FMSB
FINANCIAL MARKETS STANDARDS BOARD

Behaviour-pattern Conduct Analysis: Market misconduct through the ages

A study of misconduct in global financial markets in the last 200+ years

May 2022

About FMSB

Financial Markets Standards Board Limited (FMSB) is a private sector, market-led organisation created as a result of the recommendations in the Fair and Effective Markets Review (FEMR) Final Report in 2015. One of the central recommendations of FEMR was that participants in the wholesale fixed income, currencies and commodities (FICC) markets should take more responsibility for raising standards of behaviour and improving the quality, clarity and market-wide understanding of FICC trading practices. Producing guidelines, practical case studies and other materials that promote the delivery of transparent, fair and effective trading practices will help increase trust in wholesale FICC markets.

FMSB brings together people at the most senior levels from a broad cross-section of global and domestic market participants and end-users.

In specialist committees, sub-committees and working groups, industry experts debate issues and develop FMSB Standards and Statements of Good Practice and undertake Spotlight Reviews that are made available to the global community of FICC market participants and regulatory authorities.

Find out more about the Financial Markets Standards Board on our website fmsb.com

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Myles McGuinness,
Chief Executive Officer,
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At first glance, the issue of misconduct in wholesale markets may seem an arcane matter of little interest to others outside those markets. Until recently, the idea that wholesale financial markets were dominated by 'consenting adults' whose behaviour was largely a matter to be resolved amongst themselves, was widely held. But the investigations and regulatory sanctions relating to the manipulation of LIBOR and the widespread and significant control failings in spot FX markets during 2012-14 undermined this idea and reminded everyone of the vital dependencies of the real economy on wholesale markets.

The wholesale financial services industry is huge. Its markets turn over trillions of dollars each day and operate globally and increasingly electronically, 24 hours a day for 5½ days a week. Risk originating in Japan may be transformed and structured in Europe to be distributed in the United States. Capital for new business development in emerging markets might be sourced from investors in London and New York. Wholesale risks, capital and businesses are mobile across jurisdictional borders in a way that retail banking, insurance, asset management and other financial services activities are not.

With hundreds of governments, millions of corporations and billions of individuals relying on prices and liquidity formed in wholesale markets to raise capital, fund their operations, hedge their risks and invest their surpluses. Everyone has an important stake in the wholesale markets operating, and being seen to operate, fairly and effectively; it is vital for the health of the global economy and economic growth.

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Foreword

David Flowerday,
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As we present this second edition of our analysis of behaviour patterns driving misconduct, it is important that we take a moment to contextualise the study. Without entering an extensive philosophical debate, the fundamental idea is that humans are inherently good and have a 'moral compass' – or set of guidelines – that allows them to decide the difference between good and bad. In the context of wholesale FICC markets, individuals are expected to align their values with the organisation's culture and aim to deliver the best outcomes for their customers, and society as a whole.

For the most part this occurs and is supported with checks and balances through a compliance framework. However, there are individuals who exploit certain opportunities for their own benefit. Although these behaviours represent a small fraction relative to the total activity in wholesale markets, they often have a large impact and stoke the narrative that financial services, and those who work in them, are motivated only by personal gain and cannot be trusted.

This analysis highlights the repeating nature of the misconduct. Especially given the pace of innovation and change, the intention is that market practitioners, and others active in wholesale FICC markets, can use the BCA framework supported with illustrative real-life case studies to inform their business practices, learn from history to eradicate poor behaviours and continue the process of rebuilding trust in financial markets.

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Behaviour-pattern Conduct Analysis: 'History may not repeat itself. But it rhymes'

Introduction

During 600, BC Thales, a philosopher and astrologist, predicted that the next year's olive harvest would be more bountiful than usual, meaning that the right to use olive presses (used to convert olive into oil) would be selling for a higher rate. Thales then took whatever little money he had and went to all the owners of the olive presses and made a small deposit with each of them to use their presses exclusively during the harvest time. When the harvest really did produce a bumper crop, Thales, having cornered the market, made a significant profit by charging the other merchants whatever he wanted for the use of olive presses.

Although the sophistication of markets and asset classes has moved on since Thales' era, the underlying behaviour of cornering the market for price manipulation has remained the same. In preparing this edition of the Behaviour-pattern Conduct Analysis ('BCA') we considered cases spanning over 200 years, across 28 jurisdictions (14 of which are reflected in this document) and five overarching asset classes and distilled these into six core behaviours which occur most frequently in market misconduct cases. Using this framework with supporting real-life case studies, market practitioners can learn from history and seek to better inform the ways that conduct problems may manifest in a changing environment.

The BCA charts the course of misconduct and manipulation of wholesale financial markets from the earliest days of modern capital markets (figure 1). For centuries, legislators and regulators have enacted measures to address misconduct, but the inherent limitations on what these measures can achieve means that they are not of themselves sufficient conditions for good behaviours. The nature of legislation and regulation also tends to be reactive, introduced after problems are identified, rather than pre-emptive. This 'following' nature is exacerbated by the pace of innovation in wholesale markets, with very rapid product and market development cycles. This may be why, despite the introduction of countless new laws and regulations in many jurisdictions, patterns of behaviour driving misconduct that have been seen for decades, and even centuries, still recur.
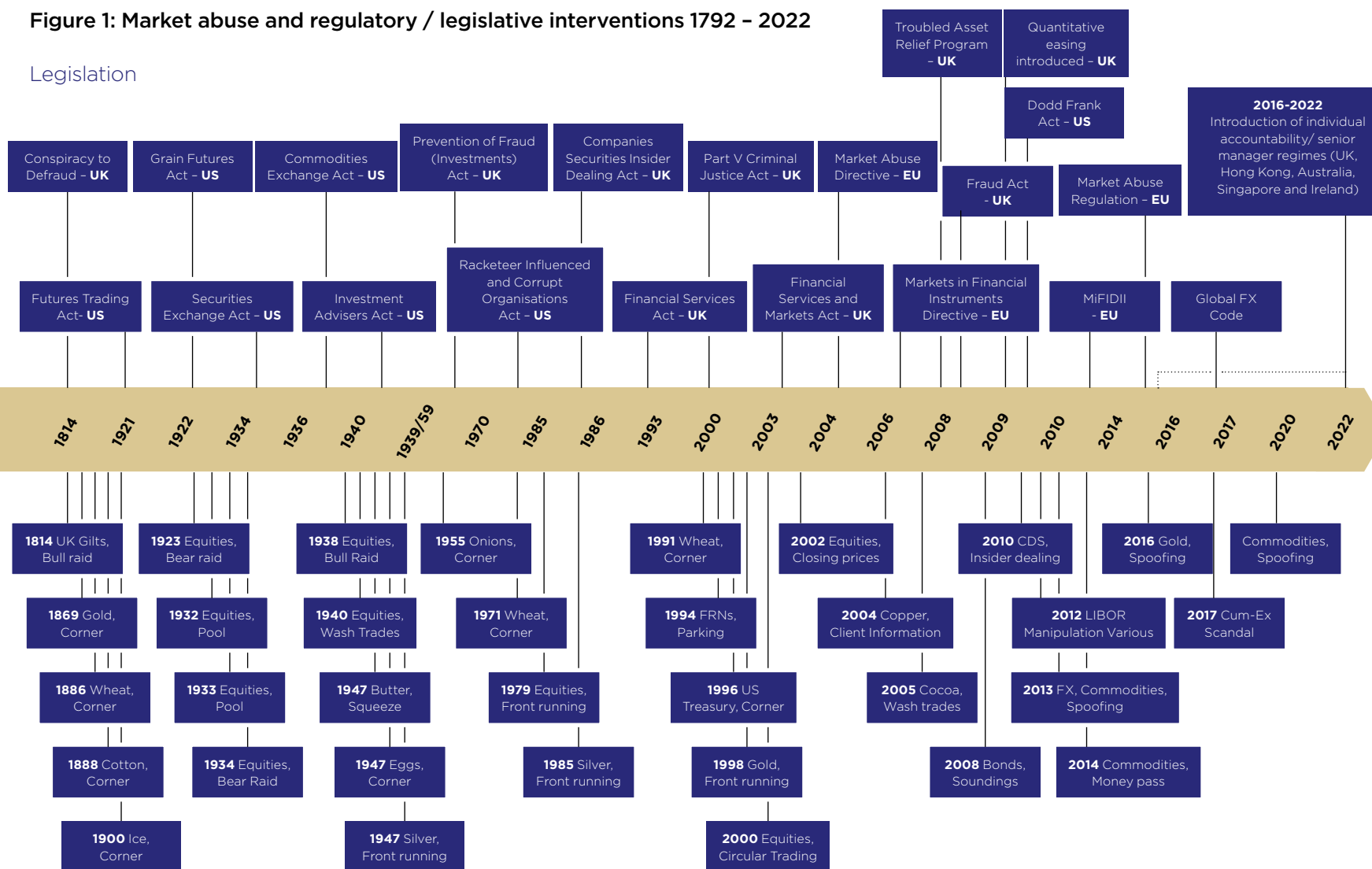
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Behaviour-pattern Conduct Analysis – 'History may not repeat itself. But it rhymes' continued

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Sample Misconduct Incidents

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Norway: Equity

SMCR 2016

UK: Commodities Equity FX Rates and Credit Various

Russia: Equity

Estonia: Equity

US: Commodities Cryptoasset Equity FX Rates and Credit

Ireland: Rates and Credit

SEAR 2022

Denmark: Equity Rates and Credit

South Korea: Cryptoasset

Japan: Equity Rates and Credit Various

Netherlands: Equity

France: Equity

Germany Equity

China: Equity

Spain: Commodities Equity

Italy: Equity

Pakistan: Equity

Myanmar: Equity

MIC 2017

Hong Kong Equity:

Switzerland: Equity

Israel: Equity

India: Equity

Thailand: Equity

Brazil: Equity

Nigeria: Equity

Sri Lanka: Equity

IACR 2021

Singapore: Equity

Malaysia: Equity

BEAR 2018

Australia: Equity Fixed income

South Africa: Commodities Equity

New Zealand: Equity

The most striking lesson from history then is not the variety of misconduct but rather, the opposite. Over hundreds of years and across the jurisdictions that we have reviewed, we see the same behavioural patterns recur time and time again. Each of the examples in this analysis represents a much larger number of similar cases. The updated analysis supports the key conclusions reached in the 2018 edition of BCA:

- **1. There are a limited number of patterns of poor behaviour and types of misconduct.** This study identifies that 19 types of misconduct used to manipulate or distort markets can explain all the activity we have studied over the past 200+ years. These 19 types of misconduct logically group into six simple behaviours (figure 3). This update to the BCA consolidates and streamlines the seven categories and 25 clusters that featured in the 2018 BCA[1].

- **2. Misconduct is jurisdictionally, geographically and asset class neutral.** Misconduct is evident worldwide across global markets and is not specific to particular asset classes but occurs in all fixed income, currency and commodity markets, and equity markets, as well as in new asset classes, including crypto and other digital asset markets. Asset classes do not generate conduct risks – people do.

- **3. The six behaviours adapt to new technology and market structures.** Technology is not new – it has been a feature of markets for years, and as such there is a corresponding body of evidence of misconduct in the screen-based trading environment. These are known behaviours that have adapted to new environments.

Figure 3: Six core behaviours and the associated type(s) of misconduct[2]

1. Price manipulation

- Spoofing/layering
- Ramping
- Pools
- Corners/squeezes
- Bull/bear raids

2. Circular trading

- Wash and matched trades
- Money pass and compensation trades
- Parking

3. Misuse of inside information

- Insider dealing
- Unlawful information disclosure

4. Reference price influence

- Manipulation of submission-based fixes
- Manipulation of transaction-based fixes
- Portfolio price manipulation / window dressing
- Triggering or protecting barriers

5. Improper order handling

- Disclosure of client order information
- Front running
- Cherry picking
- Triggering or protecting stop losses and limits

6. Misleading customers and/or markets

- Disseminating inaccurate or false information to clients or markets

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Figure 4: asset classes evident in the cases included in the BCA

This analysis has identified recurring incidences of misconduct in different markets and asset classes. The table below sets out the asset classes evident in the review cases.

Equities	Rates and Credit	Commodities	FX	Crypto
Products				
Contracts for Difference	Asset-Backed Securities	Cheese Futures	FX Futures	Bitcoin Non-Deliverable Forwards
Equity	Collateralised Debt Obligations	Cocoa Futures	FX Options	Cryptoassets
Equity Index Futures	Convertible Bonds	Coffee Futures	Spot FX	
Equity Options	Corporate Bonds	Crude Oil		
	EURIBOR	Energy Futures		
	Eurodollar Derivatives	Ethanol Futures		
	Floating Rate Notes	Fuel Oil		
	Government Bonds/Gilts	Gold		
	LIBOR	Onion Futures		
	Mortgage-Backed Securities	Precious Metals Futures		
	US Treasuries	Property Futures		
		Soybeans		
		Soybean Oil		
		WTI Oil		

As noted above, rules and regulations are often introduced with hindsight after misconduct has occurred. Reliance on legislation and regulations alone to inform risk identification provides an incomplete view of the risks inherent in a business line. Censure is often founded upon principles-based regulation which can differ between jurisdictions and does not provide *ex-ante* guidance to market participants: analysis of the last three years shows us that approximately three-quarters of FCA sanctions on market's businesses were principles-based. Using real-life case studies to inform risk identification is key to improving the clarity, understanding and application of market-wide standards through practical examples.

Such cases were first collated in the BCA published in July 2018 and have been extensively used by FMSB members to inform their market surveillance, training, compliance and risk management programmes. This edition updates the original analysis to include cases that have occurred between 2017 and 2021 and extends the number of jurisdictions covered by the analysis (including France, Spain, Italy, Germany and the Netherlands). In so doing, this analysis aims to further enhance risk identification and encourage more transparent, fair and effective markets by focusing on the behavioural aspects and not just on processes and 'rules'.

Key trends in FICC markets since 2018 publication of BCA
It is believed to be Mark Twain who said "history may not repeat itself. But it rhymes". This is being borne out in the fast-developing financial markets: historical forms of misconduct, such as price manipulation and circular trading, which have been present in the financial markets for hundreds of years, are playing out in new digital asset classes, including cryptoassets and non-fungible tokens ('NFTs'), and in new contexts, such as the sustainable finance market and the post-pandemic hybrid working environment. Rapid advances in, and growing access to, new technologies and social media platforms are making traditional misconduct, like bull and bear raids, easier to facilitate (spurring

the increasing occurrence of "meme stocks") whilst simultaneously facilitating the detection of market manipulation by regulators. At the same time, these developments are taking place alongside a growing global regulatory emphasis on individual accountability, meaning regulators will have increased powers to hold senior individuals responsible for poor conduct in their business lines, potentially deterring some of the misconduct discussed in this analysis.

Individual Accountability Regimes
The introduction of individual accountability regimes has been a key global regulatory development over the past five years. Following the introduction of the Senior Manager and Certification Regime by the UK in 2016, Hong Kong, Australia, Singapore and Ireland have also adopted similar regimes (introducing, respectively, the Manager-In-Charge regime in 2017, the Banking Executive Accountability Regime in 2018, Individual Accountability and Conduct Regime in 2021, and the Senior Executive Accountability Regime ('SEAR') in 2022).

These regimes expand the ability of regulators to pursue enforcement action directly against individuals for their own financial misconduct. By way of illustration, in 2021, the Central Bank of Ireland ('CBI') fined Davy, one of Ireland's largest stockbrokers, a record €4,130,000 for failing to meet its regulatory obligations in relation to conflicts of interest and personal account dealing. The investigation was in relation to a 2014 bond transaction which a group of 16 Davy employees (including senior executives) undertook in a personal capacity with a client. By permitting the transaction, Davy prioritised an opportunity for its group to make a financial gain ahead of ensuring compliance with its regulatory obligations. The CBI also found deficiencies in Davy's control framework in relation to conflicts of interest management and personal account dealing[3].

Following this decision, there was scrutiny around whether the CBI retained the ability to pursue action against the individuals concerned for their misconduct relating to insider dealing and market abuse[4]. At the time the case was brought, it was more difficult for the CBI to pursue individuals directly for their own misconduct (as opposed to where they have participated in a firm's wrongdoing). However, this is set to become easier with the introduction of SEAR in Ireland in 2022[5].

Artificial intelligence ('AI') and machine learning
Regulators have been aware of the conduct risks posed by AI and machine learning for several years[6]. In particular, the lack of explanation of results[7] and 'breadcrumb trail' that manual traders often leave can make it difficult to find evidence of intent[8], and algorithms may have the ability to 'game the system', without understanding the limits of permissibility or having a sense of conscience[9]. Some machine learning algorithms may systematically work out parameters that Compliance would see as high conduct risk and look for gaps they could exploit[10]. There are also continuing concerns regarding novel scenarios in which, through self-learning, 'autonomous AI trading agents… discover both old and new forms of market abuse', including forms of collusion[11].

However, such advances in technology, whilst facilitating certain forms of misconduct, are also increasing our ability to detect manipulation. AI is increasingly being used as a communications surveillance tool to interpret the context of human language and detect human intention. The software identifies and alerts supervisors where it detects misconduct (such as traders making a plan to manipulate a market)[12]. Regulators have also emphasised the role that AI and machine learning will play in simplifying and speeding up detection of misconduct[13], such as through the design and implementation of 'screening algorithms' to monitor and identify risks and manipulations[14]. The FCA and SEC have invested in supervisory technology ('SupTech') which identifies potentially abusive behaviour by running surveillance algorithms over trade data gathered from trading venues[15]. This was seen in the recent FCA case brought against Corrado Abbattista, an experienced trader and portfolio manager, for market manipulation that was detected through this technology (included in our spoofing/layering case summaries below).

New asset classes and new contexts
Cryptoassets
The risk of market manipulation increases when there is rapid growth in new financial products in evolving markets, particularly when this is coupled with advances in technology and an ever-growing number of new market players. For example, there are estimates that "as much as 90% of cryptocurrency's trading volume could be the target of manipulation"[16]. This may be driven by the novel characteristics of digital assets (which can increase the difficulty of surveillance), the decentralised market structure and limitations on the applicable regulatory perimeter. This has already been borne out: in August 2020, it was alleged that, between August 2019 and May 2020, the vast majority of the transaction volume on Coinbit, one of South Korea's largest cryptoasset exchanges, had been subject to wash trading through the use of ghost accounts[17]. Concerns about market manipulation and wash trading are also being raised in relation to the rapid increase in prices of NFTs, a form of digital asset that uses blockchain technology[18].

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ESG products and risks of greenwashing

Similar concerns have arisen in relation to sustainable finance with the exponential growth of new ESG products. ESG-related traded investment products now exceed USD$1 trillion and are continuing to grow rapidly across financial markets[19]. This has led some to predict that ESG data may be "the next frontier for market manipulation[20]". Global regulators are also increasingly concerned about greenwashing and "firms confusing or even misleading consumers about the nature of some of these [ESG] investments", particularly in relation to the labelling of funds as 'sustainable'[21]. One of the most famous examples of greenwashing from outside of the financial sector was 'Dieselgate' which began in September 2015, when it was discovered that Volkswagen had misused software to produce lower greenhouse gas emissions during laboratory tests. In the US, Volkswagen agreed to pay $4.3 billion in criminal and civil penalties[22], Germany imposed a fine of €1 billion (with an additional €800 million fine for Audi, Volkswagen's subsidiary)[23], and in Australia, the ACCC imposed a record fine of AUD$125 million (the largest ever imposed on a company in Australia for misleading consumers). These sanctions send a strong signal that misconduct in relation to greenwashing and its impact on market integrity is being taken extremely seriously[24]. Regulators of financial markets are also increasingly placing greater scrutiny on ESG products and marketing materials to verify claims of sustainability and ensure investors are properly informed when allocating capital to products labelled as 'green'.

"Meme stocks"

New forms of price manipulation have also been seen with the rise of 'meme stocks', such as the GameStop short squeeze which resulted in a 2700% increase in GameStop's share price over the course of January 2021[25]. This was the result of a group of retail investors who had coordinated their trading using message boards like Reddit and then executed trades through consumer-facing trading platforms such as Robinhood. In the wholesale markets, these types of bull/bear raids create challenges for asset managers and market makers who need to manage exposures and client interests in an appropriate way. The SEC identified that further consideration may need to be given to trading through wholesalers and in dark pools, as much of the retail order flow in GameStop was purchased by wholesalers and executed off exchange. The SEC also noted that such trading interest is less visible to the wider market and wholesalers are subject to fewer requirements in relation to transparency and resiliency[26]. In September last year, the SEC also took action against two individuals, Suyun Gu and Yong Lee, for engaging in wash trading to manipulate the options market for meme stocks, including GameStop (see the wash and matched trades case summaries below).

Hybrid working

The risk of misconduct has also been impacted by the shift to remote working during the Covid-19 pandemic and the subsequent adoption of hybrid working models by a significant number of workplaces. This has created challenges for traditional surveillance models which relied on co-location and 'line of sight' as these can be difficult to replicate in a remote environment. There may also be an increase in use of inappropriate communication channels, such as unmonitored and/or encrypted messaging applications (e.g. WhatsApp), which already feature in a number of recent case studies included in this analysis. Regulators are seeking to address these risks with the FCA issuing guidance requiring that a firm be able to prove that remote working arrangements do not affect the firm's ability to oversee its functions, including those which are outsourced, and prove that its control functions, such as risk and compliance, remain able to carry out their functions[27].

Conclusion

It is often colloquially observed that major financial crises occur once every generation because the next generation forgets the lessons learned by the previous one. This volume has its origin in a simple question: "what can we learn from past episodes of market misconduct in order to pre-empt conduct problems that may arise today?". This question remains as relevant as ever in today's rapidly evolving environment in which market participants are grappling with a raft of the same conduct challenges in new settings. However, the wholesale financial services industry is arguably better equipped than ever to reduce future misconduct through the development of more effective controls, assisted by advances in behavioural science and a broader mindset shift. Enduring patterns of history can therefore be broken as firms better anticipate and design out patterns of misconduct.

This document

This document provides a concise analysis of core market misconduct behaviours, from historic cases to the present day, to allow readers to understand how those behaviours play out and to provide insights as to the steps that firms can take to prevent those behaviours from occurring.

It is structured into six sections focusing on each of the core behaviours and the associated types of misconduct. Under each section a descriptive definition is provided for each behaviour and is supported with a selection of real-life cases, demonstrating through the experience of other markets how misconduct has manifested through the ages. Two cross-cutting themes across the behaviours have been identified – collusion and the misuse of technology, which are denoted with the following symbols in the relevant cases:

	Collusion			Misuse of technology

Readers are asked to note the following when using this edition:

- The cases in this document are based on publicly available information set out in a large body of enforcement sources. The wording of the case summaries has been largely adopted from these publicly available sources to avoid any misrepresentation or reframing of the facts.

- The review was conducted by the FMSB Secretariat supported by external contributors as set out in the 'Contributors' section on page 66. This volume sets out the research findings following this review: it does not set out the views of the FMSB or its member firms on the cases or behaviours in question.

- The BCA is an exercise in the collation and analysis of market misconduct for the purposes of recognition, and to support, among other things, management oversight, training and control function oversight. As such, we do not seek to provide legal or regulatory definitions of particular practices. The definitions used vary by jurisdiction and are intended to reflect, at a high level, practitioner understanding of the core characteristics of each type of misconduct, not to track legal definitions. Descriptions are provided to illustrate the behaviours in question, so that these can be understood by market participants and factored into systems and control frameworks. Readers and users may therefore wish to re-classify the behaviours and types of misconduct used in this volume based on their own analysis or interpretation of source materials. Similarly, readers and users will need to consider what is relevant to their individual business models and the markets in which they operate.

- The purpose of the analysis is not to analyse the merits of individual enforcement cases, or to provide a view on the culpability of individuals or firms involved or any penalty imposed.

- The objective of this document is not to distinguish cases by the purpose of the actors. The same techniques can be deployed for multiple purposes, can be adapted to new market structures and can be used in combination. The aim is to identify and address the more limited number of tools and techniques which are repeatedly used to advance a broader range of misconduct in market transactions.
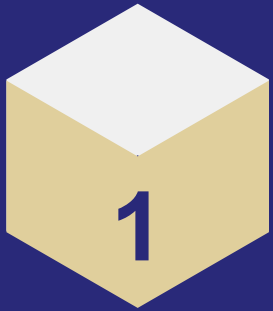
Price manipulation

In this section:

- Spoofing/layering
- Ramping
- Pools
- Corners/squeezes
- Bull/bear raids

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1 Price manipulation

Price manipulation covers behaviours, including entering into transactions or placing orders, which improperly influence, or attempt to influence, the price of securities or derivatives.

Below we discuss five types of price manipulation (spoofing/layering, ramping, pools, corners/squeezes and bull/bear raids), illustrated with real-life examples.

Spoofing/layering

Spoofing involves placing offers or bids for a security or commodity on a trading platform with the intention of cancelling those offers or bids prior to them being filled.

Layering is characterised as a specific form of spoofing where the actor enters multiple orders at different levels in order to create the illusion of market liquidity.

N/A	Case study	Reference	Asset class
	Cosco shares – placing buy and sell orders through personal account	Monetary Authority of Singapore, 2013, in the matter of Lee Wee Soon	Equities

Lee entered five buy orders through his personal account for shares in Cosco Corporation (S) Ltd ('Cosco'), during the Singapore Exchange Pre-Open Phase. The buy orders were priced between $3.38 and $3.48, totalling 1.1 million shares, and represented 62.7% of all buy side volume at the 20 best bid prices for Cosco shares at the time. At the same time, Lee also placed a sell order for 100,000 Cosco shares at $3.35. Lee deleted the buy orders just before the opening price for Cosco shares was determined at 8:59 a.m. Lee admitted that he had no intention of fulfilling the buy orders but had entered them to create a favourable environment to fulfil his sell order at $3.35.

Price manipulation continued

Case study	Reference	Asset class
Swift Trade – layering to give false and misleading impression of supply and demand on London Stock Exchange	FCA, 2015, in the matter of Swift Trade	Equities

Swift Trade engaged in layering. This caused a succession of small price movements in a wide range of shares on the London Stock Exchange from which Swift Trade was able to profit. The trading activity involved tens of thousands of orders, was repeated on many occasions and was conducted in many different shares. Swift Trade placed the large orders in order to give a false and misleading impression of supply and demand. The large orders were not intended to be executed. They were placed close enough to the touch price (i.e. the best existing bid/offer) to give a false and misleading impression of supply and demand, but far enough away to minimise the risk that they would be executed. They were deleted in seconds in order to further minimise the risk that they would be executed. The trading activity caused many individual share prices to be positioned at an artificial level, from which Swift Trade profited directly.

Case study	Reference	Asset class
Inter-dealing trading platform – misleading other market participants	FCA, 2017, in the matter of Trader A	Rates and Credit

At the relevant time, Trader A was a bond trader. The FCA found that across a period of two months, Trader A carried out a strategy of entering quotes on an inter-dealer trading platform in relation to six Dutch State Loans (DSLs). The FCA concluded that Trader A's quotes were designed to induce, and had the effect of inducing, other market participants who were tracking quotes to raise or lower their quotes so that he could benefit from those price movements.

According to the FCA's findings, Trader A represented to the market an intention to buy when his true intention was to sell and represented an intention to sell when his true intention was to buy. When his intention was to sell, his misleading quotes, skewed to the highest bid, induced other market participants to raise their bids. When he wanted to buy, his misleading low offers induced others to lower their offers. Trader A then aggressed (traded by selling bonds into an existing bid or by buying from an existing offer) these bids or offers, thereby trading at a more advantageous price.

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Case study	Reference	Asset class
Treasury futures – individual and coordinated spoofing	CFTC, 2017, in the Matter of Jonathan Brims, in the Matter of Stephen Gola	Rates and Credit

The CFTC alleged that Brims and Gola engaged in a practice of spoofing in U.S. Treasury futures markets. According to the CFTC, their spoofing strategy involved placing bids or offers of 1,000 lots or more with the intent to cancel those orders before execution. The spoofing orders were placed in the U.S. Treasury futures markets after another smaller bid or offer was placed on the opposite side of the same or a correlated futures or cash market. This created the impression of greater buying or selling interest than would have existed absent the spoofing orders, and was done to induce other market participants to fill the smaller resting orders on the opposite side of the market from his spoofing orders in advance of anticipated price changes. Brims and Gola cancelled the spoofing orders after either the smaller resting orders had been filled or they believed that the spoofing orders were at too great a risk of being executed.

In addition to executing the spoofing strategy individually, at times, the actors coordinated with one or more other traders on the U.S. Treasury desk to implement the spoofing strategy. In some of those instances, the actors would place one or more spoofing orders after another trader had placed one or more smaller resting orders in the same or a correlated futures or cash market. In other instances, another trader would place spoofing orders to benefit the smaller resting orders.

Case study	Reference	Asset class
Spoofing and layering via algorithmic high frequency trading	AMF & Conseil d'Etat, 2015-2017, in the matter of Virtu	Equities

In 2009, Virtu Financial Europe (a high frequency trading company) operating for its own account on Euronext and four alternative trading platforms implemented a strategy of identifying the best price for a security on one platform, usually Euronext, then placing four passive orders at a slightly different price on four other platforms. Upon execution of one of the orders, which would result in a capital gain equal to the price difference, the company would cancel the three remaining orders. These interventions were carried out in a few milliseconds, and the company's algorithm entered and cancelled orders permanently on the different order books, according to the evolution of the best-posted prices.

Price manipulation continued

Case study Placing and cancelling large orders for Contracts for Differences ('CFDs')	Reference FCA, 2020, in the matter of Corrado Abbattista	Asset class Equities

The FCA, using its supervisory technology ('SupTech') identified that an experienced trader, Corrado Abbattista had engaged in market abuse by creating a false and misleading impression as to the supply and demand for equities between 20 January and 15 May 2017. On several occasions, Abbattista placed large misleading orders for CFDs referenced to equities which he had no intention of executing. He would simultaneously place smaller orders that he did intend to execute on the opposite side of the order book to the misleading orders. The FCA's internal surveillance systems identified this behaviour by ingesting order book data from the leading UK equity trading venues and then running surveillance algorithms, designed to identify potentially abusive behaviours, across that consolidated data set.

Case study Misleading other market participants and spoofing	Reference CFTC, 2020, in the matter of Firm A and two of its subsidiaries	Asset class Commodities

The CFTC alleged that Firm A and two of its subsidiaries engaged in manipulative and deceptive conduct and spoofing from at least 2008 to 2016. The CFTC found that throughout this eight-year period, Firm A and two of its subsidiaries, through former traders on its precious metals and Treasuries trading desks, placed hundreds of thousands of spoof orders in precious metals and U.S. Treasury futures contracts on the Commodity Exchange, the New York Mercantile Exchange and the Chicago Board of Trade, with the intent to cancel these orders prior to execution. Through these spoof orders, the CFTC found that the former traders "intentionally sen[t] false signals to supply or demand designed to deceive market participants into executing against other orders they wanted filled". The CFTC found that, in many instances, the former traders intended to manipulate market prices and the spoof trades did lead to artificial prices.

Case study Spoofing and layering – fuel oil contract prices	Reference US, 2021, in the matter of Heredia Collado	Asset class Commodities

In March 2021, Emilio Jose Heredia Collado pled guilty to charges that between 2012 and 2016, he had conspired with other employees at an oil trading company to manipulate the price of fuel oil contracts purchased from and sold to a counterparty. According to the guilty plea, Heredia directed his co-conspirators to submit orders to buy and sell fuel oil during a specific window with the intent to artificially inflate or deflate the benchmark price assessment set by an intermediary for the fuel oil contracts. For example, if Heredia's oil trading company had a contract to buy fuel from another company, he would direct his co-conspirators to submit offers for the sole purpose of decreasing the price estimate for that oil, which allowed Heredia and his co-conspirators to obtain illicit profits by paying a lower price to the counterparty under the contract.

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Ramping

Building a position in a security through the purchase of multiple small lots at increasing prices in order to artificially inflate the market prior to selling a large lot at a higher price.

Case study	Reference	Asset class
Treasury options and futures – igniting price momentum	US, 1996, in the matter of Catalfo	Rates and Credit

Catalfo and Zimmerman bought Chicago Board of Trade Treasury bond put options and sold Treasury bond futures in very large volumes with the intention of providing a negative signal to the market and igniting a momentum price decline. Catalfo and Zimmerman timed their trades with the release of the Department of Labor's unemployment statistics. In the first nine minutes of trading they bought 4,100 puts. Shortly after, bond prices began to plummet and Catalfo and Zimmerman sold their positions to make a sizeable profit.

Case study	Reference	Asset class
Shares and CFDs – artificial increase in trading price	ASIC, 2015, in the matter of Derek Heath	Equities

ASIC found that Heath had ramped prices to induce investor participation by circular trading and using spoof bids and offers. Heath traded in shares and CFDs in four resource companies through nine separate share trading and CFD trading accounts. Between 2 July 2012 and 11 October 2013, Heath executed 30 simultaneous buy and sell transactions involving shares and CFDs relating to the resource companies which had the effect of artificially increasing the price for trading in those shares on the ASX. These trades, commonly referred to as 'matched trades', caused an increase to the price of shares traded on the ASX of between 3.1% and 6.9%.

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Case study	Reference	Asset class
N/A	Real estate shares – falsely inflating liquidity and share price	Spanish Audencia Nacional, 2016, Securities company	Equities

Between 3 September 2007 and 2 February 2009, a securities company purchased 556,452 shares in a real estate company, of which it sold 416,577. The securities company spread these transactions over the period, purchasing at 107 opening auctions and 52 closing auctions and selling at 96 opening auctions and 27 closing auctions. The operations carried out by the securities company consisted mainly of transactions involving no change in ownership of the shares. In some of the sessions, the securities firm accounted for 100% of the total shares volume traded in the opening auctions. The trading gave false indications to the market as to the liquidity and price of the shares.

Case study	Reference	Asset class
Influencing price of shares on Euronext Amsterdam	Authority for the Financial Markets (Stichting Autoriteit Financiële Markten, the "AFM"), 2017, in the matter of Lexon	Equities

Lexon was found to have manipulated the price of four equity funds listed on Euronext Amsterdam. Lexon's actions resulted in potentially misleading signals with regard to the price setting of these instruments. In addition, Lexon brought the prices of these instruments to an artificial level. Lexon manipulated the market in the following manner: after buying shares in an issuer at a low price level, Lexon submitted small orders at increasingly higher prices. As a result, investors (including algorithmic traders) were encouraged to issue increasingly higher buy and sell prices causing the price of the shares to rise. Lexon was then able to sell its shares with a profit at this higher price.

In other instances, Lexon also did the opposite: it sold shares at a high price level and then brought the price down to buy shares again at the lower price. In certain cases, Lexon also traded with itself as the counterparty. In these cases, Lexon was the seller of the shares that it bought. Using these methods, Lexon manipulated the price of four issuers listed at Euronext Amsterdam.

| Case study	Reference	Asset class
High frequency trading algorithms – influencing price of shares	Spanish Audiencia Nacional, 2019, in the matter of Gestión de Patrimonios Mobiliarios SV SA	Equities

The company, through two intermediaries, made daily purchase orders for a limited number of shares in an infrastructure company at a limited price, with the legitimate aim of taking a long position in that security. In parallel, on the basis of high frequency trading algorithms, it also carried out a high number of automatic purchase orders at market price, with the aim of influencing the price. The effect of this behaviour was to moderate or correct downward trends and provide an average price of the trading session above the regular average price, enabling the company to close its position at a profit.

Pools

Pools are multi-party dealing rings that engage in collusive and pre-arranged transactions within the pool to give a false impression of market activity or to ramp prices and subsequently close positions at a profit.

Transactions between pool members are undertaken at progressively higher prices, typically in smaller sizes until the price target is reached, at which point positions are liquidated and the market is left to adjust. Pools may be managed by a nominated or key individual. Actors trade with each other and take market risk, and there is a change in beneficial ownership. Pools tend to be longer term strategies in which manipulation takes place over a period of days, weeks or months.

'Pool' operation
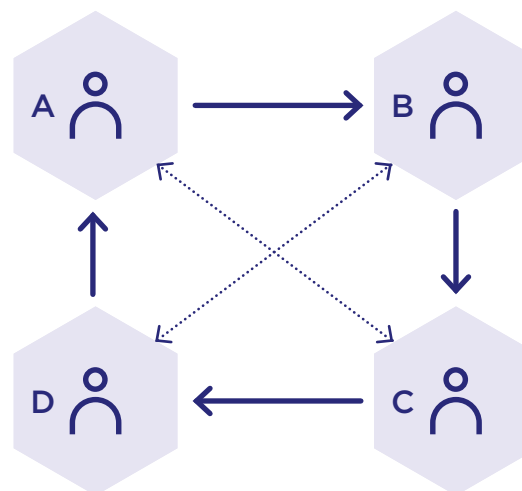
Pool members A,B,C,D are in collusion to operate the pool

Case study	Reference	Asset class
Manhattan Electrical Supply Co – forcing price increase	US, 1935, in the matter of Brown et al	Equities

In 1929, Brown owned (or controlled) 90,900 shares in the Manhattan Electrical Supply Co., Inc., of which he was president. The company had 125,000 shares listed on the New York Stock Exchange. McCarthy became associated with Brown in December 1929 and they agreed to sell the shares at constantly rising prices. To accomplish this, they opened 91 accounts with 52 different brokers, in their own names and those of their wives, and in the names of others. A single set of books contained all the purchases and sales, and the actors furnished the bulk of the money to carry out the strategy.

The actors paid brokers to recommend the stock and conduct "washing" sales which were made possible by the numerous accounts controlled by the defendants between whom transactions could be executed and then cancelled. The actors also published false statements of the earnings of the company. By these means they forced up the price to $55 in May 1930. Trading in the stock was suspended for several days, after which the stock opened below $20 and never recovered.

Case study	Reference	Asset class
UKEM – ramping to manipulate share price	Thailand SEC, 2014, in the matter of Porntep Thawornwisuthikul and Arada Lertpinyopap, former executives of United Securities Plc., Naruephol Chatchalermvit, Prayuth Lertpinyopap, Karuna Kaewmanee, and another	Equities

The Thailand SEC filed a criminal charge alleging that seven conspirators manipulated the share price of Union Petrochemical Plc. ('UKEM'). They colluded to trade UKEM shares through seven trading accounts, inflated and stabilised the share price and matched orders within the group. They ramped the closing price of UKEM's shares from 2.60 baht per share on 18 July 2008 to close at 6.20 baht per share on 20 August 2008.

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Case study	Reference	Asset class
Terni Energia – false and misleading indications of share demand and price	Consob, Italian Supreme Court of Cassation, 2010, 2018, Mr F.S., Mr F.E. and Mrs P.L. (re Terni Enterprise for Research and New Industries Terni Enterprise for Research and New Industries)	Equities

It was found that Mr F.S, Mr F.E and Mrs P.L. had colluded to fix the share price of Terni Enterprise for Research and New Industries S.p.A ('Terni Energia') at an artificially high level by providing false and misleading indications to the market relating to the demand and price of Terni Energia's shares. The individuals engaged in the collusive behaviour to inflate the company's share prices in the period immediately following the listing of Terni Energia on the 'mercato Expandi' (following the communication of a placement reserved for institutional investors).

The conduct was characterised by the continued and aggressive trading of large quantities of the company's shares between 25 July 2008 and 20 March 2009. The three individuals adopted similar trading methods and alternated in making large purchases of Terni Energia shares. During this period, the price of the company's shares remained stable, even though the performance of the FTSE MIB index was characterised by an almost continuous negative trend (-44.87%). Once the individuals ceased trading, the share price progressively decreased, reaching €1.091 on 30 June 2009 (-27.26% compared to 31st March 2009), thus realigning itself to the FTSE MIB index.

Case study	Reference	Asset class
On The Beach Group IPO – undermining proper price formation	FCA, 2019, in the matter of Paul Stephany	Equities

Stephany was a portfolio fund manager at Newton Investment Management Limited, managing four funds that invested in UK equities. On 21 September 2015, Stephany contacted external fund managers at competitor firms in relation to On The Beach Group plc's initial public offering (the "IPO"), as the lead fund manager in respect of this IPO. The FCA found that this was an attempt by Stephany to influence the fund managers to cap their orders for an allocation of shares at the same price limit as his order. The FCA concluded that this was an attempt to get investors to use their collective power to undermine the proper price formation process of the IPO, which risked causing harm to other market participants. This followed a similar attempt by Stephany on 9 July 2015 in relation to a placing by Market Tech Holdings Limited.

Corners and Squeezes

A corner is an attempt by a market participant to achieve a dominant controlling position in a commodity, security and/or related derivative to influence the price of such instrument and profit from that activity. This can be undertaken to drive prices higher or to support them.

A squeeze arises where a party does not seek dominance but attempts to gain control of sufficient amounts of a commodity or security to impact prices.

Case study	Reference	Asset class
Onion futures – cornering the market to manipulate price	US, 1955, in the matter of Onions. Vincent Kosuga and Sam Siegel[28]	Commodities

In 1955, two onion traders, Siegel and Kosuga, cornered the onion futures market on the Chicago Mercantile Exchange.

Allegedly, in the autumn of 1955, Siegel and Kosuga attempted to manipulate upward prices of the onion future on the exchange and cash onions, and in the winter of 1956, they manipulated downward prices of onion futures and cash onions. To put upwards pressure on the price of onion futures, they bought sufficient physicals and futures to control 98% of the available onions in Chicago and entered into agreements with onion growers, pursuant to which the growers would purchase and take title of car-lots of onions and merchandise them in regular channels of trade. They agreed that they would make no deliveries of onions on any exchange for the balance of the onion season. The purpose of this agreement was to remove potential deliveries of onions to the Chicago Mercantile Exchange, thereby increasing or preventing a decrease in the prices of futures and of cash onions.

To manipulate the price of onion futures downward, Siegel and Kosuga developed a dominant short position in onion futures, maintained that position during the weeks just prior to the beginning of the delivery period while other shorts were covering, carried a large short interest into the delivery month, maintained a complete monopoly of cash supplies and made deliveries as soon as the delivery period opened.

Case study	Reference	Asset class
N/A **Case study** The Great Salad Oil Swindle	**Reference** US, 1963, in the matter of Allied Crude Vegetable Oil Refining Corp. DeAngelis	**Asset class** Commodities

In what is known as the Great Salad Oil Swindle, Anthony DeAngelis, owner of the Allied Crude Vegetable Oil Refining Corp., created false warehouse receipts for non-existent soybean oil (through a variety of methods including filling storage tanks with water and covering the water with a thin layer of soybean oil on top) and used those receipts as loan collateral to finance heavy trading of soybeans, soybean oil, and cottonseed oil futures (including a 1962 attempt to corner the soybean market). The scandal caused 16 firms (including two Wall Street brokerage houses) to go bankrupt and led to calls for increased regulation of the commodity futures markets.

Case study	Reference	Asset class
N/A **Case study** Penny stocks – creating unfair trading conditions	**Reference** AMF, 2009, in the matter of Safe	**Asset class** Equities

Between April 2005 and January 2006, shares of Alstom and Eurotunnel were still listed among the penny stocks of the Paris stock market with a price of less than €1. During this period, an Italian trading company was the most active participant in these stocks, with orders two to four times larger than those of the next most active participant. It placed sell orders on a forward contract in the last 10 seconds before the close, at a distance very close to the last bid limit for the smallest possible quantity and with a validity period limited to the same day. This was repeated daily for more than 4 months.

The placing of a very large volume of orders at the last bid limit obliged other operators wishing to buy or sell the same securities either to wait for orders placed before their own to be executed in the order book, or to place orders on terms that were less favourable to them.

The Enforcement Committee found that with its dominant position, the trading company created "unfair trading conditions" in the market for the two shares in question.

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Case study	Reference	Asset class
Manipulation of NYMEX crude oil contract prices	CFTC, 2011, in the matter of Parnon Energy Inc and Arcadia	Commodities

The CFTC alleged that, from 2007 through 2008, a common enterprise of crude oil speculators ("Arcadia") manipulated and attempted to manipulate the contract prices of the New York Mercantile Exchange ("NYMEX") West Texas Intermediate ("WTI"). According to the CFTC complaint, Arcadia took advantage of a tight physical market, executed a manipulative trading strategy designed to affect NYMEX crude oil futures contract spreads by building a dominant controlling position in physical WTI crude oil deliverable at Cushing, Oklahoma under the NYMEX futures contract; holding the physical position until after futures expiry with the intent to affect NYMEX crude oil spreads and selling off the physical position in a concentrated fashion during the cash window at a loss. The complaint further alleged that Arcadia sought to generate profits by buying WTI futures spreads prior to widening the spreads through their manipulation and selling WTI futures spreads prior to selling their physical WTI crude oil position.

Case study	Reference	Asset class
N/A Manipulation of gilt price during quantitative easing	FCA, 2014, in the matter of Stevenson	Rates and Credit

Stevenson (an experienced bond trader formerly at Credit Suisse Securities (Europe) Limited) bought £331 million of the UKT 8.75% 2017 (the "Bond"), a UK government gilt, between 09:00 and 14:30 on 10 October 2011. The Bond was relatively illiquid and Stevenson's purchases represented approximately 2,700% of the average daily volume traded for the Bond in the previous four months and 92% of volume purchased in the IDB market on 10 October 2011. The price and yield of the Bond significantly outperformed all gilts of similar maturity on 10 October 2011 as a direct result of Stevenson's trading. This trading took place on the first day of the second round of quantitative easing in the UK. During quantitative easing the Bank of England purchased certain gilts from GEMMs, injecting money into the economy. Offers for sale of eligible gilts to the Bank of England could be made by GEMMs between 14:15 and 14:45 on 10 October 2011. Stevenson offered to sell £850 million of the Bond to the Bank of England on 10 October, which included the £331 million acquired that day. Stevenson's offer price to the Bank of England was based upon the prevailing market price for the Bond, which had been influenced upwards by his trading that day. The FCA concluded that Stevenson's trading on 10 October 2011 was designed to move the price of the Bond in an attempt to sell it to the Bank of England at an abnormal and artificial level thereby increasing the potential profit made from the sale of the Bond.

Bull/Bear Raids

Taking a position in a security and publishing or disseminating false or misleading information in relation to the issuer of such security, or the security itself, in order to move the price to the advantage of the purchaser.

Case study	Reference	Asset class
"City Slickers" – spreading favourable rumours	UK, 2005, in the matter of Bhoyrul and Hipwell	Equities

Hipwell and Bhoyrul were journalists at the Daily Mirror who produced the "City Slickers" column in which they tipped various shares. They were convicted of conspiring to use the column to spread favourable rumours about shares between August 1999 and 2000. Hipwell and Bhoyrul would purchase positions in these stocks immediately before they were tipped in the City Slickers column and sell them soon afterwards making a profit from the resulting price increase. Shepherd, a private investor, was also convicted of taking part in the scheme.

Case study	Reference	Asset class
Touting shares online and via social media platforms	US, 2010, in the matter of McKeown and Ryan	Equities

A Canadian couple, Carol McKeown and Daniel F. Ryan, used their website (PennyStockChaser), Facebook and Twitter accounts to tout various U.S. microcap companies. In some cases, the defendants received shares of these microcap companies from the issuers' affiliates or third parties as compensation for touting the issuers' stocks. McKeown and Ryan used PennyStockChaser and social media accounts to predict significant price increases for the microcap companies, while simultaneously selling their shares on the open market.

Price manipulation continued

Case study	Reference	Asset class
UPAC – concealing a significant interest while funding promotional campaign	US, 2017, in re Joe Yu Cheung (aka Dylon de lu Zhu)	Equities

The SEC charged Cheung, who was based in Canada and Hong Kong, with concealing a significant interest in United American Petroleum Corp. ("UAPC") while also funding a secret promotional campaign that increased UAPC's stock before Cheung dumped his shares. The SEC alleged that Cheung "acquired greater than 10% beneficial ownership" of UAPC and between "January and July 2012, Cheung financed a promotional campaign" through "blast emails and direct mailings" that were "replete with falsehoods" about the profitability of UAPC. The SEC further alleged that Cheung's promotional campaign "increased investor demand for UAPC stock and artificially raised its price and trading volume." The SEC said that Cheung "urged investors to purchase UAPC shares at the very same time that Cheung was dumping them." The SEC calculated that Cheung made approximately $542,000 in profit.

Case study	Reference	Asset class
COMplus – market letters to artificially create demand	District Court of Frankfurt, 2019, in the matter of COMplus Technologies	Equities

According to public BaFin statements, the accused held a large position of shares in COMplus Technologies SE, a company traded on the open market of the Frankfurt Stock Exchange. He then paid for market letters to advertise the stock. The market letters, which were sent via email, recommended the purchase of the stock without disclosing the conflict of interest. The accused used the demand created by that conduct to sell his shares for an inflated price.

Case study	Reference	Asset class
New Media – Technology Adaptation. Internet.	SEC, 2020, Gomes	Equities

In September 2021, the District Court of Massachusetts issued a Final Judgment finding that between 2018 and 2020, Nelson Gomes and others enabled corporate control persons of "penny stock" companies to conceal their identities while dumping their company's stock into the market for purchase by unsuspecting investors, allowing the corporate control persons to evade securities laws restricting the sales of shares by corporate control persons absent public registration. According to the judgment, these illegal stock sales constituted a classic "pump and dump" scheme, whereby Gomes and others ran promotional campaigns designed to fraudulently increase the price of the stock by capitalizing on the COVID-19 pandemic, including through false claims posted on a company's website that it would be producing personal protective equipment such as facemasks to be used during the pandemic. Gomes and others generated more than $25 million in proceeds from illegal stock sales.

Case study New Media – Technology Adaptation. Internet and Twitter.	Reference US, 2021, in the matter of Melnick	Asset class Equities

In 2021, Mark Melnick pled guilty to charges that between 2017 and 2020, he and four other co-conspirators had engaged in a scheme to trade short-term call options in large, publicly traded companies based on materially false rumours about those companies that Ross, Melnick, and others generated and disseminated. According to the plea agreement, Melnick and the co-conspirators worked together to refine a proposed rumour and then acquire short-term call options before disseminating the rumour on one or more online market subscription services and various Twitter accounts, which would drive up the price of the underlying stock and options. It was estimated that Melnick earned approximately $374,000 in profits from the scheme.

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2 Circular trading

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- Money pass and compensation trades
- Parking

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2 Circular trading

Circular trading covers transactions with no legitimate commercial rationale. Typically, circular trading involves entering into transactions that cancel each other out and therefore does not entail the transfer of market risk.

Circular trading is one of the most common and resilient behavioural patterns. Its history in the 20th century starts with the boom in railroad stocks in the US in 1908, but it has also been used in relation to government bonds, floating rate notes, oil and even sunflower seed futures. More recently, they were found to feature in the LIBOR misconduct.

Below we discuss three types of circular trading including wash and matched trades, money pass and compensation trades and parking, illustrated with real-life examples.

Wash and matched trades

The near-simultaneous purchase and sale of the same financial instrument for the same size and price between two counterparties. There is no change in beneficial interest or risk and no legitimate economic rationale for the transaction. Wash trades can include bilateral trades (involving a sale or purchase by one party to another party and a corresponding purchase or sale by one party of the same asset at the same price in the same size) and single party trades (where a single party effects a wash trade between two separate accounts that are both under the control of that party).

Matched trades are a form of wash trade between two different counterparties intermediated by a third party, typically a broker acting on behalf of one or more of the counterparties. The sale and repurchase could be instigated by a single party through two different brokers or two colluding parties through a single broker.

Matched trade between two colluding parties
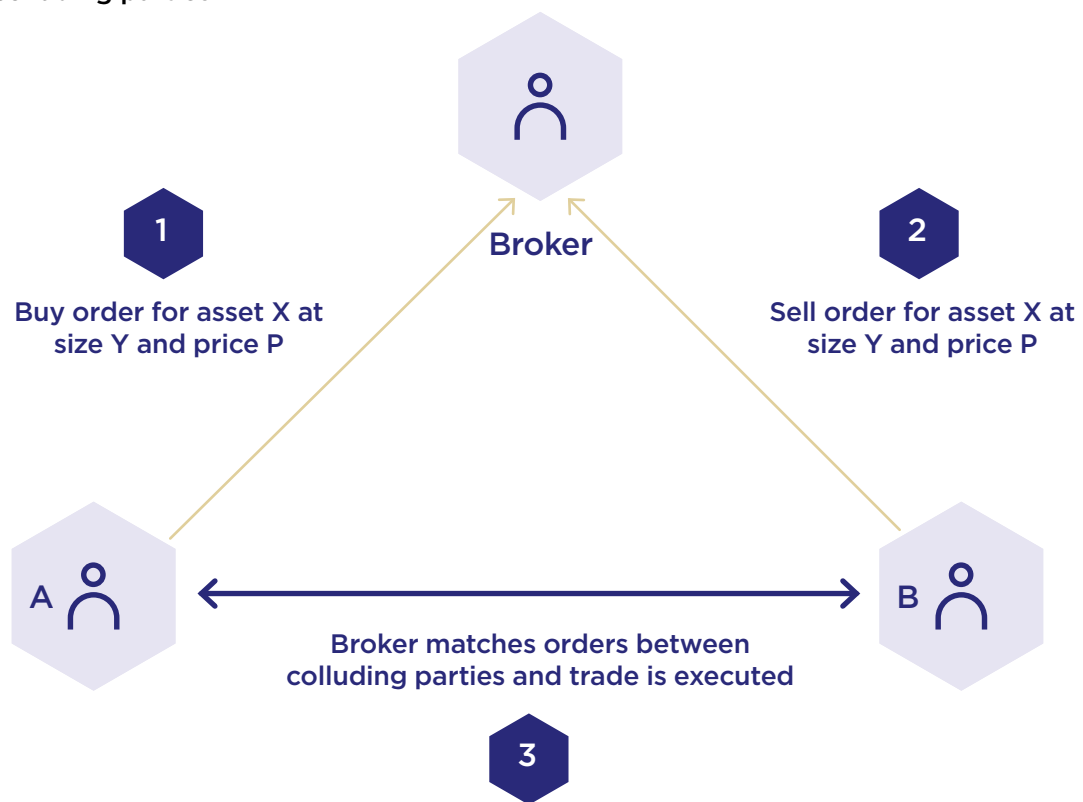
Broker

1 Buy order for asset X at
size Y and price P

2 Sell order for asset X at
size Y and price P

A   B

Broker matches orders between
colluding parties and trade is executed

3

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Case study	Reference	Asset class
Cocoa spread orders – ensuring trades matching to negate market risk and price competition	CFTC, 2005, in the matter of Armajaro and Corinth	Commodities

Armajaro Trading Limited ("Armajaro") and Warenhandelsgesellschaft Corinth mbH ("Corinth"), pre-arranged two cocoa spread cross trades that were entered and executed on the Coffee, Sugar & Cocoa Exchange. Prior to the trades, employees at Armajaro and Corinth had telephone conversations with the broker who arranged the orders to be entered and discussed the quantity and price of the orders that were to be executed. According to the CFTC, the pre-arranged buy and sell spread orders by Amajaro and Corinth ensured the trades matching on the trading floor and negated market risk and price competition.

Case study	Reference	Asset class
N/A — Wash trades between personal and relationship accounts	SFC, 2012, in the matter of VST Holdings	Equities

The Chairman of VST Holdings, Li Jialin, executed matched trades between three accounts which he was found to have controlled. Between August 2007 and January 2008, Li operated three different accounts, one in his own name, another jointly with his wife and a third in his brother's name, through which he bought and sold VST shares in transactions that involved no change in the beneficial ownership of those shares. These transactions increased the price of VST. The Securities and Futures Commission alleged that the increase in the VST share price supported the year-end share price performance.

Case study	Reference	Asset class
N/A — US Dollar and Bitcoin – bilateral wash trades	CFTC, 2015, in the matter of TeraExchange	Rates and Credit, cryptoassets

Tera offered a non-deliverable forward contract based on the relative value of the U.S. Dollar and Bitcoin for trading on its Swap Execution Facility ("SEF"). The only two market participants authorised at the time to trade on Tera's SEF entered into two transactions in the Bitcoin non-deliverable forward contract. The transactions were for the same notional amount, price and tenor, and had the effect of offsetting each other exactly. At the time, these were the only transactions in the contract undertaken on Tera's SEF. Tera arranged for the two market participants to enter into the transactions telling one trader that the trade would be "to test the pipes by doing a round-trip trade with the same price in, same price out, (i.e. no P/L [profit/loss] consequences) no custodian required." Tera subsequently represented these to the public as bona fide trading activity.

Case study	Reference	Asset class
Cross and wash trading of shares to artificially increase share price	Singapore MAS, 2017, in the matter of Chionh Teow Hie John and Kiew Yoon Seng	Equities

Between June 2008 and November 2009, Chionh and Kiew engaged in false trading in the shares of Keda Communications Limited ("Keda") by crossing 52 trades with each other using trading accounts held with a securities firm. Chionh also conducted six wash trades in Keda through two of his trading accounts held with brokerage firms. By doing so, Chionh was essentially trading with himself. The 58 cross and wash trades collectively accounted for 34% of the total traded volume of Keda shares between June 2008 and November 2009. Many of the cross and wash trades also artificially raised the price of Keda shares, with increases ranging from 11% to 146% from the previous traded price.

Case study	Reference	Asset class
N/A Matching buy and sell orders to generate tax-deductible losses	PVA TePla AG 2019 (BaFin)-Germany	Equities

According to public statements of the German Federal Financial Services Supervisory Authority, on 3 March 2017, the accused placed seven matching buy and sell orders for shares of the listed company PVA TePla AG which were harmonized regarding nominal value, trading limit and marketplace. By doing so, he intended to enter into trades in which he acted as seller as well as buyer. The orders represented approximately 85% of the traded daily volume in this stock and involved no change in beneficial ownership.

The accused confessed that he placed the matching orders to generate tax-deductible losses. Criminal charges against the accused were dropped by the district attorney.

2   Circular trading continued

Case study	Reference	Asset class
Rates derivatives – arranging wash trades to generate unwarranted brokerage	FCA, 2019, in the matter of Tullett Prebon (Europe) Limited	Rates and Credit

The FCA found that between 2008 and 2011, a number of the brokers in the Rates Division at Tullett Prebon (Europe) Limited ("TPEL"), along with certain other traders, co-operated to place improper trades to increase the brokerage to TPEL.

Between September 2008 and October 2010, 17 wash trades were arranged, generating total brokerage of over £314,000. For example, a wash trade was arranged on 16 February 2009. This involved two brokers at TPEL arranging for two traders at different banks to enter into two equal and opposite swaps trades. Both traders paid brokerage to their respective brokers.

The FCA found that the motivation of the brokers at TPEL was to improve the profitability of their books, in turn leading to higher remuneration. The motivation of the traders at the banks who paid the brokerage to TPEL through the wash trades included the receipt of corporate hospitality and promises of assistance in the attempted manipulation of LIBOR.

The FCA also found that between September 2008 and June 2011, six brokers on three different desks in the Rates Division arranged a number of three-party switches (or similar variations thereof), generating £76,000 of unwarranted brokerage. Like wash trades, these transactions were sometimes used as a mechanism for brokerage to be paid to TPEL in return for receipt of entertainment from brokers or as a favour to the broker or a tip.

Case study	Reference	Asset class
N/A Circular trading of high value trades in Danish and Belgian equities	FCA, 2021, in the matter of Sapien Capital Ltd	Equities

The FCA found that, between 10 February 2015 and 10 November 2015, Sapien failed to have in place adequate systems and controls to identify the risk of being used to facilitate "Cum-Ex" dividend arbitrage. The Solo Group introduced business to Sapien. Sapien executed purported OTC equity trades of approximately £2.5bn in Danish equities and £3.8bn in Belgian equities for Solo clients, receiving a gross commission of £297,044. The trading was a circular pattern of high value trades undertaken to avoid the normal need for payment and delivery of securities in the settlement process. The FCA found no evidence of change of ownership of the shares traded or custody of the shares and settlement of trades.

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N/A	**Case study** Wash trading to ensure company remained in FTSE All Share Index	**Reference** FCA, 2021, in the matter of Adrian Horn	**Asset class** Equities

The FCA found that an experienced trader, Adrian Horn, had engaged in market abuse by wash trading (executing trades with himself in the shares of McKay Securities Plc). During 18 July 2018 to 22 May 2019, Horn intentionally placed buy orders in McKay shares that traded with his existing sell orders (and vice versa), executing 129 wash trades in total. Horn executed these wash trades to ensure that a minimum number of shares were traded in McKay each day, which he believed was a requirement for McKay to remain in the FTSE All Share Index. Horn's wash trades resulted in other market participants seeing what they believed to be legitimate trades in McKay occurring. The wash trades also artificially inflated end of day trading volumes reported to the market.

	Case study Meme stocks – wash trades	**Reference** US 2021, SEC in the matter of Suyun Gu and Yong Lee	**Asset class** Equities

In September 2021, Yong Lee entered into a Consent Judgment with the SEC admitting to engaging in a fraudulent scheme designed to collect liquidity rebates from exchanges by wash trading push options of certain "meme stocks" in early 2021. The SEC alleged that Lee along with Suyun Gu took advantage of the increased market volume and volatility driven by meme stocks being promoted on social media by using broker-dealer accounts to place non-marketable limit orders for out-of-the-money options and to obtain rebates for providing liquidity, while using separate broker-dealer accounts that did not charge fees for taking liquidity to place trades for the same put options on the other side of the market.

Money pass and compensation trades

Compensation trades are a variant of wash trades effected between two parties to facilitate cash payments to one party using a securities transaction as the medium to affect the payment. The objective of a compensation trade itself is not to manipulate markets, although it is often used in conjunction with market manipulation strategies.

Money pass is a transaction undertaken by a party controlling two or more accounts or entities used as a conduit to move money between those accounts or entities. Money passes are similar to single party wash trades which involve a wash trade between two separate accounts that are both under the control of a single party.

N/A	**Case study** Housing Market, Cheese, and Ethanol Futures – undertaking prearranged trades between accounts	**Reference** CFTC, 2014, in the matter of Fan Zhang	**Asset class** Commodities

The CFTC alleged that Zhang undertook fictitious sales and non-competitive prearranged trades in the Las Vegas Housing Market Futures Contract, the CME Cash-Settled Cheese Futures Contract and the CBOT Ethanol Futures Contract. Zhang transferred trading profits between two accounts which he controlled by undertaking buy and sell orders for the same price and volume between the accounts. One of the accounts was an investment club (which was 50% owned by Zhang) and the other account was held in the name of Zhang's mother. Zhang engaged in the trades for the purpose of transferring money between the accounts.

N/A	**Case study** Fraudulent money pass – firm accounts	**Reference** CFTC, 2015, in the matter of Yumin Li and Kering Capital Ltd	**Asset class** Rates and Credit

The CFTC alleged that Li defrauded Li's employer, Tanius Technology ("Tanius"), by trading the employer's account against a Kering account that Li controlled. Li placed orders for the Kering Account to buy Eurodollar futures against opposite side orders placed for the Tanius account at the same price and in the same volume. Li then undertook offsetting transactions to close out the position. The transactions were structured such that Li bought futures from the Kering account at higher prices and then sold those same futures back to Kering at lower prices (or the reverse). These transactions resulted in profits to Kering at the expense of Tanius.

Circular trading continued

Case study	**Reference**	**Asset class**
MINIs – prearranging price, volume and timing to transfer profit/loss	ASIC, 2015, in the matter of Tony Davidof	Equities

ASIC found that on 21 February and 3 June 2013, Davidof took part in back-to-back buy and sell trades in MINIs on ASX with a former employee of Credit Suisse after the pair had pre-arranged the price, volume and approximate timing of the trade. On each occasion, in the preceding days, the former employee had traded SPI Futures on behalf of Davidof resulting in a loss (in February) and a profit (in June) for Davidof.

ASIC found that the prices at which Davidof and the former employee arranged to trade MINIs were designed to transfer the profit/loss from all the preceding trading, without reflecting the SPI Futures that were actually traded. This was likely to have the effect of creating an artificial price for trading in the affected MINIs on ASX.

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Circular trading continued

Parking

A form of position concealment whereby securities are sold subject to an agreement or understanding that equivalent securities will be repurchased by the seller at a later point and at a price which retains the economic risk with the seller of the securities. Parking can be external (actors parking securities with third parties) or internal (parking using different trading accounts held by the same firm, such as client and proprietary accounts).

An Example Parking Transaction
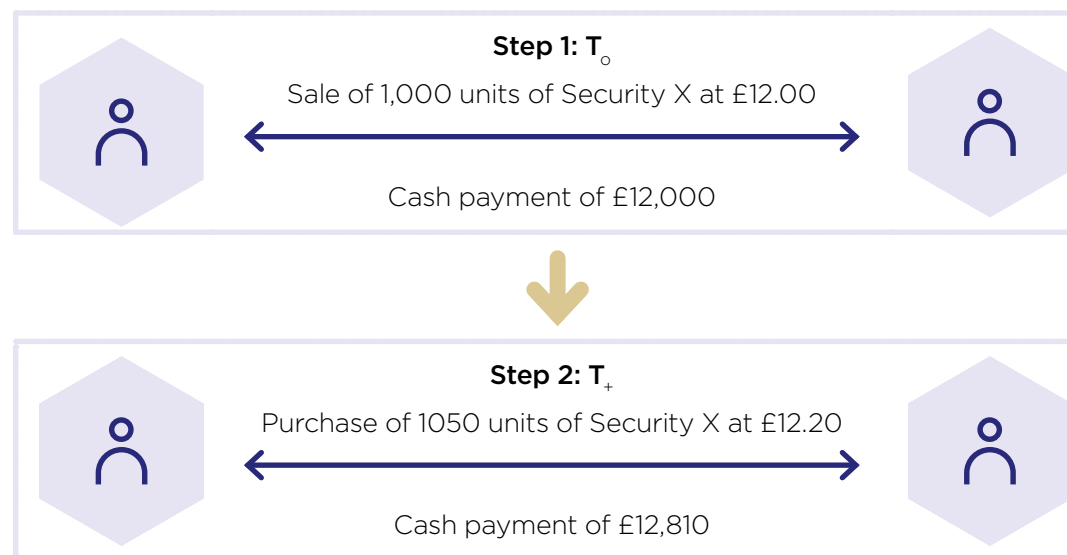
Step 1: T$_0$

Sale of 1,000 units of Security X at £12.00

Cash payment of £12,000

Step 2: T$_+$

Purchase of 1050 units of Security X at £12.20

Cash payment of £12,810

Case study	Reference	Asset class
Parking unsold stock in client accounts without authorisation	SEC, 1973, in the matter of Resch-Cassin & Co	Equities

The firm was underwriter to an equity offering of 150,000 shares of Africa, a Delaware corporation. Under the terms of the offering, all 150,000 shares had to be sold within 60 days. The firm parked unsold stock in client accounts without client authorisation. On occasion this activity was undertaken by inflating the size of genuine client orders.

Case study	Reference	Asset class
Bonds – avoiding aging inventory limits	SEC, 2014, in the matter of Gonnella	Rates and Credit

In May 2011, Gonnella (a trader at Firm A), was about to incur aged inventory charges on positions in several asset-backed securities. On 31 May, Gonnella contacted King (a trader at Firm B) to undertake parking transactions in four bonds to avoid the aged inventory charges.

King agreed to buy the bonds with the understanding that Gonnella would repurchase the bonds one day after the sale. Gonnella repurchased the bonds from King at one point more than King paid per bond, providing an immediate profit to Firm B at the expense of Firm A and allowing Gonnella to avoid the aged inventory charges.

At the end of August and the beginning of September 2011, Gonnella offered three bonds to King which King agreed to buy on Firm B's behalf. The next day Gonnella repurchased two of the three bonds at higher prices and sold King five more bonds. Two days later, Gonnella repurchased the additional five bonds. In September 2011, Gonnella repurchased the last remaining bonds that he had sold to King in August.

Case study	Reference	Asset class
DAIICHI – misleading others to inhibit sale and purchase	SESC, 2018, in the matter of Daiichi Kigenso Kagaku Kogyo Co., Ltd	Equities

The SESC determined that the offender had used "fraudulent means" (under the Financial Instruments and Exchange Act) in relation to shares of Daiichi Kigenso Kagaku Kogyo Co., Ltd and six other stocks through sale and purchase entrustments without limit, with closed conditions of these securities inhibiting the sale and purchase of securities.

The offender intended to mislead other persons into believing that the order statuses of the sale and purchase of the securities were maintained until closing and the sale and purchase of these securities before it affected market prices in his/her favor.

Misuse of inside information

3

In this section:

- Insider dealing
- Unlawful information disclosure

Misuse of inside information covers obtaining unfair advantage from inside information to the detriment of third parties or otherwise disclosing inside information for an unlawful purpose.

Throughout the entire history of financial markets, there have been many individuals who have used their access to inside information to gain an unfair edge over other investors. William Duer is widely considered to be the first to have used his privileged knowledge in a scheme to profit[29]. Duer was appointed by Alexander Hamilton to serve as the assistant secretary of the Treasury in 1789. Six months later, he resigned from his position after it was discovered that he was taking advantage of his access to confidential information in order to speculate on stocks and bonds. Duer went bankrupt as a result of the Panic of 1792, and was held in debtor's prison for the rest of his life. His failure has been cited as a cause of the panic, reportedly the first in New York caused by speculation.

Below we discuss two types of misuse of inside information: insider dealing and unlawful information disclosure, illustrated with real-life examples.

Insider dealing

Obtaining an unfair advantage from the use of inside information[30] when entering into, or attempting to enter into, market transactions.

Case study US M&A – using dealing ring to trade on inside information	Reference FCA/SEC, 2011, in the matter of Sanders and Sanders & Swallow	Asset class Equities

A dealing ring was formed between James Sanders, a director of Blue Index (a specialist Contract for Difference brokerage), his wife Miranda Sanders, James Swallow (a former employee at Blue Index) and Arnold and Annabel McClellan (who was Miranda Sanders' sister). Arnold McClellan was a senior partner in a US accounting firm that was an insider to a number of mergers and acquisitions in US securities listed on the NYSE and NASDAQ exchanges. Inside information was leaked by Arnold or Annabel McClellan and passed to James and Miranda Sanders who used the information to commit insider dealing in the relevant US securities between October 2006 and February 2008. James Sanders also disclosed information to others including James Swallow, who used that information to commit insider dealing. In addition, James Sanders encouraged clients of Blue Index to trade in CFDs on the basis of the inside information. James Sanders created spread bets to cash in on the information for both himself and his clients.

N/A	**Case study** Insider dealing – shares of alcoholic beverages company	**Reference** Spanish National Court, 2019, Manufacturer of alcoholic beverages	**Asset class** Equities

On 4 June 2014, a director of an alcoholic beverages company bought 2,300 shares of the company at €4.43 each, for a total amount of €10,189, through an intermediary company. On 7 August 2014, he bought another 2,300 shares at €4.40 each, for a total amount of €10,252, through the same intermediary on behalf of his daughter. On 27 October 2014, the company announced to the market a takeover offer for its shares, with a corresponding de-listing and reduction of capital, at a price of €5.70 per share. The shares purchased by the director (and those purchased on behalf of his daughter) were not sold in the market after the relevant takeover announcement, nor did they participate in the takeover bid. Despite this, the Spanish National Securities Market Commission concluded that the behaviour of the director of the company (who had been included, since 1 August 2014, in the list of insiders prepared by the company in relation to the takeover bid) constituted an act of insider dealing because he was in possession of inside information that he used to acquire, on behalf of a third party, shares of a listed company to which that inside information was relevant.

N/A	**Case study** Imaging Inc M&A – misappropriating material non-public information to make profit	**Reference** US, 2019, in the matter of Tsai	**Asset class** Equities

The SEC charged Tsai, a junior analyst at a large international investment bank, with insider trading. The SEC alleged that Tsai learned of Siris Capital Group, LLC acquiring Electronics for Imaging, Inc. ("EFII") in advance of its transaction announcement and misappropriated material non-public information to make purchases of EFII options. The SEC contends that Tsai hid the transactions in a brokerage account from his employer and made nearly $100,000 in profit.

	Case study Insider dealing – misuse of Netflix subscriber data	**Reference** US 2021, in the matter of Sung Mo Jun et al	**Asset class** Equities

In August 2021, Sung Mo Jun, his brother Joon Jun, and his friend Junwoo Chon pled guilty to charges of insider trading in the purchase and sale of Netflix securities between July 2016 to July 2019. Sung Mo Jun was a software engineer at Netflix with access to material, non-public information, including Netflix subscriber data. According to the plea agreement, Sun Mo Jun profited on trades based on that material non-public information, and disclosed that information to Joon Jun and Junwoo Chon with the knowledge that the two intended to use the information to profit on the purchase and sale of Netflix securities. The illicit profits gained by all defendants were estimated to be $1,170,905.

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Unlawful information disclosure

The disclosure of inside information by a person outside the normal course of business.

N/A	Case study Disclosure of confidential information to market operators	Reference [Italian Supreme Court of Cassation, 2018, in the matter of Mr R. C. C](#). (former employee of Citigroup Global Markets)	Asset class Equities

Consob found that Mr R.C.C. had engaged in insider dealing for having disclosed, outside the normal exercise of his employment, confidential information contained in a research report, prepared by Mr. R.C.C., relating to Banca Italease. The report contained a purchase recommendation and a target price that was significantly higher than the market price. Mr R.C.C. disclosed the report to seven market operators prior to its publication to the market.

N/A	Case study M&A bond issuance – disclosing price sensitive information to clients	Reference [FCA, 2012, in the matter of Kyprios](#)	Asset class Rates and Credit

In November 2009, US telecommunications company Liberty Global, inc ("Liberty"), agreed to acquire Unitymedia GmbH ("Unitymedia"), a German cable television company. Liberty appointed a bank as lead book runner for a potential €2.5 billion bond issue, the proceeds of which were likely to be used to finance the acquisition and refinance outstanding debt. Prior to the announcement of the takeover and issue, Kyprios, who worked as Head of Credit Sales at the bank, signalled non-public information to two fund managers, against the express instructions of his employer and despite the fact that the fund managers asked not to be wall crossed. Kyprios disclosed: (i) the fact that Unitymedia was potentially about to bring a big bond issue to market; (ii) the fact that the issue was intended to be announced the next day; (iii) the potential rating of the issue; (iv) the fact that Unitymedia would redeem outstanding bonds; and (v) the fact that the issue was M&A-related.

The information was price sensitive to outstanding Unitymedia floating rate notes.

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Case study	Reference	Asset class
Company takeovers – disclosing proposed M&A deals	FCA, 2019, in the matter of Fabiana Abdel-Malek and Walid Choucair	Equities

The FCA secured criminal convictions against Fabiana Abdel-Malek and Walid Choucair in respect of insider dealing offences.

During the relevant period, Fabiana Abdel-Malek worked as a senior compliance officer at UBS AG's London office. In this role, she had access to price-sensitive information about potential mergers and acquisitions held within the UBS compliance system. The FCA alleged that, despite being familiar with the restrictions on disclosing inside information, Abdel-Malek searched the compliance system and obtained inside information relating to the proposed takeovers of five companies, which she then disclosed to Choucair, who traded in the shares of five target companies. It was found that Abdel-Malek and Choucair sought to conceal their criminal activity by using unregistered pay-as-you-go mobile phones, changing and swapping SIM cards at regular intervals, to communicate with one another.

4 Reference price influence

In this section:

- Manipulation of submission-based fixes
- Manipulation of transaction-based fixes
- Portfolio price manipulation/window dressing
- Triggering or protecting barriers

Reference price influence

4

Reference price influence covers improperly influencing, or attempting to influence, prices against which other positions are valued.

Whilst the LIBOR rate fixing scandal and the widespread control failings relating to benchmark FX rates are some of the highest profile examples, attempts to influence reference prices have been seen across industries with cases involving heavy electrical equipment, fuel surcharges, lysine, music CD, beer and Christmas trees.

Below we discuss four types of reference price influence including attempts to manipulate submission-based fixes, transaction-based fixes, portfolio prices as well as window dressing and triggering or protecting barriers, illustrated with real-life examples.

Manipulation of submission-based fixes

Submitting false or inaccurate information where such information is used to calculate a closing price, reference price or index with the intent of improperly influencing such benchmark.

Case study CTT – placing buy orders to artificially raise share prices	Reference SEC, 2005, in the matter of Competitive Technologies Inc	Asset class Equities

The SEC alleged that between July 1998 and June 2001, CTT, its CEO and others, participated in a scheme to raise artificially and maintain the price of CTT's stock. According to the SEC, these persons placed buy orders at or near the close of the market in order to inflate the reported closing price (i.e. "marking the close"), placed successive buy orders in small size at increasing prices (i.e. "painting the tape") and using accounts they controlled or serviced, placed pre-arranged buy and sell orders in identical amounts ("matched trades") and placed other buy orders intended to minimize the negative impact on CTT's price from sales of the stock (i.e. pegging.) The SEC also alleged that the defendants used CTT's own stock purchase plan to offset selling pressure, place late day orders, and maintain the stock price.

Case study Coffee futures and coffee futures options – reference price manipulation	Reference FSA, 2010, in the matter of Andrew Kerr	Asset class Commodities

Andrew Kerr, on the instruction of a client ('Client A', a proprietary trader) manipulated the market in London International Financial Futures and Options Exchange ('LIFFE') coffee futures and coffee futures options. Client A held positions in LIFFE coffee futures and coffee options with a strike price of $1,750 and held a large position (2,000 contracts) in coffee put options. The coffee options reference price ('CORP') was calculated by reference to the volume weighted average price ('VWAP') of coffee futures trading between 12:29 and 12:30 on the third Wednesday of the preceding month. In the minute prior to 12:29 on 15 August 2007, coffee futures had been trading at $1,745 and the VWAP was below $1,750. Accordingly, it appeared that Client A's coffee put options would expire in the money ('ITM'). Shortly before 12:29, and following a plan developed during a series of telephone conversations between Kerr and Client A, which commenced on 14 August 2007, Client A instructed Kerr to time a 600 lot coffee futures buy order to be entered seconds before 12:30. Client A made it clear to Kerr that the order must be executed prior to 12:30 and that his intent in placing the order was to manipulate the coffee futures price so that the CORP would close above $1,750 and the put options would expire out of the money ('OTM'). Kerr then executed the order and the price of coffee futures rose to $1,757 at 12:30 and the CORP was set at $1,752.

Case study LIBOR – attempting to influence submissions	Reference FSA, 2013, in the matter of RBS	Asset class Rates and Credit

In 2013, the FSA took action against RBS for its significant failings in relation to LIBOR which occurred between October 2006 and November 2010. The FSA found that to benefit its derivatives trading books, RBS sought to manipulate LIBOR in connection with its own submission of rates forming part of the calculation of Japanese Yen ('JPY') and Swiss franc ('CHF') LIBOR. It did this by taking into account the trading positions of its interest rate derivatives traders when making its JYP and CHF LIBOR submissions. It also found that RBS colluded with other banks who submitted LIBOR to the British Bankers' Association and firms employing interdealer brokers in relation to JPY and CHF LIBOR submissions. RBS, through its primary submitters, also inappropriately considered the impact of LIBOR and RBS's LIBOR submissions on the profitability of transactions in its money market trading books as a factor when making (or directing others to make) JPY, CHF and USD LIBOR submissions. This misconduct undermined the integrity of LIBOR.

Reference price influence continued

Case study	Reference	Asset class
Athena Capital Research – use of an algorithm to mark the close	SEC, 2014, in the matter of Athena Capital Research	Commodities

Athena was a high-frequency trading firm that, according to the SEC, developed a complex computer program to carry out a manipulative scheme that consisted of marking the close price of publicly traded securities. Athena allegedly developed a series of algorithms called "Gravy", which assisted Athena in making large purchases or sales of stocks in the first few seconds before market close in order to drive closing prices slightly higher or lower. Athena's trading focused on trading in order imbalances in securities at the close of the trading day. Imbalances occurred when there were more orders to buy shares than to sell shares (or vice versa) at the close for any given stock. Every day at the close of trading, NASDAQ ran a closing auction to fill all on-close orders at the best price, one that is not too distant from the price of the stock just before the close. Athena placed orders to fill imbalances in securities at the close of trading, and then traded or "accumulated" shares on the continuous market on the opposite side of its order with the goal of holding no positions by the close. According to the SEC, Athena used these strategies to help generate profits, and, with help from its Gravy algorithms, refined a method to manipulate the process used to set closing prices.

Case study	Reference	Asset class
IBOR – attempting to influence submissions (DB)	FCA, 2015, in the matter of Deutsche Bank AG	Rates and Credit

The FCA took action against Deutsche Bank for its attempted manipulation of IBOR rates and improper influence over IBOR submissions. Over at least five years from January 2005, the money market derivatives and pool trading desks routinely manipulated DB's IBOR submissions and improperly influenced other panel bank's IBOR submissions to profit. This involved collusion with a number of parties and trading activity to maximise the potential impact of misconduct on the IBOR rates, with managers acting centrally in this misconduct. In relation to its manipulation of EURIBOR, DB used a three-pronged approach to maximise its impact on the rate. This involved certain traders (i) influencing DB's submitters to alter DB's EURIBOR submission; (ii) contacting other panel banks and requesting that they put in different EURIBOR submissions; and (iii) occasionally offering or bidding cash in the market to create the impression of an increased or reduced supply to influence other Panel Banks to alter their EURIBOR submissions.

Manipulation of transaction-based fixes

Buying or selling a high volume of securities and/or derivatives contracts during, or in the lead up to, the market close, reference period or index with the intent of improperly influencing such benchmark.

N/A	**Case study** HSI futures – manipulating opening price	**Reference** SFC, 2019, in the matter of Tsoi Wan	**Asset class** Equities

The SFC found that a futures trader, Tsoi Wan, manipulated the calculated opening price (calculated during the pre-market opening period to serve as the market opening price for the corresponding product) of Hang Seng Index futures contracts. Wan did this by placing several orders on various dates during the morning of the pre-market opening period, making a profit of $70,800 from these manipulative trades.

	Case study Listed investment fund – manipulating closing prices	**Reference** AFM, in the matter of Mr Hoogeveen	**Asset class** Equities

Mr Hoogeveen held a securities account with a bank. The value of his investment portfolio was used as collateral for a loan provided by the same bank. The share portfolio of the investor predominantly consisted of one type of shares. The bank determined the value of the share portfolio each day based on the closing prices of the shares, following which Mr Hoogeveen was granted 70% of the determined value as a loan. If the value of the share portfolio dropped, Mr Hoogeveen would have to repay (part of) his loan. If the value of the share portfolio increased, he was able to borrow more.

In the period from 1 August 2011 to 21 September 2011, Mr Hoogeveen managed to realise a higher share price by means of a specific manner of placing his orders. With respect to this particular share, it was possible to trade through and auction in the morning and during the afternoon. Mr Hoogeveen regularly placed his purchase orders immediately before the closing of the market, and each time in such a way that the demand exceeded supply at a lower price level with a limited number of shares. This meant that the entire order, and consequently the price at auction, was carried out a higher price level. The conduct resulted in Mr Hoogeveen on average being able to realise a price increase of 9.9% per transaction.

The AFM found that the transactions of Mr Hoogeveen were exclusively intended to raise the price of the share.

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Portfolio price manipulation/window dressing

Manipulating the prices of securities held in a portfolio to enhance portfolio performance prior to a reporting period.

N/A	Case study Fund invested securities – manipulating price to overinflate funds' performance	Reference SEC, 2008, in the matter of Lauer	Asset class Equities

The SEC alleged that Lauer, a founder of Lancer Management Group and Lancer Management Group II, conducted a hedge fund fraud scheme that resulted in the loss of hundreds of millions of dollars in investors' funds. Lauer overstated his hedge funds' valuations for the years 1999-2002, manipulated the prices of seven securities that were a material portion of the funds' portfolios from November 1999 to April 2003, misled investors about the hedge fund's actual holdings by providing them with fake portfolios and falsely represented the hedge funds' holdings in newsletters.

Lauer directed the day-to-day operations of five hedge funds. The investment strategies for the two largest funds, Offshore and Partners, were concentrated on investments in small and mid-cap companies that were "investment community pariahs." In a 1997 *Business Week* article, Lauer was quoted as stating that the funds' secret was seeking out "fallen angels" (companies in which Wall Street firms have little or no interest).

The funds relied on a few highly valued small cap issuers which were a substantial portion of their portfolios. The majority of the stocks in which the funds were invested were thinly traded on the OTC Bulletin Board and pink sheets. Most had virtually no operations or earnings but were assigned values in the hundreds of millions of dollars.

Lauer manipulated the price of certain securities in which the funds were invested. The manipulative trading practices consisted of purchasing blocks of certain thinly traded stocks, generally at increasing prices, at or near the close of the last trading day of the month. The purchases were made to raise the closing market price of certain stocks in the funds' portfolios. The ultimate objective of the scheme was to overinflate the funds' performances and Net Asset Values.

Reference price influence continued

Case study	Reference	Asset class
N/A	High Country Bancorp – increasing closing price affecting valuation of client accounts	SEC, 2011, in the matter of Donald L. Koch and Koch Asset Management	Equities

Between September and December 2009, Koch engaged in marking-the-close transactions in two securities to artificially increase the reported closing price of those securities. The closing prices affected the valuation of all of Koch's advisory clients' accounts that held the securities at the end of those quarters.

For example, Koch held positions in High Country Bancorp (HCBC). In December 2009, when the stock had a bid-ask quote of $14.05 to $16.70, Koch instructed his broker to "Please put on your calendar to buy HCBC 30 minutes to an hour before the close of the market for the year. I would like to get a closing price in the 20 – 25 range, but certainly above 20". The broker bought 3,200 shares with the final trade two minutes before the close at $19.50 (the closing price). The SEC found that Koch's motive for this trading activity was to affect the closing price of the security.

Case study	Reference	Asset class
Window Dressing – Broker Intermediation	FCA, 2011, Fagbulu and Visser	Equities

Fagbulu and Visser were fund managers. They purchased small tranches of shares in two illiquid issuers at significant premiums above opening prices from a market maker. They also made additional purchases through a broker. The share prices increased accordingly, enhancing the gross performance of the fund by +5.2% for May 2007. Without the purchases, the performance would have been +0.3% for the month. The purchases also led to breaches of mandate limits on the size of holdings in off exchange traded securities.

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Triggering or protecting barriers

Engaging in market activity to trigger or avoid the triggering of barriers that act as reference levels for associated derivative contracts with a view to benefitting the derivative or other positions of the firm.

N/A	**Case study** FTSE and S&P – manipulating an index to avoid option exercise	**Reference** FSA, 2002, in the matter of Fleurose	**Asset class** Equities

Fleurose undertook index manipulation to avoid an option exercise which would have led to payment under a binary option. Under the option, a payment would be made to the counterparty if both the FTSE 100 Index and the S&P 500 Index were higher at the end of the month than at the beginning.

On 28 November 1997 the S&P Index was significantly higher than it had been at its November opening, but by the end of the last trading day of that month, the FTSE 100 was closer to the option strike level of 4842.3. At 4.10 p.m. the FTSE 100 stood at 4856.56 points, and at 4.29 p.m., 4869.856. The FTSE 100 closes at 4.30 p.m. and, during the last six seconds of trading, the Index dropped by 38.08 points to below the strike level of the option. The binary option was out of the money and the payment was avoided. The reason for the sudden fall in the FTSE 100 Index just before close of business was due to sales by Fleurose in the cash market during the last ten minutes of trading prior to the close.

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N/A	Case study	Reference	Asset class
	Gold fixing – intending to increase the likelihood of price fixing below barrier to avoid payout	FCA, 2014, in the matter of Barclays and Plunkett	Commodities

Plunkett was a Director on the Precious Metals Desk at Barclays and was responsible for pricing products linked to the price of precious metals and managing Barclays' risk exposure to those products, and pricing and managing Barclays' risk on a digital exotic options contract (the "Digital") that referenced the price of gold during the 3:00 p.m. Gold Fixing on 28 June 2012. If the price fixed above US$1,558.96 (the "Barrier") during the 3:00 p.m. Gold Fixing on 28 June 2012, then Barclays would be required to make a payment to its customer. But if the price fixed below the Barrier, Barclays would not have to make that payment.

During the 3:00 p.m. Gold Fixing on 28 June 2012, Plunkett placed certain orders with the intent of increasing the likelihood that the price of gold would fix below the Barrier, which it eventually did. As a result, Barclays was not obligated to make the US$3.9m payment to its customer, and Plunkett's book profited by US$1.75m (excluding hedging), which was in addition to an initial profit that his book had received upon the sale of the Digital.

Very shortly after the conclusion of the 3:00 p.m. Gold Fixing on 28 June 2012, the customer became aware that the price had fixed just below the Barrier and sought an explanation from Barclays as to what happened in the Gold Fixing. When Barclays relayed the customer's concerns to Plunkett on 28 and 29 June 2012, he failed to disclose that he had placed orders and traded during the Gold Fixing. Plunkett also misled both Barclays and the FCA by providing an account of events that was untruthful.

5 Improper order handling

In this section:

- Disclosure of client order information
- Front running
- Cherry picking
- Triggering or protecting stop losses and limits

5 Improper order handling

Improper order handling covers exploiting knowledge of client order information to advantage the house account and/or to the detriment of the client.

Consistent with other types of abuse, we have seen the same behavioural patterns recur time and time again. It is said that the practice of front r1nning first appeared on the Chicago Board Options Exchange with the SEC identifying the practice in 1977[31]. However, the origin of rules on front-running can be traced all the way back to the 1800s.

Below we discuss four types of improper order handling (disclosure of client order information, front running, cherry picking and triggering or protecting stop losses and limits), illustrated with real-life examples.

Disclosure of client order information

The improper disclosure of client order or other confidential information, typically providing the recipient with an information advantage over the market at large.

Case study	Reference	Asset class
Gold futures – disclosing confidential trading activity	CFTC, 1998, in the matter of Kelly and Rhee	Commodities

Kelly, a commodities trader for John W. Henry & Company, disclosed information as to his employer's confidential trading activity and strategy in gold futures to Rhee, who owned his own trading company. Rhee then traded on this confidential information generating personal profits.

Case study	Reference	Asset class
Equity transactions – tipping off to front run	FCA, 2012, in the matter of Sidhu	Equities

Between 15 May 2009 and 22 August 2009, Sidhu was jointly involved with Ahmad, a hedge fund trader and risk manager with AKO Capital LLP ("AKO"). In his role as a trader at AKO, Ahmad knew about forthcoming equity transactions by AKO. Ahmad would tip off Rupinder Sidhu as to what shares AKO would buy and sell on a particular day. Ahmad would "hold back" on making trades enabling Sidhu to place spread bets to front run AKO's orders.

Front running

Entering into a transaction in advance of a known pending order with the intention of taking advantage of the anticipated impact of the pending order on the market.

Case study	Reference	Asset class
Placing silver futures contracts orders resulting in artificially high levels	US Court of Appeals for the Seventh Circuit, 1985 in the matter of Dial	Commodities

Donald D. Dial was an experienced silver trader and a manager at Clayton Brokerage Company. Dial, with the assistance of Salmon, the president of Clayton Brokerage, used a personal trading account at Clayton to buy silver futures contracts without putting up any cash or cash-equivalent margin. At the same time, Clayton sought a large foreign investor, International Monetary Corporation ('IMC'), to take delivery on a large number of silver future contracts in order to cause silver prices to rise. Dial, with the knowledge that the IMC account would be available for a large purchase, advised other customers to purchase silver future contracts. While holding many customer orders and aware that later large purchases for the IMC account would cause the silver futures prices to rise sharply, Dial allegedly entered purchase orders first on behalf of accounts in which he and Salmon had a financial interest. Dial then entered or caused to be entered orders on behalf of other customers before entering large orders for the IMC account. These IMC orders, totalling 6,000 contracts, caused the prices of all Chicago Board of Trade silver futures to rise to artificially high levels.

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Case study	Reference	Asset class
Dark pool – configuring subscribers' orders to benefit trading desk	SEC, 2015, in the matter of ITG Inc / AlterNet Securities	Equities

The SEC alleged that ITG Inc. operated an alternative trading system, commonly referred to as a dark pool, known as POSIT. AlterNet, an affiliate of ITG, provided trading algorithms and smart order routers that sent orders to various market centres including POSIT.

According to the SEC, between April and July 2011, ITG operated a proprietary trading desk known as "Project Omega". Project Omega accessed live feeds of ITG customer and POSIT subscriber order and execution information and traded algorithmically based on that confidential information in both POSIT and other market centres. The SEC claimed that as part of one of its trading strategies, Project Omega identified and traded with sell-side POSIT subscribers and ensured that those subscribers' orders were configured in POSIT to trade "aggressively" so as to benefit Project Omega.

Case study	Reference	Asset class
FSIS orders – placing orders using personal account ahead of FSIS	MAS, 2019, in the matter of Leong Chee Wai, E Seck Peng Simon and Toh Chew Leong	Equities

Starting from March 2007, Leong and E colluded to profit from the price-sensitive confidential information that Leong received on intended orders by FSIS. Under this arrangement, Leong informed E about FSIS' intended orders and E used his personal trading account to place orders in the same counters, ahead of FSIS' orders, thus front-running FSIS' orders. As FSIS' orders typically involved large quantities of shares, the orders had significant price impact on the market. When FSIS' orders generated favourable price movements, E unwound his position by trading in the opposite direction of FSIS' orders. This led to insider trading profits which were split equally between Leong and E.

Cherry picking

Executing a client order and withholding the allocation to the client pending assessment as to whether the execution is a winning or losing trade. If the market moves adversely, the trade is allocated to the client. If the market moves positively, the trade is taken by the actor.

Case study Cherry Picking – Firm Accounts	**Reference** CFTC, 1998/1999, Steven G. Soule, Kyler F. Lunman II and Hold-Trade, Inc.	**Asset class** Commodities

From September 1993 to December 1994, the actors engaged in a scheme in which they defrauded Coastal Corporation by misappropriating energy futures trades made on behalf of Coastal and allocating them to accounts they controlled. Soule, as the Coastal employee responsible for entering its energy futures orders to the floor of the NYMEX, allocated profitable Coastal trades to futures trading accounts owned or controlled by Lunman and Hold-Trade, Inc. who, along with Rossi, distributed the profits among the members of the scheme. Soule and Thomas F. Demarco, a telephone clerk on the NYMEX, ensured the successful completion of the wrongful allocations by creating false floor order tickets and entering into additional transactions to replace those that were misappropriated

Case study Fixed income funds – creating conflicts of interest in incentive structure	**Reference** FCA, 2014, in the matter of Aviva	**Asset class** Rates and Credit

Aviva Investors employed a side-by-side management strategy on certain desks within its fixed income business whereby funds that paid differing levels of performance fees were managed on a side-by-side basis, i.e. by the same desk. A proportion of these performance fees were paid to traders on Aviva Investors fixed income business who managed the funds on this basis.

This incentive structure created conflicts of interest as these traders had an incentive to favour one fund over another. This risk was more acute on desks where funds traded in the same instruments. Traders could delay recording the allocation of executed trades. By delaying the allocation of trades, traders who managed funds on a side-by-side basis could assess a trade's performance during the course of the day and when it was recorded allocate trades that benefitted from favourable intraday price movements to one fund and trades that did not to other funds.

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Case study	Reference	Asset class
Case study Cherry Picking – Client to PA Accounts	**Reference** SEC, 2015, Mark P. Welhouse and Welhouse & Associates Inc	**Asset class** Equities

Welhouse & Associates Inc. and its sole owner, Mark. P. Welhouse, allegedly engaged in fraudulent trade allocation, or "cherry picking", by unfairly allocating options trades amongst various accounts. The actors allegedly inappropriately allocated options trades that had appreciated in value during the course of the trading day to the owner's personal and business accounts while allocating trades that depreciated in value to client accounts. According to the SEC, Welhouse was able to unfairly allocate the trades by purchasing options in an omnibus or master account for Welhouse & Associates Inc. and delaying allocation of the purchases until later in the day, after he saw whether or not the securities appreciated in value.

Case study	Reference	Asset class
Case study Stocks allocation – favouring own account over clients'	**Reference** US, 2017, in the matter of Strategic Capital Management, LLC, et al	**Asset class** Equities

The SEC charged Breton, a principal at Strategic Capital Management, LLC ("SCM"), with allocating poorer performing stocks into his clients' accounts and keeping higher-performing stocks in his account. Specifically, the SEC alleged Breton bought and sold securities on behalf of his clients and would then wait to see if the stock price went up or down to the detriment of his clients. The SEC alleged that Breton and SCM violated their fiduciary duties because they "routinely favored" the Breton accounts over client accounts by "cherry picking trades." The SEC pointed out that Breton and SCM defrauded at least 30 of SCM's clients by "cherry picking" more than 200 profitable trades for the Breton accounts and allocating more than 200 unprofitable trades to the client accounts, making more than $1.3 million in profits from the trades that he fraudulently did not allocate to the client accounts.

Triggering or protecting stop losses and limits

Engaging in market activity with the intent of triggering or protecting stop loss or other limit orders, which commonly act as support or resistance points in the market, for the benefit of the firm and potentially to the detriment of clients or other market participants.

N/A	**Case study** G10 Spot FX trading – attempting to trigger client stop loss orders	**Reference** FCA, 2014, in the matter of five banks	**Asset class** Spot FX

The FCA took action against five banks, stating they had ineffective controls which the FCA characterised as allowing G10 spot FX traders to put the banks' interests ahead of the interests of their clients, other market participants and the wider UK financial system. The regulators stated that traders at the different banks had formed relationships and used chatrooms to share information about client activity. The FCA further stated that amongst other inappropriate uses of client information, the traders would attempt to trigger client stop loss orders, describing that traders would disclose information concerning details of the size, direction and level of client stop loss orders, then trade with a view to manipulating the spot FX rate to trigger stop loss orders, with the banks potentially benefitting if they sold the particular currency to their clients pursuant to the stop loss orders at a higher rate than it had bought that currency in the market.

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Misleading customers and/or markets

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- Disseminating inaccurate or false trading information to clients or the market

6   Misleading customers and/or markets

Misleading customers and/or markets involves providing information to customers and/or markets that is false or creates a misleading impression.

There is an early example of this conduct in a case from 1814, in which a conspiracy was formulated between Charles de Berenger, Sir Thomas Cochrane, and six others to profit from the publication of false information. Having accumulated a large position in UK gilts, de Berenger appeared in the port of Dover in Kent, disguised as a Bourbon officer and reported that Napoleon Bonaparte of France had been killed. Requesting this information to be relayed on to the Admiralty in London by semaphore telegraph, the co-conspirators paraded across London Bridge in a horse-drawn carriage proclaiming victory. The price of UK gilts soared on the news, and the conspirators sold theirs at a profit. More than 200 years on, we are still seeing conduct issues in relation to gilts, with traders misusing the quantitative easing policy introduced following the global financial crisis in an attempt to increase profits (see the Stevenson case study above under corners and squeezes). Similarly, we have seen traders' misconduct in relation to bond trades lead to profiting off public bailout funds (see Royal Bank of Scotland case below).

Below we discuss this misconduct in the form of disseminating inaccurate or false trading information to clients or the market, illustrated with real-life examples.

Disseminating inaccurate or false trading information to clients or the market

Communicating information to clients or other market participants in relation to bids, offers or transactions that are not supported by, or derived from, actual orders or instructions or where no such trades have taken place.

Case study Dissemination of inaccurate information regarding solvency ratio	Reference AMF & Paris Appeal Court, 2013-2015, in the matter of Chevallier	Asset class Equities

An economist and former financial analysis university professor published an article on his blog asserting that French bank Société Générale's solvency ratio was 2% as of 30 June 2011, while the official figure published by the bank was 9.3%. The information was then relayed by an American investment advisor.

The Enforcement Committee applied Article 632-1 of the AMF's General Regulation to the two bloggers, which states that "any person must refrain from knowingly communicating or disseminating information, whatever the medium used, that gives inaccurate, imprecise or misleading information about financial instruments, including by spreading rumors (…) when that person knew or ought to have known that the information was inaccurate or misleading".

Case study Misrepresentations to induce payment of inflated prices and acceptance of deflated prices	Reference US, 2015, in the matter of Royal Bank of Scotland	Asset class Rates and Credit

In 2015, the US Attorney's Office for the District of Connecticut announced that Siegel, a former supervisor at RBS, had admitted that he and others conspired to increase RBS's profits on bond trades relating to collateralised loan obligations and residential mortgage-backed securities. They did this by making misrepresentations to (i) induce buying customers to pay inflated prices and (ii) selling customers to accept deflated prices for bonds. In relation to certain transactions, Siegel and his co-conspirators would misrepresent the seller's asking price to the buyer (or vice versa), keeping the difference between the price paid by the buyer and the price paid to the seller for RBS. For other transactions, Siegel and the co-conspirators would misrepresent to the buyer that bonds held by RBS were being sold by a fictitious third-party seller, allowing RBS to charge the buyer an extra, unearned commission. These fraudulent transactions by Siegel cost at least 35 customers, including firms affiliated with recipients of federal bailout funds through the Troubled Asset Relief Program, millions of dollars.

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Case study	Reference	Asset class
Volbroker electronic trading platform – communicating fake orders and trades	FCA/CFTC, 2020, in the matter of TFS-ICAP	FX

The CFTC and the FCA took action against TFS-ICAP alleging that between 2008 to 2015, its brokers had routinely communicated fake bids and offers and fake trades in the FX options market to their clients, seeking to encourage the clients to trade when they might not otherwise have done to generate business for TFS-ICAP. The FCA has described this practice of brokers communicating misleading information as "printing", namely when a broker communicates to clients that a trade has been executed at a specific price or volume when that trade has in fact not taken place. TFS-ICAP engaged in their scheme through telephone, instant messages, and on Volbroker, their proprietary electronic trading platform. Brokers were able to populate the Volbroker trading screen with bids and offers that were not real but appeared to clients as tradable prices. Through this scheme, brokers were able to match these fake bids and offers with each other which caused the Volbroker screen to flash, giving clients the false impression that a trade had occurred.

Case study	Reference	Asset class
Misleading investors as to the profitability of cryptoasset investment	US, 2021, in the matter of Arcaro	Cryptoassets

In 2021, Glenn Arcaro pled guilty to charges that in 2017 and 2018 he had conspired to mislead investors about BitConnect, a cryptoasset investment that was marketed as being able to generate substantial profits and guaranteed returns by using investors' money to trade on the volatility of cryptoasset exchange markets. According to the plea agreement, to induce investors, Arcaro and others had posted falsified returns on the BitConnect Website that amounted to a 3,700% return on an annual basis. Arcaro and his co-conspirators at BitConnect had operated a "Ponzi scheme" by paying earlier BitConnect investors with money obtained from later investors. It was estimated that investors were defrauded of over 325,000 Bitcoin, or approximately $2 billion.

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End notes

1. In particular, some clusters have been removed: new issue support and takeovers has been removed given the narrow application to securities, and soundings and research have been removed as separate categories. Several clusters have been merged due to an overlap in behaviours: wash and matched trades are now one category, as are window dressing and price manipulation, disclosure of client order information is now included in the 'improper order handling' category, and benchmarks, closing and reference prices have been consolidated under the 'reference price influence' category.

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30. Inside information is information that has not been made public but which, if it was made public, would likely have a significant effect on the market price of financial instruments or on the investment or voting decisions of a stockholder or investor. We note the term 'material non-public information' is used in the US.

31. 'Front-Running – Insider Trading Under the Commodity Exchange Act', Jerry W Markham, Florida International University College of Law, 1988