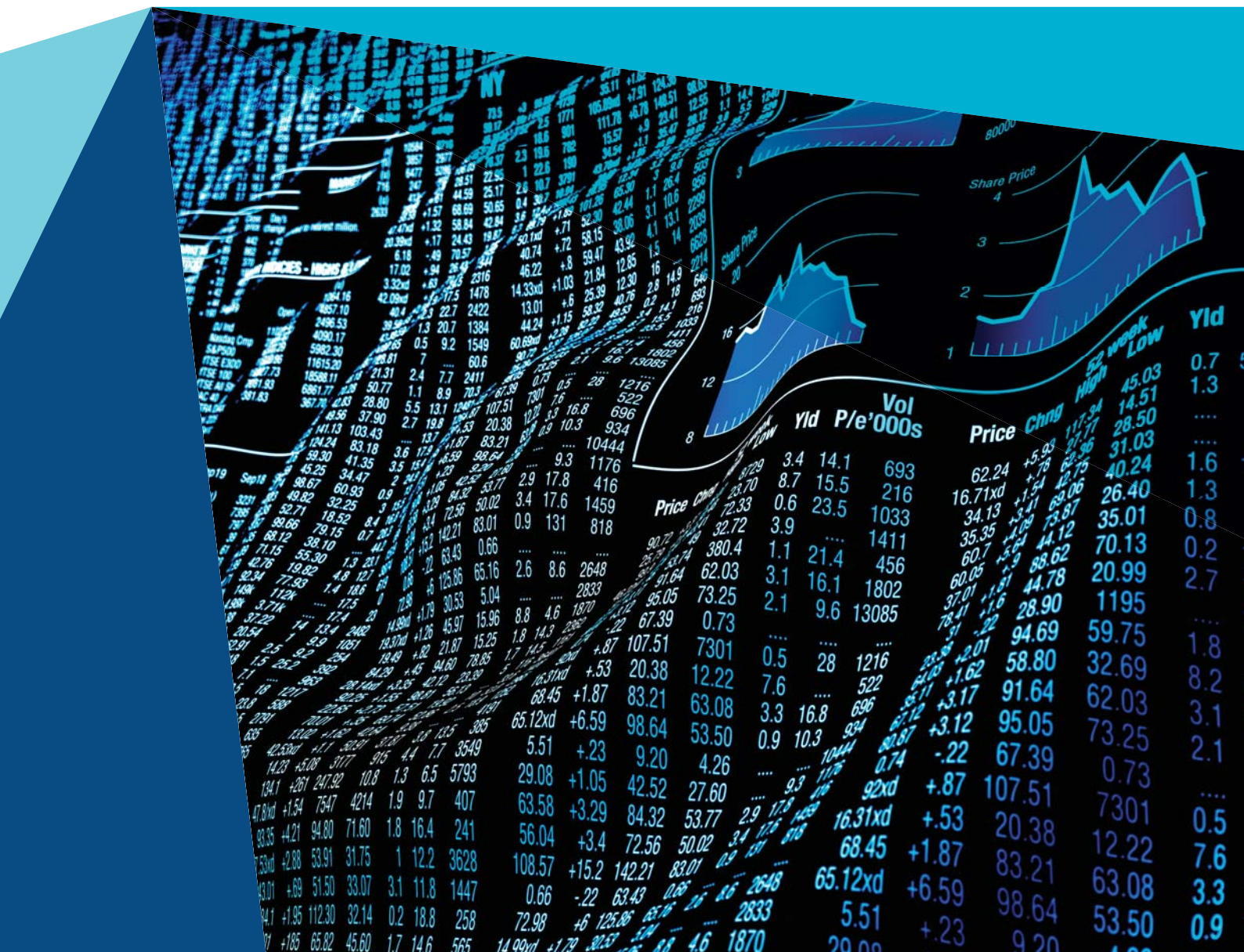


VOLATILITY, NOT VULNERABILITY

TO SURVIVE SWINGS IN COMMODITY PRICES,
COMPANIES MUST FIRST BUILD A RISK-MANAGEMENT FRAMEWORK



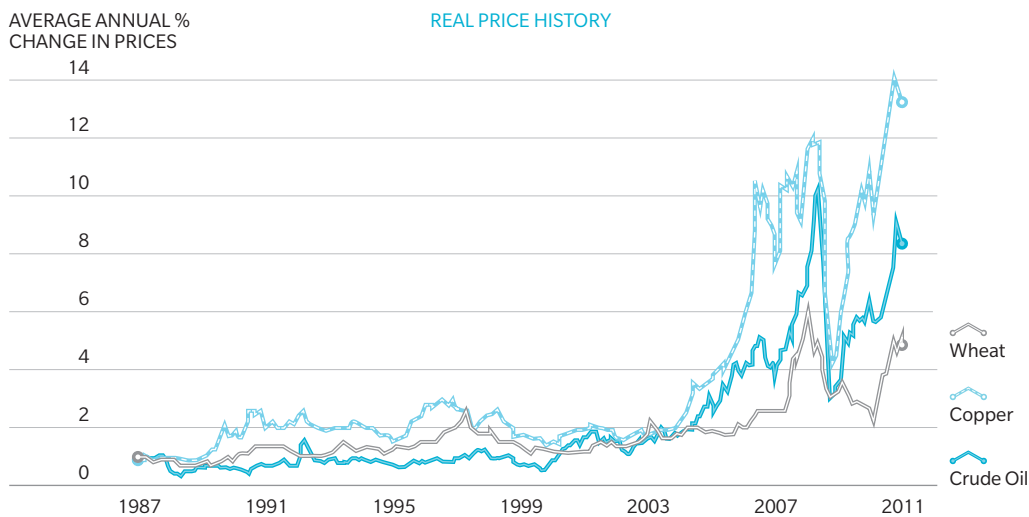
Historically, most businesses could simply withstand changes in commodity prices, given that the swings were usually temporary, cyclical—and manageable. However, structural changes in the global economy are creating wilder swings in commodity prices that are not only affecting short-term profits, but also long-term planning and investment. In this environment, every company must develop a formal risk management approach to counter the growing volatility in commodity prices. For corporate leaders, this means building the infrastructure, governance programs, and analytical capabilities that can help them better manage their exposure to commodities.

1. COMMODITY PRICES AND VOLATILITY

After a brief respite in 2009, the volatility that has come to define many commodity markets roared back in the latter half of 2010—much to the dismay of businesses for whom oil, industrial metals, and other raw materials comprise a significant share of their costs. Crude oil cracked the psychological barrier of \$100 per barrel, major food price indexes reached record highs in the first quarter of 2011, and base and industrial metals such as copper and aluminum also reached new highs—creating significant pain for buyers (see Exhibit 1). Even where prices pulled back, the cost of many commodities remained higher than before—the result of structural shifts in supply and demand on both a local and global scale (For a closer look at the causes of volatility see Exhibit 2).

These commodity shocks are not only cutting into corporate profits but are testing the abilities of even the best businesses to plan for and invest in the future. Already in 2011, the CEOs of consumer-facing companies as diverse as PepsiCo, Kraft, Kimberly-Clark, and Levi's have said they expect commodity price inflation to pose a significant challenge to continued earnings growth over the next several years. Those in the middle of the value chain have a tougher challenge as they cannot easily raise prices to recover lost margins. Few expect this storm to pass quickly: The 2011 World Economic Forum Global Risks Survey found corporate executives in agreement that a key risk they face in the coming decade is extreme volatility in energy and other commodity prices.¹

EXHIBIT 1: COMMODITY PRICES ARE SOARING
INDEXED REAL PRICES FOR KEY COMMODITIES (1987 TO PRESENT)



¹ World Economic Forum. "Global Risks 2011," 6th edition, January 2011. Oliver Wyman was a contributor to that report.

EXHIBIT 2: WHY THE VOLATILITY?

CAUSE	DESCRIPTION
Erratic weather	Catastrophic weather events have affected production (2009 drought in Australia affected global wheat prices)
Emerging markets	Growth in emerging markets has increased demand for food, energy, and raw materials. Global food output will have to rise 70% by 2050 to meet demand* while global energy demand is predicted to increase by 36% between 2008-2035†
Speculation	Emergence of commodities as an investment class (development of commodities-based ETFs)
Infrastructure spending	Deteriorating infrastructure in developed countries and a lack of infrastructure in emerging economies hampers the physical flow of commodities
Supply-country strategies	Development of market-distorting trade policies (Russian wheat export ban followed crop shortfall in 2010)
Purchasing-country strategies	Countries developing more sophisticated buying capabilities (Korea opened a grain-trading office in Chicago in 2011)

* Food and Agriculture Organization of the United Nations, World Summit on Food Security, November 2009

† International Energy Agency, World Energy Outlook 2010

This volatility could persist for years, particularly given that governments appear willing to disrupt or intervene in markets, including halting exports. These collective forces have created pressure for corporations to develop strategies to mitigate this growing risk. While companies in agri-processing, oil refining, and wholesale electricity generation have developed formal approaches to trading and risk management programs, the majority of companies need to do more—much more.

Given the likelihood of further volatility in commodity prices, every company must adopt an analytic risk framework based on a clear understanding of its exposure. This paper offers guidance on developing a plan for managing commodity risks that draws on the best practices of companies from around the world. The approach is built around the three pillars of a “best practices” program: governance, infrastructure, and analytics. The paper provides an in-depth review of the role of analytics and outlines a new systematic approach to managing commodity risk, illustrated through case studies.

ONE COMPANY’S MOVES TO TAME ITS VULNERABILITY TO VOLATILITY

A leading industrial company failed to deliver its projected earnings due to a decline in the profitability of non-core energy activities. To measure the company’s total exposure to energy volatility—and quantify the potential effect on future profits, it needed to develop an integrated energy risk profile. In other words, the company needed the ability to aggregate the energy exposure of each business unit and evaluate the effectiveness of existing mitigation efforts before it could truly understand net exposure.

The company analyzed commodity volatilities and correlations to produce a probabilistic analysis and derive “EPS-at-risk” estimates, demonstrating the portion of earnings that were vulnerable to these price volatilities. It then adopted a risk assessment tool capable of performing scenario analysis linked to alternative market states and specific events, integrating this discipline by training both operational and financial staff in Treasury, Procurement, Planning, and Operations. This helped the company to gain insights into the aspects of its energy exposure that were most sensitive to price movements under different future states, and thus were targets for mitigation efforts.

2. COMMODITY RISK MANAGEMENT FRAMEWORK

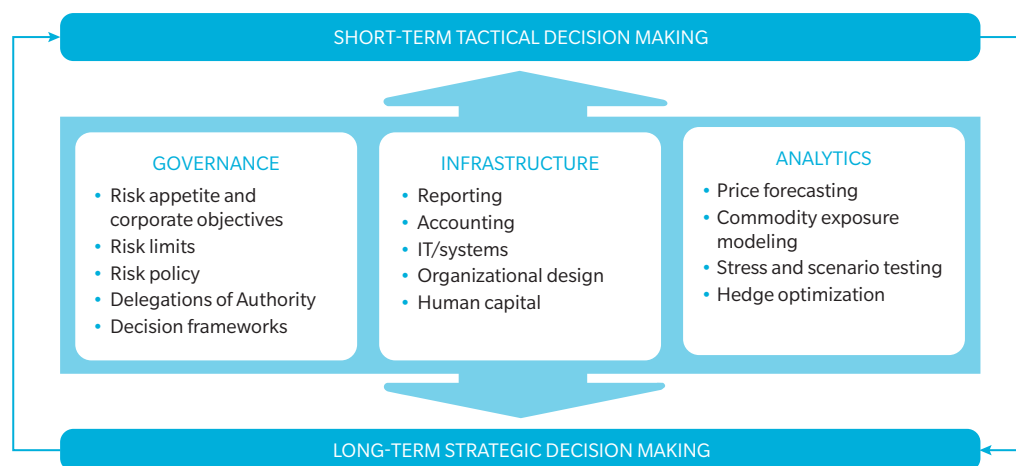
A structured commodity risk management framework is built around three pillars:

Governance, Infrastructure, and Analytics. Together, these pillars support both short-term tactical decisions and long-term strategic initiatives (see **Exhibit 3**).

GOVERNANCE

The first pillar of this framework is Governance in which an organization identifies the main objectives of its commodity risk management program. Companies first create a risk appetite statement. In this critical step, an organization defines its risk tolerance and aligns it with its broader performance objectives. The risk appetite statement thus establishes the basis of the organization's risk limits.

EXHIBIT 3: COMMODITY RISK MANAGEMENT FRAMEWORK



DEVELOPING A COMMODITY RISK GOVERNANCE PROGRAM

A crude oil producer/marketer in Eastern Europe was recently seeking to enhance margins by creating regional physical trading capability. First, the Board required stakeholder alignment on a multi-dimensional risk appetite statement to guide risk and scale considerations. High level loss limits were linked to the risk appetite, and from these "desk-level" limits were calculated. By codifying the risk limits in policies, the equity usage, growth targets, and working capital requirements were made explicit and served to support all later decisions on the business expansion plan.

INFRASTRUCTURE

The second pillar, Infrastructure, comprises the organizational structure, systems and human capital that companies need to measure and manage risks. Organizations need to assess whether they have the systems to capture and monitor the necessary data flows. The organizational structure is important because the volatility in commodity markets requires discipline and a tight alignment between managing cost- and revenue-related risks across the enterprise. Historically, these functions worked independently, but today that results in inefficiencies or even conflicting actions by different internal teams. Human capital is also key. In some cases, a corporation may not have the experience or capabilities to manage commodity risks effectively. While a company can outsource risk management to financial institutions or other market participants, it pays a significant premium for that service and potentially forfeits any upside potential. In the process, it gives its “partner” proprietary information they can use to trade for solely their own benefit.

INCREASING EFFECTIVENESS THROUGH IMPROVED INFRASTRUCTURE

The effects of steady growth were slowly compromising the risk management effectiveness of a major North American crude and distillates marketer/trader. Reporting timeliness was eroding, error rates were climbing, and management’s confidence in risk control was decreasing, prompting a full review of the organizational design and processes. This revealed that the risk control function (middle office) was still performing much of the trade reconciliation, that trade details were transmitted by email, and that most reporting was done through spreadsheets.

Several straightforward organizational shifts and systems enhancements eliminated a number of bottlenecks, and enabled risk reporting down to the cargo level, by desk and counterparty.

ANALYTICS

The third pillar of a commodity risk management program is Analytics. Organizations cannot assess their financial exposure to commodity price swings without robust analytical tools. These analytics (or “modeling”) platforms support decision making at every level — by helping managers model the future paths of commodity prices, conduct stress- and scenario-testing, and evaluate and optimize risk-return profiles using a range of price-risk management strategies. However, analytical capabilities vary dramatically from firm to firm. Companies should take a sequential approach to developing a robust analytics framework that will support commodity risk management.

THINK LIKE A TRADER

Trading is viewed as a necessary evil by some corporations, given the connotations of excessive speculation and risk-taking with derivatives (in this case, commodity futures contracts). A recent review of annual reports reveals that many companies disclosing commodity positions caution that these are strictly for hedging purposes and that the company “does not hold financial derivative positions for the purposes of trading”

Whether they realize it or not, many companies are in fact speculating on commodity prices—on both the cost and revenue sides. Procurement officers are tasked with getting the best price on purchases for the company and its business units. So the procurement staff commonly enters into forward, fixed-price arrangements to guarantee both supply and pricing. Just like traders, they have thus made a bet on future prices and concluded price risk management with that view in mind.

Companies need to accept that the days of a “set it and forget it” approach to risk management are over. That approach was fine when volatility was low and prices increased gradually over time. Today, companies need to empower designated executives to think like traders: “Is this a good or bad price? Should I buy more or run down inventory?” Since most companies aren’t traders by nature, they need to create a trading playbook that is integrated with their overall game plans.

First, a company must understand its commodity risk profile. This helps the organization assess its net exposure to commodity prices—and their inevitable volatility—across business and customer segments. Detailed analysis also allows the organization to then develop long-term strategies to mitigate commodity-related risks.

A commodity risk profile provides a common understanding for senior management and a fact-based foundation for evaluating the effectiveness of risk-mitigation actions. With this knowledge, management can determine if the company’s current commodity risk exposure is within its risk tolerance and whether it has communicated these expectations to stakeholders. This analysis also helps the management team evaluate different risk management strategies. It promotes risk mitigation at the portfolio level, which helps reveal any risks lurking in individual business units or departments. In short, this analysis will allow the company to optimize risk-return positioning.

THE NET EXPOSURE CHALLENGE

Determining true net exposure requires consideration of several factors: gross commodity exposure, existing risk mitigations, foreign exchange flows, demand sensitivity and the interactions among these. This can be challenging for an enterprise with wide-spread operations or multiple product lines. Typically, each factor’s net impact at the corporate level is first assessed and any offsets across factors can then be accounted for.

To manage commodity price risks in ways that are consistent with broader corporate objectives, companies need a robust set of analytic tools to calculate the current exposure. Exhibit 4 offers a six-step analytical approach that companies can use to determine the effect of commodity price risks and mitigation efforts on key financial metrics.

The first step in the analytical framework requires management to build a forecast of commodity prices using simulations or other techniques. The company should complement these forecasts with an analysis of alternative price outcomes based on “stress events” to understand fully how prices may evolve.

In the second step, the management team estimates the volume of future commodity purchases across the enterprise. In Step 3, this demand forecast is combined with price projections to determine the firm’s gross commodity exposure. In Step 4, the risk management strategies already in place are identified. Then, in Step 5, these are applied against the gross exposure to generate a “net commodity exposure” for the enterprise. The process ends with Step 6, the creation of a holistic, company-wide risk profile – with the sensitivities in price projections identified in Step 1 used to explore the potential impact on EBITDA, debt covenants, and other financial metrics.

EXHIBIT 4: CREATING A HOLISTIC COMMODITY RISK PROFILE

STEP	ANALYSIS	BENEFITS
COMMODITY PRICE PROJECTIONS	<ul style="list-style-type: none"> Use analytic engines to simulate potential commodity price pathways (data driven) Incorporate market context and paradigm shifts/scenario analysis (judgment driven) 	<ul style="list-style-type: none"> Integrates historical patterns, market intelligence, and fundamental analysis Unifies disparate views of expected and high/low commodity price scenarios across organization Incorporates interrelationships and correlations between commodities and currencies
SALES, PRICING, AND PURCHASE VOLUMES	<ul style="list-style-type: none"> Determine expected commodity purchase volume based on sales expectations 	<ul style="list-style-type: none"> Centralizes commodity requirements across business units and geographies Enables testing of alternative commodity purchase requirements using price elasticity analysis
GROSS EXPOSURE	<ul style="list-style-type: none"> Calculate expected commodity exposure (e.g., price multiplied by volume) 	<ul style="list-style-type: none"> Gives context of expected commodity exposure compared to P&L and other risks Accounts for “natural hedges” in the portfolio Shows shifts due to changes in business mix, commodity price expectations
RISK MANAGEMENT PORTFOLIO	<ul style="list-style-type: none"> Define options for managing commodity price risk Centralize risk management options undertaken across organization 	<ul style="list-style-type: none"> Brings together and coordinates different functions of the organization (e.g., Strategy, Procurement, Treasury) and geographies Sets understanding of risk management options for key commodity exposures
NET EXPOSURE	<ul style="list-style-type: none"> Calculate exposure after incorporating current risk management portfolio 	<ul style="list-style-type: none"> Helps management assess the effectiveness of the risk management portfolio vs. desired exposure Provides understanding of how commodity price risk flows through the organization
HOLISTIC COMMODITY RISK PROFILE	<ul style="list-style-type: none"> Determine impact of commodity price projections and exposure on financial metrics (e.g., EBITDA, cash flow, debt covenants) 	<ul style="list-style-type: none"> Enables objective evaluation and comparison of a range of risk management strategies Promotes risk mitigation at a portfolio level to minimize sub-optimal risk mitigation at individual business unit or department level Provides view of the earnings impact from commodity prices at different levels of probability

Source: Oliver Wyman

STRATEGIES FOR MANAGING COMMODITY RISK

With a well-defined risk profile and an understanding of its ability to manage risk, a company can build a plan that matches its net exposure to commodities with its tolerance for risk. To manage commodity prices in the short term, companies generally have three tools at their disposal:

- Product pricing— identifying customer segments where the company has the ability to raise prices or create pricing structures that mitigate risk
- Procurement contract structuring—developing innovative risk-sharing contracts with suppliers
- Financial hedging—using financial instruments for hedging to reduce overall risk exposure

The effectiveness of these short-term strategies depends on the size of the organization's exposure to a given commodity — and the commodity itself. For example, financial hedging works best in commodity markets that are liquid (e.g., energy products such as crude oil and natural gas, or agricultural products such as wheat and corn). Meanwhile, passing higher commodity costs to customers through price increases is often ineffective in competitive markets such as consumer products. However, when commodity cost increases are significant and widespread, pass-through pricing might be more viable. Some companies have taken creative approaches to raising prices. For instance, a number of consumer products companies have reduced the volume of product—while keeping the same package size—to maintain margins in the face of higher commodity costs. Other firms have substituted cheaper ingredients to lower their net product costs.

Over the long term, volatility in commodity prices affects the behaviors of consumers, companies, and their suppliers. In response, some companies—and even countries--have embedded commodity risk strategies into their long-term strategic plans.

IMPROVING COMPETITIVENESS WITH A STRATEGIC RESPONSE TO COMMODITY VOLATILITY

A global food ingredient processor was losing sales to much smaller competitors solely because those firms were much more responsive to the highly volatile product price. By analyzing the impacts of its forward sales process and market price uncertainty, a new strategy was developed to migrate customers to shorter term contracts and to begin linking prices to market indices – which immediately improved the firm's competitive positioning.

CONCLUSION

Large and sustained commodity price swings are reshaping whole industries. This means that commodity risk management can no longer be considered the sole responsibility of the procurement or finance staff. With rising commodity prices affecting both the short-term earnings and long-term strategies, it is imperative that C-level executives develop a deeper understanding of how to mitigate these risks. Developing a structured commodity risk management program built around the components outlined here is crucial. Given the new realities of higher prices and more volatility in commodities, organizations must integrate commodity risk management into their day-to-day operations. They also must build it into their long-term strategies to ensure the viability of the firm itself.

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