

ROSENBLATT

Analysis of CVM Partial Regulatory Impact Analysis Report (AIR)

***Prepared in Response to the CVM May 9, 2024 Public
Call for Contributions on Internalization of Orders***

***by
Rosenblatt Securities
for
B3 S.A.
September 30, 2024***

ROSENBLATT

I. Introduction

On May 9, 2024, the Comissão de Valores Mobiliários of Brazil issued a Public Call for Contributions on the topic of Internalization of Orders, which has been subject to regulatory discussion at the CVM since 2007. As part of this Public Hearing process, the CVM produced and disseminated a Partial Regulatory Impact Analysis (AIR). This 111-page document explores whether alternatives to Brazil's existing laws and rules regarding internalization should be explored. A substantial portion of the AIR, Section VI, is devoted to benchmarking international internalization practices, in the United States of America, European Union, Australia and Canada.

B3, the incumbent exchange for listed equities and derivatives, as well as the dominant provider of clearing, settlement and custody services in Brazil, has asked Rosenblatt Securities to analyze the AIR, paying special attention to the global benchmarking section (Section VI), and identify any areas of incompleteness, inaccuracy or necessary clarification, as well as provide additional, relevant detail and data that CVM may want to consider as part of its review. This report contains Rosenblatt's findings and recommendations pursuant to this engagement with B3.

II. About Rosenblatt

Rosenblatt Securities is a New York-based institutional brokerage and investment bank. In addition to its core businesses — executing US equities transactions for and providing equity research to institutional investors, as well as helping technology companies with capital-markets transactions and strategic advisory needs — Rosenblatt is recognized among the leading global experts on trading and markets. The firm's award-winning market-structure group advises institutional investors, banks, proprietary trading firms, exchanges, regulatory authorities and other clients on an array of market-structure and regulatory topics. For further information, please see the [Market Structure page](#) of Rosenblatt's website.

III. Rosenblatt's Analysis of the AIR

Rosenblatt has identified in the AIR a number of gaps, inaccuracies and points that require clarification. These may be useful for the CVM to bear in mind as it conducts its review of this topic. They pertain not only to the practice of internalization and its benefits and drawbacks, generally, but also details regarding how internalization occurs in the jurisdictions included in the global benchmarking section, as well as the omission of other jurisdictions which could be helpful for the CVM to examine as it considers the future regulatory environment in Brazil. Rosenblatt also has identified several pieces of additional information, not specific to the AIR, that may be of interest to authorities as they contemplate whether changes to the current legal and regulatory regime are appropriate.

The rest of this report is divided into five sections:

- Section III.A pertains to general observations in the AIR regarding internalization.

ROSENBLATT

- Section III.B covers the jurisdictions examined in the Global Benchmarking section (Section VI) of the AIR.
- Section III.C contains information about how internalization is treated in two other large, important jurisdictions globally — the United Kingdom and Japan.
- Section III.D includes additional information the CVM may want to consider as it continues its review of internalization in Brazil
- Section IV summarizes Rosenblatt’s findings and relays conclusions that may be of value to CVM

III.A. General Observations About Internalization

III.A.1 Retail and Institutional Flows and Adverse Selection. Section III.2.2 of the AIR lays out a scenario in which orders from “retail investors” present a low adverse-selection risk for liquidity providers while “institutional” flows are regarded as higher-risk. Further, this section of the AIR suggests that based on this evaluation of adverse-selection risk, liquidity providers choose to internalize retail orders but not institutional orders, a practice that could fall under a type of behavior known as “cream skimming.”

This, however, conveys an incomplete picture of why and how brokers and dealers choose to internalize or otherwise interact with customer order flow. In reality, both retail and institutional orders can present relatively low adverse-selection risk and therefore are segmented and internalized in many markets throughout the world.

It is true that many intermediaries in jurisdictions outside Brazil choose to isolate and fill retail order flow directly, often through segmented or bilateral arrangements. It’s also true that one reason for this is that retail orders are generally regarded to be uninformed about short-term price fluctuations. Typically, an individual retail customer choosing to buy or sell an individual security directly in the market, rather than through a pooled investment vehicle such as a mutual fund, has not engaged in predictive modeling of short-term prices with the intent of exiting the position for a profit within seconds or minutes. Such customers also generally do not buy and sell in such large quantities as to affect the price of the instrument they are trading. As a consequence, market makers and other intermediaries providing intraday, short-term liquidity can be assured that filling these customers’ orders is less likely to result in the kind of short-term losses that sometimes are incurred when dealing with informed counterparties. This is often referred to as “adverse selection” risk.

It is also true, however, that certain institutional flows can be regarded as having relatively low adverse-selection risk for liquidity providers. A significant portion of the large orders institutional investors enter into the market are divided, using computerized algorithms and “smart” order

ROSENBLATT

routers, from their “parent” size into much smaller “child” orders and executed over time in the marketplace. This can minimize the market impact of such large orders, which can be a major component of institutional transaction costs (*See Section III.A.2 below for more*). Often, such algorithmic orders follow participation-based schedules, to further mute their influence on market prices. Such strategies include attempting to participate at a percentage of overall volume or to be benchmarked to the volume-weighted average price of the day or a certain intraday time interval. Liquidity-seeking orders generated by such participation-based algorithms often present lower adverse-selection risk for liquidity providers than other varieties of institutional or professional-trader orders. Many market makers and brokers seek to face off directly against such orders using various segmentation methods, including “counterparty filtering” mechanisms and “private rooms” in US Alternative Trading Systems, as well as bilateral Single Dealer Platforms in the US and Systematic Internalizers in the UK and European Union.

Even very large, non-algorithmic order flow from institutions is routinely internalized in jurisdictions like the US, UK and EU. Banks and certain dealers sometimes use their own capital or inventory of securities to fill block orders for institutional clients, as part of their overall relationship with these firms. Such principal activity is less prevalent than it was decades ago, but still constitutes a significant portion of overall trading volume. In the US, for example, we estimate that “manual crossing and capital commitment” account for as much as 11% of total equities volume (*see Section III.B.1.b for more*). To be sure, some of this involves “high-touch” sales-traders matching two clients with opposing block interest in a given stock, but we believe a substantial portion is also principal trading using capital and inventory. This is another method large institutions use to manage the market impact of large orders, which can constitute a substantial portion of total transaction costs (*please see the next item in this section, III.A.2, for more on this topic*).

Further, some orders emanating from individual “retail” customers may be more informed than those of other retail traders. Certain quasi-professional individuals may pursue day-trading strategies, sometimes informed by mathematical and computerized modeling, that can render their liquidity-seeking order flow more “toxic” — that is, having a greater adverse-selection risk, from a liquidity-provider’s standpoint — than that of other retail orders. For example, one major US-based firm serving individual investors, Interactive Brokers, divides its order flow into segments — called IBKR Pro and IBKR Lite — which are regarded to exhibit different levels of toxicity. The IBKR Lite segment pays no commission, and is similar in nature to flows from other zero-commission brokerage apps. But the IBKR Pro segment pays commissions and receives access to additional services. Some of the IBKR Pro

ROSENBLATT

users are day traders or otherwise pursuing strategies regarded as “professional” or quasi-professional and therefore more informed. Interactive Brokers sends orders from IBKR Lite to wholesalers, whereas IBKR Pro flow makes its way to multilateral venues, including ATSSs.

III.A.2 AIR Does Not Acknowledge Market Impact as Critical Component of Transaction Costs. The AIR, in sections I.1.2.4, III.2.4 and elsewhere, does not address the price impact of large-size transactions as a critical component of investor transaction costs. The various references to transaction costs focus instead on explicit costs for retail investors, such as commissions, fees and bid-ask spreads, as well as the costs of obtaining and analyzing market data. When considering the rules and practices underlying internalization throughout the world, however, it is important to note that (*as laid out in Section III.A.1 above*) the large orders many institutional investors send into the marketplace can influence market prices quite dramatically. An asset manager or pension fund’s order to buy a very large quantity of a stock, for example, likely will drive the price of that stock higher over the course of the order’s execution. Conversely, a big sell order could nudge down the price of the security in question. This implicit cost, known as “market impact,” can be a significant portion of institutional investors’ all-in transaction costs, in some cases exceeding explicit commissions and fees. And it tends to vary inversely with liquidity.

Indeed, managing market impact is a major goal of the traders who are responsible for executing orders on behalf of institutional investors. This is one reason why they often divide sizeable “parent” orders into many, far smaller pieces that are executed over time. As discussed in Section III.A.1 above, such “child” orders, because they each carry less market impact — and therefore less adverse-selection risk for liquidity providers — than the parent order, are often segmented and internalized. Even parent-size or near-parent-size orders are sometimes internalized on a principal basis by banks and brokers as part of the overall relationship with institutional clients. Both methods help institutional investors minimize this market-impact cost.

III.A.3 Other Jurisdictions Missing from the AIR’s Global Benchmarking Section. Section VI of the AIR, titled “International Benchmark,” looks at four developed markets and their rules and practices regarding internalization. We believe that two other jurisdictions are also worth consideration, because of their size and, in the case of the UK, a unique model for internalizing retail orders. We detail relevant information about both jurisdictions in Section III.C below.

(Continued on Next Page)

III.B. Jurisdictions Examined in the Global Benchmarking Section of the AIR

III.B.1. United States

III.B.1.a Types of US Trading Centers. Section VI.1.2 of the AIR, citing the Exchange Act of 1934 and the Securities and Exchange Commission's Regulation NMS, details the various "Permitted Trading Environments" for US equity securities. Competitive practices and behavior in the US equity market, however, have evolved significantly during the half-century since the Act was last revised, in 1975, and in the nearly two decades since the 2005 passage of Reg NMS. Accordingly, a fuller understanding of the US trading landscape would take into account the following features:

From a practical standpoint, "stock market makers" are not really a distinct trading venue. Rather, they act as members and customers of licensed exchanges, such as those operated by NYSE, Nasdaq, Cboe, IEX, MEMX and MIAX, and place orders on those exchanges the same way other market participants do. These on-exchange market-makers must enter firm bids and offers into these exchanges' order books which, in turn, are subject to the fair-access and other provisions of US regulation and law. But they are not themselves the execution venue for any transactions resulting from their quotations. Rather, the exchanges are the marketplaces of record for these trades.

The category of "Broker-dealers," importantly, includes a sub-group that has emerged and grown in the years following the implementation of Regulation NMS: Single-Dealer Platforms. These are electronically accessible venues through which market-makers offer automated execution for a variety of liquidity-seeking orders, including those emanating ultimately from both retail and institutional investors. Broker-dealers are generally expected to register as Alternative Trading Systems any platforms or facilities that are engaged in systematically crossing client orders. But broker-dealers don't need to register as ATSS platforms that offer bilateral, principal execution. Several SDPs operate on the latter basis in the US, accounting for approximately 5% of total equities share volume (*see Section III.B.1.b below for more details*).

Additionally, regarding the category specified in the AIR as "Over-the-counter market makers," it should be noted that the wholesaling of retail orders is just one form of off-exchange internalization by broker-dealers in the US. SDPs, identified in the previous paragraph, are another. Broker-dealers also engage in "high-touch" crossing and principal execution of institutional orders, as well as other forms of internalization, such as through access to their Central Risk Books and off-exchange Market-on-Close facilities, which

ROSENBLATT

compete with listing exchanges to internalize closing-auction interest, in both an agency and principal capacity. We offer a breakdown of these off-exchange categories and their market shares in Section III.B.2 below.

III.B.1.b US Off-Exchange and Retail Market-Share Update and

Clarification. Section VI.1.6 of the AIR provides first-quarter 2022 statistics regarding the market shares of “stock markets,” “ATs,” “Wholesalers” and “Other broker-dealers.” As outlined in Section III.B.1 above, these categories do not fully reflect the evolution of US market structure and venue competition in recent decades. As a pre-eminent provider of market-structure research globally, Rosenblatt tracks closely the market shares of exchanges, ATs and several categories of off-exchange execution platforms. Our most-recent figures for all of these market segments, from the second quarter of 2024, are as follows:

- Exchanges: 54.1%
- “Wholesalers” of marketable retail orders (off-exchange): 16.6%
- ATs (off-exchange): 11.3%
- Capital Commitment & Manual Crossing (off-exchange): 11.3%
- Single Dealer Platforms (off-exchange): 4.9%
- OTC Market-on-Close Facilities (off-exchange): 1.8%

Additionally, Rosenblatt for several years has used a variety of data sources to estimate total retail participation in US equities.¹ As of June 2024, that figure stood at 27% of all stock-market share volume.

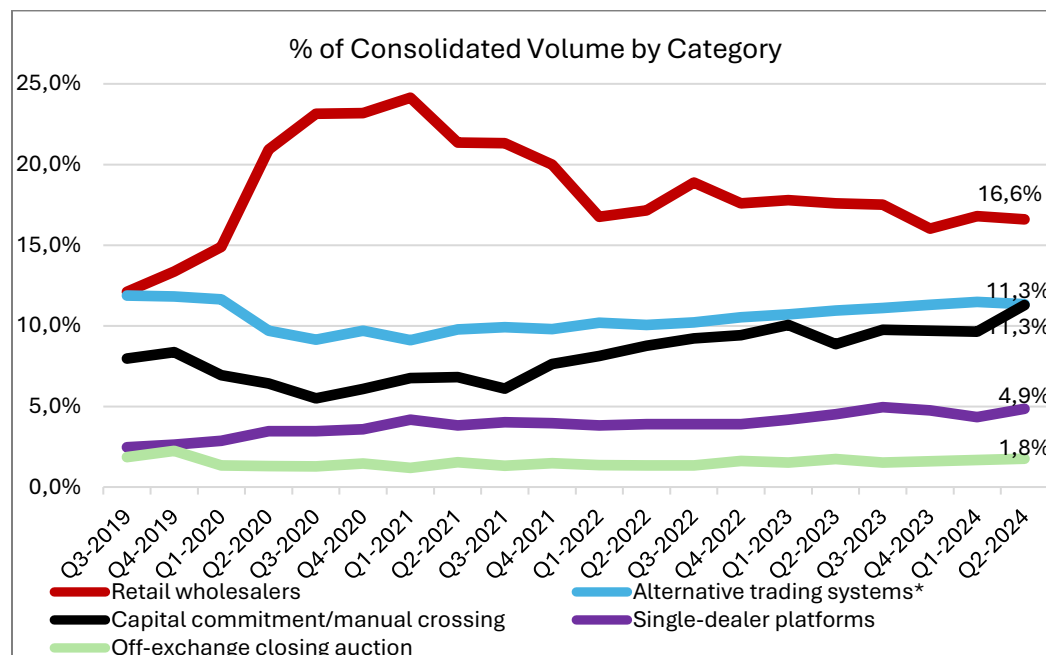
The percentages of total equity volume executed off-exchange and involving “do-it-yourself” retail traders using online brokerage websites and apps had grown substantially since the fourth quarter of 2019. In November 2019 the online brokerage industry widely adopted the zero-commission policies that had been popularized over the previous few years by new entrants. A few months later, stay-at-home policies and relief checks connected with the Covid-19 pandemic further encouraged these DIY traders to ramp up their activity in US equities. Retail participation peaked during the first wave of what became known as “meme-stock” mania in early 2021, but remains significantly higher today than before these two catalysts occurred.

We can see this pattern in the two charts below, showing the market shares of various off-exchange components, as well as of total retail participation, over the past several years. Wholesalers executed nearly 25% of US equity volume at their peak in the first quarter of 2021, compared with 17% today.

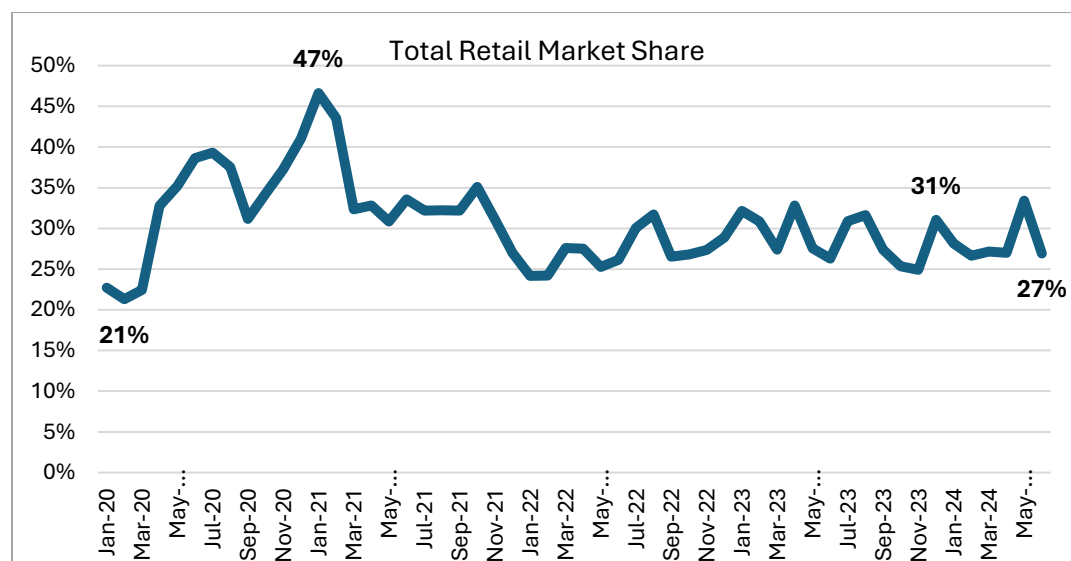
¹ The percentage of share volume reported by wholesalers is only a portion of total retail trading. In addition to the marketable orders internalized and reported by wholesalers, some retail volume comes from non-marketable orders which are not internalized but rather executed on exchanges and other venues.

ROSENBLATT

Likewise, total retail market share reached 47% during the first quarter of 2021, compared with 27% today. Both figures, however, are several percentage points higher than before the retail-participation surge of late 2019 and early 2020.



Source: Rosenblatt Securities



Source: Rosenblatt Securities

III.B.1.c Differences Between B3's RLP Program and Similar

Arrangements in the US. In a multi-page table at the end of Section VI of the

ROSENBLATT

AIR, details regarding internalization in Brazil and other jurisdictions are laid out, including the RLP program at listing exchange B3. This table does not, however, acknowledge the several Retail Liquidity Programs and Retail Price Improvement programs that the US SEC permits exchanges to operate. These US RLP programs bear many similarities to the Brazilian RLP, but there also are some key differences.

Like Brazil's program, interest from market makers in the US RLPs is not displayed to the entire market, but visible only to brokers handling and routing retail orders for execution. Also like the Brazilian program, US RLPs must offer price improvement beyond the displayed bid-offer spread. Unlike displayed quotations, which currently must be priced in increments no less than one US cent (\$0.01) per share, RLP interest can be priced in increments of one-tenth of one cent (\$0.001) per share. Perhaps the biggest differences between the Brazilian and US RLPs, however, is that the US programs are multilateral, and not subject to any caps on volume or market share, whereas Brazil's system facilitates internalization only within single brokers, and caps the amount of activity per broker. In the US, multiple Retail Liquidity Providers on an exchange can submit RLP interest that can be accessed by brokers routing retail order flow. The RLP submitting the highest-priced bids or lowest-priced offers typically receive execution priority. This encourages price competition among liquidity providers, which could result in better prices for retail investors. Although they share the name RLP, the US system is less of a pure-internalization scheme than Brazil's and more of a system for segmenting retail orders from multiple brokers and delivering them to a group of liquidity providers who compete to execute them at the best possible prices.

Because they compete with forms of segmentation and internalization that are far more compelling for both retail brokers and liquidity providers, US RLP programs execute a very small portion of total equities volume — just 0.1% during the month of July. The US RLP programs are part of exchange trading, which is subject to stricter rules than off-exchange trading, including a requirement that exchanges provide products and services on a fair-access basis to all market participants. This limits exchanges' ability to segment order flow. Off-exchange wholesaling of retail orders does not face such restrictions and therefore can be done in bilateral fashion, with liquidity providers knowing their counterparties and offering customized execution terms with generally lower adverse-selection risk than if they were interacting with a wider array of anonymous counterparties.

III.B.1.d Recent US SEC Reforms That May Influence Internalization.

Section VI.I.6 of the AIR refers to a series of reforms to equity market structure proposed by the US Securities and Exchange Commission in

ROSENBLATT

December 2022, which could influence the way internalization occurs in the future. The SEC in recent months has adopted two of these proposals — including, in September, a measure that would reduce the minimum quoting increment for “tick-constrained” securities, from one cent (\$0.01) per share to a half-penny (\$.0005) per share. Upon implementation, these amendments to Regulation NMS could reduce the bid-ask spreads on such tick-constrained securities. This could influence internalization in two different ways.

First, because today exchanges cannot accept or display sub-penny price quotations, brokers often seek better prices on off-exchange venues, which are not subject to the same restriction. Some of this order flow is sent to ATSS, many of which execute orders at the midpoint of the best bid and offer displayed on public exchanges, or at other points between the best bid and offer. For tick-constrained securities, which typically are quoted one tick wide, trading at the bid-ask midpoint in ATSS may be one way that market participants execute in sub-penny increments despite the on-exchange quoting restrictions. To be sure, exchanges do also offer non-displayed order types, including orders that “peg” to the bid-ask midpoint. Still, it’s possible that some flow that currently pursues sub-penny executions off-exchange, particularly in ATSS, may find its way back to exchanges once these securities are quoted in half-penny price increments.

Second, a reduction in quoted bid-ask spreads on tick-constrained securities that get half-penny quoting increments likely will improve execution quality for DIY retail traders. As stated previously, most marketable orders from retail customers are sent by retail brokers to off-exchange “wholesalers,” who internalize most of that flow while typically providing “price improvement” on the best bid-offer spread displayed on exchanges (also known as the National Best Bid-Offer, or NBBO). Because tick-constrained securities currently trade at artificially wide bid-ask spreads, wholesalers can more easily provide price improvement to orders in these stocks than they can for issues that are not tick-constrained. Midpoint price improvement can be commonplace in these stocks, for example. But the midpoint of today’s quoted spread in these securities will become the near side of the spread once they are quoted in half-penny increments. Retail brokers will still expect wholesalers to execute at prices better than the NBBO, however. This should result in better retail execution quality in these names. For example, a DIY retail customer buying a tick-constrained stock that’s bid at \$10.00 and offered at \$10.01 today might receive a fill from a wholesaler at \$10.005. But if that stock is assigned a half-penny tick size and is instead bid at \$10.00 and offered at \$10.005, a wholesaler competing for order flow on the basis of execution quality might have to sell the stock to the customer for \$10.004.

III.B.2. European Union

III.B.2.a Providing Clarity on the European Union's Best-Execution

Regime. Contrary to the potential implication in Sections II.4.2.1 and II.4.2.5 of the AIR, EU best-execution rules are *not* more prescriptive than those of the other benchmarked jurisdictions. In fact, they are the least prescriptive of the four countries the AIR examines. Under the Markets in Financial Instruments Directive, European brokers are required to have and make available to customers a best-execution policy. Such policies can, and often do, take into account not just the quoted price of a security but also costs related to accessing those quotations, such as memberships, connectivity and transaction fees charged by exchanges or alternative execution venues. Brokers who deem the costs not worth the potential benefit to customers of connecting to, taking data from and accessing liquidity on alternative venues are free to simply route all customer order flow to the listing exchange. Many smaller market participants follow such a policy. This contrasts with both the US and Canada, which “protect” exchange quotations from transactions occurring at inferior prices.² It also is more-lenient than Australia, which takes a hybrid approach, mandating best price as a benchmark for retail orders while applying less-stringent, EU-like principles for institutional flow.

Additionally, the same section of the AIR refers to public reporting on order routing and execution quality that was established with 2018 revisions to MiFID known as MiFID II. Unfortunately, much of this reporting has since been discontinued in the EU and UK. The so-called RTS 27 and RTS 28 reports that required asset managers to disclose their top 5 brokers and brokers to disclose their top 5 execution venues, for example, are no longer required or available.

III.B.2.b Clarification Regarding the EU's Share Trading Obligation and OTC Trading. Section II.4.2.2 of the AIR states that the Markets in Financial Instruments Regulation's “share trading obligation” prohibits equity and equivalent instruments from trading OTC. This is not the case. EU-listed securities may trade OTC but only under special circumstances, including that they are *ad hoc* and outside the regular course of business. This might include large blocks filled as principal or crossed with other customers, as well as dividend-related transactions, which typically cause OTC market share to rise seasonally along with corporate dividend payments in Europe.

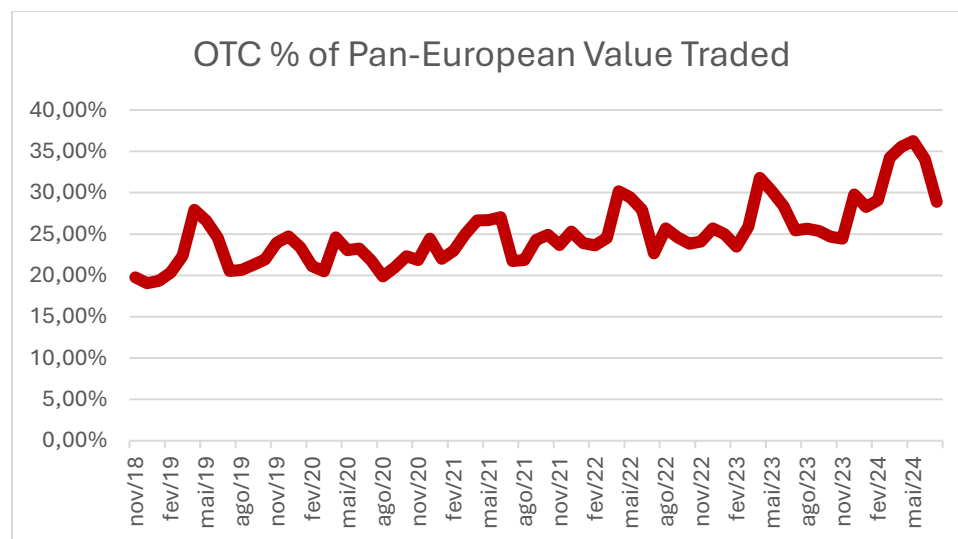
III.B.2.c Clarity and Updated Statistics on Systematic Internalizers and OTC Trading. Section VI.2.6 of the AIR, citing figures from consulting firm

² The US protects only the best prices displayed on each exchange (top of book) in this fashion, whereas Canada protects all displayed orders (full depth of book).

ROSENBLATT

Oxera, states that Systematic Internalizers and OTC accounted for 11% and 6%, respectively, of European equity trading in the first quarter of 2021. Oxera's statistics significantly understate OTC activity in Europe and slightly understate SI market share.

We closely track European volumes and venue market shares, on an ongoing basis, for clients. According to our monthly data, OTC trading accounted for 21.99% of EU value traded in January 2021, 22.98% in February 2021 and 25.01% in March 2021. Since November 2018 OTC market share has ranged from a low of 19.76% to a high of 36.24% in May 2024 (see chart, below).³ In aggregate terms, OTC transactions accounted for €17 billion per day (28.89% of pan-European value traded) in July.



Source: Rosenblatt Securities

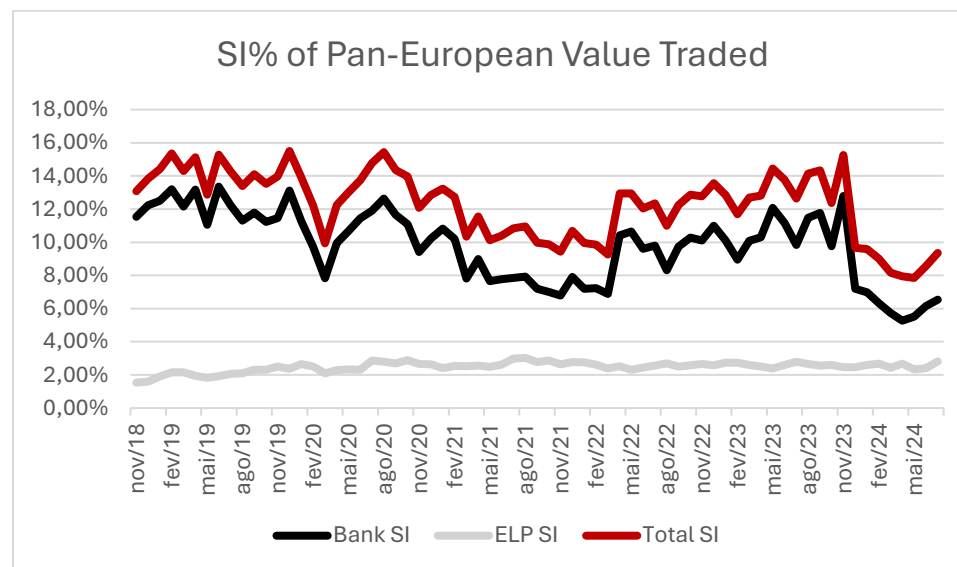
Additionally, from a practical standpoint SIs come in two major varieties: those operated by banks and those run by non-bank market makers, also known as electronic liquidity providers, or ELPs. Bank SIs typically internalize orders received directly from institutional and other clients. These may be either “high-touch” orders handled with some manual processes or algorithmic orders, which generally divide larger buy and sell interest into smaller quantities for electronic execution over time and across a variety of venues. Bank SIs can internalize both varieties of customer order flow, and account for the vast majority of total SI trading. ELP SIs, on the other hand, function differently, mostly receiving algorithmic child orders from other brokers’ smart routers, and not directly from institutional or

³ These figures include stocks listed in the United Kingdom, which cannot easily be separated from EU-listed issues in our data set.

ROSENBLATT

other customers. A bank offering algorithmic execution services to institutional investors, for example, might first attempt to internalize an asset manager's child order at its own SI and, if unfilled there, route it subsequently to one or more ELP SIs or other execution venues. The ELP SIs still offer bilateral execution, with unique, private quote streams sent to each broker router based on its order-flow characteristics. But they do not have customer relationships with asset managers or other institutional or retail investors.

According to our monthly data, SIs executed 13.23% of European equity value traded in January 2021, 12.74% in February 2021 and 10.34% in March 2021. Bank SIs alone accounted for 10.82% in January 2021, 10.19% in February 2021 and 7.81% in March 2021, with ELP SIs accounting for 2.42%, 2.54% and 2.53%, respectively. Since November 2018 total SI market share has ranged from a low of 7.85% (in May 2024) to a high of 15.50% (December 2019). The gap between Bank SIs and ELP SIs has narrowed over the years, but Bank SIs market share is still more than double that of ELP SIs (see chart below).⁴ In aggregate terms, SIs accounted for €5.5 billion per day in July — €3.8 billion for Bank SIs and €1.7 billion for ELP SIs. By way of reference, lit venues traded €19.8 billion per day and opening and closing auctions accounted for €9.4 billion per day.



Source: Rosenblatt Securities

III.B.2.d MiFID II and the Role of Systematic Internalizers. Section VI.2.1 of the AIR states that the 2018 revisions to MiFID known as MiFID II focused,

⁴ These figures include stocks listed in the United Kingdom, which cannot easily be separated from EU-listed issues in our data set.

among other things, on “strengthening the role of ‘Systematic Internalizers.’” That isn’t quite the case. Changes to MiFID at this time banned a previous class of venues known as Broker Crossing Networks, which were not official MiFID venues nor subject to fair-access provisions. Some of the activity that previously was executed in BCNs did migrate to some SIs (those operated by banks, many of which also ran BCNs). Additionally, SIs operated by ELPs claimed greater market share in the years following MiFID II. But SIs were first authorized by the original MiFID in 2007. And nothing in the modified rules themselves specifically or directly targeted SIs for more volume compared with any other variety of execution venue.

III.B.2.e Off-Book, On-Exchange Trading in the EU. Another method of internalization that is large and growing in Europe is non-bank market makers interacting bilaterally with institutional customers, outside of SIs. Some major ELPs have been marketing such services aggressively in recent years. Anecdotal evidence suggests that the portion of total volume being executed in this fashion has been rising significantly. These are transactions that can be regarded as internalized, in that they are executed between two counterparties bilaterally, without exposure to the wider market. But because such bilateral ELP trades are one of many execution modes that are reported as Off-Book, On-Exchange, it is difficult to pinpoint them specifically. Overall, Off-book, On-Exchange transactions accounted for 22% of European value traded, or approximately €12.6 billion per day, in August 2024.

III.B.2.f Update on EU Payment for Order Flow Rules. Section VI.2.4.2 of the AIR states that “the resale of trading flows, also known as ‘payment for order flow,’ is not prohibited in the EU. That has changed since the publication of the AIR. In March 2024, revisions to MiFID took effect that impose a ban on PFOF. The ban included an option for EU member states to apply for a three-year reprieve, starting from the date of the political agreement on the revised MiFID text, June 2023. Only one EU state — Germany — has applied with the European Securities and Markets Authority for such an extension. Germany is currently the only member state in which PFOF arrangements exist. Beginning in July 2026, PFOF also will end there, under the recent revisions to MiFID.

Even though PFOF still temporarily exists in Germany, it is very small in scale. The country’s federal financial supervisory authority for financial markets, BaFin, identifies four market centers permitting PFOF, which it defines as “the offering of kickbacks for transmitting clients’ orders.” They are Tradegate, Lang & Schwarz, Gettex and Quotrix. Volume statistics for these platforms are hard to come by, but Deutsche Börse, which owns Tradegate, says that the retail-specific exchange traded approximately €3 billion per month in 2023. A BaFin study in 2022 found that prices on PFOF venues were

"advantageous" for small transaction volumes. That study reached a different conclusion than previous investigations by the Dutch and Spanish national regulators, which found that the presence of PFOF could lead to worse investor outcomes. Importantly, PFOF arrangements in Germany are not subject to any price-improvement requirements. Market centers offering PFOF can fill retail orders without offering better prices than those displayed on listing exchanges.

III.B.3. Canada

III.B.3.a Clarity Regarding Canadian Rules on Internalization. Section VI.4.1 of the AIR states that rules regarding internalization were updated in 2012, so that trades without pre-trade price transparency could only occur "in the case of price improvement and large lots." These rules, however, apply only to so-called dark trades, which are often *not* internalized. Regulators in Canada and Australia require certain price-improvement or size benchmarks to be met to justify trading without pre-trade transparency, out of concern for the potential impact of dark trading on price discovery. Canada's rules regarding internalization, however, are far more broad, as covered elsewhere in Section VI.4.4.4 of the AIR. These include a requirement that all orders below a very large size threshold must be exposed to the market, and that any internalized trades for such orders occur on fair-access "marketplaces." Such marketplaces — exchanges and ATSs — facilitate a form of internalization using crossing order types and broker preferencing. Together, these let brokers segment and internalize customer order flow on-marketplace. Although mentioned separately in the AIR, the use of the word "internalization" in Section VI.4.1 when discussing the rules for non-displayed orders (which apply whether such orders are internalized using the various mechanisms described above or not) may cause confusion about Canada's rules pertaining to internalization.

III.B.3.b Clarity Regarding Payment for Order Flow and Retail Segmentaton in Canada. Section VI.4.4.2 of the AIR states that PFOF is not permitted in Canada for Canadian-listed securities. While true in a strict sense, there are practical exceptions and work-arounds to this prohibition. Canada permits exchange- and ATS-based "crossing" order types and broker preferencing, combined with so-called inverted transaction-fee schedules and, in some instances, speed bumps and other features designed to provide liquidity providers with protection against adverse selection. These arrangements allow retail brokers to effectively internalize retail flows on-marketplace. They also permit systematic liquidity providers to effectively segment retail flows while paying fees that exchanges use to fund rebates to the retail brokers. All of this bears some similarities to the US system of off-exchange wholesaling with PFOF, though with key differences, such as

ROSENBLATT

occurring via fair-access, multilateral marketplaces on an order-by-order basis.

For further reference, the Canadian cash equity market traded CAD18.21 billion per day in August (approximately BRL74 billion). Of this, CAD1.85 billion (10.17%) was executed using “intentional cross” order types, in which brokers simultaneously submit offsetting client orders to be matched without interacting with the broader market. The market share of “unintentional crossing” — a form of on-marketplace internalization that typically works in tandem with broker preferencing arrangements — is more difficult to ascertain. A November 2023 [paper](#) by Cboe Global Markets, which operates Canadian equities marketplaces, said that unintentional crossing at that time accounted for 11-12% of total share volume. We believe that unintentional crossing likely accounts for a significantly smaller share of value traded in Canada, because a substantial portion of it occurs in stocks with low share prices that are favored by retail customers.

III.C. Jurisdictions Not Examined in the Global Benchmarking Section of the AIR That May Be Relevant to CVM’s Review

III.C.1. United Kingdom

III.C.1.a The UK Retail Service Provider Network. Despite the UK’s departure from the EU four years ago, UK equity-trading rules still very closely resemble those of the EU. One area of difference that may be relevant for CVM regarding internalization, however, is the UK’s Retail Service Provider network. In most EU markets, roughly 90% of retail flow ends up on-exchange. But in the UK that figure is inverted.⁵ The RSP network, which is run by market-data vendors Iress, Proquote and Fidessa (now part of financial-technology group Ion), matches orders from retail brokers with quotes from a small number of market participants. Historically, investment bank Peel Hunt and Winterflood Securities have dominated liquidity provision in the RSP. Other ELPs, however, are beginning to participate and gain market share. Importantly, all RSP trades are uncleared, which deprives retail investors of important post-trade safeguards. Additionally, all RSP volume is reported as “off-book, on-exchange” (*see Section III.B.2.e above for more on such activity*).

Though it’s not clear precisely which UK retail brokers connect to the RSP, [a 2023 paper](#) from Fatemeh Aramian and Carole Comerton-Forde at the University of Melbourne found that 85% of retail-specific trading in FTSE 100 names took place on the RSP. If accurate, this figure suggests that most well-

⁵ Retail orders are not tagged or otherwise broken out in trade reporting in either the UK or EU. These figures come from extensive conversations with market participants in both jurisdictions.

ROSENBLATT

known UK retail brokers are using the network for the bulk of their trading. It is unclear whether Iress, Proquote and Fidessa/Ion would allow non-UK retail brokers to trade UK-listed issues through the RSP.

The firms that operate the RSP network do not disclose how much volume it handles. Aramian and Comerton-Forde came up with a methodology for identifying RSP trades, but it only works for UK-listed securities. Retail brokers also may trade French, German and Dutch shares, for example, through the mechanism, but the academics found that data for these symbols was too confusing to be useful. Aramian and Comerton-Forde isolated all off-book, on-exchange trades that are reported to the London Stock Exchange (OBOE volume also can be reported to other UK and EU exchanges). Trades with a Market Model Topology in the trade-qualifier field that begins with four and five are off-book, on-exchange. Transactions that also contain “R[ACT FLAG1]” in those trade qualifiers are RSP trades.

Using this methodology, RSP trades in FTSE 100 stocks amounted to 5.36 million euros per day between January 1, 2019 and August 31, 2022. That’s 303 trades per day with an average size of 17,660 euros per trade. Some caveats: the RSP contains some institutional flow and the academics’ method of calculating RSP ADVT omits trading in both non-UK and midcap UK stocks. Additionally, some factors may result in this estimate being either inflated or too low. It is not possible to say whether the methodology skews the volume figure higher or lower. Some UK market participants, however, believe that the RSP is responsible for far more than 5.36 million euros per day in FTSE 100 equities.

The RSP is the only European cash-equity retail offering that uses a request-for-quote mechanism to determine prices. Dedicated retail offerings in the EU are all pre-trade transparent because they take place on an exchange, even if there is only one market maker (such as at Tradegate and Lang & Schwarz in Germany). The RSP, however, is not pre-trade transparent. The RSP operators do not charge trading fees to either retail brokers or market makers. Both types of firms, instead, pay a subscription fee to one of Iress, Proquote or Fidessa/Ion. Unlike other retail-dedicated offerings, such as Equiduct, Euronext Best of Book and Turquoise Retail Max, retail brokers that use the RSP do not pay for clearing because trades are not cleared. RSP is cheaper than services run by stock exchanges, but there is inherently more risk.

III.C.2. Japan

III.C.2.a Japan is a Large, Developed Market That Limits Internalization and competition with listing markets. Like the US, Europe, Canada and Australia, Japan is a large, developed equity market, ranked fourth in the world by market capitalization of listed companies and third by value traded.

ROSENBLATT

Over the past year average daily value traded in Japanese cash equities has ranged from a low of JPY4.3 trillion, in December, to JPY6.2 trillion (equivalent to approximately BRL233 billion), in March.

Japan permits so-called Private Trading Systems to compete with listing exchanges for trading of listed securities, but PTSs must disseminate pre-trade quotations and can accumulate no more than 10% market share before having to convert to full exchange status, at which point they may trade only their own listed securities, not those of other exchanges. Currently two PTSs, both of which are multilateral markets that display quotations, compete with the Tokyo Stock Exchange.

Apart from PTSs Japan also permits very limited instances of internalization, all of which are consummated and reported via the TSE's ToSTNeT system, which is reserved for large-size, portfolio and closing-price orders. Some individual brokers operate "dark pools" that execute via ToSTNeT. These systems can be multilateral but also facilitate segmented trading. Such dark pools in recent months have [accounted](#) for approximately 3-5% of total value traded in the Japanese equity market. In 2020, Japanese regulators increased transparency about dark-pool transactions, introducing a flag system to identify orders matched on dark pools.

III.D. Additional Information CVM May Want to Consider

There are several other pieces of information and data that CVM does not specifically address in its call for public comments that nevertheless may be relevant to its deliberations regarding the future of internalization in Brazil. These include:

III.D.1. Payment for Order Flow in the US and its Effect on Execution Quality. Many experts believe that the use of PFOF in the US is associated with inferior execution quality for customers.

To be sure, PFOF practices have changed in recent years, largely because of growing controversy and scrutiny. Historically, wholesalers would pay different PFOF rates to retail brokers, which could take those rates into account when allocating customer order flow among the wholesalers. For example, Retail Broker A might have been choosing between multiple wholesalers. Perhaps Wholesaler 1 paid \$0.0018 per share in PFOF, but routinely delivered inferior execution quality (i.e. less price improvement compared with the NBBO) for customers, while Wholesalers 2, 3 and 4 paid just \$0.0010 per share but consistently delivered better execution quality (more price improvement vs. the NBBO). Broker A may have decided to award Wholesaler 1 more customer flow, so that it received more PFOF, despite the outcome being worse for customers.

ROSENBLATT

Today, PFOF rates are equalized among wholesalers, largely removing this particular variety of routing conflict. But because not all brokers accept PFOF, the presence of PFOF, compared with its absence, may also affect execution quality for customers. Consider the scenario of Retail Broker A, which accepts PFOF from wholesalers, and Retail Broker B, which does not. Now consider that for wholesalers, gross trading profits consist of the prevailing best bid-ask spread (the National Best Bid-Offer, or NBBO), minus any price improvement offered the retail customer and PFOF given to the retail broker. A wholesaler may decide, based upon its quantitative modeling, profit requirements and other factors, that it is prepared to give up 30% of the NBBO on a given transaction (wholesalers are often comfortable with such scenarios — effectively, providing a narrower bid-ask spread than on fair-access exchanges — because of the lower adverse-selection risk associated with providing liquidity bilaterally to non-toxic retail flow, as mentioned in Section III.A.1 above). Generally, wholesalers do not care about whether this portion of the spread they're willing to sacrifice takes the form of price improvement for the end client, PFOF for the retail broker, or some combination of both. In this example, Retail Broker B, which does not accept PFOF, would deliver the entire 30% to the customer in the form of price improvement. But Retail Broker A would deliver only 15% to the customer while taking 15% for itself, in the form of PFOF.

This concern over the conflict of interest posed by PFOF, as well as the potential negative impact on the prices paid and received by retail customers, has fueled concerns among policymakers in recent years. These concerns have inspired a range of proposed and adopted regulations in both the United States and Europe, as detailed in Sections III.B.1.d and III.B.2.f above and Section III.D.2 below.

III.D.2. Recent European Union Ban on Payment for Order Flow and Proposed US Rules. As mentioned in Section III.B.2.f above, recent revisions to the Markets in Financial Instruments Directive have banned PFOF in the EU. Just one member state, Germany, has had its existing PFOF arrangements extended through July 2026 under the recent ban, as part of a political compromise between Germany, which currently permits PFOF and opposed the ban, and other member states, which do not permit PFOF and supported the ban. The PFOF ban is part of a broader, longstanding effort by EU policymakers to encourage more transparent, trading on exchanges and other multilateral marketplaces.

Additionally, the US Securities and Exchange Commission has proposed, but has yet to adopt, two rules that would significantly alter retail order-routing and execution, including PFOF arrangements. One of these, called Regulation Best Execution, would impose additional restrictions on what it calls

ROSENBLATT

“conflicted transactions” involving PFOF. Another, the Order Competition Rule, would force all marketable retail orders into fair-access auctions before they could be sent to wholesalers or otherwise internalized. These proposals have been highly controversial, with much industry opposition, but SEC officials have hinted that they intend to adopt them nonetheless, though perhaps with some modifications from the original proposals. US and EU policymakers have been particularly attuned to the conflicts of interest often confronting brokers and other market participants when handling retail orders because of the growth of retail participation in recent years (as detailed in Section III.B.1.b above). Regulators in these jurisdictions also have expressed concerns about whether rising levels of off-board trading are damaging price discovery and market quality. A June 10, 2021 [meeting](#) of the US SEC’s Investor Advisory Committee, for example, featured a study by US broker BestEx Research which asserted that moving retail flow from bilateral “wholesaling” arrangements to public exchanges would narrow NBBO spreads by 20%.⁶ And Nasdaq’s comments on US equity market structure have referred to widening spreads during the time in which retail participation and off-exchange internalization of retail orders increased.⁷

III.D.3. The Importance of Preserving Brazil’s Final-Beneficial-Owner Clearing and Settlement Model. One potentially important topic that the AIR does not examine in detail is clearing. As we mentioned in Section III.C.1.a above, not all internalized trades in other jurisdictions are cleared and settled. The UK’s Retail Service Provider network is one example. Recently some retail brokers serving that region have expressed interest in alternative execution models that provide the additional safety and security that come with central-counterparty clearing and settlement. Brazil, of course, is unique among the jurisdictions considered in the AIR for its final-beneficial-owner clearing and settlement model, in which customer positions are not aggregated by brokers at the clearinghouse. This level of segregation provides even greater safeguarding of client assets. Given that some internalized trades, like those executed via the UK RSP, have chosen to forego central clearing and settlement, it’s worth mentioning that any efforts to do the same for internalized trades in Brazil — or to aggregate customer positions in “street name” at the broker level — would represent a deterioration of such world-class customer-asset safeguarding.

⁶ Mittal, Hitesh and Kathryn Berkow. “[The Good, the Bad & the Ugly of Payment for Order Flow](#).” May 3, 2021. BestEx Research.

⁷ Nasdaq’s 2022 “Optimizing Markets” [whitepaper](#) contains one chart, on page 10, showing that VIX-adjusted average bid-ask spreads for stocks in the S&P 500 grew from a range of 5.3-5.4 basis points in 2017-19 to 5.6 bps in 2020 and 6.7 bps in 2021, when “meme-stock” mania reached its peak. Another, on page 7, shows that during the second half of 2021, spreads were widest in stocks with the highest retail market shares.

ROSENBLATT

III.D.4. Retail Participation is Evolving. The surge in retail trading that has occurred in recent years overlaps significantly with other forms of speculation by individuals, often in small notional amounts and aided by technology such as smartphone apps and machine-learning or big-data-driven prompts. Wagering on sports contests and elections, for example, has increased in popularity alongside the growth of retail securities and derivatives-trading apps. Many of the same quantitative trading firms that operate retail-order wholesaling or other market-making operations in financial markets are already involved in these related enterprises, or are monitoring them closely as potential areas for expansion. Certain industry practices or policy interventions which affect the experiences of retail participants in financial markets, then, may also affect activity in these related realms. A customer that has a bad experience trading stocks online, for example, may simply move some or all of that activity into sports betting instead. And these related forms of speculation often do not come with the same levels of regulation, disclosure and customer protection found in financial markets, especially those in which issuers raise capital that helps drive the economies of cities, countries and indeed the entire world. Regulators would do well to consider all of these factors when evaluating how to oversee internalization practices in financial markets.

III.D.5. More Data on Individual Securities Favored by US Retail Investors.

In Section III.B.1.b above, we provided some details about the substantial growth in recent years of retail participation in US equities. When examining this trend and its effect on markets, it's important to note that retail traders often gravitate to certain individual securities. Frequently these have low share prices and therefore can be traded with less capital outlay. Sometimes social-media or other internet chatter can rapidly drive interest in a given security, which can see outsized retail participation as a result. These securities can trade far more in off-exchange, bilateral and internalized fashion than the market-wide average for US stocks we detailed in Section III.B.1.b, when updating figures provided in the AIR. We believe it is important for CVM to understand the off-board/internalization levels in some of these securities, given that similar dynamics may drive retail interest in Brazilian securities.

Accordingly, we provide a table here of US-listed stocks with off-exchange market share of greater than 50% for the period between July 24, 2023 and August 23, 2024. This list includes several of the most-actively traded stocks market-wide by share volume (see first column, Market-Wide Volume Rank). It also includes several large-capitalization, major-index constituents such as Tesla, AMD and Nvidia. The list is sorted by each stock's off-exchange market share, from highest (TELL, at 71.75%) to lowest (SOFI, at 50.88%). The right-

ROSENBLATT

most column shows how much of each stock's off-exchange volume is done outside of Alternative Trading Systems (what the US Financial Industry Regulatory Authority calls Non-ATS OTC). The single biggest piece of that non-ATS OTC activity is marketable retail orders being internalized by wholesalers (see Section III.B.1.b above). In other words, the higher the number in this column, the higher the retail-to-wholesale internalization in each stock. Additionally, although this table shows statistics for the entire 11-month period referenced above, often individual securities are driven to similar levels for shorter periods, then revert to earlier trading patterns.

Market-Wide Volume Rank	Symbol	Off-Exchange Market Share	% of Off-Exchange Volume Done Non-ATS OTC
31	TELL	71.75%	90.77%
32	MULN	70.62%	97.02%
47	FCEL	70.47%	91.86%
7	NKLA	70.05%	92.65%
451	CEI	69.32%	95.24%
63	CGC	69.26%	93.64%
41	GOEV	66.50%	91.70%
2	TSLA	65.91%	91.87%
45	PHUN	65.08%	94.84%
27	CRKN	64.48%	96.82%
35	GWAV	64.21%	95.36%
48	FSR	64.17%	83.36%
11	AMD	62.34%	89.29%
9	FFIE	62.03%	94.71%
43	EBET	61.58%	96.39%
37	DNA	58.74%	79.13%
4	NVDA	57.82%	86.70%
50	SOUN	54.80%	91.01%
49	CLSK	54.70%	90.06%
14	MARA	53.14%	90.98%
39	AMC	53.04%	86.44%
1	SQQQ	51.87%	88.59%
12	PLTR	51.61%	86.03%
26	RIVN	51.41%	81.53%
577	SNDL	50.95%	89.50%
22	SOFI	50.88%	83.08%

Source: Rosenblatt Securities, Financial Industry Regulatory Authority

IV Summary and Conclusions

Internalization is a controversial topic in financial markets. Segmenting flows to be internalized by brokers or dealers rather than exposed to the wider market can result in better outcomes for the involved parties, but may pose threats to the wider market, including the potential for damage to price discovery. For this reason, most markets globally impose either outright bans or restrictions on the practice. The AIM released by CVM as part of its Public Call for Contributions rightly examines this topic in general, but also explores how four jurisdictions outside Brazil either permit or limit internalization.

However, portions of the AIR are either in need of updating because of changed practices throughout the world or are not as clear as they could be about various matters. Additionally, there are some bits of information not strictly mentioned or within the scope of the AIR that may be relevant to CVM as it considers regulation concerning internalization. Accordingly, we have in these pages presented additional information that may help CVM and other concerned parties more-completely consider the issues surrounding internalization and how it is handled by other markets and regulatory authorities globally. Some of the key points include:

- Internalization often applies not just to small retail orders but also institutional orders of various sizes.
- Because the impact of a large order's size on market prices can be a major component of overall transaction costs, sometimes such orders are internalized rather than exposed to the market.
- In addition to the US, EU, Canada and Australia, two other large, developed markets — the UK and Japan — may be instructive for the CVM and Brazilian market participants to consider.
- The variety of US trading centers, in practice, differs somewhat from the categories the AIR lays out, which are based on the now two-decades-old Regulation NMS and nearly 50-year-old language in the US Exchange Act.
- US retail participation has fallen from an early-2021 peak but remains significantly higher than prior to the advent of zero-commission apps and the Covid-19 pandemic, and the vast majority of retail orders are internalized bilaterally and off-exchange.
- Some of the most-actively traded US stocks have been profoundly influenced by rising retail participation, to the point where 60-70%+ of their total volume occurs off-exchange, primarily via bilateral, retail-to-wholesale internalization arrangements.
- EU best-execution rules are significantly less prescriptive and more principles-based than those of the US, Canada and Australia.
- The levels of systematic-internalizer and, especially, OTC trading in the EU are significantly higher than what the AIR, citing consulting firm Oxera, asserts.

ROSENBLATT

- “Off-book, on-exchange” transactions, including non-bank market makers providing liquidity bilaterally to institutional investors, have been on the rise in the EU.
- Growing concern about protecting the rising ranks of retail traders from conflicts of interest embedded in retail order handling have prompted recent regulatory responses around the world, including a ban on payment for retail order flow in the EU and rules that would discourage off-board, bilateral wholesaling in the US.

Brazil thus far has confined wholesaling to the RLP schemes available through its primary listing exchange, B3. Given the size of Brazil’s market relative to the others mentioned in the AIR and our examination of the AIR, we believe this is a prudent approach. Extending internalization to the other forms seen in other countries, including bilateral wholesaling and single-dealer platforms in the US, as well as systematic internalizers and “off-book, on-exchange” bilateral liquidity provision in the EU, could pose risks to price discovery that Brazil may not be able to withstand as well as far larger markets with more participants, liquidity and trading activity.