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**BASEL 2: THE NEW BASEL CAPITAL ACCORD
AND ITS IMPACT ON COMMODITY FINANCING
IN DEVELOPING COUNTRIES**

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Executive summary

Commodity finance to developing countries is notoriously fickle. Only a limited number of large banks are committed to it, others leave and re-enter the sector depending on the profit/risk ratios they think that they can obtain. Credit availability is affected by political and economic developments, with a noticeable contagion effect within whole regions (e.g. if one country in West Africa faces a crisis, credit lines to its neighbours are also cut) can be affected by large crises, even across regions (problems in Russia affect lending to Brazil). The consolidation in the banking sector in recent years has reduced the number of banks with a strong presence in commodity finance, and current negotiations in the framework of the World Trade Organizations may curtail official export credits.

One significant future driver of commodity finance has, however, so far been rather overlooked by developing country banks and governments: the new Basel Capital Accord, more commonly known as Basel 2. For years, the introduction of Basel 2 was continuously postponed, but for the past year, the starting date of December 2006 has stood firm. From early 2007 onwards, new rules will guide how much capital banks have to provision (set aside as safety margin) for each of their loans. Capital provision has a direct impact on the costs of loans: given a target return on capital, the less leverage a bank can obtain on its capital, the higher will be the margin that it seeks on its loan. The Basel 2 Accord treats lending risks in a much more differentiated manner than the current Basel 1 regime. In the new regime, some transactions will qualify for lower provisioning if certain, rather complex criteria are met, while others will require much higher provisioning. Lending to developing countries and sub-investment grade companies will generally fall in the latter category – but there are some ways to mitigate this effect, at least if developing country regulators chose to take a pro-active role.

In the absence of a change in the current course taken by banks and governments, most developing countries will see a radical increase in interest rates, a decline in credit availability and a stronger pro-cyclical bank lending pattern from 2007 onwards. This will have a negative effect on their economies (it implies a new resource transfer from these countries to more developed ones), and given the importance of finance for investments and international trade, will damage their growth prospects. There is still time to change course, but time is rapidly running out: one of the ways to overcome the negative effects of Basel 2 requires three years of records on individual loan performance, and the time for collating these is already overdue; another way involves capacity- and institution-building for local banks, which will also take time to become effective.

This report explores the link between the new Basel Capital Accord and commodity finance for developing countries. It explains the basic principles of Basel 2, and how various mechanisms have been built into the Accord which can, in principle, help developing countries to mitigate or overcome any *a priori* negative effects. It then explores mechanisms such as structured finance and collateral management which can isolate certain transactions from high provisioning requirements, highlights the critical steps that developing countries and their banks can take, and discusses what international banks and the international community can do to protect commodity finance flows to developing countries.

Table of contents

<u>Chapter</u>	<u>Pages</u>
Introduction	4-7
I. Capital provisioning: regulations, practices and their impact on borrowing costs for developing countries	9-19
A. Capital provisioning: the rationale and impact of Basel 1	9
B. Basel 2: why revise Basel 1, and where are the discussions headed?	10-12
C. The core provisions of Basel 2	12-14
D. How banks improved their capacity to manage risks: value-at-risk and RAROC	14-16
E. Impact on developing countries	17-19
II. Commodity-related finance within Basel 2 framework	20-26
A. General impact of Basel 2 on trade finance	20-21
B. Basel 2's definition of "commodity finance"	21-22
C. Identifying the risks of "commodity finance" transactions	23-26
III. Safeguarding commodity finance for developing countries after Basel 2 is launched	27-37
A. The scope of Basel 2	27-28
B. Implications for international commodity finance	28-30
C. Developing country choices: what can banks, their borrowers and their regulators do?	30-34
D. Stimulating structured finance to safeguard commodity financing flows	34-37

INTRODUCTION

In western Switzerland, in the town of Geneva, a new world trade agreement is being negotiated. Most of the world's governments take an active role in the discussions of the World Trade Organization, and have allocated considerable manpower resources to ensure that their best interests are safeguarded. Developed country governments have accepted that this round of negotiations will be a "developing country round", where the special interests and constraints of developing countries will be given particular attention.

Some 200 kms north of Geneva, in the headquarters of the Bank of International Settlements in the Swiss town of Basel, another international agreement is being negotiated. This agreement, the New Basel Capital Adequacy Framework (Basel 2)¹ will change the face of international finance as much as a WTO agreement will change of world trade. It is, in the words of a KPMG report, "a revolution disguised as regulation".² In this case, however, developing countries are absent from the negotiating table. The Basel Committee on Banking Supervision where the Framework is being designed is a group of Central Banks and bank supervisory authorities from 13 developed countries.³ Their concern is the health and shock-resistance of the world financial system. Any damage that their new rules may cause developing countries is collateral damage – unfortunate, but not their concern.

At its very basic, the Basel 2 Framework, like its Basel 1 predecessor, is an international standard for banking regulation, set in train with the laudable objective of strengthening the soundness and stability of the international banking system. Basel 2 will be the guiding force steering banking capital, and even though developing countries have not been part of the negotiating process, it is poised to become the yardstick by which their banks are measured. There is no doubt that as a result of Basel 2, those developing countries who experience macroeconomic volatility and vulnerability to external shocks will find themselves further on the fringe of the international financial market. Yet, all is not lost for them: the Framework, its national adoption, the domestic interpretation and the actual implementation all provide room for developing countries to mitigate negative effects, if only they get their act together.

It is useful to revisit the beginnings of the Basel Accords. Following the oil crisis of 1973 there were severe disturbances in the financial markets, culminating in 1974 in the collapse of Bankhaus Herstatt in West Germany. Herstatt was a relatively small bank, but its excessive engagement in international currency markets (the bank's founder and several others were later given prison sentences) resulted in a loss of US\$460 million. This put into motion a chain reaction, leading to the collapse of the much larger Franklin National Bank in New York; other banks, including Chase Manhattan Bank NA, Morgan Guaranty Trust Co., Seattle-First National Bank and Hill Samuel of London lost a total of about \$1.5m billion in currency dealings with Herstatt. The global

¹ The "official" denomination of the Basel 2 (also called Basel II) Framework has gone through different versions. The current one is *International Convergence of Capital Measurement and Capital Standards: a Revised Framework*. The latest version was published in November 2005.

² KPMG, *Basel 2, a worldwide challenge for the banking business*, 2003.

³ Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, United Kingdom and The United States.

interdependence of the financial system was thus brought out for all to see and this put cross-border capital flows under scrutiny.

The Basel Committee, a committee of central banks and bank supervisors from major industrialized countries, was established in December 1974 with the objective of improving supervisory quality in order to prevent a systemic collapse of the world's financial markets. Since then, it has remained this coterie of a select number of developed countries.⁴ Since the first accord (Basel 1) in 1988 the Committee has focused on setting minimum supervisory standards in areas where they are considered desirable. As compliance with Basel 1 has become the standard by which banks and their host countries are judged, this has undoubtedly contributed to the improvement of the banking system in many developing countries. But Basel 1 has become outdated, and the regulators recognized that they had to keep pace with the fast developing risk management systems of banks. In 1999, a new framework was proposed to replace Basel 1.

While both Basel 1 and Basel 2 hinge capital adequacy (pillar I) as the linchpin in banking regulation. Basel 2 adds 200 pages of regulations (Basel 1 was only 28 pages long), but also two other mechanisms (called 'pillars') for regulatory supervision: supervisory review (pillar II) and market discipline (pillar III). Pillar II can be seen as a safeguard to the spirit of pillar I. Regulators are entrusted to ensure that capital provisioning is accompanied with the better use of risk management techniques which promotes the creation of stronger institutions. Pillar III is a complement to pillar I and pillar II, seeking to promote market discipline by setting disclosure requirements.

Chapter 1 distills the major issues related to capital provisioning: the essence of capital and its fit in the risk framework, and the reasoning behind the changes implicit in Basel 2 and the core provisions which are guiding the accord today. Among other things, the new accord seeks to ensure that the capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks.⁵ How tenable is this? It has been rightly argued that Basel 2 is not about the borrower. The march towards building a stronger financial system is led with the depositor in mind. Better risk management systems, for those who can afford them, will surely lead to cleaner books and healthier systems. It is not unexpected that in the process, some will win and others will lose. However, in the current format of the accord and its implementation modalities, the strong will win and the weak will lose. From an international policy perspective (going beyond the perspective of banking regulation), this would appear an undesirable outcome.

Chapter 2 explores the impact of Basel 2 in the area of commodity financing. Financing income, i.e. producing assets carries its own sensitivities. Basel 2 recognizes this, grouping commodity lending as a separate asset class. The chapter analyses the framework as it relates to commodity financing. What does the accord say, and how does translate for the commodity players? Again, the outcomes are not optimal from a development perspective. Many banks will cut down on their commodity sector portfolios and blacklists of "overly risky" borrowers (who until now are being

⁴ See *History of the Basel Committee on banking supervision*, <http://www.bis.org/bcbs/history.htm>

⁵ See the 2004 framework; all further paragraph references come from: *International Convergence of Capital Measurement and Capital Standards: a Revised Framework*. Available at: <http://www.bis.org/publ/bcbsca.htm>

financed by banks) will emerge.

The accord offers tools for risk mitigation which could go a long way in preserving capital, and if these tools are properly applied the impact of stronger capital provisioning rules on weaker borrowers is reduced. Commodity financing with its scope for making transaction, structures prevail over debtor profiles holds the potential to harness these solutions. Basel 2 incorporates three risk mitigating tools which can be of defining importance: collateral, guarantees and structured finance solutions. Concluding chapter 3 takes a look at these in relation to the provisions in Basel 2 and also discusses the scope for implementing these important solutions. Even today, these tools remain underutilized due to lack of awareness and other institutional deficiencies. Is there a solution in sight or is this another bridge towards inequities?

While there are considerable negative collateral damage effects of Basel 2 for developing countries, there are internal correction mechanisms in the international financial system. Sweeping through the industry, the multinational accord's philosophy is *'the winner takes it all'*. However, as some of the large international banks have realized, international finance these days depends on collaboration among banks. Even if they can in the short run improve their competitive position as compared to smaller banks, in the longer run, their growth depends on the survival and flourishing of a large, diversified banking community, which can contribute specific skills and risk-taking attitudes to possible deals.

Furthermore, while Basel 2 is sure to stay and the majority of countries have already decided that they will adopt it, much depends on how regulators embrace the accord. The capital requirements as prescribed by the Basel Committee are intended to be a minimum standard, leaving much leg space for the national regulator. Take the European Commission which has been working for the last two years on a revision of the existing European legislation that will establish a new capital framework applicable not only to internationally active banks, but to all credit institutions and investment firms incorporated in the European Union. It has argued that "new rules need to reflect different banking cultures".⁶ Preferential treatment has been sought for their critical SME industry and certain forms of venture funding.

Similarly in the USA, national regulators have carved out policy space. In the words of Alan Greenspan's successor, "The Basel-II capital accord is not a treaty; it is a consensus which the authorities in each national jurisdiction will inevitably apply in their own specific ways reflecting their preferred approaches to bank supervision and regulation".⁷ Consequently, with what one commentator called a "hidden goal to create a protectionist tool",⁸ "most American banks will not have to implement Basel 2. In America, the new rules will only be applied by about 20 internationally important banks, whereas in the European Union they will be observed not only by banks, but by all investment firms too. This makes Europeans feel that, as in other areas of American involvement abroad, there is one law for America and another for the rest of the world".⁹

⁶ According to Frits Bolkestein, the EC's Internal Market Commissioner. See European Commission, January 2001, http://europa.eu.int/comm/internal_market/en/finances/banks/01-60.htm.

⁷ Ben Bernanke, then still a Governor of the Federal Reserve, in a speech at the Institute of International Bankers, on October 4, 2004.

⁸ Paolo Naolin, *Home-Host Issues in Basel II*, Singapore, 2 December 2005.

⁹ The Economist (2005). *A survey of international banking*, 21 May.

Developing country regulators will similarly need to start arguing for their rights to interpret and implement the Basel 2 Framework in a way that best meets their interests.

With the possibility of the WTO General Agreement on Services imposing minimum banking standards, the potential impact of the accord and the way it is implemented will only increase. From a development perspective, efforts need to be mobilized at various levels to reduce the negative impacts of Basel 2 on developing countries. How will regulators of developing countries interpose themselves, balancing their catalytic (developmental) and supervisory roles? To what extent are developing country banks gearing themselves to use to the maximum the available options in this run-up to the 2007 implementation? These are questions to which every banking regulator should have answers, and hopefully this report will help in that regard.

Chapter I
**CAPITAL PROVISIONING: REGULATIONS, PRACTICES AND THEIR IMPACT
ON BORROWING COSTS FOR DEVELOPING COUNTRIES**

A. Capital provisioning: the rationale and impact of Basel 1

The Basel doctrine seeks to ensure financial soundness by regulating a bank's capital, but what does "capital" really mean to a bank? Capital is commonly considered as a barometer of a bank's shock-absorbing capacity, i.e. as a cushion against risks. In the event of insolvency or a bank going bust, this capital would determine the residual wealth of the equity-holders i.e. funds available after paying external claim holders like depositors or lenders. And capital also protects banks against bankruptcy: it could work as a buffer to absorb any ongoing losses. But objectively, capital is an imperfect measure of a bank's soundness: it does not reflect the quality of assets or the available liquidity for a bank.

In the logic of the Basel agreements, having bank assets or their use of funds backed by 'adequate' capital provides the basis for a strong financial system. But how does one determine 'adequate' capital – capital adequate to meet what type of losses, emerging from which assets, captured using which risk measurement system, provided by *which* party?

Basel 1 had a simple answer: a "capital adequacy ratio", which was supposed to encapsulate all that was required to cover a bank's risks. Expressed as regulatory capital¹⁰ upon risk weighted assets, the Basel Committee decided that this ratio had to be at least 8 per cent, i.e. banks were free to have higher ratios, and national regulators could also set higher ratios.

What are the risk-weighted assets against which a bank was supposed to keep a minimum of 8 per cent capital? Here, the approach changes drastically from Basel 1 to Basel 2. In the 1988 Basel 1 Accord, the allocation of weights was based on the category of borrower. Thus a loan given to a corporate borrower, irrespective of whether its rating was AAA and B carried a risk weight of 100 per cent. But any loans to any OECD sovereign carried a risk weighting of 0 per cent. Thus, a portfolio comprising of corporate loans worth 300 million and sovereign OECD loans worth 100 million would convert into risk weighted assets worth 300 million, which would demand 24 million in provisioning.

Basel 2 provides for much more detailed risk measurements. In principle, this would seem a perfect idea – and indeed, banks have been making their own efforts to improve their risk measurements in recent years. But the problem is in the detail: in the particular case of commodity finance, the prescriptions of Basel 2 do not allow for a proper measurement of the risks in commodity finance, and moreover, for procedural reasons they will not allow most banks to cut their provisioning requirements by reducing their financing risks.

¹⁰ Capital adjusted for certain assets and liabilities.

B. Basel 2: why revise Basel 1 and where are the discussions headed?

Basel 1 explicitly focused on managing credit risk, and thus implicitly assumed that other risk categories were covered in this measure. Its biggest limitation, however, was its insensitivity towards individual risk profiles. The one-size-fits-all approach was a far cry from the real risks faced by banks – the provision requirements had little to do with the real risks to which banks were exposed. And its approaches can even be said to exacerbate financial instability: among other things, Basel 1 discriminates towards non-OECD countries, assessing a 100 per cent risk weight for credits with a residual maturity of over one year, irrespective of the specific characteristics of the borrower. One consequence was a preference towards short-term bank lending to this group of countries, which has often been suggested as one of the drivers of the financial crises that these countries have faced.

Both bankers and regulators felt it necessary to introduce a more comprehensive measure of risk. In particular, they sought to introduce a system which was responsive to financial innovation and modern risk management practices (which is further discussed in section D). The first change in regulations came in 1996, when market risk was introduced as a source for an independent capital charge (in other words, credit risk was no longer supposed to cover all risks). But a comprehensive proposal for reform only came in June 1999 when a BIS committee released a new proposal to replace the Basel 1 framework by a new one. Basel 2 revised the methodology for calculating credit risk and introduced capital allocation for operational risk. This goes together with a greater reliance on banks' own risk reviews (but regulators are expected to evaluate how well banks are assessing their own capital needs), and increased disclosure requirements for banks on the ways that they measure and manage risks.¹¹

So what does Basel 2 really change and what does this mean for the bank and the borrower? Critically, Basel 2 changes the basis of risk assessment. While both Basel 1 and Basel 2 recognize different classes of borrowers such as corporates, banks, sovereigns, the treatment within each asset category in Basel 2 makes it possible to distinguish the risk profiles of borrowers. Thus, under Basel 2 risk weights for corporate borrowers are assigned based on their individual credit rating (compared to a flat weight of 100 per cent under Basel 1). Similarly, risks to sovereign borrowers are now determined on the basis of countries' credit ratings: under Basel 2, a sovereign loan to the Singapore Government and one to the Indonesian Government will carry different risk weights, and thus require different capital provisioning. A further implication is that provisioning requirements may not remain stable over the life of a loan, and banks may want to pass on eventually higher costs to their clients during the loan's life.

As discussed in section D, in the course of the 1990s banks had already started to better align their capital with their risks, introducing systems such as RAROC (Risk Adjusted Return on Capital) to ensure that the interest rates that charged on their loans were commensurate with the risks that they

¹¹ Basel 1 had only one "pillar", which aimed to align minimum capital requirements to banks' underlying risk, Basel 2 on the other hand has three pillars. The first pillar is a more sophisticated alignment of capital requirements to underlying risk. The second pillar is that of supervisory review: regulatory agencies are to evaluate each bank's assessments of its own risks and determine whether these are reasonable; this is supposed to lead to greater interaction between banks and their regulators. Regulators can demand extra capital as a result of such interaction. The third pillar is that of market discipline: Basel 2 requires banks to provide more public information and this transparency is expected to turn the market place into another "regulator".

were taking. Much of the changes in Basel 2 are therefore merely meant to enable a convergence of regulatory capital with “economic capital” as determined by banks’ internal systems.¹² To a large extent, then, Basel 2 is supposed to serve the needs of both the regulators, who want a sound financial system, and the bankers, who wished to use regulatory capital more efficiently in the light of their real risk experience.

While the revised Basel framework is sure to lead to a much more meaningful assessment and management of risk in the long run, the actual implementation is strewn with regulatory burdens. The massive amount of compliances and the human, technical and intellectual infrastructure which it requires will disqualify many players. A 2004 study¹³ on the implementation effects revealed that while 60 per cent of the banks in Europe had moved into implementation phases (build, test and roll-out) of their Basel 2 programmes, Asian and emerging markets, as well as the US bank lagged behind with only 27 and 12 per cent, respectively.

¹² Gilles Thieffry (2004). "The Impact of Basel II on Commodity Trade Finance: A Legal Perspective"; *Journal of International Banking Law and Regulation*, Vol. 19 (2004), Issue 10, available at <http://www.plplaw.ch/topic.php>.

¹³ Accenture, Mercer Oliver Wyman and SAP, *Global Survey on Banks' Basel II Preparations*, June 2004.

Trade and commodity finance are far from of Basel 2's concerns. Nevertheless, the Basel Committee has recognized "commodity finance" as a special lending category, which can be treated differently from other lending business. Specifically, if a loan qualifies as "commodity finance", the bank will be able to use the transaction risk rather than the borrower's risk as the basis for capital provisioning. However, because of an unduly restrictive definition of "commodity finance", much of it will not qualify for this special treatment. Instead, the broad sweep of the Basel 2 approach, as discussed in the next section, will be applicable (the treatment of trade and commodity finance will be further discussed in the next chapter). Furthermore, while better allocation of capital to risk is the intention, in practice the tools in Basel 2 to identify risk are crude or even completely wrong for many specific cases of trade and commodity finance. Moreover, its prescriptions on procedures used by banks when dealing with collateral and documents will lead to significantly increased costs.

C. The core provisions of Basel 2

Basel 2 categorizes risks into three classes: credit, market (which concerns the risks that banks are taking through their own trading/speculative activities) and operational risk.¹⁴ This paper focuses on credit risk as this is the guiding force which will steer the quantum and quality of credit flows.

The framework introduces two broad approaches in the measurement of credit risk. The 'standardized approach' and the 'internal rating based (IRB) approach'. Each of these has two sub-classes. The 'simplified standardized approach' and the 'standardized approach' in the standardized approach, and the foundation and advanced, approaches in the IRB approach. As noted above and as will be discussed further in the next chapter, if a loan can be classified as a "commodity finance" loan, or in any of the other categories of specialized lending recognized by Basel 2 (e.g. project finance, securitization), the treatment will be somewhat different (although the same core principles will apply).

In the **standardized approach** assets are grouped into different classes of borrowers: corporate, retail, sovereign, banks, etc. Risk weights are then allocated depending on the asset class. While risk weights for certain classes such as corporates, banks, sovereigns are directly associated with the allocated rating for the *individual* entity/country, weights for other categories like retail portfolios are based on a weight which is fixed for the *category* by the regulator. The *rating* for the former is provided by an *external* credit assessment institution (in the standardized approach) and the corresponding *risk weight* is allocated by the regulator. This process of converting the rating into a risk weight is called risk mapping. The simplified standardized approach broadly follows the same process except that the grades for the sovereign, banking and securities asset classes are based on a country risk score assigned by an OECD Export Credit Agency (ECA).¹⁵

In the **IRB approach**, banks are allowed to rely on their own but subject to regulatory approval and internal estimates of risk components in determining capital requirements for each exposure. The process they have to follow in order to reach these estimates is spelled out in detail in Basel 2, and regulators are to ensure that banks indeed follow these procedures. Risk assessment is to be

¹⁴ See Andrew Cornford (2005). *Basel II: the revised framework of June 2004*, UNCTAD Discussion Paper No. 178, June.

¹⁵ ECA country scores can also be used for sovereign weighting in the standardized approach at the discretion of the regulator.

based on the calculations of unexpected losses (UL) and expected losses (EL). While EL is treated separately, UL is treated by provisioning capital. In the case of corporate, sovereign and banking exposures, the capital to be provisioned is derived by entering certain risk components in a published formula.

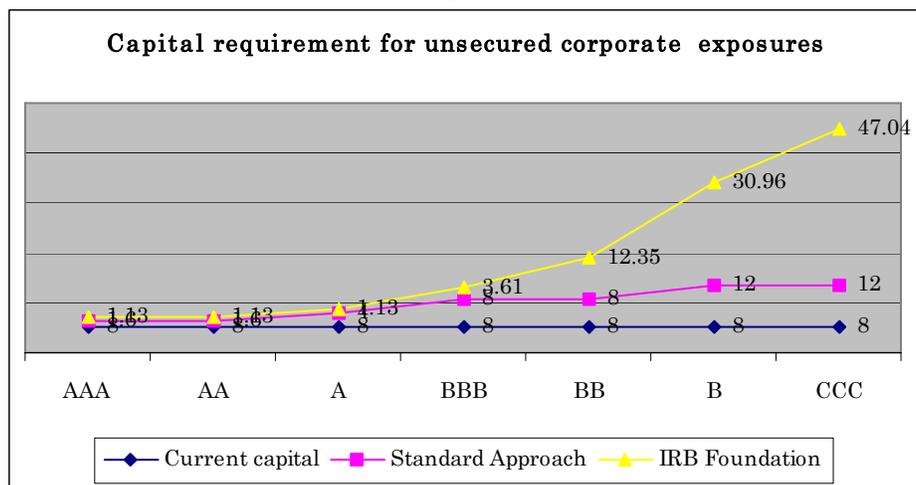
The risk components are the loss given default (LGD), exposure at default (EAD), probability of default (PD) and effective maturity (M). LGD represents the expected loss as a percentage of the exposure (what proportion of the exposure will be recovered), while EAD is determined by the banks' exposure to the borrower at the time of default. LGD concerns transaction specific factors while PD relates to borrowers' default risk. The unexpected loss capital (K) so derived is treated to the following formula to arrive at the risk-weighted assets (RWA).¹⁶

$$\text{risk-weighted assets (RWA)} = K \times 12.5 \times \text{EAD}$$

For many of the asset classes, there is a further option to choose between the foundation IRB approach and the advanced IRB approach. In the foundation IRB approach, a bank uses its own estimates to calculate PD while relying on supervisory estimates for other parameters. In the advanced IRB approach, all parameters are based on the bank's internal estimates. That makes it possible for advanced IRB banks to use considerably lower LGDs, which leads to much lower provisioning requirements.

In both approaches, provisioning will be closely related to the credit quality of the borrower. In other words, credit ratings (internal or external) will be a key input for determining capital requirements. As the regulatory divide between investment grade and speculative grade assets grows, it is not really difficult to guess, who would be at the end of the curve. A Bank of England survey puts numbers to the expected discrepancy (see figure 1).

Figure 1



Source: Bank of England, *Spring Quarterly Bulletin*, 2001

¹⁶ To explain the 12.5 in this formula: the minimum capital requirements is 8 per cent of risk weighted assets. Working reverse, risk weighted assets can be derived by multiplying the regulatory capital by 12.5.

As the ratings downgrade from BB to B, the risk weights rise exponentially, increasing the requisite capital by 150 per cent in the foundation IRB approach and as much as 50 per cent in the standardized approach. It should also be noted that the tenors of loans will have an increasing impact on risk weights, with loans to less-well-rated borrowers rapidly attracting additional provisioning requirements as the loan tenors increase.

In the advanced IRB approach, banks can mitigate much of the effects of the higher capital requirements through deal structures which limit the probability of default and loss given default, but such mitigants are not available for the ‘standardized’ and the ‘foundation’ IRB approaches.

Under the basic IRB approach, banks are not permitted to estimate their PD, but have to rely on “supervisory slotting”, which more or less corresponds to the following:

Table 1: Supervisory slotting criteria for probability of default

Slot	Strong	Good	Satisfactory	Weak
Equivalent risk	BBB-	BB	BB- or B	B to C-
Risk weight	70 per cent	90 per cent	115 per cent	250 per cent

Banks have to slot their each of their clients into one of the categories, according to preserved criteria. Unfortunately, as research by banks has shown, the risk weights for satisfactory and weak risks are too high, leading to unnecessary high provisioning requirements for loans to these categories.

Under the foundation IRB approach, banks can use their own internal rating for PD but must rely on supervisory estimates for other risk components – which again are on the high side. Moreover, they are not able to use many of the risk mitigants that deal structures can provide.

D. How banks improved their capacity to manage risks: value-at-risk and RAROC

The Basel 1 Capital Accord dates from 1988, and since that time there has been a radical development in the ways that banks measure and manage risks. To a very large extent, Basel 2 is just an effort of the regulators to catch up. Understanding how banks currently look at risk will help understand the logic of Basel 2 – and identify where the regulators’ effort risks to go wrong.

Understanding risk exposure is the first step in managing it. The rapid development of computer hardware and software since the late 1980s and 1990s, as well as the development of a broader range of financial markets made it possible for banks to have a much better grasp of the risks of individual transactions and of their exposure portfolio, and to adopt much more sophisticated ways to deal with these risks.

The traditional approach to analysing risk exposure is asset/liability analysis. This approach works as follows:

1. A hypothetical scenario is selected that describes how various financial variables – interest rates, GDP growth, commodity prices, inflation, etc. – might evolve over an extended horizon.
2. This scenario is used to simulate the cash flows and the accounting value of assets and liabilities as they would develop over time, assuming that the scenario becomes reality.
3. The process is repeated for other scenarios in order to consider a range of future outcomes.

Asset/liability analysis is a flexible methodology that allows the user to test interrelationships between a wide variety of risk factors including market risks, liquidity risks, actuarial risks, management decisions and uncertain business cycles. Its major shortcoming is that it is highly subjective. It is up to the user to decide what are the appropriate scenarios, analyse the results and determine their significance. Accordingly, asset/liability analysis is not so much a measure of risk as it is a tool that supports the analysis of risks. In the early 1980s, banks increasingly complemented it by more objective statistical measures of risk.

Initially, the major new approach was value-at-risk (VaR). VaR provides a measure that indicates how much money a bank could lose by holding a position for a specific period of time, given a certain confidence interval. This approach:

1. Calculates the dispersion around the trend of prices, interest rates and other assets that are important for the bank.
2. Using normal statistical analysis, the standard deviation of prices is determined.
3. A monetary value is then given to the negative results: e.g. how large will the bank's loss be if the 3-months interest rate increases by 1 per cent? This monetary value is the value-at-risk. Normally, these values are also calculated for two and three standard deviations.

In other words, VaR enables a bank, the head of one of its departments, or the manager of a portfolio, to make statements along the following lines: “If we continue with our current strategy, there is a chance of one out of 20 that in the coming day/month/year, we will lose at least \$10/50/100 million”, implicit in this is that “it could be even worse”.

For a portfolio of assets, the co-variance of asset prices is calculated, to arrive at the total risk for the full portfolio. Naturally, this quickly becomes complex in practice, one needs specialized software for a VaR analysis and a large set of underlying data to understand correlations. VaR analysis only became feasible for many institutions in 1994, when JP Morgan made its Risk Metrics system – with a huge underlying database of historical asset price – publicly available.

While VaR analysis using such complex “black box” models is a valuable tool in the sense that it provides a standardized measure of risk, it can become risky if the users are not aware of its assumptions, as well as the limitations of the VaR concept. For example, crashes occur in real markets much more often than a normal distribution (which underlies many VaR models) would predict; and prices are usually difficult to calculate in illiquid markets or for non-continuously traded assets, so the values and volatilities introduced into the model can easily be wrong. Also, VaR is based on historical data and cannot encompass the risk that conditions will fundamentally

change (for this reason, VaR is usually accompanied by stress-testing, which tests the performance of a portfolio under one or a handful of user-defined market scenarios).¹⁷

Perhaps most importantly, the VaR approach only looks at risk, but does not balance risk and return. The development of a more sophisticated approach that calculates Risk-Adjusted Return On Capital (commonly known as RAROC) was thus unavoidable. Again, massive efforts were needed to gather and analyse all the relevant data, and only when one bank, Bankers Trust, made the results of its analysis and the underlying databases available to the public did it become possible for banks to adopt the RAROC approach in a general manner.

The first step in the RAROC approach is to create a formal model of the risk portfolio. For example, what is the exposure to US dollar risk; what is the exposure to long-term interest rate risk? The bank's risks are thus categorized into pre-set categories, with the correlation between categories already built in. The second step is to estimate "capital at risk". This is calculated as the amount of capital needed to cover the worst 1 per cent of possible outcomes, given historical risk distribution - in the Bankers Trust model, a Monte Carlo simulation (a very large number of completely arbitrary scenarios) is used to identify the losses resulting from the 1 per cent of worst outcomes. This capital at risk can then be attributed over different business units, categories of instruments, etc. The model allows us to test different scenarios: adding new positions, adopting a hedging strategy, changing asset allocation, and so on. Sensitivity analysis is also possible to identify the possible effect of hypothetical changes in interest rates, exchange rates, etc.

From an operational perspective, RAROC allows a bank to segment risk into all of its different components. And not in an abstract way, but by attributing the amount of capital that is at risk in each component (this is called "economic capital"). This capital at risk can then be compared to the returns made by this component. In other words, a bank can use RAROC to ensure that the magnitude of returns fits the magnitude of the risks it is taking. If the two are not commensurate, it can decide to allocate its capital in a more profitable manner; e.g. expected returns can be improved while keeping risk constant.

All of this is reasonably well-reflected in Basel 2. But banks did not stop at measuring risk and putting a price on it. The RAROC methodology was used to give "risk ceilings" to departments and to individual credit managers: these ceilings represented the part of the economic capital of the bank that these departments and individuals were allowed to put at risk. Naturally, they quickly developed methods to make better use of this capital, in order to leverage their possibilities. This includes methods to lay off part of their portfolios to the capital market when regulators imposed overly high regulatory capital, as well as techniques to reduce risks in individual transactions and bring economic capital closer to regulatory capital (see Figure 2). This coping strategy is only imperfectly recognized in Basel 2.

¹⁷ See for an overview Aaron Brown (1997). "Value-at-Risk: the next ten VaR disasters", *Derivatives Strategy*, March.

E. Impact on developing countries

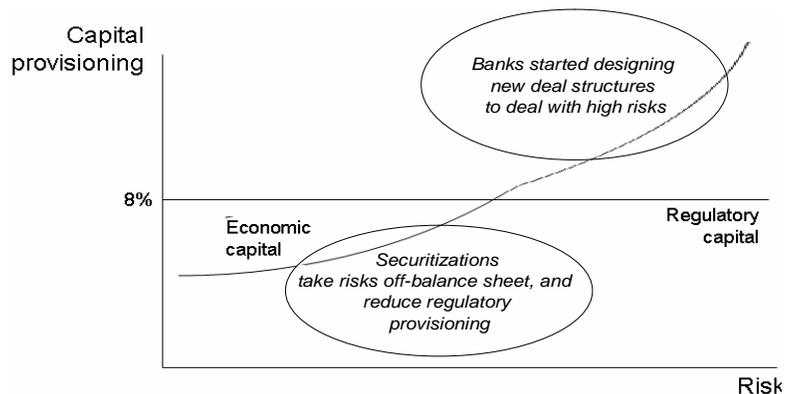
Basel 2 will better align capital provision with lending risks. In Basel 1, all non-OECD countries were treated in the same way, which implies that some were treated unduly harshly. However, for most developing countries, provisioning requirements were actually less than was warranted on the basis of their risks alone, and to the extent that Basel 2 will correct this situation, they will see their loans become more expensive. But Basel 2 over-corrects and now over-estimates the risks of lending to developing countries. One widely-shared criticism of Basel 2 is that it looks at risks on a deal-by-deal basis and does not recognize that for a bank, a well-diversified portfolio is less risky than a more concentrated portfolio. In the words of Stanley Fischer, Vice Chairman of Citigroup:

“In not taking into account the risk mitigation effects of international diversification, Basel 2 in its current form runs the risk of materially reducing the incentive for larger internationally active banks to maintain and expand their operations in emerging market economies. Given the economic and other benefits of such operations, not just for the host economies and for the international financial system more generally, this must be considered a significant shortcoming”.¹⁸

But this is only one of the impacts of Basel 2. Justifiably, Basel 2 wishes to ensure that the capital charge is more closely linked to the credit quality of the borrower. Table 2 shows how provisioning requirements become more favourable for well-rated borrowers and more stringent for more risky ones. Banks logically try to use their capital in an optimal manner, and have therefore developed their own risk management models.

But this will now be overridden by a new regulatory model which forces banks to put too much capital (as compared to the capital that is required to cover real financing risks) for loans to borrowers that are deemed risky. As capital is scarce, this will imply that credit lines will be cut for such “risky” borrowers, unless banks can pass on the extra costs to them. Worse, this exposes lending to such borrowers to larger risks of cyclical credit crunches.

Figure 2
Ways to synchronize regulatory and economic capital



¹⁸ William Taylor Memorial Lecture at the International Conference of Banking Supervisors, Cape Town, September

The real impact in terms of lending costs for developing countries may be severe in some cases, less severe in others, as banks will have to exercise flexibility in the way that they adjust credit terms to changes in provisioning requirements. While more capital provisioning at a bank's portfolio level may demand new capital and with it increased lending costs, the same may not hold good at an individual loan level. This would depend to a large extent on a bank's asset mix and, of course, the policy accommodations made by its management. This would be strongly guided by the extent and nature of competition amongst banks. Competition between banks and other capital providers will force banks to keep interest rates down, or face the risk of losing clients. Some banks are already charging weaker clients for economic capital (which reflects risks) rather than regulatory capital – so an increase in the latter is irrelevant. Banks will, on the other hand, try to use their capital to the optimal extent. Regulatory capital freed up for high-rated clients could be appropriated for other clients.

Table 2: Impact of Basel 2 on provisioning conditions of two kinds of borrowers

(in per cent)

Company rating	A	B-
Probability of default	4	12.3
Loss Given Default	35	55
Capital adequacy ratios:		
- Basel 1	8	8
- Standardized	4	12
- Foundation IRB	1.2	20.3

Source: Fitch Rating

Another impact on developing countries will come through the likely weakening of the competitive position of their banks. Smaller banks in developed countries have lobbied against Basel 2, arguing that it would distort the playing field in favour of large banks who would be the only ones able to make use of all of the possibilities for reducing the capital provisioning that will be available under the new Accord. Impact studies have borne out this fear. The same effect will weaken the competitiveness of developing country banks as opposed to large developed country ones.

"Greater competition from internationally active banks could see banks from the developing world being taken over by foreign banks, at a pace even quicker than has occurred in recent years. This greater competition would be linked to the fact that the less sophisticated developing and transition country banks would tend to use for a significant period, the standardized approach described below, which requires more capital, whilst the large international banks would be able to use the more advanced approach, which requires less capital. If developing and emerging banks attempt to switch to the more sophisticated approach (so as to avoid a higher capital requirement that increases their costs), they will find it extremely complicated and demanding to do so, if not impossible in the medium term".¹⁹

Large banks in developing countries with a relatively sophisticated financial sector, e.g. Brazil or India, have recognized this potential threat and are working hard to be able to implement Basel 2 and have encouraged their regulators to develop the capacity necessary to implement the new Accord. In these countries, may well have the effect of strengthening the Basel 2 risk management capacity financial sectors, and thus its resilience to shock. In developing countries where domestic banks do not have the financial and managerial means to upgrade to meet Basel 2 advanced IRB

¹⁹ S. Griffith-Jones & S. Spratt (2001). *Will the proposed new Basel Capital Accord have a net negative effect on developing countries?* Institute of Development Studies.

requirements or regulators do not have the capacity to implement Basel 2, the effects are, however, likely to be as expressed in the quote above.

Chapter II

COMMODITY-RELATED FINANCE WITHIN THE BASEL 2 FRAMEWORK

Most international commodity trade finance – up to 95 per cent, according to some estimates – is provided in the form of bank lines, either “clean lines” (not secured by any controls over the use of the funds), or “borrowing base lines” (which have some loose collateral stipulation), to mid-sized trading houses. Very few of these have any formal debt ratings, and those that have are rarely investment-grade. Quite a few banks are basing their lending decisions on long-standing relationships and on domain knowledge, but this will no longer be sufficient under Basel 2.²⁰ As Basel 2 comes into force, the capital risk weighting of such credit lines will make these traditional financings for commodity traders far more difficult.²¹ Instead, much more creativity will be needed to enable the continuing provision of funds to trading companies.

Basel 2 identifies "commodity finance" as a separate category for provisioning purposes, recognizing that it can be structured in a way different from "clean lines" of credit. If a credit to a trading company or other borrower meets the criteria of Basel 2, it will be provisioned not according to the credit risk of the borrower (as discussed in the previous chapter), but according to separate rating criteria.

There are three core problems with Basel 2 as concerns finance for the commodity sector. First, the criteria for recognizing a transaction as "commodity finance" are unduly restrictive. Second, the way that the different approaches – standardized and IRB – deal with commodity trade finance, even as a "specialized lending category", is unduly harsh. Third, risk mitigation methods that are the mainstay of structured commodity finance today will in the future only give relief, in terms of provisioning requirements, to the small group of banks that will be able to use the advanced IRB approach. After a brief discussion of the general impact of Basel 2 on trade finance (which will impact all those commodity financings that do not qualify for Basel 2's "commodity finance" treatment), this chapter focuses on these three aspects.

A. General impact of Basel 2 on trade finance

According to ABN/AMRO, one of the largest banks in the payments and financing of developing countries' trade, "tests regarding L/C confirmation have proved that capital requirements can rise under BIS II in all three approaches for issuing banks domiciled in emerging markets. The increase can be up to 50 per cent in the standardized approach and triple in the Foundation IRB approach, depending on the countries involved. When applying the Advanced IRB approach, capital charges could even be higher."²²

²⁰ James Parsons (2005). *The impact of Basel 2 on trade finance structures*, Conference on Structured Trade & Commodity Finance, Agra Informa, London, 8-9 March.

²¹ According to Prabhat Vira, head of the global commodity finance group at ABN Amro, quoted in the article "An emerging market", *CFO Europe*, February 2005.

²² Carl Stocking (2004). "ABN Amro's experience: positioning global trade within the Basel II Framework", Bankers' Association for Finance and Trade, 14th Annual Conference on International Trade, Chicago, 5 November.

Under Basel 2, trade services (opening L/Cs, forfaiting, etc.) will become more expensive because:

- New “operational risk” capital to cover banks’ risks of loss due to systems failure, fraud, deal execution errors, etc. Processing and handling trade documents and payments is relatively complex and thus would carry high operational risk.
- Heavier weighting of the outstanding capital-at-risk of short-term L/Cs under the Advanced IRB approach. Under Basel 1, and the other two Basel 2 approaches, only 20 per cent of the nominal value of a short-term self-liquidating L/C is deemed to be at risk, but under the advanced IRB approach this will become 100 per cent.²³
- Revised credit risk capital requirements. In the advanced IRB approach, Basel 2 requires at least 2.5 as much capital as Basel 1 for sub-investment grade exposure. In terms of the credit spreads that banks have to demand from their customers (assuming that they wish to maintain their normal level of profits), this implies that for a simple 90-day letter of credit to a BB-rated borrower, a bank will have to ask for a interest rate mark-up (above LIBOR) of 2 per cent; for a single B-rated borrower, the mark-up has to be as much as 5 per cent.

This approach in Basel 2 goes against the realities of international finance. In effect, trade finance is much less risky than other finance: According to the International Chamber of Commerce (2002):

“Trade finance has an extremely low risk profile... There appears to be little recognition of the potentially serious impact the current credit risk proposals could have on trade finance... These could well bite hardest on trade with developing countries or those with relatively low credit ratings”.

Or in the words of the Fédération Bancaire de l’Union Européenne (2002):

“the treatment of trade finance under both the standardised and foundation IRB approaches fail to reflect the low loss experience in trade finance... It could lead to banks withdrawing from this activity (especially from markets which are perceived as being more risky).

B. Basel 2's definition of "commodity finance"

Commodity finance can either be categorized as a corporate exposure or as a sub-class of specialized lending, "commodity finance". In Basel 2, "commodities finance" is defined as a form of lending that is not principally secured on the borrower, but on the underlying transaction (see Box 1).

The definition adopted in Basel 2 is restrictive in several aspects. The transaction has to be:

- for an exchange traded commodity =
- repaid from the proceeds of their sale =
- be "structured" in a manner strong enough to make the commodity more than just a risk mitigant.

²³ Carl Stocking.

Box 1
Basel 2, paras. 224 and 225 – defining commodities finance (CF)

“CF refers to structured short-term lending to finance reserves, inventories, or receivables of exchange-traded commodities (e.g. crude oil, metals, or crops), where the exposure will be repaid from the proceeds of the sale of the commodity and the borrower has no independent capacity to repay the exposure. This is the case when the borrower has no other activities and no other material assets on its balance sheet. The structured nature of the financing is designed to compensate for the weak credit quality of the borrower. The exposure’s rating reflects its self-liquidating nature and the lender’s skill in structuring the transaction rather than the credit quality of the borrower.

The Committee believes that such lending can be distinguished from exposures financing the reserves, inventories, or receivables of other more diversified corporate borrowers. Banks are able to rate the credit quality of the latter type of borrowers on their broader ongoing operations. In such cases the value of the commodity serves as a risk mitigant rather than a primary source of repayment”.

The restriction to exchange-traded commodities is a corollary to the desire to make the bank's reliance on the commodities fool proof: if the transaction goes wrong, the bank can take and sell the underlying commodities at the market price; in the logic of the Basel Committee, such a sale will only be guaranteed if the commodity is exchange traded. However, this restriction would eliminate many well-structured deals for products such as, fruits, vegetables, flowers, fisheries or diamonds from a "commodity finance" treatment. These are among the most dynamic commodity sectors, and this restriction (which has little to do with the risk of the actual loans) will hinder developing countries' diversification efforts.

The other two restrictions have an impact on the way that banks should structure commodity loans in the future. First, banks will have to overcome the hurdles of having a transaction recognized as "commodity finance", and second, having obtained such recognition, they will then have to ensure that the treatment of the transaction is as favourable as possible.

Elsewhere, the Committee has specified what is necessary to get a transaction recognized as "specialized" – this also applies of course to "commodity finance" – “banks must be able to demonstrate that they exercise effective control over the project’s/object/asset and the income that it generates. Such control should include the ability to:

- Continuously monitor the physical and financial condition of the assets, through independent engineering reports or visits, on-site audits, and access to the borrower’s accounting systems;
- Easily gain control over cash flows paid into and generated by the assets; and
- Take over the project/object/asset without material delay in the event that the borrower defaults on its obligations”.²⁴

²⁴ BIS (2001). *Working Paper on the internal ratings-based approach to specialized Lending Exposures*, October.

C. Identifying the risks of "commodity finance" transactions

As is the case for all other forms of finance, in assessing the risks of commodity financings Basel 2 gives only little flexibility to banks that use the standardized approach and more to banks that use the IRB approach. Banks which adopt the standardized approach would be required to follow the risk grades as specifically allotted by their regulator for commodity lending (see Table 3). Banks using the IRB approach, however, can use the risk weights they generate internally.

Table 3: supervisory rating grades criteria for commodities finance exposures

Source: Bank of International Settlements

	Strong	Good	Satisfactory	Weak
Financial strength				
Degree of over-collateralisation of trade	Strong	Good	Satisfactory	Weak
Political and legal environment				
Country risk	No country risk	Limited exposure to country risk (in particular, offshore location of reserves in an emerging country)	Exposure to country risk (in particular, offshore location of reserves in an emerging country)	Strong exposure to country risk (in particular, inland reserves in an emerging country)
Mitigation of country risks	Very strong mitigation: Strong offshore mechanisms Strategic commodity 1 st class buyer	Strong mitigation: Offshore mechanisms Strategic commodity Strong buyer	Acceptable mitigation: Offshore mechanisms Less strategic commodity Acceptable buyer	Only partial mitigation: No offshore mechanisms Non-strategic commodity Weak buyer
Asset characteristics				
Liquidity and susceptibility to damage	Commodity is quoted and can be hedged through futures or OTC instruments. Commodity is not susceptible to damage.	Commodity is quoted and can be hedged through OTC instruments. Commodity is not susceptible to damage.	Commodity is not quoted but is liquid. There is uncertainty about the possibility of hedging. Commodity is not susceptible to damage	Commodity is not quoted. Liquidity is limited given the size and depth of the market. No appropriate hedging instruments. Commodity is susceptible to damage.
Strength of Sponsor				
Financial strength of trader	Very strong, relative to trading philosophy and risks.	Strong	Adequate	Weak
Track record, including ability to manage the logistic process.	Extensive experience with the type of transaction in question. Strong record of operating success and cost efficiency.	Sufficient experience with the type of transaction in question. Above average record of operating success and cost efficiency.	Limited experience with the type of transaction in question. Average record of operating success and cost efficiency.	Limited or uncertain track record in general. Volatile costs and profits.
Trading controls and hedging policies	Strong standards for counterparty selection, hedging, and monitoring.	Adequate standards for counterparty selection, hedging, and monitoring.	Past deals have experienced no or minor problems.	Trader has experienced significant losses on past deals.
Quality of financial disclosure	Excellent	Good	Satisfactory	Financial disclosure contains some uncertainties or is insufficient.
Security Package				
Asset control	First perfected security interest provides the lender legal control of the assets at any time if needed.	First perfected security interest provides the lender legal control of the assets at any time if needed.	At some point in the process, there is a rupture in the control of the assets by the lender. The rupture is mitigated by knowledge of the trade process or a third	Contract leaves room for some risk of losing control over the assets. Recovery could be jeopardized.
Insurance against damages	Strong insurance coverage including collateral damages with top quality insurance companies.	Satisfactory insurance coverage (not including collateral damages) with good quality insurance companies.	Fair insurance coverage (not including collateral damages) with acceptable quality insurance companies.	Weak insurance coverage (not including collateral damages) or with weak quality insurance companies.
Insurance against damages	Strong insurance coverage including collateral damages with top quality insurance companies.	Satisfactory insurance coverage (not including collateral damages) with good quality insurance companies.	Fair insurance coverage (not including collateral damages) with acceptable quality insurance companies.	Weak insurance coverage (not including collateral damages) or with weak quality insurance companies.

The standardized approach only recognizes financial collateral as a credit risk mitigant. The IRB approach recognizes that commodity lending as a specialized category has broadened the range of permissible collateral to include receivables and other collateral - albeit that even with this collateral, the minimum loss given default has been set at 40 per cent (compared to 0 per cent for financial collateral).

The accord prescribes two approaches for using collateral as a credit risk mitigant: the “simple approach” and the “comprehensive approach”. In the simple approach (which can be used both within standardized and IRB approaches) the credit rating of the borrower gets replaced with that of the collateral. In the comprehensive approach (applicable only to IRB approach) the Loss Given Default is adjusted as a function of the strength and value of the collateral.

Commodities can in principle be used as collateral in a specialized "commodity finance"; However, things, are not as, straightforward. Firstly, in order for collateral to provide protection, the credit quality of the counterparty and the value of the collateral must not have a material positive correlation and the bank would have to demonstrate that to its regulator.

Secondly, the use of physical collateral is subject to approval by the national regulator, which in turn, is guided by two standards: the existence of a liquid market for the disposal of the collateral and the availability of well established, publicly available market prices to value the collateral.²⁵

Thirdly, the collateral arrangements must have been set up properly. Operational guidelines stressing legal enforceability demand compliance.

“Any claim on a collateral taken must be legally enforceable in all relevant jurisdictions, and any claim on collateral must be properly filed on a timely basis. Collateral interests must reflect a perfected lien (i.e. all legal requirements for establishing the claim have been fulfilled). Furthermore, the collateral agreement and the legal process underpinning it must be such that they provide for the bank to realise the value of the collateral within a reasonable timeframe”.²⁶

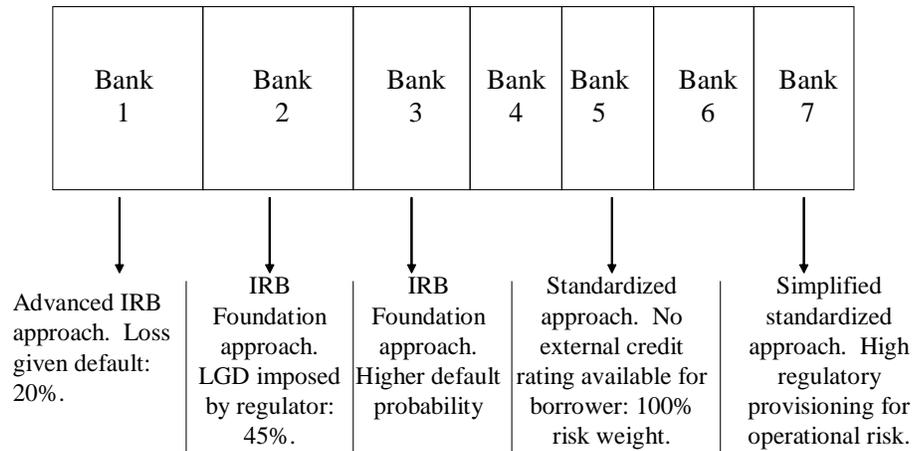
Fourthly, banks also need to comply with all procedural and documentary requirements of the project. For example, the bank **must** have continuous monitoring appropriate to the exposure, including control of trade documents, frequent audits of collateral, ageing reports, control of proceeds of accounts paid, regular financial analysis. The extent of legal and physical control over the commodity will play an influential role on deal structures. Third-party services for physical inspection and for establishing the legal right to take legal position and to liquidate the collateral can be expected to gain in importance.

²⁵ See BIS (2004), para 521.

²⁶ See BIS (2004), para 509.

Box 2
Possible impact of Basel 2 on syndicated loans to developing countries

Basel 2 is likely to disrupt the syndicated loan market, which is now quite important for a number of developing country commodity exporters. Just consider trying to arrange a syndication with interested banks with all following different provisioning rules, as follows:



Although this is one and the same deal, and its risk is the same for all the participating banks, this is not the way that the banking regulators will look at it. Among other things, Basel 2 excludes the possibility for banks to “piggy-back” on the transaction ratings of other banks (although data pooling is possible, each bank in the IRB approach will have to prove itself that this type of transaction has X default risk, Y loss given default).

Instead, each of these banks has different provisioning requirements for such a syndicated loan. Only IRB-compliant banks can use internal ratings, the other banks have to rely on external ratings (in the case of the simplified approach, only ECA ratings). These are scarce in developing countries.

Moreover, risk mitigation mechanisms that have a value for some of the banks because they allow lower provisioning (e.g. assignment of receivables or use of collateral management) have no value for the other banks and are just a cost factor. In such conditions, how can the banks agree on the interest rate or even on the deal structure? Large loans such as the annual \$300 million+ financing for the Ghana Cocoa Board require a large number of banks to participate and it is not clear at all how this will be organized after 2007.

Chapter III
**SAFEGUARDING COMMODITY FINANCE
FOR DEVELOPING COUNTRIES
AFTER BASEL 2 IS LAUNCHED**

A. The scope of Basel 2

Basel 2 represents a major effort by the world's major banking regulators to better align banks' capital with their real risks, in order to reduce systemic risk in the international financial sector and reduce its vulnerability to shocks. The approach of Basel 2 is very similar to the models that the world's largest banks introduced during the 1990s, which were meant to identify the "economic capital" that each transaction tied up and how banks should price the risks they took in each transaction. Banks introduced these new models throughout their operations, including in their commodity financing.

However, these banks have used these models in a somewhat flexible way. However, in the Basel 2 regulations everything is codified, it even micro-manages the ways that banks need to handle collateral in order to be able to use it to reduce provisioning requirements. International finance is complex and commodity finance is, in many respects, different from mainstream forms of banking. Perhaps as a result of this, the prescriptive rules in Basel 2 capture rather poorly the way banks handle their commodity financing risks. Now, this poorly captured image of banks' risk management methods is reflected back onto the banks, who may be forced to adapt their practices to conform to regulators' poor understanding of commodity finance.

In consequence, the Basel 2 framework is deeply flawed when it comes to commodity finance. There are two sets of problems: those that relate to developing countries, irrespective of whether they apply Basel 2 in their domestic bank regulations or not, and those that will apply to the countries where regulators decide to adopt the Basel 2 prescriptions. The first set of problems is around the corner: starting in 2007, the major international banks will start functioning under the Basel 2 regime.

Further changes to the letter of the Basel 2 framework are desirable, even though it may be too late. The need for such changes has been convincingly claimed by a range of institutions, but unless the intellectual argument was supplemented by political pressure, such arguments have been largely ignored by the Basel Committee on Banking Supervision. The most glaring fault in Basel 2 – this has been to the detriment of developing countries, is its inexplicable downplaying of the effect of portfolio diversification on risk. As argued strongly not just in academic circles,²⁷ but also by groups representing the largest international banks:

“Under Basle CP3, the benefits of diversification of business lines, asset classes, geographical regions and risk types is not adequately recognized in assessing capital requirements. This is in contrast to modern economic theory, industry practice and empirical evidence. Diversification mitigates the possibility and extent of loss by

²⁷ Most so by Stephany Griffith-Jones, e.g. in “Mistakes in Basel Accord Could Harm Developing Countries”, *Ideas*, 23 May 2003; and *How to Prevent the New Basel Capital Accord Harming Developing Countries?* Paper presented at the IMF-World Bank Annual Meetings at Dubai, 2003.

allowing holding companies to rely on earnings from one area when another area slows or experiences losses and to benefit from diversification of risk. Diversification also allows strength in market or credit performance in some areas to offset weaknesses or problems in other without necessarily drawing on capital. The regulatory capital requirements should reflect the benefits of diversification”.²⁸

Developing countries should use all means at their disposal to change Basel 2, even though very little time still remains. Such pressure can focus on the following issues:

- The introduction of ceilings for risk weights or a lower risk curve under IRB approach (this has already agreed for SME finance, to avoid that in particular German bank would have to make unduly heavy provisionings for loans to SMEs)
- The full acceptance of specialized lending mechanisms (use of physical collateral etc.) under the standardized approach, so that the many smaller banks in developed countries, which have developed niches in certain areas of developing country finance can continue such business;
- The introduction of a mechanism that would counter pro-cyclical tendencies in the current Basel 2 framework; and
- The recognition of the effects of international portfolio diversification on unexpected losses. Capital requirements for lending to these countries should be reduced by as much as 20 per cent.

This concluding chapter, however, does not further discuss useful changes to the Basel 2 framework itself, but focuses on what developing country regulators, banks and borrowers can do within this framework to safeguard commodity financing flows. Basel 2, after all, provides a framework, with room for re-interpretation and different modalities of implementation. As long as the financial market (that is, international banks) accepts as sound, a national regulator and developing bank’s interpretation, they do not need to stick to the letter of Basel 2. But it should be noticed that this evaluation – are national practices sound or not? – depends on the “packaging” of the message as much as on the message itself; in national regulators developing countries’, and their banks therefore have an interest in formulating a clear common platform on Basel 2.

B. Implications for international commodity finance

Basel 2 is unduly conservative when it comes to financing developing countries in general (even the portfolio effects of financing a more diversified group of countries is not properly accounted for), particularly when it comes to commodity finance.

A first effect is that the risks of lending to developing country governments and regulators will be explicitly recognized. Some developing countries and companies which have superior credit ratings (e.g. Botswana, China, Malaysia) will benefit by no longer being treated in the same way as all other developing countries, but as Table 5 indicates, the majority have sub-investment grade ratings, which will mean an increase in provisioning requirements. For some countries, the effects of this may be less than feared, as many banks have already been applying RAROC system and

²⁸ Quoted from a submission by the New York Clearing House Association (which represents several of the world’s major banks) to the Basel Committee in August 2003.

pricing their loans on the basis of the economic capital tied up by the transaction, rather than the regulatory capital. But overall, most of these sub-investment grade countries can expect a significant increase in interest rates for standard loans, with spreads over LIBOR possibly doubling for the countries in the BB+ to BB- category, increasing up to four-fold for the countries in the B+ to B- category, and more than six-fold for countries with a CCC or no rating (again, actual increases may be lower if banks, for competitive reasons, decide not to pass on all the costs of their increased provisioning requirements).

Table 5
Sovereign ratings of developing countries, as of 16 April 2006

AAA, AA+, AA, AA-	A+, A, A-	BBB+, BBB, BBB-	BB+, BB, BB-	B+, B, B-	CCC or no rating
<i>(can expect improving credit conditions)</i>		<i>(will be little affected)</i>	<i>(can expect worsening credit conditions)</i>		
Chile Singapore	Bahrain Botswana China Kuwait Malaysia Mexico Oman Qatar Saudi Arabia South Africa Thailand Trinidad and Tobago Tunisia United Arab Emirates	Colombia Egypt Jordan Morocco	Brazil Costa Rica El Salvador Guatemala India Indonesia Nigeria Pakistan Panama Peru Sri Lanka Venezuela Vietnam	Argentina Benin Bolivia Burkina Faso Dominican Republic Ghana Grenada Jamaica Lebanon Madagascar Mali Mongolia Mozambique Papua New Guinea Paraguay Philippines Senegal Surinam Uruguay	Belize Cameroon Ecuador <i>The other countries developing countries not included in this table have no sovereign rating.</i>

Source: Standard & Poor's.

Second, as discussed in the previous chapter, there are many problems with the prescriptive detail of Basel 2. For example, even in the IRB approach, what commodities should qualify under “other

collateral” is subject to supervisory approval, which is dependent on the existence of a liquid market and easily available prices for the collateral. Many commodity-dependent countries selling commodities, which do not have well developed commodity exchanges (e.g. horticultural commodities, fishery products) risk to lose their financiers, irrespective of the actual low risk of some of the financing structures that are now used in these sectors.

Other more difficult – to quantify – effects of Basel 2 may have a stronger impact. Basel 2 brings colossal reporting, validation and other data intensive compliance requirements. Many smaller banks may not be able to develop the systems required for the advanced IRB approach, or they may not be able to gather enough data for statistically significant risk estimates, or their commodity finance may be relatively marginal and not worth the expense of developing model approaches in order to maintain it. Such banks may withdraw from commodity finance altogether, or if they remain active, would have to increase their rates considerably.

C. Developing country choices: what can banks, their borrowers and their regulators do?

Local regulators have, in principle, considerable discretionary powers in deciding on whether or not to adopt Basel 2, and if they do, how. For example, only 11 banks in the U.S. will have to comply with Basel 2, while a further 10 others may have to comply. The rest will stay in the Basel 1 regime. The Basel Committee only represents the regulators of 13 OECD countries, and they do not have the right to impose their accord on others (or even the obligation to implement it domestically). This was also true for Basel 1, but this has now been implemented by over a 100 countries, for a number of reasons, among others:

- Financial markets punish countries, and their banks, which have not implemented Basel 1.
- Banks from such countries cannot enter the financial centres in the OECD.

One may, therefore, wonder whether developing countries in practice, will really have an opt-out possibility like the USA. Just like Basel 1, meant just for large international banks, became the international standard, Basel 2 is likely to become the yardstick by which developing country banks are measured for a number of reasons:

- at some time in the future, IMF requirements for banking regulations (currently, the IMF position is that regulators first need to develop the capacity to properly implement Basel 1, and before they are able to do so, they should not be considering implementation of Basel 2);
- adoption of Basel 2 will affect their ability to operate branches in developed countries;
- similarly, it will affect their ability to borrow on interbank market;
- in the future, the WTO General Agreement on Services may impose minimum banking standards.

In quite a few developing countries, regulators are not even able to properly apply the Basel 1 regulatory framework for their banks. Basel 2 puts a much heavier burden on regulators as it is process – and not rule-based – and it is clear that adopting Basel 2 would be beyond the capacity of many of them. Normally, such countries should focus on strengthening their bank regulators.

But the effects of the adoption of Basel 2 on their commodity sectors may well be serious, and it is not clear whether these countries can afford to maintain their current banking regulations; it may well be that they have to strengthen the capacity of their local banks to engage in commodity finance in order to counter the effects of international finance becoming scarcer and more expensive. And a good way of doing so is adapting a modified version of Basel 2. “Indeed, even those institutions that are not required to comply with the New Accord will likely tend to use it as a risk management benchmark so they may remain competitive with those that must comply”.²⁹ National governments should recognize the priority of this issue and make sufficient means available for the strengthening of their country’s banking regulators; the international community should support them in this regard, in the light of the threats posed to the achievement of the Millennium Development Goals if finance to the commodity sector, on which most of the world’s poor depend, is frozen.

If they are forced to adopt Basel 2, many developing country regulators may “simply” go for the standardized approach, which may well be a mistake, for a number of reasons. While it avoids the heavy provisioning for higher risks of the IRB approach, it will make local banks less competitive with foreign banks for higher-rated clients. Also, the requirement of provisioning for operational risk (15 per cent of gross income) adds to costs, as compared to Basel 1. Provisioning can be punitive for good banks in sovereigns with poor ratings – these banks have to apply the slotted risk weights provided by the regulator for all of the country’s banks.

Moreover, the reliance of the standardized approach on external credit ratings is going to lead to problems. There are a few credit rating agencies in developing countries, and even if there are their coverage is incomplete. For example in 2002, only 150 out of 80,000 registered corporates in Argentina had a rating. As stated by the Bank of Guyana “Having no rating agencies in Guyana and the Caribbean may subject banks to higher capital charges vis-à-vis those countries that have such agencies.”³⁰ The only alternative are external grades which get mapped into risk weights at the discretion of the regulator (which, in our experience done, bears little relation to actual risk profiles).

Finally, the standardized approach does not recognize many risk management tools. Typically in trade and commodity finance, banks build a range of risk mitigants into their deal structures. However, under Basel 2, these risk mitigants will be without value unless a bank is allowed to use an IRB approach. And the list of potential guarantors is limited, putting many other possibilities in cold storage.

In all, one may conclude that the extent to which developing country borrowers will get disenfranchised will not only depend on the borrower and the use of risk mitigants available to him, but to a large extent on the course taken by a country’s regulator. Basel 2 has recognized a wide range of risk mitigants, including securitization, guarantees and collateral. However, in a cruel twist of Basel 2’s regulatory logic, these risk mitigants are mostly available to the banks with the most sophisticated risk management capacities, those which are allowed to use the advanced IRB approach.

²⁹ KPMG (2003). *Basel 2, a worldwide challenge for the banking business*.

³⁰ See Bank of Guyana’s comments on The New Capital Accord, BIS

This makes little sense. Less sophisticated banks in particular, including those in developing countries, should be encouraged to better manage the risks in their operations. Basel 2 in principle gives national regulators the authority to choose the provisioning regime for their banks, and there are strong arguments for regulators in developing countries to let their banks put into place a regime different to that proposed in Basel 2.

Concretely, developing country regulators should stimulate their banks to isolate their commodity finance operations from the rest of their business, and to treat them differently from a provisioning perspective. While a full-fledged IRB approach for all of a bank's operations probably goes beyond the wherewithal of many regulators and banks, there may be a middle way. Partial adoption of the IRB approach is in principle possible. Banks can be allowed to use one approach for their main business, and another (e.g. IRB) for their trade finance operations. And within “specialized lending” they can use different IRB approaches for each product line.

In some countries, regulators may feel that they are not yet ready to apply the stricter controls over processes that the IRB approach pre-supposes, and may therefore not allow their banks to follow this approach. Even if the banking regulators are ready to manage banks that operate IRB capital provisioning systems, to be allowed to use an IRB approach, banks will normally be required to provide four independent components:

- System that assigns ratings and validates their accuracy;
- Quantification process that translates risk ratings into IRB parameters;
- Data maintenance system that supports the IRB system;
- Oversight and control mechanisms that ensure the system is functioning as intended and producing accurate ratings.

There are two major problems with these requirements: firstly, they are very expensive (costing millions of dollars to each bank), and secondly, the required data to validate accuracy and quantify parameters may well be absent.

In other words, for a large number of banks in developing countries, commodity lending will be much more expensive than it should because they will be unable to adopt the provisioning schemes under which they are allowed to recognize risk mitigants.

But to make it possible for these banks to adopt the advanced IRB approach, regulators also need to revise the way in which banks are allowed to estimate the various risks in their operations. It is very unlikely that the banks have a sufficiently large set of data to draw statistically significant conclusions on such an element as risk of default, loss given default for different types of structures. Instead, they should be allowed to use estimates from a panel of experts (ideally, developing country regulators across a region should cooperate and have one joint panel). Currently, in the advanced IRB approach, credit risks are determined by internal models (this is called “calibration”). These have to be based on statistical data which show, among other things, loss given default (LGD) and exposure at default (EAD). But the range of trade finance instruments is large, and there are very few default cases, so it is difficult to determine LGD in an “acceptable” manner. Alternatives include:

- Pooling data among banks (done by largest developed country banks);
- Have regulators adopt an “expert panel” approach (which has been proposed by some European banks).

Either of these two approaches would overcome problems that local banks may have with data to develop an IRB approach for their trade finance operations. Still, the regulators to have the capacity to judge whether a bank’s proposed IRB approach is indeed sound. Even if a bank as a whole falls under the standardized approach, it should be allowed – and even encouraged – to adopt the advanced IRB approach for its commodity finance operations. Only in this manner it can make full use of the various risk mitigants available to it under Basel 2.

If developing country regulators follow this approach – preferably in a coordinated manner – it is very likely that it will be accepted by the financial market, which at the end is what matters. Developing country banking regulators are often not very proactive and would not wish to stand up against international rule-making, but they should consider the alternatives. For one, if they are to accept the Basel 2 recommendations, they would have to treat different banks in their constituencies differently – in practice, this will imply lighter provisioning for foreign-owned banks than for local ones, and while foreign banks would have a comparative advantage in lending to the best-rated local companies, local companies would be forced to concentrate on the more risky borrowers. Would this be politically acceptable?

Regulators should also use the other flexibilities that Basel 2 affords. It may be possible to re-characterize certain loans so as to reduce provisioning requirements, e.g. agricultural loans or loans to SMEs could be made to look like retail lending (and local regulators can be pro-active in this respect). Also, as in Basel 1, longer-term loans can be disguised as revolving short term (less than one year) loans, which in the standardized and foundation IRB approaches only require 40 per cent of the provisioning of loans for more than one year. Regulators should not try to prevent this practice as long as the banks involved show that they can manage the risks.

Basel 2 also puts new demands on borrowers (see Table 4). Certain financing structures which mitigate the negative effects of the new Accord require active cooperation from the borrower, who may have to provide considerably extra information to the bank. Banks should work with their clients to improve their understanding of these matters.

Table 4: Impact of Basel 2 on borrowers

Current situation	Effects of Basel 2	Challenges	Risks
<ul style="list-style-type: none"> - Often unable to generate sufficient internal cash flow to realize all necessary investments - Depend on external resources which could be debt or equity 	<ul style="list-style-type: none"> - Need external/internal rating to obtain credit - Face increased transparency of account profitability - Need to collect and disclose new information - Face possibility of reduced service, standardized products, higher interest rates 	<ul style="list-style-type: none"> Face new costs resulting from: <ul style="list-style-type: none"> ● need to provide lenders with new, timely information. ● Improve lending terms ● Improve connections with lenders/investors through enhanced disclosures and structured debt holder's relationship management ● Use key performance indicators to monitor performance ● Face request for better collateralization ● Manage rating process 	<ul style="list-style-type: none"> Receive a marginal rating, which could result in: <ul style="list-style-type: none"> ● Reduced credit lines ● Increased collateral requirements. ● Fewer refinancing opportunities ● Higher interest and general costs ● Increased information Requirements ● Comparative disadvantages with suppliers and customers if rating is part of a prequalification process

Source: KPMG (2003), *Basel 2: a worldwide challenge for the banking business*.

D. Stimulating structured finance to safeguard commodity financing flows

From the point of view of large, sophisticated banks, “for unrated borrowers or borrowers with a B rating or lower (or borrowers that operate in a country with B rating or lower), structuring techniques will make the difference between reasonably-priced costs of funds and financing costs that would render their operations uncompetitive”.³¹ However, these banks will only be interested in a minority of large clients, and if developing country governments wish to make full use of the

³¹ Nicholas Budd (2003). "Treatment of structural and operational risk in commodity-financing transactions under Basel II", *Trade and Forfeiting Review*, April.

potential of structuring techniques to safeguard commodity financing flows, they have to allow a broad category of banks to use IRB "specialized finance" approaches for their commodity finance operations, and to use panel data for estimating the risks of various financing structures.

This would be the ideal way to combine the interests of banking regulators in maintaining a sound banking system and the broader development interest of the government at large. It would also fit perfectly with the ideal (albeit not the letter) of Basel 2 to link provisioning requirements to the risk of lending transactions.

Concretely, regulators (with support from other government agencies and the international community) should work with local banks to familiarize them with structured finance techniques that, in the wording of Basel 2, reduce the loss given default (LGD), the exposure at default (EAD) and the probability of default (PD). In many structured financings, for example, banks would strictly control the use of the funds rather than simply transferring the loan to the borrower, thus limiting EAD. LGD is typically reduced by using the commodities that are being financed as collateral, and can also be reduced by using guarantees (traditional insurances are generally insufficient). PD is reduced by the inherent incentives of the credit structure – generally cheaper than alternative forms of finance and also full of safeguards that make default difficult.

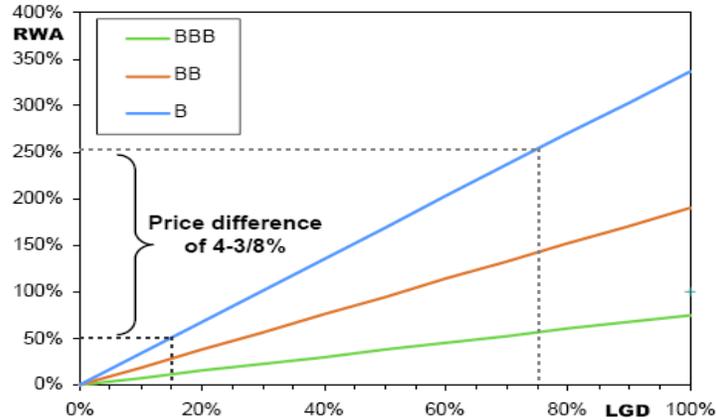
This implies that local banks should become fully familiar with warehouse receipt finance, the use of collateral managers, the financial products that can be provided by specialized guarantee agencies³² (e.g. the "wraps" that monoliner insurance agencies can give, which effectively guarantee the full transaction), and that they have to learn how they can make use of the capital market (institutional investors) to lay off certain risks. As discussed in the previous chapter, understanding these techniques is not enough: banks have to be able to follow to the letter the prescriptions made in Basel 2, e.g. on the internal procedures that they adopt in order to deal with collateral. Where such trade finance support agencies are weak or absent, governments may also consider assisting their creation or strengthening, again with support from the international community; in the case of smaller countries (e.g. this would apply to much of Africa) regional cooperation can be a valuable tool for such institution-building.

To give an example of the impact of the use of structuring techniques on lending costs, consider figure 3, which shows the link between the loss given default and "risk weighted assets", RWA, (one of the major inputs into the calculation of provisioning requirements) for three categories of borrowers. For example, for an investment grade (BBB) borrower, if the LGD is 100 per cent (the bank loses the whole loan in case of a default), then the RWA is 50 per cent of the loan. If the LGD is 75 per cent, it is only 37.5 per cent, and at a 15 per cent LGD, it is only 7.5 per cent. For a more risky B-rated borrower, RWA goes down from 250 per cent at a LGD of 75 per cent to only 50 per cent at an LGD of 15 per cent. In other words, with proper collateral management in place

³² It should be noted that while the advanced IRB approach does not impose restrictions on the range of potential guarantors, the standardized and foundation IRB approaches limit the eligible guarantors to certain other entities rated A- or better. In the standardized approaches the rating of the covered portion of the exposure is substituted with that of the guarantor, in the foundation IRB approach the guarantor's borrower grade is adjusted against the probability of default and in the advanced IRB approach the risk mitigation effect could be reflected by adjusting either the PD or LGD. Only under the advanced IRB approach, guarantees where a guarantor may not be obliged to perform (conditional guarantees) may be recognised under certain conditions.

to reduce the likely loss in case of a client default, a loan to a B-rated client could be made as cheap as that of an investment-rated client for whom less stringent collateral management systems are in place.

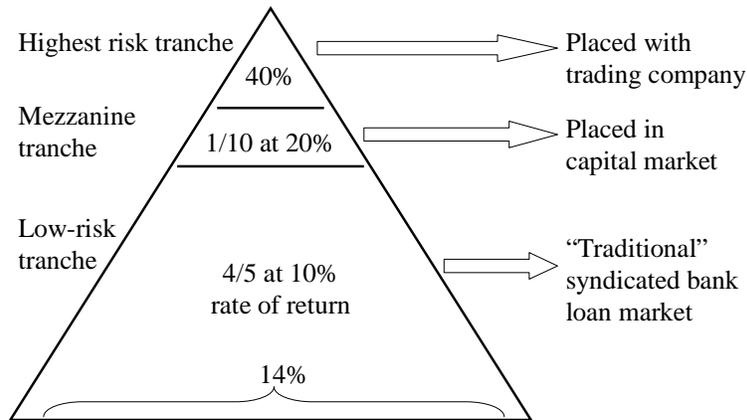
Figure 3
Impact of reducing LGD on provisioning requirements



Source: James Parsons, op.cit.

Banks also need to learn how to use the capital market in order to segment the risks in trade finance deals, and place the various risk tranches with the parties best able to carry them. Figure 4 gives a simple illustration of how this could facilitate syndications.

Figure 4
New “vertical” syndication possibilities



In conclusion, although Basel 2 has a potentially very negative impact on commodity finance flows to developing countries, banks, their regulators, bank clients and governments have a range of possibilities to mitigate this impact. But this will require proactive practices, and given the magnitude of the task at hand, active support from the international community.

Part of the work that needs to be done concerns banking regulators in developing countries. They need to be assisted in adapting Basel 2 to the needs and structures in their countries –which implies that the new regulations should not stifle commodity sector growth, but should combine the objective of enhancing the security of the financial system with that of safeguarding commodity financing flows. The core responsibility for this lies with national regulators, but they need to be provided with sufficient means by their governments, and where necessary, supported by the international community. In order to convince the international market place of the superiority of their approach to Basel 2, these banking regulators are well-advised to coordinate their work at least at a regional level.

The other major responsibility is the upgrading of the capacity of banks and, to some extent, local institutional investors (who will be called upon to provide some of the risk mitigants that help structure loans under the Basel 2 regime). Local governments, in partnership with their local financial communities, can take the lead in this, but international support (to provide expertise and, in particular in least developed countries, funding for the capacity- and institution-building activities) is likely to be crucial. In this respect, the international community should recognize the role of finance as the lubricant of production and trade and a critical condition for their growth; coping with the fallout of Basel 2, then, becomes automatically tied with traditional development objectives.

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