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CC&G's Sovereign Risk Framework

A Summary for Participants

Background

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- This presentation contains a description of the Sovereign Risk Framework (SRF), implemented by CC&G and LCH.Clearnet Group to develop a tool to measure and monitor Sovereign Risk and to build adequate protection for a CCP and its participants
- This SRF aims at representing the state of the art of Sovereign Risk Management at CCP level:
  - Based on a wide set of dynamic market indicators
  - No single trigger point, so to eliminate room for potential market manipulation
  - Sound statistical and mathematical basis
  - Use of local multi-node sovereign curves to incorporate Country-specific factors
  - Equal treatment of short and long positions
  - Wide set of remedies
  - Gradual increase of default lines of defense, so to avoid procyclical effects

The Sovereign Risk

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- Sovereign Risk has a multiform and complex nature and crises are always different (e.g. Russia and Argentina), even when the countries affected are inside the same monetary area (e.g. Greece and Ireland and Portugal)
- Credit Ratings should not be taken as the sole indicator of the actual evolution of financial crises
- Accordingly, it seems appropriate to take into account a set of different dynamic market factors to monitor country risk rather than considering as indicator exclusively the breeching of a single static threshold or credit rating downgrades
- By the same token, CCPs must retain the capacity to calibrate its approach in order to be case-specific and should not rely on a one-size-fits-all approach
- The SRF aims to be objective and measurable, using a set of forward looking market indicators to predict sovereign risk

The Sovereign Risk Framework (1/2)

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- The scope of the SRF is to develop a tool to evaluate the increases of Country Risk, using market signals and considering each single country in respect of the general economic and financial context and evaluating the case-specific optimal tradeoff to protect CC&G and its participants, fulfilling the following criteria:
  - avoid procyclical effects and other unwanted/undesirable consequences
  - sound statistical basis (including the application of backtest)
  - duration-related margins increases
  - trigger points identified among a sufficiently wide set of market indicators
  - avoid too specific market targets in order to eliminate room for potential market manipulation
  - equal treatment of short and long positions
- Larger toolbox
- Early and careful evaluation of larger set of ***unambiguous*** market indicators
  - Increases/decreases are in small steps and not in big jumps
- Search for trend indicators rather than static thresholds
  - CCPs should attempt to catch “early warnings” so that margin increases do not happen too late, when the crisis is already acute, generating procyclical effects when are least needed
- Use of country specific curve in lieu of a blended Eurozone curve in order to capture each country’s specificities

The Sovereign Risk Framework (2/2)

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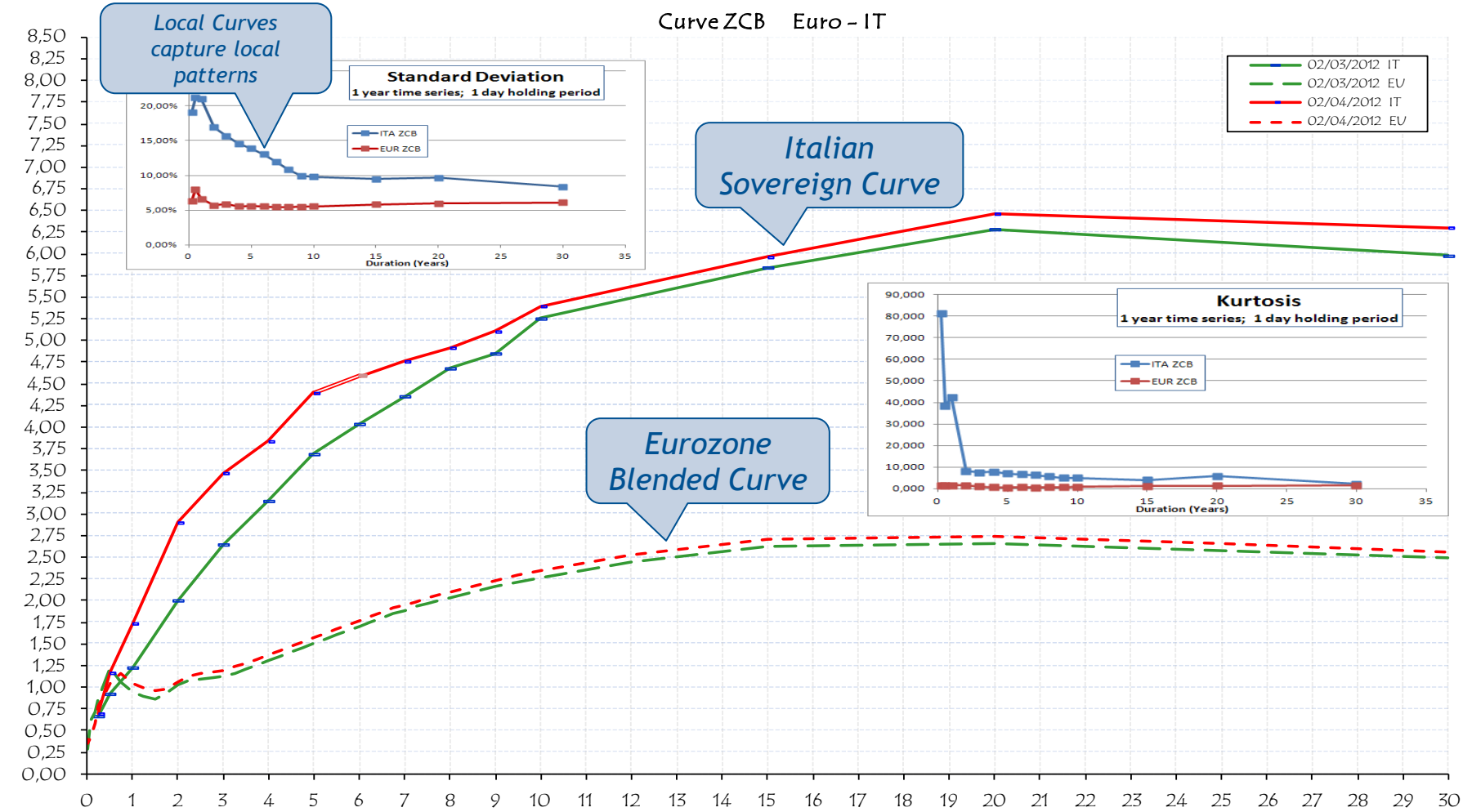
- Trigger-point automatic actions are not desirable as they may become self-fulfilling prophecies
- High thresholds → late interventions
- Indicators should be forward-looking and a single indicator may not tell it all
  - "*If you only have a hammer, then everything looks like a nail*"
- Adequate consideration should be given to the fact that each sovereign crisis is different and may require different actions
  - "*Somebody's medicine (and quantity) can be somebody else's poison*"
- Margin Increases across the board are suboptimal as unfairly penalizing for shorter maturities

Curves Comparison



Wide Set of Risk Indicators

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- CC&G monitors Sovereign Risk via a **market data based model**
- The model takes into account a list of >50 countries, ***without necessarily presuming safe havens*** and defines for each country a “credit measure” which will have multiple inputs including:
  - Credit Default Swaps
  - Sovereign Bond Spreads
  - Default Probabilities
  - Credit Ratings

Granular Sovereign Risk Tier Structure

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- Countries are grouped in Bands so that each Country's credit risk is seen as relative to its “comparables”
- Within Bands, further risk indicators identify relative trends, in order to point out countries which are most likely to be “demoted” or conversely “promoted”
- Each country is then assigned a Credit Risk Score, which is a function of its risk indicators
- Score coherence to ensure respect of the Monotonicity Principle (ie market risk indicators should worsen as country relative creditworthiness deteriorates)

Wide Set of Risk Protection Measures

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- Beyond a predetermined threshold, credit demotions (i.e. increase in credit risk score) imply a progressive increase of risk defenses, first by adopting ad hoc stress test scenarios, as it would still be considered as an extremely remote although plausible event, which falls under the commonly accepted definition of “stress risk”
- As creditworthiness further deteriorates, protection migrates from Default Fund to Margins
  - *Gradual Increases of Stress Test Scenario (first tool)*
  - *Gradual Increase of Confidence Levels (second tool)*
  - *Gradual Increase of Holding Periods (third tool)*

Model Back Test against CH Approach

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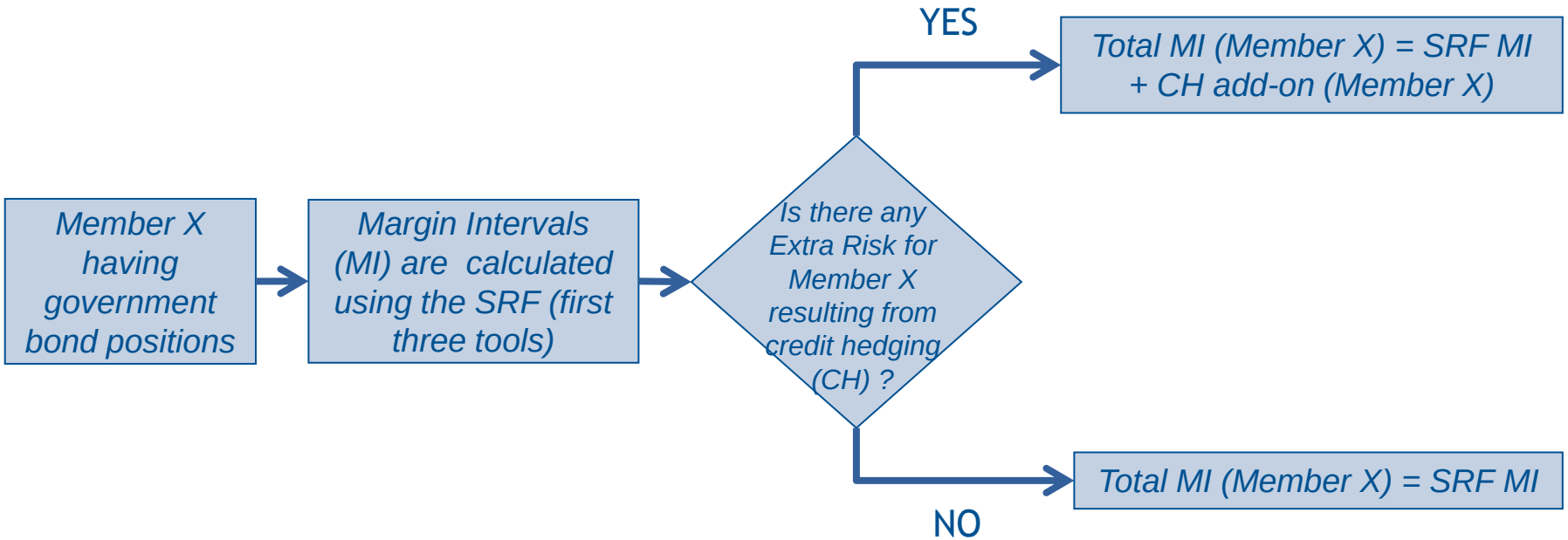
- In order to evaluate the adequacy of the initial margins applied to members having government bond positions, the SRF Joint Proposal foresees a fourth tool – the Credit Hedging Approach – that takes into consideration the theoretical cost of buying credit protection up to the maturity of the specific country's government bond
- This proposal is not suggesting that Credit Hedging would be done in practice, but the cost of credit protection is suggested as a relevant and dynamic indicator of the market view of credit risk. For higher rated categories this cost is reviewed as a stress test, but gradually this cost is moved entirely to the initial margin
- The Credit Hedging is applied **only at Individual Member level**. It results in a potential margin charge for a member having government bond positions including an extra risk that may not be fully covered by the sum of its initial margin (inclusive of the default fund contribution of the specific member) and a percentage of the remaining default fund total amount.

Sovereign Risk Framework Application



While the aim of the first three tools of the Sovereign Risk Framework Joint Proposal is to calculate Country specific margin intervals to be applied to <u>All Members</u> having government bond positions, the Credit Hedging approach is applied only at <u>Single Member</u> level, if needed.

Conclusions

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We consider the Sovereign Risk Framework to be in line with the following criteria:

– avoid pro-cyclical effects and other unwanted/undesirable consequences?

☑ The SRF is forward looking and keeps into consideration early warnings

– sound statistical basis?

☑ The SRF is based on statistical analysis on specific sovereign curves and on a large date base and is flexible and adequate to economical environmental circumstances

– duration-related margins increases?

☑ The Margins are based on volatility of the individual nodes of the each sovereign curve

– trigger points identified among a sufficiently wide set of market indicators?

☑ The SRF takes into consideration a wide set of market indicators (Ratings, CDS, CDS Vol, Spreads, Default Probability, absolute and relative yield variations)

– avoid too specific market targets in order to eliminate room for potential market manipulation?

☑ There are no predefined absolute barriers, all indicators are relative expectations and there is sufficient executive discretion

– equal treatment of short and long positions?

☑ The SRF does not differentiate between long and short positions