

J2.3 HELP WANTED: METEOROLOGISTS TO FIX DROUGHT IN PRECIPITATION CONTRACTS

Bob Dischel *
Weather Market Observer

Certainly precipitation variability has an important impact on the economy. Why then is trading in precipitation-indexed contracts so much less robust than trading in temperature-indexed contracts?

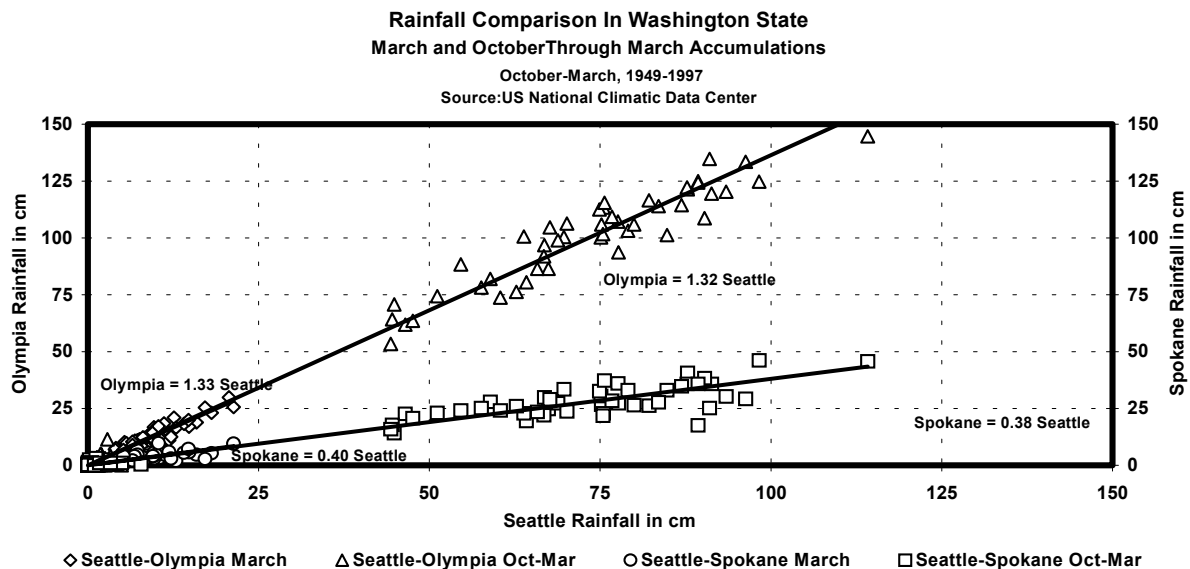
Businesses, both small and large, are the important potential end users of financial contracts. They want to reduce their exposure to unpredictable weather variations – and speculators stand ready to sell them contracts. But with precipitation, it just does not happen with regularity or with ease. Many negotiations are begun, yet few precipitation deals are consummated.

Among the reasons for these failed opportunities is the perception that weather, especially precipitation, varies over distance. Common wisdom must be respected, as we know that precipitation measurements at a location acceptable to the contract originators (almost exclusively first order sites) are unlikely to match exactly the weather events over a nearby exposure region (a watershed, for example). This means that payments based on financial contract indexes may not match the actual costs that the business is trying to protect. The market calls these potential payment differences due to physical separation geographical (or location) basis risk.

Among the non-meteorological potential end users

It is often said that – “Although it can frequently rain on one side of a street the other side can remain dry.” This limiting view does not grasp the connections that we know exist in weather; and though technically correct, the view does support quantifying the actuality that within certain constraints, weather is correlated over distance, especially when events are collected over a month or a season. Sometimes this correspondence is readily quantified even where distances are great and there are significant differences in terrain. Seattle and Spokane, for example correspond well enough to allow reasonable interpolation to locations between them (see figure). This is so even though one is at the coastline and the other at elevation. Clearly this kind of correspondence exists in many places. A challenge to the meteorological community is to quantify differences and correspondences across the continent in a way that is meaningful to the financial community as a step to providing better measures of geographical basis risk.

A common market approach is to seek answers in statistics applied in the absence of meteorological judgment. The meteorologists’ contribution would be to bring the experience of how weather and seasons evolve to make better choices in applying statistics.



Corresponding author address: Robert S. Dischel,
Weather Market Observer, 161 West 86th Street, NY,
NY 10024, BobDischel@WxPx.com