5.6.1 Control and Measurement of Treasury

Unit: Unit 1 – Treasury Strategy

Module: Module 5 – Treasury structure

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Summary: A comprehensive look at the issues around control and measurement of treasury, from segregation and documentary control to benchmarking, KPIs and dashboards. Different types of treasury, especially along the cost centre/ profit centre dimensions require different approaches.

Keywords: operational risk, key performance indicator, dashboards, internal control, authorisation, approval, segregation, reconciliation, measurement, benchmarking, shadow portfolio

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Learning outcomes:

1. To understand the different roles inside treasury of firm risk management and departmental management.
2. To understand the operational risks inside a treasury.
3. To understand the context and content of control.
   a) control environment in the company
   b) risk assessment and management
   c) control activities
   d) information and communication
   e) monitoring
4. To understand the implications of the control environment and management philosophy of the firm on treasury management.
5. To understand the control procedures available in a treasury.
   a) authorisation and approval
   b) segregation of duties
   c) adequacy of documentation
   d) safeguards for access / use
   e) reconciliation / checking
   f) measurement, including the use of KPIs
6. To understand the uses of benchmarking.
7. To understand the uses of Key Performance Indicators (KPIs) in risk management and treasury control.
8. To understand the uses of dashboards in treasury management.
9. To understand how treasury performance might be measured.
10. To understand how a treasury might be placed along a cost centre / value added or cost saving centre / profit centre.

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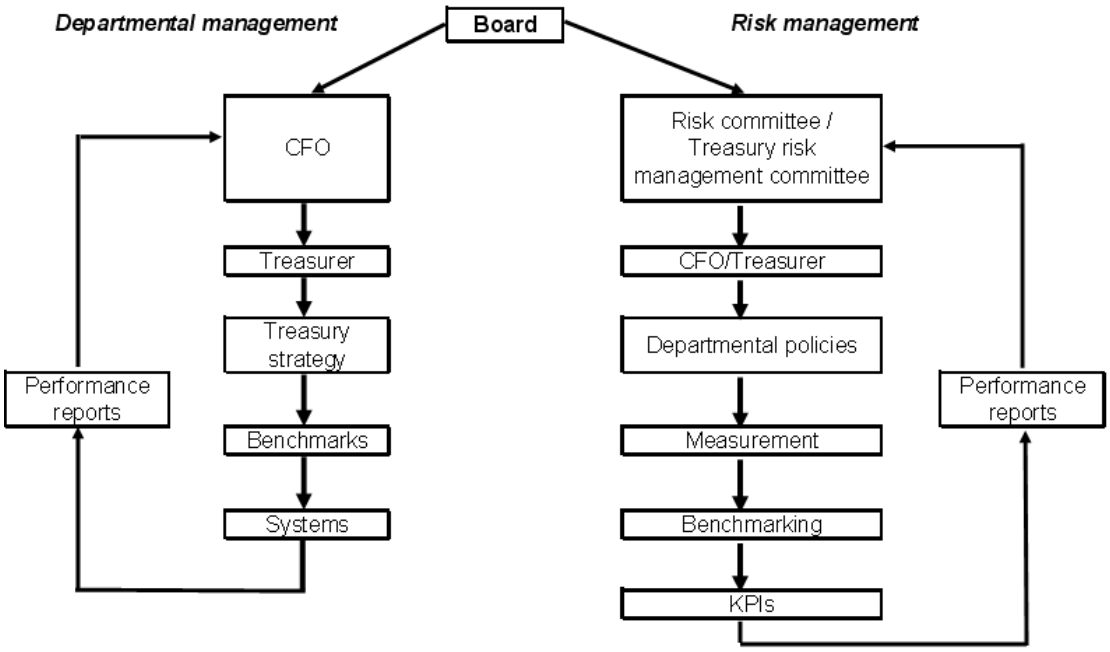
1 Introduction

We start off with this subject by recalling the main roles of treasury - departmental management and risk management - split between financial risk and operational risk, and reprise Exhibit 1.

Exhibit 1: Treasury Policy Process



Treasury has a role in risk management where policies are established in line with the overall strategic approach of the firm. We need to consider how control and measurement of treasury should work in these circumstances. It is not enough to make treasury responsible for the success or failure of risk management policies, as these are firm wide risks, but we do need to control and measure treasury as to how well it complies with risk management policy.

Example 1: Firm v treasury performance

Sagittarius Inc is a quoted business serving the retail sector for logistics and inventory management. It has quite a demanding interest cover covenant. Treasury has been forecasting that a breach was highly likely for several months, using an accurate forecast of interest and combining this with forecasts from the operations for the EBITDA element of the relevant ratio.

The firm does in fact breach the covenant but the accurate prediction by treasury has allowed the firm time to talk with its lenders about possible solutions.

Despite the fact that the firm has breached a covenant and therefore been impacted by the event, in fact treasury has done its job well.

1.2 Departmental management

Treasury is also a department and has to operate efficiently and economically, like any other part of a firm. Again we need to see how control and measurement work here.

Example 2: Treasury departmental performance
Aquarius SaS operates in the arena of ship operation and maintenance in the Scandinavian region. It acquired a licence to a new treasury system over 12 months ago but has failed to properly implement the system and the treasury continues to run under the legacy software.

While there has been no loss to the group, because internal controls remain unaffected, the investment has been a waste and treasury have failed to do their job.

1.3 Control of operational risk

Finally, is the aspect of control of treasury operational risk. In carrying out its function treasury is exposed to particular risks around its operations, relating to fraud, errors and so on. Treasury is particularly susceptible because of the large amounts of value it handles, and the complexity surrounding its activities.

Treasury functions should be carried out in an environment that minimises operational risk, defined as 'the risk of monetary losses resulting from inadequate or failed internal processes, people and systems' (Basel Committee on Banking Supervision).

Financial instruments have become more complicated, operating in markets has become more difficult since the financial crisis and treasurers are likely to have to speak to more people, all of which makes the treasury function more difficult to manage. Treasurers can undertake transactions containing risks which their senior management colleagues do not always understand and when times are hard the pressure to 'show a profit' or at least 'recover costs' is much higher.

Not surprisingly, in parallel with these developments there has been increased interest in the measurement of treasury performance and, as the potential for loss as well as profit is more clearly understood, in control. Most jurisdictions have in place some regulation affecting corporates, such as the UK Corporate Governance Code in the UK and Sarbanes-Oxley in the US; these as well as the introduction of IFRS and increased regulatory focus following the Global Financial Crisis, all of which have reinforced the need for control and disclosure. High profile losses due to inadequately supervised use of derivatives have underlined the importance of control.

We will address issues of control in some depth and aim to provide a framework for understanding and thinking about control in a treasury context. Because individual treasuries differ so much in make-up and scope the emphasis is on the underlying principles rather than the detail of specific control and reporting systems.

We also consider some of the standard measurement tools for both control and measurement, especially around benchmarking, Key Performance Indicators (KPIs) and dashboards.
We will consider some of the issues around measurement of treasury and how this might differ according to some of the design issues around treasury, especially with regard to the approach

taken to 'response to risk', i.e. whether the treasury is a cost centre / value added or cost saving centre, or a profit centre.

2 The context of control

Internal control is a management process involving the board, senior management and staff designed to provide reasonable assurance regarding the following:

- safeguarding the assets of the business
- effectiveness and efficiency of operations
- reliability of financial information
- compliance with relevant regulations

Internal control expertise in the finance area is a fundamental part of the accountant's tool-kit. However, the treasury function is a sophisticated area, and treasury control differs from traditional financial control in terms of the emphasis on risk and the complexity of the instruments and systems used. Therefore, the control skills and techniques needed for treasury, while obeying the same principles, go beyond those traditionally applied across the financial function as a whole. The existence of professional associations such as the Association of Corporate Treasurers is evidence of this fact.

Internal control is a process which is implemented by people at all levels in the organisation. It is not merely a set of mechanical procedures and electronic systems. Neither can it be expected to give more than reasonable assurance. No system can provide total protection against human error or the determined fraudster. So the existence of a sophisticated internal control system does not absolve managers from managing it by continually exercising a duty of care.

Internal control is typically seen to comprise five elements:

- control environment in the company
- risk assessment and management
- control activities
- information and communication
- monitoring

These five elements are interrelated. Initiatives to improve internal control such as those by the ACT and other trade bodies, each embrace several elements. We attempt below to distinguish as clearly as possible between the five elements, bearing in mind our own approach to these as part of our studies.

2.1 Control environment in the company

This is the company-wide context within which treasury must be able to establish and maintain controls appropriate for treasury. It is influenced by:

- senior management philosophy, style, ethics
- organisation structure, culture
- personnel policies
- external industry influences

Control environment is shorthand for the company's general attitude towards control, or lack of it, across all its operations.

Senior management philosophy, style and ethics
In any company, treasury is just one (highly specialised) activity among many. Across the company there will be a general attitude to control, exemplified by senior management and part of the corporate culture. It is less a matter of what is written down, than of what is said and of how things are done. At one extreme, management philosophy may be bureaucratic, with low levels of personal autonomy and ready acceptance of control; at the other extreme, it may be entrepreneurial, with very high levels of personal autonomy and disdain for formalised procedures.

Organisation structure, culture
Organisation structure specifies how authority is defined, how communication is routed and how activities are co-ordinated. In other words, it has a very important impact on how control is exercised throughout the company.

Of particular relevance for treasury is how the firm is organised on the axes of Response to risk (profit / cost centre basis) and Authorities (the extent to which treasury is centralised).

Personnel policies
Aspects of company personnel policy relevant for treasury are quality levels aspired to, continuing professional development, ethical standards demanded, and thoroughness of the recruitment process. Treasurers could empathise with the following statement by a U.S. bank: 'We make an unusual effort to identify and recruit the very best person for every job. Although our activities are measured in billions we select our staff one by one.'

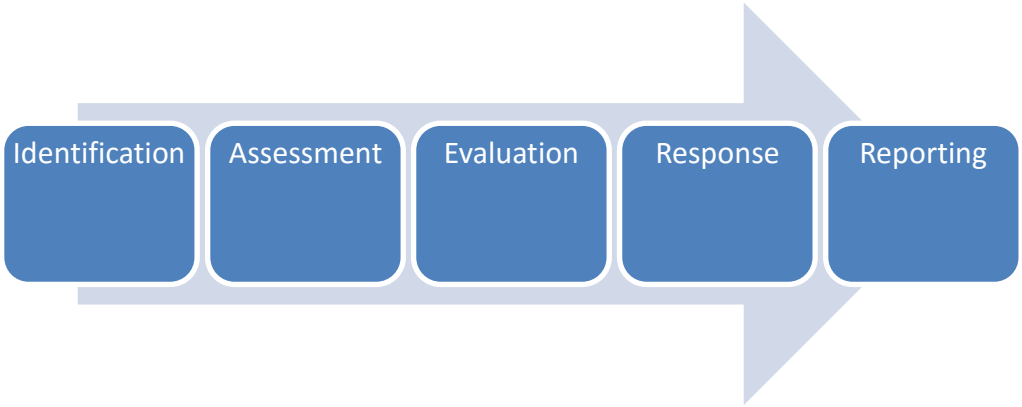
External industry influences
The control environment in many industries is affected by the legal, technical or ethical standards which apply in that industry e.g. banking, defence, food, or pharmaceuticals. In other institutions such as local authorities, utilities, charities, political and moral standards will also have an effect.

For treasury the Financial Services and Markets Act in the UK, Sarbanes-Oxley, IFRS and related compliance requirements are key external influences.

2.2 Risk assessment and management

This is an area where we are familiar with our approach:

Exhibit 2: Risk framework



The discipline offered by this approach is an excellent start to a strong internal control arrangement.

2.3 Control activities

These are the policies and procedures which help ensure control of operational risk. We cover these in the next section.

2.4 Information and communication

This is the *capture, processing and recording* of data / information, both internal and external, so that it can be disseminated for *action, management and control.* The activities involved are broader than formal accounting reporting but fall within the same framework of:

- recognising
- classifying
- measuring
- recording
- analysing
- reporting

2.5 Monitoring

Separate / independent (of treasury), this is the continuing *assessment of internal control* to ensure that it is working and to propose improvements. Usually achieved by:

- internal audit studies
- external audit for preparation of financial statements
- routine compliance checks

3 Control of treasury

Control procedures exist to ensure that the company's treasury objectives and policies are complied with, that unauthorised transactions and fraud are prevented, that errors can be readily detected and that accounting/reporting systems are followed. They tend to focus on operational risk but can be applied to the general approach to risk.

It is easy to confuse control procedures with accounting systems, so here is an example to help explain the difference. If the accounting / reporting system is for bank deposits then the function of the control procedure is, for example, to ensure that the deposit is recorded correctly, that the deposit bank is an acceptable counter-party credit risk and has an appropriate mandate in place and that receipt of the deposit is acknowledged by the bank and that the deposit will be repaid to the correct account. The accounting system by contrast will record the deposit as an asset of the company, noting size and interest accrued.

Control procedures generally cover the following areas:

- authorisation and approval
- segregation of duties
- adequacy of documentation
- safeguards for access / use
- reconciliation / checking
- measurement, including the use of KPIs

3.1 Authorisation and approval

Authority for arranging financial transactions originates with the board of directors.

However, except for major decisions, such as making acquisitions or entering into syndicated bank facilities or debt issues, authority for day to day decisions will be delegated to senior management. They will, in turn, delegate selectively to operating personnel.

Authorisation may be general or specific. General authorisation is commonly granted for recurring transactions, typically up to some limit either per transaction or cumulatively over a period of time. Specific authorisation may then be required for individual transactions which fall outside the criteria for general authorisation because, for example, they exceed the size or maturity limit.

These "delegated authorities" or "reserved powers" should be widely communicated inside the firm and ideally reviewed frequently. They should become cultural in a firm. It is easy for a manager in a remote subsidiary to say "yes but that wouldn't work here" but it should be clear that the authorities apply to everyone.

Bank mandates can appear to perform a similar role but have limitations in that they only act after the critical event. That's to say that they act at the time of payment, rather than contract. Control at time of payment (or indeed invoice approval) is usually too late.

3.2 Segregation of duties

Segregation of duties is designed to prevent fraud and detect errors. It is particularly important where large sums of money are transferred and to prevent or detect breaches of counter-party limits or positions.

The general principle is to break up the transaction into several steps and make several people responsible for implementing it. Typical steps are:

- authorisation: the initial approval
- execution: doing the transaction
- custody: delivering, receiving
- recording: entering the transaction into the recording system
- checking: independently verifying the copy of the counterparty's record of the transaction with that of the company
- settlement: final movement of funds

In a small treasury, limited staff numbers may make segregation of duties difficult. In this situation, some functions may have to be performed outside the treasury.

3.3 Adequacy of documentation

Paper or electronic formats need to be designed so that all the required information is recorded correctly, so that no transaction is omitted or is recorded more than once and so that the format is user-friendly.

Documentation (and its completion) must be structured appropriately to comply with hedge accounting requirements.

Procedures in a TMS should be based on unique numbering, requirements for authorisations before any confirmations or payments are made, naturally reflecting similar requirements in the days when work was paper based, with its pre-numbering, pre-printed instructions and defined spaces for authorisation / approval.

3.4 Safeguards for access / use

Safeguards are used to reinforce segregation of duties and to prevent third parties from being able to obtain unauthorised access to systems or documents. Safeguards typically include:

- restricted physical access to sensitive areas, e.g. dealing rooms or payments areas (although this is really large company stuff)
- restricted access to electronic systems by the use of tokens and / or passwords
- enforced dual (or more) workflow in computer systems (such as input, authorise, release)
- mandate documentation
- restricted access to documents
- physical safeguards for documents and computer records such as fire-proof safes, computer back-up systems.
- ensure that no-one shares passwords

3.5 Reconciliation / checking

Reconciliation occurs when an accounting record (or indeed any record) is checked against another record of related transactions, documents or control accounts. Reconciliations typically include the following types of comparisons of detailed accounting records to:

- transaction / asset accounts e.g. reconciliation of bank balances / inventories of securities with accounting records
- control totals, e.g. periodic reconciliation of cash posted to accounts receivable with total cash received
- external information, e.g. checking of counterparty statements against internal records
- control accounts: periodic reconciliation of sub-ledger accounts to the control account in the general ledger

For treasury, a vital reconciliation is the daily cash reconciliation. This is not an accounting reconciliation, but a proof that yesterday's cleared closing balance was indeed as expected over every bank account in treasury's area of responsibility. However, an accounting reconciliation is also important and in many cases, daily (or even more frequent) reconciliations can be powerful.

Other treasury "reconciliations" (or control reports) would include:

- counterparty limits report
- transactions yesterday for matching to input records
- unapproved transactions outstanding
- unmatched confirmations outstanding

There are some essential control features of reconciliations:

- They should be carried out by a party independent of the transaction to be reconciled. Ideally, reconciliation of treasury transactions should be performed by the 'back office' if it is separated inside treasury, failing which by someone outside of the treasury department. The danger of using non treasury personnel to perform these tasks is that they do not fully understand them and do not take them as seriously as is needed, and they can be easily hoodwinked by treasury staff wishing to cover something up. Such personnel therefore need training or qualifications appropriate to the role.
- Reconciling items must be cleared promptly – certainly by the next reconciliation. Discrepancies arising from the daily treasury cash reconciliation should be investigated immediately and thoroughly; depending of course on materiality.
- Reconciling items must be properly explained, and approved as appropriate. Remember – you can reconcile anything to anything; so without explanation reconciliation in itself is meaningless.
- Reconciliations should be reviewed and approved by a supervisor as part of a properly regulated and scheduled process. The supervisor should also be accountable for carrying out this task properly.

The effectiveness of reconciliation procedures depends on reconciliation taking place as soon as possible after the transaction, the reconciliation of all transactions, the tenacity with which

errors are pursued and rectified, and with which causes of errors are discovered and corrected.

3.6 Measurement, including the use of KPIs

The treasurer should be happy to subject the department to measurement (as with any other part of the business) as otherwise it is impossible to track progress against targets

Measurement should be as far as possible quantifiable - it is hard to measure against qualitative criteria such as 'customer satisfaction' without further definition. And measurement should form part of a constructive process to improve control and efficiency. Mapping measurement to KPIs is one way to achieve this.

An example of an area for the application of measurement is the reconciliation processes. A KPI which measures reconciling items outstanding or speed of confirmations and is then published in and perhaps beyond the department can show up weaknesses in processes or display strengths to the rest of the firm, giving the wider firm confidence in treasury. We return to KPIs later in the reading.

4 Treasury control checklist

A checklist for one detailed approach to treasury control is given below in Exhibit 3.

Exhibit 3: Controlling the treasury function

Area	Controls
Board policies	• Board policy establishing the parameters within which treasury may operate • Policy needs to be explicit in terms of the company's appetite for risk, dealing and authorisation limits on counterparties, positions / exposures, currency, maturities etc.
Committee powers	• Treasury committee membership • Treasury committee delegated authorities • Treasury committee meeting arrangements
Organisation	• Current organisation chart for treasury • Complete job descriptions for all functions • Duties segregated as much as possible, especially between authorising, verifying, executing, recording, confirming and reconciling transactions
Treasury policies	• Mapping of treasury policies to company policies • Current policies manual for treasury operations • Specific policies for high-risk activities such as short-term investing, borrowing, risk management, foreign exchange and payments
Procedures	• Procedures manual for treasury operations (may be combined with treasury policies manual) • Procedures to protect the confidentiality of information and documentation

Area	Controls
	• Procedures to identify and escalate exceptions and extraordinary situations as soon as possible • Contingency procedures with service providers for continuation of services
Management reporting	• Documentation as to what management information reporting is required • Timing / frequency of reports • Exception reporting requirements
Treasury reporting	• Transaction recording providing for accurate accounting, confirmation and audit trails • Operating reports e.g. deals outstanding, limit utilisation, cash flow reports • Accounting report requirements
Bank documentation	• Bank account opening documents, letters of instruction and contract documents available (KYC) • Bank account and dealing mandates defining who can undertake and authorise transactions with each bank, reflecting paper and electronic instruction methods • Up-to-date list of authorised signers, communicated to all counterparties, with positive acknowledgement where possible • Service level agreements • When documentation is in a foreign language (such as overseas bank account opening forms), a translation, 'certified' as appropriate • This can also apply where dealings are made with non banks

Banking relationships	• Database for:
	  ○ All banking contacts
	  ○ Services / volumes used
	  ○ Fees / compensation paid
	  ○ Credit facilities
	  ○ Borrowing levels
	• Prompt review of the account analysis / bank statement

Technology	• Review of systems security internally and externally • Physical control over access to facilities and systems • Password protected logon to systems • Regular review of system audit trail • Contingency plan in place and tested • Regular backups, tested for restore capability
Environmental review	• Review of the regulatory environment and any changes that necessitate changes in the treasury functions (e.g. the impact of Check 21 in the U.S., or the use of IBANS and BICS in Europe) • Compliance monitoring to ensure appropriate procedures are in place, being monitored and still effective

Note the importance of documentation in this particular approach. How many treasurers are really sure that their documentation is completely up to date? A feature of the collapse of Lehman in 2008 was how poor the ISDA documentation was for all derivative clients. Both Lehman and bank / corporate counterparties had operated broadly under different assumptions about the relationship than actually legally applied. There were few exceptions.

5 Benchmarking

Benchmarking is an extremely useful tool. It has several different meanings in a treasury context. At its most fundamental it is a means of comparison of a specific measurement to an agreed reference, i.e. 'benchmark' measurement. Examples of benchmarking in treasury are as follows:

- In a loan agreement the benchmark rate could be LIBOR, against which the firm's loans are priced with a suitable margin.
- In managing a treasury department, a benchmarking exercise could be undertaken in which staff numbers are compared against those in similar sized firms.
- In establishing a foreign exchange risk policy, a budgeted rate could[1] become a benchmark.
- In managing liquidity risk, the standard benchmark ratios used by credit rating agencies could be used to assess the historical, current and forecast performance of the firm.
- In formulating the response to the hedging of fuel price risk in an airline, the hedging strategies of competitors could be used as a benchmark against which to compare the response chosen by the firm.
- In investment, many benchmarks exist (called an index or indices) with which to compare actual portfolio performance – this has become a science in the asset management industry. In treasury this approach can be used for cash investments and is also seen in pension investment.
- In establishing control procedures, comparisons could be sought through the firm's advisers, e.g. treasury consultants from auditing firms, based on their own observations of other firms.

To a large extent, qualifications are also a benchmark and indeed even this material could be regarded as some form of benchmark of good treasury practice. Benchmarks are everywhere, even if they are not identified as such.

We can recall that our standard and suggested policy format seen in this study unit suggests use of benchmarks, ideally seeking external ones. Here we can see that benchmarks can become an integral part of policy formulation. Note that vocabulary with regard to benchmarks can become quite difficult. We see their use in the simple application of loan rate setting or even budget rate setting but it might be that a policy response will target a particular measure in its operation. This measure may then be called a benchmark in that policy but in fact is better described as a target.

Example 3: Benchmarks and targets

[1] Readers should be aware that this is not a recommended practice

Superstore plc is a major retailer operating in the United Kingdom and has FX transaction risk on its purchases of goods from overseas, paying foreign currency to the suppliers on average 90 days after the goods are delivered. It carries out a benchmark exercise and discovers that its competitors hedge 100% of all invoices over £5,000 following receipt of invoice. This is the benchmark.

Superstore decides to adopt a VaR approach and targets a VaR of £100,000 to 98% certainty for the life of its exposures, from order to settlement. The VAR limit becomes a target.

Superstore can then compare the success of aiming for its target with the success of its competitors adopting the benchmark approach. Superstore could also compare the actual result from its target approach, to the calculated effect of using the benchmark approach using Superstore's own data, and use this information to further refine its approach.

We should be aware of course, that benchmarking has a fundamental flaw, in that a practice or measure will gain credence simply from being heavily used in an industry. Mere use of a measure does not mean that the measure is an appropriate one.

Example 4: Inappropriate benchmarks

In the asset management industry, especially as applied in the defined benefit fund management sector, it became very common up to the 1990s to set benchmarks of the performance of other pension schemes. This implies that trustees will be happy if they are beating the performance of other pension schemes.

While this might make the trustees feel happy, it says nothing about how the assets are performing in relation to liabilities.

5.1 Shadow portfolios

A particular example of a benchmark in use in treasury, when assessing financial performance, is the use of 'shadow portfolios'. If a treasury is to be assessed against a particular rate in the financial markets, then in many circumstances a shadow portfolio should be created. In many industries, especially the asset management industry, this role is carried out by the use of indices. There are myriads of indices for almost any asset class, and equity indices are available for many sectors, e.g. Asian, US, Global etc.

However, indices are often imperfect and need to account for varying balances over time, dividends, re-investment rates and so on. If a treasury is measured for cash investment against 1 week LIBOR, for example, then to take account of the way that amounts available to invest will vary over the period, a shadow portfolio must be created. This can cause much work to both design and run. In foreign exchange portfolios, account must be taken of intraday movements, complicating matters.

Example 5: Shadow portfolios in foreign exchange

Charybdis SA operates an intercompany netting system for its multinational operations. On the relevant day in the month the foreign exchange transactions are executed at around 1100. Operating subsidiaries use several different foreign exchange rates, including month end rates

and day end rates to calculate profitability. The 1100 rates are always different to the day closing rates and subsidiaries often complain that rates were not traded at favourable rates.

6 Key performance indicators

KPIs are another useful tool in the treasurer's tool box and of course we have also come across these in the formulation of our standard and suggested policy format. They can form a part of almost every process and indeed they can be viewed simply as a measure. To the extent that measures have been used in business for many years, so have KPIs. They have reached prominence recently in the UK with their formal inclusion in law, via the Companies Act 2006 for all but small businesses. The features of appropriate KPIs are that:

- They are **KEY** to the relevant process.
- They relate to the **PERFORMANCE** of the business and contribution of staff
- They are an **INDICATOR** ideally of future performance, such as R & D leading to new products, new stores opened or products developed.

KPIs are used, for example in annual reports. However, they often refer to historical data and are merely a repeat of what is in the accounts or what can be derived from the accounts. They may also not reflect the contribution of staff but merely economic conditions. For example, if a KPI in an annual report is operating margin, then this merely states history and any change may be due to external market conditions. It is nevertheless a step forward to include KPIs because at least we can then understand what management is focusing on and judge this over time. A target or objective for these KPIs is also very useful, but the best KPI is one which measures what people are doing to improve performance or competitiveness.

However, the pure concept of measurement is one that has not been easy to apply to treasury in the past. "How good is a cash management process?" or "How good are our bank relationships" are very difficult questions to answer, but ones that can bring rewards if one is prepared to measure activities in some way and then set targets for improvement.

We will briefly review KPIs in treasury in the contexts of risk management, treasury controls and treasury management. In these contexts, control is to do with issues of operational risk, such as fraud, and treasury management is to do with how well the day to day job is being done.

6.1 KPIs in risk management

KPIs appear in the processes used to manage risk and are one part of the suggested policy format and of the risk framework. The KPI is typically the measure of risk and a target is chosen for this KPI to which the treasurer must manage. However, the KPI is merely the final output of the process.

Example 6: Superstore continued

Superstore plc has adopted a policy of managing FX transaction risk with a VAR approach and targets a VAR of £100,000 to 98% certainty for the life of its exposures, from order to settlement. VAR is measured on the sum of all orders and invoices received and not settled, less the amount of forward purchases of FX in respect of those (commercial) purchases.

The process to manage FX risk then comprises:

- Gather outstanding order data
- Gather outstanding invoice data
- Gather outstanding forward FX purchases (all by currency and settlement date)
- Gather implied (or historic) volatility by currency and settlement date
- Gather current FX rates
- Gather currency correlations
- Calculate VAR (by historic or implied methods)

It can be seen that the VAR is only the final output. There is a lot of process underlying its calculation, and meanwhile VAR may exceed its target if implied volatility suddenly climbs (If VaR is measured using implied rather than historical volatility). Thus in this case process efficiency or performance is as much about the collection and accuracy of data and speed of response as about the size of the final number.

The treasurer may therefore wish to measure several stages in the process but of course he will report in the terms of the KPI against the target that has been set.

6.2 KPIs in treasury control

KPIs, as simple measures, can be used in the control of treasury operations. While there are many possibilities, some of the more important ones could be as follows:

Exhibit 4: Key performance indicators

KPI	Target
Number of items un-reconciled in bank accounts	Nil
Time from transaction to swapped confirmation	1 hour
Trades made in error (e.g. wrong way round)	Nil
Bank and dealing mandates up to date	100%
Passwords changed every 2 months	100%

As with other KPIs it is the process to achieve these which must be targeted, the KPI is merely the summary measure. Target setting is obviously a fairly difficult exercise but benchmarking can give some guidance here. We should also try and distinguish between measures of success and procedures put in place to ensure success. A criticism of the five KPIs above is that they are post event measures. Perhaps a better KPI might be measure the proportion of transactions carried out with straight through processing (STP). If that was the case that might be a better forward looking indicator for number of items un-reconciled. In other words, the best way to avoid un-reconciled deals is to make all deals STP.

6.3 KPIs in treasury management

Again, KPIs as simple measures can be used in the management of treasury. There are enormous possibilities to measure processes inside treasury and set targets. Each treasury may differ depending on its role and size of the firm and the following examples are only meant as an indication of what might be possible.

Exhibit 5: Key performance indicators

KPI	Target	Comment
Percentage of all group bank accounts reported centrally	90%	Some jurisdictions may be too problematic
Percentage of cash flow in concentration arrangements	90%	Some jurisdictions may be too problematic
Percentage of business units participating in concentration arrangements	80%	Countries / regions with only one bank account may not require these
Percentage of business units participating in intercompany netting arrangements	90%	Some jurisdictions may be too problematic
Penalty charges	Varies	
Speed of response to business units	20 minutes	Varies according to type of request
Compliance reporting	100%	

Target setting is obviously a fairly difficult exercise, as well as time to achieve some of these outcomes. Note also how the “70/30” rule often applies, i.e. often you can get 70% of the whole task achieved, with 30% of the effort. Depending on the application, targets of much over 70% may not be cost-effective.

7 Dashboards

Another tool for the treasurer is the ‘dashboard’. The concept of a dashboard is of course borrowed from motoring and possibly from flying, where more information is shown. The information in a dashboard allows management to react so that a KPI is maintained. In the treasury context items on the dashboard may include:

- FX positions or exposures
- FX volatilities
- FX rates
- interest rates
- headroom
- cash positions
- CDS prices

Note that these are things that treasury generally would react to, rather than influence, but the output can be on a dashboard as well.

Example 7: Superstore continued

Superstore plc has adopted a policy of managing FX transaction risk with a VAR approach and targets a VAR of £100,000 to 98% certainty for the life of its exposures, from order to settlement. Dashboard data in this case are:

- order data
- invoice data
- forward purchases
- implied volatilities
- currency correlations
- current VaR as at date

KPIs might include speed of response to new data. The final output reported is the VaR which must be kept within limits by reacting (KPI) to the data in the dashboard. The VaR can also appear in the dashboard.

Dashboards can also be considerably enhanced by using traffic lights (red / amber / green) to highlight results for immediate / maybe / minimal attention; and by graphs showing trends.

8 Measuring treasury performance

The challenge of measuring treasury performance is a relatively new one. Many treasurers will try and resist measurement and many CFOs might see it as too difficult. However, the trend towards performance related pay and good management techniques mean that it does have to be addressed. In fact, a treasurer really should be very happy to be measured so that the contribution added to the firm by the treasurer and the department can be fully recognised and rewarded.

The Board is ultimately responsible for establishing treasury policy and should therefore also carry out a measure of how that policy is implemented. KPIs can be used to measure the effectiveness of a policy, but they may also be used to measure treasury's performance in delivering the policy. So the definition and application of KPIs needs to be carefully thought through to avoid confusion between these two aspects. Possible KPI measures for a variety of risk management policies are set out in Exhibit 1.

To emphasise this point about the two aspects, let us consider a company with cash to invest. It will have formulated a policy on issues such as limits per counterparty, liquidity limits, duration and yield targets (complying with the SLY principle). The role of treasury is to comply with the policy and measurement of treasury is about how well it complies with policy. If a counterparty fails, that is not about the performance of treasury but about the risk in the policy

itself. Failure of a counterparty is envisaged by the policy. Of course, treasury will have to report against policy and in reports, the issue may become clouded, but the distinction is clear. Treasury might also be measured on its ability to make forecasts. Thus a treasury should not be considered to fail if a covenant is failed but if treasury had not forecast such a breach, then that might be considered a failure of treasury.

Exhibit 6: Policies and potential KPI measures of treasury performance

Policy	Possible KPI measures
Liquidity management policy	Availability of funds to operations. Idle cash not invested. Amount & maturity profile of cash invested
Bank relationship management policy	Qualitative measurement such as number of meetings per year, volume of deals done, levels of satisfaction, feedback from operating units or bank staff.
Credit risk policy	Compliance with policy, or breaches, but not losses experienced.
Internal control policy	Compliance with policy, or breaches. Speed of implementation of internal audit recommendations, and degree implemented.
FX risk policy for each type of risk	Compliance or financial result compared to an alternative approach, i.e. benchmarking. Measurement of reduction in risk is also possible.
Debt portfolio management policy	Compliance with policy, or breaches. Proposals to comply in the future.
Compliance (with loan documents) policy	Completion of reports and early warnings given. Current and forecast performance against covenants
Interest rate risk policy	Compliance or financial result compared to an alternative approach, i.e. benchmarking. Measurement of reduction in risk is also possible.
Investment policy	Return received on cash compared to benchmark.
Rating policy	Number / frequency of meetings with credit agencies and feedback received.
Pension policy	Compliance or financial result compared to an alternative approach, i.e. benchmarking. Measurement of reduction in risk is also possible.

The measures suggested above might be used as policy KPIs, treasury performance measures, or both, depending on the organisation and the exact terms of each policy. It can be seen that there are a variety of different measures possible, from quantitative measures such as financial reports, to qualitative opinions to whether reports have been prepared on a timely basis. In addition, the treasurer will also want to make his own assessment of departmental performance and may use measures such as:

- timely process completion
- subsidiary participation in inter-company netting
- items outstanding under reconciliation
- bank guarantees outstanding past maturity date

- accuracy of cash forecasting
- accuracy of interest charge forecasting

Ideally each performance measure should cross reference to treasury policies in order to:

- Assess the effectiveness of treasury policy.
- Assess the efficiency with which the policy is carried out.

There are two parameters on which treasury performance should be evaluated. There is a quantitative aspect in terms of the tangible increase which treasury activities add to shareholder value, and a qualitative benefit in terms of the value of advice and how the job (especially with regard to risk management) has been performed. The latter is far more difficult to measure objectively.

Whatever the risk appetite and preferred risk management response, treasury must be set targets, and subsequently measured on results, under an agreed measurement methodology. Measuring performance inevitably assists the process of feedback to the board of directors on the appropriateness of the strategic direction, the policy and its execution.

9 Implications of response to risk in treasury

In Exhibit 7 we remind ourselves of our approach to treasury organisation and concentrate on one aspect in particular - response to risk and how this might affect control and measurement.

Exhibit 7: Treasury organisation profile

ROLE	Advisory	Agency	In House Bank
AUTHORITIES	**Decentralised**	**Centralised**	**Dynamic balance**
RESPONSE TO RISK	**Cost centre**	**Value added Cost saving centre**	**Profit centre**
ORGANISATION	**Elementary**	**Intermediate**	**Advanced**

9.1 Cost centre treasury

A cost centre is an area of operations within a business where the manager is responsible solely for managing costs, which are then distributed back to the units served. When treasury is established as a cost centre it focuses solely on its cost of operations, disregarding any opportunity to add further value e.g. from services to subsidiaries. Performance measurement is based around cost or efficiency - ‘bang for buck’.

9.2 Cost saving / value-added centre

The value-added centre is an area of operations where the manager is responsible for costs, but at the same time is expected to identify other ways in which value can be added to the treasury and to the business. In practice, this means that treasury monitors its own costs carefully. However, if it believes that by adding cost to its operations, it can make savings

elsewhere in the business which justify that cost, it will be prepared to make the investment. A firm which invests in a regional cash pooling structure may find that costs charged directly to treasury have risen sharply, but that this is justified by the aggregate cost reductions in the business overall.

This approach calls for a higher level of treasury expertise than a cost centre approach, and more sophisticated control systems to ensure that the benefits needed to justify the additional costs are realised. This categorisation simply recognises that there is little point in having a central treasury unless it adds value to the business. It follows, therefore, that the added value should be measured.

9.3 Profit centre

A profit centre is an area of operations within a business where the manager is responsible for revenues as well as costs, and so is accountable for the profitability of the operations. Where a profit centre approach is adopted, the treasury unit may operate more as a line function in a similar way to a commercial operating unit (e.g. as an In-House Bank), than as a support or staff function.

With a profit centre, treasury takes responsibility for risk exposures, usually by executing an internal deal with a business unit at an arm's length price. The business unit position is, therefore, covered but the risk exposure has been transferred to treasury, which is accountable for managing the position. Efficient risk management will yield profit, and inefficiency will result in losses; such profits and losses are, in this approach, isolated within the treasury and visible to management.

It is a common misconception that firms with profit-centre treasuries necessarily have a high appetite for risk, and are willing to increase underlying positions in order to maximise profits. It is perfectly possible to adopt a profit centre approach within the constraints of a limited risk appetite. The treasury policy will clearly lay out a treasurer's priorities in this regard.

Control and measurement here must take account of the added risk involved in being a profit centre, it is not sufficient to measure the profit without taking into account the risk (and hence the capital and risk appetite required to support that risk) assumed to create the profit, noting that return is not possible without risk.

9.4 Choices in response to risk

There are some pointers to how a treasury might approach this choice. The sort of behaviour seen in the different approaches is summarised in exhibit 8 and can point a firm in one direction.

Exhibit 8: Approaches to response to risk

Type	**Features**		
	Activity	Active / Passive	Risk appetite
Cost centre	Hedges mechanically	Passive	Risk aversion
Cost saving / value adding	Hedges & manages	Active	Risk tolerance
Profit centre	Hedges, manages & speculates	Active	Risk preference

Different firm structures might also give a pointer here. Exhibit 9 shows one analysis based on type of firm.

Exhibit 9: Corporate organisation approaches to response to risk

Corporate organisation \ Treasury organisation	Advisory	Agency	In-house bank
FUNCTIONAL One or few market products	C	(C/P)	(P/C)
DIVISIONAL Semi-autonomous business units, central support	C	C/P	P/C
CONGLOMERATE Independent businesses	C		P/C
MATRIX Interdependent business		C/P	P/C

C = cost centre; P = profit centre; ( ) = less likely but possible

Abbreviations: P for profit centre, C for cost centre, P/C or C/P if either could be appropriate.

A treasury may blend these different structures in its different operations. It may, for example, be a cost centre in the central arrangement of trade finance instruments and measure cost of arrangement. In its role of centralised executor of foreign exchange transactions, it may be a profit centre, seeking to make profit from actively managing the firm's FX risks, and finally in its role of providing liquidity to the group it may have a value added approach, assessing the benefit of a new cash management arrangement in a country against any extra cost of managing it.

10 Measuring treasury performance

10.1 Measuring cost centres

A cost centre treasury may not be entering into transactions in its own name but as agent for the operating units. In this case the simple and normally preferred route is to set targets such as to not exceed a certain budgeted cost, or to match or outperform selected benchmarks, in this context used as a market rate.

The selection of appropriate benchmarks can often present problems, such as in setting up a shadow portfolio. For rapidly moving portfolios the method by which yields are calculated can in itself produce big differences and the calculation is by no means always straightforward. Many treasurers may question the benefit of this cost of measurement if the result is merely differences in terms of basis points.

10.2 Measuring value-added and profit centres

For value added or profit centre treasuries, meeting a treasury value added target is a simple yardstick, capable of accurate measurement in most cases. The net earnings in the treasury management accounts should properly reflect the difference between actual results achieved by the treasury function and what the position would have been if treasury did not exist. This follows if the treasury assumes the role of an in-house bank. In such cases the treasury gives arm's length prices to operating units (arm's length prices are prices which are at least as good as the rate the unit would have got by going to the financial markets independently).

Arm's length pricing is critical to ensuring treasury's success in gaining the line managers' confidence, to avoid tax problems on cross-border transactions and to preserve the integrity of the management information. This measure is fair because it highlights just what value has been added to the group by having the function, compared with what would have happened if all group companies dealt directly with the financial markets.

However, risk must also be measured as we know that reward is never gained without risk, and that can be a challenge in control and measurement.

10.3 Qualitative measures

The next aspect of measurement to consider is the area of the qualitative measures. The most obvious approach is for senior management to determine as objectively as possible whether the department has achieved its overall goals and whether both the department and the treasurer have developed in the expected manner. Relationships, both third party relationships and those within the group, are difficult to assess in terms of the impact that the treasurer has had, such as on the quality of advice, the decisions taken and communication.

The real challenge is that qualitative measures can be highly subjective and easily manipulated. Sometimes poor judgement can be masked for years until a major miscalculation comes to light. On the other hand, consistently giving good quality advice and running an efficient and well controlled treasury is usually regarded as a basic prerequisite.

In practice, the evaluation depends on a mixture of simple performance measures, achievement against objective reviews, and the personal knowledge and relationship that the treasurer has with his manager, commonly the CFO. CFOs know the limitations of performance measurement and can generally recognise and reward a good treasurer when they have one.

10.4 Bank treasuries

It is worth considering the distinction between treasuries in banks and those in corporates. On a wide interpretation of what comprises a treasury in a bank, it has trading desks acting very much as profit centres as well as teams managing the balance sheet, liquidity and debt, the overall financial risk to the bank. For the trading desks it must have a systems and reporting infrastructure that can manage high volumes of data and real time reporting of positions, risks and profitability. The trading desks are a major source of revenue for the bank and effectively a standalone business.

Some large corporations will mimic this to a certain extent but generally corporate treasury is normally designed to support the firm's underlying business, rather than being a standalone business itself.

10.5 Conclusions on measurement

However it is constructed, any system of evaluation should have the following characteristics:

- consistent with policy
- quantifiable and objective, whenever possible
- within the control of those being measured
- clearly communicated and understood by those being evaluated

- relevant to the market and to what is being measured
- take into account the risk assumed when seeking a profit

Benchmarks and performance measurements also need to reflect the constraints that certain risk policies might impose. For example, if policy limits are reached and a dealer is forced to take less than best pricing, this will reduce performance against benchmarks. But this is what the policy is designed to do – mitigate risk – recognising that there is a cost to doing so. It is vital that this is considered, acknowledged and incorporated into the treasury performance measurement. This will remove the incentive for treasurers to breach limits to meet targets or to penalise unfairly those who comply with their limits.

It is also essential that any benchmarks included in the treasury policy are relevant to the performance they are meant to measure. The use of benchmarks and targets in evaluating performance can be invaluable only if they truly reflect the firm's risk appetite and if they are achievable.

Corporate treasury performance measurement should be based on the significance of treasury risks to the business and must reflect the reality of reporting systems. The extent of detailed reporting of treasury performance should be appropriate to the organisation's needs, particularly if the cost of detailed reporting would be excessive in terms of staff time, system costs and the benefits achieved.

Appendix 1: Managing derivatives risk: guidelines for end users

The ACT collaborated in the publication of a booklet by the UK's Futures & Options Association (FOA) entitled: 'Managing Derivatives Risk: Guidelines for End Users of Derivatives' (1995). Although written more than a decade ago this publication is still relevant and is summarised below.

The FOA guidelines consist of Six Principles which are reproduced below, together with suggested actions points. It arguably omits issues around accounting, which, for many companies, carries a significant weight in the management of derivatives.

Principle 1: The role of the board of directors

The board of directors (or its equivalent) should establish and approve <u>an effective policy for the use of derivatives</u> which is consistent with the strategy, commercial objectives and risk appetite of the underlying business of the organisation, and should approve the instruments to be used and how they are to be used

Suggested action points

- Before any derivative transactions are entered into the board of directors should review the proposed purpose and use of derivatives to ensure that:
    - the organisation has the power to use derivatives;
    - they are consistent with management capabilities, financial position, strategy, commercial objectives and appetite for risk of the underlying business;
    - there is an approved list of derivatives (including the purposes for their use);
    - senior management have developed, documented and the board of directors has approved appropriate policies and control procedures; and
    - the risks and rewards have been assessed, documented and reviewed by persons independent of those responsible for using derivatives.
- The board of directors should consider establishing a sub-committee of the board or nominating two or more individual directors to be responsible for derivatives.
- The board of directors should establish a method for the regular review of actual derivative usage against the documentation described in the first action point above.
- The board of directors should ensure that the management information presented to it is in a form that is readily understandable, complete and a sound basis from which to make informed judgements.
- The board of directors should consider whether there is a requirement for its own education (for example, training courses, presentations). It should ensure that key personnel are adequately trained on an ongoing basis in order to keep up to date with market developments.
- The board of directors should review its existing remuneration policies to ensure that they are consistent with the purpose for which derivatives are used by the organisation.

Principle 2: Policies and procedures

Senior management should establish clear written procedures for implementing the derivatives policy set by the board, covering such matters as dealing authority, reporting lines, risk limits, counterparty and documentation approvals and valuation procedures and should regularly review their operation and effectiveness.

Suggested action points

- Appoint senior manager to be responsible for developing policies and procedures.
- Prepare a matrix of how and in what circumstances derivatives can be used.
- Design and document limits for market and credit risk which are consistent with the commercial objectives of the organisation.
- Design and document procedures, including reporting lines and authorisation, to deal with breaches of limits.
- Determine a policy for obtaining valuations of derivative transactions (including who should supply valuations and the frequency of valuation).
- Clarify any relationships with providers of valuations and, in particular, understand and document the basis on which the valuations are requested.
- Design and document procedures for the authorisation of new products to include analysis of risk as well as all relevant approvals.
- Design and document procedures for approving brokers or counterparties to be used.
- Ensure that accounting policies have been properly thought through and they have been fully documented.
- Ensure that all the taxation implications of derivatives have been considered (including withholding taxes and VAT).

Principle 3: Supervision of activities

Senior management should ensure that derivative activities are properly supervised and are subject to an effective framework of internal controls and audits to ensure that transactions are in compliance with both external regulations (including the capacity to enter into derivative transactions) and internal policy (including procedures for the execution, confirmation, recording, processing and settlement of transactions).

Suggested action points

- Review the level of derivative expertise in the organisation to ensure that there is no undue reliance on a few specialists.
- Carry out an independent review of the internal controls operated to ensure that they comply with best practice.
- Review management reports on derivatives to ensure that they are distributed to the appropriate senior managers/directors on a timely basis and contain relevant, reliable and comprehensible information.
- Examine computer systems to ensure that they are adequate and robust and have been independently reviewed, and that controls over the amendments to programs are adequate.
- Establish/enhance internal audit function (and, when relevant, compliance function) or arrange for audits by external professionals.

Principle 4: Risk management organisation

Senior management should establish a sound risk management function providing, wherever possible, for an independent framework for reporting, monitoring and controlling all aspects of risk, valuing exposures, assessing performance, imposing, monitoring and enforcing position and other limits, stress testing and contingency planning.

Suggested action points

- Prepare regularly a detailed analysis of the risk profile of any existing derivatives and ensure that all risks are fully controlled.
- Allocate clear responsibility for the different aspects of derivatives risk management to individuals with the ability to monitor these risks.
- Such responsibilities should be incorporated into organisation charts and job descriptions.
- Adopt market risk measurement and valuation techniques which are consistent with both the size of the risks being run and the extent of the activity undertaken. If required, employ people with the necessary mathematical skills to validate complex valuation methodologies.
- Monitor compliance with risk policies and limits on a basis that is frequent enough to identify non-compliance before significant losses can be incurred. In many cases, this will involve some form of daily monitoring.
- Ensure that all significant limit excesses are reported periodically to the board of directors.
- Perform stress testing to assess the effect of abnormal market movements and establish procedures to manage such situations effectively.
- Formulate and document contingency plans to ensure that derivative activity can continue in the event of a counterparty or broker ceasing to trade. Review such plans at least on an annual basis and ensure that appropriate steps are taken to ensure that the contingency plans are capable of implementation.

Principle 5: Credit risk

Procedures should be in place to provide for a full analysis of all credit risks to which the organisation will be exposed, the minimisation of such risks through the use of collateral or other credit enhancement techniques and the management of such risks through the use of credit limits for each counterparty covering the organisation's aggregate exposure to that counterparty.

Suggested action points

- Analyse fully the credit risk inherent in derivatives activity including that inherent in exchange traded activity. Such an analysis may involve detailed discussions with brokers and advice from appropriate professional advisers.
- Establish credit risk measures which allow credit risk to be aggregated across products and which are appropriate to the size and nature of the activity.
- Take all practical steps to minimise credit risk through the use of netting agreements, collateral and other credit enhancement techniques.
- Establish limits for all types of credit risk including settlement risk.
- Establish procedures for authorising credit limit excesses.

- Ensure that all credit limit excesses are reported periodically to the board of directors.
- Establish policies and procedures to be followed in the event that a counterparty or broker becomes insolvent.

Principle 6: Legal and documentation issues generally

Procedures should be in place for monitoring and managing legal risk, covering issues of legal capacity and authority, compliance with relevant statutory requirements and the need for appropriate documentation dealing with the nature of the relationship between the parties, the terms of the transaction, netting provisions and, where relevant, credit enhancement arrangements.

Suggested action points

- Establish, with the assistance of legal counsel (internal or external), that the organisation has the necessary power under its constitutive documents and any relevant legislation to use derivatives in the manner envisaged and to enter into any related agreements or security documentation.
- Ensure that authority to enter into derivative transactions and related arrangements is delegated in appropriate terms to appropriate staff of the organisation or to an appropriate external investment manager.
- With the assistance of legal counsel (internal or external), draw up a complete list of authorised existing and potential brokers or counterparties, with annotation indicating in summary form the restrictions (if any) applicable to any of them.
- Obtain appropriate warranties from the proposed broker or counterparty as to its power to enter into the contemplated derivative transactions. If in doubt about its broker's or counterparty's powers, the organisation should carry out further investigations, taking legal advice as necessary.
- Consider carefully the proposed account documentation or mandate or other documentation to ensure that it is fully understood and that it accurately reflects the nature of the relationship between the parties. Any such documentation should be subject to regular reviews.
- In the case of over-the-counter derivatives, use market-standard master agreements which contain payment netting and close-out netting provisions to govern derivative transactions with counterparties.
- Margin or other credit enhancement arrangements should be appropriately documented. The implications of any such arrangements should be fully understood.