



The winners and losers of El Niño

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As 2015 wound to a close, it was assigned to the record books as the world's warmest year. Of course, global warming is widely considered to be at play, but meteorologists are particularly interested in the strength of this year's El Niño, which has exacerbated droughts in some areas, increased floods in others, and led to an unusually mild winter in North America and Europe. The effects of this unusually warm winter on the world economy are representative of the diverse financial consequences of El Niño and of climate variability generally, with weather being blamed for increased production costs, reduced revenues, and reduced GDPs. The question for each of these companies is whether they were prepared for El Niño and integrated weather risk management into their development strategies.

Exploring the El Niño phenomenon

El Niño is well known as a cyclical phenomenon that occurs about once or twice per decade that sees the warm waters of the central Pacific expand eastwards towards North and South America. During the summer period, it increases the risk of decreased rainfall in the Eastern Pacific (India, Indonesia and in the northern part of Australia), and conversely, it rains more in the southern United States and on the west coast of South America. In winter, when El Niño peaks, temperatures are abnormally high in

North America and Europe, and there is more intense storm activity in the Gulf of Mexico. It is also accompanied by intense rains. El Niño leads to a significant increase in the number, duration and intensity of weather anomalies around the world.

The current El Niño episode is the strongest event since 1998 and is expected to be among the most powerful ever recorded, expected to hold on until spring 2016, when it will turn to the second phase of the El Niño-Southern Oscillation (ENSO) cycle, El Niña, which sees a huge transfer of heat from the ocean to the atmosphere and a opposite but similar effects to El Niño.

The financial consequences of seasonal climate variability

The effects of this unusually warm winter on the world economy are representative of the diverse financial consequences of El Niño and of climate variability generally. For example, since May, El Niño has caused high temperatures and reduced precipitation in eastern Australia, Southeast Asia, and India, with the dry conditions causing increased production costs in agriculture, which in turn have resulted in raised prices in the latter half of 2015. Alternatively, in North and South America, El Niño has brought ideal farming conditions, resulting in plentiful grain crops.^[1]www.wsj.com/articles/from-cattle-to-coffee-farmers-weather-worst-of-el-nino-1451205301

In Europe and North America, retailers are complaining of sales slumps for winter clothing, with Hennes & Mauritz AB (the clothing retailer H&M) reporting revenue substantially lower than analysts' estimated as mild weather weighed on demand in North America and Europe, particularly in Germany, where it gets about a fifth of its sales (in November the retailer's monthly growth fell below 10%, and its shares declined as much as 1.1% in Stockholm).^[2]www.bloomberg.com/news/articles/2015-12-15/h-m-blames-warm-weather-across-u-s-and-euro-zone-for-sales-miss Similarly, Steilmann SE, one of the largest apparel companies in Germany by revenue, announced that the unusually mild weather have affected a number of its group companies, with expected revenues being substantially adjusted.^[3]www.reuters.com/article/idUSL8N1450G220151216 Marks & Spencer, Debenhams and BHS are among those running extensive promotions, particularly on knitwear and coats, as a result of temperatures topping 15C this December, with the average level of discounts across the high street expected to hit 45% for the end of December sale.^[4]www.theguardian.com/business/2015/dec/20/warm-december-nervous-uk-retailers-christmas-sales-panic-monday Food and beverages sectors have also been affected, with seasonal soups, winter vegetables and hot drinks in low demand.^[5]www.chichester.co.uk/news/local/sussex-set-for-warmest-wettest-december-on-record-1-7137188 Needless to say, ski resorts and winter supply retailers have been particularly hard hit, with ski resorts opening weeks later than hoped, and snow shovels, snow blowers, windshield washer fluid, and furnace repairs and check-ups all severely impacted. Energy companies will have lost substantial revenues due to the unseasonably warm weather with customers not needing to crank the heat as with other Decembers.

The question for each of these companies is whether they were prepared for El Niño and integrated weather risk management into their development strategy.

Adapting to seasonal climate variability

Certainly, seasonal climate variability is very damaging to the world economy, thus the United Nations has been encouraging the financial markets and meteorological services to work together to propose solutions capable of improving corporate resilience to increased climate variability. This research was given a great deal of attention at the recent Cop21 climate change conference in Paris, where for the first time the public and private sectors came together to agree that finance has an important role to play in helping companies and governments to adapt to climate change by becoming more resilient to climate variability.

Indeed, now more than ever, as climate change meets cyclical weather events, business leaders and communities must better understand the weather risks to which they are exposed and adopt

operational and financial management tools to respond to these risks. Thus, companies are beginning to integrate index-based weather insurance to compensate for increased production costs or poor sales caused by unfavourable weather. At the same time, they invest in operational measures such as irrigation systems in preparation for droughts, different varieties of crops or breeds that are more genetically hardy, or a more diverse product line.

Today, many banks and investors are increasingly aware of the effects of weather on corporate profitability. The climate vulnerability assessments are being demanded for listed companies and institutional investors now demand to know what the weather risk to which the business in which they have invested is exposed, and how the company is mitigating these risks.

Effective weather risk management tools

The means to obtain effective weather risk management tools is always the same, commencing with risk identification and risk quantification (identifying the period and duration of potential losses), and implementing a risk management policy (identifying the maximum acceptable loss, the periods that need to be protected, the management objectives and the sums one is willing to devote). Next, it is necessary to implement the strategy, deciding how much risk should be transferred, and whether to protect a loss threshold and retain all of the potential outperformance or protect a small threshold by waiving the portion of the outperformance potential.

Meteo Protect, Europe's leader in weather risk management, can provide both weather risk assessments and financial analyses of weather sensitive businesses, as well as the ability to decide how and at what point it wishes to decrease its risk exposure.

For this, it relies on a financial instrument called an index-based weather hedge, which can be offered to businesses, agricultural cooperatives, municipalities and others as weather derivatives or as insurance products, depending on the local tax, legal and accounting situations. The weather derivative is indexed on the weather parameter or index weather (when there are multiple parameters) which affects the financial performance of the company. As each company knows the connection between weather and financial performance, it chooses the maximum acceptable loss and therefore the threshold of the corresponding weather index. When the weather index threshold is crossed, the weather derivative automatically compensates the company the amount corresponding to the loss on the weather. Weather coverage products enable the same strategies as classic hedging instruments. The leader can completely neutralize the risk by using a swap. This ensures normal weather profitability. If the weather is unfavourable, the company is paid an amount corresponding to the loss on the weather. If instead the weather is favourable, it is the company which pays the amount of the outperformance. This is the operating principle of a forward cover: no premium to pay a guaranteed level, no loss or gain related to the weather.

As El Niño continues and we brace ourselves for La Nina, companies can move quickly to manage their weather risks. Thus, if a company director or government leader continues to say that revenues or GDP are down because of the weather, as though this was a foregone conclusion of unfavourable weather, the investors, shareholders and the public can all rightfully demand an explanation.

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