Weather Risk Management: Adding a New Capability to the Risk Manager’s Toolkit

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Each of us has our own personal relationship with the weather. Some of us like it cold and snowy; some of us like it hot and dry. Corporations and governments across the global economy also have an important relationship with the weather. One need only read the U.S. government’s Beige Book¹ or the explanations released with monthly retail sales statistics to appreciate how variations in temperature, snowfall, precipitation and other weather variables affect the global economy and the budgets of governments. Just Google “weather + earnings” for any quarterly earnings period and there will be a long list of companies blaming some aspect of the weather for their poor financial performance.

The launch of the weather risk management market

There were no financial products available to manage weather risk until 1997 when the continuing deregulation of the U.S. energy markets created the perfect backdrop for the first weather derivative transaction. This new financial product was immediately relevant given that utilities were evolving toward a business model where they were responsible for managing all of their risks and one of the largest – fluctuating demand for gas and power – is highly correlated with temperature variability. This key energy market application launched a new and separate market for weather risk management products that has grown in size and scope over the past 15 years and which now offers financial products customized to an industry or company’s specific weather exposures and the location of their business.

Although weather protection products initially focused on demand, with the advent of renewable energy, energy companies, grid operators and investors also became exposed to the fluctuating supply of energy, as wind, solar and hydro generation energy sources depend upon the whim of the weather. Today, weather risk management products for the energy industry have evolved to offer protection not only against variable weather, but also the weather’s impact on actual energy prices, typically gas and power.

¹ The Beige Book, more formally called the Summary of Commentary on Current Economic Conditions, is a report published by the United States Federal Reserve Board.

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Other industries have discovered the benefits of weather risk management products as well. Tailored products are now available for companies in agriculture, construction, retail, outdoor entertainment, manufacturing and transportation. Municipalities are also showing great interest in weather products that can cap their exposure to snow removal costs.

Customization

Unlike interest rate or foreign exchange risks which can have a more uniform impact across an industry, very few businesses within an industry have exactly the same exposure to weather given their specific products, geographical footprint or customer behavior. This difference accounts for limited end-user interest in exchange-traded weather risk management products as compared against the broader use of exchange-traded products in interest rates or foreign exchange.

Every weather risk management product is indexed to the performance of an underlying index composed of a weather variable(s) – such as temperature, precipitation or snowfall – averaged or totaled over the desired risk period. For example, a product designed to manage snow removal costs for a municipality (see sidebar on page 3) would index the municipality’s total seasonal costs to cumulative snowfall at a pre-agreed weather station. The settlement index would be the sum of daily snowfall – of course most days will see zero inches – as measured and recorded by an independent third party, in this case the National Weather Service (NWS). Given the large number of weather stations managed by the NWS in the U.S. and other similar government meteorological agencies across the globe, geographically customized weather products can be readily developed based on the large number of possible indices available.

Once the settlement index of a product is established, the remaining financial terms are finalized, including the Risk Period, the Strike (similar to an insurance deductible), the Notional (effectively the payout rate for any index points above or below the Strike) and the Contract Limit (the maximum payout). Payouts are a function of the performance of the index, subject to the Notional and the Limit. Conceptually, structuring the financial terms of a weather risk management product is akin to determining the relationship between weather and the potential economic losses.

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**Flexibility meets buyers’ needs**

Sellers of weather risk management products are usually strongly-rated (re)insurance companies that have the ability to offer products in both derivative and (re)insurance form. The bulk of the products to date have been documented as derivatives given that the International Swaps and Derivatives Association, Inc. (ISDA) form is used widely throughout the energy industry to document commodity risk management transactions. Most importantly, the financial strength and issuer credit ratings of these (re)insurers give buyers of weather risk management products comfort that payment will be made to the extent there is a claim payable.

Contract limits can range from approximately $100,000 to several hundred million dollars depending on the scale of the buyer’s operation and the extent of its exposure to weather. Products generally cover seasonal risks for a specified period during a given year – for example June 2013 through August 2013. As experience with weather risk management products has grown, multi-year transactions which cover several years of the same seasonal protection are on the upswing. Using the last example, a buyer might seek cover for the next five June through August periods, instead of just the upcoming period.

In the past 15 years, weather risk management products have become accepted as valuable tools by increasingly versatile risk managers. Their flexibility of design and the growing availability of weather data for modeling and settlement have facilitated the growth of this industry into one that is truly global, rapidly expanding across geographies and industries.

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### Weather Risk Protection Example: High Seasonal Snowfall

A New Jersey municipality has a contract where it pays its snow removal contractor $100,000 per inch of snow from 1 October 2013 through 30 April 2014. Given that average annual snowfall is approximately 40 inches, the municipality budgets $4 million per year for snow removal.

However, historical snowfall has ranged from 2 inches to 80 inches. So while the municipality has experienced windfalls to its budget in drier winters, it has also experienced extreme budget stress in snowier winters when it had to utilize funds earmarked for other projects and services to pay for snow removal.

To counteract this lack of certainty, the municipality buys a weather protection product that pays $100,000 per inch for every inch above 50 inches of seasonal snowfall, which effectively acts as a $5 million deductible in this transaction. The protection could range up to a limit of 90 inches which would allow for a future season with 10 inches more snow than the worst historical year. This would give the municipality 40 inches, or $4 million, of total protection.

In this example, the premium for this protection costs $400,000 – the equivalent to the cost of 4 inches of snow. Once in place, the municipality’s budget would be effectively capped at $5.4 million, the deductible plus the premium. Of course, the municipality would still enjoy the financial benefits of a below-average snowfall year less the $400,000 premium which it paid to gain budget certainty.

<table>
<thead>
<tr>
<th><strong>PROTECTION TYPE</strong></th>
<th>High seasonal snowfall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOCATION</strong></td>
<td>Newark International Airport</td>
</tr>
<tr>
<td><strong>RISK PERIOD</strong></td>
<td>1 October 2013 through 30 April 2014</td>
</tr>
<tr>
<td><strong>WEATHER INDEX</strong></td>
<td>Simple sum of daily snowfall over the Risk Period</td>
</tr>
<tr>
<td><strong>STRIKE</strong></td>
<td>50 inches</td>
</tr>
<tr>
<td><strong>NOTIONAL</strong></td>
<td>$100,000 per inch above the Strike</td>
</tr>
<tr>
<td><strong>LIMIT</strong></td>
<td>$4,000,000 (payable at 90 inches of snowfall)</td>
</tr>
<tr>
<td><strong>PREMIUM</strong></td>
<td>$400,000 (10% rate-on-line)</td>
</tr>
</tbody>
</table>
In a competitive legal environment, law firms that develop strong institutional ties with their corporate clients are likely to have more business channeled to them from that firm. To expand relationships with key clients, law firms are now drawing on a variety of approaches, including alternative fee arrangements, billing management techniques and dedicated project teams for their larger clients.

Another strategy many law firms are employing today is the use of secondment arrangements. Secondment refers to a practice, originally created by the British military, where officers are exchanged...
between different military units. In the legal profession, this term describes the practice of lending a lawyer to a corporate client to act as in-house counsel for the host-client for a specific and limited period of time.

Secondment is gaining in popularity

After falling out of favor in the early 2000’s, secondment has regained popularity. In 2012, 77% of law firms surveyed by the ‘2012 Law Firm Leaders Survey’ as published by The American Lawyer, reported that they had seconded lawyers to their corporate clients in the past year. In 2009, only 60% of these firms reported using such arrangements.4

There are a number of likely reasons for this trend. Secondment tends to be a ‘win-win’ proposition – the corporate client benefits by having a law firm’s lawyer work in-house, usually at a fixed cost that is viewed as quite reasonable, while the law firm’s seconded lawyer has the opportunity to learn in more depth the client’s business and build relationships with the business staff, managers and executives of the client company (see sidebar). In addition, the law firm may be able to increase billings in practice areas where attorneys would have been under-utilized if not for the secondment arrangement.

Secondment is not without its risks

Handled with due care, secondments can be a powerful marketing tool for law firms and provide a mutually beneficial legal service for the firm’s key corporate clients. Handled improperly, secondments can result in the law firm’s disqualification from significant client matters, and can even result in professional liability claims because of perceived or actual conflicts of interest or the improper disclosure of confidential, sensitive or proprietary information.

If the scope and duties of the seconded lawyer are not set out clearly, precisely and completely in a secondment agreement, the client may not fully understand the limitations on such arrangements which could lead to the inadvertent disclosure of confidential information to the seconded lawyer. This has the potential to jeopardize a transaction involving the law firm and its corporate client, thereby increasing the risk that a claim could be brought by a third party against the law firm for failing to disqualify itself for a conflict of interest or breach of confidentiality.

Even where there is no ethical conflict and the seconded lawyer can be properly ‘screened’ both during the secondment and upon return to the law firm, if a claim arises out of work performed by the seconded lawyer, the law firm may be at risk of liability because of the relationship with the client. This highlights the importance of clear and precise secondment agreements.

While in private practice prior to joining Endurance in 2010, Caryn Silverman was seconded for six months to the legal department of one of her law firm’s clients – a large, multi-national pharmaceutical company.

“With responsibility for managing a varied docket of product liability litigation and claims for the client, I had many interactions with company executives, both formally and informally, which provided me with opportunities to learn more about the client’s business, operations and values. This strengthened my ties to the client as I became more knowledgeable about their needs. Upon return to my law firm, I was viewed as a more valued member of the client’s outside counsel team. It was an all-around success for me, the client and my law firm.”

Caryn Silverman
Senior Vice President and Claims Counsel
Endurance Services Limited

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4 http://www.americanlawyer.com/PubArticleTAL.jsp?id=1202579458620.
seconded lawyer while at the company, a jury may give weight to a perceived conflict even if it had no direct or harmful effect on the law firm’s representation of the client.

For example, if a seconded lawyer becomes aware of a planned hostile bid by the host-client for another of the law firm’s corporate clients, without proper screening and debriefing upon the seconded lawyer’s return to the firm, the seconded lawyer’s knowledge of the planned transaction may disqualify the firm from participating at all in the transaction. In a more distressing variation on that scenario, if the knowledge of the transaction is not discovered until after the closing, and it is later alleged that the law firm erred in its representation of one or both of the parties, the seconded lawyer’s knowledge of the transaction becomes a complicating factor, even if that knowledge itself had no discernible effect on the transaction. The company that was the subject of the hostile take-over could allege that it would have received a better financial deal but for the conflict, and a jury may agree that there was a perceived improper dealing by the law firm of the seconded employee.

**Mitigating underwriting risks**

Guidance on how to structure a secondment to avoid conflicts of interest issues is scarce. It appears that the only formal opinion on the subject is a 2007 Formal Opinion published by the New York City Bar Association (the “Opinion”). The heart of the Opinion is:

A law firm may second a lawyer to a host organization without subjecting the law firm to the imputation of conflicts under DR 5-105(D) if, during the secondment, the lawyer does not remain “associated” with the firm... and if the lawyer is securely and effectively screened from the confidences and secrets of the firm’s clients.

The Opinion presents several hypotheticals to illustrate the application of DR 5-105(D) to particular scenarios. Its most critical takeaways are the importance of clearly structured secondment agreements to ensure that the seconded lawyer does not continue to be associated with the law firm during the secondment and the implementation of debriefing procedures post-secondment.

In addition to ethical screens the law firm must put in place, a written agreement between the corporate client and the law firm should clearly delineate the scope and duties of the seconded lawyer’s role during the secondment and address potential conflicts with other corporate clients of the law firm before and during the secondment. The firm should also have a formal re-integration plan for the returning lawyer when the secondment concludes.

Secondment can be an important tool in a law firm’s competitive arsenal, but the arrangement must be structured carefully to avoid any perceived or actual conflicts of interest issues and prevent the improper disclosure of client confidences.

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5 Section DR5-105(D) of the New York Code of Professional Responsibility relates to Conflict of Interest; Simultaneous Representation. See, http://www.law.cornell.edu/ethics/ny/code/NY_CODE.HTM.
Implications of a Eurozone Break Up

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Slow growth in real GDP coupled with rising debt is a recipe for economic and political disaster. We have seen just how quickly such a crisis can erupt based on the recent events surrounding Cyprus’ US$13 billion bailout by the European Union (“EU”). Is Cyprus a blueprint for the survival of the Eurozone or its collapse?

Eurozone break up scenarios abound. One scenario is where a large financially troubled EU member, such as Italy or Spain, seeks to exit unilaterally. Another is where a small financially weak EU member, such as Greece or Portugal, wants or is forced to withdraw. A third scenario contemplates a core EU country, like Germany, exiting because it is tired of providing much of the financial support for weaker EU members. A fourth situation is a total breakup of the Eurozone community and another is where a two-tier Euro area is created with financially sound and core EU countries having a “stronger” Euro, and the fiscally troubled EU countries having a “weaker” Euro, each group having separate interest rates, money supply and inflation targets. Each break up scenario has its economic and political advantages and disadvantages, but all would create legal challenges.

The absence of withdrawal provisions in the Treaty on European Union, signed in Maastricht, Netherlands on February 7, 1992 and effective on November 1, 1993, commonly known as the “Maastricht Treaty,” which led to the formation of the European Union and the creation of the Euro, virtually ensures that any exit, whether orderly or unilateral, by a member of the EU would create a legal quagmire. Legal experts on the subject of currency redenomination and contract continuity risks predict widespread uncertainty on the validity and enforceability of contracts denominated in Euros should an existing member of the EU withdraw from the EU and the European Monetary Union. This uncertainty could lead to an increase in commercial disputes and a sharp rise in forum shopping by litigants.

Likely practical consequences of such an exit would be the denomination of a new national currency by the government of the exiting country, based on the principle of Lex Monetae. The new currency would naturally be devalued against the Euro which could conceivably boost the exiting country’s economic competitiveness in real estate, tourism and professional services, which would benefit from lower labor costs. However, such a devaluation could lead to a liquidity crunch, driving up the inflation rate and tariffs and lead to the introduction of capital and exchange controls to avoid bank deposits and currency from flowing out of that country.

For global (re)insurers, any of the Eurozone break up scenarios could have a significant impact on contractual liabilities, such as premium payments, claim recoveries, and collateral requirements. (Re)insurance intermediaries also have Eurozone exposure with regard to remittances, where it is unclear in which currency premium and loss payments should be made if one or more parties to a reinsurance agreement withdraws from the EU and the Euro. In addition, the risk of insolvency of ceding companies and intermediaries as well as their banks becomes heightened as many insured businesses find themselves in default of their payment obligations should there be a Eurozone withdrawal in the jurisdiction where the cedant or intermediary is domiciled.

On a macro-economic level, fiscal reform and debt reduction appear to present the best options to avert a Eurozone crisis. Global (re)insurers seeking to avoid legal uncertainty should address this exposure through the development of appropriate risk mitigation practices and clear and complete contract terms that address the consequences of the potential break up scenarios.

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1 The agreement among the EU members to adopt a single currency and monetary system.
2 Lex Monetae is the legal principle that each state exercises sovereign power over its own currency.
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