

ceg

COMPETITION  
DISPUTES  
REGULATION

Asia-Pacific | Europe | North America

# Quantitative Finance Practice



# CEG is a leading global economic and financial consultancy that provides expert analysis in support of disputes and other key decisions for its clients.

CEG is an economic and financial consulting firm with offices in Europe, North America and Asia-Pacific. CEG applies rigorous economic and quantitative finance analysis to solve complex and critical problems for their clients.

CEG's Quantitative Finance professionals employ complex financial engineering, modelling techniques, valuation skills and market acumen in order to address and solve their client problems across the globe. CEG uses and applies sophisticated mathematical techniques such as analytical, numerical analysis and simulation in order to support clients.

Our skilled professionals have many years of experience that include research, valuation, trading and risk management in complex and illiquid securities, ranging from plain vanilla securities to complex derivatives.

In recent years, CEG quantitative finance professionals have worked with major law firms, regulators, financial institutions and other corporates to deliver the required solutions. CEG professionals provide independent and robust valuations of complex financial and energy products for dispute and litigation support as well as in support of other complex corporate decisions.

CEG continues to provide independent and robust analysis to support its expert testimony in national courts or international arbitration tribunals, while also supporting corporate decision making around transactions and risk management.

# Quantitative Finance

In our role as advisors, CEG professionals provide independent valuations of complex financial and energy products for dispute and litigation support as well as in support of other complex decisions.

Some decisions require a full valuation, while others require a key element of the valuation, such as the estimation of the cost of capital. The cost of capital is the key hurdle rate that must be met in any financial decision and is not only relevant in transaction but also in instances of regulatory and competitive reviews.

From a valuation perspective, the Quantitative Finance team has the capability and expertise to cover the following asset classes:

- Alternative Investments – Private Equity, Hedge Funds, Infrastructure, and Fund of Funds
- Equities
- Energy & Commodities
- Credit & Fixed Income
- Foreign Exchange
- Interest rates

Valuing and modelling financial, energy and commodity exposure requires specialist expertise. We always approach your specific problem with sound methodologies and commercial acumen to offer flexible and innovative solutions.

Being independent and free from conflict allows us to be totally impartial in providing our valuation advice.

# Disputes & Investigations

CEG continues to provide independent and robust analysis to support its expert testimony in national courts or international arbitration tribunals. Our primary focus has been to provide such services in the financial services and energy sectors, where clients face various issues of a very complex nature.

CEG's quantitative finance professionals not only assist such clients and their attorneys but also regulators and competitive authorities when conducting investigations, such as ones into rogue trading or market manipulation.

We always aim to bring the right resources that include top affiliates to ensure that we deliver a quality and impartial service.

We pride ourselves on the fact that our work stands up to the scrutiny of national courts, international tribunals, and regulatory bodies.

## REPRESENTATIVE ENGAGEMENTS

- Arbitration proceedings where bondholders of a failed European bank are taking action against a European government for its alleged regulatory non-intervention to save the ailing bank
- Expert advice in arbitration case relating to a Joint Venture dispute in a European consumer credit business between two parties

- Assisted lawyers to assess the case merits relating to breach of warranties in the contexts of a fund of hedge funds transaction
- Testifying expertise in an arbitration case Switzerland around exotic interest rate and forex products. Quantum of claim was \$1.5 billion
- Expert advisory services in a large litigation case where the plaintiff, a global Investment Bank sued and Investment Fund, the client, to recover approximately USD 250 million due principally in respect of amounts owed on the closing out of derivative positions following unmet margin calls

# Disputes & Investigations

## REPRESENTATIVE ENGAGEMENTS

- Provided expert advice for a global investment bank that has allegedly been mis-booking and entering into a number of unauthorised forex transactions for a private client
- Investigation into the sale of a multi-billion portfolio of complex Forex hedging instruments to a corporate in the Middle East in order to advise the corporate on a possible plan of action to help unwind the hedges and start proceedings against the banks responsible for mis-selling these products
- Investigation of a global asset manager in London into rogue trading activities performed by two of its traders
- Expert report with respect to alleged insider share trading by a number of parties in the Middle East in response to a regulatory investigation
- Valuation of sulphur mines in Russia as part of a dispute
- Advised a Turkish power provider in an arbitration case relating to a power purchasing contract

# Advisory Services

CEG's Quantitative Finance practice advises clients in several critical and important situations such as:

- Securities' transactions
- Portfolio valuation
- Financial and regulatory reporting
- Valuation governance and control reviews
- Valuation of incentive schemes

VALUATION

- Risk hedging and mitigation
- Model validation
- Cost of Capital Analysis

RISK  
MANAGEMENT

Irrespective of our clients' needs, we always provide independent and sound advice where the emphasis is on quality and transparency.

We can offer valuable advice to help our clients derive consistent valuation marks, develop efficient risk management and hedging strategies and build sophisticated market models that reflect their specific needs.

# Valuation

Increased regulation, volatile markets, and greater scrutiny on the valuation of assets have contributed to greater transparency and accountability in the financial services sector. We can help our clients accomplish that. We understand that valuation is not just an accounting or regulatory requirement but is necessary for managing the business that included addressing the risks involved in being invested in those assets. The Quantitative Finance team has access to software packages and programme languages as well as market-leading databases, that allow us to value not just single securities but portfolios of assets.

The commodities market comprises of a large number of diverse and distinct markets for individual products, each with their idiosyncrasies and complexities. The valuation approach needs to be reflective of the commodities' characteristics and the purpose of the exercise.

Given our expertise, we also assist clients in ensuring that the valuation is performed independently and following "best practice". We can review and analyse the valuation and control processes that are in place, test their effectiveness and consistency. Part of this exercise involves reviewing the supporting documentation and where necessary implement improvement plans.

Another area that we support clients is in relation to both assisting with the structuring and valuation of management or employee incentive schemes. We can ensure that the right performance targets are in place and value these schemes irrespective of complexity. We have experience in working with lawyers drafting such contracts and can prepare valuations for both reporting and tax purposes.

# Valuation

## REPRESENTATIVE ENGAGEMENTS

### *Securities and Portfolio Valuation*

- Advised a European banking group on the acquisition of a number of smaller banks and distressed loan portfolios collateralised through real estate assets. Provided advice relating to the impact on risk-weighted assets, capital adequacy and liquidity of the bank as a result of the acquisitions and portfolio restructuring
- Advised a large Japanese bank on the disposal of various loan portfolios and portfolios of structured products (CDOs, CLO's, RMBS and CMBS) to a Japanese asset manager

- Advised a European Bank on the acquisition of a number of distressed loan portfolios including corporate, SME, commercial and residential mortgages. This included building a bespoke loan portfolio evaluation tool for the bank
- Advised EC DG Comp on the implementation of the Asset Relief Programme for troubled banks in Europe
- Portfolio valuation of a fund of hedge funds in Switzerland
- Portfolio valuation of a range of derivatives for a US\$ 9 billion AUM hedge fund

### *Energy and Commodities Valuation*

- Valuation of embedded derivatives in gas contracts with regard to an acquisition of a US energy group
- Valuations of an acquisition of a mining group by a large global mining player
- Performed quarterly valuations for a major US hedge fund with regards to their commodity, including metals, biofuels, and energy assets for financial reporting purposes
- Valuation of a number of power plants for restructuring purposes in emerging markets



# Valuation

- Valuation of Gas Fields in Africa for a major Asian Group
- Providing advice on the valuation of LNG contracts
- Advised fund is investing in commodity assets, either through unleveraged, direct investments or through leveraged contracts with exotic and complex payoffs, such as embedded optionality or contingent cashflows

## *Incentive Schemes*

- Structuring and valuation of compensation structure for a European hedge fund to incentivise managers. This included devising appropriate performance measures tied to the fund's strategy
  - Valuation of securities in a complex capital structure for a management incentive scheme in a car park network in the UK
  - Valuation of incentive schemes for several FTSE 100 companies to comply with IFRS2
- Adviser to a Global Investment Management company to value restricted share units (RSUs) in the context of a tax filing to HM Revenues & Customs
  - Structuring and valuation of a complex compensation structure for a European hedge fund to incentivise managers
  - Valuation of management incentive schemes for several US Hedge and Private Equity Funds to meet reporting and IRS requirements

# Risk Management

We can assist clients in developing their risk management frameworks. As such, we provide our clients with robust advice as to how they should quantify, monitor, manage and hedge their risk exposures. If clients already have a framework in place, we can assist them in assessing the hedge effectiveness of their commodity, currency and interest rate risk.

In addition, we can provide them with fundamental and quantitative modelling services in different environments and programming languages. We not only can build but also validate bespoke models that are suitable to the value a security or a portfolio of securities.

We support our clients in a variety of ways to measure and ensure that appropriate returns are generated by their respective businesses. Our Cost of Capital offering ensures that risk is measured appropriately to compensate investors. This considers the geography, underlying currency, industry and financing structure. Only by considering these factors, we ensure that the appropriate returns benchmark is generated.

The Cost of capital is a fundamental aspect of Corporate Finance as companies need to ensure that this required return is met for a project or transaction to be value generating. We advise clients in several geographies and industries on their cost of capital. We also support their regulatory analyses to ensure that their estimates are robust enough to pass the acid test of their respective regulator.

In other words, our Quantitative Finance team can provide you with:

- Greater Fair Value pricing for your transaction or across your portfolio
- The highest level of transparency that enables you to comply with required accounting, auditing and regulatory requirements
- Cost effective solutions without compromising on quality
- Independent advice as to whether your hedging strategy works

# Risk Management

## REPRESENTATIVE ENGAGEMENTS

- Model Validation for a North American Pension fund with £80 billion AUM
- Advised a large UK insurance group on risk measurement and management of a major stock lending transaction
- For a large UK hedge fund advised the CIO and COO on issues relating to investment strategies and risk mitigation
- Advised a food company producing crisps to hedge their exposure to production ingredients such as sunflower oil and plastics
- Model build of a portfolio of clean energy assets in Europe and the US
- Model validation of embedded derivatives for an energy distribution group in the UK
- Model validation of a European forex exchange
- Cost of capital and performance analysis for a global energy player across three business lines, generation, transmission, and telecoms and forty different jurisdictions
- Cost of Capital analysis for asset acquisitions in a number of developing countries for a number of oil majors
- Cost of Capital analysis for an energy group restructuring its power generation and transmission portfolio in emerging markets
- Advised a bulge bracket investment bank of the cost of capital attributable to its various divisions after a merger
- Cost of capital analysis for an investment manager with stakes in railway projects, motorway operations, and real estate in five different geographies
- Advised a FTSE 100 company in the packaging business of the cost of capital required for a number of acquisitions in various geographies
- Cost of capital for several telcos, power generators and water companies in the UK as part of their regulatory reviews

# CEG brings together experts in the leading competition and regulatory agencies, academia and industry

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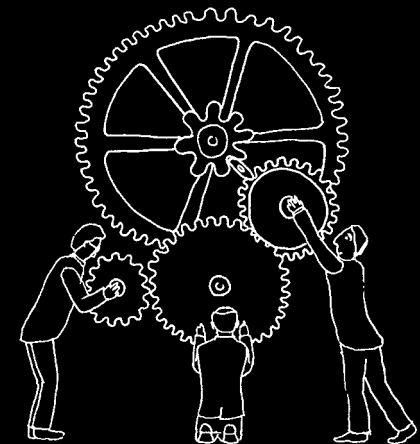
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