

---

**Problem set # 3**

Due: Thursday, October 26, by 5pm.

1. We are going to create a bespoke CDX index out of 5 underlying credits.

Pick 5 issuers of your choice that have CDS of at least 3 maturities in common.

Please try to get a wide variety of spreads.

- (a) Create a CDS survival curve for each of the issuers.
- (b) Convert each of these survival curves into a loss curve.
- (c) Create a bespoke index consisting of equally weighted CDS. The index should have 3 maturities matching those of the CDS. Calculate the fair spreads of this bespoke index for each maturity, assuming that index has a recovery of 40%.
- (d) Let  $(0, 5)$ ,  $(5, 15)$ ,  $(15, 30)$ , and  $(30, 100)$  be the tranches for this index. Further assume that all base correlations are 30% (for all tranches and all maturities). Compute the spreads of all the tranches.
- (e) Compute RPV01 and DV01 of all the tranches. What do you notice?
- (f) Working with the shortest maturity of the CDX, compute Jump-to-Default changes for each of the 4 tranches for each of the 5 defaults. How does this value change with the spread of the underlying?
- (g) Suppose you believe that correlation should be 50% and not 30%. What trade would you put on?
- (h) Can you make it dollar-neutral?