MIFID complex and non-complex financial instruments
for the purposes of the Directive's appropriateness requirements
Comments by
Prof. Umberto Cherubini – University of Bologna

In this document I summarize my comments and remarks on the Consultation paper "*MIFID complex and non-complex financial instruments for the purposes of the Directive's appropriateness requirements*", issued by the CESR on May 2009. with particular reference to the views expressed in Section 2, concerning the classification of complex and non-complex of various types of money market instruments, bonds or other forms of securitized debt.

My general comment starts from the answer to **Questions 15**. In my view, reference to the presence of derivative products embedded in an instrument is not a sufficient condition for classifying the instrument as complex or not. The reason why it is not sufficient is that in principle any bond or debt instrumebt embeds a derivative contract. The most obvious example is the option representing credit exposure. Any bond in fact includes a short position in a put option, whose value represents the expected loss on the bond. Whether or not the presence of this put option may be considered relevant actually depends on the relevance of its value with respect to the overall price of the product, that may be altered by more complex provisions, such as subordination clauses.

So, certainly, the presence of embedded derivatives cannot be considered sufficient to deem a product as complex. One should add some clarification, such as: "*the presence of derivative contracts that include exposure to new risk factors and/or artificially increase the exposure to the risk factors of the instrument*". In this document, I would stick to this definition and use it to show how it could adjust many inconsistencies that instead arise from the approach taken in the Consultation paper.

I see two main sources of inconsistency in the treatment of the Consulation paper:

1) **Questions 11, 12, 17.** The Consultation paper addresses the problem of securitized debt by concluding that, *ipso facto*, it cannot be considered as non-complex, while it grants the classification of non-complex instrument to subordinated debt. In this case the inconsistency is huge: on one side, a super senior tranche of a securitization deal or a synthetic covered bond are deemed complex instruments even though the relevance of the credit derivative in the price is non-existent; on the other side, a subordinated debt issue by a bank or a non financial firm, which is genuinely a call spread (what we define a "complex position in options" in finance textbooks) is deemed as non-complex. This giant inconsistency arises not only because the Consultation paper sticks to the rule of the precence of embedded derivatives, but also

because the rule is not actually applied to the case at hand. This is clearly evident from the sentence of the Consultation paper, in which it is proposed to consider securitized debt issues as complex products "*even where there may be a question as to whether or not they embed a derivative*". Now, there is no question at all that every securitized debt embeds a derivative, so much so that in the financial literature we have defined a new term for these products, and we call them "*tranches*". A *tranche* is a bond characterized by the presence of an "*attachment*" and a "*detachment*" which represent the strike prices of a position in derivatives. From an equivalent point of view, a *tranche* is characterized by a degree of subordination. It is then not possible to justify why a subordinated bond should not be considered like a *tranche*. **The Consultation paper should have included the concept of *subordination* (which implies the presence of a complex position in options) among the reference features to define a financial product as complex.**

2) **Question 20. It is very striking that products including interest rate derivatives are not explicitely mentioned in the list of complex instruments. Would this mean that caps, floors, or even reverse floaters or CMS bonds would not be considered complex?** Notice that in these products the underlying of the derivative contract is neither a bond index or any of the other choices proposed and listed in Annex 1. I would remind the reader of a real story occurred in Italy, and which ended up on the newspapers, of an old man that entered a bank to buy an indexed bond, and walked away with a reverse floater (an indexed bond, no doubt about it) on which he would soon have lost most of his investement. The reason behind exclusion of these products, which make the bulk of the structured finance market, is again the impossibility to only rely on the presence of embedded derivatives. On one side, in fact, sticking to this rule would make all floaters (that we define as bonds in which the coupon move in the same direction as an interest rate) complex instruments: after all, they are nothing but a collection of forward rate agreements, which are the first example of a derivative contract. On the other side, if a floater is not considered a complex instrument, it is not clear how to justify why a reverse floater (a bond in which the value of coupon changes in opposite direction with respect to underlying interest rate) should be considered complex, even though everyone knows it is. Again, the reason is that the presence of a derivative contract is not sufficient. **The difference between a floater and a reverse floater is that in the former case one *may* overlook the presence of a derivative, that is designed to make the instrument safe, while in the latter one *must* be aware of the presence of a derivative, because it is made to artificially increase the sensitivity of the product changes in interest rates.** What about caps and floors (but we could extend to cliquet and reverse cliquet, digital coupons and the like)? Can we really state that these products are not complex? Just like floarers and reverse floaters, they are not listed in Annex 1. In this case, the presence of a derivative is straightforward, and it modifies the nature of the product "*adding a level of*

complexity to the understanding of the characteristics and valuation of those instruments." Actually, the presence of derivatives a new risk factor, of which the investor should be aware, that is the sensitivity to volatility. Notice that it is the non linear nature of the derivative that introduces the sensitivity to this new risk factor. So, **bonds with caps and floors, either plain vanilla or, *a fortiori*, exotic, should be considered as complex products, because they make the product sensitive to a new risk factor, which is the volatility curve**. **By the way, this is actually the only reason why we do agree that callable and putable bonds must be considered as complex instruments (Question 16).**

Before I finish I would like to signal a bad mistake in footnote 22, page 15, which reads: "*A convertible bond is an instrument that gives the holder the opton to convert the bond for other securities (usually shares issued at the time of conversion) offered by the issuer. An exachangeable bond (or reverse convertible bond) gives the holder the option to exchange the bond for securities of a company other than the issuer of the bond or for pre-existing securities of the issuer of the bond, at a future date under prescribed conditions.*" This sentence contains a sure mistake and very questionable definitions.

- The sure mistake is that a reverse convertible bond it is the issuer, and not the holder of the bond that has the option, opposite to convertible bonds for which it is the holder of the bond who has the option. For this reason a reverse convertible embeds a short position in a put option, which decreases the price, while a convertible bond features a long position in a call option, which increases the price.
- The definition of *exchangeable bond* is questionable, and for sure the association to a reverse convertible is badly mistaken. The definition of exchangeable bonds is actually linked to that of "*echange option*", and can be associated both to convertible and reverse convertible bonds. An exchange option is defined as an option in which the strike is the price of another asset. In convertible and reverse convertible bonds, an *exchange option* arises if the exercise date of the conversion option is before the maturity of the bond. In this case the bond, if we call τ the exercize date, $p(\tau)$ the value of the bond at that date, $S(\tau)$ the value of the shares at the same date and *n* the number of shares per bond, the price is decomposed as

  $$p(\tau) + \max(n\, S(\tau) - p(\tau), 0)$$

  for a convertible bond and

  $$p(\tau) - \max(n\, S(\tau) - p(\tau), 0)$$

  for a reverse convertible bond.

  In both cases, the bond embeds exchange options and there is no reason whatsoever why only the second should be defined an exchangeable bond.
- The reference that is made to the fact that convertible bonds refer to cases in which new shares are issued by the same issuer of the bond has to do with the dilution factor and not with the very nature of the position in options that is the

real discriminant between convertible and reverse convertible bonds. To be clear, a bond giving the holder the rigth to convert the bond in a number of shares (issued by whomever) is a convertible bond, and if the shares will be newly issued (again, by whomever), than it will involve a dilution factor.

Concerning the blunder above, it should be adviceable that Consultation paper would refer to the relevant literature on the subject. Providing a consistent taxonomy of financial products is by no means a straightforward task. I refer to my book: *U. Cherubini, G. Della Lunga, "Structured Finance: The Object Oriented Approach", John Wiley Finance Series, 2007*, for more details. Anyway, as far as the distinction between a convertible and a reverse convertible bond is concerned, any standard textbook would do.

Umberto Cherubini
University of Bologna