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„Patterns of Dark Pool Regulation: A Comparative Analysis of US, Canadian and EU Approaches“

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CONTENTS

CHAPTER 1: INTRODUCTION, METHODOLOGY, AND THE THEORETICAL FRAMEWORK

1.1 Introduction

Dark pools are private, non-exchange trading venues where institutional investors can trade large blocks of financial instruments away from the public eye. Unlike traditional stock exchanges, dark pools do not publicly display orders in a central order book until after the trade has been executed. These platforms are called "dark" because of their lack of transparency compared to "lit" markets, where buy and sell orders are visible to all participants. In a dark pool, the identities of trading parties and the details of orders are hidden until after a trade is executed.[1] The goal is to minimize market impact and reduce the risk of price movements that might occur if large orders were revealed to the broader market. When both parties remain anonymous and the publication of the transaction is postponed until after completion, the price remains more stable with the result of both parties enjoying an overall better price.[2] Although dark pools come in many different forms, varying in structure, ownership, and internal rules, the characteristics of anonymity and private ownership are universal to them all, making them attractive especially to institutional investors looking for a way to complete their transactions with reduced market impact.

The concept of dark pools dates back to the 1980s, when the first electronic trading platforms emerged in the United States as competition for traditional exchanges. As electronic trading became more widespread in the 1990s and early 2000s, the infrastructural possibilities for dark pools improved, enabling the rise of alternative trading systems (ATSs).[3] These systems allowed large institutional traders to transact without moving the market significantly. However, dark trading also provoked considerable debate as it raises issues of transparency, investor protection, fairness, and market quality. Critics argue that the lack of pre-trade transparency and the high exclusivity of most dark pools contribute significantly to market fragmentation or even encourage predatory trading.[4] Although there is a worldwide trend of tightening financial regulation since the Global Financial Crisis of 2007-2009, dark pools outside of Europe remain

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[1] Monica Petrescu and Michael Wedow, *Dark Pools in European Equity Markets: Emergence, Competition and Implications* (ECB Occasional Paper No 193, 11 July 2017) https://ssrn.com/abstract=3008485 4, accessed 8 June 2025

[2] Brian P Baxter, 'The Securities Black Market: Dark Pool Trading and the Need for a More Expansive Regulation ATS-N' (2017) 70(1) *Vanderbilt Law Review* 311, 312

[3] Walter Mattli, 'Introduction and Overview: A New Capital Market Reality' in Walter Mattli (ed), *Global Algorithmic Capital Markets: High Frequency Trading, Dark Pools, and Regulatory Challenges* (Oxford University Press 2018; online edn, Oxford Academic, 24 January 2019) https://doi-org.uaccess.univie.ac.at/10.1093/oso/9780198829461.003.0001 2, accessed 13 July 2025

[4] Baxter (n 2) at 322

largely unregulated (in comparison to “lit exchanges”).[5] Off-exchange trading, which includes dark trades, estimated to take up 37% of the American securities market in 2014, exceeded 50% for the first time in 2025, indicating that non-standard trading solutions are gaining popularity.[6]

Technological advances and increased use of algorithmic trading have also changed the dynamics of dark pools. Some now offer "dark liquidity aggregators" that search across multiple dark pools for the best matches.[7] Meanwhile, the line between dark and lit trading continues to blur with innovations like “lit liquidity seeking” and “conditional orders”, which are features that combine the benefits of dark pool anonymity with some of the responsiveness of lit markets. Information linkages between lit and dark markets increasingly complicates matters as the two types of venues interact.[8] In an environment of fast-paced technological change, dark pools offer a range of benefits to both institutional and retail investors.[9] The benefits include alleged protection from technology-based threats such as the detrimental effects of high frequency trading (HFT).[10]

Despite their non-transparent nature and close interaction with controversial activities like HFT, dark pools remain less regulated than other venues, posing an ongoing challenge for regulators. When a practice is so important that it takes up a considerable proportion of the market, it should be well-understood in order for policy-makers and regulators to be able to respond to it in a way that is neither under- or over-regulatory. Despite their benefits, the nature of dark pool operations raise issues of transparency, fairness, and market quality. Opponents of dark trading name lack of transparency as a key issue, leading in turn to concerns over decreased efficiency and liquidity, as well as problems with price discovery and conflicts of interest facilitated by transaction opacity.[11]

Dark pools represent a critical yet controversial component of modern financial markets. By offering a means to quietly execute large trades, they serve a valuable role for institutional investors seeking to minimize market impact and protect trading strategies. Their mere popularity indicates that they represent a value to market participants. If they are valuable, their

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[5] Christopher Mercurio, ‘Dark Pool Regulation’ [2014] 33 *Rev Bank & Fin L* 69, 69–70
[6] Scott Patterson, ‘SEC Chairman Targets Dark Pools, High-Speed Trading’ *Wall Street Journal* (New York, 6 June 2014) C1; Lu Wang and Isabelle Lee, ‘Wall Street Enters Darker Age With Most Stock Trading Now Hidden’ (Bloomberg, 24 January 2025) https://www.bloomberg.com/news/articles/2025-01-24/wall-street-enters-darker-age-with-most-stock-trading-now-hidden accessed 27 May 2025
[7] Serhan Altunata, Dmitry Rakhlin and Henri Waelbroeck, ‘Adverse Selection vs Opportunistic Savings in Dark Aggregators’ (2010) 5(1) *The Journal of Trading* 16, 1
[8] Mahendrarajah Nimalendran and Sugata Ray, ‘Informational Linkages between Dark and Lit Trading Venues’ (2014) 17 *Journal of Financial Markets* 230–261
[9] Baxter (n 2) 313
[10] ibid 312
[11] Mercurio (n 5) 70

precise value should be evaluated and confronted with the potential risks that their structure may pose. While market regulation is potentially a useful tool for increasing public confidence in the financial system and, if carried out properly, can protect market participants, the appeal of dark pools lies in their lack of regulation. In the event of a clamp down on dark pools, the result can prove more detrimental to market health than their continued operation on present terms.[12] However, the lack of transparency, potential for misuse, and fragmented structure of most dark trade venues have drawn scrutiny from regulators, traders, and academics alike. As technology evolves and regulatory frameworks adapt, new solution and approaches are necessary to ensure that dark pools continue to exist, but with greater fairness and transparency maintained. For anyone involved in the financial markets, understanding dark pools is essential to grasping the full picture of how securities are traded today. In the context of the increasing reliance on technology through the proliferation on algorithmic trading, the regulatory structure must remain equally flexible to match the dynamic nature of the regulated activity.

Financial economists have analyzed the impact of dark trading on market quality using various parameters, with most finding that the practice generally has either a neutral or a positive effect on market health.[13] A preliminary review of the relevant literature indicates that, in short, the anonymity offered by dark pools facilitates trading for large investors, while small investors benefit from the additional generated liquidity and both groups enjoy better prices.[14] The issue of dark pool regulation thus appears as a trade-off between policy values (mainly transparency) and economic considerations, leading to a crucial question of proportionality. Given the lack of empirical evidence for the detrimental role of dark pools, pressures for their increased regulation appear disproportionately restrictive.[15] This thesis will aim to explore the differences between the approaches to dark pool regulation of different jurisdictions, seeking to identify which solutions work best and why.

Dark pool regulation across the world has evolved over time. Initially dark venues fell under the general provisions regulating financial markets in every jurisdiction, but over time every jurisdiction developed a slightly different approach to their regulation. Some, like the US, follow a more relaxed approach, with dark pools being subject to minimal restrictions,

[12] Thomas Johann, Talis Putnins, Satchit Sagade and Christian Westheide, *Quasi-Dark Trading: The Effects of Banning Dark Pools in a World of Many Alternatives* (SAFE Working Paper No 253, Goethe University Frankfurt 2019) https://doi.org/10.2139/ssrn.3365994 accessed 31 July 2025, 27-28
[13] See, for example, Haoxiang Zhu, 'Do Dark Pools Harm Price Discovery?' (2014) 27(3) *Rev Fin Stud* 747
[14] See, for example, Gbenga Ibikunle, Youwei Li, Davide Mare and Yuxin Sun, 'Dark Matters: The Effects of Dark Trading Restrictions on Liquidity and Informational Efficiency' (2021) 75 *J Intl Fin Mkts Inst Money* 101435; Christian Neumeier, Arie Gozluklu, Peter Hoffmann, Peter O'Neill and Felix Suntheim, 'Banning Dark Pools: Venue Selection and Investor Trading Costs' (2023) 65 *J Fin Mkts* 100831
[15] Johann (n 12) at 27-28

consisting mainly of transparency requirements. Others, like the EU, chose a restrictive approach of imposing demanding requirements and limitations. In between the two extremes is a spectrum of different choices and solutions relying on different regulatory methods. More than just being varied, the provisions are also never static, with jurisdictions continually reviewing or updating their regulatory systems, in line with changes in market structure and public policy priorities. It is an indication of the dynamic nature of the regulated activity and of the fact that there is no clear golden solution available. Rather, jurisdictions appear to test different solutions in search of the optimal one.

1.2 Methodology

This project will evaluate the relevant EU, US, and Canadian provisions through a comparative doctrinal analysis. The regulation of dark trading in the EU will be compared with the equivalent laws in place in the US and Canada. The choice of the US and Canada as comparisons for the EU is based on the representation by these jurisdictions of three different regulatory approaches to dark trading. The EU and the US are respectively the least and most liberal jurisdictions, while Canada represents a "middle road" approach. The comparison will entail a three-part analysis.

First, a black letter assessment of the relevant provisions in place in the three jurisdictions will be used to deconstruct the embedded policy objectives and priorities (Chapters 2 and 3). Isolating the precise aims of the relevant provisions will, in turn, allow a confrontation of the regulations with the risks of the regulated activity (as revealed by a comprehensive literature review from the discipline of financial economics) in order to identify potential discrepancies. A thorough review of the relevant laws in the EU, US, and Canada will provide an understanding of the priorities set by every jurisdiction and the identify the specific regulatory approaches adopted by regulators.

Secondly, a review of relevant cases, scrutiny actions, and investigations carried out in the three jurisdictions will be added to provide context and analyze the interpretation and application of the relevant provisions to dark pool-related issues in terms of their proportionality (Chapter 4).[16] A look at the provisions "in action" will be a crucial element of the analysis, as it will help locate the risk areas related to algorithmic trading, indicating where regulatory intervention is most necessary, where self-regulation may be sufficient, and where expectations of risk may have been exaggerated.

[16] See for example *In the Matter of Pipeline Trading Systems LLC*, Exchange Act Release No 65529, 24 October 2011; *People v Barclays Capital Inc* (Sup Ct NY County 2014)

Finally, Chapter 5 will focus on the application of a specific theoretical framework to the dark pool regulation patterns observable across the US, Canada, and the EU. The writings of F. A. Hayek and Richard Posner, due to their focus on the interaction between law and economics, serve well as a lens for the analysis of the practical impact that different levels of regulation may have on the economic contribution of dark trading. By attempting to combine the perspectives of Hayek and Posner, this work hopes to generate a multidimensional and pragmatic interpretation of the existing regulation trends and produce a recommendation for future research and policy design.

1.3 Theoretical Framework

At its foundation, this work is inspired by the writings of F. A. Hayek. At the core of Hayek's thought is the idea that: "[t]he economic problem of society is not merely a problem of allocating 'resources'… It is a problem of the utilization of knowledge which is not given to anyone in its totality."[17] Dark pools, by design, reflect fragmented and privately held information: traders conceal intentions to minimize market impact. Hayek's insight suggests that price formation is an emergent product of millions of private decisions. Excessive transparency mandates (for example, forcing all trades onto lit venues) might suppress this discovery process.

In works like *Law, Legislation and Liberty* (1973–79), Hayek distinguishes between spontaneous order (organic, evolved systems like common law or free markets) and constructivist rationalism (top-down social planning).[18] According to this categorization, dark pools and other ATSs can be seen as evolutionary responses to market needs. Regulatory attempts to eliminate or heavily constrain dark pools (such as through volume caps or minimum order sizes) might reflect constructivist overreach, risking unintended distortions in market behavior. Hayek warns that centralized authorities, even with good intentions, lack access to the dispersed, tacit knowledge embedded in individual market actors' decisions. This thesis examines the regulation of dark pools in the EU, US, and Canada through the theoretical lenses provided by F. A. Hayek, arguing that divergent approaches to transparency and market fragmentation reflect deeper philosophical tensions between spontaneous order and centralized control. By applying Hayek's theory of knowledge, institutional evolution, and legal order, the thesis evaluates whether regulatory interventions enhance or undermine the discovery function of financial markets.

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[17] FA Hayek, 'The Use of Knowledge in Society' (1945) 35(4) *American Economic Review* 519, 520
[18] FA Hayek, *Law, Legislation and Liberty: Volume I* (Routledge 1998) 5-34

Richard Posner's approach, grounded in law and economics, is chosen as a complement to Hayek's theory as it offers a pragmatic, outcome-oriented method for evaluating legal rules, especially in complex and technical domains like financial regulation. While Hayek emphasizes the epistemic limitations of centralized planning and the value of evolved, abstract norms, Posner provides analytical tools to assess whether legal institutions promote efficiency (defined as the maximization of social wealth).[19] This focus allows for a more concrete evaluation of regulatory outcomes, viewing dark pool rules purely through an economic lens. Posner's framework also supports empirical inquiry and cost-benefit analysis, making it especially valuable when dealing with rules that must adapt to evolving technologies and trading practices. Taken together, Hayek's normative concerns with legal structure and Posner's instrumental focus on functional performance create a theoretical approach through which the regulation of dark pools can be evaluated.

At a practical level, the project will undertake a functionalist approach acknowledging that the EU, US, and Canada are seeking different legal solutions to the same problem—the oversight of dark trading in the interest of transparency, stability, and fairness. Functionalism allows comparisons of regulatory responses to the same risks, which is useful in fields like financial law, where legal innovation often lags behind technological change. It also aligns well with empirical research, testing whether different rules achieve the same functional outcome.[20] Finally, the project will contextualize the respective regulatory frameworks within their broader institutional and political environments, recognizing that differences in national legal cultures, market structures, and historical experiences with financial crises may account for regulatory divergences.

In addition to building on the foundational works of Hayek, this research project will rely on the extensive literature discussing the relationship between dark trading and the law as well as the findings of scholars specializing in financial economics. To date, several scholars have looked at the impact of dark trading on financial regulation, assessing its repercussions and limitations.[21] Many have focused on the ways in which traditional regulatory concepts have been challenged by the novelty and growing use of algorithmic technology in trading.[22] Others identified regulatory gaps and discussed the different methods for their closing, either by human

[19] Richard Posner, *Economic Analysis of Law* (3rd edn, Wolters Kluwer 1986), 12-15
[20] Ralf Michaels, 'The Functional Method of Comparative Law' in Mathias Reimann and Reinhard Zimmermann (eds), *The Oxford Handbook of Comparative Law* (2nd edn, Oxford University Press 2019) ch 10
[21] See, for example, Marc Lenglet, 'Conflicting Codes and Codings: How Algorithmic Trading Is Reshaping Financial Regulation' (2011) 28(6) *Theory, Culture & Society.*
[22] See, for example, Mattli (n 3)

supervision or direct market intervention.[23] This research would tie into the existing literature by taking the next step and suggesting a theoretical framework for finding the optimal solution to the challenge of dark trading and the existent regulatory gaps.

The main contribution of this research will lie in its comparative nature and the possible policy implications resulting from the findings. It will fill a lacuna in comparative financial law scholarship by attempting to systematically analyze how three major jurisdictions with distinct regulatory approaches govern dark trading. Their comparison can lead to a streamlining of trading regulation in individual jurisdictions based on the isolation of effective solutions tested elsewhere. The inclusion of Canada, a jurisdiction underrepresented in global regulatory comparisons, may provide especially valuable insights. The research will make a practical contribution by producing evidence-based recommendations on best practices, highlighting what works and why. It will seek to refine risk-based and principles-based approaches, clarifying the perception and application of proportionality to algorithmic trading, with the resulting solutions transferable to other areas of fintech regulation. More broadly, the findings will contribute to knowledge about the degree of regulatory convergence (or divergence), regulatory arbitrage, and market structure.

CHAPTER 2: THE TECHNOLOGICAL AND ECONOMIC FOUDNATIONS OF DARK POOLS

2.1 The General Structure of Dark Pools

2.1.1 Who runs a dark pool?

The emergence and proliferation of dark pools are closely linked to the adoption of digital tools and the accompanying computerization of stock trading. Advanced computer technology allowed financial services to migrate into the digital realm and removed trading from physical exchanges to electronic equivalents or other electronic communication networks (ECNs).[24] The possibility of carrying out trade and related transactions remotely contributed to the creation of a two-tiered market structure: a "downstairs" market, consisting of electronic exchanges open to all investors, and an "upstairs" market inhabited by broker firms specialized in matching buyers and sellers for the execution of larger-than-average orders.[25] In search of best execution,

[23] See, for example, Carsten Gerner-Beuerle, *Algorithmic Trading and the Limits of Securities Regulation* (De Gruyter 2022)
[24] Edward M Eng et al., 'Finding Best Execution in the Dark: Market Fragmentation and the Rise of Dark Pools' (2013) 12 *Journal of International Business and Law* 39, 42
[25] Baxter (n 2) at 318

large investors turn to broker firms in charge of the "upstairs" market, whose services in finding an appropriate counterparty allow greater efficiency by saving time and offering lower price variance in return for a premium charged to their clients (an insignificant amount compared to the higher transaction costs of the "downstairs" market"). The large trade volume provided by large investors allows brokers to earn respectable profits.[26]

Dark pools are one of the different types of venues found on the "upstairs" market. Their qualities of anonymity, speed, and openness to the use of new, computerized trading make them an attractive choice for traders operating in an environment dominated by fierce technological and strategic competition. Though dark pools differ in structure, the main features of their organization reflect their purpose as exclusive, anonymous trading venues aiming for low market impact. The services offered by dark pools are varied and geared towards attracting different clients. However, their organizers fall into three categories: "lit" exchanges, which run dark pools in addition to their main venue; sell-side firms, or brokering institutions such as investment banks, which run dark pools as part of their general concern; and independent providers, whose sole purpose is to run the dark pool.[27] Dark pools can also be classified into two separate categories based on the level of their formality. Some are "dark order books," using external prices for reference and operating on a basis of a transparency waiver. Others are known as broker crossing networks, possess a wide selection of means used to match buyers and sellers but are not formally registered as trading venues.[28]

Operating a dark pool is usually most interesting to a sell-side firm. Instead of expending resources by directing orders to a "downstairs" market in search of a match, a broker can provide its client with a counterparty sourced directly from its venue or proprietary trading pool.[29] This "internalized" type of dark pool provides evident benefits for its host through lower transaction costs and the ability to engage in its own market activities rather than rely on profit from commission earned on brokered transactions. However, it puts into question the anonymity of such transactions (which, to many investors, is precisely what attracts them to a dark pool in the first place) and possibly increases the likelihood of abuse. The case of Pipeline LLC provides an example of the latter concern. Between 2004 and 2010, an American company, Pipeline LLC, operated a dark pool advertised to its clients as fully anonymous, secure from

[26] Eng et al. (n 24) at 41-42
[27] Matteo Aquilina, Sean Foley, Peter O'Neill and Thomas Ruf, 'Sharks in the Dark: Quantifying HFT Dark Pool Latency Arbitrage' (BIS Working Papers No 1115, Bank for International Settlements, August 2023) 8
[28] European Central Bank, *Financial Stability Review* (Box 4, November 2015) 59 https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2015/pdf/ecb~5aeb682ec5.fsrbox201511_04.pdf accessed 13 July 2025
[29] Baxter (n 2) at 319

information leakage, and uninvolved in proprietary trading. In reality, a subsidiary of Pipeline, created by its parent specifically to profit from internal trading, exploited the information available to it as an affiliate to front-run Pipeline's customers. Pipeline was accordingly sued for misrepresentation and subjected to cease-and-desist proceedings by the SEC.[30]

2.1.2 Who participates in a dark pool?

As anonymity is the defining characteristic of dark pools, little precise information is available regarding the identities of their participants. Typically, dark trading is associated with large, institutional investors interested (for various reasons) in carrying out very large orders anonymously. Dark pools attract participants from both retail and institutional backgrounds.[31] Depending on its host, a dark pool can impose on its participants different restrictions on access, depending on the individual profile of the venue. Some dark pools will exclude high-frequency traders, others will be available only to institutional investors, or impose special requirements for brokers-dealers.[32]

Structural barriers also contribute to dark pool exclusivity. Smaller investors generally cannot afford to participate in dark pool trading due to the high costs associated with carrying out dark trade. Effective dark trading requires thorough research into the particularities of the chosen dark pool, as well as precautions against possible predatory activities.[33] As a result, only large investors with access to the appropriate resources are capable of entering a dark pool with any confidence of profitable trading. However, proponents of dark pools point out that although dark trading excludes most investors based on size, the sell-side of a dark pool often indirectly involves smaller traders, as ultimately they are the ones to provide the securities necessary to realize orders put forward by large buyers. In this way, the proponents argue, dark pools benefit the "average" investor through increased liquidity and associated efficiency gains.[34]

Other important, and often notorious, participants of dark pools are high-frequency traders. High-frequency trading (HFT) employs algorithms rather than human activity to place and execute large volumes of orders automatically, quickly, and within a short period of time. The speed and volume of trade guaranteed by HFT technology allows its users to generate profits from small price differences and momentary imbalances, providing a unique advantage

[30] Baxter (n 2) at 319-320
[31] ibid 313
[32] Leslie A Boni, David C Brown and J Chris Leach, 'Dark Pool Exclusivity Matters' (19 December 2013) SSRN https://ssrn.com/abstract=2055808 accessed 13 July 2025, 3
[33] *In re Barclays Liquidity Cross and High Frequency Trading Litigation* 126 F Supp 3d 342, 352 (SDNY 2015)
[34] Baxter (n 2) at 317

over traders using human-only capacities. In a 2010 Concept Release, the SEC provided a convenient summary of the advantages and techniques applied by HFT trading:

"(1) The use of extraordinarily high-speed and sophisticated computer programs for generating, routing, and executing orders; (2) use of co-location services and individual data feeds offered by exchanges and others to minimize network and other types of latencies; (3) very short time-frames for establishing and liquidating positions; (4) the submission of numerous orders that are cancelled shortly after submission; and (5) ending the trading day in as close to a flat position as possible (that is, not carrying significant, unhedged positions overnight)."[35]

As HFT is often considered a predatory form of trading, many dark pools choose to exclude it from their venues in an attempt to provide greater security and attract traditional investors.

2.1.3 The nature of trading in a dark pool

While the identities of participating traders remain secret, the main features of dark trading are identifiable. Several sets of criteria can be applied to categorize trade characteristics within a dark pool. Firstly, trade frequency: a dark pool may choose to trade either continuously or at set intervals throughout the day.[36] Often, a dark pool host makes the choice between continuous and interval trading based on the proportion of high-frequency traders present on its venue and related fears of abuse. High-frequency traders typically prefer venues that trade continuously, as non-stop trading enables them to maximize the advantages of their technology, outpacing regular traders and executing trades more quickly.[37] In contrast, interval trading occurs at set times during the day, as established by the exchange. Trading at intervals may lead to price inefficiencies, as not every time interval may be equally convenient for every trader, resulting in less-than-optimal buyer and seller matching; on the other hand, it equalizes the chances of all traders and eliminates the advantage of automatic trading by forcing every participant to trade at the same speed.[38]

Beyond establishing different trade frequencies, dark pools may also differ in the way they match buyers and sellers. Some dark pools match buyers and sellers on a one-to-one basis, others may choose to match one buyer to many sellers or many buyers to many sellers (specific

[35] US Securities and Exchange Commission, 'Concept Release on Equity Market Structure' (2010) 75 *Federal Register* 3594, 3606 https://www.federalregister.gov/documents/2010/01/21/2010-1045/concept-release-on-equity-market-structure accessed 13 July 2025
[36] Eng et al. (n 24) at 44
[37] Matthew O'Brien, 'Everything You Need to Know About High-Frequency Trading' *The Atlantic* (11 April 2014) http://www.theatlantic.com/business/archive/2014/04/everything-you-need-to-know-about-high-frequency-trading/360411/ [https://perma.cc/M4N5-TMQ3] last accessed 13 July 2025
[38] Eng et al. (n 24) at 44

restrictions may be imposed by a dark pool regarding how many sellers a buyer may match). In theory, the greater the number of sellers a buyer can match, the greater will be the liquidity of the securities traded at that venue, and thus the attractiveness of the venue to investors. However, opinions on the advantages and disadvantages of multiparty trading differ. Proponents argue that the practice increases liquidity and thus attracts more investors, while opponents emphasize that it serves primarily large institutional investors, who benefit from an aggregation of small sellers to carry out their desired block trade, leading to an inefficient price formation on the market and information asymmetry.[39]

Dark pools can also be distinguished from one another by the orders they are willing to execute. The two main order types are known as "committed" and "uncommitted" liquidity. "Uncommitted" trades are those where a party is notified that an interested seller or buyer has appeared, but does not have to commit and can still back out of the transaction after notification. Uncommitted trading creates the danger of "pinging orders," a predatory method of trading used to overcome dark pool anonymity and discover the existence of large orders by placing numerous small ones and subsequently backing out of them. Baxter explains the tactic behind pinging orders: "[o]nce a predatory firm detects interest in a given security, it can then replicate the block in its own portfolio, drive the price up, and offer the block for sale at the peak price, resulting in what facially appears to be a degree of arbitrage."[40] In contrast, "committed" orders are transactions executed as soon as an interested counterparty is found, without notifying the author of the order of the counterparty's appearance until the transaction is completed. In theory, the impossibility of backing out of the transaction overcomes predation through pinging orders. However, it should be noted that commitment does not eliminate the risk of pinging entirely, as well as other forms of abuse, such as "pass-through" orders or internal orders.[41]

A final important aspect of dark pool organization concerns price determination and pricing rules. Sellers and buyers submitting orders to a dark pool will typically indicate the minimum and maximum prices at which they are willing to sell and buy. To create a price schedule in a context of no pre-trade transparency and within the imposed brackets of minimum and maximum prices imposed by customers, dark pool hosts will rely on the prices available at lit exchanges. After the selection of one or more lit exchange as a reference point, a dark pool sets its prices per the Best Bid/Offer (BBO) or constructs an average (if using multiple lit venues

[39] Eng et al. (n 24) at 45
[40] Baxter (n 2) at 322
[41] ibid 322; Stanislav Dolgopolov, 'Regulating Merchants of Liquidity: Market Making from Crowded Floors to High-Frequency Trading' (2016) 18 *University of Pennsylvania Journal of Business Law* 651, 663 n 40 (quoting Paul Reynolds, *Shining a Light on Fixed Income Dark Matter*); Eng et al. (n 24) at 45

as a reference). Next, prices are matched based on the midpoint price, the BBO, or both (however, this practice is considered predatory in several jurisdictions and forbidden, including in the EU following the adoption of MiFID II).[42]

2.2 The Economic Function of Dark Pools

2.2.1 The benefits of dark pools

The growing popularity of dark pools and other off-exchange venues indicates that these venues must offer its users substantial benefits. The most frequently named advantage of dark trading is anonymity. Traders, especially large, institutional investors, are attracted by the opportunity of securing better prices through reduced market impact and trading at the midpoint price (the usual dark pool practice, typically more lucrative for both parties to a transaction).[43] [44] The lack of pre-trade transparency prevents other traders from learning of the existence of a large order, reducing or eliminating the price impact on block trades and allowing the price to remain higher. Under normal, lit circumstances, the price would increase as the order was gradually realized. The reduced price impact of the dark pools also allows a block order to be executed faster, with a better price ultimately secured for both parties. An additional advantage is the possibility for large investors to maintain their trading strategies secret.[45] Buying and selling on a lit exchange keeps the record of purchases and sales made public, which means others may freely imitate any patters that govern the trading strategy of a successful trader, eroding its value.[46]

Despite the opacity of the dark pool environment, traders are not entirely deprived of the means to obtain information. There are ways in which traders can communicate with each other in order to find a match for their order. One of the ways of communicating before the making of a match is to enable "indications of interest" or "IOIs", which are communications distributed anonymously between interested buyers and sellers withing a dark pool or even between them, creating a network. These require human interaction to actually negotiate a deal, potentially raising transaction costs (though these are still incomparably small to those present on lit venues). The formation of a trade network through the distribution of IOIs is also an

[42] Aquilina et al. (n 27) at 7–8
[43] ibid 6-7
[44] Mercurio (n 5) 70
[45] Eng et al. (n 24) at 45
[46] Sabrina Buti, Barbara Rindi and Ingrid M Werner, 'Diving Into Dark Pools' (31 January 2022) Charles A Dice Center Working Paper No 2022-01, Fisher College of Business Working Paper No 2022-03-01 https://ssrn.com/abstract=1630499 accessed 13 July 2025, 1

argument against the perceived role of dark pools in market fragmentation and a point in favour of the idea that self-regulation is a sustainable method of regulating a dark pool.[47]

Numerous studies by researchers in the fields of finance and economics provide insight into the effect of dark trading on factors affecting market quality such as fragmentation, volatility, liquidity, welfare, price efficiency and discovery mechanisms, and transaction costs. Such studies provide an assessment of dark pool advantages based on objective economic indicators of market health. For example, a study exploring the impact of dark trading on market quality through its effect on liquidity found a positive effect on the primary, "downstairs" market. In fact, a study conducted by researchers of the Bank of England explicitly concluded that despite the current (2015) regulation trends, low levels of dark trading do not endanger market quality and may instead benefit the equity market through improved liquidity.[48]

While some effects of dark trading, such as market fragmentation, are almost universally found to be detrimental, others are not as unequivocally positive or negative.[49] The effect of dark pools on price discovery is mixed. Intuitively, the effect appears to be negative, as not displaying quotes publicly naturally reduces the amount of information available to the market, potentially weakening the price discovery process. However, some argue that dark pools follow prices set in lit markets, and consequently do not distort price formation significantly unless they become too large in volume share.[50] The effect of dark trade on volatility is likewise ambiguous. Some scholars find increased volatility a result of dark activity, but only under certain condition and in a specific environment.[51] On the other hand, intuition indicates that by absorbing large orders privately, dark pools can dampen sudden price swings that would occur if those trades hit public markets. Overall, the impact of dark pools on market quality appears to be conditional on the nature of the market and the extent of dark activity.

The areas where dark trading appears to be a decisively positive influence are competition and innovation. By their mere existence, dark pools increase the competitive pressure on traditional exchanges, encouraging fee reductions, technological innovation, and custom execution services. Ultimately, these pressures may lead to better execution choices and trading technology advancements on all venues. Motivated by the desire to compete with the

[47] Baxter (n 2) 322-323
[48] Bank of England, *Staff Working Paper No 545* (September 2015) 34
[49] Hans Degryse, Frank De Jong and Vincent van Kervel, 'The Impact of Dark Trading and Visible Fragmentation on Market Quality' (January 2014) TILEC Discussion Paper No 2011-026 https://ssrn.com/abstract=1815025 accessed 13 July 2025
[50] Nathalie Oriol, Alexandra Rufini and Dominique Torre, 'Should Dark Pools Be Banned from Regulated Exchanges?' (GREDEG Working Papers Series, 2016) https://halshs.archives-ouvertes.fr/halshs-01254447 accessed 13 July 2025, 2
[51] Buti et al. (n 46) at 963

most powerful investors, others will seek to innovate to gain advantages elsewhere, for example through technology or improved strategies (arguably, by combining algorithmic technology and different trading strategies, HFT traders are an example). A difference in approaches to dark pool regulation can also lead to regulatory arbitrage. While the phenomenon is usually considered controversial, it is nevertheless an opportunity for investors to choose the option most suitable for them. The ability to choose, in turn, creates the possibility for achieving greater market efficiency.

Finally, some analysts believe that participation in a dark pool may have strategic value to a participant other than anonymity. Although dark pools are often associated by their critics with greater risks of abuse, their opaque nature also offers protection from certain common forms of abusive or "predatory" trading. Releasing trade information post-trade prevents predatory firms from "front-running dark market trades."[52] In other words, dark pool participants have quite a large selection of options regarding defence from abusive and predatory behaviour, the two main ones being committed liquidity, minimum order sizes (a pinging order will not be placed of only large block trades are accepted), and interval trading.[53] One of the major perceived attractions of dark trading is its use as a hedging strategy against HFT arbitrage.[54]

2.2.2 Potential risks created by dark pools

A preliminary look at the core concepts behind them may lead to the conclusion that dark pools are an expression of the free market: they are largely unregulated, admit participation based on a subjectively set threshold rather than the principle of fairness, and prioritize profit in an unapologetic way. Nevertheless, their exclusive nature does create economic pitfalls which may form the basis of an argument that the lack of regulation does not always equal greater efficiency.

"Missed liquidity" is one of the potential inefficiencies risked by dark pool participants. While the term "liquidity" refers to the ease with which a security can be purchased, sold, or converted into cash, "missing" liquidity means overlooking opportunities for a sale or purchase. In the context of dark pools, where transparency is sacrificed for the sake of anonymity and exclusivity, this risk appears. Nevertheless, missed liquidity does not appear to lessen the appeal of keeping transactions dark for some traders. In fact, in lockstep with the advancements of

[52] Edwin Batista, 'A Shot in the Dark: An Analysis of the SEC's Response to the Rise of Dark Pools' (2014) 14 *Journal of High Technology Law* 83, 111
[53] Baxter (n 2) at 323-324
[54] ibid 313

computer technologies and their implementation in finance, the savings provided by the ability of these technologies to increase speed and reduce the administrative costs associated with human-operated transactions.[55] In fact, technological advancements have also allowed for the further reduction of transaction costs through the creation of specialized software matching buyers and sellers in seconds and executing orders equally quickly.[56]

From this perspective, many of the concerns regarding inefficiencies can be assuaged by references to the benefits of technology, making pro-regulation argumentation based on economic criteria more difficult. Missed liquidity also manifests itself in the strategies traders use to make sure that their orders are filled in the face of imperfect information. As traders are unsure if a single dark pool will be capable of filling their entire order, they may choose to divide the order into smaller orders spread across different pools, potentially wasting time and other resources and missing out on the liquidity if it could have been offered by the single dark pool.[57]

Fragmentation is a frequently-named negative side effect of dark trading. The exclusive nature of dark pools and the lack of information-sharing between them as well as between the participants of dark and lit venues encourages the separation of the market into segments organized based on the availability of information and means of communication. Market fragmentation in any context is a major factor leading to the rise inefficiencies.[58] By inhibiting communication between the participants of different fragments of the market, information asymmetries arise, leading to uncertainty and possibly preventing the optimal formation of matches between buyers and sellers.[59] In other words, best execution is often not as good as it could be. “Best execution” refers to a situation in which optimalization between the goals of the buyer and the seller occurs—the buyer is able to buy at the lowest possible price and the seller sells at the highest possible price under the conditions dominant at the moment. In other words, an equilibrium between the desires of the seller and buyer is met.[60]

In general, the lack of information is the most apparent risk associated with dark pool trading. Due to the lack of available information about possible buyers and sellers, a dark pool participant always makes an order without knowing of a possible buyer exists. Thus arise

[55] Robert Hatch, ‘Reforming the Murky Depths of Wall Street: Putting the Spotlight on the Security and Exchange Commission’s Regulatory Proposal Concerning Dark Pools of Liquidity’ (2010) 78 *George Washington Law Review* 1037
[56] ibid
[57] Eng et al. (n 24) at 46
[58] Baxter (n 2) at 314
[59] Björn Hagströmer, ‘Market Fragmentation in Europe’ (11 November 2022) http://dx.doi.org/10.2139/ssrn.4274523 accessed 13 July 2025 2
[60] Eng et al. (n 24) at 46

opportunity costs and the risk of "missed liquidity," the risk than an order could have been realized faster on the public exchange. Some time may pass until a counterparty is found to fill the order, and considering the large sizes of dark pool block orders, even small tick movements can result in large missed profits. The greater difficulty in finding a match may result in fewer orders being filled.[61]

As mentioned earlier, dark pools can provide means of protection against HFT arbitrage. However, at the same time, they are notorious as hosts for HFT trading and places where HFT trading has a very wide field for profit. HFT used algorithms instead of human activity to place numerous orders within a short period of time. The speed and scale with which HFT functions collects profits from small price differences and momentary imbalances (latency arbitrage), discoverable due to the HFT technique and unavailable to traders using solely human capacities. The SEC provided a convenient summary of the advantages and techniques applied by HFT trading:

"(1) The use of extraordinarily high-speed and sophisticated computer programs for generating, routing, and executing orders; (2) use of co-location services and individual data feeds offered by exchanges and others to minimize network and other types of latencies; (3) very short time-frames for establishing and liquidating positions; (4) the submission of numerous orders that are cancelled shortly after submission; and (5) ending the trading day in as close to a flat position as possible (that is, not carrying significant, unhedged positions overnight)."[62]

Dark pools become an excellent environment for HFT traders to reap the most benefits from their techniques as they source their prices from outside markets and because their liquidity is "pegged" to this price. Once the price on the reference market changes, it takes some time before it is communicated to the dark market, creating a temporary situation where there is a price difference between the lit and dark markets. In contrast, on lit venues, uncertainty remains whether new prices on different markets will eventually converge. Due to their pegging to a reference price, the eventual update of old prices on a dark market is certain, leading to HFT traders who are aware of the difference practising arbitrage without risk.[63] Estimates indicate that trading using stale prices is usually at 4% on dark venues.[64]

[61] Baxter (n 2) at 324
[62] SEC, *Concept Release* (n 35)
[63] Aquilina (n 27) at 2
[64] ibid 3

The concerns around HFT presence in dark pools have led to a history of litigation. In one of the most famous cases of this category, *In re Barclays Liquidity Cross & High Frequency Trading Litigation*, Barclays was accused for providing a favourable environment for HFT trading in its dark pools, Barclays LX, hoping to profit from the large trade volume provided by HFT activity, despite assuring its clients that its dark pool was entirely free from HFT (see Chapter 4 for more details).[65] In spite of the ominous impression it makes, HFT trading is doubtless beneficial from an economic standpoint, as it functions in an efficient way and produces considerable liquidity. Nevertheless, it puts "traditional" traders at a significant disadvantage and creates great disparities in trading capacity, keeping the field far away from being level technologically.[66] Though the precise nature of HFT is still disputed, many studies show that HFT activity is detrimental to liquidity rather than beneficial.[67]

Finally, exclusivity is named as a key disadvantage to dark pool trading. The profits offered by dark pools exclusively to large, institutional traders may be slowly eroding liquidity.[68] The exclusivity of dark pools is directly connected to the larger issue of the trade-off between fairness and market quality. If the popularity of dark pools continues to rise, excluding small and retail investors, an imbalance in benefits will become difficult to ignore. To make matters worse, exclusivity is also possible internally, within a dark pool, through the use of IOIs, which could in practice be issued only to certain groups of investors while leaving out others, effectively resulting in "a two-tiered market in which the public does not have fair access to information about the best available prices and sizes for a stock that is available to some market participants."[69] On the other hand, keeping dark pools exclusive and favourable to large investors appears to improve trading for that group, resulting in improved large block trading through more large volume trade being carried out and less pre-trade volatility.[70] Thus, statements unequivocally condemning dark pool exclusivity should be made with caution.

2.2.3 Why does dark pool regulation matter?

In arguments calling for increased regulation of dark pools, specific concerns of an economic nature, such as missed liquidity, are presented as part of broader, more general policy concerns. These include transparency, investor protection, predictability, and fairness.[71] Many

[65] Baxter (n 2) at 325
[66] ibid 326
[67] Aquilina (n 27) at 1
[68] Hatch (n 55) at 1039
[69] SEC, *Concept Release* (n 35)
[70] Boni (n 32) at 22-23
[71] Eng et al. (n 24) at 45-46

authors voice concerns over the impact of dark trading on market efficiency, as well as over the regulatory challenges posed by possible conflicts of interest between brokers and dark pool service providers.[72] Although dark pools offer legitimate benefits, regulation is needed to ensure that the opportunities created by the lack of pre-trade transparency is not exploited by parties to gain an unfair advantage. Regulatory objectives such as fair access and transparency are directly related to economic concerns around efficiency. As shown above, disproportionate information asymmetries can lead to situations where the inefficiencies caused by missed liquidity surpass the advantages generated by the realization of large orders with no price impact. Finally, their encouragement of traders using algorithmic techniques such as HFT creates previously unknown risks related to technology-dependence, potentially posing new, systemic risks that regulators must take into account.

The world of modern finance requires a compromise between the demands of economic cost-benefit analysis and regulation based on principles addressing fundamental values sometimes remining at odds with the interests of certain groups. Together with the advance of technological solutions, competition in the security markets placed an even greater emphasis on speed, efficiency, information, volume, and low transaction costs. Traders are involved in a perpetual race to receive, interpret, and react to information.[73] Dark pools are a response to these pressures, offering investors opportunities to hone their technological and strategic approaches to trading in search of maximum profit. Their existence is therefore not only a challenge to regulators but also a chance to foster an environment where technological innovation may thrive and where novel ways of governing modern financial practices can be tested. From there, successful solutions may be transplanted to others areas of financial law (and other areas) facing regulatory challenges caused by unprecedented technological advancements.

CHAPTER 3: DARK POOL REGULATIONS IN THE US, CANADA, AND THE EU

3.1 Dark Pool Regulation in the US

3.1.1 A history of dark pools in the US

It makes sense to begin a comparative analysis of dark trade regulation by looking at the US, where the first dark pools first emerged in the second half of the twentieth century. Dark

[72] Mercurio (n 5) at 70
[73] Aquilina (n 27) at 2

pools emerged as private trading systems operated by broker-dealers to match large orders without impacting market prices. The key early dark pools included were Instinet, POSIT, and Liquidnet. Instinet began in 1969 and is currently self-acclaimed as "the original fintech."[74] At the time, it was one of the first attempts to remove stock trading from the physical to the electronic world. In 1969, the Instinet Communication System became the market's first electronic communication network, which preceded by two years NASDAQ's launch of the world's first electronic market. Investment Technology Group, Inc. (ITG) created the second anonymous electronic trade matching system, called POSIT, in 1987.[75] These two initial platforms were not subject to any regulation aimed specifically at dark trade. Instead, they fell under the general umbrella provisions of any trading exchanges Securities Exchange Act of 1934.

In the 1990s, the first provisions aimed at alternative trading systems were introduced. In 1997, the SEC Order Handling Rules (OHRs) changed the structure of the American equity market. The main goal of the rules were to enhance the level of transparency and efficiency as well as level the playing field by ensuring that the public had equal access to competitive prices. The scope of the rules included ECNs, including Instinet and POSIT. The key provisions of the rules imposed a limit order display rule, providing public access to these orders and requiring market makers to display customer limit orders. Also, market makers were required to display the most competitive quotes, including those posted on ECNs. Overall, the rules stressed transparency and competitiveness. The requirement placed on market makers to display the most competitive quotes and customer limit orders to increase the public's access to this by increasing clarity and thus reducing transaction costs that would otherwise have been higher due to the need to conduct appropriate research. Competition was thus increased by granting the public improved access to these platforms. The result was to encourage the growth of ECNs and algorithmic trading.[76]

In 1998, Regulation ATS (Alternative Trading Systems) was introduced by the SEC to provide a regulatory framework for the functioning of ATS platforms in the US. The Regulation gave ATS platforms to register either as an exchange (and be regulated accordingly as a traditional exchange) or as a broker-dealer venue (and fall under the regulations imposed by

[74] Instinet, 'Our History' (Instinet, 2024) https://www.instinet.com/history accessed 8 June 2025
[75] Heidi Feldman, 'Jefferies Group, Inc.' in *International Directory of Company Histories* (The Gale Group 2006)
[76] R Lindsey, JA Byrne and RA Schwartz, 'The SEC's Order Handling Rules of 1997 and Beyond: Perspective and Outcomes of the Landmark Regulation' in RA Schwartz, JA Byrne and E Stempel (eds), *Rapidly Changing Securities Markets* (Springer 2017) https://doi.org/10.1007/978-3-319-54588-2_1 accessed 8 June 2025

Regulation ATS). Transparency was also addressed in an attempt to protect investors. Thus, ATS platforms were required to meet disclosure and reporting standards after meeting specified thresholds of trading volume for certain securities. The Regulation effectively allowed for the rise of non-exchange trading venues, such as dark pools.[77]

In 2005, the adoption of Regulation NMS (National Market System) (effective in 2007), sought to modernize American equity markets and promote fairness and investor protection through equal access to quotes across venues, best execution obligations, and the order protection rule. The latter was imposed by Rule 611 which prevented trade-throughs of better priced quotations.[78] These provisions simultaneously put greater stress on the policy values of transparency and fairness and fuelled the growth of dark pools by increasing the fragmentation of the market through competition, the need for order routing and internalization strategies, and the desire of institutions to use dark pools to avoid quote matching delays and HFT threats in lit markets. As a result, dark trading increased and took over a substantial market share during the later 2000s.[79]

Following the financial turmoil of the Global Financial Crisis of 2007-2009 and the Flash Crash of 2010, public opinion, academic commentators, and regulators alike turned towards the idea of increased financial regulation as a precaution against future crises. Market stability and transparency became the key words of financial regulation. The SEC and FINRA, the two American regulators of exchanges and broker-dealer platforms, began targeted enforcement and investigations.[80] The main concerns included the lack of pre-trade transparency, information leakage, preferential access for certain clients, and inadequate conflict of interest disclosures.[81] At this time many lawsuits and enforcement actions involving dark pools occurred, with *Barclays* being the flagship case after being taken to court for misleading clients about HFT role in its dark pool. In addition, other institutions such as Credit Suisse, UBS, and Deutsche Bank have been fined for their dark pool practices.[82]

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[77] Alexis L Collins, 'Regulation of Alternative Trading Systems: Evolving Regulatory Models and Prospects for Increased Regulatory Coordination and Convergence' (2001–2002) 33 *Law & Policy in International Business* 481

[78] Regulation NMS, Rule 611 (Order Protection Rule), 17 CFR § 242.611

[79] K H Chung and C Chuwonganant, 'Regulation NMS and Market Quality' (2012) 41 *Financial Management* 285 https://doi.org/10.1111/j.1755-053X.2012.01184.x

[80] Eric Helleiner and Stefano Pagliari, 'The End of an Era in International Financial Regulation? A Postcrisis Research Agenda' (2011) 65(1) *International Organization* 169 https://doi.org/10.1017/S0020818310000305

[81] ibid

[82] Tim Cave, 'Deutsche Bank revamps European dark pool' *Financial News* (London, 18 February 2015)

The next years involved several regulatory proposals and reforms. In 2018, Form ATS-N required public disclosures for ATSs trading NMS stocks.[83] Operators had to file detailed information about conflicts of interest, order types, and data feeds.[84] The document aimed to bring greater transparency to dark pool operations. From these initiatives stemmed the idea of the Tick Size Pilot Plan, which will be discussed at greater length later. Currently ongoing is also the Consolidated Audit Trail, which is a massive data project aimed to enable regulators to track all American equity and options trades for surveillance.[85]

3.1.2 Current relevant regulations in the US

The current (2025) regulations governing dark pool activity in the US are primarily built around Regulation ATS, Form ATS-N, and guidance issued by the SEC and FINRA. These regulations aim to ensure transparency, fairness, and surveillance capability, while still allowing dark pools to fulfill their core function of executing large orders with minimal market impact.

Regulation ATS (Alternative Trading Systems) 1998, amended in 2018, is the foundational regulation for dark pools. The key provisions regard registration, requiring ATSs to register as broker-dealers and file Form ATS with the SEC.[86] ATSs must also maintain detailed records and provide the SEC with operational information, fulfilling operational disclosure requirements.[87] Rule 301(b)(5), known as the Fair Access Rule, applies to large ATSs and requires fair and non-discriminatory access if they cross a certain volume threshold.[88] Finally, there are also surveillance and oversight requirements which subject ATSs to inspections and oversight by FINRA and the SEC.[89]

Form ATS-N, effective since 2019, is an amendment to Regulation ATS specifically for NMS stock ATSs, including dark pools. Entities trading financial instruments fulfill disclosure requirements imposed by Regulation ATS by filing Form ATS-N, which requires detailed information pertaining to order types, execution protocols, and data feeds, as well as information disclosures regarding conflicts of interest, access criteria, and internalization policies.[90] The filing of Form ATS-N also facilitates potential SEC reviews, as all filed Forms

[83] Rosario J Girasa, Jessica A Magaldi and Joseph DiBenedetto, 'Shedding Light on Dark Pools: Recent Regulatory Attempts Toward Transparency and Oversight of Alternative Trading Systems' (2018) 37 *North East Journal of Legal Studies* 75 https://ssrn.com/abstract=3244608
[84] ibid
[85] CAT NMS Plan, 'About CAT: CAT NMS Plan' *CAT NMS Plan* (2025) https://www.catnmsplan.com/about-cat/cat-nms-plan accessed 13 July 2025
[86] Regulation ATS, 17 CFR § 242.301(b)(2)
[87] ibid at § 242.304(a)
[88] Regulation ATS (n 86) at § 242.301(b)(5)
[89] ibid at § 242.301(b)(3-4); § 242.301(c-d)
[90] Form ATS-N, 17 CFR § 249.801N

must be reviewed and approved by the SEC before they can be admitted into operation.[91] The effect of Form ATS-N is to increase the transparency of dark pool activities, especially regarding preferential treatment and internal conflicts of interest.

Regulation NMS, effected in 2005 and still in force today, does not pertain directly to dark pools but shapes how they interact with other markets. The key provisions are Rule 611 (Order Protection Rule) which prohibits trading through better prices on other venues and encourages routing to "best price," including lit markets, and Rule 605/606, which concerns order execution and routing disclosure, requiring broker-dealers to disclose execution quality and routing behaviour.[92] As they are registered as broker-dealers, and thus within the scope of this regulation, the Regulation indirectly pressures dark pools to improve execution quality and maintain competitive pricing.

FINRA and SEC oversight also plays a role in the current legal landscape. FINRA conducts surveillance, reporting requirements, and disciplinary actions related to ATSs. The key reporting and transparency tools are the Trade Reporting and Compliance Engine (TRACE), for fixed-income dark pool activity and Order Audit Trail System (OATS) (now replaced by Consolidated Audit Trail (CAT)), which, until 2023, captured order life-cycle events.[93] The CAT replaced OATS to track every order and trade across equities and derivatives markets. The SEC also holds dark pool operators responsible for violating anti-fraud and anti-manipulation laws, which are equally applicable to all market makers. These laws include, most importantly, Rule 10b-5, which concerns fraud, and Regulation SCI, which outlines system compliance and integrity for larger platforms.[94] The high-profile enforcement actions for violating these laws involved Barclays, Credit Suisse, UBS, Deutsche Bank and others who have been fined for misleading clients, conflicts of interest, and preferential access. These cases also contribute to shaping the regulatory landscape.

3.1.3 Recent developments, including the Tick Size Pilot Plan

There are several ideas for reform currently considered for implementation. The first is MSRB Rule G-18 (Best Execution), with the proposed final draft created in 2024. The SEC finalized new rules in 2024 to strengthen best execution standards for broker-dealers, including

[91] Regulation ATS (n 86) § 242.304(a)
[92] Regulation NMS, 17 CFR § 242.611; §§ 242.605, 242.606
[93] The Securities and Exchange Commission, 'Self-Regulatory Organizations; Notice of Filing of Proposed Rule Change by National Association of Securities Dealers, Inc. Relating to the Creation of New Rules 6900 Through 6970 for an Audit Trail System Owned and Operated by the National Association of Securities Dealers, Inc.' (1997) 62 *Federal Register* 45650
[94] SEC, Rule 10b-5 under the Securities Exchange Act of 1934, 17 CFR § 240.10b-5

rigorous policies and procedures and regular reviews of execution quality.[95] It would apply to all trading venues, including dark pools. The main aim behind it is to ensure that investors get the best price, regardless of venue.[96] The second reform proposal is the Order Competition Rule, proposed in 2022, and still under consideration as of mid-2025. If implemented, it would require segmentation and order-by-order competition for retail orders. The proposed new rules would also potentially limit wholesale internalization and dark pool routing of retail flow.[97]

Although currently completed, a very interesting aspect of proposed regulation took place between 2016 and 2018, with the conduct of an interesting "natural experiment." In 2021, the SEC considered introducing limits on dark trading in the US.[98] However, the Nasdaq was against implementing restrictions to the same extent as it was done in the EU with MiFID II.[99] In October 2016, the SEC introduced a "Tick Size Pilot", which was a two-year experiment intended to investigate how changes in minimum tick sizes (the smallest increment by which a stock price can move) would affect liquidity, trading behaviour, and market quality, particularly for small-capitalization stock.[100] The experiment was initiated by the SEC in October 2016 and lasted in duration until September 2018.

The purpose of the experiment was to determine whether widening the tick size from $0.01 to $0.05 for certain specific small-cap stocks (around 1,200 in number) would improve market liquidity, encourage more market-making and research coverage, and benefit smaller companies and capital formations. The stocks were divided into three test groups and one control group, with the latter trading under normal rules (minimum tick size $0.01). The first group was quoted in $0.05 increments but could trade only at $0.01 increments; the second test group quoted and traded at $0.05 increments (except for midpoint, retail, and negotiated trades). The most relevant is the third group, which quoted and traded under the same rules as the second test group, except also involved a trade-at rule. The trade-at rule prohibited off-

[95] Financial Industry Regulatory Authority, *2024 Annual Regulatory Oversight Report* (January 2024) https://www.finra.org/sites/default/files/2024-01/2024-annual-regulatory-oversight-report.pdf accessed 13 July 2025
[96] ibid
[97] Securities and Exchange Commission, *Order Competition Rule* (Proposed Rule No S7-31-22, Release No 34-96495, 17 CFR pts 240 & 242, 14 December 2022)
[98] Jonathan Ponciano, 'SEC "Looking Closely" at "Dark Pools"—Here's What They Are and Why Reddit Traders Are Rallying' *Forbes* (4 August 2021) https://www.forbes.com/sites/jonathanponciano/2021/08/04/sec-looking-closely-at-dark-pools-heres-what-they-are-and-why-reddit-traders-are-rallying/ accessed 13 July 2025
[99] Annabel Smith, 'Nasdaq Warns Regulators Should Exercise Caution Around 'Coarse' and 'Blunt' Restrictions to Dark Trading' *The TRADE* (4 March 2022) https://www.thetradenews.com/nasdaq-warns-eu-regulators-should-exercise-caution-around-coarse-and-blunt-restrictions-to-dark-trading/ accessed 14 July 2025
[100] Barbara Rindi and Ingrid M Werner, 'U.S. Tick Size Pilot' (Fisher College of Business Working Paper No 2017-03-018, Charles A Dice Center Working Paper No 2017-18, 14 March 2019) https://ssrn.com/abstract=3041644 or http://dx.doi.org/10.2139/ssrn.3041644 accessed 14 July 2025

exchange trading unless the price was better than the NBBO or met certain exceptions. The idea behind it was to push more trades away from dark and into lit exchanges.[101]

The concept proved to be a polarizing issue, provoking numerous concerns:

"Some opponents of the Tick Size Pilot Program have suggested that the real beneficiaries of this test will be HFT traders. They fear that HFTs will figure out a way to step in front of a trade and make $0.05 profit on a stock, rather than settle for a penny. Others suggest that the exact opposite will take place: The risk of a $0.05 mistake is too costly for an HFT to take. There are also detractors who argue that the Tick Size Pilot Program is merely a back door attempt by the NYSE to diminish the power of dark pools."[102]

In the end, when the pilot program ended in 2018, the SEC did not extend or adopt the changes it explored. The findings were mixed, and in many cases, negative: among other findings, the program, found that wider spreads lead to higher costs for investors, liquidity did not improve in a meaningful way, there was no significant increase in market-making or research coverage for small-cap stops. Importantly, the trade-at rule intended to encourage migration of trade from dark to lit markets did not significantly benefit market quality and added complexity. Off-exchange trade did decline for the affected stocks (by 12%, or the equivalent of $4.5 billion over the first twenty days of the plan) however the change did not result in a clear overall benefit.[103] A study conducted on the impact of the pilot plan on dark trade concluded that no "meaningful" relationship could be established between dark trading and market quality.[104] The study indicated the high complexity and costs associated with transferring trades between venues as a result of shocks such as those introduced by the pilot plan and overall cautioned against the limitation of dark trading using "blunt" instruments.[105]

3.2 Dark Pool Regulation in Canada

3.2.1 Overview of IIROC/CIRO regulations in the past and present

The history of dark pool regulation in Canada has been shaped by the country's commitment to maintaining market transparency while also accommodating institutional

[101] Securities and Exchange Commission, 'Tick Size Pilot Program' *SEC.gov* (12 June 2024) https://www.sec.gov/data-research/tick-size-pilot-program accessed 14 July 2025
[102] Pacific Ridge Capital Partners, 'Tick Test' *Pacific Ridge Capital Partners* (October 2016) https://www.pacificridgecapital.com/commentary-archive/tick-test accessed 14 July 2025
[103] Ryan Farley, Eric K Kelley and Andy Puckett, 'Dark Trading Volume and Market Quality: A Natural Experiment' (2025) 91 *Journal of Corporate Finance* 102742, 23
[104] ibid
[105] ibid

trading needs. Canadian regulators have taken a proactive and principled approach, developing one of the most structured frameworks for dark pool oversight globally. However, it has not always been like this. Until the 2000s, the Toronto Stock Exchange was the dominant marketplace. As the financial landscape began to change in the US, so did the Canadian one. In the early 2000s, alternative trading systems began to arise, fragmenting the market. Examples of early Canadian dark pools include MATCH Now (created in 2007), Instinet Canada Cross and Liquidnet Canada.[106] The latter two were branches of ECNs already functioning in the US since a few years before. At the time, there was minimal oversight, with the main applicable regulations being National Instrument (NI) 21-101, in effect since 2001, which introduced transparency requirements for marketplaces, but did not specifically target dark pools.[107] The second relevant law was National Instrument 23-101, which focused on market integrity, but once again without directly regulating dark trade.[108]

After the dust settled following the Global Financial Crisis in 2009, Canadian regulatory authorities began a push for greater transparency and regulatory involvement, in line with similar worldwide trends. In 2009, the Canadian Securities Administrators (CSA) and the Investment Industry Regulatory Organization of Canada (IIROC) began consultations on how to regulate dark liquidity. The consultations produced a proposal paper addressing issues such as fair access, price discovery degradation, and the lack of transparency.[109] In 2012, the consultations resulted in a number of amendments to existing regulations, which significantly tightened dark pool activity.

The key provisions of the above amendments are the price improvement rule, which means that dark orders can only trade at a price better than the NBBO (National Best Bid and Offer), unless the order is equal to or greater than fifty standard trading units, equivalent to $100,000.[110] This is the same trade-at rule which the Tick Size Pilot Plan experimented with in the US four years later. Another provision is minimum size exemption, which means that large

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[106] Sean Foley, Katya Malinova and Andreas Park, 'Dark Trading on Public Exchanges' (15 November 2012) SSRN https://ssrn.com/abstract=2182839 or http://dx.doi.org/10.2139/ssrn.2182839

[107] National Instrument 21-101 *Marketplace Operation* (Canadian Securities Administrators, as amended 14 September 2020) https://www.bcsc.bc.ca/-/media/PWS/Resources/Securities_Law/HistPolicies/HistPolicy2/21101_NI2.pdf accessed 14 July 2025

[108] National Instrument 23-101 *Trading Rules* (Canadian Securities Administrators, consolidated to 10 April 2017) https://www.bcsc.bc.ca/-/media/PWS/Resources/Securities_Law/Policies/Policy2/23101-NI-April-12-2017.pdf accessed 14 July 2025

[109] Canadian Securities Administrators and Investment Industry Regulatory Organization of Canada, *Joint CSA/IIROC Position Paper 23-405: Dark Liquidity in the Canadian Market* (Position Paper, 19 November 2010) https://www.osc.ca/sites/default/files/pdfs/irps/csa_20101119_23-405_dark-liquidity.pdf accessed 14 July 2025

[110] Investment Industry Regulatory Organization of Canada, *Universal Market Integrity Rule 6.6: Provision of Price Improvement by a Dark Order* (CIRO, 2025) https://www.ciro.ca/rules-and-enforcement/universal-market-integrity-rules/66-provision-price-improvement-dark-order accessed 14 July 2025

institutional orders are exempt from price improvement if they exceed specific thresholds.[111] Third is the priority rule, meaning that visible orders at the same price must have execution priority over dark orders.[112] Finally, the amendments address transparency and monitoring issues, requiring ATSs to report the volume and specific characteristics of dark trades.[113] This changes made Canada one of the first jurisdictions to impose minimum price improvement and visible order priority for dark pools.

After 2012, regulators closely monitored dark pool market share, which stabilized at around 10% of total trading volume, a level lower than in the US or EU.[114] Continued guidance from IIROC emphasizes compliance with price improvement rules and fair access. Other developments included ongoing transparency initiatives such as trade marking and post-trade reporting. There is also an examination of broker referencing and internalization practices.[115] Currently, the framework designed in 2012 remains in place, with price improvement rules and visible order priority as the foundation. There is also ongoing IIROC supervision of dark activity and requirements regarding compliance reporting. In 2019, policy review initiatives were underway, in response to global trends and technological changes.[116] The CSA and IIROC (in 2023 merged into CIPF) launched a market structure review.[117] The main concerns were internalization concerns about retail order flow being matched internally without exposure to the broader market; execution quality and liquidity, stemming from the debates around whether dark trading harms smaller investors; and potential changes to tick sizes and order handling transparency. However, despite the debates, Canada continues to maintain lower levels of dark trading relative to other jurisdictions, largely due to its early and strict regulatory stance.

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[111] Investment Industry Regulatory Organization of Canada, *Universal Market Integrity Rule 6.5: Provision of Price Improvement by a Dark Order* (CIRO, 2025) https://www.ciro.ca/rules-and-enforcement/universal-market-integrity-rules/65-provision-price-improvement-dark-order accessed 14 July 2025; CSA (n 107)

[112] Canadian Securities Administrators, *Amendments to National Instrument 21-101 Marketplace Operation* (CSA Amendment Instrument, 10 April 2017) https://www.bcsc.bc.ca/-/media/PWS/Resources/Securities_Law/HistPolicies/HistPolicy2/23101_NI_Amendment_Proposed.pdf accessed 14 July 2025; IIROC (n 111)

[113] Investment Industry Regulatory Organization of Canada, *Universal Market Integrity Rule 9.1: Prohibition of Market Manipulation* (CIRO, 2025) https://www.ciro.ca/rules-and-enforcement/universal-market-integrity-rules/91-prohibition-market-manipulation accessed 14 July 2025

[114] Sean Foley and Tālis J Putniņš, 'Should We Be Afraid of the Dark? Dark Trading and Market Quality' (2016) 122 *J Fin Econ* 456, 458

[115] Canadian Investment Regulatory Organization of Canada, *CIRO Releases 2023–2024 Enforcement Report* (CIRO, 4 July 2024) https://www.ciro.ca/newsroom/publications/ciro-releases-2023-2024-enforcement-report accessed 15 July 2025

[116] Valerie Le Blanc and Kristen Weedmark, 'IIROC 2019 Policy Priority Updates and Vulnerable Investors' *BC Law Institute* (19 July 2019) https://www.bcli.org/iiroc-2019-policy-priority-updates-and-vulnerable-investors/ accessed 14 July 2025

[117] Canadian Investor Protection Fund, *2024 Annual Report* (30 June 2025) https://www.cipf.ca/docs/default-source/default-document-library/cipf_ar24_en_fnl-13-36.pdf?sfvrsn=f04459ad_2 accessed 14 July 2025

3.2.2 Implementation of the trade-at rule and other amendments

The most relevant provision in place in Canada is the National Instrument 21-101, which concerns marketplace operation. The Instrument outlines the terms on which financial marketplaces (including dark pools) are allowed to function. It requires registration and approval of ATSs, maintenance of fair access, and imposes data reporting obligations (for example, volume, order types). There are also requirements regarding post-trade transparency, meaning that even if dark trades are initially anonymous, they must later be reported to the consolidated tape.[118] Overall, the Instrument ensures that all dark pools operate under a regulated framework and contribute to market transparency after execution, even though the requirements do not refer to dark trading specifically. A notable requirement is imposed by s. 5.1, a fair access requirement requiring ATSs to provide fair and non-discriminatory access to all participants. In addition, ATSs must report trade volumes, identify trades executed in dark venues, and file system descriptions and changes with regulators.[119] More generally, markets are obliged to maintain a reliable, secure, and robust infrastructure.

While NI 21-101 sets the landscape, National Instrument 23-101 provides for the trading rules. Following the amendments of 2012, this piece of law is the core of dark trading regulation in Canada. The most important provision is the price improvement rule, also known as the trade-at rule. It means that dark orders must trade at a price better than the National Best Bid and Offer (NBBO). However, there is an exception, as orders equal to or larger than 50 standard trading units (equivalent to one hundred thousand Canadian dollars) are exempted. Next, there is also the visible order priority rule, meaning that visible (or lit) orders at the same price must be executed before dark orders. This provision is intended to reinforce the price discovery function of lit markets. Finally, there are also trade transparency provisions, requiring that trades in dark pools must be reported in real-time (post-trade) and be clearly marked as "dark." This helps market participants and regulators monitor dark activity levels.[120]

An important component of the regulation landscape currently in place in Canada is also the Universal Market Integrity Rules (UMIR). UMIR is a comprehensive rulebook outlining the provisions applicable to different aspects of financial trading. It covers a variety of topics from abusive trading and front running to compliance and administration. The majority of the rules apply to both lit and dark markets, though some are distinctly more pertinent to dark trade. UMIR 6.6 provides rules for the entry of orders and prohibits entering orders for manipulatory

[118] CSA (n 107)
[119] ibid
[120] Foley (n 114) at 13-14

purposes or for the purpose of creating a misleading appearance of liquidity. UMIR 6.3 concerns exposure of client orders, obliging brokers to expose client orders to lit markets unless the trade meets minimum size thresholds or a better price in a dark pool. These rules seek to prevent the abuse of dark venues for retail and internal order handling without market benefit.[121]

3.2.3 Reception of the Canadian regulations

The reception of Canada's dark pool regulations has generally been positive, both domestically and internationally, with recognition that Canada has struck a strong balance between enabling efficient institutional trading and protecting market transparency and fairness. Canadian regulators such as the CSA and CIRO consider the rules implemented in 2012 to be a successful intervention. In their reports and evaluations, they have consistently reiterated that dark trading in Canada remains appropriately limited, with effective oversight and clear boundaries.[122] Under the rules, Canadian institutional investors can continue accessing dark liquidity through dark pools while avoiding market impact, while gaining additional protection from abuse. Canadian retail investors benefit indirectly from the protection of lit market priority and price improvement requirements, which ensure they are not systematically disadvantaged. Nevertheless, dealers and brokers have not been fully satisfied by the new rules, concerned that by imposing additional transparency requirements, Canadian regulators have reduced the main appeal of dark pool as trading venues.[123]

3.3 Dark Pool Regulation in the EU

3.3.1 The history of dark pool regulation in Europe

The history of dark pool regulation in the EU reflects an evolving attempt to balance market transparency with institutional investors' need for discreet execution. Over time, the EU has progressively tightened controls over dark trading, particularly through its MiFID I and MiFID II frameworks, positioning itself as one of the more aggressively regulated markets for off-exchange activity. Before the introduction of the MiFID I regime in 2007, most equity trading occurred at national exchanges. Together with the development of the electronic

[121] Canadian Investment Regulatory Organization, *Universal Market Integrity Rules: Rules & Policies* (last updated 10 July 2025) https://www.ciro.ca/rules-and-enforcement/universal-market-integrity-rules accessed 15 July 2025

[122] Canadian Investment Regulatory Organization of Canada, *CIRO Releases 2023–2024 Enforcement Report* (CIRO, 4 July 2024) https://www.ciro.ca/newsroom/publications/ciro-releases-2023-2024-enforcement-report accessed 15 July 2025

[123] Tim Chapman, 'Mixed Reviews for Canadian "Trade-At" Rule' *Traders Magazine* (18 December 2011) https://www.tradersmagazine.com/departments/buyside/mixed-reviews-for-canadian-trade-at/ accessed 15 July 2025

financial market and alternative trading systems in the US, these venues (known as multilateral trading facilities (MTFs) in the EU) and broker-crossing networks, began to emerge in the EU. As in the US, European dark pools emerged, particularly in Germany and the UK, with little initial regulatory oversight.

In November 2007, MiFID I came into force. It sought to promote competition across trading venues and allow for the creation of MTFs, resulting in the growth of dark trade activity.[124] However, re-trade transparency waivers allowed dark trading under certain exemptions, especially for large-in-scale (LIS) orders, reference price waivers, and negotiated transaction waivers.[125] The large pan-European MTFs falling under the scope of MiFID I included Turquoise, Chi-X, and BATS Europe. As MiFID I provided a relaxed and liberal framework for equity trading, many new "dark" venues arose, offering opportunities for those who wished to trade away from the public eye.[126]

In January 2018, a clampdown on dark trading occurred, as MiFID II and MiFIR came into force, dramatically tightening the rules around dark trading. The new regime introduced the Double Volume Cap (DVC) Mechanism, which limits dark trading using the reference price and negotiated trade waivers. It sets two thresholds: at 4% of total trading in a single volume and at 8% of total EU trading across all venues. If breached, the use of waivers is suspended for six months for the breaching instrument. There are also reference price waiver which can only use the midpoint of the best bid from a lit venue. Meanwhile, LIS waivers require orders above size thresholds, based on liquidity bands. MiFIR also set pre-trade transparency requirements, which oblige lit markets to publish quotes and depth, meaning that dark venues are less transparent and potentially less attractive. In addition, post-trade transparency requirements ensure that all dark trades are reported as close to real time as possible. Deferrals are allowed but limited, especially for block trades.[127]

Between 2019 and 2023, ESMA began actively enforcing DVC bans, suspending dark trading in hundreds of stocks. What followed was a periodic review of liquidity thresholds and calibration of DVC calculations. Generally, MiFID II was seen as effective but complex,

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[124] Andrea Lagna and Marc Lenglet, 'The Dark Side of Liquidity: Shedding Light on Dark Pools' Marketing and Market-Making' (2020) 23(4) *Consumption Markets & Culture* 390, 390-391 https://doi.org/10.1080/10253866.2019.1582415 accessed 31 July 2025

[125] Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC [2004] OJ L145/1

[126] Petrescu et al. (n 1) at 12

[127] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU [2014] OJ L173/349; Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012 [2014] OJ L173/84

especially for smaller venues and firms. Nevertheless, in the wake of Brexit, shifts in the European market structure resulted in calls for a revision of the DVC, either modifying or scrapping it entirely.[128] Proposal for alternative regulatory mechanisms included an increased focus on the consolidated tape to enhance post-trade transparency and more flexible waiver regimes for smaller and less liquid markets. In 2025, ESMA continues to debate a revised MiFID II framework, aiming to maintain transparency while improving execution quality and competitiveness.[129]

3.3.2 MiFID II and MiFIR

The current regulatory framework in place in the EU concerning dark pools is founded on MiFID II, MiFIR, and the ongoing reviews and recommendations published by ESMA. Like MiFID I, MiFID II focuses on investor protection and market structure. MiFIR provides the complementary rules regarding transparency and trading obligations, while the ESMA guidelines provide interpretation and enforcement advice across the EU. Overall, the European regulatory framework for dark pools and associated trading practices is one of the strictest in the world. The implementation of MiFID II in 2018 represented a turning point, as the introduction of the DVC and the restriction of waiver use marked the onset of a firm approach towards dark trading. While this stance has limited dark pool activity, it has also raised concerns about market fragmentation, costs, and liquidity, prompting ongoing regulatory reviews and adjustments.

Dark trading in the EU is possible within the regime of pre-trade transparency waivers. Depending on the type of trade a market participant wishes to engage in, a specific pre-trade transparency waiver is applicable. Types of waivers include: reference price waivers, which concern orders executed at the midpoint of a lit venue's best bid and offer; negotiated trade waivers, for trades the execution of which is allowed outside the order book if negotiated bilaterally and reported; LIS waivers, exempting large block orders above a certain threshold from pre-trade transparency; and order management waivers, for certain orders held in order management systems.[130] All of these order are monitored and tightly controlled by ESMA.

[128] Michael McKee and Chris Whittaker, 'ESMA Publishes Trading Data for Dark Pool Restrictions' (DLA Piper Intelligence, March 2018) https://www.dlapiperintelligence.com/investmentrules/blog/articles/2018/esma-publishes-trading-data-for-dark-pool-restrictions.html accessed 15 July 2025
[129] European Securities and Markets Authority, *MiFID II and MiFIR Review* (ESMA, 28 March 2024) https://www.esma.europa.eu/trading/mifid-ii-and-mifir-review accessed 15 July 2025
[130] Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012 (MiFIR) art 4

The most distinctive feature of the EU regulatory regime is the Double Volume Cap Mechanism, a central regulatory feature to limit dark trading through the reference price and negotiated trade waivers. The volume limits are 4% per venue, 8% across all EU venues. If the volume of a dark trade in a specific instrument exceeds these caps over a twelve-month rolling period, dark trading in that instrument will be suspended for six months, under the waivers it had previously received. The DVC is applicable per instrument and per jurisdiction. Enforcement of waiver suspensions is controlled ESMA, which calculates and publishes DVC breach lists monthly. Trading venues and firms are responsible for monitoring compliance and adapting order routing accordingly.[131] In addition to the pre-trade transparency waiver regime, there are also post-trade transparency obligations, meaning that all dark trades must be reported as close to the real time of their execution as possible. Deferrals are allowed, but only for large trades (which are understood to be those above LIS thresholds) and illiquid instruments. Post-trade reports must clearly identify the use of a waiver.[132]

As the main objective of MiFID II and MiFIR is the protection of investor interests (including retail investors), they also include notable best execution and broker requirements. Brokering firms with contractual or agency obligations to the client must ensure best execution while taking into account price, costs, speed, and the likelihood of execution (with all of these variables considered in terms of their favourability towards the client). When realizing retail investor orders, firms must include their commissions or fees charged in their calculations of best execution (in limited cases). Routing orders to dark venues must be justified, with periodic reviews required, and investor disclosures must include use of dark venues and execution policies.[133] Importantly, advances in technology are taken into consideration when recommending means of ensuring best execution for client orders, showcasing the sensitivity of MiFID II provisions to a changing financial landscape.

3.2.3 The impact of Brexit and potential reform plans

Brexit has had a profound and multifaceted impact on dark trading in the EU, both structurally and regulatorily. The departure of the UK, historically the largest hub for equity trading in Europe, from the EU's regulatory umbrella in 2020 marked the beginning of a new relationship between the two—the EU and UK became competitors more than collaborators. As a result, concerns arose regarding a fragmented market landscape, leading to shifts in trading

[131] ibid art 5
[132] ibid art 11
[133] MiFID II (n 127) at recitals 91–93

volumes, regulatory divergences, and renewed discussions around competitiveness, market sovereignty, and investor protection. Brexit exposed the potential costs of regulatory inflexibility and has become a driver for EU introspection and reform.

The initial post-Brexit shifts between 2021 and 2022 resulted in trading migration, as following the end of Brexit transition period in January 2021, the European Commission decided against recognizing UK exchanges as equivalent to their EU counterparts.[134] EU-based investors were no longer permitted to trade EU-listed stocks on UK dark pools or MTFs and UK-based firms lost their right of establishment and participation in the passporting system for financial services across the EU.[135] As a result, billions in equity trading volume, including both dark and lit exchanges, shifted from London to EU-based venues, particularly Dutch-based ones.[136]

Regulatory divergence also occurred, with the Financial Conduct Authority (the UK financial regulator), choosing to step back from several MiFID II rules. The goal was to enhance competitiveness, maintain London as a financial centre, and attract institutional order flow back to UK venues. Although the financial sector was generally anti-Brexit, that stance was by no means universal, with several actors in the City hoping that Brexit would bring increased deregulation.[137] In 2021, the FCA suspended the use of pre-trade transparency waivers for the purposes of the DVC, effectively abolishing the cap system.[138] Although the initial transfer of financial regulation powers from Brussels back to London granted UK regulators unprecedented influence, outlines published in 2022 promised a future policy regime emphasizing relaxed rules and enhanced competitiveness.[139] So far, the transfer of firms and assets has taken a course towards the EU rather than the UK, with the UK regulators torn between a wish for financial stability and a need for competitiveness.[140]

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[134] European Commission, *Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions — Equivalence in the Area of Financial Services* (Commission Communication 29 July 2019, COM(2019) 349 final) https://eur-lex.europa.eu/resource.html?uri=cellar:989ca6f3-b1de-11e9-9d01-01aa75ed71a1.0001.02/DOC_1&format=PDF accessed 15 July 2025

[135] D Howarth and L Quaglia, 'Brexit and the Single European Financial Market' (2017) 55(S1) *Journal of Common Market Studies* 149, 20-21

[136] Matthias Rau-Ghoering, 'Impact of Brexit on the International Role of the Euro' (ECB 2021) https://www.ecb.europa.eu/pub/pdf/ire/ecb.ire202106_03~3bb1f15b41.en.pdf accessed 15 July 2025

[137] Scott James and Lucia Quaglia, 'Differentiated de-Europeanisation: UK Policy-Making in Finance after Brexit' (2023) 30(11) *Journal of European Public Policy* 2445, 2452 https://doi.org/10.1080/13501763.2023.2183978

[138] Financial Conduct Authority, 'Suspending the use of pre-trade transparency waivers for a trading venue for the purposes of the Double Volume Cap under Article 5(3B) UK MiFIR' (FCA, 2021)

[139] James (n 137) at 2455-6

[140] ibid 2462

Nevertheless, the possibility of increased competition from the UK has spurred European thoughts of financial reform. As of 2025, the EU is actively reforming its financial market framework through the MiFID II and MiFIR Review process. A central component of this reform concerns the regulation of dark trading, as the EU seeks to balance transparency, trading efficiency, and global competitiveness, especially in response to Brexit and the potential divergence between the UK and EU markets. The main proposed reform is the abolition or reform of the DVC, relaxing it or replacing by a new mechanism focused on execution quality rather than volume metrics.[141] The rationale behind the proposal argues that the DVC is complex, costly to monitor, and sometimes ineffective, with institutional traders complaining that it limits flexibility and increases market impact.[142]

The creation of an EU-wide consolidated tape, through the launching an official consolidated tape for equities and potentially for bonds, is also an often-repeated reform proposal. A consolidated EU tape would ensure that post-trade data, including for dark venues, is easily and universally accessible, accurate, and affordable. A unified tape would improve market transparency, enable better DVC monitoring (if the DVC is retained), and support best execution analysis across venues and jurisdictions. The adoption of a consolidated tape would additionally further the efforts towards the creation of a Capital Markets Union and reduce the still-substantial fragmentation of European financial markets through the provision of a singe price reference point.[143]

A general trend towards liberalization of EU rules would mean greater harmonization with less restrictive jurisdiction and potentially increase the competitiveness of the EU as a financial hub, preventing liquidity migration to London or offshore venues. As of 2025, many reform proposals are under negotiation, adopted partially within the Capital Markets Union (CMU) reform package, and expected to be implemented progressively from 2025 to 2027.

CHAPTER 4: A COMPARATIVE ANALYSIS OF REGULATION AND ENFORCEMENT PATTERNS IN THE US, CANADA, AND THE EU

This research project is dedicated to the evaluation of different approaches to dark pool regulation in a comparative scenario. The US, Canada, and the EU have been chosen as the three jurisdictions subjected to a comparative analysis. Each of the three jurisdictions represents

[141] ESMA (n 129) at 13-15
[142] Ugo Bassi and Martijn Rookhuijzen, 'MiFIR Review: The Right Balance' (1 September 2023) 15(4) *Journal of Securities Operations & Custody* https://doi.org/10.69554/USOH1653 accessed 15 July 2025
[143] E Rogge, 'The MiFIR Review and a European Consolidated Tape: The Next Step Towards a Capital Markets Union' (2023) 24(1) *ERA Forum: Journal of the Academy of European Law* 119, 134 https://doi.org/10.1007/s12027-023-00743-y

a different regulatory strategy, with the US adopting a most liberal approach, the EU taking the strictest, and Canada being located between the two. After outlining the technological and economic foundations of dark pool operations (Chapter 2) and summarizing the most important provisions concerning dark pools (Chapter 3), this chapter will focus on a comprehensive analysis of the relevant laws, identification of the main patterns, and a review of the regulations "in action" through an analysis of case law and enforcement operations. The goal of this chapter is to identify the main themes behind the law in theory and in practice, including any potential discrepancies or problem areas, to enable a subsequent discussion of possible improvements and available solutions capable of bringing the regulatory framework closer to an optimum.

4.1 Dark Pool Regulation in Action

The appropriate enforcement of any regulation is a precondition for its effectiveness. In the context of financial law, effective enforcement is necessary to build market participants' trust and ensure that investors can transact their trades in an environment of legal certainty. Certainty, both legal and economic, is a crucial variable often capable of making or breaking legal and economic systems.[144] Without certainty, systems fall. The opaque nature of dark trading leads to information asymmetry, decreasing certainty and potentially opening the door for market abuse and manipulation. Regulatory authorities are responsible for ensuring that conditions never become too uncertain for the system to remain viable. The identification of misconduct, its punishment, and the prevention of future violations are regulators' means of protecting certainty.

4.1.1 Enforcement actions in the US

The US stands out among other jurisdictions as one with the most substantial history of securities litigation. Since the Great Depression, when suspicions of securities fraud led to the creation of the SEC, financial market oversight became more focused on fraud prevention, leading to the rise of litigation based on securities laws.[145] The first-ever case against a dark pool operator was the previously mentioned matter of Pipeline Trading Systems LLC.[146] In

[144] See, for example, Patricia Popelier, 'Legal Certainty and Principles of Proper Law Making' (2000) 2 *European Journal of Law Reform* 321; Aurelien Portuese, Orla Gough and Joseph Tanega, 'The Principle of Legal Certainty as a Principle of Economic Efficiency' (2017) 44(1) *European Journal of Law and Economics* 131

[145] Steven A Ramirez, 'The Virtues of Private Securities Litigation: An Historic and Macroeconomic Perspective' (2013–2014) 45 *Loy U Chi LJ* 669, 669

[146] Securities Exchange Commission, 'SEC's Enforcement Program Continues to Show Strong Results in Safeguarding Investors and Markets' (Securities and Exchange Commission, Press Release No 2012-227, 14 November 2012)

2011, the SEC launched an enforcement action against the company, alleging a failure to disclose to customers that its dark pool, on which the majority of received orders were filled, was an internalized venue (as discussed in Chapter 2, internalized dark pools raise significant conflict of interest issues). Pipeline advertised its services as a "crossing network" matching orders between clients, while in reality its affiliate company filled the majority of orders. In addition to the falsity of the advertisement, Pipeline generated a conflict of interest by securing favourable prices for its customers through payments made to traders operating in the affiliate company.[147] The conflict of interest was not disclosed to Pipeline's customers. Furthermore, Pipeline faced charges of discriminatory practices and insufficient protection of confidential information.[148] The enforcement action resulted in a cease-and-desist order (based on Section 8(a) of the Securities Act 1933) and a settlement, requiring the firm to pay a fine of 1 million dollars and imposing additional fines on its three senior officers (the payment of 100 000 dollars each), under Section 15(b) and 21(c) of the Securities Exchange Act 1934.[149]

Three years after settling the Pipeline case, the US witnessed one of the most infamous enforcement actions involving a dark pool, with the case having since become well-known across the world. In 2014, the US Attorney General and the New York Attorney General brought forward complaints against Barclays Capital Inc. (one of the largest dark pool operators in the US) and Credit Suisse Securities (USA) LLC, for willfully violating §17(a)(2) of the Securities Act 1933 (prohibiting "obtaining money or property by means of an untrue statement of material fact or omission"), §15(c)(3) of the Securities Exchange Act 1934 (setting a requirement for brokers and dealers to possess and implement appropriate risk management controls and supervisory procedures intended to prevent entry of orders exceeding appropriate preset credit or capital thresholds for each customer), and Regulation ATS, Rule 301(b)(2) (setting a requirement for certain designated forms to be filed "at least 20 days before commencing operation as an ATS and when implementing a material change to its operation when such material becomes inaccurate").[150]

At the core of the issue was the claim that Barclays had advertised its dark pool, LX, as free of HFT traders and equipped with a product called "Liquidate Profiling," allegedly functioning as a protection against predatory trading. The advertising was found to contain misleading statements and omissions of material facts, with additional claims stating that the

[147] Securities and Exchange Commission, *In the Matter of Pipeline Trading Systems LLC*, Exchange Act Release No 65529 (24 October 2011) Administrative Proceeding File No 3-14600, 2-3
[148] ibid 1
[149] ibid
[150] Girasa (n 83) at 86

safeguards and procedures put in place by Barclays to protect its clients' (users of LX) confidential information were insufficient or absent.[151] Ultimately, the parties entered into a consent order, effectively preventing Barclays from continuing to violate the regulations. In addition, Barclays received a censure and a fine of 35 million dollars and an independent supervisor was assigned to overlook Barclay's electronic trading and monitor compliance.[152]

The enforcement actions against Credit Suisse, in the form of two proceedings, both also initiated in 2016, concerned violations of the same regulatory provisions as in the case against Barclays.[153] Credit Suisse was additionally accused of limiting fair access to services offered by its ATS (by setting standards in an unfair or discriminatory manner) and improperly executing its clients' order to buy and sell securities.[154] Credit Suisse was compelled to pay fines of 20 million and 10 million dollars, respectively, and became the subject of two cease-and-desist actions.[155] The actions against both Credit Suisse and Barclays were initiated by the New York State Attorney General on the basis of New York's Martin Act, which grants the office of the Attorney General the capacity to investigate and prosecute cases of fraud and wrongdoing related to securities. More specifically, Section 352(c) criminalizes "fraud, deception, concealment, suppression, false pretense, and promise with respect to the purchase or sale of securities, operate falsely as an exchange, and other related offenses."[156] Interestingly, the initiation of the proceedings by a state attorney general caused controversy and a debate regarding the potential conflict between the mandates of state authorities and the SEC.[157]

The cases of Barclays and Credit Suisse provoked discussions of the optimal approaches to financial regulation law enforcement.[158] Some commentators argued that the regulators should exhibit a more heavy-handed approach, pursuing litigation and creating precedents to provide regulatory guidance when dealing with future violations. In their view, cases should be prosecuted rather than settled (even should prosecution prove unsuccessful) in order to ensure

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[151] Girasa (n 83) at 86-87
[152] ibid at 87; *People ex rel. Schneiderman v. Barclays Capital Inc*., 47 Misc.3d 862, 1 N.Y.S.3d 910 (N.Y. Sup. Ct. 2015)
[153] Girasa (n 83) at 86
[154] ibid at 86-87
[155] Securities and Exchange Commission, *In the Matter of Credit Suisse Securities (USA) LLC* Exchange Act Release No 77002, Admin Proc File No 3-17078 (31 January 2016), 15-17
[156] New York General Business Law, art 23-A, §§ 352–353
[157] Charlie Gasparino and Brian Schwartz, 'Trump Administration Looks to Neuter NYS "Martin Act"' *Fox Business* (15 November 2016) http://www.foxbusiness.com/markets/2016/11/15/trump-administrationlooks-to-neuter-nys-martin-act.html; also see, for example, Brooke Sgambati, 'Using the Martin Act to Bring Fraudulent Practices in Dark Pool Promotion to Light: An Analysis of the Martin Act's Applicability to Misrepresentations Regarding the Operation of Dark Pools' (2016) 49(4) *Columbia Journal of Law and Social Problems* 609
[158] Girasa (n 83) at 88

that transgressors are aware of the consequences of breaching the existing laws.[159] Justin Schack, the managing director of market structure analysis at Rosenblatt Securities (an agency broker and investment bank), pointed out that the potentially predatory practices occurring on dark pools (such as HFT trading at Barclays' LX) are not the problem, as traders are aware of their existence and prepared to meet them; rather, issues arise when dark pool operators choose to mislead their clients about the real conditions on their venue.[160] In response to the cases of Barclays and Credit Suisse, the SEC and FINRA published statements assuring the public of their effective approach to the issue and that supervision of dark trade and its impact on the price discovery process on lit exchanges would continue.[161]

The controversies around Barclays and Credit Suisse have also worked as a spur for the US government to initiate attempts to harness technology in the service of law enforcement. The two high-profile cases highlighted the great potential for abuse present on electronic trading platforms. The US government has decided to respond to the challenge by increased supervision and oversight and created the Consolidated Audit Train (CAT).[162] The CAT is a national market system plan designed to function as a database tracking all equity and option trading on markets in the US. The CAT, fully available to regulators, gives enforcement bodies access to information regarding the customers and transactions through a system receiving and storing trade and order data. Broker and dealer firms are responsible for maintaining, upgrading, and operating the system, including keeping in place strict procedures for the protection of customer confidential information. Furthermore, broker-dealers and their customer receive unique identifiers, and additional information as the date, time, price, type, and any other information relevant to the order is also recorded.[163]

4.1.2 Enforcement actions in Canada

In Canada, enforcement actions are carried out by the Canadian regulatory authority, CIRO (known as IIROC before June 1, 2023). CIRO targets indirect or proxy abuses of dark trading, including poor surveillance systems or manipulative execution methods. Enforcement

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[159] Girasa (n 83) at 88
[160] Nicole Bullock, 'Momentum Builds for Dark Pool Reform' *Financial Times* (26 June 2014)
[161] *CQ Congressional Transcripts*, 'House Appropriations Subcommittee on Financial Services and General Government Holds Hearing on President Obama's Proposed Fiscal 2015 Budget Request for the Securities and Exchange Commission' (1 April 2014); Gary Shorter and Rena Miller, 'Dark Pools in Equity Trading: Policy Concerns and Recent Developments' (Congressional Research Service, 26 September 2014) 13
[162] Girasa (n 83) at 89
[163] Securities and Exchange Commission, 'SEC Approves Plan to Create Consolidated Audit Trail' (Securities and Exchange Commission, Press Release No 2016-240, 15 November 2016) available at https://www.sec.gov/newsroom/press-releases/2016-240

focuses on supervisory obligations (specifically UMIR Rules 6.4 and 7.2, and Policy 7.1) of venue operators, rather than direct dark pool regulation. Enforcement actions tend to underscore the policy objectives of transparency, market integrity, and control over client access. In recent years, CIRO carried out three major enforcement actions against violations closely related to dark trading.

In 2019, IIROC finalized a settlement in an action against RBC Dominion Securities, Scotia Capital, and TD Securities (the investment branches of three major Canadian banks: Royal Bank of Canada, Scotiabank, and TD-Bank). The three institutions participated in block trades executed outside IIROC-regulated marketplaces, contrary to UMIR Rule 6.4 (which requires trades to be entered on a marketplace). In a broader deal involving American investment bank Goldman Sachs acting as underwriter for the oil giant Shell in an acquisition of the share of a Canadian energy firm, the Canadian banks agreed to become members of the underwriting syndicate.[164] On May 8th, 2018, the three firms settled allocations of over 14 million shares in a Canadian energy firm through journal entries, bypassing the marketplace process, despite available exemptions allowing trades to be reported on US venues using Canadian trading systems.[165]

The Canadian banks did not apply for the relevant exemptions, acting on the assumption that the American filing would be sufficient. Meanwhile, IIROC decided that the filings filled by the American party with FINRA and NYSE was not transparent enough to qualify as an equivalent for the Canadian requirements. Found liable for violating UMIR Rule 6.4, each of the three Canadian firms was fined 500 000 Canadian dollars and an additional 10 000 Canadian dollars to cover costs. Interestingly, press coverage of the case following the settlement emphasized that the violation was not committed with malicious intent. The three banks failed to file the share settlement due to an "administrative error," with no detrimental effects to anyone involved.[166]

A year later, in 2020, IIROC accepted another settlement, this time concerning insufficient supervision of dark trades by Instinet Limited Canada, the Canadian subsidiary of an American investment dealer and dark pool operator. Between January 2016 and February 2018, Instinet failed to detect more than two thousand "high" and "very high" alerts regarding trades involving over one billion shares on dark markets, involved in activities practiced by one

[164] David Kitai, 'IIROC Fines Three Banks Combined Total of $1.5 Million' *Wealth Professional* (5 November 2019) https://www.wealthprofessional.ca/news/industry-news/iiroc-fines-three-banks-combined-total-of-15-million/321570 accessed 15 July 2025
[165] Kitai (n 164)
[166] ibid

of its clients. Surveillance alerts concerned activities such as "rapid fires" (an algorithmic trading strategy involving the execution of multiple trades in a short timeframe to exploit market movements) into visible markets that shifted the best bid or ask, impacting dark execution prices.[167] Under UMIR 2.2 and Policy 2.2, Instinet was required to have in place adequate safeguards and detection mechanisms for the identification of manipulative and deceptive market practices.[168]

Potential failures on the part of Instinet were first identified in 2014 by IIROC's Trading Conduct Compliance (TCC) unit. Instinet responded with promises of planned improvements to its internal compliance surveillance system but did not put its plans into practice. Between 2014 and 2017, Instinet's client continued to generate alerts, despite changing its routing protocol to hide orders transferred from dark to lit markets (a practice reducing the number of generated alerts). Meanwhile, Instinet continued to responds to IIROC's inquiries with promises of an enhanced supervision system. Ultimately, IIROC decided to fine Instinet 155 000 Canadian dollars, accompanied by an additional 15 000 Canadian dollars in costs. Furthermore, Instinet was obliged to implement remedial measures and submit a report on its progress in adopting and implementing a sufficient supervisory mechanism within six months.[169]

Another case involving inadequate supervision over manipulative order handling occurred in 2022. CIBC World Markets, the investment banking subsidiary of the Canadian Imperial Bank of Commerce (CIBC), failed to oversee a client who engaged in "pinging."[170] When CIBC was initially notified of the breach by IIROC, the firm conducted an internal investigation of the trading activity and order entry of the client in question. After discovering that the client had been practising pinging, CIBC acted promptly to file a gatekeeper report with IIROC and restricted orders coming from the infringing trader. However, as another trader liable for the same abusive activity was identified while the original investigation was going on, IIROC concluded that despite the bank's cooperation and swift response, CIBC had failed to carry out sufficient supervision over its clients activities, breaching its UMIR-based obligations to prevent interferences "with fair and orderly markets." As a result, CIBC was fined 155 000

[167] Leo Almazora, 'Investment Dealer Fined $155,000 for Trading Supervision Shortfalls' *Wealth Professional* (17 June 2020) https://www.wealthprofessional.ca/news/regulators/investment-dealer-fined-155000-for-trading-supervision-shortfalls/330617 accessed 15 July 2025
[168] ibid
[169] Almazora (n 167)
[170] Investment Executive Staff, 'IIROC Fines CIBC World Markets $150K for Trading Supervision Failures' *Investment Executive* (7 April 2022) https://www.advisor.ca/industry-news/industry/iiroc-fines-cibc-world-markets-150k-for-trading-supervision-failures/ accessed 15 July 2025

Canadian dollars and an additional 15 000 dollars to cover costs. IIROC also imposed a requirement on the firm to implement new supervision protocols.[171]

In its most recent Enforcement Report (2025), the CIRO presented an overview of the most relevant findings and conclusions regarding financial regulation enforcement in Canada. The report opens with a note announcing that Ontario has become the seventh province to grant CIRO a full enforcement mandate. The full mandate entails immunity from liability in good-faith actions for CIRO employees and allows them to require disclosures of evidence in investigations and disciplinary hearings. The measures are intended to "provide stronger protection to investors."[172] The year 2025 also marks a year of transition for the Canadian regulator as the institutions overseeing the Canadian financial market system undergo through a process of centralization. After the merging of IIROC and the Mutual Fund Dealers Association of Canada (MFDA) into CIRO, the institution continues to streamline by switching to a "single system" approach for document and case management.[173]

4.1.3 Enforcement actions in the EU

The EU's approach to regulation enforcement in relation to dark pools is distinctly different from that of the US. Enforcement in the EU is structural and systemic, centred on the automatic suspension of dark trading through the DVC mechanism, not litigation or fines against specific operators. Through public breach reporting and data publication, ESMA's oversight is the backbone of enforcement. Rather than pursue claims against specific transgressors, the typical European approach can be described as focused on prevention, with broader regulatory tools, such as algorithmic trading rules and waiver oversight guidance, supporting the enforcement framework by targeting manipulation risks connected to dark activity.

The enforcement of MiFID II's DVC mechanism is the pillar of the EU's enforcement strategy. Two months after the introduction of the DVC measures as part of the MiFID II and MiFIR regime in January 2018, ESMA began publishing monthly compliance data, identifying stocks and venues breaching the caps. Each of the breaches led to an automatic six-month suspension of dark trading in affected instruments. By October 2018, dozens of stocks had triggered DVCs, with ESMA reporting about 630 stocks suspended from dark trading due to

[171] IES (n 170)
[172] Canadian Investment Regulatory Organization, *Enforcement Report Fiscal Year 2025* (1 April 2024–31 March 2025) 5 https://www.ciro.ca/sites/default/files/2025-06/CIRO-Enforcement-Report-2025.pdf accessed 15 July 2025
[173] CIRO (n 172) 6

breaches of aggregate or venue caps. As of mid-2025, over 35 000 suspensions have occurred.[174] According to ESMA, dark pool volumes plunged from approximately 9% pre-MiFID II to approximately 0.15% by May 2018, though much of that volume shifted to OTC and auction formats rather than lit exchanges.[175] Although ESMA monitors the process, enforcement of the DVC relies on National Competent Authorities (NCAs) in every Member State applying Article 5 of MiFIR.[176] ESMA data releases enable national regulators to enforce trading prohibitions under national transpositions of MiFIR caps. As a result, no high-profile individual enforcement actions, such as fines for specific dark pool operators, have occurred in the EU and regulatory enforcement has played out only through the suspension of trading following a breach.

The EU differs from the US or Canada in that it is not a national jurisdiction, but a jurisdiction aggregating other national jurisdictions. As such, it is a massive legislative endeavour that relies on a complex bureaucratic system to issue and oversee regulations. The elaborate system has proven to be both a strength and a weakness as much depends on the EU's ability to respond timely to legislative needs and pressures. In 2024, such a need arose when ESMA and EU lawmakers discovered that the updated MiFIR rules contained a drafting error. The updated version omitted the existing caps, unintentionally allowing unlimited dark trading for 18 months, starting in early 2024.[177] Regulators responded with fast-track legislation to extend and preserve the existing regime for 18 months, ensuring the DVC remained in force until a new, simplified mechanism takes effect in 2025.[178]

The Court of Justice of the European Union has not handled any cases concerning dark pool operations. The lack of case law on this subject provides valuable insight into the nature of the EU approach to dark pool regulation. The CJEU has issued decisions on freedom of services, consumer protection, and market access (such as *Fondee a.s. v. Česká národní banka* or *Alpine Investments BV v. Minister van Financiën*), but have directly dealt with dark pool mechanics, waivers, or trading exchange infractions. Regulation of dark trading is highly technical and enforcement primarily uses statutory suspensions (through the DVC mechanism) or administrative action, rather than judicial rulings. As a result, no court cases in this domain have occurred (as of mid-2025) and parties typically resolve disputes through regulatory or

[174] European Securities and Markets Authority, 'Double Volume Cap Mechanism' (ESMA, 7 July 2025) https://www.esma.europa.eu/double-volume-cap-mechanism accessed 15 July 2025
[175] McKee (n 128)
[176] MiFIR (n 130) at art 5
[177] 'EU Makes Last-Minute Dash to Close Dark Share Trading Loophole' (Financial Times, 27 March 2024) https://www.ft.com/content/78786532-d5b7-4821-9e05-81fe44be21c4 accessed 15 July 2025
[178] ibid

enforcement channels rather than litigation. The landmark cases concerning financial services regulation that has reached the CJEU generally concerns the broader, overarching legal principles of the EU, such as cross-border service freedom or the justification for national restrictions.[179] To date, none of the settled disputes have been related to dark trade.

While no European NCA has issued public fines or launched enforcement actions against dark pool operators per se, some national authorities have undertaken measures closely related to dark trading and market structure violations, providing a context of wider enforcement patterns. In July 2016, the Financial Conduct Authority (FCA) of the UK published a detailed thematic review of dark pools.[180] Although not an enforcement action, the FCA's review described formal findings and binding expectations for dark pool operators regarding conflict of interest disclosures, operational integrity and monitoring, as well as governance and best execution controls. Firms were directed to remedy identified weaknesses, and the FCA threatened escalation if recommendations were not followed.[181]

More recently, the UK became the first jurisdiction in Europe (but, post-Brexit, not in the EU) to handle a major case focused on a dark pool. On 24th October, 2024, the High Court ruled in favour of the defendant in the case *Allianz v Barclays PLC*. The case was effectively an outgrowth of the litigation faced by Barclays in the US and was filed under sections 90 and 90A of the Financial Services and Markets Authority (FSMA), regarding an alleged violation of provisions concerning losses caused by misleading or untrue statements or omissions in published information. Unlike in the US, the case was ruled in favour of Barclays.[182]

While not targeting dark pool platforms specifically, actions by France's Autorité des Marchés Financiers (AMF) concerning electronic trading manipulation schemes are an example of European enforcement of regulations in cases involving conduct akin to dark trading abuse. In 2019, Morgan Stanley and Co. International plc was fined 20 million euros for orchestrating large trades in sovereign bond futures and spot bonds that distorted prices across electronic

[179] See, for example, *Fondee a.s. v Česká národní banka (Case C-695/22) [2024] ECLI:EU:C:2024:406* and *Alpine Investments BV v Minister van Financiën (Case C-384/93) [1995] ECLI:EU:C:1995:126*

[180] Financial Conduct Authority, 'UK Equity Market Dark Pools – Role, Promotion and Oversight in Wholesale Markets' (Thematic Review TR16/5, 21 July 2016) https://www.fca.org.uk/publications/thematic-reviews/tr16-5-uk-equity-market-dark-pools-%E2%80%93-role-promotion-and-oversight accessed 15 July 2025

[181] FCA (n 180)

[182] The decision was made in favour of the defendant as the principle of reliance used to determine liability for the tort of deceit was not satisfied; Hausfeld LLP, 'Court Strikes Out Passive Investors' S 90A Claims' (blog post, 8 November 2024) https://www.hausfeld.com/what-we-think/perspectives-blogs/court-strikes-out-passive-investors-s90a-claims accessed 15 July 2025

platforms, including off-book trades.[183] This kind of trading venue abuse is a scenario that could easily be seen play out in a dark pool environment. In 2021, Global Derivative Trading GmbH and its Chief Executive Officer were fined 1.2 million euros each by the AMF for placing decoy passive orders on futures markets to distort liquidity perceptions, a practice resembling the deceptive activities (such as pinging) known from dark trading venues.[184]

The scale of ESMA's regulatory efforts is illustrated annually by a published report on the sanctions and measures imposed under the relevant financial regulations (MiFID II, MiFIR, EMIR, MAR, and others). The report highlights which provisions have suffered the most violations over the preceding year and what amount in fines has been executed. The report is compiled based on data submitted by the individual NCAs of the Member States. The most recent report, published in 2024, indicates that the preceding year saw the most violations of MAR and MiFID II, with 299 and 289 administrative measures and sanctions imposed under each, respectively. The aggregate administrative fines imposed for violations were also the highest for those two acts, amounting to 45 946 421 euros and 18 258 028 euros, respectively.[185] In comparison, in 2023, the SEC issued orders for financial remedies amounting to 5 billion dollars, while the Commodity Futures Trading Commission imposed fines amounting to 4.3 billion dollars.[186] In the UK, the FAC ordered a total amount of fines equivalent to 61 million euros.[187] ESMA's report identifies France, Hungary, Italy, and Denmark as the countries with the highest total fines imposed (France) and largest number of measures and sanctions used (Hungary, Italy, Denmark). Between 2013 and 2023, the highest total fines were imposed for violations under the sectoral acts of MAR, UCITS, and AIFMD.[188]

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[183] Autorité des Marchés Financiers, 'The Enforcement Committee of the Autorité des Marchés Financiers fines Morgan Stanley & Co International plc for manipulating the price of sovereign bonds and a sovereign bond futures contract' (Enforcement Committee news release, 10 December 2019) https://www.amf-france.org/en/news-publications/news-releases/enforcement-committee-news-releases/enforcement-committee-autorite-des-marches-financiers-fines-morgan-stanley-co-international-plc accessed 15 July 2025

[184] AMF, 'The AMF Enforcement Committee fines a German company and its CEO for manipulating the price of a sovereign bond futures contract' (Enforcement Committee news release, 28 May 2021) https://www.amf-france.org/en/news-publications/news-releases/enforcement-committee-news-releases/amf-enforcement-committee-fines-german-company-and-its-ceo-manipulating-price-sovereign-bond-futures accessed 16 January 2025

[185] European Securities and Markets Authority, 'Annual Consolidated Report on Sanctions in 2023' (ESMA74-2134169708-1333, 11 October 2024), 12 https://www.esma.europa.eu/press-news/esma-publishes-first-consolidated-report-on-sanctions accessed 15 July 2025

[186] SEC, 'SEC Announces Enforcement Results for Fiscal Year 2023' (Securities and Exchange Commission, Press Release No 2023-234, 14 November 2023) https://www.sec.gov/news/press-release/2023-234 accessed 16 July 2025; Commodity Futures Trading Commission, 'CFTC FY 2023 Enforcement Results' (CFTC, Press Release No 8822-23, 7 November 2023) https://www.cftc.gov/PressRoom/PressReleases/8822-23 accessed 16 July 2025

[187] FCA, '2025 Fines' (Financial Conduct Authority,12 July 2025) https://www.fca.org.uk/news/news-stories/2025-fines accessed 16 July 2025

[188] ESMA (n 185) at 16

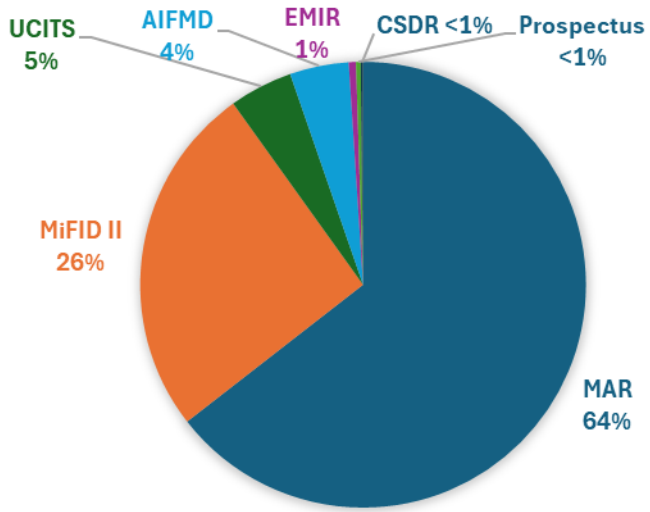

Figure 1: Proportion of fines (% of aggregate sum in EUR) imposed under each sectoral act in 2023.[189]

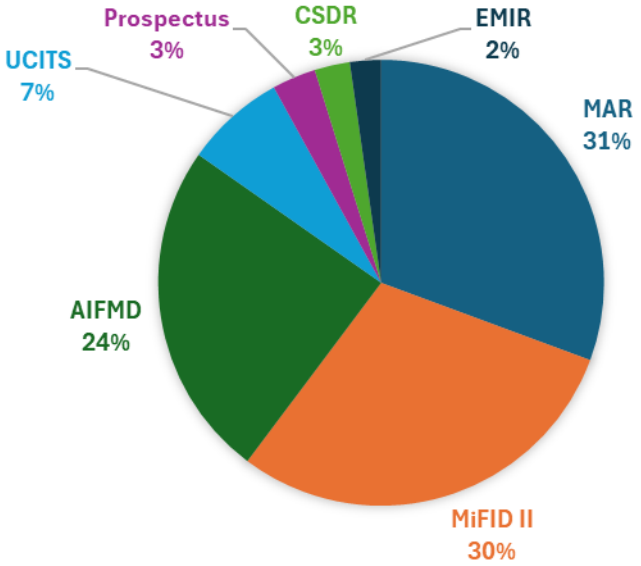

Figure 2: Proportion of the total number of sanctions and administrative measures imposed per sectoral act in 2023.[190]

4.2 The Patterns of Dark Pool Regulation

[189] ESMA (n 185) at 11
[190] ESMA (n 185) at 12

An analysis of the specific provisions pertaining to dark pool regulation in the US, Canada, and EU (contained in Chapter 3) highlights the policy objectives and risk areas that each of the three jurisdictions wishes to address in its regulatory framework. A subsequent review of the case law and enforcement actions involving dark pool operators or other violations originating in adjacent sectors provides a useful insight into the nature of the problems most commonly resulting in regulatory breaches, as well as the values which the respective regulators emphasize in their enforcement actions. When explored in tandem, the provisions and the methods of their enforcement demonstrate the patterns of dark pool regulation in the three jurisdictions in question.

4.2.1 Policy priorities in the US: transparency and investor protection

Despite the considerable differences between the regulatory approaches of the US, Canada, and the EU, the three jurisdictions are unified by the emphasis they place on transparency as a key objective of financial regulation. For the US, the bulk of transparency concerns are addressed by amendments to Regulation ATS (adopted July 18, 2018, effective October 9, 2018), which includes dark pools. In contrast to Canada and the EU, where dark pools and other ATS rules are contained within broader pieces of legislation, the SEC has chosen to devote a separate regulation exclusively to the matter of off-exchange trading. Similarly to equivalent provisions in Canada and the EU, the American regulation is largely motivated by transparency concerns.

However, unlike the Canadian and EU regulations, which stress transparency as a direct means of protecting investors from abusive practices, Regulation ATS speaks of transparency as increasingly necessary for investors to "assess NMS Stock ATSs as potential trading venues."[191] Operational transparency is then explained as necessary for market participants to understand how their orders would be matched and executed and to adequately evaluate potential conflicts of interest of their platform operators which may threaten transactions. The increased need for transparency is justified by the growing complexity of ATS operations and recent enforcement actions carried out by the SEC (namely, *Barclays*). Transparency is thus presented as a tool available to investors to effectively protect their interests, making investors agents rather than objects of protection. The document states that "[t]ransparency has long been

[191] SEC, *Regulation of NMS Stock Alternative Trading Systems* (Securities and Exchange Commission, Release No 34-83663, File No S7-23-15, 83 Fed Reg 38768 (7 August 2018)) 31–32

a hallmark of the U.S. securities markets, and is one of the primary tools used by investors to protect their interests."[192]

The SEC's release amending Regulation ATS specifically for NMS Stock ATSs demonstrates a considerable awareness of the growing economic and technological complexity of ATSs. The document identifies the increased complexity of the relationship between broker-dealer operators of ATS platforms and their clients, a development potentially conducive to the rise of conflicts of interest. As operators control access to ATS venues, they are in a position to determine the criteria for the selection of platform users. In addition to controlling access, the broker-dealers often control significant amounts of sensitive information about their clients, such as market and order and execution data, and are sellers of algorithmic trading software, order routing services, and others. The "multiservice" nature of a modern ATS platform operator thus becomes a potential risk factor, generating conflicts of interest situations where an investor interested in using the markets is reliant on a single supplier of almost all services.[193]

Interestingly, unlike the Canadian or EU regulations, the American one is the only to provide a review of the analysis undertaken by lawmakers when drafting the relevant provisions. Opening with a statement declaring that previously existent rules may no longer answer the purpose of protecting investors and the public interest due to the growing complexity of ATS market operations, the Release stresses the direct link between transparency and economic efficiency: only a well-informed investor (one who is capable of understanding the basic technicalities behind trading) is able to make informed decisions. In turn, conscious decision-making results in a more precise and deliberate capital allocation and a more accurate realization of the investor's intentions. The authors of the document emphasize that they are "sensitive to the economic consequences and effects, including the costs and benefits, of our rules," especially those impacting "efficiency, competition, and capital formation."[194] In the succeeding pages, the Release describes the anticipated economic effects of the current and proposed reporting requirements, the consequences of a lack of a standardized public disclosure, as well as the possible implications for the competition between ATSs and publicly registered exchanges.[195]

To fully assess the impact and outstanding features of Regulation ATS, it is enlightening to refer to the comments submitted to the SEC on the proposed rule (it is a standard practice for

[192] SEC (n 191) at 32-36
[193] ibid 18-19
[194] SEC (n 191) at 431-433
[195] ibid 435-440

the SEC to accept comments from the public regarding the rules it has proposed). Many of the received comments were submitted by prominent industry professionals. While the comments range in scope of the subject matter, they are generally favourable towards the amendments. The senders describe themselves as supporting "smart, effective regulation of securities markets," especially the "recent Presidential Executive Orders designed to reduce regulation, control regulatory costs, and establish core principles for regulating the financial system."[196] Others suggested taking transparency measures even further, by extending the publicization of Form ATS-N filings to current filings and to ATSs trading solely in government securities.[197] Overall, the majority of the thirty-two comments received by the SEC expressed support for the proposed amendments.

4.2.2 Policy priorities in Canada: lit market strength and public good

Similarly to the SEC, the Canadian regulator stresses investor protection as the key motive behind its rulemaking and enforcement actions. CIRO appears to prioritize specific complaint-focused investigations, relying on its Complaints & Inquiries group as an important branch of its enforcement.[198] As public complaints are received by CIRO, the institution responds by issuing investor alerts, warning Canadian investors of the suspected instances of fraud and manipulation. The alerts are then transmitted to the public through the media with the intention of raising maximum awareness. Once identified, cases of fraud are evaluated based on their severity, with the most significant ones given the greatest urgency. The integrity of Canadian capital markets and investor protection are named as the main objectives of the Canadian regulator's transparency-focused efforts.[199] CIRO's protection of investors is also enshrined in the UMIR rules, which impose a price improvement requirement, meaning that retail orders must receive better execution prices when traded against dark liquidity, typically by at least one trading increment.[200] In addition, IIROC Guidance on Best Execution (Rule 3300), published in 2017, indicates that dealers are required to consider not only the cost, but

[196] Managed Funds Association, Letter dated 18 May 2017 regarding Incentive-Based Compensation Arrangements (SEC File No S7-07-16, 'MFA-2 Letter') 1-2, https://www.sec.gov/comments/s7-07-16/s70716-1761663-152156.pdf accessed 16 July 2025
[197] Office of the Investor Advocate, Letter dated 9 September 2016 regarding Regulation of NMS Stock Alternative Trading Systems (SEC File No S7-23-15, Letter 51, 2016) 19-20 https://www.sec.gov/comments/s7-23-15/s72315-51.pdf accessed 16 July 2025
[198] CIRO (n 115) at 6
[199] CIRO (n 115) at 6-7
[200] UMIR (n 121) at Rule 6.6

also the execution quality when routing client orders, including when routing them to dark venues.[201]

Despite the light-handed approach of CIRO towards violations (demonstrated by the preference for warnings over immediate fines and for settlements rather than litigation), the Canadian regulatory framework unequivocally favours transparent trading in lit environments. UMIR 6.6 and Policy 6.6 require dark orders to provide a meaningful price improvement over the National Best Bid and Offer (NBBO) unless the order is above a minimum size threshold.[202] The trade-at rule prevents execution of dark orders at the NBBO unless price improvement is provided or the order meets size exemptions.[203] Finally, the priority rule requires that lit orders be filled before dark orders.[204] These rules are clearly designed to discourage "free-riding" on visible quotes and protect the value of displayed liquidity.

At the same time, the usefulness of dark trading is preserved as much as possible, in recognition of its importance for institutional block trading, which would have been disadvantaged if full pre-trade transparency was required. The benefits of dark trading are protected by the Minimum Size Exemption (UMIR Policy 6.6), stating that orders above the sum of 100 000 Canadian dollars in value are exempted from price improvement and trade-at restrictions and permitted to occur in the dark.[205] There are also crossing rules and internalization exceptions, allowing certain dealer-facilitated block trades to occur off-book (provided that they meet CIRO conditions).[206] These solutions acknowledge the legitimate need of institutional investors managing large orders for dark trading.

4.2.3 Policy priorities in the EU: harmonization and predictability

In the assessment of the financial law policy objectives and regulatory priorities of the EU, MiFID II is the most comprehensive source of information. In the recitals of the Directive, the lawmakers link the occurrence of the financial crisis with weaknesses in the transparency of the financial markets. An enhanced transparency is invoked as a precondition for greater

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[201] Investment Industry Regulatory Organization of Canada, 'Guidance Respecting Best Execution (Rule 3300)' (IIROC Notice 17-0138, 6 July 2017) https://www.iiroc.ca/news/notice-17-0138-guidance-respecting-best-execution accessed 16 July 2025

[202] UMIR (n 121) at Rule 6.6; Policy 6.6

[203] Investment Industry Regulatory Organization of Canada, *Rules Notice 12-0130: Notice of Approval – UMIR – Provisions Respecting Dark Liquidity* (13 April 2012)

[204] UMIR (n 121) at Rule 5.3

[205] UMIR (n 121) at Policy 6.6

[206] Canadian Securities Administrators and Investment Industry Regulatory Organization of Canada, 'Joint Consultation Paper 23-406: Internalization within the Canadian Equity Market' (12 March 2019) 3-5 https://www.osc.ca/sites/default/files/pdfs/irps/csa_20190312_internalization-within-the-canadian-equity-market.pdf accessed 16 July 2025

investor protection and increased confidence.[207] MiFID II highlights the need for transparency in relation to the internal rules set by MTFs (which include dark pools) and OTCs (often-chosen alternatives to dark trading). The rules which these venues lay down to govern their operations should be "transparent and non-discriminatory," although OTCs are given permission to restrict access to their platforms based on the obligations they have towards their clients. Although the power of rule-making regarding the structure and accessibility of MTF and OTC platforms is thus delegated to the platform operators, they must exercise their capacity in an "open and transparent manner."[208]The EU thus highlights the importance of internal supervision systems implemented by large investment firms. According to the EU, these systems of internal checks and balances should be geared towards the discouragement of excessive risk taking, a factor potentially lowering investor confidence, as well as a deterrent against incorrect conduct on the part of service-providing firms and failures in corporate governance in general.

MiFID II also frames the management of MTFs as an element within the broader initiative to facilitate access to capital for small- and medium-sized enterprises (SMEs) as well as encourage the creation of smaller, specialist markets geared towards small- and medium-sized issuers.[209] The Directive classifies MTFs as "growth markets," identifying their significant role in fostering growth among small- and medium-sized issuers and investors. The Directive indicates a desire to reduce the administrative obstacles and otherwise enhance the attractiveness of these markets to achieve the dual goal if increasing harmonisation among Member States in this regard and to further cultivate the development of SME-fostering market environments. Due to its structure as a union of nation states rather than a nation state itself, the EU naturally places a considerable emphasis on market harmonisation, though this objective is also placed in a context of investor protection.[210] The proposed solution is the creation of a sub-category of an "SME growth market" within the "MTF" category and the registration of relevant markets as such across the Member States, thus raising awareness of their existence, role, and economic and regulatory significance.[211]

The Directive also recognizes the growing market role of MTFs, signalling that cooperation between MTF operators and appropriate national authorities is a necessary precaution against potential abuse.[212] In anticipation of the potential instances of abusive

[207] MiFID II (n 127) at recitals 2-4
[208] ibid recital 14
[209] ibid recital 132
[210] MiFID II (n 127) recitals 2-4
[211] ibid recital 132
[212] ibid recitals 141-143

practices, Member States are obligated to install mechanisms providing for the imposition of "effective, proportionate, and dissuasive" sanctions and measures. Although the specifics of designing the sanction and measure regimes are delegated to the Member States, the Directive outlines the minimum requirements to be fulfilled: fines should be high enough to offset the benefits of potential market abuse and to dissuade even "larger institutions and their managers."[213] Competent authorities are also required to be able to enter the premises of the natural and legal persons under investigation when a reasonable suspicion exists that an infringement is taking place or that relevant evidence may be "removed, tampered with or destroyed."[214] Other requirements concern addressing previously unregulated areas and appropriately increasing the mandate of supervisors to ensure that they have sufficient powers to target risks.[215] The justification for these concerns is based by the EU on the identification of weaknesses, such as a lack of transparency and low level of regulation, as causes that have led to the financial crisis.[216]

4.2.4 Enforcement methods in the US, Canada, and the EU

The US stands out from among Canada and the EU as the jurisdiction most reliant on litigation in determining outcomes for instances of financial regulation violations, including those involving dark pools. As mentioned previously, despite the highest number of litigation actions among jurisdictions, the US regulator nevertheless faces criticism for its excessive willingness to accept settlements. Critics argue that litigation pursuing a punitive judgment, even if unsuccessful, has a greater impact as a deterrent and adds to the publicity of cases, dissuading potential future violators from undertaking actions that may place them at odds with the law.[217] The high-profile cases such as *Pipeline* or *Barclays* set precedents that gradually build the securities-related litigation of the US and provide guidance for future cases. They are also valuable for flagging to the public the main risks and violations associated with dark pool abuse.

The main punitive tool in use by US courts in dark pool-related cases are fines. In all recent high-profile cases, high fines were imposed as part of the settlements. Lately, there has been an observed rise in SEC fines imposed for dark pool-related violations. Furthermore, the large number of enforcement actions that have occurred over the past ten years lead some to

[213] ibid recitals 142-143
[214] ibid
[215] ibid recitals 2-4
[216] ibid recital 5
[217] Girasa (n 83) at 88

believe it the beginning of a stricter approach towards disclosure requirements and market structure reforms.[218] Importantly, opponents of regulations in their current form believe that regulatory adaptability and flexibility in the context of a fast-paced technological landscape is key for the successful oversight of dark trading.[219] As trading becomes faster and speed is elevated to the position of a key determinant of market success, it is essential to use technology-based tools, such as synchronized clocks, to ensure an equal footing for all market participants.[220]

The Canadian approach is markedly different from that of the US. Although the jurisdiction has a similar regulatory structure to that of its southern neighbour, with a central regulator and a divide between federal and provincial competences, the enforcement practices are clearly different. As exhibited by the case of CIBC, the Canadian approach makes efforts to accommodate and facilitate relations with the US in securities trading. In 1991, the Multijurisdictional Disclosure System (MJDS) was established by the Canadian CSA and American SEC. It enables eligible Canadian issuers to register and report with the SEC using Canadian disclosure documents, with limited additional American disclosures.[221] The system facilitates dual listings and capital raising across Canadian and US markets by reducing duplicative filing burdens and recognizing regulatory equivalence.[222] As showcased by the CIBC case, the Canadian requirements are nevertheless enforced strictly, despite the emphasis on cooperation and equivalence.

The analysis of Canadian enforcement actions reveals that the CIRO exercises considerable patience in approaching potential violators. In the case of Instinet, the firm was allowed three full years of warnings from CIRO before the regulator imposed punitive fines in the final settlement. Evidently, the emphasis is placed on self-regulation and healthy internal surveillance mechanisms, with every major enforcement action including a remedial measures requirement as part of the settlement and in addition to the fines. By delegating the responsibility of regulation as much as possible to the firms concerned, CIRO allows market participants to maintain a maximally individualized regulatory structure. Nevertheless, the Canadian approach cannot be described as absolutely liberal, as the self-regulation of platform

[218] Matthew Freedman, 'Rise in SEC Dark Pool Fines' (2015) 35 *Review of Banking & Financial Law* 150, 160-161
[219] ibid
[220] ibid
[221] Securities and Exchange Commission, *Financial Reporting Manual*, Topic 16: Multijurisdictional Disclosure System (Division of Corporation Finance, last updated 30 June 2013) https://www.sec.gov/about/divisions-offices/division-corporation-finance/financial-reporting-manual/frm-topic-16 accessed 16 July 2025
[222] SEC (n 221)

operators occurs within a carefully-designed framework of rules, setting requirements regarding transparency and client protection.

The enforcement methods of the EU stand in stark contrast to those of both the US and Canada. By focusing its dark trade regulation mechanism primarily on the DVC, the EU delegates the bulk of the compliance oversight responsibilities to the Member States, with ESMA remaining as a central overseer and regulatory authority. The functioning of the DVC ensures that the enforcement process is almost mechanical, with mathematical calculations used to determine which financial instrument should be suspended and on which venue. The lack of litigation or high-profile scrutiny actions concerning dark pools means that the system of volume cap enforcement remains largely outside of the public eye and is comprehensible mainly to individuals familiar with the industry. Although ideas of reforming the DVC exist, as discussed by the MiFID II and MiFIR reviews since 2024, they nevertheless maintain the old approach of a cap system, indicating that even if the DVC system is altered or exchanged for a Single Volume Cap, the core mechanism for its enforcement would remain the same.[223]

4.2.5 Enforcement transparency

In the US, enforcement transparency depends on the communication channels between the main regulatory bodies (SEC and FINRA) and the general public. Both institutions maintain a steady stream of communications regarding their rulemaking and enforcement activities. The SEC offers the possibility of searching through filings detailing enforcement cases, as well as an easy access to information regarding litigation releases, administrative proceedings, or trading suspensions. There is also an open access to a summary description of every litigation action, including the name of the respondent and the subject matter of the case. In addition, there are resources providing information on the rules of practice, reports of investigations, and enforcement data delivery standards.[224] FINRA manages its communication in a similar manner, in addition to publishing a yearly report covering its activities and enforcement priorities. In its 2024 Annual Regulatory Oversight Report, it describes the highlights of its activities regarding financial crimes, firm operations, market integrity, and financial management.[225]

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[223] ESMA (n 129) at 13-15
[224] Securities and Exchange Commission, *SEC.gov* (official website) https://www.sec.gov/ accessed 16 July 2025
[225] Financial Industry Regulatory Authority, *2024 Annual Regulatory Oversight Report* (9 January 2024) https://www.finra.org/sites/default/files/2024-01/2024-annual-regulatory-oversight-report.pdf accessed 16 July 2025

Canada's CIRO publishes an annual (per fiscal year) enforcement report, in which it devotes considerable space to an accessible explanation of the means and purposes of enforcement. The report opens with a "legal authority map," which illustrates what mandate has been granted to CIRO in every province and from what date. For example, the information bubble for the province of Quebec indicates that CIRO is authorized there to collect fines (since June 2013) and to collect and present evidence with statutory immunity (since June 2018).[226] The report then continues to give an overview of the role of enforcement, where the investigational procedures are outlined. The reader is informed of the exact structure of investigative procedures, from case assessment, through investigation and prosecutions to the different disciplinary proceedings, fines, and penalties applicable to firms and individuals.[227] Next, the report moves on to selected case highlights and statistical information regarding complaints, investigations, and enforcement proceedings, with each subdivided into categories according to type, province, source, and regulatory contravention. The sanctions imposed and the fine collection rate are explained in a detailed and accessible manner.[228] At every stage, the report is organized in a clear and straightforward manner, using minimal technical jargon and with extensive use of visual aids and representations.

The EU's enforcement framework poses by far the greatest transparency challenges. The DVC is a complex regulatory mechanism based on precise calculations of trading volumes per financial instrument and trading venue. The process is highly detailed and conducted by specialist staff working within ESMA. Any attempt at reforming the DVC or altering the cap thresholds is therefore closely tied to monitoring the connection between specific volume caps and their impact on economic factors influencing market efficiency. Although ESMA publishes the records of DVC-induced suspensions as well as all reports related to proposed reforms, the language used therein remains highly specialist and thus may be challenging to access. ESMA's enforcement report, outlining the sanctions and administrative measures imposed, is brief compared to the equivalent reports produced by ESMA's regulatory counterparts in the US and Canada. It contains an outline of the regulatory framework for reporting sanctions and measures, a general overview of the sanctions imposed across different sectors, and a brief assessment of the trends observable in sanctioning. The bulk of the report is devoted to

[226] CIRO (n 115) at 8-9
[227] ibid 10-11
[228] ibid 14-21

displaying and describing the trends in the imposition of sanctions and measures under the individual sectoral acts.[229]

4.3 Overview of Regulatory Patterns

Enforcement of dark pool regulation across the US, Canada, and the EU reflects differing regulatory emphases but converges on concerns of transparency, market integrity, and abuse prevention. In the US, several high-profile cases have exposed systemic abuses by dark pool operators, including misleading clients about order routing and giving preferential treatment to high-frequency traders. The cases illustrate the SEC's active role in uncovering misconduct within ATSs. In Canada, the enforcement landscape is shaped by a strong emphasis on transparency and market fairness. The case involving RBC, Scotiabank, and TD, though not directly involving dark pools, demonstrated how opaque execution methods to avoid lit markets triggered regulatory scrutiny. Notably, the Instinet case illustrated IIROC's (now CIRO's) focus on enforcing rules against non-transparent trading that distorts market behavior, while the CIBC case highlighted how pinging strategies (closely associated with dark venue exploitation) are monitored to prevent indirect manipulation. CIRO's 2024 enforcement review underscores this vigilance, with cases involving dark trading risks featuring prominently alongside broader fraud cases, amounting to over 10 million Canadian dollars in fines.[230] In contrast, enforcement in the EU has been more structurally focused, with regulatory ceilings (such as the double volume cap under MiFID II) serving as preventive mechanisms, although formal enforcement actions have been less frequent compared to the US and Canada. Together, these cases and figures illustrate a shared regulatory concern with curbing opacity and manipulation, albeit pursued through different institutional and legal frameworks. The instances of dark pool abuse demonstrated by the American cases also demonstrate that concerns over the consequences of insufficient transparency may be justified.

CHAPTER 5: EVALUATING DARK POOL REGULATION IN THE US, CANADA, AND THE EU THROUGH THE THEORETICAL FRAMEWORKS OF HAYEK AND POSNER

The purpose of this chapter is to evaluate dark pool regulation in the US, Canada, and the EU in terms of their effectiveness and appropriateness according to the criteria set out in the works of F. A. Hayek and Richard Posner. Dark trading is an economic activity and its

[229] ESMA (n 185)
[230] CIRO (n 115) at 15-19

regulation entails material economic effects. To fully understand the appropriateness of the respective provisions, it is essential to understand their economic impact. The comparison of non-economic factors, such as transparency or non-discrimination, is on its own insufficient to provide a basis for evaluating an activity that produces far-reaching economic consequences. As the three jurisdictions of the US, Canada, and the EU declare commitment to free market principles, it is reasonable to analyze their regulatory regimes by applying the frameworks developed by the two most prominent thinkers debating the interaction between law and free market powers.

5.1 Theoretical Framework: Efficiency in a Free Market Environment

Efficiency is an appropriate criterion for analyzing the effectiveness of financial regulation because financial markets exist primarily to allocate capital to its most productive uses. Regulation that enhances market efficiency ensures that prices reflect conditions that facilitate investment, innovation, and economic growth, such as available information, liquidity, and minimized transaction costs. From both a Hayekian and Posnerian perspective, efficiency serves as a benchmark that captures whether regulatory intervention improves or distorts the decentralized processes through which markets function. Inefficient rules, even if well-intentioned, can impede the flow of information or misallocate resources, ultimately harming the investors and institutions they aim to protect.

5.1.1 Hayek's Theory of Market Knowledge and Financial Law as a Spontaneous Legal Order

Hayek's theory of spontaneous order holds that complex and effective social systems, including markets and legal norms, can emerge without central direction through the decentralized interactions of individuals pursuing their own interests.[231] Central to this theory is the idea that knowledge in society is dispersed and contextual, meaning that no single planner can access or process all relevant information.[232] Markets function as information systems where prices convey signals that reflect the relative scarcity and value of resources.[233] This allows individuals to coordinate their actions efficiently based on local knowledge. For Hayek, a spontaneous order is superior to a centrally planned system because it harnesses the collective

[231] Hayek (n 18) at 8-34
[232] Hayek, (n 17) at 519-20
[233] ibid 526-527

knowledge embedded in free exchange and evolving practices, rather than relying on inherently limited, top-down decision-making.

In his article 'Law Without the State: The Theory of High Engagement and the Emergence of Spontaneous Legal Order Within Commercial Systems,' Bryan Druzin argues that under certain conditions where market participants are highly engaged and repeat their interactions, order can arise without the state.[234] Instead of relying on formal legal institutions, participants create observe, and enforce private norms and rules to facilitate trust, mitigate risk, and ensure accountability. Drawing from examples in commercial and international law, Druzin develops a theory of "high engagement," wherein private actors create, observe, and enforce their own rules to facilitate cooperation and manage risk.[235] This self-sustaining legal order relies on reputational incentives, mutual benefit, and network effects rather than coercive state power. Druzin's article thus challenges traditional state-centric conceptions of law, suggesting that in complex, commercial environments, spontaneous order can produce stable and effective legal norms without formal state intervention.[236]

Druzin's application of Hayek's spontaneous order theory to commercial law can be used as a lens for analysing financial law broadly, and dark pool regulation specifically. Financial law is characterized by the same "high engagement" as broadly understood commercial law: it relies on repeated interactions based on exchanges resulting in mutual benefits. It is effectively commerce in financial instruments. Within the order of financial law, dark pools are a quintessential example of a private ordering. They operate based on internal rule books, set by the venues themselves. While state regulations exist, a substantial portion of the conduct and compliance is governed privately, such as access rules, matching algorithms, confidentiality expectations, and order types and priorities. These norms evolve in a decentralized, often competitive environment, fulfilling the criteria of a spontaneous legal system that Hayek, Druzin, and others have described.

The spontaneous order theory indicates clearly what regulatory approaches should work best. Hayek argues that centralized planning is detrimental to legal order because it disrupts the spontaneous, decentralized processes through which individuals coordinate their actions based on localized knowledge.[237] In his view, legal systems should emerge organically from social

[234] Bryan H Druzin, 'Law Without the State: The Theory of High Engagement and the Emergence of Spontaneous Legal Order within Commercial Systems' (2010) 41 *Georgetown Journal of International Law* 559, 560-561
[235] ibid 561-562
[236] ibid
[237] Hayek (n 18) at 31-34

practices and traditions, rather than being imposed from above by a central authority. Centralized control tends to replace general rules of just conduct with directives aimed at specific outcomes, undermining individual freedom, distorting market signals, and eroding the rule of law.[238] For Hayek, the best legal order arises not from design but from the evolution of norms that enable individuals to form expectations and cooperate within a framework of predictable rules.[239] In dark pools, institutional investors, market makers, and high-frequency traders often repeat their transactions, meaning that they have a strong incentive to preserve their reputation and adhere to market norms, even without enforcement from a central authority. This aligns with Hayek's argument that social sanctions and network exclusion can be more effective than formal law in regulating behaviour. This lends theoretical support to arguments for light-touch regulation, self-regulation, and principles-based oversight, particularly when dealing with sophisticated actors and rapidly evolving technology.

5.1.2 Posner's law-and-economics approach

Despite his emphasis on the benefits of spontaneous ordering, Hayek admits that "the spontaneous process of growth may lead into an impasse from which it cannot extricate itself by its own forces or which it will at least not correct quickly enough."[240] At that point, deliberate legislation is necessary to correct the imperfections of naturally-grown law. Posner's theoretical framework serves as a complement to Hayek's thought on "correction through legislation," as he explains how appropriate regulation can help enhance the efficiency of the law.

In his book *Economic Analysis of the Law*, Posner opens the chapter on regulating securities markets by suggesting that the crash of 1929 and the subsequent Great Depression reflected anticipation of an economic downturn rather than market abuse.[241] He thus undermines the argument that fraud and excessive speculation require a sweeping regulatory response, such as the Securities Act of 1933 and the creation of the SEC, both of which were responses of the US government to the financial crisis. From a Posnerian perspective, regulation based on faulty causal assumptions risks being inefficient or even counterproductive.[242] When applying this stance to the issue of regulating dark pools, it can be argued that fears of market opacity or unfairness could lead to disproportionate regulation, even in the absence of clear, systemic harm. Posner's argument emphasizes that capital markets generate information

[238] Hayek (n 18) at 31-34
[239] ibid 55
[240] ibid 88
[241] Posner (n 19) at 420-421
[242] ibid 421-422

organically, through market participants such as underwriters, institutional investors, and analysts. Thus, mandatory disclosures (for example, of pre-trade data) may add little informational value, especially if written in obscure legal language or restricted by regulatory norms.[243] In dark pool regulation, this supports the view that market participants are often better positioned than regulators to manage information asymmetries. Enforcement and disclosure mandates should be empirically tested, not assumed effective by default. Posner provides an example by referencing economist George Stigler's study, Posner argues that mandatory registration and disclosure under US securities laws (post-1933) have not measurably improved investor outcomes in stock launches.[244]

Posner also defends speculation, particularly short-selling, as an efficient price discovery mechanism.[245] Speculators uncover and disseminate undervaluation or overvaluation, helping markets reflect current economic conditions faster. Restrictions like the uptick rule (preventing short-selling during a stock's price decline) and margin limits (on leverage) interfere with this process and may instead increase market volatility.[246] By extension, Posner's arguments can be used to perceive dark pools, often used by institutional speculators, as contributing to price discovery in a low-impact manner. Attempts to over-regulate them might stifle valuable speculative behavior and delay the market's informational adjustment to new data. Furthermore, an attempt to limit one form of risk, such as speculation or trading in the dark, may just push investors toward alternative, riskier behaviour, such as buying volatile stocks or pressuring firms to increase leverage, overall worsening systemic risk. If regulators suppress dark trading too much, it may push large, information-sensitive orders into less efficient execution methods or cause fragmentation in other opaque venues, not reducing risk but relocating it. It has already been demonstrated that after the introduction of the DVC mechanism in the EU, many former dark traders moved to OTC markets.[247]

In terms of fraud prevention, forcing firms to internalize risks may encourage boards and managers to monitor better, even if the shareholders (who ultimately pay the price) are blameless. Risk internalization supports systemic enforcement approaches. When dark pool operators are held liable for lapses (such as poor disclosure or discriminatory access), they might not compensate direct victims of fraud, but instead promote overall fairness in the long run. Regulators might thus justifiably pursue deterrence through institutional accountability,

[243] Posner (n 19) at 421
[244] ibid 421-422
[245] ibid 422
[246] ibid
[247] McKee (n 128)

even amid distributive imperfections. Posner notes that fraud imposes broader inefficiencies: managers expend resources to hide their misconduct and investors waste resources trying to see through deception.[248] Even if total monetary losses are ambiguous, distorted price signals reduce trust and increase transaction costs.[249] Since a central criticism of dark pools states that reduced transparency may erode market confidence and raise transaction costs, especially for less sophisticated participants, pre-regulatory research should strive to ascertain what may cause greater inefficiencies: under- or overregulation. It is important to note that Posner does not discredit all forms of regulatory interventions, but argues that subtle market distortions warrant subtle responses.[250]

5.2 Jurisdictional Overviews Through the Dual Lens

5.2.1 The US and Regulation ATS

The US framework for dark pool oversight, centered on Regulation ATS and its 2018 amendment introducing Form ATS-N, reflects an incremental, disclosure-based approach rather than a restrictive regime. This aligns, to some extent, with Hayek's vision of a market where decentralized actors adapt to changing conditions through local knowledge and innovation. By allowing dark pools to operate as ATSs rather than fully regulated exchanges, the SEC preserves space for experimentation and flexibility. At the same time, the requirement for ATSs to publicly disclose operational details through Form ATS-N, particularly concerning access protocols, conflicts of interest, and order handling, could be critiqued by Hayek as a centralizing move that assumes that regulators can meaningfully interpret and act on information best understood by market participants. From this angle, even transparency, when mandated top-down, risks distorting natural market evolution and imposing artificial constraints on competition and specialization.

By contrast, Posner's law-and-economics perspective would likely see Regulation ATS and Form ATS-N as a measured and economically rational solution to a growing problem of opacity in fragmented markets. The reforms of 2018 aim to correct information asymmetries and enhance investor confidence without banning dark pools or severely limiting their operations.[251] In Posnerian terms, requiring disclosures does not interfere with innovation *per se* but internalizes the negative externalities of non-displayed liquidity, especially where

[248] Posner (n 19) at 423-424
[249] ibid
[250] ibid
[251] Girasa (n 83) at 83-84

conflicts of interest with broker-dealer operators could disadvantage less informed investors.[252] Furthermore, the regime's reliance on enhanced oversight and review powers (for example, SEC approval of Form ATS-N before implementation) reflects Posner's emphasis on institutional accountability and rule adaptation based on market outcomes.[253] Thus, while Hayek would remain wary of the knowledge problem inherent in regulatory mandates, Posner would likely see the US model as a flexible framework that balances market innovation with the need for transparency and fair competition.

5.2.2 Canada and UMIR

Canada's dark trading regime, governed under UMIR and administered by the CIRO, represents a prescriptive regulatory model aimed at protecting price discovery and visible liquidity. Key rules, such as the trade-at rule, minimum price improvement requirements, and priority for visible orders, seek to limit dark activity that could undermine the quality of public price formation. From a Hayekian perspective, this structure may be seen as overly intrusive. Hayek argues that rules restrict the capacity of market participants to organically develop new trading practices tailored to evolving needs, such as minimizing market impact for large orders. The imposition of centralized norms on execution methods could be viewed as a disruption of the spontaneous order of financial markets, especially when they ignore the nuanced, decentralized knowledge that drives participants toward dark venues in the first place.

However, through Posner's law-and-economics lens, Canada's approach is more defensible. The regulatory choices embedded in UMIR reflect a deliberate cost-benefit analysis: by discouraging dark trading below a certain size and giving priority to lit orders, the framework aims to mitigate adverse selection and protect retail investors without obstructing innovation. According to the Posnerian lens, the Canadian model is an example of economically rational regulation, an intervention that internalizes the externalities of opacity and prevents a race to the bottom in execution quality. The clear, rules-based enforcement carried out by CIRO also aligns with Posner's emphasis on institutional competence and predictability. While Posner might caution against inflexible rules that suppress beneficial forms of liquidity, he supports a balance between investor protection (done through internalization of risks) and market efficiency, so long as the regulatory burden does not outweigh the gains in fairness and transparency. So far, the Canadian regulations have been successful at striking the right balance. For example, the introduction of the UMIR regulations resulted in a decline of dark order

[252] Posner (n 19) at 423-424
[253] ibid 11-15

internalization (notorious for its conflict of interest generation) from 13% to 6% (in dark dollar volume), suggesting that the provisions accurately target the most sensitive risk areas.[254]

5.2.3 The EU and MiFID II

The EU's MiFID II framework exemplifies a highly structured, top-down approach to market regulation, particularly evident in its treatment of dark pools through mechanisms like the DVC. From a Hayekian perspective, such measures reflect a central planner's mistrust in the market's capacity to evolve solutions organically. MiFID II's complexity and emphasis on uniformity may thus be interpreted as a misguided attempt to engineer market outcomes without sufficient regard for local knowledge, institutional diversity, or emergent behavior. From that angle, dark pools represent a legitimate and spontaneous adaptation to the needs of certain investors, especially those executing large block trades, and overregulating them risks eroding the flexibility that allows dark markets to function as dynamic, decentralized systems. By forcing dark volume into lit venues or over-standardizing execution conditions, the EU may hinder market innovation.

By contrast, Posner's law-and-economics framework provides a more conditional endorsement of MiFID II's approach. The DVC are justified if they correct identifiable inefficiencies, such as fragmentation of liquidity or the degradation of price discovery in lit markets. From this angle, MiFID II's focus on increasing transparency and rebalancing execution toward lit venues can be defended as a rational, empirically motivated intervention aimed at protecting investors and preserving market integrity. However, a Posnerian analyst should question whether the benefits of such regulation outweigh its costs: the administrative complexity, reduced competition among trading venues, and potential harm to execution quality for institutional investors. In sum, where Hayek sees overregulation and constraint of spontaneous order, Posner sees a structured policy experiment that must ultimately be judged by its real-world effects on efficiency and fairness.

5.3 Comparing Key Themes of Dark Pool Regulation Through a Theoretical Lens

5.3.1 Transparency and market evolution

Transparency is universally central to how financial markets function, but Hayek and Posner offer divergent interpretations of its role in market evolution. According to the Hayekian perspective of spontaneous order, transparency must emerge naturally as a solution developed

[254] Foley (n 114) at 30-32

by competitive pressures and institutional learning rather than be imposed by centralized authority.[255] Market participants rely on tacit and dispersed knowledge, such as trading intent, timing, and strategy, that may be undermined if transparency is mandated indiscriminately. More broadly, dark pools, which offer selective opacity to facilitate large trades with minimal market impact, can be seen as a spontaneous market solution to the problem of adverse price movement. Regulatory attempts to increase pre-trade or post-trade transparency without regard for these dynamics risk disrupting the evolutionary adaptation of markets, reducing efficiency, and favouring visible over necessary liquidity. Over-prescribing transparency thus reflects a mistaken belief in the superiority of centralized knowledge over decentralized decision-making.

Posner, by contrast, evaluates any form of intervention primarily in terms of its economic utility. Transparency enhances efficiency by reducing information asymmetries, increasing trust, and improving price discovery, provided that the benefits outweigh the costs. However, Posner points out that "[i]n deciding whether government intervention in the economic system is appropriate, it is not enough to demonstrate that the market would operate imperfectly without intervention; government also operates imperfectly. What is necessary is a comparison between the actual workings of the market and of government in the particular setting."[256] From this perspective, regulations that require enhanced disclosure from dark pools (such as Form ATS-N in the US or Canada's price improvement rules) may be justified only if they reduce unfair advantages and support competitive execution without eliminating the legitimate use of non-displayed liquidity. Each transparency rule should thus be assessed on empirical grounds, evaluating if it corrects a market failure, improves investor outcomes, or reduces systemic risk. In short, regulators face a dilemma in choosing the evolutionary emergence of trust and order or transparency as a tool for correcting inefficiencies and promoting informed, fair trading. The dilemma can be solved by a detailed and empirical econometrical analysis of individual rules and their impact on trading.

5.3.2 Innovation and overregulation

Innovation in financial markets, particularly in trading technology and execution models like dark pools, is a key driver of efficiency and competitiveness.[257] From a Hayekian standpoint, innovation, like transparency, arises best within a decentralized environment that

[255] See Hayek's discussion of dispersed knowledge (n 17)
[256] Posner (n 19) at 44
[257] Peter Gomber, Robert J Kauffman, Chris Parker and Bruce W Weber, 'On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services' (2018) 35(1) *Journal of Management Information Systems* 220 https://doi.org/10.1080/07421222.2018.1440766 accessed 15 July 2025

allows participants to experiment, adapt, and respond to local market knowledge without intrusive oversight. Regulatory overreach, especially when prescriptive or rigid, can suppress these spontaneous processes and displace bottom-up mechanisms of market evolution. In the context of dark pool regulation, rules that overly constrain execution methods (for example, volume caps, strict disclosure mandates, or trade-at rules) may limit beneficial forms of competition and prevent the market from discovering superior mechanisms for matching trades, managing liquidity, or reducing transaction costs.

When discussing innovation, Posner once again takes an empirical view. He uses the examples of a monopolist and a cartel to argue that both are often better able to internalize externalities (in this case, inventions, or "information externalities") and contribute to innovation. The monopolist (including an efficient cartel, which functions like a monopolist) has a greater incentive to innovate as he does not need to fear imitation by its competitors.[258] As patents (a form of government intervention overcoming the problem of invention copying) are limited in scope and duration, the monopolist remains better suited to invent.[259] From this perspective, innovations in market structure, such as dark trading, should be monitored and regulated only to the extent that they create substantial information asymmetries, reduce transparency, or disadvantage retail investors. Regulatory frameworks like Canada's dark trading rules or the EU's MiFID II, under Posner's lens, represent appropriate rules only if they produce a net benefit after weighing its costs, enforcement complexity, and potential unintended consequences.

5.3.3 Institutional design and enforcement

Institutional design and enforcement play a critical role in shaping the practical effectiveness of dark pool regulation, and both Hayek and Posner offer insights into how regulatory institutions should function. Hayek also argues that democratic institutions are inhibited in their effectiveness by the dissonance between governing and lawmaking. In short, Hayek believes that the line between administrators and lawmakers has become blurred, leading to the creation of laws serving the governors rather than the governed.[260] Instead, rules should be created by organically evolved institutions that reflect the cumulative knowledge and practices of market participants.[261] Regulatory bodies that attempt to centrally direct market behaviour, particularly in complex, adaptive systems (like securities trading) are inherently

[258] Posner (n 19) at 148, 274
[259] ibid
[260] FA Hayek, *Law, Legislation and Liberty: Volume III* (Routledge 1998), 23-25
[261] Hayek (n 17) at 528

limited by their inability to access the dispersed information held by individual actors. The scepticism extends to enforcement. Hayek is wary of top-down punitive regimes that assume institutional omniscience, favouring instead the evolution of norms and reputational mechanisms within the trading ecosystem.[262] In jurisdictions like the EU, with its layered structure of ESMA oversight and national competent authorities, concerns centre on the potential rigidity, bureaucratic complexity, and insufficient responsiveness to localized market dynamics.[263]

In contrast, Posner views institutional regulation and enforcement from a different angle, discussing it purely from the standpoint of utility.[264] His law-and-economics framework supports institutions and methods of enforcement based on their ability to perform their functions efficiently. Monitoring behaviour, penalizing misconduct, and adapting rules should be done at the lowest possible cost rather than with a particular set of social values in mind. In the US, for instance, the SEC's introduction of Form ATS-N and its ability to inspect ATSs or Canada's reliance on the self-regulatory oversight of IIROC (now CIRO), backed by principles-based rules and real-time surveillance, should be regarded as effective only if they are efficient. For Posner, a robust but efficient enforcement is therefore not a distortion of markets or an infringement of liberty (as it would be for Hayek) but a mechanism for internalizing negative externalities and ensuring that legal frameworks evolve to match the economic realities of market behaviour.

5.3.4 Efficiency and investor protection

The regulation of dark pools offers a compelling testing ground for the tension between market efficiency and investor protection, a dilemma also indirectly reflected in both Hayek's and Posner's frameworks. From a Hayekian perspective, "it is the efficiency of the resulting order of actions which will determine whether groups whose members observe certain rules of conduct will prevail."[265] Central planning is thus especially poorly suited for the task of lawmaking, as a central planner must inevitably make a choice between different policy objectives: efficiency or justice and equality (or, in the context of dark pool regulation, investor protection).[266] In contrast, a spontaneous order has a chance at the development of optimal solutions that balance an array of different objectives, only favouring those preferred by the

[262] Hayek (n 18) at 96-97
[263] FA Hayek, *The Constitution of Liberty* (Routledge 2006), 321
[264] Posner (n 19) at 559-570
[265] Hayek (n 18) at 74
[266] ibid 82-83

majority of individual decision-makers (in this case, dark pool participants). Furthermore, to many thinkers the link between laws and economics is a natural one, with many arguing that law tends to evolve towards efficiency. Litigation especially has been described as a legal tool serving to reach the most preferred result.[267] Some thinkers influenced by Hayek have even argued that inefficient laws are litigated more frequently than efficient ones.[268]

Posner's law-and-economics approach uses efficiency as its central reference point. It applies economics understood as "the science of rational choice in a world — our world — in which resources are limited in relation to human wants."[269] Nevertheless, he emphasizes that while efficiency is an important criterion for evaluating phenomena in economic terms, "no effort will be made in this book to defend efficiency as the only worthwhile criterion of social choice."[270] Posner acknowledges that rational decision-making cannot be divorced from non-rational inputs such as feelings or social conditions.[271] From this perspective, regulation is justified where its lack would lead to market inefficiencies or failures. Investor protection mechanisms such as minimum price improvement rules or the prioritization of lit market orders can enhance allocative efficiency by reducing the risk of unfair trading conditions and increasing trust in the market, and should be evaluated according to their ability to achieve these goals. However, the non-rational motives fuelling regulators' policymaking cannot be ignored when analyzing the utility of a particular provision. Canada's regulatory framework, for example, with its strict price improvement and priority rules in dark venues, should be evaluated based on the ranking of priorities dominant in that jurisdiction. The precise determination of that ranking, however, is a separate issue.

5.4 Accountable Flexibility: The Way Forward for Dark Pool Regulation

A combined Hayekian and Posnerian lens suggests that the best approach to dark pool regulation should balance the spontaneous, decentralized dynamics of the market with pragmatic, efficiency-oriented legal oversight. From Hayek's perspective, regulation should avoid rigid, top-down controls that stifle the organic development of trading mechanisms and limit the market's ability to self-correct through price signals and competition. Regulation should focus on maintaining general principles that uphold transparency, property rights, and contractual integrity, enabling participants to form stable expectations without prescribing

[267] Druzin (n 234) at 613
[268] George L Priest, 'The Common Law Process and the Selection of Efficient Rules' (1977) 6 *J Legal Stud* 65
[269] Posner (n 19) at 3
[270] ibid 12
[271] ibid 11-12

specific outcomes.[272] In the context of dark pool regulation, excessive intervention, particularly in such a rapidly evolving technological environment, risks disrupting the discovery processes that underpin market efficiency and innovation.

From Posner's pragmatic, economic view of law, dark pool regulation should be guided by cost-benefit analysis and empirical assessment of real-world harms. This means targeting clear market failures, such as information asymmetry, manipulation, or systemic risk, while allowing for the continued operation of solutions that demonstrably enhance liquidity or reduce transaction costs. Even if a solution appears unfair at first glance, such as a monopoly or a cartel, it should be evaluated according to its ability to produce efficient outcomes. Together, Hayek and Posner advocate a modest, adaptive regulatory regime grounded in the recognition that both law and markets are dynamic systems best served by rules that evolve in response to evidence, not ideology.

CHAPTER 6: FINDINGS AND CONCLUSION

When algorithmic trading revolutionized markets, the regulation of financial services entered a new era. The invention of new tools reorganized perceptions of priorities and strategies. Speed and efficiency acquired an unprecedented importance, while the possibility of electronic trading allowed the creation of new, previously unknown types of venues. Dark pools provide a quintessential example of the challenges posed to regulators by technological advancements; they are operated by influential actors and their activities have a material economic impact. These qualities mean that every new regulation will have an economic consequence. In the world of securities trading, where miniscule differences often have million-dollar consequences, it is essential for regulators to be fully aware of the impact they are causing.

The comparative study of dark pool regulation in the US, Canada, and the EU indicates that a wide spectrum of solutions is available when it comes to designing a comprehensive regulatory framework. Although the specific provisions concern a very particular, narrow area of financial law, they are rooted in broader values and policy goals often connected to the very foundations of the respective legal systems. In their justification of dark trade laws, lawmakers from all three jurisdictions invoke transparency, investor protection, and the public good as the overarching motivations behind regulating dark trade. Interestingly, the economic values objectives of competitiveness, efficiency, and economic growth are less emphasized. With the

[272] Hayek (n 18) 56-59

exception of the US regulations, prefaced with a lengthy discussion of their potential economic consequences and making a direct link between an investor's protection and economic well-being, the majority of regulatory provisions place the greatest emphasis on transparency, investor protection, and deterrence of potential violators.

While the policy objectives invoked by lawmakers in all three jurisdictions appear universal, the three differ substantially in the means of their enforcement. The US stands out as a litigation-heavy jurisdiction where court-settled cases, typically initiated by the SEC, are the majority. The US is also the only jurisdiction with a fairly well-established history of securities litigation, recently enriched by cases directly concerning dark pools. Landmark cases, such as *Barclays,* bring the issue of dark trading to the public eye, automatically enhancing the transparency around enforcement actions and involving the public in their regulation, with the growing repository of case law gradually developing the doctrines related to their settlement. Nevertheless, the recourse to litigation is not uncontroversial. The preference for settlements over prosecution has numerous critics and the solution of jurisdictional tensions between state and federal authorities must be resolved before a truly smooth mechanism for case resolution is established.

Northwards, Canada has developed a system designed to cooperate with the American one. Also possessing a central regulatory authority, the CIRO, and relying on an elaborate public complaint system to identify misconduct, Canada operates an enforcement system that is both decentralized and centrally coordinated. Though the mandate of the CIRO is not equal among the provinces, the trend is decidedly expansionary, with more provinces agreeing to expand the CIRO's powers every year. Canadian lawmakers clearly favour trading in the lit market, as the trade-at, priority, and price improvement rules ensure that costs are attached to dark trading. At the same time, the option to execute dark trades remains open and the enforcement of relevant rules is conciliatory rather than hard-handed; the CIRO appears to prefer alerts and internally designed remedial mechanisms over hefty fines.

The European approach is likewise distinct from the others. It is characterized by reliance on a rigid, built-in regulation mechanism rather than a case-by-case settlement system. The DVC mechanism requires dark trading to occur only within a predetermined volume range and breaches of the established caps result in automatic suspensions. Although the system is precise and highly functional, it is also quite obscure. The methods used to calculate trading thresholds are sophisticated and not easily accessible to most outside the industry. However, the choice of a standardized and predictable regulatory solution is understandable for the EU. As it is a powerful bureaucratic entity, the EU naturally prefers to rely on mechanisms like the DVC

rather than a case-by-case response system. The system is also quite centralized, as Member States execute the provisions and recommendations introduced centrally by ESMA, in accordance with the overarching EU goal of increasing harmonization in all aspects of the law.

The theories of spontaneous order and an economic analysis of the law, produced respectively by Hayek and Posner, are very helpful in evaluating the regulatory approaches of free market countries. Dark trading is a highly relevant economic activity and a thorough analysis of the interaction between its regulation and market forces is essential for the development of appropriate regulatory regimes. Although Hayek and Posner are by far not identical in the theories they propose, they are united in emphasizing the value of efficiency in evaluating legal solutions. For Hayek, overregulation and excessive centralization are evils preventing market powers from organically producing the naturally occurring best allocative solutions. For Posner, efficiency is the benchmark for evaluating if a given legal solution or regulatory intervention can contribute positively to the functioning of the legal and economic systems.

Although the comparative analysis of the US, Canadian, and EU approaches to dark pool regulation has revealed numerous valuable patterns and insights (such as a common focus on investor protection or some gaps in enforcement transparency), future research would benefit from a choice of a common criterion for the evaluation of each jurisdiction. For Hayek and Posner, the benchmark is efficiency. A detailed econometric analysis carried out to empirically determine the efficiency of the respective regulatory systems through the impact of the regulations on specific economic variables, though beyond the scope of the present work, would enrich and complement the investigation into the patterns of dark pool regulation across jurisdictions.

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