

Morgan Stanley

Operational Risk in CCAR

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Operational Risk in CCAR

- There were already a few cycles in the stress test program (first called SCAP, now called CCAR)
- Firmwide coordination projection of the impact of operational losses in the PPNR. Process is long and involves many areas within the firm
- Understanding how the FED macroeconomic factors impact OR is a challenge. Finding and estimating correlations between macroeconomic factors and operational losses are troubled by:
 - Completeness of data(internal and external)
 - Truncation of loss databases
 - Losses have diverse dates (e.g., “occurrence”, “impact”, “accounting”, etc)
 - OR is an amalgamation of different risks with very different dynamics under one umbrella
 - Resolution time for an event can be measured in years in many cases, particularly in litigation
- Relationship is assessed through frequency rather than severity

Operational Risk in CCAR

- Lack of consistency in the correlation of macro/ market factors across time
- For several important operational risk types, the lag that exists between a macroeconomic event and the losses can be expressed in many years, well beyond the scope of the exercise proposed by the regulators.
 - One example is litigation losses (mostly under the 'clients, products and business practices' risk type). Banks did not start to set reserves for litigation arising from the mortgage crisis in the US in 2007/8 until 2011. The cycle for litigation can take from three to six years, or longer. Considering the regulatory stress tests only span a couple of years ahead, it is difficult to find a meaningful correlation between a certain macroeconomic scenario and litigation losses within this time frame
- For some risk types, such as employment risk (the 'employment practices and workplace safety' category), a stress scenario can lower the risk. Analyzing unemployment data against employment-related losses in the US, it can be seen that higher unemployment levels reduce the risk, as most employees are more worried about securing their jobs and avoid litigation with employers

Issues in Finding Relationships between factors and OR

Issue	Description
Completeness of data	The completeness of internal and external data, while an objective for the industry, is elusive. Even when using external data to assess correlations, it is open to question whether loss databases such as the Operational Riskdata Exchange (ORX) are comprehensive and whether members are reporting all losses they suffer
OR is an amalgamation of very different risks	Relationships of macroeconomic factors with OR as a whole can be meaningless. More important is to find relationship with each risk type.
Varying collection thresholds (Truncation)	Several banks started with high collection thresholds and have been reducing them – this makes it difficult to find a long time series of standard events
Natural Scarcity	Operational losses are sparser. For some risk types, losses would not happen with daily or even weekly frequencies, while economic indicators are available daily. The solution in this case is to aggregate losses on a monthly or quarterly basis. However, as the aggregation increases, quite a few spurious correlations could appear that would have no logical support (for example, WTI crude oil prices, aggregated quarterly using ORX data, show a 32% correlation with business disruption and system failure losses)
Dates	Operational losses would have many dates associated, for example, 'occurrence date' (when losses occur), 'impact date' (when losses are realised), and 'account date' (when losses are booked to the general ledger). Changing the type of date used would affect correlations

Possible solution: Using FED database

- Operational loss data issues described in the previous page are not easy to resolve
- As part of the CCAR process, Firms have been reporting their losses regularly to the FED. Using this data, the Fed has indicated that it has found useful statistical relationships between certain types of operational losses and market/macro variables based on the pooled loss data of the 19 BHCs
- Individual Firms correlation exercises failed to provide many meaningful relationships
- We would be very interested in learning more about those industry-wide findings from the FED exercise since they could be valuable to guide our modeling efforts
- Also, we would like the Fed to consider sharing the pooled database of the 19 BHCs with the Firms, after the data has been properly scaled and standardized to protect its anonymity. This database is probably one of the best available in terms of its size and the quality of its data. It could be used by all banks, uniformly, as an important source of external data for their internal models.