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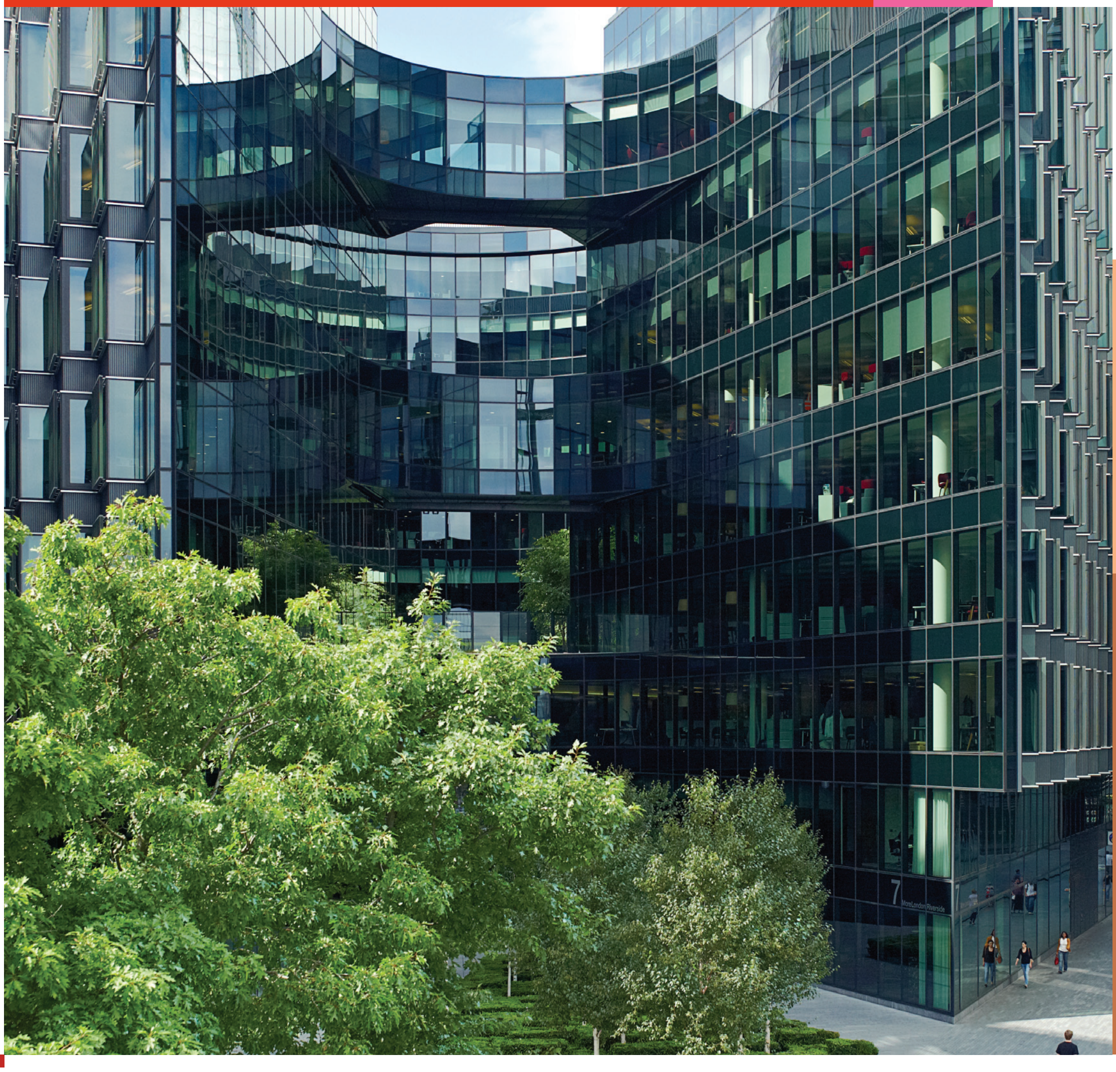
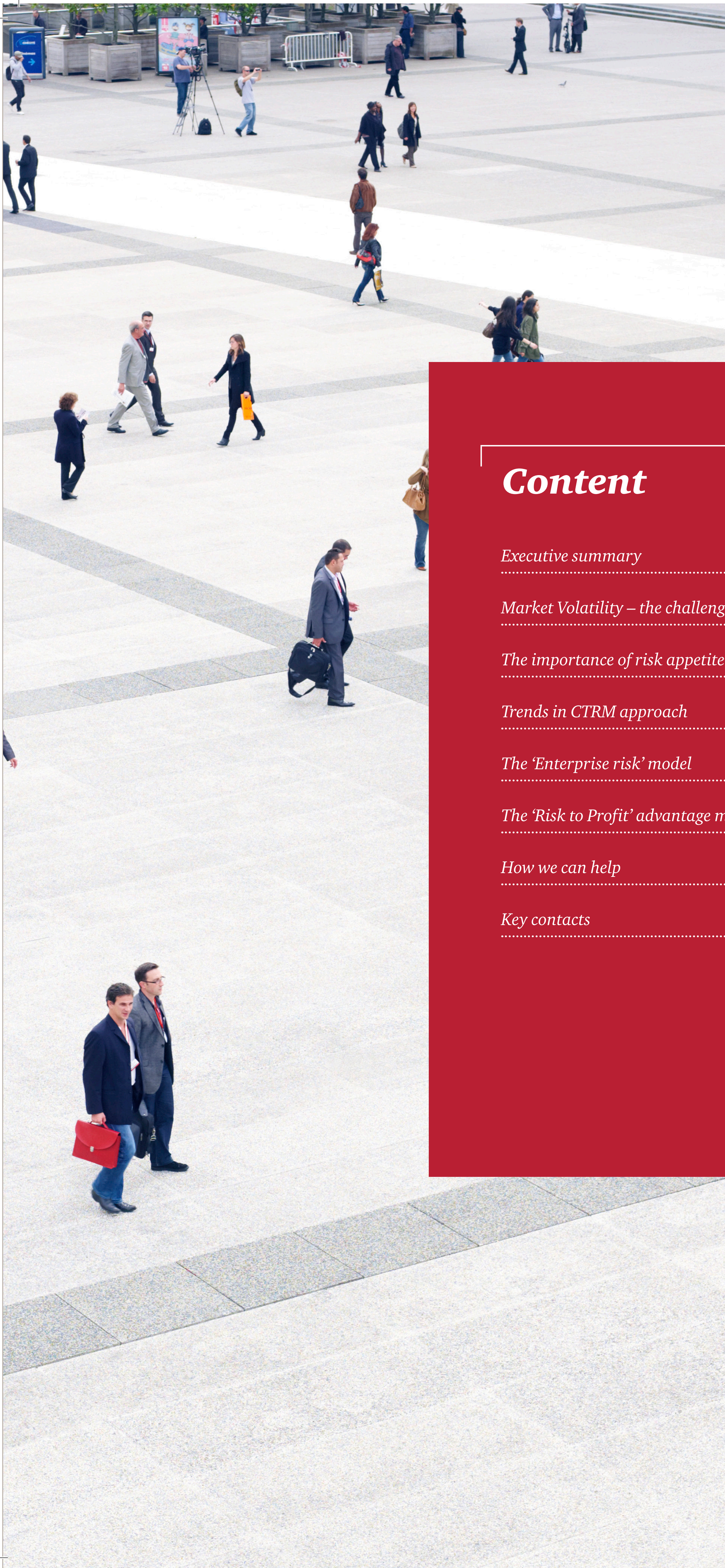
Perspectives on trends in commodity risk management operations

Commodity trading and risk management





Content

Executive summary

Commodity risk management is emerging as a critical differentiator of business performance

The 'new normal' is a world of significant commodity price volatility affecting many businesses across different industry sectors and across the full value chain of their activities. Many leading companies have established Commodity Trading and Risk Management (CTRM) 'functions' which are delivering significant performance and control improvements. The leaders are someway down the path and are setting clear CTRM standards, others still have a way to go.

Emerging standards in CTRM

External challenges

- ***Commodity price volatility***
- ***Regulatory, Tax, Accounting compliance***
- ***Reputation risk of fraud and control lapses***
- ***Accessing skilled staff***

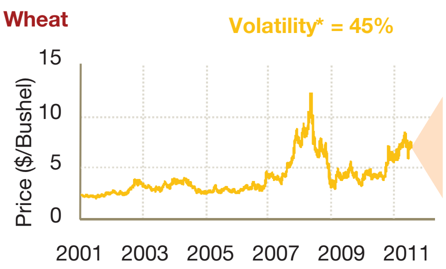
Systems	*Operating model*	*Regulation*
• Common data and information architectures • Integrated package applications • Straight through processing • Real time reporting	• Centralised CTRM functions • Supply chain and procurement optimised and aligned to CTRM activities • Treasury aligned to CTRM operations	• Regulatory capability • Regular review of impact on trading strategy • Extensive training • Reporting directly from systems
Cost management	***Risk management***	***Governance***
• Supply chain synergies • Lean/continuous improvement culture • Back office through captive SSC or outsourcing	• Quantitative risk measurement • Integrated scenario planning • Enterprise and strategic risk management	• Rigorous anti-fraud controls • Enhanced internal audit role • Clear accountability and decision frameworks
Taxation	***People***	***Internal control***
• Transfer pricing optimised • Indirect tax exposures actively managed • Location optimised	• Behaviours and culture programme • Reward aligned to corporate performance	• Segregation of duties rigorously applied • Trading controls/ limits • Automated systems controls

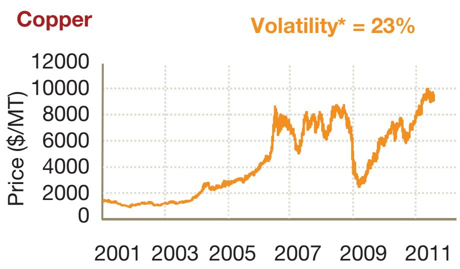
Internal challenges

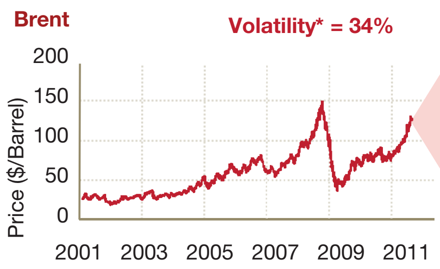
- ***Showing the value-add of CTRM activities***
- ***Setting 'risk appetite'***
- ***Structuring governance and control***
- ***Structuring an efficient operating model***

PwC view of emerging cross industry standards in CTRM

Leading companies have responded to the challenges and opportunities of market volatility by setting up CTRM functions







Source: Bloomberg

Volatility – The management challenge

All companies are exposed to volatilities in the commodities and financial markets. These volatilities have increased dramatically over the last 10 to 15 years prompting significant developments in the approach taken by many firms to manage risk.

Commodity prices are by nature volatile. The charts above illustrate the scale of price volatilities in the Wheat, Copper and Brent Crude markets since 2001.

Volatility is a consequence of market supply and demand imbalances combined with technical instabilities caused by participants benefiting from market inefficiencies. Such factors have also led to a change in the nature of the markets for many commodities. Whilst the timing and impact of these 'influencing' factors may change, increased volatility across different commodities is here to stay.

Volatility needs to be actively managed because the uncertainty and variability it feeds directly into a company's financial performance attracts the attention of external commentators. It impacts cash flows and margin and influences share price and market reputation.

Challenges in setting up successful CTRM functions

Many companies have set up CTRM operations as specialist functions with the mandate to apply consistent management practices across risks that can be found in commodity supply and marketing, credit and treasury. This approach has delivered success including; operational synergies, cost savings and control benefits and the potential for upside optimisation.

Creating this structure brings challenges. Setting up a CTRM function implies centralising aspects of the commercial supply chain. In a business with a strongly established centralised management style, such change can be relatively straightforward. However, in a business with a more decentralised management style, engaging the support of local business 'stakeholders' to relinquish ownership of commercial activities to a new function can be a difficult cultural challenge. This requires a well articulated benefits case to support the change and a well defined governance framework to set out how the new CTRM function will operate within the business.

It is also critical to ensure that the objectives for the CTRM function are aligned to the objectives for other areas of the business for example, treasury and procurement. Commodity and currency risks need to be considered together in a CTRM context because currency volatility remains a challenge despite the structurally low level of interest rates experienced since the 2008 banking crisis.

Procurement functions are frequently challenged to reduce costs, rather than manage or hedge the cost which is often a mandate set for commodities. These factors may cause competing objectives across these functions, so it is important to ensure that risk management practices are aligned across the different risk categories to avoid sub-optimisation.

Different CTRM approaches have been adopted by companies influenced by their appetite for risk

Industry approaches to CTRM

The strategic importance and recognition of CTRM varies significantly across different industry sectors and this has driven a variety of business responses to managing this challenge.

The approaches adopted to commodity price risk management vary by geography, sector and even by participant within sector. There is no 'one size fits all' rather opportunities for all to learn from the experiences of others cross sector and cross geography. In the energy sector, for example, where the commodity is the core product, there are a wide range of risk stances applied to managing the underlying commodity exposures by different companies. In other sectors, for example retail and consumer goods businesses, the growing awareness of the importance of commodity risks has created a significant re-focus on commodity risk management practices, with some taking significantly more pro-active risk management stances to optimise rather than simply 'hedge' underlying exposures.

Energy

In this sector the management of the price volatility of the commodity and the optimisation of supply with demand are key to the overall performance of the company. Organisations have established centralised commodity trading operations, optimising the value of the physical flow of the commodity, trading around the physical flows to add further value, using financial derivatives to manage exposures and in some instances, holding proprietary trading positions.

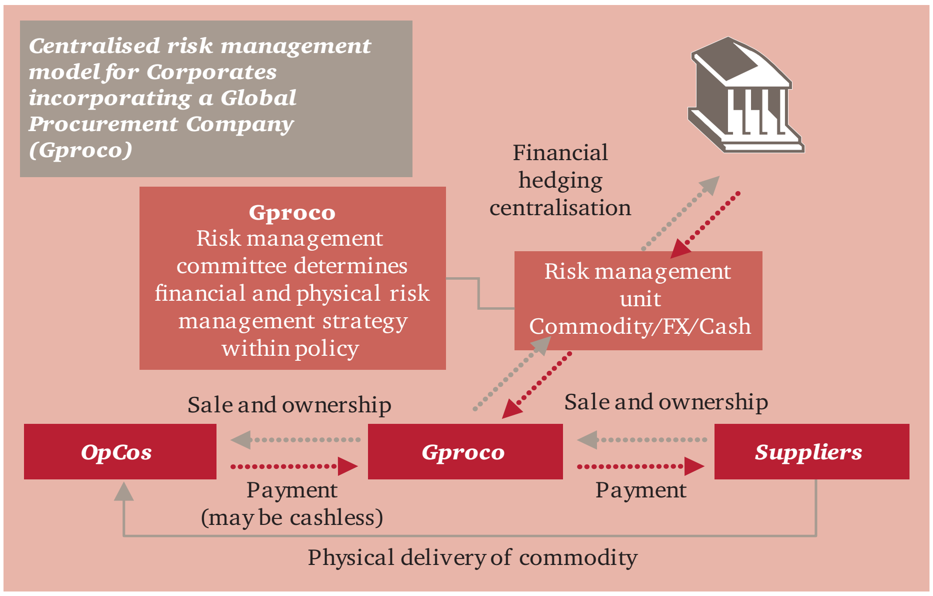
In these businesses, the trading operation sits at the hub'of the company, often holding ownership of the commodity inventory and managing the 'manufacturing' and customer supply activities to deliver value. Such companies typically apply 'active trading' strategies, managing the underlying risks within defined limits using tight governance and control standards. Differentiation happens through differences in 'risk appetites', with some being active market makers, some 'hedgers' and others structuring more simplified risk and commercial strategies. Banks have played a key role in providing liquidity' for these activities in the energy markets. Some Investment Banks and independent Trading Houses have bought into physical assets to support their trading activities; the markets have become more 'vertically integrated'.

A further consequence of the banking crisis, has been increasing pressures on companies who have adopted a 'trading' approach to CTRM to provide greater transparency of their activities to regulators and agencies. New regulations (particularly Dodd-Frank (DFA) in the US, and MiFID, REMIT, MAD, EMIR and other requirements in Europe) and new accounting rules will require many 'trading' businesses to provide greater visibility of their activities. Traders are also faced with other potential challenges. Higher credit costs, complex tax rules, liquidity to cover expanded exchange trading and a risk that Balance Sheet reserves may become required to support trading, highlight that delivering a contribution by 'trading' doesn't come without its complications.

Other sectors

In other industry sectors the models are different. In the airline sector, for example, energy price risk is often managed by the central treasury function, 'hedging' the exposures to create some certainty of the cost to the business.

Industrial, retail and consumer goods businesses are now actively managing commodity risks. It is becoming common to see centralised risk management 'centres of excellence' in these businesses managing commodity supply and price risks plus the underlying currency and cash risks. Often, a centralised risk management unit holds this responsibility working closely with the procurement and treasury functions.



The trend is towards an 'Enterprise' risk approach with some taking more pro-active risk 'stances'

We see clear trends, both within and across industry sectors, as to the structures and approaches being taken to managing commodity risks. This is despite the fact that companies vary significantly in their objectives and rationale for managing such risks.

The start point for most companies is to understand the underlying exposures of the organisation, agree on a risk management objective and then develop appropriate policies and operating standards to manage the risks in line with the agreed objectives.

Typically, companies commence the journey from a **'Federated' risk management** structure, where commodity risks are managed locally by different businesses, then progress to an **'Enterprise' risk management** approach, enabling cost savings, synergies and certain optimisation to be achieved.

Just as treasury functions have become largely 'centralised' over the past 20 years, we are now seeing an increasing focus on the centralisation of CTRM functions, under an 'Enterprise' risk management approach.

At the top end of the spectrum, many of the leading energy and power businesses, where optimising the value of the underlying commodity is core to their business performance, have developed their CTRM activities into specialised trading functions leveraging the underlying risks to generate profit advantage **(i.e. 'Risk to Profit' advantage)**.

Within the energy sector, however, there are companies who maintain a more simplistic approach and maintain volatility through their P/L accounts, transacting under long dated, spot based supply agreements.

Some of the characteristics associated with these different approaches are highlighted below.

'Federated' risk management

Characteristics

- Commodity price risk management responsibility embedded in local business functions and operations – creating local specialisation.
- Limited global view of commodity risks.
- Limited coordination of risk management activities.
- Focus on risk transfer and avoidance (e.g. fixed price supply contracts).
- Risk processes within functions.
- Limited use of financial instruments.

'Enterprise' risk management

Characteristics

- Aggregated view of risks across all subsidiary businesses.
- Risk appetite fully developed. Risk policies and strategies in place including natural hedging.
- Use of more sophisticated financial instruments although limited position taking. Hedge accounting likely to be key.
- Centralised/co-ordinated approach to risk management – likely to be specialist function aligned to the treasury and procurement functions.
- Use of appropriate quantitative measures – Sensitivities, CFAR, VAR, RAROC, and the effect on key business indicators.
- Use of commodity and treasury management systems.

'Risk to Profit' advantage

Characteristics

- Risk based performance management to Supply, Trading and Proprietary Books with clear capital allocation.
- Real-time optimisation of physical supplies, logistics and inventories in line with market conditions.
- Risk based capital allocation and decision taking.
- Risk management and trading priorities fully aligned with strategic objectives.
- Full front, middle and back office capabilities enhanced with commodity risk management systems (packages and bespoke).
- Sophisticated modelling and product control techniques to enhance market positions.
- Strong compliance, tax and accounting capabilities to meet regulatory demands.
- Key control mechanisms in place. Tax and Legal teams active in support of trading activities.

Setting up for success under an 'Enterprise' risk model

Whether you are a sophisticated energy trader or a new entrant into commodity risk management, there are some critical requirements to be addressed in establishing CRTM operations to deliver value to the business. In particular:

- Understanding the true nature of your underlying risks, agreeing a risk management strategy with supporting policies and risk valuation methodologies. This is all about being clear on how the risk function will add value. Additional value considerations are the related synergies from consolidating supply chain activities around the CTRM function.
- Understanding the regulatory, accounting and tax factors which might impact your commodity risk management and supply chain strategy. Failing to adequately address these factors has led some businesses to experience operational failures and affected reputations with regulatory authorities.
- Determining the appropriate governance and control framework for your CTRM activities. In particular, understanding how the CTRM function aligns with other functions in the organisation (e.g. treasury, procurement, supply chain, etc.) and how decisions get taken.
- Defining a clear performance management framework for the CTRM function, driven potentially by tax/transfer pricing considerations, aligned to the wider performance framework of the organisation.
- Implementing standard processes and controls for each asset/trading class, supported by appropriate systems.
- Training and inducting staff; creating behaviours which drive a culture to reward based on meeting business goals rather than individual performance targets.

Challenges in moving to an 'Enterprise' risk approach

Timely, accurate and relevant data, analysed and presented as user information for front, middle and back office staff, is critical for a high performing CTRM function.

Underpinning the delivery of this critical user information is the need for a robust data and information architecture which sets the framework to determine the systems configuration required to deliver the architecture. In our experience, many CTRM functions fail to adequately define the data/information architecture and this leads to sub-optimal decisions on the use of supporting systems.

In the early days of CTRM activities, many companies invested in bespoke systems, today the trend is towards the use of 'best of breed' package solutions. There are now a range of established packages providing full front/middle/back office coverage. As an alternative, certain of the leading ERP providers are also moving into the CTRM market, offering integrated physical/financial trading and supply functionality with back office accounting. For those adopting an 'Enterprise' risk management approach, certain treasury management systems may offer a very robust CTRM technology solution.

Technology is a major cost factor in CTRM operations. Setting a robust information, data and systems architecture with the flexibility to adjust to your changing commodity risk management and supply chain activities is a critical success factor for all.

Moving to a 'Risk to Profit' advantage model offers significant potential upside but implies greater overheads

For many companies, achieving an 'Enterprise' risk approach is the goal, but for others a more active trading (i.e. 'Risk to Profit' advantage) approach is the objective. Independent commodity traders are an example of this group, but many leading energy and power companies also operate CTRM functions to optimise physical supply, supply chain and inventories in real-time response to volatile market conditions and trade for profit.

Operating as an active physical and financial trading entity brings with it a whole set of new internal and external challenges.

Internal

Internally, more sophisticated risk management methodologies, systems, capital allocation and performance management standards and supporting technologies are likely to be required. Understanding where and how value is created across trading desks and books is a challenge which becomes more complicated as businesses expand both geographically and in the range of risks managed. Hence, clear definition is key.

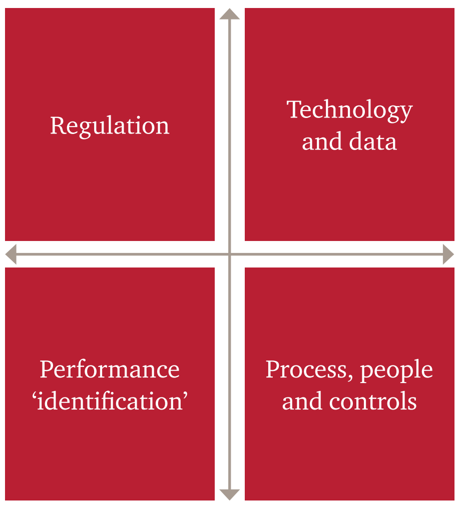
The 'operating model' for the trading business is another important internal challenge. The 'overhead' of the Middle and Back Office activities are part of the costs of doing business as a trading operation. Companies are increasingly offshoring or outsourcing aspects of these activities and locating to tax advantaged jurisdictions to increase value add.

External

Externally, a major factor is the approach to be taken to managing the new regulations. There are particular parallels for CTRM businesses to be drawn from the experience of financial services organisations in managing the challenges arising from the effects of regulation.

The first key requirement is to understand areas of 'impact' on the business, then to determine the response. Some trading companies are looking to adopt 'Regulation in the Round', by implementing common standards to identify, track and report trades using common data standards to provide the flexibility in the business systems to meet each of their regulatory requirements.

Challenges in operating an active trading business



As regulations become clearer, we expect to see some companies modify their trading activities to avoid the implicit costs of the new requirements.

Accounting is another external challenge. Whilst a Front Office may view their commodity trading business as traded risk and, therefore, would look to value their positions on a fair value/mark-to-market basis, there are prescriptive accounting rules for physical commodities. Getting the right book structures in place for capturing and valuing trades to meet the requirements of both internal and external reporting is a frequent challenge.

Achieving hedge accounting is often a key policy objective, particularly for corporates. Changes in accounting rules should facilitate this but remain complex to interpret and apply.

Tax is another critical consideration for a trading business. Physical trading attracts indirect taxes, with different regimes across different jurisdictions. Understanding the impact and obligations of tax legislation on the business is critical. For example, holding base metals in certain locations in a warehouse can create a taxable establishment and attract indirect tax. Close working between the tax and trading teams is an imperative.

Another external consideration is the role of independent 'watchdogs'. We are seeing a rise in alleged price manipulation in certain markets and this is a challenge likely to be faced by many traders as markets become ever more scrutinised.

How we can help

We have a global network of over 200 CTRM specialists who can bring insights and good practices to your CTRM challenges

Strategy and risk management

Strategy

Risk appetite, Capital/asset allocation, Trading strategy, Supply chain optimisation, Product design, Contract structuring.

Risk management

Risk analysis and models, Policy, Reporting, Valuation methods, Risk metrics and limits.

Operating model, governance and control

Governance and control

Product control, Fraud risk, Accountability and decision frameworks, Governance frameworks.

Operating model

Roles and responsibilities across the business, Organisation (including back/front office structures), Location analysis, Entity structures, Book structures, Talent, Performance management frameworks.

Technology, data and process

Technology and data

Data and systems architecture, Data modelling, Systems strategy, Package selection, implementation and review, Programme and change management.

Process

End to end process design, Documentation, Training, Learn/continuous improvement, Standards and delivery models.

Accounting, tax and regulatory compliance

Accounting

Accounting standards, Financial reporting, Audit.

Tax

Planning, Compliance and reporting, Indirect and direct tax structures, Personal tax.

Regulation

Compliance with European, US/DFA and Asian legislation.

- PwC is the world's largest professional services firm, employing more than 160,000 staff in over 150 countries. Our firm offers 3 core services to our clients: Assurance (Audit), Tax and Advisory. These 'lines of service' are aligned to provide our clients with a fully integrated service, where this is required. We are proud to be the leading firm in many of the territories in which we serve.
- Our Global CTRM practice comprises of more than 200 dedicated specialists with a wide range of CTRM experience. Our teams operate from our offices in the USA (Houston and Atlanta), UK, The Netherlands, France, Germany, Switzerland, Singapore and Australia.
- Our CTRM team work with clients to address issues in all commodity markets and geographies: Oil/Gas, Power, Metals and Soft commodities. Our CTRM specialists have access to the extensive breadth of additional PwC services where these may be required. Our team works particularly closely with our Banking and Capital Markets colleagues as their insights are often valuable to our corporate clients.
- Our CTRM team are drawn from a wide ranging background and include specialists with the following skills: Trading strategy, Trading operations, Product control, Risk management, Regulation, Accounting, Treasury management, Taxation, Governance, Data and Technology, Assurance and Control.

Contact details for our CTRM specialists

PwC has a team of global experts dealing with commodity trading and risk management issues in the oil and gas, power, carbon, agricultural commodities, metals, consumer products, industrial products and mining industries.

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