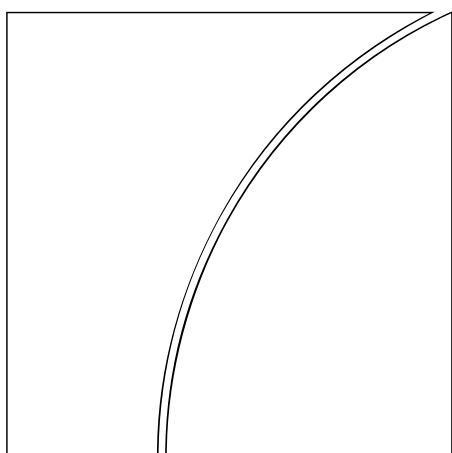


Basel Committee
on Banking Supervision



**Working Paper on the
Internal Ratings-Based
Approach to Specialised
Lending Exposures**

October 2001



BANK FOR INTERNATIONAL SETTLEMENTS

Table of Contents

| | |
|--|-----------|
| PART I: OVERVIEW TO IRB APPROACH TO SPECIALISED LENDING | 1 |
| Introduction | 1 |
| Definition of the SL Exposure Class | 1 |
| Project Finance..... | 2 |
| Income-Producing Real Estate..... | 3 |
| Object Finance..... | 4 |
| Commodities Finance..... | 5 |
| Additional Exposures which may be Included in SL..... | 6 |
| Evolutionary Approach to Specialised Lending | 6 |
| Introduction..... | 6 |
| The Basic Approach..... | 7 |
| The Foundation Approach..... | 7 |
| The Advanced Approach..... | 8 |
| Scenarios for Application of the IRB Approach to SL | 8 |
| Materiality and Roll-out..... | 8 |
| Case 1: The Basic Approach..... | 9 |
| Case 2: Conservative Application of the Basic Approach..... | 9 |
| Case 3: The Foundation Approach..... | 9 |
| Case 4: The Advanced Approach..... | 9 |
| PART II: DERIVATION OF RISK WEIGHTED ASSETS | 10 |
| Characteristics of SL and Implication for Risk Weights | 10 |
| Inputs to the Risk-Weight Function | 10 |
| Probability of Default (PD) for the Borrower..... | 11 |
| Loss Given Default (LGD)..... | 12 |
| Maturity (M)..... | 13 |
| Measurement of Exposure Amounts (EAD)..... | 13 |
| PART III: MINIMUM REQUIREMENTS FOR SL EXPOSURES | 14 |
| Overview | 14 |
| Requirements to Ensure Meaningful Differentiation of Risk | 14 |
| Overall Rating System Structure..... | 14 |
| Rating Grade Structure..... | 15 |
| Criteria, Orientation, and Oversight of the Rating System | 15 |
| Development of Specific Rating Criteria..... | 15 |
| Assessment Horizon..... | 15 |
| Range of Practice in the Rating Assignment Process | 16 |
| Financial Strength/Flexibility..... | 17 |
| Stability of Supply & Demand/Marketability/Resale Value..... | 17 |
| Collateral Control..... | 17 |
| Strength of Management..... | 18 |
| Other Risk Factors and Mitigants..... | 18 |

Use of Supervisory Rating Categories18
 Evaluation of Relevant Risk Factors in Assigning Internal Ratings18
 Application of Supervisory Rating Categories18
 Issues in Mapping Internal Grades20
Minimum Requirements for use of Supervisory Estimates of PD28
 Reference Definition of Default28
Minimum Requirements for use of Supervisory Estimates of LGD and EAD28
 Project Finance, Object Finance, and Commodity Finance28
 Income-Producing Real estate28
Data Collection and IT Systems29
Use of Internal Ratings29
Internal Validation29
Disclosure Requirements30

Part I: Overview to IRB Approach to Specialised Lending

Introduction

In the January consultative package (CP), an underlying tenet of the proposed IRB approach for corporate exposures is that the source of repayment of the loan is based primarily on the ongoing operations of the borrower, rather than the cash flow from a project or property. In this context, assets pledged as collateral serve as a risk mitigant and as a secondary source of repayment.

Defined as such, the corporate exposure class did not encompass loans which finance income-producing assets, and which are structured in such a way that repayment of the loan depends principally on the cash flow generated by the asset rather than the credit quality of the borrower. This distinction was made for two primary reasons, as noted in the January CP: First, such loans possess unique loss distribution and risk characteristics. In particular, given the source of repayment, the exposures exhibit greater risk volatility - in times of distress, banks are likely to be faced with both high default rates and high loss rates. A second key reason for treating such exposures separately in the IRB framework is that most banks use different internal risk rating criteria for such loans, and may treat them separately in other internal risk management processes. In light of the above, in this paper, the Basel Committee's Models Task Force (MTF) proposes a specific IRB treatment for these exposures, which are referred to collectively as "Specialised Lending" (SL). Please note that these lending activities were collectively referred to as "project finance" in the January CP.

Since the publication of the January CP, the MTF's dialogue with the industry has also highlighted that historical loan performance data for SL exposures are scarce. Many banks therefore face difficulties in establishing credible and reliable estimates of key risk factors (including the probability of default), which can be adequately validated by both the bank and its supervisor. As a result, there is no common industry standard for a rigorous, empirical, and risk-sensitive approach to economic capital estimation of SL exposures. In contrast, for corporate exposures, the MTF was comfortable that banks had in place, or could develop within the relevant time frame, internal rating systems capable of assessing the quality of the exposure, and quantifying these assessments. Foundation IRB banks were presumed to be able to provide reasonable estimates of the probability of default (PD), while advanced IRB banks were also presumed to be able to generate reliable estimates of loss-given-default (LGD) and exposure at default (EAD).

In light of the above, the proposed IRB framework to SL is based on an evolutionary approach for the assessment of regulatory capital requirements. However, while the evolutionary concept is consistent with that set forward in the January CP, the specifics of the SL approach take into account the different levels of sophistication observed in the industry, as well as the limited data availability. In particular, the proposed IRB framework for SL supplements the foundation and advanced methodologies set forward for corporate exposures with a more basic methodology, which is based on supervisory estimates of PD as well as LGD and EAD.

Definition of the SL Exposure Class

The proposed framework for SL is expected to encompass loans that have the following characteristics, either in legal form or economic substance:

- The economic purpose of the loan is to acquire or finance an asset;
- The cash flow generated by the collateral is the loan's sole or almost exclusive source of repayment;
- The subject loan represents a significant liability in the borrower's capital structure;
- The primary determinant of credit risk is the variability of the cash flow generated by the collateral rather than the independent capacity of a broader commercial enterprise.

The MTF has identified four product lines that exhibit these characteristics, and which fall within the SL exposure class:

Project Finance

This is a method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the loan. This type of financing is usually for large, complex and expensive installations such as power plants, chemical processing plants, mines, transportation infrastructure, environment, media, and telecoms. Project finance may take the form of financing of the construction of a new capital installation, or refinancing of an existing installation, with or without improvements.

In such transactions, the lender is usually paid solely or almost exclusively out of the money generated by the contracts for the facility's output, such as the electricity sold by a power plant. The borrower is usually a special-purpose entity (e.g. a corporation, limited partnership, or other legal form) that is permitted to perform no function other than developing, owning, and operating the facility. The consequence is that repayment depends primarily on the project's cash-flow and on the collateral value of the project's assets. In contrast, if the loan depends primarily on a well established, diversified, credit-worthy, contractually-obligated end user for repayment, it is considered a corporate rather than an SL exposure.

Below, we set out some examples of how certain transactions would be classified in the IRB framework.

- A bank finances a special purpose vehicle (SPV) that will build and operate a project. The SPV has an off-take contract with an end-user. The length of the off-take contract covers the full maturity of the loan, and the loan amortises fully during the length of the contract. The payments by the end-user to the SPV are based mainly on the ability of the SPV to provide the specified output/services and not on the actual demand for the output/services. If the contract is terminated, the end-user is normally required to purchase the underlying assets at a price related to the market value of the unexpired term of the contract. This should be considered a corporate rather than an SL exposure.
- A bank finances an SPV that will build and operate a project. If the bank is exposed to the key risks in the project - construction risk (the risk that the project will not be completed in a timely and/or cost effective manner), operational/technology risk (the risk that the project will not operate up to specifications), or market/price risk (the risk that the demand and the price of the output will fall and/or that the margin between output prices and input prices and production costs will deteriorate), then the project should be classified as SL. Also, if a circular relationship exists between the end user's and the project's financial strength, the project should be classified as SL. This would be the case when an end user has limited resources or capacity to

generate revenues apart from those generated by the project being financed, so that the end user's ability to honour its off-take contract depends primarily on the performance of the project.

- If the bank provides a loan to finance a transatlantic fibre optic cable to an established telecommunications firm, which has an established business plan, track record and diversified revenue stream, the exposure would be considered corporate.

Income-Producing Real Estate

This category refers to a method of funding the construction or acquisition of income producing real estate (IPRE) such as office buildings to let, retail space, multifamily residential buildings, industrial or warehouse space, and hotels, where the prospects for repayment and recovery on the loan depend primarily on the cash flows generated by the asset. The primary source of these cash flows would generally be lease or rental payments or the sale of the asset. The borrower may be an SPV, an operating company focused on real estate construction or holdings, or an operating company with sources of revenue other than real estate.

The MTF recognises that the same physical collateral type could fall within both the SL and the corporate exposure class. The distinguishing characteristic of IPRE in SL is the strong positive correlation between the prospects for repayment of the loan and the prospects for recovery in the event of default, with both depending primarily on the cash flows generated by a property.

Below, we set out some examples of how certain transactions would be classified in the IRB framework.

- A bank makes a loan to an SPV to finance the construction of an office building that will be let to tenants. The SPV has essentially no other assets and has been created just to manage this office building. The office building is pledged as collateral on the loan. This loan should be classified in the IPRE product line of SL, given that the prospects for repayment and recovery depend primarily on the cash flow generated by the asset.
- A bank makes a loan to a large, well-diversified operating company to finance the construction of an office building that will be primarily occupied by the company. The office building is pledged as collateral on the loan, and the loan is a general obligation of the company. The loan is small relative to the overall assets and debt service capacity of the company. This loan should be classified as a corporate exposure since repayment depends primarily on the overall condition of the operating company, which does not in turn depend significantly on the cash flow generated by the asset.
- A bank makes a loan to an operating company to finance the construction or acquisition of an office building that will be let to tenants. The office building is pledged as collateral on the loan, and the loan is a general obligation of the company. The company has essentially no other assets. The bank underwrites the loan using its corporate procedures. Despite the fact that the borrower is an operating company and the bank uses its corporate underwriting procedures, this loan should be classified in the IPRE product line of SL. The motivation is that the prospects for repayment and recovery both depend primarily on the cash flow generated by the asset. Although there is legal recourse to the project sponsor, which is an operating company, the overall condition of the project sponsor depends

primarily on the cash flow generated by the asset. Therefore, in the event of project failure, the sponsor will have essentially no ability to meet its general obligations.

- Same as above, except that the loan is unsecured. Again, the loan should be classified as IPRE. The fact that the office building is not pledged as collateral on the loan does not override the fact that the loan shares the risk characteristics common to IPRE loans in the SL portfolio.
- A bank makes a loan to an SPV to finance the acquisition of an office building that will be primarily leased to a large, well-diversified operating company under a long-term lease. The SPV has essentially no other assets and has been created just to manage this office building. The lease is at least as long as the loan term and is non-cancellable, and the lease payments completely cover the cash flow needs of the borrower (debt service, capital expenditures, operating expenses, etc.). The loan is amortised fully over the term of the lease with no bullet or balloon payment at maturity. In classifying this loan the bank may look through the SPV to the long-term tenant, treating it as a corporate loan. This is because the prospects for repayment and recovery depend primarily on the overall condition of the long-term tenant, which will determine the cash flow generated by the asset.
- Same as above, except that (1) the lease term can be cancelled at some time before the end of the loan term, or (2) even if the lease is non-cancellable, the lease payments do not fully cover the aggregate loan payments over the life of the loan. This loan should be classified in the IPRE product line of SL. This is because the tenant is not fully committed to the lease sufficient to repay the loan, so passthrough treatment is inappropriate.

Object Finance

This heading refers to a method of funding the acquisition of equipment (e.g. ships, aircraft, satellites, railcars, and fleets) where the repayment of the loan is dependent on the cash flows generated by the specific assets that have been pledged or assigned to the lender. A primary source of these cash flows might be rental or lease contracts with one or several third parties. In contrast, if the loan is to a borrower whose financial condition and debt-servicing capacity enables it to repay the debt without undue reliance on the specifically pledged assets, the exposure would more appropriately be considered a collateralised corporate exposure.

Below, we set out some examples of how certain transactions would be classified in the IRB framework.

- A recently established charter airline finances the purchase of two aircraft. The airline does not have an established record of financial or operational performance, and the bank would not normally extend long-term credit to the airline. An SPV owns the aircraft and leases it to the airline. The legal structure of the transaction is such that the bank, in the event of default, can seize and re-market the aircraft without delay. Such a loan would be assigned to the object finance (OF) product line given that the borrower's ability to service the loan is unproven and the bank's credit decision is largely based on its ability to re-market the collateral in the event of the borrower's default. In this case, the asset-based focus is supported by a loan structure that supports this premise (e.g. the amortisation schedule mirrors the anticipated depreciation of the aircraft's fair value, the bank has the right to quickly gain control of the aircraft in the event of default and/or bankruptcy, and the lender has control over the airline's lease payments).

- A charter airline with an established business plan, many aircraft, and diversified service routes finances the purchase of additional aircraft to be used in its own operations. The airline establishes an SPV to own the subject aircraft. The bank lends to the SPV and takes a security interest in the aircraft. The SPV enters into a long-term lease with the airline. The lease's term exceeds the term of the underlying loan. The lease cannot be terminated under any condition. This exposure would be placed in the corporate exposure class because the repayment of the loan depends on the overall operations of the airline and is not unduly dependent upon the specific aircraft as the primary source of repayment.
- Same example as above, except that (a) the lease term can be cancelled by the airline without penalty at some time before the end of the loan term, or (b) even if the lease is non-cancellable, the lease payments do not fully cover the aggregate loan payments over the life of the loan. This loan should be classified as OF, given that the airline/lessee is not fully committed to a lease sufficient to repay the loan, so passthrough treatment is inappropriate.
- A large, well-established shipping company sets up an SPV as a subsidiary. There is no contractual recourse between the shipping company and the SPV. The SPV wishes to finance a container ship, and the income from container shipping (either by the SPV leasing the ship to third parties or doing the shipping itself) serves as the sole repayment source for the loan. Such a loan would be classified as OF because the primary source of repayment is the container ship and its income generating ability. The lender's ability to base the transaction's rating on the shipping company's financial capacity is hampered, given that the shipping company is not contractually obligated to repay the debt or make payments to the SPV sufficient to repay the debt. Instead, the loan is structured so that the cash flow from the specified asset, and not the general financial capacity of the shipping company, serves as the primary source of repayment.

Commodities Finance

Commodities Finance (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 loan will be repaid from the proceeds of the sale of the commodity and the borrower has no independent capacity to repay the loan. 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 borrower's skill in structuring the transaction rather than the borrower's credit quality as such.

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

Below, we set out some examples of how certain transactions would be classified in the IRB framework.

- The bank extends short-term documentary trade credit to a small independent trading company that acts as an intermediary between producers and their customers. The trader specialises in a single commodity and a single region. Each commodity shipment handled by the trader is financed and secured separately.

Credit is extended upon delivery of the commodity to the trader, who has already contracted for the resale of the commodity shipment. A trust-worthy third party controls the shipment of the commodity, and the bank controls payment by the customer. This loan would be classified as a CF exposure in the SL exposure class, since repayment depends primarily on the proceeds of the sale of the commodity.

- The bank extends short-term documentary trade credit to a small trader. The circumstances are the same as in the preceding case, except that the trader has not yet contracted for the resale of the commodity. This loan would be classified as a corporate exposure since it may not be self-liquidating, given that the trader has not hedged the transaction's market risk. The bank's credit exposure is primarily to the non-hedged trader that is long the commodity.
- The bank provides an unsecured non-transactional working capital loan to a small trader, either separately or as part of a transactional credit facility. Such an unsecured loan would be classified as a corporate exposure, since its repayment depends on the trader rather than on the revenues generated by the sale of any specific commodity shipment being financed.

Additional Exposures which may be Included in SL

The MTF also recognises that the January CP did not specifically address other forms of so-called "asset-based lending". This term refers to a specialised form of secured lending whereby a company uses its current assets (e.g., accounts receivable and inventory) as collateral for a loan. The loan is structured so that the amount of credit is limited in relation to the value of the collateral. The product is differentiated from other types of lending secured by accounts receivable and inventory by the lender's use of controls over the borrower's cash receipts and disbursements and the quality of collateral. This form of lending can be extended to both solvent and bankrupt borrowers. Debtor in possession (DIP) financing is a type of asset-based lending activity where banks extend credit to bankrupt borrowers based upon their accounts receivable and inventory which is taken as collateral. The MTF's preliminary view is that this product line may also fall under the IRB framework for SL.

The MTF is currently working to develop the specific proposals for this product line; preliminary comments from industry on both the supervisory standards, as well as empirical evidence to support supervisory estimates of key risk characteristics, would be particularly welcome.

Evolutionary Approach to Specialised Lending

Introduction

In the January CP, the Committee noted that the best way of securing the objectives set forward for the New Basel Capital Accord is through the adoption of an evolutionary approach to the IRB framework, which mirrors the ongoing evolution of credit risk management itself. As part of this evolutionary structure, the Committee proposed two approaches for estimating risk components in the corporate framework – the "foundation" and the "advanced" approach.

The IRB treatment for SL exposures is consistent with this evolutionary concept. Thus, it will provide for a single framework by which a given set of risk components is translated into

minimum capital requirements. However, three methodologies for the estimation of the risk components are contemplated – a “basic”, “foundation”, and “advanced” approach.

The Basic Approach

In its surveys and discussions with the industry, the MTF has discovered that best practice banks have developed risk rating systems that provide for a meaningful differentiation of risk, and that are able to rank order SL exposures by level of risk. However, these discussions have highlighted the challenges associated with quantifying these variations in credit risk given the scarcity of historical loan performance data.

As a result, for these types of transactions, a rigorous, empirical, highly risk-sensitive approach to economic capital does not yet exist within the banking industry. Many banks, including some best-practice banks, therefore face difficulties in establishing credible and reliable statistical estimates of key risk factors, including the probability of default, which can be adequately validated by both the bank and its supervisor. This stands in contrast to the foundation IRB approach for corporate portfolios wherein all banks are presumed to be able provide reasonable estimates of PDs.

Thus, for the SL exposure class, the MTF proposes a “basic approach” that is characterised by supervisory estimates of PD, LGD, and EAD. In order to make use of the basic approach, a bank would first need to demonstrate compliance with a set of minimum requirements, which seek to ensure the accuracy and integrity of its internal rating system, and its process for assigning exposures into internal grades.¹ The bank would then be required to map its internal rating grades into four supervisory rating categories, which are associated with strong, fair, weak and defaulted exposures. The mapping process would be based on pre-defined criteria, which draw on the general characteristics of exposures that should be slotted into each respective supervisory category for each product line. A supervisory estimate of PD, LGD, and EAD (and, in turn, a risk weight) would be given for each of the four categories.

The Foundation Approach

The MTF is also seeking feedback on whether banks may be in a position to provide meaningful and quantifiable estimates of some, but not all, of the risk parameters required under the IRB approach to SL. If so, the MTF could envisage developing a foundation approach to sit alongside the basic and advanced methodologies. As with the foundation IRB approach to corporates, the SL foundation approach could be based on a bank’s estimate of PD, coupled with estimates of additional risk factors that are derived through the application of standardised supervisory rules. Alternatively, for some or all SL portfolios, some banks might find it easier to estimate reliable LGD figures only, while the scarce default data would not allow them to estimate PD.

The MTF specifically seeks comment on whether (a) a foundation approach is warranted for any or all of the product lines under the SL exposure class; (b) if so, whether it should be

¹ Banks who do not meet these requirements may be required to use a modified version of the Basic Approach – see discussion later in the document.

based on bank estimates of PD, and supervisory estimates of LGD/EAD, or (c) vice versa.

If a foundation approach is developed, the MTF's preliminary view is that it would incorporate a bank's own assessment of the effect of guarantees and credit derivatives on the risk of the exposure (in contrast to the proposed approach to corporates, banks, and sovereigns, where such an assessment is an element of the advanced approach).

The MTF is also considering the explicit treatment of maturity, M, if a foundation approach is developed for the SL exposure class. This work will likely be guided by the current efforts with respect to the proposals for corporate exposures in the January CP, and is therefore not addressed in detail in this paper.

The Advanced Approach

For those banks that are able to meet additional, rigorous standards for reliable and consistent estimates of all the required risk components (PD, LGD, and EAD), the MTF also proposes an advanced approach. The MTF feels that the wider use of such internal assessments is an important part of a risk sensitive and incentive-compatible IRB approach.²

The MTF is also considering the explicit treatment of maturity, M, in the advanced approach to SL. As noted above, the work on maturity will likely be guided by the current efforts with respect to the proposals in the January CP, and is therefore not addressed in detail in this paper.

Scenarios for Application of the IRB Approach to SL

The following section expands on the various scenarios for assessing regulatory capital for SL exposures, and discusses possible roll-out provisions.

Materiality and Roll-out

In general, a bank using an IRB approach for an exposure class (for example, corporates) is required to have an agreed plan with its supervisor to move all of its other exposure classes onto the IRB approach within a reasonable time frame. The need for this, however, is clearly dependent on the materiality of the institution's SL exposures. Accordingly, it is proposed (consistent with the general approach taken elsewhere in the IRB framework) that supervisors may, at national discretion, exclude SL holdings from one of the IRB approaches due to their immaterial exposure.

If the institution moves to an IRB approach elsewhere in its business and if its SL portfolio is considered to be material, then it will be required to simultaneously roll-out the IRB approach for its SL portfolio. This modification to the general approach taken elsewhere in the IRB framework is motivated by two key reasons: (a) at a minimum, all IRB banks will have the capability to use the basic approach (or the conservative application of the basic approach –

² The MTF also recognises that banks may utilise alternative technique to the PD/LGD framework when measuring risk in certain product lines. Further discussions and consideration will take place to assess the viability of such techniques within the advanced approach.

see below), as it relies on supervisory estimates of the requisite risk components; (b) the IRB approaches, including the basic approach, provide a more risk-sensitive treatment than that offered under the standardised approach.

The discussion in the next sections sets out various scenarios for roll-out to the IRB approach, and within the IRB approach, for SL exposures.

Case 1: The Basic Approach

A bank which can demonstrate compliance with the overall requirements for rating system and structure, but which does not meet the standards for the estimation of the specific risk parameters (PD, LGD, or EAD), will be eligible for the basic approach. As noted above, such a bank will be required to map its internal rating grades into the four supervisory determined categories (strong, fair, weak, and default). Exposures slotted into each supervisory category will be associated with supervisory estimates of PD and LGD. Banks under this scenario will also be required to use supervisory methodology for the estimation of EAD.

Case 2: Conservative Application of the Basic Approach

If a bank does not meet the minimum requirements for the overall rating system and structure for the basic approach, the MTF proposes to associate all its exposures with a conservative estimate of PD, LGD, and EAD. One possibility is to require SL exposures under each respective product line to be automatically slotted into the “weak” supervisory category set out in the basic approach, and be associated with the respective supervisory PD, LGD, and EAD values. A bank may also be permitted to slot individual exposures into the supervisory rating categories based on the assessment of an eligible external credit assessment institution.

Case 3: The Foundation Approach

If a foundation approach is deemed necessary, a bank which meets all the overall supervisory standards for rating system and process, as well those set out for the estimation of PD (or LGD, depending on the structure of such a foundation approach), will use its own PD (or LGD) estimate as an input to the risk weight function, and continue to use supervisory estimates of the remaining risk parameters.

Case 4: The Advanced Approach

Banks which meet the requirements for the overall rating system and process, as well as incremental requirements for the estimation of all the risk parameters (PD, LGD, and EAD), will be permitted to use their own estimates as inputs to the risk weight function.

In this respect, the MTF recognises that a bank’s ability to provide meaningful estimates of key risk components may differ depending on the product line in question. As such, the MTF proposes that roll-out of exposures from the basic approach to the advanced approach (or to the foundation approach, if one is developed) may be effected on a product-line by product-line basis – this approach differs from that proposed for roll-out of the corporate exposure class.

Part II: Derivation of Risk Weighted Assets for Specialised Lending Exposures

Characteristics of SL and Implication for Risk Weights

The approach proposed by the MTF for derivation of risk weights for SL exposures is similar in process to the approach set out for corporate exposures in the January CP. As such, it will likely depend on estimates of the PD, LGD and, in some cases, maturity (M), that are attached to an exposure.

However, there is a key distinction between corporate and SL lending exposures with respect to assumed correlation between PD and LGD. The risk weight formulae used in the CP for corporate exposures assume that PD and LGD are independent. For products that fall under the SL framework, however, common systematic risk factors are important drivers of both realised default and recovery rates. Empirical evidence and logic support that realised PD and LGD increase simultaneously with declines in collateral value. The MTF has identified two main options for addressing this correlation:

- Develop a unique risk weight function for SL. Under this option, the MTF would attempt to develop correlation assumptions possibly more fine-tuned to the characteristics of different product lines. Owing to data problems, however, such an approach seems highly problematic.
- Use the formulae developed for corporate exposures, and reflect the correlation through input of an estimate of a “conditional” LGD, which incorporates data from periods of downturn, into the risk weight function. Both the supervisory LGDs for the basic approach, and banks’ own LGD estimates in the more advanced methodologies, would be determined in this manner.

In light of the data limitations associated with the development of a unique risk weight function, the proposals set out below are based on the second approach.

The MTF seeks comment on its choice of approach for the derivation of risk weighted assets. In particular, feedback is sought on whether use of the corporate risk weight formula is appropriate for SL exposures in light of the relative lack of empirical data and the different loss characteristics. The MTF also welcomes comment on the feasibility of estimating a conditional LGD, and the standards that should underpin banks’ internal estimates in the more advanced approaches, in order to ensure that the resulting LGD values capture the risks associated with SL exposures.

Inputs to the Risk-Weight Function

The key steps for derivation of risk weighted assets for exposures under SL are broadly similar to those set out for corporate exposures in the January CP. The mechanics for deriving the inputs to the risk weight function - PD, LGD, EAD and M - are presented below. This discussion focuses on the treatment under the Basic and Advanced Approaches. As noted in Part I, the MTF is currently seeking feedback on whether a foundation approach is warranted, and if so, on which supervisory parameters it would be based. Subject to this feedback, the MTF would then develop the mechanics for the foundation approach as required.

Probability of Default (PD) for the Borrower

Probability of Default in the Basic IRB Approach

Banks who do not meet the requirements for the estimation of PD will be required to map internal grades into the supervisory rating categories, and to make use of supervisory PD estimates.³ The characteristics which define the supervisory categories, and the PDs associated with each category, have been developed to express the same degree of default risk across the four product lines in SL. As such, a project finance exposure slotted in the “strong” PF supervisory category would be associated with the same PD as a real estate exposure that is slotted into the “strong” IPRE category.

The MTF’s preliminary recommendations for the supervisory PD estimates are set out below. The values are based on industry consultation on the comparable riskiness of different SL exposure types, anecdotal and empirical evidence on the quality distribution of banks’ SL portfolios, and analysis of default data from banks and external rating agencies.

| Supervisory slotting class | 1-year PD | Approximate correspondence to external rating category⁴ |
|-----------------------------------|------------------|---|
| Strong | 0,5% | BBB- or better |
| Fair | 2,5% | B+ to BB+ |
| Weak | 12,5% | B or worse |
| Default | 100% | D |

The MTF seeks specific feedback on (a) the appropriateness of these preliminary figures; (b) the distribution of loans across these categories (in particular, what rating category best represents an “average” or “typical” SL exposure), and (c) whether an additional supervisory category (and related PD estimate) is warranted so as to further differentiate higher-quality loans.

Probability of Default in the Advanced IRB Approach

Banks that meet the supervisory requirements set out for the advanced approach for estimation of PD would input their own estimate into the risk weight function. As with the approach for corporates, the MTF proposes that banks’ internal estimates should be subject to a floor of 0.03%.

Adjustments for Guarantees and Credit Derivatives

Guarantees from the government, public sector entities, sponsors, suppliers or customers of the project or asset are a widely used feature in SL. However, in contrast to guarantees that support corporate exposures, these guarantees are typically “conditional”, and are often limited to certain risk types, events or project phases.

³ As noted earlier, banks which do not meet the overall standards for the basic approach may be required to slot all exposures into the “weak” category, or make use of external credit assessments by recognised ECAs.

⁴ The notations follow the methodology used by one institution, Standards & Poor’s. The paper in large part uses Standard & Poor’s credit ratings as an example only; it could equally use those of some other external credit assessment agencies. The ratings used throughout this document, therefore, do not express any preferences or determinations on external assessment institutions by the MTF or the Committee.

The MTF recognises the risk mitigating effect of guarantees in the SL business. However, it believes that use of a supervisory methodology for assessing the effect of guarantees would be impractical; each type of conditional guarantee would need to carry its own specific recognition modus, accompanied by operational standards.

Given the complex and individual nature of many guarantees, as well as potential future developments, the MTF proposes a specific assessment of the effect of guarantees in each of the evolutionary approaches to SL. Under the basic approach, the existence of a guarantee is set out as one of the supervisory criteria by which a bank would slot loans into the supervisory rating categories. Under the advanced approach (and the foundation approach, if it is developed), banks would be required to assess the effect of the guarantee on the rating assigned to the project/asset/object, and “notch” the rating of the project/object to reflect that effect. This “notching” would be subject to a ceiling based on the rating of the guarantor. This approach is consistent with the so-called “substitution ceiling” treatment for guarantees under the advanced IRB approach to corporates.

Loss Given Default (LGD)

A bank must input an estimate of the loss given default (LGD) for each SL exposure.

LGD under the Basic Approach

Under the basic approach, supervisory LGD values are provided based on broad criteria for differentiating the risk of exposures. Given the special structure of SL, where the financed asset is both the main source of income and the collateral, the asset itself and its potential resale values are critical inputs in the LGD estimation. However, estimated resale values display a high degree of variability, depending on the underlying asset and the product line in question. Thus, given that PD and LGD are assumed to be correlated in the SL exposure class, supervisory LGDs have been approximated for each product line by looking at loss experience during periods of distress (i.e. a conditional LGD).

The MTF has reviewed some initial evidence on realised losses for each product line. For the PF and IPRE portfolios, our initial evidence suggests that realised losses during difficult periods may exceed those of senior, unsecured corporate exposures. In contrast, for readily marketable OF and CF exposures, our initial evidence suggests that loss rates may be lower. Consistent with the foundation treatment for corporate exposures, the MTF would also need to assess the impact of subordination on such supervisory LGD figures.

The MTF notes that data limitations in this area are particularly severe, and welcomes industry comment and evidence on the loss data for each of these product lines. Comment is also sought on whether supervisory LGD figures should be differentiated by product lines, and whether such a product line distinction achieves the appropriate balance between accuracy and simplicity.

Relatedly, evidence suggests that SL exposures are seldom associated with other collateral over and above the project/asset. Therefore, the MTF is not currently proposing recognition of any additional collateral in the basic approach (though banks are free to reflect any such collateral in the advanced approach, below). The MTF seeks industry input on the appropriateness of this assumption and, in case the assumption turns out to be not appropriate, on potential types and methods of recognition of additional collateral.

LGD under the Advanced Approach

Banks who meet certain additional minimum requirements may use their own internal estimates of LGD for SL exposures. The principles behind these minimum standards are generally expected to follow those set out for corporate exposures with one key exception – the requirement to use a conditional instead of average LGD as an input to the risk weight formula.

Maturity (M)

The MTF expects that the treatment of maturity under the SL framework will follow that under review for corporate exposures.

Measurement of Exposure Amounts (EAD)

Exposure Measurement under the Basic Approach

The predominant type of variable exposure within SL is a committed line of credit, whose drawdown is linked to the fulfilment of certain conditions, covenants or project progress. Although these conditions and covenants make a drawdown prior to default potentially less likely, the MTF believes that the very structure of SL business might make it desirable for a bank to fund the completion of the project, given that banks may minimise losses if they complete a project/object and place it in operation. Thus, the MTF proposes that the measure of exposure would be set at the total facility amount – i.e., the EAD conversion factor would be set at 100%.

The MTF seeks feedback on this proposal; if commentators believe that a lower figure is warranted, the MTF would also welcome quantitative evidence in support of these views.

With respect to on-balance sheet netting, the same premises set out for corporate exposures will apply. The MTF believes, however, that netting will play a very minor role in SL, as the specific set-up of an SPV for one very specific project /object makes large-scale deposits of the SPV unlikely.

Exposure Measurement under the Advanced Approach

Banks which meet the additional minimum requirements for use of their own estimates of exposure will be allowed to use their own internal estimates of credit conversion factors across the different product types.

Other Issues

The current proposal for the advanced approach does not include an option where a bank would provide an estimate of the expected loss (EL) associated with each grade. The MTF's perception is that well-managed banks are typically able to separately identify the underlying PD and LGD of exposures within each grade.

The MTF seeks specific comment on the appropriateness of this assumption.

Part III: Minimum Requirements for SL Exposures

Overview

To be eligible for the IRB approach, a bank must demonstrate to its supervisor that it meets certain minimum requirements at the outset and on a continuing basis. The purpose of these requirements is to ensure the accuracy and integrity of banks' rating systems, and the comparability of the resulting PD, LGD, and EAD estimates, both across banks and over time.

In developing the preliminary requirements for SL, the MTF has sought to address the common attributes of the four product lines under the umbrella of SL – in particular, the reliance on the cash flow generated by the project or asset for repayment of the loan. The MTF also recognises that each product line possesses various distinguishing characteristics. As such, some of the minimum requirements are unique to each product line (e.g., the requirements for use of the supervisory PD, LGD, and EAD estimates in the basic approach).

The remainder of this document discusses the minimum requirements that banks will need to satisfy in order to qualify for the Basic IRB Approach to SL. The discussion focuses on the main areas where the standards for SL will differ from the overall requirements set out for corporate exposures in the January CP. This document does not contain specific proposed language for such standards. By year-end, the MTF plans to develop such language and revise these proposals in light of industry feedback.

The MTF seeks comment on the preliminary minimum requirements proposed for the basic approach, below.

The MTF will also develop additional requirements for the foundation approach (if such an approach is deemed necessary) and for the advanced approach to SL. These are not described in this document. Although these requirements are expected to resemble those for corporate exposures, there will be important differences dealing with the special nature of SL.

In order to guide the MTF in this work, feedback on the direction of the additional requirements to be developed for the foundation and advanced approaches would be appreciated. In particular, we welcome comments on (a) the standards for estimation of the probability of default; (b) the standards for the estimation of a conditional LGD; and (c) the standards for estimation of EAD.

Requirements to Ensure Meaningful Differentiation of Risk

Overall Rating System Structure

The standards proposed for corporate exposures in the CP required a two-dimensional rating system: (a) one dimension related to the risk of borrower default, and (b) a separate distinct dimension taking into account transaction specific factors.⁵ Such a two-dimensional approach

⁵ In the CP, the Committee noted that the second dimension may be satisfied by developing a rating scale that explicitly estimates LGD or by a facility orientation which takes into account both borrower and transaction specific factors.

was deemed necessary in order to provide supervisors with confidence that the assignment of borrower ratings (and, in turn, PDs to borrower grades) is not “tainted” by consideration of the specific structure of the transaction.

In contrast, a key characteristic of SL exposures is the strong linkage between the risk of the borrower and the transaction. As such, banks will not be required to maintain a two-dimensional rating system, and may satisfy the requirements in this area through use of a single facility grading system, which takes account of both borrower and transaction-specific risk factors.

This preliminary view will of course need to be revisited in light of industry comment and the MTF’s decisions on the structure of the evolutionary approach. One of the issues that would need to be addressed is whether a one-dimensional rating system would be consistent with the use of differing supervisory LGDs across product lines.

Rating Grade Structure

Banks must have an internal risk rating system that adequately differentiates credit risk across the risk spectrum. The MTF proposes that a bank must have a minimum of three borrower grades for performing SL loans and one grade for defaulted SL loans. Banks are strongly encouraged to have risk rating systems that are more risk sensitive than this minimum (such banks would therefore assign multiple internal grades to one or more of the four supervisory categories contained in the basic approach – see below).

The MTF also recognises that the product lines under the SL framework are likely to require less risk differentiation than the corporate portfolio, given that fewer exposures warrant very strong risk ratings. Indeed, evidence indicates that the majority of SL exposures tend to fall around the boundary between investment and speculative quality on a rating agency equivalent basis. Due to this attribute, the MTF is not contemplating a specific quantitative threshold for the percentage of gross exposures that may fall within a single grade.

Criteria, Orientation, and Oversight of the Rating System

Development of Specific Rating Criteria

Given the unique nature of each SL product line, a bank will be required to have a specific rating system for separately rating PF, IPCRE, OF and CF exposures.

Furthermore, supervisors will seek to ensure that there exists a sufficiently specialised team which is responsible for the rating assessment and monitoring process of SL exposures, and which possesses a firm understanding of the economic, legal, and technical aspects of this type of lending.

Assessment Horizon

The MTF has adopted a different approach to the assessment horizon for SL, compared to that set forward for corporate exposures. Under the corporate framework, the January CP noted that the bank’s internal rating should reflect the borrower’s financial strength over the foreseeable future. This language recognised that a “life of the loan” assessment horizon may not be feasible due to the difficulty in predicting how numerous factors would influence credit quality over lengthy time periods. In addition, corporate entities are likely to be

collections of numerous lines of business that will react differently to changes in the general economy, industry operating conditions, and input prices.

In contrast, evidence suggests that banks typically utilise simulation and stress testing to assign risk ratings for SL exposures. These techniques clearly focus on the project's/property's resilience to a range of operating environments and its maintenance of adequate debt service coverage over the loan's term. As such, SL exposures are well-suited to a "life of the loan" rating approach. This view is supported by a number of factors, including, (a) the discrete nature of projects and properties, (b) the dependence on a limited number of inputs in assessing credit capacity (e.g., market rents and expenses in the case of IPRE and output prices and production costs for PF), and (c) the existence of historical databases for these variables.

The proposed standards for SL therefore require a bank to assess the asset's repayment capacity over the life of the loan based on current and projected information and experience with critical parties (e.g., sponsor, general contractor, property manager, operator, primary tenants/lessees, etc). The risk assessment should evaluate the asset's ability to generate sufficient cash to meet contractual obligations and withstand normal business stresses. Default simulation models and stress-testing techniques should evaluate risk over the term of the obligation. Given the difficulties in forecasting distant events and the influence they will have on a particular borrower's financial condition, a bank must take a conservative view of projected information.

The MTF wishes to stress the distinction between the assessment horizon to be used in evaluating an exposure and the time period used in quantification. With respect to the latter, the MTF proposes that, consistent with the corporate approach, risk parameters should be calibrated over a one-year period; the supervisory PDs under the basic approach are calculated in a comparable manner.

Range of Practice in the Rating Assignment Process

Bank SL risk rating systems vary in their orientation and approach. These variations exist both across SL product types within the same institution and at different institutions for the same SL product type. These rating systems can be characterised by a number of broad approaches:

- Objective benchmark - The borrower is compared to a template of objective benchmarks for different risk factors, such as a set of threshold values of financial ratios.
- Simulation model - The borrower's financial performance is simulated over multiple periods with critical inputs altered. The model applies a financial test to determine how likely a project will default.
- Stress testing - The borrower's financial performance is estimated given a shock in a critical revenue and/or expense. Transactions that can withstand greater adversity are of better credit quality, while those that have limited financial flexibility in the face of adversity are poorly rated.
- Judgmental - The bank develops judgmental criteria and descriptions to distinguish credit quality, such as judgementally applying and weighing subjective rating criteria to arrive at a rating.

- Hybrid - Many SL risk rating systems are a combination of these approaches.

The MTF has reviewed the criteria used by banks, rating agencies and international financial institutions within these rating processes. These are summarised below.

Financial Strength/Flexibility

- Debt Service Coverage Ratio (DSCR) - The ratio between an asset's cash flow and its debt service requirement is a strong predictor of its financial capacity. The DSCR thresholds or ranges developed by the bank should reflect the results of stress testing and/or modelling projects with similar characteristics.
- Leverage or Loan to Value (LTV) - The ratio between an asset's indebtedness and its market value is a strong predictor of its level of credit risk. An asset's LTV is closely related to its DSCR. Due to the relationship between a project's DSCR and its LTV, these two assessments should work together in identifying segments of the portfolio that are deteriorating and improving.
- Tenor of transaction compared to useful life of the asset – The rating assessment should incorporate an estimate of the useful life of the asset or, in the cases of PF and IPRE, the period it will require limited capital expenditures that are supported by the economics of the project. The shorter the transaction's tenor compared to the asset's useful life, the lower the risk. The longer the tenor compared to the project's useful life, the greater the risk.
- For PF and IPRE, the adequacy of reserve funds to cover outlays during the construction and ramp-up/leasing phases.

Stability of Supply & Demand/Marketability/Resale Value

- Competing sources of supply (both existing and planned), estimates of demand and growth in demand, and analysis of buyers' willingness and ability to pay for project output/assets.
- The quality of the asset being financed, particularly with respect to its design, configuration, maintenance requirements and overall condition.

Collateral Control

- The adequacy of the legal infrastructure (enforceability of contracts; bankruptcy codes; stability of licensing, regulatory, and tax regimes; etc.) in the legal jurisdictions in which the project or asset will operate.
- The extent to which financial covenants ensure that the lender has first claim on the asset and its cash flows (e.g., payment priority, dividend restrictions, restrictions on issuance of additional debt, etc.)
- The use of escrow accounts or lock-box arrangements to enable the lender to control cash receipts generated by the asset.
- For PF, IPRE, and OF, controls over the disbursement of funds, including the use of escrow accounts to control construction advances and the requirement that

independent engineers certify that work has been completed prior to disbursing additional funds.

Strength of Management

- The experience, reliability, and financial strength of the asset's sponsor/operator.

Other Risk Factors and Mitigants

- For PF in particular, the degree of country risk (host country support for the project, transfer risk, risk of expropriation, macroeconomic stability and measures taken to mitigate country risk, such as written agreements and guarantees from the host government).
- Casualty and business interruption insurance coverage and assignment of insurance proceeds to the lender. In addition, for PF and OF, political risk insurance from multilateral agencies and export finance guarantees, respectively.
- The existence of maintenance contracts.

Use of Supervisory Rating Categories

Evaluation of Relevant Risk Factors in Assigning Internal Ratings

A bank using the basic approach will assign exposures to its internal rating grades based on its own criteria, systems and processes, subject to compliance with the requisite minimum requirements. It will then be required to map these internal rating grades into the four supervisory rating categories. Thus, in order to make use of the supervisory rating categories, a bank must first demonstrate that its internal risk rating system adequately addresses key determinants of credit risk and provides some critical objective rating parameters. The MTF believes that this is necessary to ensure consistency across exposures and to allow third parties to verify the integrity of the risk rating system. In addition, a bank should have a formal process for stress-testing the key risk factors, particularly those of a quantitative nature. The outcomes of the stress tests should be taken into account when the bank is assigning the rating.

Banks will also be required to incorporate certain specific criteria into their rating assignment process, in order to properly map internal rating grades into the supervisory categories (see below).

Application of Supervisory Rating Categories

As noted above, banks in the basic approach will be required to map internal grades to the supervisory rating categories, subject to compliance with the requisite minimum requirements. Tables 1-4 below provide the general characteristics of exposures that should be associated with the respective supervisory categories (and supervisory PD, LGD, and EAD estimates) under each product line.

In developing these characteristics, the MTF drew on the criteria used by banks to define their internal rating grades, loan classification guidance that is well established in numerous

countries, and publicly-available documents that summarise criteria employed by the external rating agencies when evaluating asset-backed lending programs (see previous section). The resulting characteristics are intended to be flexible and not overly prescriptive; however, one of the tenets of the IRB approach is that banks must be able to achieve internal risk rating consistency and that external parties are able to make inter-bank comparisons of disclosed information.

To promote these goals, the characteristics used to define each of the supervisory categories incorporate a number of objective criteria. In order to map internal grades to the supervisory rating categories, banks will also need to incorporate such objective criteria into their internal risk rating systems for SL. This is meant to promote consistency and supplement subjective rating criteria that are also material indicators of credit risk. For example, bank and rating agency practices for evaluating IPRE transactions suggest that the asset's loan-to-value ratio (LTV), actual and DSCR are key quantitative variables that are predictive of credit strength. To facilitate cross project comparisons, the rating agencies have established specific guidelines for ensuring that LTV and DSCR ratios are calculated consistently such as stipulating fixed assumptions for capitalisation rates, management fees, and refinancing rates. However, due to definitional variations among banks, the MTF expects the IRB proposals will provide banks the flexibility in defining these criteria and the specific DSCR and LTV thresholds or ranges to be associated with each supervisory category (the MTF has also included these factors in the characteristics used to define the PF and OF supervisory categories.)

Another parameter used in defining the supervisory rating categories (with the exception of CF exposures) is that a project/property/object must be completed and operational in order to be slotted in the "strong" supervisory rating category. Based on the range of practice observed among banks and other financial institutions, there appeared to be a consensus that, other things equal, projects that were not yet completed and fully operational involved significantly greater risk than projects that are up and have been running for some time. Thus, in assessing the level of risk for these projects, the MTF believes it is important to distinguish between the construction phase and the operating phase. For purposes of mapping to the supervisory rating categories, projects in the ramp-up phase should be treated similarly to those in the construction phase. The MTF invites comment on whether this and other proposed variables are critical risk drivers for these other product lines.

The MTF also recognises that, due to the unique nature of many of these SL projects, subjective factors are also critical in assessing risk within this exposure class, and that these exposures do not lend themselves to a uniform, mechanical risk rating process. In this regard, the MTF stresses that it does not intend to interfere with a bank's proven credit underwriting process or credit culture, or reduce banks' internal risk rating systems into non-judgemental, black and white processes. Rather, the aim of the supervisory categories and the related characteristics, is to promote the development and maintenance of SL risk rating systems that adequately incorporate relevant risk factors, result in a consistent rank ordering of risk and are reasonably consistent across product lines.

The MTF invites comment on the industry's view of whether the general criteria described in this document achieve an adequate balance across product lines for "strong", "fair" and "weak" credits in a manner that would provide for comparable risk across the different product lines. We also request feedback on whether an adequate balance was achieved between flexibility and comparability in the characteristics proposed for the supervisory rating categories. It also seeks feedback on the characteristics that banks should be explicitly required to review as part of their internal rating processes, so as to ensure the integrity of the internal rating, and, in turn, the process of mapping to the supervisory categories.

The MTF also invites feedback on whether the structure of the supervisory categories achieves an adequate level of credit risk differentiation, or whether additional categories should be developed - for example, to further differentiate high-quality exposures.

Issues in Mapping Internal Grades

The MTF recognises that the criteria used by banks for assigning exposures to internal grades will not perfectly align with those of the supervisory categories; however, banks must demonstrate that the mapping process has resulted in an alignment of grades which are consistent with the preponderance of the characteristics in the respective supervisory category. In particular, banks must demonstrate consistency with the “make-or-break” criteria set out in the supervisory categories (e.g., that the rating for loans under construction is capped at “fair”). Banks should also take special care to ensure that any overrides of their internal criteria do not render the mapping process ineffective.

As discussed earlier, banks are also encouraged to have more than four internal rating grades, and to slot multiple grades into the supervisory categories. If a bank’s internal grade describes assets that should be slotted into two supervisory categories, the exposures should be assigned to the riskier supervisory category. For example, if a bank’s internal rating system had one rating that described both the supervisory “strong” and “fair” categories, the exposures should be slotted into the “fair” category.

Table 1: Supervisory Categories for Classic Project Finance

The following table provides the general characteristics of PF exposures that should be slotted into each supervisory rating category.

| Characteristic | Strong | Fair | Weak |
|--------------------------------|--|--|---|
| Financial strength/flexibility | <p>Ample. The project has the capacity to generate sufficient revenues to service debt and pay other expenses, including the ability to maintain a debt service coverage ratio in line with industry norms for exposures rated investment-grade, under severe stress test scenarios.</p> <p>Reserve funds are fully cash-funded by the start of commercial operations. Reserves would generally be expected to cover 12 to 24 months of operation.</p> <p>Fully amortising debt</p> | <p>Limited. The project has the capacity to generate sufficient revenues to service debt and pay other expenses, including the ability to maintain a debt service coverage ratio in line with industry norms for exposures rated upper speculative grade, under moderate stress test scenarios.</p> <p>Reserve funds are covered by cash or letters of credit. Reserves would generally be expected to cover 6 to 12 months of operation.</p> <p>Mostly amortising debt, with limited bullet payments</p> | <p>Strained. The project's capacity to generate sufficient revenues to service debt and pay other expenses is doubtful under moderate stress-test scenarios.</p> <p>Reserve funds are funded out of operating cash flow. Reserves would generally be expected to cover 6 months of operations.</p> <p>Project has bullet maturities.</p> |
| Collateral control | <p>Comprehensive. The contract provides the lender effective control (e.g., a first perfected security interest) in all project assets, contracts, permits, and accounts necessary to run the project.</p> <p>The lender has effective control over cash flows.</p> | <p>Comprehensive. The contract provides the lender effective control (e.g., a first perfected security interest) in all project assets, contracts, permits, and accounts necessary to run the project.</p> <p>The lender has effective control over cash flows.</p> | <p>Limited. The contract provides little security to the lender.</p> <p>The lender has limited control over cash flows.</p> |
| Strength of management | <p>Strong. The sponsor, contractor, and project manager have extensive experience with the type of project being financed and with country in which it is located. Past projects have been constructed without significant delays or cost overruns, have generated revenues in line with projections, and have repaid debt on schedule.</p> | <p>Moderate. The sponsor, contractor, or project manager has some experience with the type of project and the country. Past projects have experienced some problems but have repaid debt on schedule.</p> | <p>Weak. The sponsor, contractor, or project manager has little experience with the type of project or the country. Past projects have experienced significant problems and some projects have failed to repay debt on schedule.</p> |

| | | | |
|-----------------------|---|---|--|
| Other Risk mitigation | High. Bank has made a thorough assessment of all risks involved in project, and has ensured that the project has a comprehensive package of risk mitigation against all recognised risks. These include exposure to technology, construction, operational, market, and political risk. | Comprehensive. Bank has made a thorough assessment of all risks involved in project, and has ensured that the project has a comprehensive package of risk mitigation against key risks. Thus, the project has some elements of risk mitigation that reduces its exposure to technology, construction, operational, market, and political risk. | Limited. The project has relatively few mitigants against the risks assessed by the bank and is substantially exposed to technology, construction, operational, market, and political risk. |
| Project Track record | Strong. The project has a good track record in respecting major contract terms and covenants and staying within projected construction schedules, cost estimates, revenue projections, and performance parameters. Lender receives monthly reports prepared by independent engineers and auditors | Fair. The project has had only minor violations of contract terms or covenants, construction delays or cost overruns, or problems in meeting performance parameters or revenue projections. Lender receives monthly or quarterly reports prepared by independent engineers and auditors. | Weak. The project has had significant violations of contract terms or covenants, construction delays or cost overruns, or problems in meeting performance parameters or revenue projections. Lender receives monthly or quarterly reports prepared by the project contractor or manager. |
| Project Phase | Fully Operational | Not Yet Fully Operational | Not Yet Fully Operational |

Table 2- Supervisory Categories for Income-Producing Real estate

The following table provides the general characteristics of IPRE exposures that should be slotted into each supervisory rating category.

| Characteristic | Strong | Fair | Weak |
|--------------------------------|---|--|--|
| Project Strength | | | |
| Financial strength/flexibility | <p>Ample – The project's resources, contingencies and liability structure allow it to withstand severe financial adversity. The project's DSCR is considered high and its LTV is considered low given its type and volatility.</p> <p>The property's leases are long-term with creditworthy tenants and their maturity dates are scattered. The property has a track record of tenant retention upon lease expiration. Its vacancy rate is low. Expenses such as debt service are predictable.</p> <p>The project can meet its financial obligations under stressed conditions. The project is only likely to default under severe economic conditions.</p> <p>The return on the loan funding the project is comparable to similarly risky assets in the same asset class.</p> | <p>Limited – During an economic downturn, the project would suffer a decline in revenue that would limit its ability to fund capital expenditures and significantly increase the risk that it could not meet its debt service requirements. The project's value has fallen increasing its LTV.</p> <p>The property's leases are long and medium term with tenants that range in creditworthiness. The property experiences a moderate level of tenant turnover upon lease expiration. Its vacancy rate is moderate. Expenses are relatively predictable but vary in relation to revenue.</p> <p>The project is likely to meet its financial obligations; however, it has exposure to stresses that are not uncommon during normal economic conditions.</p> <p>The loan's return may be below market on a risk-adjusted basis.</p> | <p>Strained – The project's DSCR has deteriorated significantly and the project is likely to default unless conditions improve shortly. Its LTV is well below underwriting standards for new loans.</p> <p>The property's leases are of various terms with tenants that range in creditworthiness. The property experiences a very high level of tenant turnover upon lease expiration. Its vacancy rate is high. Significant expenses are incurred preparing space for new tenants.</p> <p>The project's financial condition makes it prone to default and is substantially inferior to current underwriting standards for similar projects</p> <p>The loan's return is below market on a risk-adjusted basis.</p> |

Table 2 – Supervisory Categories for Income-Producing Real estate

| Characteristic | Strong | Fair | Weak |
|--|--|--|--|
| Market conditions and future prospects | Positive - The supply and demand for the project's type and location are in equilibrium. The number of competitive properties coming to market is roughly equal to forecasted demand. The project's design and capabilities are competitive with new projects. | Neutral - Market conditions are roughly in equilibrium. Competitive properties are coming on the market and others are in the planning stages. The project's design and capabilities may not be state of the art compared to new projects. | Uncertain - market conditions are weak. It is uncertain when conditions will improve and return to equilibrium. The project is losing tenants at lease expiration. New lease terms are less favourable compared to those expiring. |
| Strength of management and property quality | Strong. Experienced management and high project quality – Management has significant experience managing projects similar to the type financed. They have strong relationships with leading real estate agents that prospective lessees are likely to use for site selection. Project is located in highly desirable location that is convenient to services that tenants desire. Project is favoured due to its configuration, design and maintenance. | Sufficient. Mediocre management and project quality - Management has limited experience with properties of this type. They may lack close relationships with real estate agents and other parties providing important real estate services. The project location lacks a competitive advantage compared to other markets. Project is adequate with regard to its configuration, design and maintenance. | Insufficient. Ineffective management and substandard project quality – Management's difficulties in promoting the project have contributed to the project's financial problems. The project's location, configuration, design and maintenance have contributed to the project's difficulties. |
| Project Phase | Completed - The project has achieved its long-run occupancy and rental rate. These rates compare at or favourable to projections. | Completed or in Development - The project has achieved stabilisation but long-run occupancy and rental rates do not support the degree of financial flexibility warranted for the strong category or the project is in the development phase. Transactions in the development phase cannot achieve a strong rating. | Completed or in Development - The project is complete but not achieving stabilisation or the project is in development and experiencing problems such as cost overruns. |
| Marketability (only descriptive when an active secondary market exists). | High. The loan's underwriting meets or exceeds secondary market standards for similar projects | Moderate. The loan's underwriting does not uniformly meet all of the secondary market standards for similar projects. | Low. Loan is only saleable in the distressed loan market at a moderate discount to par. |

Table 3: Supervisory Categories for Object Finance Exposures

The following table provides the general characteristics of object finance exposures that should be slotted into each supervisory rating category.

| Criteria | Strong | Fair | Weak |
|---|---|---|--|
| Financial strength/flexibility | Ample – the object’s resources, contingencies and liability structure can withstand severe financial adversity. The object’s DSCR is considered high and its LTV is considered low given its type and volatility. Current resale value is well above loan value. | Limited – during an economic downturn, the object would suffer a decline in revenue that would significantly increase the risk that it could not meet debt service requirements. The object’s value has decreased, thereby increasing its LTV. Current resale value is about equal to loan value | Strained – the object’s DSCR is low and the object is likely to default unless conditions improve shortly. Its LTV is well below underwriting standards for new loans. Current resale value is below loan value. |
| Collateral Control | Comprehensive. The contract provides the lender effective control (e.g., a first perfected security interest) in the object, and the lender has the means to monitor the location and condition of the object. | Comprehensive. The contract provides the lender effective control (e.g., a first perfected security interest) in the object, and the lender has the means to monitor the location and condition of the object. | Limited. The contract provides little security to the lender. |
| Market conditions and future prospects | Positive. Supply and demand for the object are in equilibrium and are expected to stay there. The number of competitors coming to the market approximately meets forecasted demand. | Neutral – Market conditions are roughly in equilibrium. In the future, there is some danger of more supply than demand, as new competitors are expected to enter the market.. | Uncertain – market conditions are weak. It is uncertain whether they will improve to equilibrium. |
| Strength of management and object quality | Strong. Experienced management and high quality of the object – Significant management experience in the object type business. They have strong relationships with potential customers. The object is favoured due to its configuration, design and maintenance. | Sufficient. Average management and object quality – management has some experience with the specific object type, but might have more experience with similar types. Relationships with potential lessees might be limited. The object is adequate with regard to design, configuration and maintenance. | Insufficient. Poor management and object quality – management has already shown some shortcomings in operating the object. Relationships with potential lessees are poor and not likely to improve significantly. The object’s configuration, design and maintenance are below market standard. |

Table 4: Supervisory Categories for Commodity Finance

The following table provides the general characteristics of commodity finance exposures that should be slotted into each supervisory rating category.

| Characteristic | Strong | Fair | Weak |
|--|--|--|--|
| Future prospects and market conditions | <p>Positive – Supply and demand for the commodity are in equilibrium. The market is liquid and stable.</p> <p>The commodity to be financed is good (quality, type, low perishability) and easy to sell on a market.</p> | <p>Neutral – Market conditions are roughly in equilibrium but some doubts remain in price, quality and stability of the market.</p> | <p>Uncertain – Market conditions are weak. It is uncertain whether they will improve to equilibrium.</p> |
| Collateral control | <p>Robust – The contract provides the lender effective control of the commodity if needed and the lender has the means to monitor the location and condition of the commodity.</p> | <p>Sufficient – The contract provides the lender effective control of the commodity and the lender has the mean to monitor location and condition of the commodity.</p> | <p>Uncertain – The contract, in some cases, provides little security to the lender.</p> |
| Strength of management | <p>Strong – The bank, the producer, the sponsor or project manager (e.g. traders in transactional financing) have extensive experience with the type of structured finance transaction being financed, the commodity type and the country in which it is located. The counterparties are carefully selected. The monitoring (i.e. documentary credit control procedures) is strong.</p> | <p>Sufficient – Sufficient experience of these transaction / clients/ products / countries.</p> <p>Past transactions of this type have sometimes experienced minor problems but have repaid debt on schedule.</p> | <p>Insufficient – Weak or insufficient experience in these types of transactions. Past deals have experienced significant problems (such as performance risk) with difficulties to repay on schedule.</p> |
| Risk mitigation | <p>High – The transaction is well covered for all risks (market risk, legal, fiscal and insurance risks, country and political risks). The performance risk is very acceptable. The expected recovery is deemed high to very high (high marketability).</p> | <p>Comprehensive – The transaction has a comprehensive package of risk mitigation against key risks, but some elements could be less strong.</p> | <p>Limited – The mitigants are limited and leave room to some risks. The recovery could be jeopardised.</p> |

| Characteristic | Strong | Fair | Weak |
|----------------|--|--|---|
| Track record | <p>Strong. These transactions (client / counterparty / product / country) have a good track record in respecting major contracts terms and covenants, with no or very limited performance risk, delivery being on time.</p> | <p>Fair. The track record is fair and acceptable (minor weaknesses only).</p> | <p>Weak. The track record can be limited or uncertain.</p> |

Minimum Requirements for use of Supervisory Estimates of PD

Reference Definition of Default

As a starting point, the MTF proposes that banks under the IRB approach use the same reference definition of default in assessing risk for SL exposures as that proposed for corporate exposures. The application of this definition within SL should focus on identifying exposures that have undergone distressed restructuring; such restructuring tends to be the predominant credit loss event for many types of collateral-centred lending activities. In particular, banks should ensure that any restructuring which provides material additional financing beyond current underwriting standards or which materially relaxes repayment terms or extends the repayment period is classified as a default.

The MTF seeks comment on the appropriateness of this definition, and whether there is a need to incorporate other credit events specific to SL. For example, it is the MTF's understanding that covenant violations may constitute a default event in PF.

Minimum Requirements for use of Supervisory Estimates of LGD and EAD

Due to the variation in focus between SL asset's orientation and the borrower centred analysis in corporate lending, the corporate requirements relating to collateral (overall minimum requirements, definition of subordination, and operational requirements, etc.) are replaced with the following minimum requirements:

Project Finance, Object Finance, and 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.

Income-Producing Real estate

- The purpose of the loan must be the acquisition, construction, or rehabilitation of the IPRE project.
- Exposures in this product line must be secured by a perfected, legally enforceable, first lien position on the subject IPRE.
- The bank must have the contractual right to foreclose on the IPRE if a legal default has occurred. Further, the note, security agreement and the legal

process underpinning the claim should provide the bank the ability to gain control over the IPRE within a reasonable timeframe.

Data Collection and IT Systems

Banks under the basic approach must collect and store data to provide effective support to its internal credit risk measurement and management process, consistent with the requirements set out for the foundation approach to corporate exposures. However, given that banks under the SL basic approach are not required to estimate PDs, the minimum standards for data collection of estimated PDs do not apply. Other standards under this heading (including the requirement to compile realised default data on an ongoing basis) are however expected to apply.

Use of Internal Ratings

The MTF is contemplating a number of modifications to the requirements set out in the corporate framework, including the following:

- Given that the foundation approach is based on a supervisory estimate of PD, the requirements linked to the estimates of default probabilities associated with internal ratings do not apply to the basic approach.
- Given that the basic approach is a “place-holder” pending further improvement in banks’ capabilities in estimating PD and other risk parameters, the requirement that a bank must demonstrate that it has been using a rating system that was broadly in line with the minimum requirements articulated in this document for at least three years will not apply.

Internal Validation

Since banks using the basic approach do not estimate PD, LGD, or EAD, the procedures for validating estimated values of these parameters, which are set out in the corporate framework, do not apply. Instead, banks under the basic approach must satisfy a modified set of internal validation requirements. Below, we set forward the MTF’s preliminary thinking on the broad direction of these requirements.

IPRE exposures historically have a lengthy and severe credit cycle; as such, it can be extremely difficult to observe the performance of the rating system based on its short or medium term historical performance. When the real estate market is experiencing strong conditions, few defaults are observed regardless of their degree of financial flexibility. A bank’s ability to rank order risk is more apparent when weak conditions exist and those properties with inadequate financial resources are readily exposed.

Due to the difficulties in validating the performance of the IPRE rating system using historical data, banks are encouraged to use simulation techniques such as stress testing or modelling project performance under a variety of market conditions. IPRE exposures in particular lend themselves to such techniques due to their financial performance depending on a discrete number of parameters compared to corporate

entities, which are likely to have numerous lines of business. These techniques should be used to increase the likelihood that the bank's risk rating system is adequately rank ordering credit risk in systematic fashion. A bank will also be required to maintain relevant records on SL criteria and performance for use in the validation process.

The MTF seeks specific comment on the feasibility of these techniques, particularly for product lines other than IPRE. For example, the MTF recognises that due to the unique nature of PF lending, and the scarcity of data, banks have difficulty estimating and validating the performance of PF rating systems. Banks are therefore also encouraged to use simulation techniques such as stress testing or modelling project performance for this product line. The process of simulating PF project performance can be more complex than that for IPRE exposures; however, this technique is often the best way of evaluating the loss characteristics of a project.

Disclosure Requirements

The Committee will be developing disclosure requirements for SL, consistent with the overall framework for Pillar 3.