

## Basel III

The shape of the Basel III proposals has now emerged. Although not as draconian as initially feared, they will have a major impact on the development of the global financial services industry over the next decade.

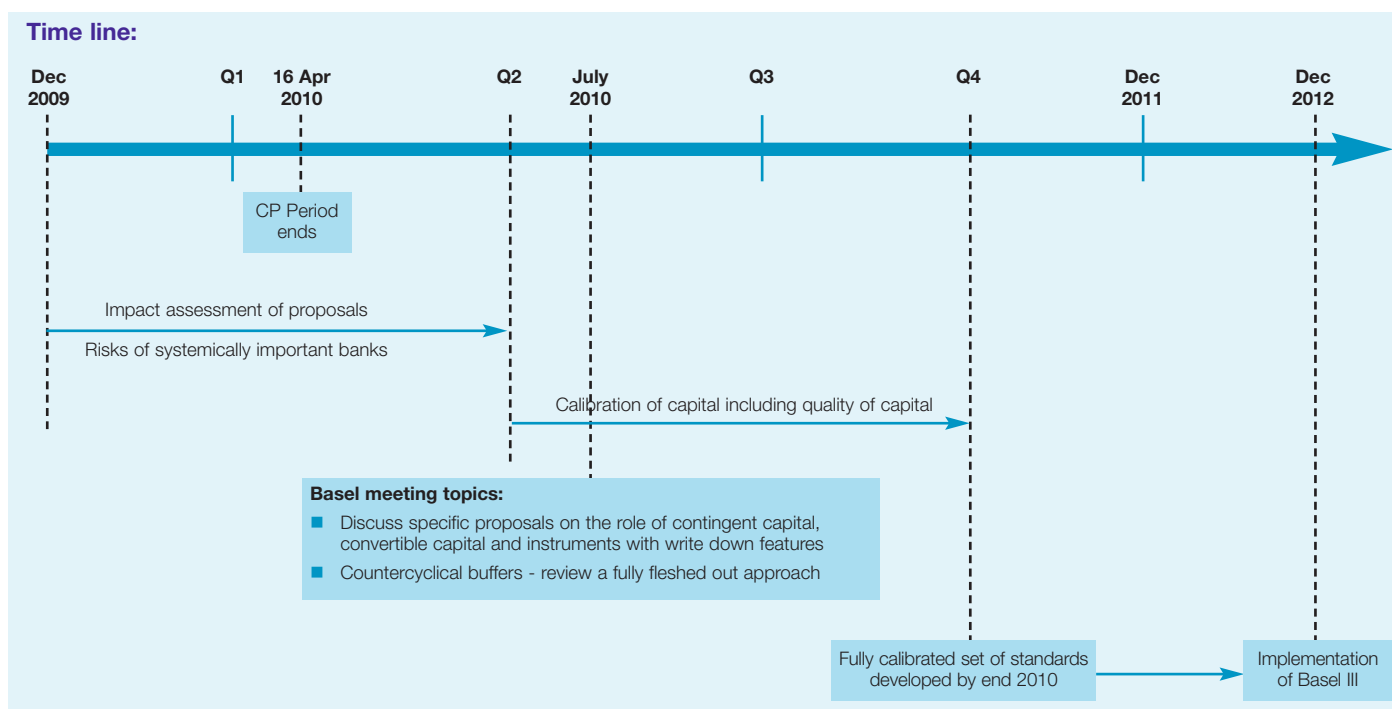
Basel III is a package of amendments to the existing Basel II regime. The fundamental architecture of Basel III – the division of banks into standardised, foundation IRB and advanced IRB – continues, and the approach of using the banks' own models to provide the inputs for the regulatory capital determination survives intact. Basel III makes a series of adjustments to various components of the basic calculation, all of which have the effect of increasing in one way or another the amount of capital required, and imposes some new constraints on bank activity.

### Timing and implementation

We are towards the end of the period in which Basel II will be designed. Given that the Basel Committee itself is not a regulator, the result of the Basel process will be simply a set of principles – it will then be up to national regulators and legislators to transform those principles into rules and regulations. There can be no guarantee that all of the members of the Basel Committee will in fact implement Basel III within the proposed deadline, and questions remain as to whether the US will implement it at all (it has not yet implemented Basel II). However, the rhetoric of the heads of state is that it will be implemented in full across the G20.

In the EU there will be an intermediate stage, in that Basel will first be implemented in a new directive ("CRD 4", the fourth Capital Requirements Directive) before being brought into force in the Member States. It is likely that the discretions which Basel describes as being vested in home supervisors will in the EU either be hard-wired into the legislation or vested in the European Banking Authority (the successor to the Committee of European Banking Supervisors). It is unlikely that individual Member States will be left with any significant discretions.





**The changes which Basel III makes to the capital regime can be grouped under six broad headings:**

1. Changes to capital definition and levels
2. Increased capital charge for derivatives and securities financing transactions
3. Increased risk charge for financial institution exposures
4. Leverage ratio
5. Liquidity Coverage Ratio (LCR)
6. Net Stable Funding Ratio (NSFR)

**The implementation of these is summarised in the table below:**

Basel III Capital Requirements

	2013	2015	2018	2023
<b>Equity</b>	3.5%	4.5%	7%	7%
<b>Other Tier 1</b>	1.0%	1.5%	1.5%	1.5%
<b>Tier 2</b>	3.5%	2.0%	2.0%	2.0%
<b>Total Requirement</b>	8%	8%	10.5%	10.5%
<b>Capital Deductions</b>	0%	40%	100%	100%
<b>Legacy sub debt</b>	90%	70%	40%	0%
<b>Leverage Ratio</b>	Observed	Disclosed	In force	In force
<b>LCR</b>		In force	In force	In force
<b>NSFR</b>			In force	In force

## 1. Capital composition

The new Basel minima for bank capital are set out in the boxes below, which set out the minima for the beginning and the end of the phase-in period.

2013	
Equity	3.5%
Tier 1 debt	1.0%
Tier 2	3.5%
<b>Total</b>	<b>8.0%</b>

2018	
Equity	7%
Tier 1 debt	1.5%
Tier 2	2.0%
<b>Total</b>	<b>10.5%</b>

The reason for the leap in the equity requirement is the result of two developments. One is the raising of the basic equity requirement from 3.5% to 4.5%, and the second is the introduction of the 2.5% “capital conservation” requirement, which must be met out of equity. In theory, a bank may allow its equity to dip below the capital conservation requirement. However, if it does so it will be subject to restrictions on paying dividends and bonuses, and these will continue for as long as its total equity remains below that level. As a result, banks will regard this requirement as mandatory.

In assessing the significance of these requirements, the following table may be illuminating.

As at June 2007	Tier 1 ratio	Total Capital Ratio
Northern Rock	11.3%	18.2%
Alliance & Leicester	10.4%	12.8%
HSBC	9.3%	13.2%
Bradford & Bingley	8.5%	14.7%
Lloyds	8.1%	10.4%
HBOS	8.0%	12.0%
Barclays	7.7%	11.8%
RBS	7.4%	12.5%

An important component of the Basel proposals for some banks are the requirements that certain exposures be deducted from capital. These are :

- Minority interests in non-bank subsidiaries (minority interests in bank subsidiaries may still be recognised provided that they constitute genuine third party common equity)
- All unrealised losses (including own use and investment property)
- Goodwill and other intangible assets (excluding Mortgage Servicing Rights)
- Gains and losses due to change in the bank’s own credit risk
- Defined benefit pension fund assets (liabilities must still be deducted)
- Any provision shortfall – i.e. the amount by which the bank’s accounting provisions fall short of its estimate of expected losses according to its own risk models
- Deferred tax Assets arising from net loss carry-forwards
- Investments in own shares
- Reciprocal cross-holdings in other financial institutions
- Cash flow hedge reserves

- Any adjustment resulting from deterioration of own credit<sup>1</sup>

There are three classes of deductions which are treated slightly differently. These are added together, and the deduction from capital is the amount by which all three exceed 15% of the reporting bank’s common equity. They are :

- Significant investments (net 10% after hedging) in banking, insurance and financial entities
- Mortgage servicing rights
- Deferred tax assets arising from timing differences

The significance of these is somewhat debateable – many of the proposed deductions have been imposed on banks for some time, and some of the proposed rules – for example, the deduction of holdings of other bank’s capital – are considerably more generous than those imposed on UK banks today. The most significant innovation for EU banks is almost certainly the rule on deduction of minority interests – however, the inclusion of the exception for bank subsidiaries will help considerably here.

The proposal also tidies up the current rule that certain exposures should be

<sup>1</sup> This arises when a bank holds its own debt obligations. As the bank’s credit deteriorates, the value of its obligation decreases and the value of its equity consequently rises.

deducted 50% from Tier 1 and 50% from Tier 2. With the reduced role that Tier 2 will play in bank capital this no longer made sense, and these holdings (securitisation and equity exposures, non-payment on DVP transactions and significant investments in commercial entities) will now be given a 1250% risk weighting.

## 2. Risk Weightings

The majority of the changes to risk weightings proposed in the Basel III framework apply to derivative and securities financing exposures. This is partly because other significant risk weighting issues, such as the increase in securitisation risk charges and the across-the-board increase in trading book requirements have already been proposed (see <http://www.bis.org/publ/bcbs158.pdf?noframes=1>, <http://www.bis.org/publ/bcbs159.pdf?noframes=1> and <http://www.bis.org/press/p100618/annex.pdf>).

The primary effects of the changes proposed in the Basel III package are:

(a) To require banks to model the risk of loss arising from deterioration of the credit of counterparties to these transactions. During the crisis it was found that, although banks had modelled the loss which they would suffer if a counterparty defaulted, they had not modelled (or recognised) the fact that if a counterparty's credit deteriorated whilst it remained solvent, this would result in a mark-to-market loss being incurred. The BIS claim that two-thirds of all the credit losses which impacted banks over the crisis were attributable to credit deterioration short of default. The approach which is taken is to require the bank to treat such exposures as if they were bonds issued by the relevant counterparty, and to apply the market risk charge which would apply to such a bond. The initial Basel proposal suggested that the risk charge actually applied

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should be five times the charge which would be applied to such a bond, but this proposal has now been dropped.

- (b) To require banks to identify circumstances where there is a specific legal connection between an exposure and the credit risk of an instrument used to hedge that exposure (“specific wrong-way risk”). This can happen, for example, where in a single-name CDS there is a connection between the swap counterparty and the issuer of the underlying. What is proposed is that, in this case, the credit exposure to the counterparty should be treated as the notional value of the CDS – thus, if a bank has a bond worth 100 covered by a CDS written by an unconnected person (“A”), the bank's credit exposure to A would be the Expected Effective Positive Exposure (EPE) under the contract. However, if A is a connected person the exposure will be the nominal value of the CDS. This change almost certainly has the effect of rendering such protection worthless, since the increase in credit risk is likely to exceed the decrease in market risk resulting from the CDS. It is not clear what is meant by an “explicit legal relationship” in this context – clearly parents and subsidiaries would be caught, but would an issuer be taken to have an “explicit legal relationship” with its primary bankers?
- (c) To require banks to increase the levels of margin which they hold in respect of OTC derivatives and securities financing transactions. This is effected by doubling the assumed holding period for collateral if a particular derivative

portfolio transgresses certain restrictions. Doubling the holding period results in the margin requirement significantly in excess of that ordinarily required. This will occur if:

- (i) The number of OTC transactions within a “netting set” exceeds 5,000. This has the effect of making it cheaper for banks to deal with a larger number of counterparties.
- (ii) Netting set contains either “illiquid” collateral or OTC transactions “that cannot easily be replaced”. This means that if bespoke or structured derivatives are included within the netting set the cost of business will rise significantly.
- (iii) The bank has experienced more than two margin call disputes on the particular netting set over the previous two quarters. In this case, the margin holding period required is doubled for the next two quarters. This will place significant pressure on counterparties not to dispute margin calls regardless of the circumstances.

These proposals are accompanied by systems and controls requirements which mandate that the collateral management unit within the bank must be independent, sufficiently resourced and report to senior management.

It is also proposed that in the standardised approach securitisation bonds, if given as collateral, should be subject to double the haircut applied to other bonds of the same credit rating.

(d) To require banks to maintain a small risk charge (1-3%) in respect of position and collateral exposures to CCPs. This will be a change from the current architecture, under which exposures to CCPs are effectively treated as risk free. The Committee states that the purpose of imposing this charge is to remind banks that CCPs are not in fact completely risk free. The difficulty here is that the current treatment (under which such exposures are treated as a 0% exposure value) also has the effect of excluding them from the bank's large exposures limits. This is important since if regulators make CCP clearing compulsory (as they intend), banks exposures to CCPs will increase dramatically, and it would be an unfortunate policy own goal if the application of large exposures limits prevented banks from clearing trades which they would otherwise wish to clear.

(e) To eliminate the restriction by which guarantees given by a guarantor with a credit rating of A- or worse are disregarded. During the crisis this rule lead to an unfortunate cliff effect as the credit of certain protection providers deteriorated. Any guarantee given by an externally rated guarantor may now be recognised in the Standardised approach.

### 3. Increased risk charge for financial institution exposures

The effect of this change is to increase the capital requirement applied to all credit exposures to large financial firms. For this purpose a "large" financial firm is a firm with \$100bn of gross assets. For this purpose a "financial firm" includes banks, broker-dealers and insurance

## "The essence of a leverage ratio is that it restricts the absolute level of indebtedness which a bank may take on."

companies. It is also suggested that this increase should be applied to highly leveraged entities (meaning at least hedge funds and financial guarantors) regardless of size.

The proposed change has a varying impact on banks according to their creditworthiness – for some reason the better the credit of the bank (i.e. the lower the PD) the higher the premium. For low PD, highly systemic firms, the premium will be up to 35% over the charge which would be applied to an exposure to a non-bank of equivalent credit standing.

### 4. Leverage Ratio

The leverage ratio is the implementation by Basel of an existing US technique. A leverage ratio is simply a non-risk-sensitive capital requirement, and the proposed ratio is envisaged as a backstop for the primary ratio rather than a substitute for it.

The essence of a leverage ratio is that it restricts the absolute level of indebtedness which a bank may take on. Where a bank takes on matched assets and liabilities, it may well incur little or no risk, but the argument behind the leverage ratio is that sheer size is in itself a risk, and that banks should not be permitted to grow the absolute size of their balance sheet above a certain multiple of their capital no matter how well-hedged they may be. The current proposal is that the leverage limit be 3% – that is, the bank's gross borrowings should not be more than 33 times the bank's Tier 1 capital.

The primary problem which the imposition of a leverage ratio poses is that different countries vary significantly in the extent to which they recognise netting on an accounting basis. There is, therefore, no agreement on what is meant by gross borrowings. In particular, US GAAP permits broader recognition of netting than IFRS, and where a bank prepares accounts under both standards it is commonly found that the gross assets under US GAAP may be 2/3 of the gross assets under IFRS. Thus, the basis on which the leverage ratio is applied must be set by regulators in order to produce a globally applicable standard.

The broad approach which the Basel committee has adopted to this problem is to say that the leverage ratio should be applied to the gross assets before recognition of accounting netting. However, regulatory netting will be recognised for derivatives (including credit derivatives). Thus, where on- or off-balance sheet exposures may be recognised for regulatory purposes, they will be netted for leverage ratio purposes. However, financial collateral and on-balance sheet netting (the netting of loans against deposits) will not be recognised – equally, repo financing will be treated for this purpose as ordinary lending. Securitisation assets will be treated according to the accounting treatment – it seems that if a securitisation is treated as off-balance sheet for accounting purposes its liabilities will not be included in the calculation of the bank's leverage ratio, even if the vehicle is consolidated for regulatory purposes. Off-balance sheet commitments such as loan commitments, guarantees and letters of credit will be included as exposures in

accordance with the regulatory “credit conversion factor” treatment – thus, a loan commitment of less than one year would be treated as having 20% of its value, whereas a guarantee would be treated as having 100% of its value. An important exception to this, however, is that unconditionally cancellable commitments, which are treated for risk purposes as risk free, will be included in gross exposures using a 10% haircut.

The leverage ratio will be introduced very gradually. In 2011 regulators will begin a two-year process to develop reporting templates. In 2013 regulators will start monitoring leverage ratio data, and in 2015 banks will be required to publish their leverage ratio. Subject to final adjustments, the leverage ratio will apply to banks as a rule as from 1 January 2018.

## 5. Liquidity Coverage Ratio

The liquidity coverage ratio is a development of a rule to which most banks are already subject. The essence of this rule is that a bank is required to maintain a pool of highly liquid assets which is sufficient to meet the forecast net cash outflows over a 30-day period.

This can be expressed graphically as set out below:

### LCR in a Nutshell

Assets	Liabilities
Ineligible Assets	Other Liabilities
Eligible Assets	Net 30-day outflows

The reason that the Basel formulation of the LCR rule will have such a significant impact on banks is that, under the existing rules, banks hold enough assets to fund

normal outflows assessed on a behavioural basis by the bank itself. Under the LCR, the regulator imposes on the Bank some interesting assumptions about how fast cash will flow out, and the bank must construct its asset pool accordingly. The overall result for many banks will be to increase by a factor of several times the proportion of its total balance sheet which is required to be held in the form of highly liquid assets. Since highly liquid assets are invariably low-yielding assets, this imposes a significant cost on the relevant bank.

The basic requirement is that the liquidity pool should be capable of meeting the net cash outflow over the period, and it is therefore necessary to consider inflows. Scheduled repayments of loans and payments of interest may be assumed to be received by the bank, and these will reduce the net outflow. However, for this purpose the accord requires the bank to assume that:

- It will be unable to raise any finance from secured funding on non-government securities
- It will be unable to draw on any of its backup liquidity lines
- It will be subject to 100% drawing on all of the liquidity lines which it has granted
- It will be unable to issue CP or access the short-term money market
- It will be subject to a 3-notch ratings downgrade, and will therefore be subject to collateral calls

It will therefore be seen that the result of this rule is to mandate a liquidity pool which is considerably worse than worst case.

The LCR asset pool must be a real asset pool, in that it must be a segregated and identifiable pool of assets, controlled by the group treasurer as part of the bank’s liquidity management activity and completely unencumbered. This means

that at least some of the high-quality liquid assets held by the bank will be ineligible for inclusion in the LCR ratio.

The question of what counts as high-quality liquid assets for this purpose has not yet been entirely settled. Clearly, government securities issued by 0% weighted sovereigns are included, as are cash balances held with central banks, and other government bonds may also be included to the extent that they match net outflows in the relevant currency. However, the decision has also been taken to recognise certain other securities as “Tier 2” assets – quite possibly due to concerns that the impact of the LCR rules may be so significant that in certain jurisdictions there may not be sufficient Tier 1 assets available to meet the requirement. Tier 2 assets consist of

- Government and PSE assets qualifying for a 20% weighting
- High-quality non-financial bonds and covered bonds rated AA- or better for which there is an established, liquid market

Tier 2 assets may make up to 40% of the liquidity pool, and are valued using a 15% haircut.

It may be asked why it was necessary to write these eligibility rules, since most banks in practice will regard the assets in their liquidity pools primarily as collateral which can be used to obtain funding from the relevant central bank, and in consequence tend to regard the question as to whether a particular asset is liquid or not as synonymous with whether it will be accepted by the central bank or not. The problem, however, is that central banks have very different eligibility criteria, and in certain jurisdictions where the criteria are extremely tight it is necessary to be able to give regulators the power to treat non-central bank eligible securities as capable of being held within the liquidity pool.

The next question is therefore what uses up the liquidity pool. The regulators have provided a set of “liquidity weightings” which are applied to different liability and commitment types, which are intended to reflect how fast the relevant funding will be withdrawn in the event of a crisis. These are summarised below:

**Deposits and Funding**

- 5% of “stable” (i.e. insured) retail and SME accounts
- 10% of less stable (high-value or internet) retail and SME accounts
- Financial institutions
  - 25% custody, clearing and settlement balances
  - 100% all other balances
- non-financial corporate and public sector deposits
  - 25% of balances operated for cash management purposes
  - 75% of other non-financial corporate deposits, sovereigns, central banks and PSEs
- 100% of all other deposits and unsecured funding

**Secured Funding**

- 0% for secured funding backed by Tier 1 assets
- 25% for secured funding backed by other assets from sovereigns, central banks & PSEs

- 100% for other secured funding backed by other assets
- Assume outflow of all collateral obligations triggered by downgrade triggers
- Assume that where secured financing is secured on non-Tier 1 collateral, and extra 20% of collateral will be called

**Commitments**

- 5% of commitments to retail
- 10% of credit facilities to non-financial corporates, sovereigns, central banks and PSEs
- 100% of commitments to
  - financial institutions
  - other types of borrowers
  - liquidity facilities to non-financial corporates
- Supervisors have discretion to include
  - Unconditionally cancellable commitments
  - Guarantees and L/Cs

The effect of this can be expressed as a contribution requirement – thus when a bank receives a new deposit of 100 from a retail customer it is obliged to put 5 into the liquidity pool, when it receives a deposit from a corporate it has to put 75% of it into the liquidity pool, and when it receives a deposit from a financial institution it is required to put all of it into the liquidity pool. Likewise, where a bank enters into a commitment to a retail borrower it must on the inception date pay

10% of the value of that commitment to the liquidity pool, and when it enters into a commitment to a financial borrower it must immediately place 100% of the value of that commitment into the liquidity pool. A more realistic mental model, however, is probably to imagine that the size of the liquidity pool is absolutely fixed. Thus if £100 of liquidity becomes unencumbered (say by a borrower repaying a £00 loan), the result permits the bank to either (a) take in £2,000 of new retail deposits, or (b) accept £133 of new corporate deposits, or (c) grant a £1,000 commitment to a corporate or (d) grant a £100 commitment to a financial institution.

The LCR will be introduced as an observation exercise in 2011, and will be imposed as a rule as from 2015.

**6. Net Stable Funding Ratio**

The net stable funding ratio is an innovation, in that it seeks to control the extent to which banks rely on short term (sub-1 year) funding as a proportion of their overall funding. In effect, it requires a bank to fund the illiquid portion of its asset book with funding of more than one year residual maturity. The NSFR may be represented as follows:

**NSFR in a Nutshell**

Assets	Liabilities
Unliquidatable Assets	Stable Capital Equity Long-term debt (+ 1yr) “stable” deposit area
Liquid Assets	All other funding

As with the LCR, the key to understanding the effect of this rule is to consider the accord’s assessment of what constitutes

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“stable” funding and what constitute “illiquid” assets for this purpose.

#### Stable funding is defined below

- Capital
- Liabilities with maturity of one year or more
- 90% of stable (i.e. deposit guaranteed) retail deposits
- 80% of less stable retail/SME deposits
- 50% of corporate wholesale deposits
- 0% of financial institution funding

The working assumption here is that over a 12-month period the net outflow will be 5% of retail deposits, 50% of corporate deposits and so on. Thus, the effect of the rule is to put pressure on a bank to fund illiquid exposures with either capital, long-term debt or non-financial sector deposits.

Stable funding is required to finance those assets which are regarded as not being capable of being liquidated within 12 months. This at first sight seems a fairly strange concept, since almost any financial asset is capable of being realised within that period. However, the accord bestows the calculus of illiquidity as follows:

#### Assets

- 0% of securities and bank receivables with a maturity of less than one year
- 5% of the value of government securities with a maturity of more than one year
- 20% of AA corporate and covered bonds with a maturity of more than one year
- 50% of liquid equities, bonds of between AA- and A- and loans to corporates with a residual maturity of less than 1 year
- 65% of high-quality mortgages

- 85% of retail loans with a residual maturity of less than 1 year
- 100% of everything else

#### Commitments

- 5% of the value of irrevocable and conditionally revocable commitments
- ?% of uncommitted facilities

These percentages are intended to be estimates of the amount of a particular asset that could not be monetised within a 12-month period. The “everything else” category includes all non-financial assets.

The NSFR is to be subject to a very extended lead-in period. The observation period will begin in 2012, and it will be introduced as a minimum standard in 2018. The NSFR has been subject to sustained criticism as being in appropriate and producing bizarre results, and it seems likely that the extended observation period is likely to be used to recalibrate it significantly.

#### Contacts:



**Simon Gleeson**  
Partner  
T: +44 20 7006 4979  
E: simon.gleeson@cliffordchance.com



**Chris Bates**  
Partner  
T: +44 20 7006 1041  
E: chris.bates@cliffordchance.com



**Mark Benzler**  
Partner  
T: +49 697199 3304  
E: mark.benzler@cliffordchance.com



**Frederick Lacroix**  
Partner  
T: +33 14405 5241  
E: frederick.lacroix@cliffordchance.com



**David Felsenthal**  
Partner  
T: +1 212878 3452  
E: david.felsenthal@cliffordchance.com

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