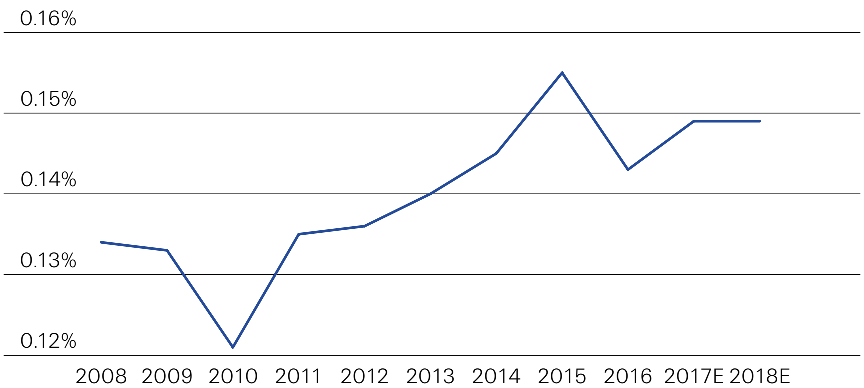
After the earthquake and tsunami losses of 2011, and also in light of the heavy floods in Thailand that same year, commercial property owners and corporates have increasingly come to see earthquake and BI insurance as core components of their risk management strategies. In 2018, DPW of commercial property insurance are estimated to have increased by 1.7% to JPY 830 billion. We expect premium rate hardening in property catastrophe line this year after the many natural catastrophe events in 2018 (see Figure 17). Meanwhile, the penetration rate of property insurance is estimated to be 0.15% of GDP in 2018 (see Figure 18).

Figure 17
Commercial property insurance direct premiums written (JPY billion)



Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Figure 18
Penetration rate in commercial property insurance (% of GDP)



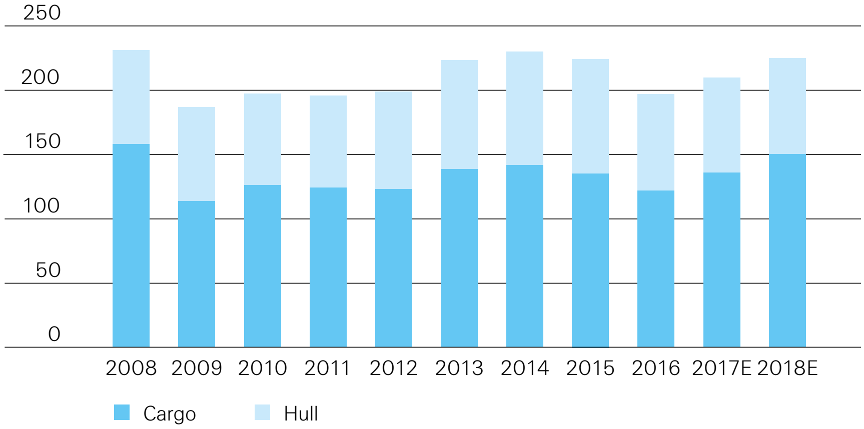
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Marine insurance premiums grew strongly in 2018.

Marine insurance

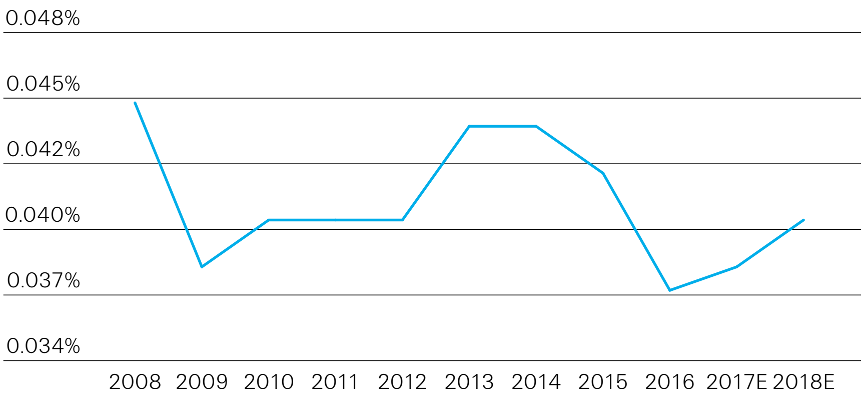
In 2018, marine premiums in Japan are estimated to have increased by 7.2% to JPY 225 billion alongside a recovery in global trade and shipping (see Figure 19). Over the last few years, ship owners have refrained from placing more orders due to excess capacity. The low ocean freight volumes depressed rates in the container segment, and that led to consolidation among shipyards and ocean carriers globally and in Japan. In 2017, the new shipbuilding market recovered and ocean freight volume increased (see Figure 21 and Figure 22). Meanwhile the marine insurance penetration rate is estimated to have been 0.04% in 2018.

Figure 19
Marine insurance direct premiums written (JPY billion)



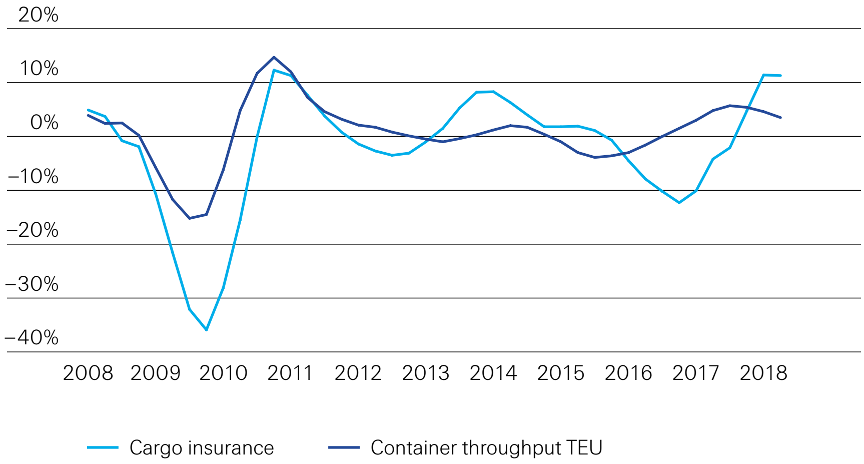
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute

Figure 20
Marine insurance penetration rate (% of GDP)



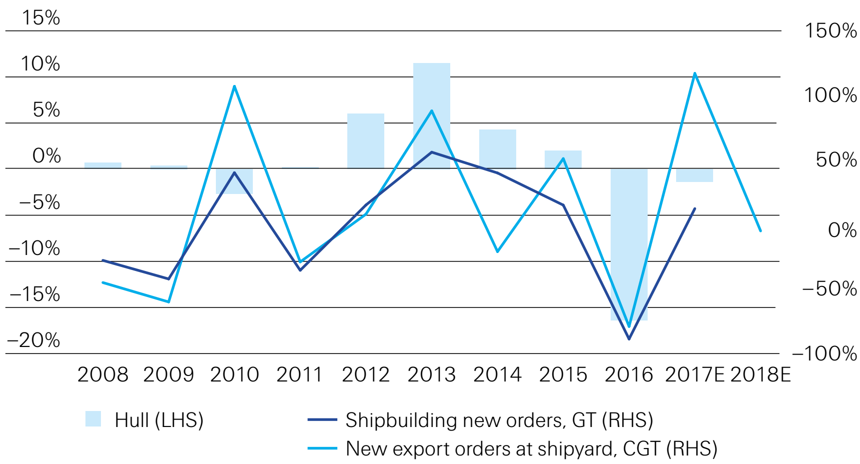
Source: The Statistics of Japanese Non-Life Insurance Business, General Insurance Association of Japan, Swiss Re Institute.

Figure 21
Japanese cargo insurance premiums and port container throughput at major ports of Japan (4QMA, year-on-year %)



Note: 4QMA =four-quarter moving average; TEU = 20-foot equivalent; 2018 data as of June 2018.
Source: CEIC, Swiss Re Institute

Figure 22
The growth of hull insurance premium, shipbuilding new orders and new export orders at shipyard (year-on-year %)



Note: 2018 data refers to *April-October 2018; GT = gross tonnage; CGT = compensated gross tonnage.
Source: The Shipbuilders' Association of Japan, Japan Ship Exporters' Association, Swiss Re Institute

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