LIQUIDITY PUT DISCUSSION

- What "liquidity risk" are we talking about?
- The probability weighted cost may seem to be low, but the risk premium observed from similar markets is not.
- Arbitrage profit, if any, cannot be recognized until realized; FMV can't be entity specific

MODEL APPROACH PROPOSED BY THE BUSINESS

The model does not price the "liquidity risk" very well for the following reasons:

- Funding liquidity risk was not addressed at all, i.e. the risk of $26B hitting our balance sheet at the same time. It does not look at all the deals together for systematic liquidity breakdown.

- Only one of the five option exercise contingencies is captured by the model (the ABCP spread cap trigger)
  - CP fails to roll
  - ABCP spread cap trigger (realistically, before the spread trigger ever gets hit, CP investor should have already backed out)
  - Early termination condition exists (not likely)
  - Citibank downgraded "Credit Event"
  - Knock-out (CP Max Principal loss amount) reached (loss > $187M in Tierra Alta)

- Model calculates the credit loss due to liquidity put being exercised but not the liquidity risk itself

- Signaling effect not credited by the model. The backstop liquidity facility provided by a highly reputable bank sends a positive signal to other financial market participants (reduces information asymmetries)[1]

- Term-out fee (to extend liquidity put by one additional year) not considered; such fees were 12.5 bps in 2001, but increase to 25 bps in 2002[1].

- Risk premium cannot be easily modeled

QUALITATIVE SUPPORT FOR LIQUIDITY PUT VALUATION

ABCP Business (Jim Murray):

Overall Impression: Citi takes on virtually no credit risk being the Conduit manager. The 15 bps are primarily the compensation for the backstop liquidity risk.

Pool level credit enhancements (before assets enter the conduit):

- Haircut/gross-up reserve/OC
- Pool-specific loss reserve
- Guarantees or LC
- AMBAC surety bond
- Asset diversification
- No below-investment grade seller
- Strict rating criteria

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[1] "Pricing and Hedging of Contigent Credit Lines", by E. Loukoianova et al., 02/2004

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Combination of the above should give the conduit collateral with a shadow rating of AA per CRC. All commercial loans are fully supported (100% wrapped).

At conduit level, here are the additional program-wide credit enhancements and risk mitigation capabilities:

- 10% of the outstanding ABCP protection (min 250M up to $1.5B) in the form of AMBAC and Equity
- Liquidity funding becomes unavailable if surety bond provider becomes insolvent or credit enhancement has been reduced below certain amount
- The fact we are the manager, we could liquidate assets when seller rating drops
- Short tail risk 4% coverage (below certain OC levels, CP holders are exposed to credit risk of the collateral)
- As the conduit manager, Citi has negotiated a pass-through arrangement that when Citi is downgraded to A2/P2, CP will roll as A2/P2 paper; the actual funding cost is therefore passed on to the sellers (not limited to Libor + 35 like CDO ABCP)
- Citi owns credit risk, but we could actively monitor and manage the assets in the conduit. We can take the asset out of the conduit/restructure before taking any losses. Well established rules for liquidation are in place.

Other notes from the meeting:

- Conduit is set up as such that deteriorating assets will be liquidated way before the liquidity put gets exercised
- ABCP conduit experienced 55 asset liquidation historically but without suffering any credit loss
- According to Jim, ABCP is in the Banking book. Aside from this, there is no difference from the ABCP in the CDO book.
- Program fee covers AMBAC, Conduit management and reporting
- Overall, seller is paying 22.5 to 27 bps for AA rated high end asset (10 for program fee, 15 for liquidity, 1 for admin)
- Liquidity facility costs (10 -15 bps) for super AAA/AAA assets (negotiated position not traded position)
- ABCP drawn rate is 37 bps to 50 bps, in some cases can go up to 100 bps; unlike 35-40 for CDO
- ABCP on-balance sheet facility 25-30 bps; can go up as high as 75-100 bps
- Customer average size 200 MM - 300 MM
- Citi can pledge ABCP assets to Fed if necessary
- Pricing of WRAP does not take into consideration of pool level Ambac insurance; so the deal level insurance then is kind of "funny money" as Jim calls it

Extendible CP Program - Structured Credit Derivatives (Frank Pertusiello):

Overall Impression: The pure liquidity providing is valued at least at 10 – 15 bps; the counterparty reputation benefit in the backstop liquidity is valued at 10 – 15 bps

- Recently, the largest mortgage originators have set up this funding program to warehouse their loan production prior to sale or securitization
- Citi provides market value/cost of funds swap capacity for single-seller extendible CP sponsored by various mortgage dealers
- The swaps cover market value losses on sales of loans and interest rate movements while loans are in the SPV
- A1/P1 CP non-extendible is traded at L + 5 bps; corresponding extendible CP traded at L + 25 bps
- The primary cost saving comes from not having back-up liquidity lines
- If going with a back-stop liquidity facility, the overall cost will be 5-10bps higher

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- The reason for the swap is that that SPV needs to face a highly rated counterparties; Citi receives 10 - 15 bps as a swap provider
- Desk sees no credit nor liquidity risk to Citi except for the counterparty credit risk with the Back swap counterparty which is mitigated with CSA and other agreement
- Our swap has security lien against the SPV asset in case the Back Swap counterparty (A- Servicer) blows up; the risk is like a TROR with a margin account
- CP is of 90-180 day maturity extendible for 180 days
- SPV has real Equity and Mezz subordination; Equity is 2% cash reserve fund
- Since we are also the CP dealer, we can cash in and sell down the assets when SPV asset starts to default
- >75% loans held less than 90 days; the rest will have to be sold out within 1 year
- Program termination and wind-down provisions: Servicer defaults, cross-default, breach of portfolio criteria (min FICO, state concentration limits, min LTVs), breach of aging limitations, failure to maintain swap lines, etc.

CIB Treasury (Joe Martinelli):

Overall Impression: Backstop liquidity facility costs 12 – 15 bps

- When Citi is downgraded to A2/P2, put exercises; we have 15 days to convert to Funding notes; since we are facing same investors, the funding notes may not be repo-able
- The right liquidity risk to look at: 15 BB hits Citibank BS within 15 days period (need to look at the deals together for systematic liquidity breakdown)
- Citi have 55% of CDO liquidity put market (it is concentration risk as well as saying we are offering it cheap compared with competitors)
- The backstop liquidity provider would rather not deal with the CDO; but would deal with Citigroup directly for 12 – 15 bps; ie, CDO is not paying enough for liquidity puts
- 12 - 15 bps were charged internally as well as externally for conditional liquidity facility; MAR (market access requirement) costs 12 bps
- Our credit is more important to CP investors than the Super Senior collateral quality

Additional Indications:

- There is potential conflict of interest in pricing the liquidity put cheep so that more CDO equities can be sold and more structuring fee to be generated
- Diversy Harbour: we are holding both equity and the super senior note priced at L+ 24bps
- For some reason, the underwriting of SSGA was terminated

Conclusion:

Super senior credit risk:	~7 - 11bps
Backstop liquidity risk:	~ 10 - 20 bps

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