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European Credit Research
J.P. Morgan Securities Ltd.
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All you ever wanted to know about corporate hybrids but were too afraid to ask

See inside for some quick answers to the following key questions

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Why are companies issuing hybrid capital securities?

The cynics amongst us might say: "Because they can." Then again, put yourselves in a corporate treasurer's position and imagine that you've been given the green light by the ratings agencies to issue notes or instruments that are: (i) sufficiently debt-like that your interest payments to noteholders are tax deductible; and (ii) sufficiently equity-like that your financial ratios are improved. In this context, the question for the cynics should be: "Why shouldn't they?"

The bottom line is that hybrid capital instruments increase flexibility and add an additional string to the corporate treasurer's bow. Specifically, the ability to access risk, or synthetically access equity capital might be particularly attractive to a company that is, for example, keen to bolster its balance sheet in an attempt to maintain its ratings profile. This might be relevant in the context of potential M&A transactions that would threaten current ratings if conventionally funded through senior debt issuance alone. It could be particularly significant for privately or state-owned enterprises without access to the equity markets.

Clearly, from the perspective of the classic U-shaped weighted-average-cost-of-capital curve, the incentive to issue hybrid capital instruments increases the further one migrates down the ratings spectrum, at least in investment grade.

The multiple possible attractions of hybrid securities are illustrated by one interesting possibility that we have considered: that companies could issue hybrid securities in order to fund pension deficits. This would potentially have three benefits:

1. contributing cash to the pension fund allows returns to roll-up tax free;

2. senior creditors benefit as a super-senior liability is replaced with a subordinated liability; and

3. since Moody's looks at the gross rather than net pension deficit, the reduction in debt-like liabilities is larger than if proceeds are used to refinance senior debt.

From a shareholder's point of view, hybrid capital is mixed news, although we don't think that it will be a major issue for the equity market either way. Insofar as hybrid capital is replacing senior debt, it will be negative for earnings due to higher interest payments. However, this cost brings the benefit of equity credit at the agencies, which could lead to lower cost of senior debt and additional financial flexibility.

How do the rating agencies analyse these securities?

Moody's and S&P take a fairly similar approach to discerning the "equity content" of hybrid securities, but there are small differences in the importance assigned to various features of individual hybrids. However, they take very individual approaches to adjusting financial ratios for hybrids.

In the Moody's scheme, hybrid instruments are classified according to where they fit on the "debt-equity continuum". The three key features of equity for Moody's are:

1. absence of maturity;

2. no requirement for ongoing payments; and

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3. ability to absorb losses for creditors.

Moody's new instrument committee scores a new hybrid instrument against each of these criteria, assessing its "equity value" as none, weak, moderate or strong. These three scores, together with analytical input with regard to use of proceeds and the overall flexibility of the security, place the hybrid into one of five baskets (A-E). For example, basket D treatment implies 75% equity credit. It is this measure that is used to adjust the financial statements, so a basket D hybrid is treated as 75% equity on the balance sheet, with 75% of the coupon classified as dividends rather than interest. Assuming that hybrid proceeds are used (at least initially) to reduce senior debt, it therefore has a 75% "deleveraging" effect.

Table 1: Treatment of hybrids for ratio purposes at Moody's

Basket	A	B	C	D	E
Treatment	100% debt 0% equity	75% debt 25% equity	50% debt 50% equity	25% debt 75% equity	0% debt 100% equity

Source: Moody's

S&P uses a fairly similar approach to classifying hybrids according to their ability to mimic the features of equity in protecting creditors and credit quality (although it seems to assign additional importance to the expected permanence of the hybrid in the capital structure). Hybrid instruments are assigned "equity credit" of between 0% and 100% based on the features of the instrument. However, S&P does not bifurcate the hybrid between debt and equity for the purposes of ratio analysis. Rather, the ratios are calculated with the instrument treated as debt or left out of the analysis of financial liabilities ("equity treatment"), and both sets are then considered by rating committee, although with the emphasis falling on one set or the other, depending on how equity-like the instrument is considered. We think that, from now on, the published ratios will be based on debt treatment for instruments with less than 50% equity credit, and on equity treatment for those with more than 50%, with those in between left to analyst discretion.

What has changed recently with regard to ratings and hybrids?

We believe that a major factor in the recent spate of hybrid issuance has been a change in Moody's criteria. In general, the agency has allowed certain features of some instruments to achieve additional recognition, with the result that a more equity-like basket can be achieved.

For example, a perpetual bond with a call allowing cash repayment used to mean no equity credit for absence of maturity. The agency now considers that this is unfair because utilising the call in a hybrid is no more harmful to credit quality (and possibly less harmful) than making a common stock repurchase, which is something the company could do at any time. As a result, it now regards a perpetual bond with a cash call as having "weak" equity characteristics. In other changes, mandatory deferral of coupons tied to a pre-specified trigger is now seen as a strong rather than moderate feature, provided there it is non cumulative. Similarly, optional deferral and the ability of subordinated debt to absorb losses is also stronger. Moody's cites experience of the behaviour of subordinated instruments (mainly in the US) and also more active management of capital structures by companies as drivers of these changes. Judging by the examples that Moody's has given, it seems that the net impact of the changes is often to give 25% additional equity credit (i.e., one basket) in calculating ratios.

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A less significant change announced in the recent paper is that Moody's has changed the way it adjusts fixed charge coverage for hybrids. Previously, there was no adjustment for the equity credit achieved on a hybrid (ie it was all treated as interest charges). Now, it is adjusted in line with the balance sheet treatment.

S&P has not changed its actual methodology recently, but it has changed the presentation of "equity credit". It has said it will no longer publish the percentage score which an instrument achieves, because it believes that this was misleading to issuers and investors. Since there was never fractional adjustment to ratios, the agency believes there has been undue focus on the exact percentage assigned. It will in future indicate that it regards a hybrid as having minimal, intermediate or high level of equity content. In practice, it seems like high equity content is primarily going to be reserved for instruments with early triggers for deferral of coupons or where near-term conversion into common equity is expected, while minimal content is really for pure subordinated debt with no additional equity-like features such as ability to pass coupons. We would expect all of the hybrid capital discussed here to be intermediate.

Can you give me a theoretical example of the rating agency treatment?

Below is a theoretical example of how we think ratio adjustments would be made by the agencies for a theoretical (and admittedly very simple) corporate. The assumptions we make are that:

1. the company pays down senior debt with the proceeds of issuing 10mn in hybrid securities;

2. the instruments receive 75% equity credit at Moody's and are judged to have intermediate equity content at S&P;

3. cost of senior debt is 4% and of hybrid notes 5%; and

4. in S&P's analysis the agency calculates interest coverage based on the coupons being classified as dividends, but as a fixed charge in calculating fixed charge coverage.

The effect of the agencies ratio adjustments are therefore:

Adjustments to ratios made by the agencies (JP Morgan calculations)

		Moody's Treatment		S&P's Equity Treatment		S&P's Debt Treatment	
	Before Issuance	Adjustment	New Ratios	Adjustment	New Ratios	Adjustment	New Ratios
Assets	200.0	0.0	200.0	0.0	200.0	0.0	200.0
Debt	150.0	(7.5)	142.5	(10.0)	140.0	0.0	150.0
Equity	50.0	7.5	57.5	0.0	50.0	0.0	50.0
EBITDA	40.0	0.0	40.0	0.0	40.0	0.0	40.0
EBIT	25.0	0.0	25.0	0.0	25.0	0.0	25.0
Net Interest	6.0	(0.3)	5.7	(0.4)	5.6	0.1	6.1
EBT	19.0		19.3		19.4		18.9
Debt/EBITDA	3.8x		3.6x		3.5x		3.8x
EBITDA/Net Interest	6.7x		7.0x		7.1x		6.6x
Fixed Charge Coverage					6.6x		6.6x

Source: JP Morgan

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What are the consequences of the agencies using different approaches?

We would tend to agree with S&P's assertion that "there is just no tidy way to adjust financial ratios to reflect the nuances of complex structures". As such, we think its "two sets of ratios" approach is more analytically sound. We also think it more accurately reflects the rating process. Obviously, the financial ratios are but one element of a rating assessment and analysts sitting on a Moody's committee no doubt take account of the make-up of the capital base aside from the ratios.

In our own analysis of corporates that have issued hybrid capital, we would look at senior leverage and total leverage in a similar way to a high-yield structure with multiple layers of debt. In either case — HG hybrid structure or a HY senior-sub structure — we don't really see that bifurcating the instrument makes a great deal of sense. In the end, the coupon is either paid or it isn't, and the debt is either loss-absorbing for senior creditors or it isn't. Similarly, we don't think that a company with $100 of debt is really equivalent to one with $80 of debt and $40 of hybrid securities that have been awarded 50% equity credit.

Against the increased analytical "soundness" of S&P's approach, however, is what we consider to be a lack of clarity. From the point of view of both issuers and investors, it is helpful to know the actual ratios that Moody's will be using in its rating committee discussions.

There are also important consequences from the fact that the agencies give different amounts of credit for different features. This can make the structure of a hybrid, largely a question of balancing the criteria of the two agencies. As an example, with regard to coupon deferral, S&P's focus is on the management option to defer relatively freely. However, Moody's view is that "history shows that the deferral option is not likely to be used" and real comfort is provided by pre-agreed triggers for deferral rather than management options.

This leads to an interesting dilemma for Baa1/BBB+ corporates wishing to sell hybrid capital with investment grade ratings. The inclusion of an compulsory trigger is sufficiently negative for the credit quality of a hybrid that S&P is likely to insert an additional notch below senior – the agency explicitly did so in the case of the recent Vattenfall issue. This is despite the fact that in S&P's view, the relevance of the trigger is limited because it is much lower than the current ratio.

Hence, from a pure S&P perspective it might be tempting to leave out the trigger, and if a BBB+ company wants to issue investment grade hybrids, it may have to issue with no compulsory trigger. However, Moody's regards the "no ongoing payments" feature as being only moderate rather than strong without that trigger, which may well be sufficient to move a basket towards debt – and indeed DONG seems to have been given basket C treatment v. basket D for other recent hybrids on this basis.

How do the agencies notch hybrid capital down from senior ratings?

The agency policy for notching hybrid capital down from senior ratings has not been articulated as clearly as the treatment of those hybrids for credit assessment purposes. However, the anecdotal experience is that Moody's is generally putting hybrid capital two notches lower as standard for "deeply subordinated" securities.

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S&P seems to use criteria similar to those it applies to preferred stock. The base case for preferred stock of an investment grade company is a two notch differential. However, in the case of Vattenfall, S&P gave one notch for contractual subordination, one notch for the option to defer coupon payments, and a final notch for the compulsory coupon deferral that occurs if FFO interest cover falls below 2.5x. The proposed DONG transaction, with its absence of compulsory deferral trigger is only two notches below senior at S&P.

How are these instruments treated for tax purposes?

A key part of making hybrid capital attractive to issuers is debt treatment by tax authorities, allowing coupon payments to be made before tax and therefore substantially lowering the cost to the issuer. We think that all current issues have achieved this in their individual jurisdictions, and we believe that all innovative Tier 1 issues from banks have achieved debt treatment, so this should also be possible for corporates. DONG, for example, may have put a 1000 year maturity on its bond rather than have it perpetual, in order to get debt treatment under Danish tax law.

Under IFRS, how are these instruments treated?

The relevant rules for accounting for hybrid capital under IFRS are in IAS 32. The standard states the instrument is classified as a financial liability or as an equity instrument in accordance with the substance of the contractual arrangement. If there is a contractual obligation to deliver cash or another financial asset, or to exchange financial assets or liabilities on potentially unfavourable terms, then the instrument is a financial liability (see IAS 32 para 11 and para 15-16). Coupons on financial liabilities are interest payments for the income statement and cash flow statement, while coupons for equity-accounted instruments will be regarded as dividends.

Per the Application Guidance (IAS 32 AG25-26), which we think is relevant, preference shares may be financial liabilities or equity instruments, depending on the particular rights attached. A preference share that provides for redemption on a specific date or at the option of the holder is a financial liability. When they are non-redeemable, the appropriate classification depends on the rights attached. When distributions to the holder are at the discretion of the issuer, they are equity instruments. We understand that the 100bps step-up in the recently issued hybrid capital has been agreed by the auditors of at least some of the issuers to be an encouragement to redeem rather than a compulsion.

Interestingly, IAS 32 explicitly states classification of a pref as debt or equity is NOT affected by:

1. a history of making distributions; or

2. an intention to make distributions in the future; or

3. a possible negative impact on the price of ordinary shares of the issuer if distributions are not made (eg because of restrictions on paying dividends on ordinary shares if dividends are not paid on the prefs).

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To summarise, if the economic reality is that the notes are perpetual and the issuer does not have to pay interest, it is equity; otherwise it is debt for accounting purposes. In effect, the notes are in a grey area (e.g., although the rule says that a redeemable note must be a financial liability, one could argue that redemption in 1,000 years is perpetual in economic substance).

In fact, it seems that classification of hybrid capital as debt or equity will be at issuer discretion. We guess that some will choose equity as this will improve balance sheet strength and credit ratios. However, some may choose debt treatment in order to: a) avoid the appearance of improving ratios via financial engineering; b) allow hedge accounting to be used on a swap that might be put in place related to the issue' and c) potentially strengthen tax analysis.

How do the claims of holders of hybrid securities rank in comparison to holders of other securities?

It is clear that hybrid securities are deeply subordinated instruments but it is not completely clear if they are debt or equity in the context of insolvency or a company restructuring. The extent of subordination is usually captured within the terms governing the particular security. Hybrid securities are usually described as "direct unsecured and subordinated" obligations of the issuer and then the terms go on to specify how the hybrids rank in relation to other obligations. This type of language is typical of most terms governing bond issuances, obviously varying in terms of security and subordination.

One of the interesting things to note is that while it is clear that hybrid securities rank junior to other debt (existing at the time of the issuance), their ranking in relationship to equity may vary. In fact, language in the various issuances may be quite different. There are provisions that suggest the hybrid securities are senior to equity because either the language around subordination is in respect to other obligations only (with no mention of equity) or it specifies that the particular security ranks in priority to all classes of share capital. There is also language, however, that states the security ranks in priority to common stock, which leaves the position in respect of preferred stock unclear. In the latter example perhaps there is a stronger argument that the particular hybrid issuance is equity rather than debt like.

When and why does the legal ranking of hybrids matter?

Ranking is important in respect of the priority of distribution in liquidation (particularly insolvency) and it may also matter in the context of company reorganisation. We think that holders of most corporate hybrids have no remedy outside a bankruptcy type event (making them similar to preferred stock). In the unlikely event of an actual bankruptcy, holders would technically have a claim where preferred stock would only have an equity interest. However, in reality, this may not impact the ultimate economic outcome for hybrid holders.

In a liquidation scenario, once the priority and secured claims are satisfied the next category is the unsecured general creditors. Within that group, the holders of hybrid securities may have a claim (if it is deemed to be debt) although in reality due to contractual subordination it is unlikely that they will be paid until other creditors have received their share. Holders of equity in a liquidation scenario receive proceeds only once all creditor groups have been paid out.

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If the liquidation is due to insolvency, then the reality is that shareholders are unlikely to receive anything. Determining whether hybrid securities are equity may not be as important in an insolvent liquidation as, given the deeply subordinated nature of these instruments, there is a limited likelihood of any payout.

Whether hybrid securities are debt or equity may be more interesting in the context of company reorganisation although that may depend on the jurisdiction in which the reorganisation is taking place. In England, most reorganisations are conducted out of court and companies will endeavour to obtain the approval of creditors and/or shareholders. In the US, however, Chapter 11 of the Bankruptcy code is more of a court-oriented process. If the holders of hybrid securities consider themselves debt holders then they may form a creditor class. This may give them some bargaining power, as the consent of different classes is required to approve a plan. That said if the holders were unduly delaying the plan the court has always got the ability to "cram-down" their claim. In addition, courts may also re-characterise debt as equity if they consider it equitable to do. There are a number of factors a court may consider in respect of such re-characterisation, including the holders' ability to assert their claim against an issuer through the demand for payment. Courts will focus on whether the holders have the risk of owning the company and whether the instrument is really a contribution to equity. The hybrid securities, that we have considered, are not governed by English or New York law (which tends to be the governing law for many debt issuances) nor are the companies incorporated in those jurisdictions. Investors should note that the jurisdiction of insolvency cases does not necessarily follow the place of incorporation of a company; it is focussed on the centre of main interests.

In summary, whether hybrids are treated as debt or equity, we believe that, given the level of subordination, there is not a strong likelihood of recovery in insolvency and it is arguable whether there is much bargaining power in the case of reorganisation.

What does the replacement language mean?

The replacement language in hybrid securities is a statement of intention from the issuer that the hybrids will form a permanent part of the capital structure. As such, it intends to redeem hybrids with the issuance of new hybrids or new equity. The issuer also intends that any new hybrids would have replacement language similar to the original. In the case of Suedzucker, there appears to be stronger language whereby the exercise of the call seems to be dependent on issuance of an equivalent amount of similar hybrids or more junior capital.

We believe that the rating agency puts quite a lot of store by these statements in terms of judging the permanence of the capital. However, we are sceptical of the value of a statement about management intention in ten years time when the first calls become exercisable. In addition, if hybrid bonds were to be redeemed with senior debt, with possible adverse affect on senior credit quality, we would note that the statement of intention was only to be found in the documentation for the hybrids, which have now been redeemed, and was an agreement to which senior creditors were not party.

We also can't help but wonder about a company's possible actions if there is no market for hybrid securities at the time of the first call. If the company is unable or unwilling to issue common equity, then there may be contradictory outlooks.

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Holders of the hybrids are expecting the call to be exercised, but senior creditors/rating agencies are expecting permanent hybrid capital. A company may not be able to fulfil both sets of expectations.

How do the deferral mechanisms work?

There are slight differences but, conceptually, the coupons may be deferred by either management option or compulsory triggers. Looking at these separately:

- Management may choose to defer coupons at any time if certain criteria are met. To limit the risk of deferral, there is a dividend linkage whereby the company's ability to pay dividends is linked to coupons not being deferred. This can take the form of making coupons compulsory following dividends in the last twelve months (a "pusher"), and/or preventing dividends if coupons are deferred (a "stopper"). The effect is much the same, in our view. In addition, coupons deferred by management option may be cumulative, and sometimes also compounding.

- Compulsory triggers are also in place in some of the issues, the purpose being to ensure cash preservation at a time of credit quality decline. Coupons deferred under these circumstances are not cumulative. Sometimes there is a stopper on dividends for a year after the deferral.

How different are these securities to innovative Tier 1issued by banks?

The structure of the corporate hybrid notes that have recently been issued is similar to the Tier 1 securities issued by banks, although in Tier 1 mandatory triggers, where they exist, are tied to regulatory requirements. The other differences that we perceive are:

- The motivation for issuance is different. Banks issue innovative Tier 1 instruments because it is a cheaper way of making up the total capital base required by regulatory demands for solvency. This regulatory "arbitrage" means that there is an incentive for even very strong banks to issue Tier 1. Very highly rated corporates are unlikely to issue hybrid capital in our view – additional senior debt is likely to prove more economical. The "arbitrage" that corporates are accessing is a essentially of rating agencies – at Moody's there is 75% equity credit for capital that has a cost well below 75% of the cost of equity. The tax-deductibility of coupons is an important element of this, in our view.

- The "replacement language" in corporate securities, even when replacements are required to exercise call options, is a much weaker compulsion to refinance with risk capital than the requirement on banks to maintain its capital ratios.

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- The need to maintain unfettered and immediate access to the capital markets is a requirement for a large bank to remain a going concern. In building a valuation framework for bank Tier 1 (*Are Tier 1 Valuations Stretched?*, January 2005), our colleagues assumed that coupon deferral had the same probability as default since coupons would only be passed in very extreme circumstances and default would likely follow soon after. Corporates obviously do need access to capital markets, but we think that a corporate could theoretically defer a coupon in less extreme circumstances because its need to re-access the markets is less immediate and urgent to its status as a going concern.

- The maturity of the markets is very different at this juncture. We think that the Tier 1 market plays an important role in the whole banking system now and a bank passing a coupon or failing to call a security at the first call date because replacement funding would be at higher spread, rather than because it was unable to, could badly affect this market. This puts substantial pressure on banks not to do so. In the event that a mature market for corporate hybrids comes into existence a similar situation may develop, but this is uncertain for now.

As an aside, we think that the subordinated triple-B paper issued as part of the whole business securitisation structure used by some UK water companies is a sort of regulatory arbitrage. These securities are structured to look like debt to investors, but risk capital to the regulator, and therefore do have some more limited similarity with Tier 1, but the structure of the securities is very different.

Is there a limit to the amount of hybrid capital than can be issued?

The amount of Tier 1 that a bank will issue is limited by the amount of innovative securities that the regulator will allow within the capital base. No more than 15% of total Tier 1 capital can be made up of innovative securities rather than pure equity. Corporates have no such limitation, but rating agencies are likely, in our view, to act as a de facto cap on the amount of hybrid capital a corporate will issue. S&P has addressed this issue specifically in stating that

1. with regard to the credit impact of hybrids, while there is no specific limit on how much hybrid can get equity credit "at some point, one would question a company's creating a capital structure with an unusually large proportion of newfangled securities"; and

2. With regard to notching, in the case of preferred stock (and the agency seems to see a good deal of similarity between hybrid capital and preferred stock) S&P states that if prefs were to make up more than 20% of the company's capitalisation, there would likely need to be additional notching below senior for prefs/hybrid capital.

How should I value these hybrid securities?

We have developed three basic concepts for determining the fair value spread on a hybrid capital compared to the spread on senior debt. The first two are essentially "rules of thumb", while the last is to build a full valuation framework computing the additional spread required for each of the features.

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Trading Spreads and Senior Hybrid Multiples (mid levels)

	10Y Senior	Hybrid	Multiple
Vattenfall	45	155	3.4
DONG	60	191	3.2
Suedzucker	65	198	3.1

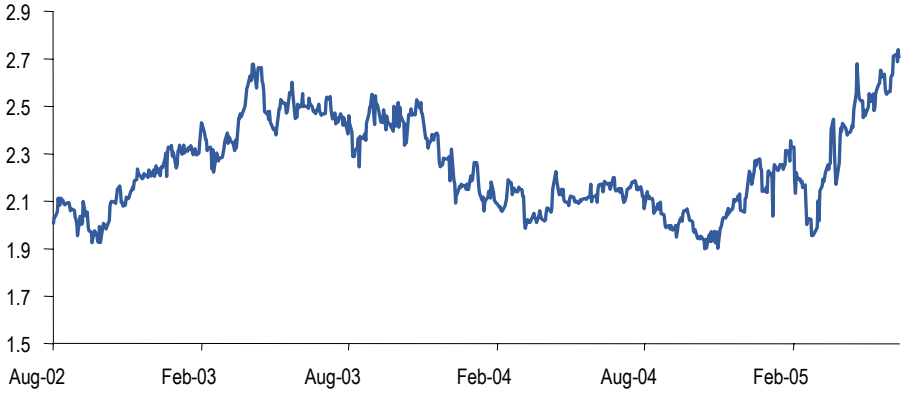
10Y senior levels are based on current CDS markets
Source: JP Morgan as of 3pm on July 11

Multiple of senior spread

In the bank market, traders and investors often think in terms of spread multiples between Lower Tier 2 and Tier 1, where the maturities/call dates are matched[1]. The different features of different securities mean there are adjustments (in particular there is a higher multiple for "non-step" securities that have a call date but no step-up). However, in broad terms, a multiple of three is often considered by the market as about right. When the Tier 1 market was being established, the average multiple was above three, but this has compressed as the market matured to stand closer to two now.

In the chart below, we show the recent relationship between Tier 1 and Lower Tier 2, but the ratio is artificially high because the Tier 1 index includes the recent non-step deals which trade at much higher multiples (up to 4x) than traditional Tier 1.

Ratio of Tier 1 Spreads to Lower Tier 2 Spreads over Time



Source: JP Morgan

This broad approach could be applied to corporate hybrid capital, although we might expect multiples to be a little higher given the compulsory deferral features, the relative immaturity of the market and the lower ratings of the corporate hybrids. We believe that this is how the hybrids were initially priced and valued on this basis.

Part of the equity risk premium plus part of the senior debt spread

If we accept that the rating agency assessment of equity credit reflects the proportion of equity and debt risk assumed by the owner of a hybrid security, then it would make sense for the return to be a commensurate percentage of the equity risk premium for that company. This would mean that the yield on a hybrid receiving 75% equity credit at Moody's should be

75% of the equity risk premium
plus
25% of the senior spread
plus
the risk-free rate to the call date

This exercise is hampered by the uncertain nature of the equity risk premium, especially for unlisted companies.

[1] We regard Lower Tier 2 as the most senior level of risk capital for a bank. Senior debt itself is funding rather than risk capital.

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However, for a single-A corporate, a reasonable estimate of the equity risk premium would be 3-4%, in our view. Without going through a specific example, it is clear that this would lead to yields considerably higher than those currently available on the hybrid notes.

In our view, this is because the market does not believe that the amount of risk assumed is as high as the amount of equity credit the agencies are awarding. These notes may have a large proportion of "equity value" in terms of preventing default, but they do not have the capital accumulation/residual value element of uncertainty which is the key feature of common equity.

A valuation framework based on senior plus adjustments for options

Our bank colleagues have attempted a full valuation for Tier 1 securities (*Are Tier 1 Valuations Stretched?* January 2005). We will attempt to replicate it for corporate hybrids below, and we think that we come to a number resembling a "floor" for the valuation of the hybrids. In reality, we would expect spreads to be higher than this, to reflect a "liquidity" or "uncertainty" premium for these new instruments.

1. Subordination.

This is actually the easiest feature for which to adjust as this is really just a question of changing the recovery rate. We assume that senior debt for the issuer is trading on the very well established CDS market convention of 40% recovery rate. We then think it is reasonable for the subordinated debt to have a recovery of zero. We regard this as a conservative but justified assumption – one of Moody's arguments for making its framework for equity credit more generous was that recovery on deeply subordinated paper was proving more similar to equity than to senior debt.

Therefore, using the relationship that

*Spread = probability of default * (1-recovery rate)*

Spreads on zero recovery instruments should be 1.6x (1/0.6) larger than spreads on 40% recovery instruments.

There is an argument that this does not constitute a full adjustment for subordination. For example, as discussed above, hybrid securities are likely to have very little bargaining power in a re-organisation scenario as a result of the subordination. However, ultimately, this should be reflected and captured by the lower recovery rate, in our view.

2. Optional Coupon Deferral

The structure of hybrid notes allows management to choose to defer coupons subject to certain criteria. Coupons that are passed are cumulative (and compounding in the case of the DONG security). Coupons can only be deferred if no dividend or share buyback has been made in the last year. In the case of bank Tier 1, our colleagues assumed that the risk of coupon deferral was the same as the risk of default because the cash cost of making the coupon is so small, that optional deferral is only likely if default is imminent. We think this holds for corporates provided that the proportion of the interest bill made up of hybrid coupons remains relatively low – perhaps in line with the 20% which the rating agencies look at as a ceiling for equity credit.

However, the assumption made with regard to banks is that senior debt of banks does not "default" as such, but rather goes into regulatory work out.

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Hence, during a period of regulatory work-out, senior creditors would continue to receive coupons where Tier 1 holders would not. For corporates that don't have such a regulatory framework, if we make the same assumption that coupon risk is the same thing as default risk, the logical conclusion is rather counter-intuitive. It actually means that NO additional spread required versus senior debt because all coupons, senior and hybrid, are "deferred" after default.

Of course, at the margin, there is some risk of deferral not coinciding with default, and of management deferring the coupon for some other reason. However, due to the dividend "pusher", if the entity survives the credit crisis, it is likely that the deferred coupons will be paid if there is no default. As a result, the actual loss would only come from the lack of compounding on the coupon.

3. Mandatory Coupon Deferral

Where the coupon on a hybrid can be automatically suspended, there is clearly some additional spread required, especially because these deferrals are not cumulative. The value of the option depends on the likelihood of it being exercised, which would depend on an analytical view as to the likelihood of the trigger ratio being reached. We look at Vattenfall as an example because DONG has no compulsory trigger and Suedzucker has a trigger based a non credit-relevant ratio.

In the Vattenfall structure, coupons are deferred automatically when FFO interest coverage falls below 2.5x. In the Utility sector, we think that this ratio would reflect a credit which had already or was about to fall to sub-investment grade. Using this assumption, we look at Moody's rating transition matrices to estimate the probability this may happen to Vattenfall. According to Moody's data, of single-A corporates that were still rated five years later, 5.1% had sub-investment grade ratings.

If we make the (admittedly very simplified) assumption that the downgrade were to occur halfway through the ten year period to the maturity of the bond, we can then calculate the value. The investor would lose the PV of the coupons between year five and year ten, which for Vattenfall amounts to 18 points (using the current yield on the perp as the discount rate).

So, there is a 5.1% chance of losing 18 points due to coupon deferral, which equates to a risk-adjusted 0.9 bond points, which we calculate to be worth 12 basis points. There are further distinctions between different issuers – for example, some have capital payment stoppers after a mandatory deferral, while others do not. Similar, some have optional settlement of the coupon post a deferral with the sale of new shares, while others do not.

There is a further risk from mandatory coupon deferral, of course – the worst case scenario of the bond not being called while FFO interest coverage is below the ratio. At this point, the hybrid could effectively be a zero-coupon perpetual with a value of zero. However, given the inability to pay dividends in this scenario, we don't think it would be a sustainable situation and in the end we think the correlation with default would be high so again we don't assign value for this scenario.

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4. Extension risk

We think that the bonds not being called at the first call date is a material risk and it is a larger risk for corporates than it is for banks, for reasons discussed above, especially because the step-up of 100bps represents a smaller percentage of spread than is typically the case for Tier 1 (in the range of 50% of issue spread for the existing deals). There are Tier 1 deals for Barclays and Allied Irish Banks which do not have coupon steps at all – investors must rely purely on the stated intention of the bank. These deals typically trade at double the spread of traditional Tier 1 (so 4x rather than 2x). Given the much smaller percentage of spread, corporate hybrid capital could be regarded as somewhere in between step and non-step Tier 1.

It may well be that the stepped bonds could still be attractive capital for the issuer. If new bonds could be issued at a similar or lower spread to the spread on the bonds after the step, then issuers could be expected to call. But if not, there is a material chance that they could be left outstanding. If overall credit spreads were roughly 50% wider than at the time of issuance of the original hybrids, we would expect that similar or lower spreads would not be available.

The value of this option today depends on a combination of: a) the impact of the bond becoming perpetual; and b) the likelihood of this occurring. The first part of this can be assessed using Bloomberg analytics. Using Suedzucker as an example, at the issue spread of B+210, the Z-spread is 198 to the call date, but 151 on a perpetual basis. However, this is an underestimate of the likely fall in value due to:

a) the bond would remain callable every quarter, and would likely be called when, and if, the company could fund on more attractive terms; and

b) a company which had failed to call the bond could find it trading a very long way below par, making the use of the call even more unattractive,

c) the need to transfer the bonds into new hands, and the number of buyers for these "busted" hybrids is likely to be limited.

We don't really have a methodology for estimating the value of this option at this point. Instead, we turn to the work of our colleagues in financial institutions. In estimating the value of the call, they looked at the difference in pricing of subordinated paper that has extension risk (Tier 1) and that without that risk (Upper Tier 2). They found limited examples, but usefully for our purposes in corporates they were from relatively low-rated Italian banks. The market evidence was that Tier 1 spreads were 22% higher than the spreads on Upper Tier 2.

We think that for corporates, without the "magic circle" effect of Tier 1 (and indeed regulatory pressure to maintain the coupon unless capital ratios really are under threat), as well as the higher step as a percentage of spread, this premium should be in the region of double that for banks. As a very rough guide, we therefore assume a 44% premium.

5. Putting it all together

In the case of Vattenfall, senior 10 year protection is offered at around 45.

1. Adjustment for subordination: 45* 60% = 27

2. Adjustment for optional coupon deferral: zero

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3. Adjustment for mandatory coupon deferral: 12 (as discussed above)

Total so far: 84

4. Adjust for extension risk: 84* 44% = 37

Total "justified spread" is 121 (which is 2.7x senior spread)

We think this may represent a floor for spreads as it adjusts for the major features of the notes. It does not adjust for any of the following:

1. various very unlikely scenarios such as the bond becoming a zero coupon perp without a default of the issuer;

2. the liquidity risk of the instruments given their complication and the absence of a CDS market; and

3. the immaturity of the market which may yet develop in a strong source of capital, but equally may not do so.

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Appendix: Summary of Recent Hybrid Issuance Terms

Issuer:	DONG A/S	Vattenfall Treasury AB	Sudzucker International Finance BV
Issuer rating:	Baa1 / BBB+	A2 (pos) / A- (stable)	A3 (neg) / A- (stable)
Issue rating:	Baa3 / BBB-	Baa1 (pos) / BBB- (stable)	Baa2 (neg) / BBB- (stable)
Equity credit	Basket C (50%) / Intermediate	Basket D (75%) / Intermediate	Basket D (75%) / Intermediate
Size:	EUR 1.1bn	EUR 1.0bn	EUR 500mm
Launch price:	MS + 220 (initial fixed coupon 5.5%)	MS + 195 (initial fixed coupon 5.25%)	MS + 210 (initial fixed coupon 5.25%)
Ranking:	Senior to common equity, junior to all unsubordinated and less deeply subordinated creditors	Senior to common equity, junior to all unsubordinated and less deeply subordinated creditors	Senior to common equity, junior to all unsubordinated and less deeply subordinated creditors
Tenor:	Due 3005, callable at make-whole (sliding scale) at end of year 5 and annually thereafter for the next four years and at par at end of year 10 and quarterly thereafter	Perpetual, callable at par at end of year 10 and quarterly thereafter	Perpetual, callable at par at end of year 10 and quarterly thereafter
Interest payments:	Annual fixed rate until end of year 10, quarterly floating rate of 3 month Euribor plus a fixed spread thereafter	Annual fixed rate until end of year 10, quarterly floating rate of 3 month Euribor plus a fixed spread thereafter	Annual fixed rate until end of year 10, quarterly floating rate of 3 month Euribor plus a fixed spread thereafter
Step-up:	Interest payments increase by 100bp over initial credit spread after year 10 and by a further 100bp in 2505	Interest payments increase by 100bp over initial credit spread after year 10	Interest payments increase by 100bp over initial credit spread after year 10
Tax call:	On any coupon date, on a make whole basis (B + 75bp), in case of withholding tax gross-up or in case of loss of deductibility	At any time at par in case of withholding tax gross-up or on a make whole basis (B + 50bp) in case of loss of deductibility	At any time at par in case of withholding tax gross-up or on a make whole basis (B + 75bp) in case of loss of deductibility
Accounting call:	None	None	At any time on a make whole basis (B + 75bp) in case of loss of consolidated IFRS equity accounting treatment
Replacement language:	Intention that Issuer or subsidiary raise funds in prior 12 months by sale of shares or pari passu securities with same key terms (in italics in terms)	Intention that raise funds in prior 6 months by sale of Guarantor shares or pari passu securities with same key terms (in italics in summary only)	All call options conditional on Guarantor or subsidiary raising funds in prior 12 months by sale of junior or pari passu securities with same key terms
Optional deferral:	Cumulative, and compounding, interest deferral may be elected for any period of time Deferred amounts and interest thereon may only be settled using alternative coupon satisfaction mechanisms (ordinary shares / parity securities / more underlying securities) Capital payments stopper applies (shares and parity) until so settled Any amounts outstanding at maturity are cancelled	Cumulative, but not compounding, interest deferral if no payment on or repurchase of junior or parity securities during previous 12 months Arrears payable when next interest payment is made, or next payment is made on shares or parity securities, or on redemption or liquidation	Cumulative, but not compounding, interest deferral if no payment on junior or parity securities at or since previous AGM, or repurchase thereof during previous 12 months Arrears payable when next interest payment is made, or next payment is made on shares or parity securities, or on redemption or liquidation
Mandatory Non-payment:	n/a	Interest not payable if (FFO + Interest Paid)/Interest Expense < 2.5x in most recent annual statement Non cumulative Capital payments stopper for next 12 months	Interest not payable if Guarantor's consolidated cash flow is <5% of consolidated sales revenues in most recent annual statement Non cumulative but optional settlement for 1 year from proceeds of sale of new or treasury shares raised during 6 months before or 1 year after No capital payments stopper

Sources: Vattenfall Capital Securities Offering Circular; Sudzucker Capital Securities Offering Circular; DONG Capital Securities Offering Circular; Standard and Poor's; and Moody's
Note: n/a – not applicable

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