Calculation of Net Exposures to Complex Derivatives and other Computerized Analysis

1. How would your organization or community define “net exposures to complex derivatives”?

First of all it is important to mention that according to Brazilian legislation, OTC derivatives transactions must be analyzed, approved and registered by centralized systems authorized by Securities Commission and the Central Bank of Brazil, unlike the usual OTC model seen in the rest of the world. This process occurs in the Brazilian market since 1994.

Another specificity of the Brazilian market is the obligation during the registration to name and identify the beneficial owner of each transaction performed.

We consider complex derivatives the ones that are not possible to have the exposure calculated by the centralized system responsible for the registration of those derivatives. The concept is applicable, for instance, to derivatives transactions that combine more than one kind of derivative instrument.

2. Do you calculate net exposures to complex derivatives?

In the case of complex derivatives the parts involved in the bilateral transactions must inform electronically to the centralized system the MtM at least once a month.

Nowadays one of the centralized systems that is in charge of more than 75% of the OTC derivatives market in Brazil (and does not act as a CCP) calculates MtM in a daily basis, except the ones consider as “complex derivatives”. The institution is working to extend the service and to provide the calculation of “complex derivatives” in a short future.

3. What data do you require to calculate net exposures to complex derivatives? Does it depend on the derivatives instrument type? How?

The centralized system who received the authorization by Securities Commission and the Central Bank of Brazil to register OTC derivatives is responsible for requesting the parts (who intermediate and represent the buyer and the seller in the OTC market) all data related to each derivative transaction. This information must be provided during the registration process.

For each type of derivatives different kinds of data are requested.

4. Are there any difficulties associated with your ability to gather the data needed to calculate net exposures to complex derivatives? What are they?

No. See the answer of the question 3.

5. What other analyses do you currently perform on derivatives agreements? What kinds of analyses would you like to perform, and how could regulators and standards setters make those analyses possible?

The institutions authorized to hold registration systems must also have a monitoring department responsible for following OTC derivatives transactions registered. In this department several analyses are performed. Example: Analysts compare the rates of the transaction to those ones performed by the market and check if the parameters of the contract stay under a standard variation acceptable for the kind of instrument registered.

6. How often do you perform net exposure calculations at the level of your organization? Is it continuous and real time, only for periodic external reporting, or some frequency in between?

In the case of no “complex derivatives”, the calculation of the exposure is performed in a daily basis in the batch process. The entity who is in charge of 75% of the OTC derivatives transaction registered in Brazil is working in order to extend MtM calculation service for complex derivatives in a short future.

The information is also available in a daily basis to the parts involved in the transaction and also to the Regulators by reports and shortly by files.

Current practices concerning standardized computer descriptions of derivatives

7. Do you rely on a discrete set of computer-readable descriptions (“ontologies”) to define and describe derivatives transactions and positions? If yes, what computer language do you use?

Yes. The derivatives are represented on a discrete form by database model and transactions are described on xml and java language

8. If you use one or more ontologies to define derivatives transactions and positions, are them proprietary or open to the public? Are they used by your counterparties and others in the derivatives industry?

The clearing is proprietary of the database model. The xml messages and reports are available to counterparties. Historical series are published on the web site.

9. How do you maintain and extend the ontologies that you use to define derivatives data to cover new financial derivatives products? How frequently are new terms, concepts and definitions added?

The database model used is generic and flexible to adjust new functionalities. About transactions, if new functionalities are not supported by the actual, new xml and java codes are constructed.

10. What is the scope and variety of derivatives and their positions covered by the ontologies that you use? What do they describe well, and what are their limitations?

The model covers a large variety of derivatives like Swaps, Stock Options and Box, Term contract. There are no limitations. New requirements are developed under demand.

11. How do you think any limitations to the ontologies you use to describe derivatives can be overcome?

The model and the language used are scalable to support any kind of derivatives and evolution.

12. Are these ontologies able to describe derivatives transactions in sufficient detail to enable you to calculate net exposures to complex derivatives?

The system is prepared to calculate exposures that use calculate indexes. For indexes that the clearing don't know how to value we are not prepared to perform the calculation.

13. Are these ontologies able to describe derivatives transactions in sufficient detail to enable you to perform other analysis? What types of analysis can you conduct with this data, and what additional data must be captured to perform this analysis?

    Even if the ontologies were able to describe derivatives transactions sufficient detailed, analyzes as the ones described in the answer of the question 5 require a range of information from the market. For instance, market data must be captured and compared with the description of the transaction. That is the reason why one of the centralized systems that is in charge of more than 75% of the OTC derivatives market in Brazil counts with other systems to capture all information needed to perform analyzes.

14. Which identifier regimes, if any, do you use to identify counterparties, financial instruments, and other entities as part of derivatives contract analysis?
    N/A

Current use of standardized computer readable descriptions for messaging of derivatives transactions

15. Which computer language or message standard do you currently use to create and communicate your messages for derivatives transactions?

Xml messages and reports are used to communicate.

16. Is there a difference between the created message and the communicated message? For example, does your internally archived version of the message contain proprietary fields or data that are removed when it is communicated to counterparties or clearing houses?

All the fields used in the messages are the same for the clearing and counterparties

17. Are different messaging standards used to describe different contracts, counterparties, and transactions?

There are several messages to input different kinds of information such as: new derivatives, information of price, payments and financial settlement.

18. How and where are the messages stored, and do the messages capture different information from that information stored in internal systems?

The messages are stored in a database. There is no different information from the ones stored in the internal systems.

19. What information is currently communicated, by and to whom, and for what purposes?

The clearing communicates daily the counterparties, Securities Commission and Central Bank of Brazil the evolution of derivatives transactions by reports.

20. For lifecycle event messages (e.g., credit events, changes of party names or identifiers), are there extant messaging standards that can be update data relating to derivatives contracts that are stored in data repositories?

The counterparties can update contract characteristics until three days after the registration.

21. What other standards (i.e., FpML, FIX, etc.) related to derivatives transactions does your organization or community use, and for what purposes? Has your implementation of these standards had any effect on the way your business is conducted (e.g., does it reduce misunderstanding of contract terms, has it increased the frequency or ease to trades).

Actually the clearing use only messages defined by Central Bank (xml messages).

22. Is the data represented by this/these messaging standard(s) complete enough to calculate net exposures to complex derivatives? What additional information would need to be represented?

Further analysis can be made by data archives and reports.

23. In general, to what extent are XML-based languages able to describe a derivatives contract for further analysis? To what extent is other technology needed to provide a full description?

Further analysis can be made by data archives and reports.

24. What other analysis can be conducted with this data? What additional information should be captured?

    The Central of Exposures in Derivatives (CED) is an initiative of FEBRABAN, CETIP and BM&FBOVESPA, in partnership with ANBIMA in order to share information about exposures related to derivatives contracts signed between financial institutions and, mainly, companies. The main purpose of that is to reduce uncertainties and increase transparency.

Thanks to CED, banks will be able query their clients' positions registered at CETIP or BM&FBOVESPA. The main information that can be obtained is related to the notional amount, risk factor, tenor and short or long position. But it is important to mention that clients must authorize this query ensuring the confidentiality of the information.

25. Do you have plans to change your messaging schemes/formats in the near future?

No.

26. Are there identified regimes widely used in derivatives market for identifying counterparties, financial instruments, and other entities in messaging?

The need for standardized computer descriptions of derivatives

27. Would there be a benefit to standardizing computer readable descriptions of financial derivatives? What about standardization for a certain class/type of financial derivatives (i.e., CDS versus interest rate, or plain vanilla versus complex)?

The standardization of financial derivatives descriptions would be a benefit for both regular and complex derivatives. It would propitiate a better supervision by Regulators and also the exposure calculation improvement.

28. What would be the issues, costs and concerns associated with standardizing computer readable descriptions of financial derivatives? Are there existing standards that could or should be expanded (i.e., FpML, FIX, etc.)? Do the existing standards in this area have materially different costs or issues?
N/A

29. What would be an ideal ontology for you in terms of design, implementation, and maintenance of the data sets and applications needed for your business?

Actually we consider our model good enough for our business, but we are always looking for new and better alternatives.

30. How would a standardized computer readable description of financial derivatives be developed and maintained (i.e., a government-sponsored initiative, a public-private partnership, standard-setting by a collaborative process, etc.)? Are there current models that should be considered?
N/A

31. What is the importance of ontologies for the representation of derivatives data now and in the future?

The computer discrete model is important to support the business with readiness and effectiveness. Besides that we can give real time information to support the analysis and the decision process.

Implementation

32. Have you ever implemented a transition to a new data ontology, data messaging standard, or internal data standard?

Yes, new implementations are always built. Recently all derivative system was migrated from mainframe to java platform.

33. If yes, how did the perceived and actual benefits compare to estimated and actual costs over the short and long-run?

Java code may be reused so the development process is improved. Relational Database is generic and easy to be model. The interface for the user becomes friendlier.

34. What were the main difficulties that you experienced during a transition/implementation of new data standards? What could the organization developing and maintaining the standards do (or avoid) to help alleviate these difficulties?

The main issues are changes discovered after implementation and ensure that all de functionalities that we had on mainframe we have reproduced on java platform. The suggestion is to do a more detail specification.

35. Would it be useful to use a standardized, computer readable description for financial derivatives instruments? How would it be useful? Would such a standard be useful for communications transactions, storing position information, both, or other purposes? What would be the costs involved?

    It would benefit analyzes performed. But everything point out on the answer of the question 27 must be consider (mainly the OTC nature).

36. How should regulators and standard setters implement description standards in the derivatives market?

    It is important to develop the standardization process together with the market. The process should not interfere dramatically in the way transactions are performed. Everything point out on the answer of the question 27 must be consider (mainly the OTC nature).

Making computer descriptions legally binding

37. Are there currently aspects of financial derivatives messaged in a computer readable format that have a legally-binding effect?

In Brazilian OTC market, the juridical relationship between the parts is the contract and its respective annex, the same as ISDA (Master Agreement + Confirmation). Unlike other countries, here we have the electronic register which is not a legal demand for the formalization of the contract (which is based on the Civil Law) but a requirement for financial institutions (that is why it is mandated by the National Monetary Council – CMN instead of by a Law).

In the opinion of CETIP, this register is binding since the contracts foresees that the operation will be registered and that both parts are subordinate to the rules and procedures of the trade repository (CETIP or BM&FBovespa).

For your information, the great majority of operations between banks are made without confirmation, just with the master contract and the double instruction.

38. What information, if any, is not captured that would be required to make the computer descriptions themselves, without reference to other materials, legally binding?

The register must reflect the contract, then all information are captured.

39. What information would need to be captured for a legally binding contract that would not need to be captured for analyzing the contract? Is there a substantial cost differential between the process needed to capture one set of information versus another?

In the opinion of CETIP, information not captured is not necessary to analyze the operations (they are conditions and procedures foreseen in the contract like early termination (cross default, ownership, covenants, etc), guarantees, etc).

40. Would there be a benefit to making the computer readable descriptions of financial derivatives legally binding? Would there be drawbacks? What are they?

The stronger the legal linking of the register, more comfortable the institutions will be to use it instead of an executed confirmation. In this case, the parts would be more aware about the accuracy of the registered information.

Other

41. Is there other information not called for by these questions that we should consider?

No.