

September 2, 2019

## **Event Update: Hurricane Dorian**

In our last report from Friday we mentioned the difficulty for the top hurricane models to precisely forecast Dorian's future track. This difficulty stemmed from the opposing influences of large-scale weather systems which steer the storm, firstly the Bermuda High and secondly a thunderstorm front approaching over the Continental US from the west. Both steering effects continued to move the modelled forecast track around over the weekend, with yet another factor, a low pressure system entering continental North America from the north, adding further complication to the picture. However, the joint effect of these factors led to -cautiously- good news for Florida (but unfortunately not for some islands of the northern Bahamas!). Dorian's forward motion recently came to a near standstill over Grand Bahama Island, with the above mentioned thunderstorm front now estimated to weaken the ridge of the Bermuda high sufficiently to allow the storm to turn right during the next days, a movement further supported by the Canada trough. Both the 0Z and the 6Z Monday model runs supported a picture by which a direct hit on Florida seems less probable. However, the official track forecast of the National Hurricane Center is dangerously close to the coastline from Florida to the Carolinas, and only small wobbles of the storm to the west over the next time may lead to a landfall in that area.

Concerning strength, Dorian surprised the modellers by intensifying into a very powerful category 5 hurricane. At the time of writing the system was just downgraded back to category 4 again, as the storm developed a second eyewall outside of its main eyewall. Such an eyewall replacement, in which the original inner eyewall collapses and is replaced by a new one at larger radius, is common in severe hurricanes and typically leads to a significant reduction in a storm's windspeed for about a day, until the storm can reorganise itself. Such reorganisation might be complicated in the current case, however, by Dorian's stalling over shallow waters: The powerful storm is stirring up colder waters, and not moving on to new heat sources provides less 'fuel' than needed to re-strengthen. For that reason the forecast of future intensity of the storm is steadily decreasing. On the flip side, an eyewall replacement typically widens a storm's wind field. This increases the probability that even without landfall strong winds will reach the coast and pushes water over a larger area towards the shore, increasing the risk of flooding.

A scenario by which the storm remains off-shore would certainly be the most favourable outcome, even though Dorian's large wind field is likely to cause some storm related losses in addition to inland flood caused by excessive rain and storm flood related impacts. However, even if the storm were to hit land further north, then as a weaker storm, the loss potential looks smaller than last week.

The portfolio management team remains at your disposal for any additional questions.

With kind regards  
The Solidum Management Team