

PUTTING A LIMIT ON LOSSES

Will Spinney explains the secrets of measuring and managing counterparty risk

Counterparty risk has increased in importance since the financial crisis. Indeed, in many surveys of treasurers, it is cited as one of the top three risks facing the treasurer or company. That's not to say that the subject was not considered important prior to the crisis – it was, but it was just not assessed with the same rigour seen today.

Two major factors are behind this increased focus on counterparty risk. Firstly, the creditworthiness of banks has fallen as they are no longer seen as incapable of failure. Secondly, there is a rise in cash holdings by many of the world's corporations (both large and small) as they hold back on capital expenditure in an uncertain economic environment and protect against future liquidity risk. Investing cash is probably the most obvious activity where counterparty risk is considered. It is by no means the only one, however, and banks are not the only class of counterparty where risk arises.

Counterparty risk is the risk that a counterparty to a contract will not perform their part of the contract, such as repay a deposit of cash, settle an invoice or supply goods when due. This is called 'default risk'. It also refers to how much of the contract is performed. In some defaults, all the amounts at risk might be received (for example, in a secured lending), or just some might, or indeed none at all. The total amount of funds lost is known as 'loss given default'.

In this article, we will look at how counterparty risk arises, how we might measure it and, finally, how we might manage it.

Before we can establish a policy for managing counterparty risk, such as setting an objective and assigning responsibilities, we need some way to measure these risks. There are two key dimensions to this. Firstly, we must measure the size of the risk. Secondly, we must measure the likelihood of default and any subsequent loss.

Measurement of risk

We can measure the exposures relatively easily (for example, size of term deposit

Counterparty risk can arise for a corporation in the following most important ways:

COUNTERPARTY RISK REGISTER - BANKS AND SHADOW BANKS		
Type of risk	Description	Explanation
Cash deposits	The risk that the bank fails to repay the deposit and interest.	Term deposits, call deposits, current (checking) account balances, certificates of deposit and bonds.
Cash in the process of collection	The risk that cash paid into a bank account might not be able to be withdrawn prior to bank failure.	Cheques, wires (especially batch-processed wires, non-real-time gross settlement), automated clearing house and cards.
Cash in the process of payment	The risk that an instruction to pay given to a bank may not be executed before bank failure.	A bank funded in the morning may only pay out on instructions late in the day, giving time for the bank to fail.
Having no cash management bank	The risk that there are no collection or payment facilities for a company.	If a bank fails, the company must find a replacement cash management bank.
Cash in set-off arrangements	The risk that balances in notional pooling and concentration systems might not be mixed on bank failure.	Cash in notional pooling and concentration systems prior to concentration. Credit and debit balances might be treated differently. Concentration systems generally work overnight, giving time for the risk of bank failure.
General set-off arrangements	The risk that loans must be repaid, but that deposits with the same bank may also not be repaid.	Generally, refers to cash deposits and current account balances. Banking law often allows banks to set off credit and debt balances, but not for customers to do the same.
Derivative contracts in the money	The risk that a derivative contract in the money will not be honoured. This also includes the risk of replacing such a contract.	Any FX, equity, credit, interest rate or commodity derivative in the money for the corporate, together with purchased options.
Derivative settlement	The risk that only one principal will be paid in settlement of derivatives. Also known as daylight or Herstatt risk.	Any derivative where principals are exchanged at maturity.
Letters of credit and bank guarantees receivable, underwriting agreements	The risk that instruments given by a bank in support of a third party (reduction of third-party credit risk) will not be honoured.	Letters of credit (and similar instruments) and bank guarantees received to cover liabilities or as bid, advance payment or performance guarantees and underwriting agreements. These are only as good as the bank.
Letters of credit and bank guarantees payable	The risk that, if a bank that has issued instruments for a third party's benefit (reduction of own credit risk to a third party) fails, the beneficiary will seek a replacement.	Letters of credit (and similar instruments) and bank guarantees given to cover liabilities or as bid, advance payment or performance guarantees and underwriting agreements. Also covers cash used to secure the issuance.
Failure to lend	The risk that a bank with an obligation to lend will not do so following failure.	Participation in revolving credit facility, overdrafts, asset finance, supply chain finance, card-acquiring services.
Custodianship failure	The risk that investments are not delivered when required.	Most investment arrangements, including segregated cash, repos, money market fund assets as well as investment funds.

Note: Shadow banking includes activities such as money market funds and hedge funds, although it also involves securitisation and collateral intermediation. Firms that mimic banks, for example, in providing FX derivatives, would also fall into this category



or derivative valuation) although the measurement of long-term customer or supplier risk, for example, is a bit more difficult. There are also some other complications to be aware of, which take into account the complexity of banking groups. When measuring counterparty risk size, this should be done by:

- ◆ Legal entity;
- ◆ Country (foreign branches may not be covered in entity review);
- ◆ Overall group;
- ◆ Subordination within legal entity;
- ◆ Instrument, especially to capture the liquidity of the instrument; and
- ◆ Maturity, to cover the time over which the risk occurs.

A further dimension to consider is type of counterparty. For example, when measuring investments, types might include:

- ◆ Commercial banks;
- ◆ Investment banks;
- ◆ Sovereigns; or
- ◆ Non-financials (which could also be broken down further).

Measurement of likelihood of default and loss given default

This measurement is arguably more challenging and amounts to an assessment of credit risk of the counterparty. We will restrict ourselves to measuring bank credit risk, although the same principles broadly apply to other types of counterparty.

A particularly useful way to analyse some of this data is to use it against

INSURANCE COMPANIES		
Type of risk	Description	Explanation
Claim failure	The risk that an insurance company fails before a claim is paid.	All insurance contracts.
NON-FINANCIAL COMPANIES		
Bad debts	The risk that an invoice raised on a customer on open account (or similar) is unpaid.	All receivables and a classic risk. Also applies to goods in manufacture and goods not delivered if made specially.
Long-term customer loyalty	The risk that a customer forming a large part of turnover fails.	This will include receivables, but also the amount invested in the customer, such as tooling, design, etc.
Suppliers	The risk that a supplier fails to deliver a service or goods and the risk of having to find an alternative.	All supply contracts for goods and services such as software and consultancy. Has short-term and long-term elements.

One positive aspect of assessing bank credit risk is that there is plenty of data available to use:

MEASURING BANK CREDIT RISK	
Data piece	Description and comment
Credit rating	Every bank is rated and the rating agencies specialise in credit risk assessment. They have been known to be slow to react to events, however, and bank failures happen very quickly. As well as the rating itself, both long- and short-term, the outlook should also be considered.
Debt prices	The price of bank debt (for example, bonds, commercial paper, money market pricing) will reflect the market view of the bank's credit risk. The higher the yield, the greater the risk. This can form part of an assessment of a 'market-implied rating' where a certain yield implies a certain rating, whatever the actual rating is.
Credit default swap (CDS) price	The CDS price reflects the price of credit in the same way that bank debt does, but is arguably more liquid and immediate than debt prices, thus adding signalling power.
Share price	The share price is an easily available measure that can be expected to react quickly to events and so has high signalling power.
Fundamental analysis	Proper fundamental analysis is almost certainly beyond the capability of most treasuries, but simple measures of balance sheets can be made, such as the leverage measure used by regulators. One problem with this type of analysis is that it is out of date very quickly.

a benchmark of the sector. So if, for example, the CDS price of a bank was rising (worse credit risk) faster than its peers, that would be a warning sign. Similarly, if the share price was falling (worse risk) faster than its peers, that would also be a warning sign.

Limits

Having measured the size and likelihood of an exposure, then the next stage in counterparty risk management is to establish a set of limits, which is the typical response to this risk. Limits should be set within an overall risk management approach using the concepts of risk tolerance, appetite and budgeting. Companies taking high business risk might decide to take minimal counterparty risk and invest only in 'risk-free' sovereign instruments. Some companies may take different amounts of risk with different cash segments, such as core long-term cash, compared with cash needed for paying wages or suppliers. Limits should be set, taking into account the following:

- ◆ Overall group;
- ◆ Entity within a group;
- ◆ Country;
- ◆ Subordination within a group;
- ◆ Instrument;
- ◆ Maturity;
- ◆ Credit risk (by whatever measure or combination of measures); and
- ◆ Industry sector/bank type.

Limits should be aggregated across the company so that limits are not broken by two parts of the organisation acting independently.

Risks should be measured on a regular basis and there should be an ability to react to changes in risk quickly, bearing in mind how quickly banks, in particular, can fail. Some companies use a traffic light system, based on a combination of the measures in the table above left, which can be used as a trigger for action.

It is impossible to eliminate credit risk, but a company should understand the risks it faces and be in control of them. ♦

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