



The Tohoku Earthquake and Tsunami Second Report

August 2011

Five months have now passed since the 9.0 magnitude earthquake and ensuing tsunami devastated the Tohoku region of north-eastern Japan. By way of update to our original report dated 30 March¹ – in which we summarised the main lines of Japanese insurance business likely to be impacted by the disaster – we set out below an overview of:

- (i) the factual situation in Japan since our original report; and
- (ii) direct and reinsurance issues that have the potential to emerge as the focus gradually shifts from residential to commercial loss adjustment. This includes a brief overview of the characteristics of contingent business interruption cover as written by direct insurers in:
 - a. Japan²;
 - b. the United States; and
 - c. the United Kingdom.

1. Factual Overview

1.1 Post-Disaster Situation Since 30 March

As at 14 August 2011 the Japanese National Police Agency figures for dead, missing and injured arising out of the Tohoku earthquake and tsunami stood at 26,081, comprising 15,698 fatalities, 4,666 missing and 5,717 injured. Press reports on 23 July indicated that a further 570 deaths are being assessed by various municipalities in Miyagi, Iwate and Fukushima prefectures to determine whether they are “related” to the disaster (thereby triggering condolence payments under relevant social security regulations): these cases generally involve elderly fatalities arising out of pneumonia and/or stress-related illnesses thought to have been caused by the catastrophe.

The Life Insurance Association of Japan (**LIAJ**) had already announced on 15 March that the approach to the Tohoku disaster by all Japanese life insurance companies would be full payment of accident-related life insurance benefits without applying relevant earthquake-related exclusion clauses. In general, Japanese life insurance terms provide that life insurance companies may reduce or decline payment of insurance benefits in the context of earthquake/tsunami; while difficult to generalise, the relevant provision can state that:

“... if the Insured suffers a high degree of disability or dies as a result of war or other disturbance, and if such disability / death affects the basis of calculation under this Policy, then the Insurer reserves the right to indemnify the Insured for an appropriately reduced amount, provided that such reduced amount is not lower than the reserve fund”.

Earthquake and tsunami is usually included in the concept of “disturbance”.

¹ For access to our earlier report, please click [here](#)

² We are once again indebted to Mr Shinichi Takahashi of the law firm of Nishimura & Asahi, Tokyo for his input on the Japanese direct insurance section contained in this article. Any inaccuracies, however, are our own.

Over 110,000 residential properties have been classified as totally destroyed (*zenkai*), 134,429 half destroyed (*hankai*) and almost 500,000 partially damaged (*ichibuson*). As at 5 August the General Insurance Association of Japan (**GIAJ**) reported 644,949 claim payments in respect of residential insurance covers (bearing earthquake and/or tsunami endorsements) issued by Japanese insurance companies (i.e. not including *kyosai* mutual co-operatives). Total payments by commercial insurers in this residential context exceeded Yen1.105trn (US\$13.7bn) as at 5 August, with the scale of destruction such that in certain regions – designated “total loss areas” by the GIAJ, as identified by aerial and satellite images – certification of residential claims by commercial insurers involving total destruction proceeded without the need for physical loss adjustment, a historical first in the Japanese insurance sector.

The Japanese Ministry for Health has confirmed that approximately 80% of the 380 hospitals in Iwate, Miyagi and Fukushima Prefectures were damaged, including 11 facilities that were totally destroyed. 101 tsunami evacuation centres where people had gathered for shelter on a pre-arranged basis were inundated by the wave, which (as confirmed by the 2011 Tohoku Earthquake and Tsunami Joint Study Group) reached a maximum height of 40.5m (132.8ft) in Miyako, Iwate Prefecture. By way of comparison, the pedestrian walkway above London’s Tower Bridge stands 143 feet above river level, just 10 feet higher than the waves highest point. Prior to this the highest recorded tsunami run-up was 38.2m (125.2ft) at Ofunato in the same prefecture of Iwate, during the Meiji-Sanriku tsunami of 1896; indeed the Tohoku region was previously hit by major tsunamis in both 1896 and 1933.

As at 6 May 2011 the Japanese Ministry of Economy, Trade and Industry had confirmed 525 aftershocks exceeding 5.0 moment magnitude, comprising 444 in the 5 magnitude class, 76 in the 6 magnitude class and 5 in the 7 magnitude range. This included two tremblors on 7 and 11 April of 7.1 and 6.6 respectively which caused further damage and collectively killed 7 people. As recently as 31 July a further 6.4 magnitude aftershock (slightly more powerful than the 6.3 magnitude earthquakes on 22 February and 13 June 2011 in Christchurch, New Zealand) occurred 18km off the east coast of Iwaki in Fukushima prefecture (184km north east of Tokyo); this at a time when tsunami-ravaged Fukushima residents had been experiencing torrential rainfall for 3 consecutive days, averaging over 26 inches in places at a periodic rate of almost 4 inches per hour. This rainfall prompted the evacuation of over 500,000 people due to flooding concerns in Niigata and Fukushima prefectures, compounding the difficulties of over 35,000 people who are still living in earthquake evacuation shelters, in addition to the tens of thousands who remain displaced in hotels or temporary housing due to the continuing nuclear crisis at the Fukushima Daiichi facility (see section 1.2 below).

The Japan Times reported on 16 June that in the 3 prefectures of Miyagi, Iwate and Fukushima an estimated 230,000 motor vehicles were damaged or destroyed by the earthquake and ensuing tsunami, along with approximately 20,000 (mainly small) marine vessels. Some of these vessels remain on land, nestling with disaster waste estimated by the Japanese Environment Ministry to exceed 24 million tonnes in Miyagi, Iwate and Fukushima alone.

On 24 June 2011 the Japanese Cabinet Office narrowed its projection of direct earthquake and tsunami infrastructural damage to Yen16.9trn (US\$209bn), having issued an estimated range on 23 March 2011 of Yen16trn – Yen25trn (US\$198bn – US\$309bn). This revised figure still dwarfs the US\$125bn economic impact of Hurricane Katrina – previously the world’s costliest natural catastrophe – and is some 80% higher than the Yen9.6trn (US\$119bn) in damage caused by the Great Hanshin Earthquake in Kobe, Japan on 17 January 1995.

In response to the pressing need for debris removal and re-construction, the Japanese Parliament approved two disaster relief budgets on 9 May and 25 July, pursuant to the Disaster Relief Act 1947; the budgets totalled Yen4.02trn (US\$50bn) and Yen2trn (US\$25bn) respectively. A third reconstruction budget is expected within the present Japanese fiscal year (ending 31 March 2012), which is anticipated to be in the region of Yen10trn (US\$125bn).

Reconstruction is expected to take at least 5 years.

1.2 Fukushima Daiichi Nuclear Crisis

While the above Cabinet Office damage estimate of US\$209bn includes damage to facilities and equipment at the Fukushima Daiichi nuclear facility owned by the Tokyo Electric Power Company (TEPCO), it does not incorporate the cost of remediating radioactive contamination; nor does it include compensation for individuals/businesses affected by the post-tsunami explosion of containment vessels housing Daiichi reactors 1, 3 and 2 (which explosions respectively occurred on 12, 14 and 15 March).³

The mandatory 20km evacuation zone around the facility which was imposed by the Japanese Government on 12 March (which affected over 7,000 businesses in the area, in addition to over 100,000 people) foreshadowed the disaster's designation on the International Nuclear Event Scale as Level 7 (the highest level) by 12 April, rendering it equivalent to the Chernobyl meltdown on 26 April 1986. By 15 May TEPCO had announced that as early as 4 hours after the tsunami crippled the cooling system to reactor No 1 the core fuel rods had become exposed through boiling off of non-circulating water, resulting in full meltdown less than 12 hours later. This damaged the pressurised container vessel in which the core was housed, causing the release of thousands of gallons of highly radioactive coolant water into basement levels of the reactor's containment building.

TEPCO further confirmed on 24 May that similar meltdowns occurred in reactor Nos 2 and 3 within 60 and 101 hours respectively of the tsunami striking, leaving an estimated 120,650 tonnes of radioactive water pooled within the plant. Although purification operations began on 27 June as part of a TEPCO plan to achieve cold-shutdown of the reactors by January 2012, the Asahi Shinbun reported on 28 July that due to design failings in the purification system/water leakages, there were now 3,000 tonnes more radioactive water within the facility (due mainly to typhoon rain) than when the purification process commenced.

Indeed almost 5 months since the crisis began the situation at the Daiichi facility remains extremely serious, with traces of plutonium identified in areas around the site, leakage of radioactive water into the Pacific and a TEPCO detection on 1 August of isolated radiation releases exceeding 10 sieverts per hour outside exhaust areas for reactor buildings 1 and 2. This latter finding represented the highest level of radiation measured at the facility since cooling systems were lost to the reactors in the immediate aftermath of the 14 metre wave which overtopped the plant's 6 metre seawall on 11 March: exposure to radiation doses of 10 sieverts per hour (10,000 millisieverts) risks fatality.

1.3 TEPCO: Liability and Compensation

As at 13 April the potential cost of remediation and compensation of third party businesses/individuals displaced by the Fukushima Daiichi crisis was estimated by Bank of America-Merrill Lynch to be in the region of \$130bn.

Under Japan's 1961 Act on Compensation for Nuclear Damage, nuclear operators such as TEPCO have strict (i.e. no fault) liability for damage resulting from reactor operations. Under the Act such operators are required to provide Yen120bn (US\$1.46bn) in security for third party liability, per site. This security is provided in the form of a liability insurance contract for nuclear damage (through the Japanese Atomic Energy Insurance Pool) as well as a separate indemnity agreement through which the Japanese Government "... undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage not covered by the liability insurance contract" (which indemnity is co-extensive with the above Yen120bn figure).

Under the Act a nuclear operator's strict liability for compensation in excess of this sum is only excepted where, inter alia, "... the [nuclear] damage is caused by a grave natural disaster of an exceptional character".

³ See our report dated 30 March 2011

Despite guidance from the Japanese Cabinet Office's Atomic Energy Commission that an earthquake of "considerably greater scale" than the Great Kanto Earthquake of 1923 or the Great Hanshin Earthquake of 1995 would potentially qualify as a "grave natural disaster of an exceptional character", Prime Minister Kan in the Japanese Diet on 29 April denied that TEPCO had any right to an exemption, notwithstanding the Tohoku disaster comfortably representing the costliest natural catastrophe in history. This apparently reflects a public/media perception that the nuclear crisis was potentially exacerbated by TEPCO's handling of the situation in the hours after the tsunami struck, along with the fact that the (in)adequacy of its seawall defences had apparently been raised previously, including in the Japanese Diet.

That said, a disorderly collapse of TEPCO under the weight of unlimited Fukushima-related third party liability has been recognised as untenable, not least because the crisis (as well as extended uncertainty over the availability of financial support from the Kan Government) had contributed to an erosion of more than 80% of the share value of the utility, which (lest it be forgotten) supplies electricity to over 44.5m people in Tokyo and its surrounding regions. Equally TEPCO – having already posted a Yen1.25trn (US\$15.3bn) loss for the financial year ending 31 March 2011 (the biggest loss in Japan's corporate history outside of the financial sector) – is Japan's largest issuer of corporate bonds, in respect of which liabilities to the market currently exceed Yen5trn (US\$62.4bn).

On this basis the Japanese Diet, after much debate, finally passed financial assistance legislation on 3 August, pursuant to a power arrogated under the 1961 Act that allows Government aid to a nuclear operator (for third party compensation) "*... when the Government deems it necessary in order to attain the objectives of this Act*".

Under the scheme (many of the finer details of which have yet to be set out) TEPCO will be obliged to provide third party compensation on an unlimited basis; to the extent, however, that it may not be able to meet this ongoing exposure, a new state-backed funding entity is to be established using Yen2trn (US\$25.9bn) of public funds, into which (it is understood) as yet unspecified contributions from TEPCO shareholders and other nuclear utilities will also be made. It is further understood that for TEPCO to draw money out of this entity it will have to submit a detailed request for financial assistance to a special Cabinet panel (which effectively means that TEPCO management will be under government control/supervision); upon approval the funding entity will provide loans or purchase preferred shares in TEPCO, with the utility repaying the funds gradually through subvention of annual profits.

2. Commercial Insurance: Contingent Business Interruption

The main lines of domestic Japanese insurance potentially affected by the Tohoku earthquake and tsunami, and the characteristics of that cover within the Japanese market, are set out in our first report dated 30 March, to which the reader is referred for further information.

The present report concentrates more narrowly on disruption caused to Japanese industry, how that industry has been recovering in recent months and the issues that have the potential to emerge for both insurers and reinsurers of Japanese commercial risks. This coincides with domestic claims adjusting gradually shifting from the residential to commercial sectors, thereby serving to crystallise over the coming months the true scale of commercial losses to which the domestic and international (re)insurance markets may be exposed.

As will be recalled from our first report, with the principal exception of residential earthquake cover issued by Japanese *kyosai* co-operatives (which is heavily reinsured on an excess of loss basis with non-Japanese reinsurers), the main potential impact of the disaster on international (re)insurance markets is via commercial and industrial losses, whether through the international proportional and excess of loss reinsurance programmes of Japan's three largest commercial insurance groups⁴, or through more limited facultative reinsurance placements covering large stand-alone exposures.

⁴ Tokio Marine, Mitsui Sumitomo Aioi Dowa and NKSJ.

As at 23 May the Nikkei reported that the three insurance groups referenced above expected in excess of Yen600bn (US\$7.4bn) in earthquake-related insurance payments to corporate policyholders. Egecat's revised market loss estimate on 9 May (which raised its projected insured loss estimate to \$25bn – \$39bn, up 56% from its original projection of \$12bn – \$25bn on 16 March) included an estimated loss of US\$5bn – US\$8bn from the commercial books of Japan's non-life insurers. Of longstanding concern in this context, however, is the continuing uncertainty over contingent business interruption losses⁵, the true extent of which is still largely to be split out and quantified in notified loss figures. Egecat's above commercial loss projection, for example, was exclusive of contingent business interruption. On 18 April it was reported that global CBI losses connected to the Tohoku earthquake were conservatively estimated at US\$10bn – US\$15bn; yet a further projection put the potential figure as high as US\$70bn.

In the immediate aftermath of the earthquake and ensuing tsunami it is understandable why CBI commanded a sizeable portion of the international (re)insurance markets' attention. As set out in our first report, production in the Japanese electronic, semi-conductor, petrochemical and automotive industries was particularly badly affected: many parts-suppliers to Japanese and global car manufacturers were based in the Tohoku region, the damage to whose factories resulted in partial shutdown of production at Toyota, Nissan, Honda and other domestic automotive manufacturers. Toyota's worldwide production was reportedly down 80% in April compared with 12 months previously, and was still down 54% in May, which figures reflected both interruptions to the supply chain and direct impact on production lines.

In mid-May Sony (which suffered physical damage at 9 of its Japanese plants) announced that the earthquake's effect on its sales in March was estimated at Yen22bn (US\$270m), in addition to Yen11bn (US\$130m) in losses from restoration costs to inventory, machinery and buildings. However, Sony indicated that it expected to recover both sets of losses through its insurance coverage. General Motors US was reported as having issued a provisional CBI loss notification in the region of US\$1bn principally due to the suspension of assembly at its 800-employee Shreveport, Louisiana plant in March due to parts shortages. Relevant parts suppliers in this automotive context included the Japanese firm Renesas Electronics Corp in particular, a global production leader in LSI micro-controllers used not merely in cars but also in refrigerators and a host of other electronic devices, whose production plant in Hitachinaka, Ibaraki prefecture was badly damaged by the earthquake, resulting in an almost complete shutdown of production until 15 June. The plants of the leading Japanese chemical manufacturer Shin-Etsu at Handotai, Shirokawa and Kashima were also damaged, as was Hitachi's airflow sensor facility north of Tokyo (whose internationally placed property programme is expected to be a total loss approximating US\$700m); one of Texas Instruments' Japanese semiconductor fabrication plants was also damaged.

The production facility of German chemical manufacturer Merck KGaA in Onahama, Fukushima prefecture similarly stopped production of its industry-leading Xirallic metal paint pigments (used in automobile paint) due to physical damage. Merck supplied Ford and Chrysler in the US, who both temporarily suspended retail dealer orders for vehicles featuring various colours using the pigment. Audi and BMW were also understood to use Merck's product.

In addition, the multinational 3M anticipated insurance claims of up to US\$250m arising out of physical damage to its Japanese operations and consequent business interruption. Apple similarly notified a US\$500m exposure due to an expected shortfall in parts from physically damaged Japanese suppliers of electronic components used in Apple products, while CBI-specific claims for US\$64m and US\$49m have been reported as respectively notified by Mazda and Nissan.

⁵ Contingent business interruption insurance (or supplier/customer extension insurance as it is known in the UK business interruption market) covers business interruption-related loss to an insured that is triggered by physical damage to a supplier or customer of the insured, rather than to the insured itself.

However, despite the above there are commercial reasons for considering CBI exposure (while certainly very real) to be potentially less severe than initially expected. In the first instance, the recovery of Japanese industry from the effects of the 11 March catastrophe has been surprisingly rapid: the Nikkei index of leading Japanese shares recovered to pre-earthquake levels by 15 July; while a Nikkei survey of 123 major Japanese manufacturers, retailers and service companies as at 1 July reported that approximately 80% had recovered output to pre-earthquake levels. Further, while it had originally been estimated that production at Toyota, Honda and Nissan would not return to pre-11 March levels until October or November of this year, all were reported to have returned domestic production to figures approaching normality by early July; this notwithstanding a change in working week from Saturday – Wednesday to reduce peak-time electrical demands (given electrical grid shortages attributable to only 16 of 54 of Japan's nuclear reactors being online as at 30 July).

Further, the US\$1bn CBI loss notification by GM referenced above was substantially attenuated by GM's reported revision of this estimate in May: due to the sourcing of replacement parts from both (recovered) Japanese suppliers and alternative sources, it was reported that GM did not ultimately expect that the Tohoku disaster would have a material impact on profits.

Notwithstanding the above, it is clear that CBI exposure remains a sizeable potential issue, which justifies some consideration of how such cover is generally provided:

- (i) by Japanese domestic insurers to Japanese corporate insureds; and
- (ii) by US/UK insurers providing:
 - (a) direct CBI coverage to insureds outside Japan; and/or
 - (b) global master policies granting CBI coverage to Japanese subsidiaries of multinationals via Difference in Conditions cover (where the subsidiaries' fronted Japanese policies might exclude such cover).

As an initially obvious point, the nature of commercial insurance (more so than residential insurance) is such that specific policy terms and conditions are commonly negotiated on an insured-by-insured basis. In light of this, attention necessarily needs to be directed to the relevant direct wordings in each individual case. This has the consequent effect that to a far greater extent than with residential claims (particularly the myriad claims that have impacted excess of loss *kyosai* reinsurance covers) more detailed reporting on the application of direct policy terms will obviously be required for larger commercial losses, both as part of the prudent handling thereof by direct insurers and for the purposes of addressing the reporting expectations of proportional and facultative reinsurers in particular.

2.1 Japan

As set out in our first report, business interruption insurance is not as widespread in Japan as in other developed economies: it is estimated that fewer than 20% of Japanese businesses purchase such cover as part of more general commercial fire/property protections.

While wordings diverge, Japanese business interruption coverage is predicated on business interruption "*directly resulting from physical loss or damage*" to the insured's property at defined locations within an identified insured territory (or territories).

BI cover for interruption to utility services is also available, insofar as (by reference to sample wordings):

"... physical loss or damage [to the insured's property at an insured location] results from interruption of incoming services consisting of electricity, gas ... water, refrigeration or from lack of outgoing sewerage services by reason of any accidental occurrence to the facilities of the supplier of such [utility] service ... that immediately prevents in whole or in part the delivery of such usable service ...".

BI cover for "pure" utility service interruption i.e. without requiring the above underlined physical loss or damage at the insured location (due to interruption of incoming utility services) can also be sourced by endorsement.

Further, a Japanese Contingent Time Element Extension typically provides for coverage of business interruption incurred by the insured:

“... directly resulting from physical loss or damage of the type insured, to property of the type insured, at any locations of direct suppliers or customers located within the [insured territory] ...”.

“Supplier or customer” in this context is generally defined so as not to include utility providers.

In general, therefore, CBI coverage on the above terms depends on whether damage of the type covered vis-à-vis the insured occurs to the direct third party supplier (as opposed to secondary or tertiary suppliers), with such exclusions as might apply to the insured equally applying to the third party for CBI coverage purposes.

Ostensibly, therefore, all of the above categories of cover (business interruption due to physical damage at the insured’s premises/due to loss of utility supplies resulting in physical damage at the insured’s premises/due to “pure” loss of utility supplies to the insured’s premises/CBI due to physical damage to a direct supplier or customer of the insured) would potentially be relevant to claims by Japanese entities for BI/CBI losses suffered due to earthquake and/or tsunami-induced property damage at Japanese facilities, and/or through power failures triggered by the catastrophe.

As might be expected however, earthquake, tsunami and nuclear contamination exclusions are de rigueur in Japanese BI and CBI coverage extensions, as well as in fire/property insurance more generally. While capable of being written back by specific endorsement, example wordings serve to exclude losses “directly or indirectly” arising out of:

- (i) “nuclear reaction or nuclear radiation or radioactive contamination”;
- (ii) “any natural or man-made earth movement including, but not limited to, earthquake, volcanic eruption or landslide”; and
- (iii) “flood following earthquake or tsunami”.

That said, endorsements are available which provide for write-back of such cover, sample terms providing for insurance of:

“... physical loss or damage caused by or resulting from earthquake ... and/or tsunami. Any ensuing physical loss or damage, without the intervention of any other independent excluded cause, should be covered under this endorsement.”⁶

There are two points to be made in this context. Firstly, such writebacks of earthquake and tsunami cover by Japanese insurers very commonly exclude business interruption and CBI losses “caused by or resulting from earthquake ... and/or tsunami”, thereby predictably avoiding potentially unmanageable aggregations of interruption loss. It is true that earthquake business interruption coverage is written, albeit sparingly; earthquake-related CBI coverage, however, is rare.

Secondly, earthquake business interruption/CBI cover that is written is subject to sub-limits, generally as part of a combined loss limit. It has been a characteristic feature of commercial losses arising out of the Tohoku earthquake that in many instances an exhaustion of overall limits has occurred solely through property damage adjustment, thereby precluding in practical terms any triggering of, or controversy under, earthquake/CBI business interruption extensions.

One further point which should be noted is that Japanese insurers do provide Fire Following Earthquake (FFE) coverage, which commonly includes cover for both business interruption by FFE and CBI by FFE (although coverage for business interruption and CBI by earthquake/tsunami alone is excluded). Insofar as most facilities that suffered fire in the aftermath of the Tohoku earthquake suffered both earthquake damage and fire following earthquake, this is necessarily giving rise to difficult adjusting issues in terms of allocating business interruption/CBI losses to earthquake on the one hand, and fire following

⁶ For aggregation purposes earthquake/tsunami is generally defined such that all earthquake/tsunami occurrences within a continuous 72 hour period will be considered a single occurrence/event.

earthquake on the other. This is particularly so given that Japanese insurers, in order to show that business interruption and CBI losses were not caused by fire following earthquake, bear the burden of proof in an all risk policy context.

One further area which merits mention is causation under Japanese law i.e. where the adjustment of claims arising out of the Tohoku disaster potentially involves more than one cause of loss: for example, a factory within the Fukushima exclusion zone may have incurred damage through earthquake, ensuing tsunami and thereafter radioactive contamination. While earthquake and tsunami cover may have been written back into cover (it is common for both perils to be written back through a single endorsement), radioactive contamination will very likely remain excluded.

In such circumstances issues as to whether the relevant perils can be regarded as concurrent and interdependent, or concurrent and independent, or sequential, ostensibly arise, insofar as one operative peril may be excluded and another covered. An issue also arises (where the perils can be regarded as independent) as to whether it is possible to reliably allocate portions of damage to the relevant covered peril. Of potential relevance in this context is Article 15 of the Japanese Insurance Law 2008, which has applied to both domestic insurance companies and kyosai co-operatives since April 2010. This provides that:

“The Insurer must provide indemnity for loss caused by an insured contingency, even if the insured property in question (to which the loss in question occurred) is subsequently destroyed by a contingency that is not covered by this insurance.”

A potential issue is whether this provision operates so that a Japanese insurer/kyosai will have to indemnify an insured for all, or part only, of a loss:

- (i) where that insured suffers damage that is caused both by an insured peril and (a) an uninsured or (b) excluded peril, where those perils act in conjunction (i.e. concurrently) to cause the relevant loss; and/or
- (ii) where that insured suffers damage that is sequentially caused by an insured peril e.g. earthquake which triggers a resulting chain of related perils (including nuclear contamination) where the latter perils are excluded.

Causation for insurance purposes is in general an unsettled area of law in Japan, in respect of which case law is relatively undeveloped. However, the better view is that it is not the case that an uncovered or excluded peril, where operative in conjunction with a covered peril, will mean the insurer is liable for *all* losses as a matter of Japanese law. In Japan, the main issue where there are covered and excluded causes is how the covered part of the losses will be determined, or whether all losses are unrecoverable.

In this context Article 15 appears to deal with a situation in which several independent sequential perils are involved, in circumstances where the covered peril precedes the uninsured/excluded peril; however, it does not provide any further ready guidance, and is easily applied (as regards damage caused by the initial covered peril) only where the amount of loss from the covered peril is undisputed. While the application of the Article is yet to be considered in any decided case, however, it must be open to real question whether it operates to render insurers liable for the total loss in question, where that loss derives from both covered and excluded causes.

2.2 United States

As referenced above, a second (and main) source of potential CBI exposure derives from US insurers, either via:

- (i) direct CBI coverage granted to insureds outside Japan who source supplies or customers within Japan; or
- (ii) global master policies providing CBI coverage to Japanese subsidiaries of multinationals via Difference in Conditions cover (where the subsidiaries' fronted Japanese policies exclude CBI cover as referenced above).

Although the specific CBI wording will vary from policy to policy, a typical CBI clause for US purposes commonly requires the following elements before coverage is provided:

- (i) physical damage to property of a type insured under the insured's policy;
- (ii) to property of a supplier or customer at a dependent location;
- (iii) by a peril covered under the insured's policy;
- (iv) which precludes the provision receipt of the relevant goods/service by the supplier/customer; and
- (v) which causes interruption to the insured's business operation.

In applying these criteria to the (relatively unique) facts of the Tohoku disaster, assistance can be derived from a more developed body of US CBI case law than exists in Japan, to which we briefly refer below.

A note of caution must be sounded, however, in that applicable legal principles vary depending on the law of the particular state governing the policy in question and, of course, on the language of the policy at issue.

2.2.1 Supplier / Customer

One requirement that is likely to raise CBI issues as CBI losses arising out of the Tohoku disaster are quantified is whether the relevant entity that suffered physical damage as a result of the earthquake and/or tsunami can be deemed a "supplier" or "customer" of the US insured. A common issue in this context is how far back in the supply chain the relevant entity can be before CBI coverage is lost: this issue naturally centres on how the concepts of "supplier" and "customer" are defined in the relevant policy.

Many US policy wordings use phrases such as "*direct supplier or customer*" or "*suppliers or customers with whom the insured has a contractual relationship*". Other forms require designation within the policy of the precise suppliers envisaged. In such cases, cover is only available for CBI loss suffered as a result of physical damage to direct (as opposed to secondary or tertiary) suppliers in question.

In other policies, however, the language used may simply refer to "*(any) supplier or customer*". This is more problematic, as courts in different US jurisdictions diverge widely in their interpretation of these terms when undefined, and these interpretations may ultimately determine the existence or absence of coverage.

For example, in *Pentair Inc. v. American Guarantee and Liability Insurance Co.*⁷ contingent business interruption was suffered by the insured through a lack of electrical power (post-earthquake) to the undamaged factories of two Taiwanese entities that provided components to Pentair. The lack of electrical power to the Taiwanese factories had been caused by earthquake damage suffered at two third party electrical substations. Applying Minnesota law it was held that the electrical substation was not a "supplier" to Pentair for the purposes of (otherwise undefined) CBI coverage, as the Taiwanese power company did not supply any product to Pentair. Equally, the direct supplier (the Taiwanese factories) had not suffered any physical damage from the earthquake such as to trigger its production disruption, on which basis CBI coverage was not operative in that context either.

By contrast, in *Archer-Daniels-Midland Co. v. Phoenix Assurance Co.*⁸, a wider view of "supplier" was taken. The insured (which was a processor of farm products) made a CBI claim for disruption of its grain business caused by extensive flooding in the American Midwest during the summer of 1993. The CBI policy language required physical damage to "*any supplier of goods or services*". This terminology was found to be ambiguous such that it could not be restricted to direct suppliers with whom the insured had a contractual relationship: the Court instead widely defined "supplier" to involve "*an unrestricted group of those who furnish what is needed or desired*". On this basis "supplier" was held to include local farmers whose properties had been affected by flooding, thereby causing them to

⁷ 400 F.3d 613 (8th Cir. 2005)

⁸ 936 F. Supp. 534 (S.D. Ill. 1996).

suspend supplies of grain to the (undamaged) grain intermediary from which the insured purchased its stock. Notwithstanding the fact that these farmers were “secondary” suppliers having no direct contractual relationship with the insured, they were deemed to satisfy the “supplier” requirement for CBI coverage purposes.

In the more recent decision of *Park Electrochemical Corp. v. Continental Casualty Co.*⁹, the issue of whether the insured’s subsidiary company could be classified as a “*direct supplier*” to the insured for CBI coverage purposes was considered. The insured was a manufacturer of electronic circuit boards; one of the insured’s wholly-owned subsidiaries, located in Singapore, supplied a vital component to another subsidiary in Arizona. When the subsidiary in Singapore suffered an explosion at its plant, the subsidiary in Arizona suffered loss due to it having to temporarily suspend operations for lack of parts from Singapore. The relevant policy language stated that it would:

“...pay for the loss resulting from necessary interruption of business conducted at Locations occupied by the Insured and covered in this policy, caused by direct physical damage or destruction to ... any real or personal property of direct suppliers which wholly or partially prevents the delivery of materials to the Insured or to others for the account of the Insured ...” (emphasis added).

Despite evidence that the industry norm was to restrict CBI coverage to situations in which the supplier was not owned by the insured, the New York District Court nevertheless held that as the relevant policy did not define the term “*direct suppliers*” it did not serve to exclude direct subsidiary suppliers in this way.

2.2.2 Physical Damage To Supplier / Customer

The prerequisite to CBI cover that there be physical damage to the relevant supplier is well illustrated through the decision in *Penton Media Inc. v. Affiliated FM Ins.*¹⁰, in which the insured trade show operator claimed CBI loss for cancellation of a scheduled convention. The cancellation occurred due to its venue “supplier”, the Javits Center in Manhattan, having been commandeered for relief operations in the immediate aftermath of the September 11 attacks. It was held that as the Center itself did not suffer physical damage, there was no basis for CBI recovery by the insured.

Likewise, in *Philadelphia Parking Auth. v. Federal Ins. Co.*¹¹, a case arising out of the US government’s nationwide order grounding all commercial aircraft in the wake of the September 11 terrorist attacks, it was held that there was no basis for CBI recovery by the insured. The insured operated a parking facility at an airport in Philadelphia, Pennsylvania, which depended on the airport to attract and supply its customers. Because there was no physical damage to the airport, there was no CBI coverage. The court rejected the insured’s arguments that purely “economic damage” arising from the government’s grounding order could meet the requirement of physical damage.

Similarly, as we have seen in *Pentair* (above) the direct supplier to Pentair – the two Taiwanese factories – did not suffer any physical damage in the relevant earthquake that might be said to have caused suspension of its operations (and Pentair’s consequent contingent business interruption). The suspension had been due to the loss of electrical power at the factories, but this was held not to amount to physical damage for CBI purposes.

A similar argument may accordingly be made to deny CBI cover where detailed adjustment indicates that relevant Japanese suppliers/customers suspended operations due solely to loss of power through electrical blackouts/rationing necessitated by the Fukushima Daiichi situation. This argument would equally apply where suppliers’ production suspension was caused through disruption to regional infrastructure, workforce issues or government orders, as opposed to actual physical damage.

9 No. 04-CV-4916, 2011 WL 703945 (E.D.N.Y. Feb. 18, 2011)

10 245 Fed. Appx. 495 (6th Cir. 2007)

11 385 F.Supp.2d 280 (S.D.N.Y. 2005)

2.2.3 Damage As Insured in Insured's Policy

CBI coverage is triggered only when the supplier/customer suffers physical damage to its property via the type of peril covered under the insured's policy. Similarly, all exclusions that apply for CBI purposes vis-à-vis the insured will equally apply to the supplier's or customer's situation.

In the context of the Tohoku disaster the main issue is likely to be whether the (US) insured's policy contains earthquake and/or nuclear exclusions (the latter being almost certain), and whether tsunami is incorporated within flood exclusion terminology.

Further, thorny causation issues may well arise, the resolution of which will necessarily depend on particular policy wording and the case law of the relevant jurisdiction(s). A loss may involve a chain of events that includes both covered and excluded causes. In jurisdictions employing the "efficient proximate cause" rule (when the efficient cause of loss is covered) cover will not be vitiated merely because an excluded risk contributed to the loss.

Thus, for example, if the insured's policy includes earthquake damage but excludes radioactive contamination, there will be issues where, for instance, the supplier/customer had to suspend its operations in its capacity as one of the 7,000 businesses ordered to evacuate from the 20km exclusion zone around the Fukushima Daiichi plant¹². Faced with such coverage concerns, and depending on the state law relevant to the cover, arguments will inevitably be raised as to whether the efficient proximate cause in such circumstances was earthquake or radiation, thereby necessitating detailed adjusting of the relevant damage and its impact on operations.

It is important to note that most jurisdictions in the US permit parties to contract around the "*efficient proximate cause*" rule with policy wording that plainly and precisely includes or excludes coverage when at least one of the causes of loss in a chain of events is excluded. But certain jurisdictions do not permit an insurance policy to contract around the rule, although the policy may include other wording that limits or expands the types of damage that are covered.¹³

Further, it is also important to distinguish the "*efficient proximate cause*" rule from the doctrine of concurrent causation. The latter arises when two events of independent origin combine to cause a loss that would not have occurred unless both events had taken place. Some first-party property policies preclude coverage, under a so-called "*anti-concurrent cause*" provision, if one of the independent causes of the loss is excluded under the policy.

A final causation-related issue worth noting is the doctrine of resulting or ensuing loss. Property policies commonly provide coverage for a so-called "ensuing" loss, which is a loss by a particular, covered risk that was set in motion by an excluded risk. Moreover, there would be cover under this doctrine even if the excluded peril continues after the ensuing peril begins.

In sum, issues pertaining to the cause(s) of loss will need to be carefully analysed under the particular policy wording and case law of the relevant jurisdiction.

2.3 UK

Given the UK's dwindling manufacturing base, and Japan's position as a leading components producer, the provision by UK insurers of business interruption coverage to a UK insured in respect of physical damage to a third party Japanese supplier (or customer) which affects the insured's business is of relevance to the Tohoku disaster. Such supplier (and customer) extensions (dependency extensions) can insure the insured's interruption occasioned by physical damage to the third party via earthquake or tsunami, once those perils are covered by endorsement. As in the US context above, these extensions are pertinent not merely as regards direct coverage written by UK insurers for insureds outside Japan who source supplies or customers within Japan, but also as regards global master policies providing supplier or customer extension coverage to Japanese subsidiaries of multinationals via Difference in Conditions protection.

¹² Unless such a situation is specifically covered in the insured's policy.

¹³ See, e.g. *Julian v. Hartford Underwriters Inc. Co.*, 35 Cal.4th 747, 759-60 (California law); *DeBruyn v. Superior Court*, 158 Cal.App.4th 1213 (same).

While many of the issues traversed in the context of US CBI cover above are equally applicable as regards UK supplier/customer dependency extensions, it is fair to say that UK jurisprudence on such extensions is not as developed as in the US. Much necessarily depends on the policy wording, in which both Named Suppliers and Unspecified Suppliers clauses are common, the latter generally commanding sub-limits shaved to approximately 10% of overall limits.

Consistent with the US, a common issue under UK dependency extensions concerns the legal definition of “supplier” in circumstances where the supplier is not named in the policy and there is (for example) no direct contractual link between the insured and the secondary or tertiary entity in the supply chain (where that latter entity’s physical damage ultimately occasions business interruption to the insured).

Controversy in such circumstances is generally overcome in the UK market through the availability of a Suppliers of Suppliers extension, albeit standard wordings make clear that a secondary supplier in this context generally does not include public utilities whose premises might suffer physical damage.¹⁴ This is obviously of importance in the Tohoku context given the disruption to primary suppliers’ power requirements through reported earthquake/tsunami damage not merely at Fukushima Daiichi but also at various TEPCO thermal utility plants.

Insofar as a standard (primary) suppliers’ extension requires physical damage to that supplier (by means of an insured peril) before the insured’s ensuing business interruption is recoverable, it seems clear on the basis of standard market wordings that a mere loss of utility supply to that supplier would not amount to “damage” sufficient to trigger the insured’s suppliers’ extension. Indeed this was one of the reasons why (direct) suppliers’ extension coverage was not triggered in the context of the Varanus Island gas utility explosion in Western Australia in June 2008, when goods suppliers (who had not been physically damaged) to various insureds could not maintain standard operations due solely to a shortage of gas supply to those suppliers from the (secondary) utility.

3. Reinsurance Considerations: Loss Allocation

As mentioned in our 30 March report, aggregation of losses arising out of the Tohoku disaster will be an important issue in the context of non-proportional reinsurance. Quite apart from the usual issues that might surround the relevant aggregating factor – “event” wording being commonplace in property catastrophe excess of loss covers along with Hours Clause issues – there may be specific issues as to which territorial losses can be aggregated together.

In particular, some cedants purchase separate reinsurance cover for direct exposure to North America/Canada (**US/C**) on the one hand, and the rest of the world (**RoW**) on the other. In principle the geographical criteria relevant to triggering each reinsurance cover could centre on the location of the losses directly insured, or the location of the “event” from which those losses derive. The key issue is whether the reinsurance contracts in question clearly specify which geographical trigger is operative, and whether the relevant trigger applies consistently across both the US/C and RoW wordings.

It is not difficult to envisage potential issues that may arise in this context. By way of example, a non-proportional RoW reinsurance cover may pay limits per Loss Occurrence, defined as:

“... the sum of all individual losses directly occasioned by any one disaster, accident or loss, or series of disasters, accidents or losses arising out of one event.”

The RoW Territory clause may provide that:

¹⁴ Indeed standard (primary) suppliers’ extensions generally exclude utility companies (electricity, gas, water and telecommunications) as suppliers for coverage purposes; specific coverage for business interruption through failure of utility supply at an insured’s electrical terminal ends, gas meter, water stopcock or incoming telecommunication line terminal is by way of separate Failure of Supplies endorsement (usually subject to a specified time franchise).

“... the territorial scope [of the reinsurance] will follow that of the [reinsured’s] policies as respects losses occurring anywhere in the world other than in the United States of America, its territories and possessions, and Canada”.

Based on the above, where both the event and the ensuing (re)insured losses occur outside the US/Canada, there is no issue: there is RoW reinsurance coverage. Where the event and ensuing losses all occur within the US/Canada, there is no RoW reinsurance coverage.

In a CBI context relating to the Tohoku earthquake, however, there is a potential dichotomy between the location of the “event” peril (the earthquake/tsunami: Japan) and the ensuing (re)insured CBI losses, suffered by insureds based (say) in the US.

In this latter circumstance, and viewed against the above wording¹⁵, on a natural reading the governing criterion for coverage under the RoW reinsurance would appear to be the location of the losses suffered (as insured under the cedant’s policies), rather than the location of the event triggering those losses: the Territory clause focuses on coverage of losses occurring anywhere in the world save for the US/Canada, without the location of the triggering event being specifically mentioned as relevant.

Taking an example, therefore, a direct CBI cover of a US-based insured whose US business is affected by the Tohoku disaster will protect that insured against losses to its business operations in the US: such US CBI losses would not fall within the territorial scope of the above RoW reinsurance terms, despite the earthquake “event” (in Japan) being an RoW event. This would mean that, under an RoW cover, property losses that might be covered by the cedant in Japan cannot be aggregated for reinsurance purposes with CBI losses incurred by the cedant’s insureds in the US.

That said, before deciding on how an RoW reinsurance cover might work in a Japan event/US CBI loss context, the reinsurance should be read as a whole, and the “twin” tower of cover for US/Canada should also be examined. If there are inconsistencies in Territory wording as between such twin reinsurance covers, this can create confusion.

For example, the Loss Occurrence clause in a US/Canada reinsurance may provide that Loss Occurrence means:

“... the sum of all individual losses directly occasioned by any one disaster, accident or loss, or series of disasters, accidents or losses arising out of one event, which occurs within the area of one state of the United States or province of Canada ...”.

The Territory clause may state that:

“The territorial scope of this Agreement will follow that of [the reinsured’s] Policies as respects losses occurring in the United States of America, its territories and possessions, and Canada”.

On this basis the Territory provision requires that the losses should take place in the US/Canada for coverage to be relevant. However, the Loss Occurrence clause (at least when read in isolation) can be regarded as requiring, in addition, that the triggering event should also occur within the US/Canada. This is because the Loss Occurrence clause’s operation depends largely on what the words “which occurs” refer to i.e. to “the sum of all individual losses ... which occurs within [the US/Canada]”, or to “any one disaster, accident or loss, or series of disasters, accidents or losses arising out of one event, which occurs within [the US/Canada]”.

The most natural reading of “which occurs” (singular) might be regarded as the latter. On this basis there would be a dual trigger before the US/Canada reinsurance comes into operation: the triggering event should occur in the US/Canada, and the losses incurred must derive from that same territory. Only once this dual trigger has been satisfied would losses be recoverable under the US/Canada reinsurance cover. If this were the correct

¹⁵ Of course, any reinsurance cover needs to be read as a whole, insofar as other clauses may colour the interpretation of specific clauses. Such an exercise obviously cannot be attempted here. Equally, an RoW cover needs to be read in conjunction with a “twin” US/Canada cover (see further, above)

position, however, it would create an unexpected gap in reinsurance cover:

- (i) CBI losses incurred by US insureds that are triggered by the Japanese earthquake would not be recoverable under the US/Canada reinsurance cover: while CBI losses were incurred to insured operations within the US/Canada, the triggering event did not occur there;
- (ii) however, those CBI losses would be equally unrecoverable under the RoW reinsurance, due to the losses not having been incurred outside the US/Canada.

A way out of this “gap” situation would be an alternative reading of the US/Canada cover’s Loss Occurrence definition, to the effect that coverage is provided for “*the sum of all individual losses ... which occurs within the area of [the US/Canada]*”. Certainly, in avoiding the gap in cover referenced above, that would make commercial sense of the coverage afforded by the twin RoW and US/Canada reinsurance covers, notwithstanding a literal reading of the relevant clauses being potentially to the contrary.

Given the above complications that can arise in a US CBI context, both the reinsured and reinsurer would be well advised to consider carefully their aggregation and territory wordings, as well as to scour the remainder of the reinsurance terms in order to establish whether any ancillary guidance can be gleaned as to whether it is the losses, or the event, that must occur within the relevant territorial area before CBI losses can be covered/aggregated (or both).¹⁶

Further information

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¹⁶ One potential indication in this context might be a stipulation within the relevant e.g. US/Canada reinsurance tower that in the context of e.g. earthquake the epicentre need not necessarily be within the territorial confines of the US or Canada. A clause such as this would point to the conclusion that the governing factor for coverage/aggregation purposes under the relevant US/Canada reinsurance cover is that the incurred losses (as opposed to the peril) must have occurred within the defined US/Canada territory.

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