



MAY 2020

**QUANTIFYING SYSTEMATIC  
INTERNALISERS' ACTIVITY: THEIR  
SHARE IN THE EQUITY MARKET  
STRUCTURE AND ROLE IN THE  
PRICE DISCOVERY PROCESS**

IRIS LUCAS

amf-france.org

AUTORITÉ  
DES MARCHÉS FINANCIERS



This study was coordinated by the Market Surveillance Division. It is based on sources that are considered to be reliable but whose comprehensiveness and accuracy cannot be guaranteed.

Copying, distributing or reproducing this study, in full or in part, is subject to prior express written authorisation from the AMF.

## SUMMARY

As the new regulatory framework on markets in financial instruments (MiFID II) enters its third year of implementation, the European Commission is completing its technical reform under its Refit programme. In its report drafted for this purpose, the European Securities and Markets Authority (ESMA) suggests that systematic internalisers (SI) no longer be included in the share trading obligation. To enable a greater volume of orders to contribute to the price formation process, MiFID II imposes an obligation to trade shares on regulated markets (RMs), multilateral trading facilities (MTFs) or systematic internalisers (SIs), which are investment firms that execute client orders on own account outside "traditional" trading venues. The Autorité des Marchés Financiers (AMF) has therefore decided to study the role of systematic internalisers from three angles: their weight in the current market structure, their contribution in terms of pre-trade transparency and price formation and, lastly, the quality of their prices compared with those of Euronext Paris.

## WEIGHT OF SYSTEMATIC INTERNALISERS ON THE MARKET

In the first months that followed the entry into force of MiFID II on 3 January 2018, the market share of SIs rose to more than 30% of volumes traded, raising many questions as to the role of these participants in the market structure and therefore in the price formation process (see chart 1). Two years on, after clarifications of transaction reporting confirmed suspicions that the weight of these market participants had been over-estimated, depending on the month, the market share of SIs is now valued at between 15% and 20% of total amounts traded in equities, which is still higher than expected.

To understand the role of SIs in market structure more effectively, we need to differentiate between their activity that contributes to price formation and their activity relating to technical transactions. The regulatory reporting format requires that this be mentioned specifically when transactions are reported. If we consider this distinction and if we exclude intra-group SI transactions, the study shows that the percentage of amounts from SI transactions involved in the price formation process and accessible to clients did not account for more than 8% to 10% of total trading volumes in French equities in the first quarter of 2020 (see Chart 4). The rest of this study is based on this scope, which is more representative of the market.

## OVERVIEW OF STAKEHOLDERS

In the first quarter of 2020, there were 36 active systematic internalisers on the French equity market, observed through transaction reports. They were made up of 28 investment bank SIs (Bank SI) and 8 high-frequency traders (Electronic Liquidity Provider SI or ELP SI). Bank SIs account for 76% of volumes while ELP SIs account for 24%. However, of the 65% of volumes from SIs executed during the Euronext continuous trading phase (i.e. before the closing auction), the market share of ELP SIs rises to 37% (see Chart 5).

The analysis of the breakdown of the amounts traded by the two SI categories shows that ELP SIs focus on small transactions (mostly under €50,000), while Bank SIs are rather used for larger transactions of more than €200,000 (see chart 7).

## CONTRIBUTION IN TERMS OF PRE-TRADE TRANSPARENCY

MiFID II requires that systematic internalisers publish bid and offer prices for a size at least equal to 10% of the Standard Market Size (SMS) for liquid shares and equivalent liquid instruments (such as ETFs and certificates)<sup>1</sup>. However, SIs are free to propose to their clients, in addition to their public quotes, bilateral quotes that are not subject to pre-trade transparency when they are higher than the SMS.

---

<sup>1</sup> The standard market size is €10,000 for nearly all the 150 French securities that fall within the scope of the study.

In September 2019, on average, most systematic internalisers proposed a quote for a size representing between 15% and 40% of the standard market size, i.e. between €1,500 and €4,000. This may seem relatively marginal compared with the liquidity that is potentially accessible at the best price on Euronext during this period (€40,000 on the average).

Nevertheless, this publicly offered liquidity does not reflect the reality of the amounts traded, since a large portion of SI transactions are not subject to pre-trade transparency requirements. If we compare data from public quotes and transaction reporting, it emerges that transactions subject to pre-trade transparency requirements represent only 22% of the amounts traded by SIs during the continuous trading phase, i.e. only 1.4% of the total amounts traded on the market during this period. The contribution of SIs with regards to transparency is therefore very limited.

## **IMPROVEMENT OF PRICES OFFERED COMPARED WITH EURONEXT**

To examine the quality of the prices proposed, based on data from the first quarter of 2020, the study compares the prices executed on SIs to the spread prevailing on Euronext at the same time. Nearly all the amounts declared by ELP SIs fall within the spread proposed on Euronext Paris, with the exception of transactions that are above the large-in-scale threshold (bloc transactions). Since Bank SIs carry out more voice broking with their clients, and mostly handle large volumes, their prices diverge more frequently from those of the reference exchange.

Of the amounts executed on SIs where the price falls within the Euronext spread (i.e. half of price forming volumes), 54% are executed at the same price as the price displayed at the same time in Euronext's order book. The remaining 46% are executed at an improved price (with respect to the study scope, a tick size, which is the minimum difference between two successive prices offered on a market, usually amounts to €0.05 or €0.01) that can range from one-tenth of a tick to several ticks. 12% of these involve a significant improvement (i.e. higher than one tick, see charts 16 & 17).

ELP SIs proportionally aggregate most of the amounts traded with an improvement in price (see chart 20).

## **COMPLIANCE WITH THE FUTURE TICK SIZE REGIME**

MiFID II has established a tick size regime, calculated according to equity liquidity and prices. This regime has harmonised quotes on "traditional" venues and will be extended to SIs by the end of June 2020. We observe from the study that nearly 40% of volumes traded on SIs are traded at a price that will no longer be permitted after the tick size regime will be applicable to SIs (see Chart 11). Moreover, with the extension of the regime to systematic internalisers, most of the price improvements mentioned above will no longer be possible: during the first quarter, 43% of improved prices were lower than a tick and would not have been compliant with the tick size regime.

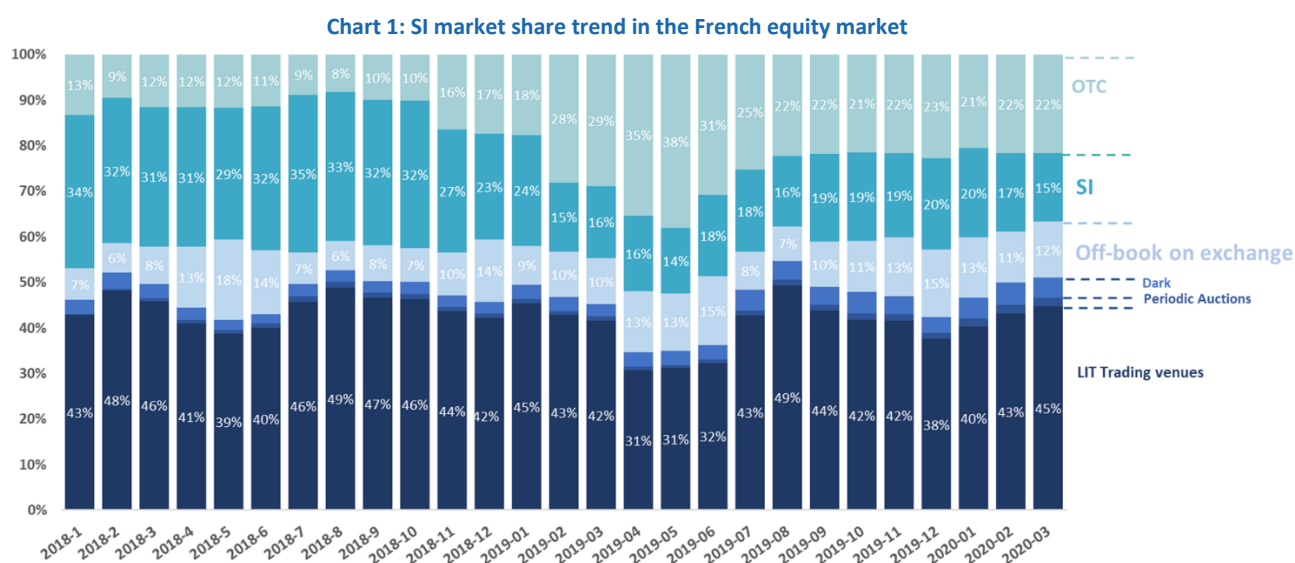
## **QUALITY OF PRICES OFFERED FROM THE CLIENT'S PERSPECTIVE**

To assess the quality of SIs from the client's perspective, the study presents an analysis of the price trend observed on the French equity reference market (Euronext Paris) around an SI transaction. The study, which was performed on the basis of SI transactions regardless of their counterparty, highlights rather diverse price reversion levels among the various market participants (see Chart 21). However, as we have mentioned above, prices offered by SIs may vary depending on the client. Such analysis, which is an essential component of the MiFID II best execution/selection process, should therefore be made by each participant based on their own trading prices or the stream of prices that they receive from the SI, if applicable.

## 1. MARKET STRUCTURE

### 1.1. WHAT IS THE TRUE WEIGHT OF SYSTEMATIC INTERNALISERS IN THE MARKET?

Shortly after MiFID II came into force on 3 January 2018, the significant market share of systematic internalisers (SI) raised many questions about these investment firms that execute their clients' orders outside trading venues on their own account. It must be remembered that, in the French equity market, **the SI market share published by data providers was more than 30% in the first few months following the European Directive's entry into force. Two years on, in the first quarter of 2020, the weight of SIs is now estimated at between 15% and 20% of volumes traded, once again according to data providers (see Chart 1 below).**



Source: Refinitiv, AMF

Note: In Chart 1 above, "LIT Trading venues" refers to volumes of continuous order book trading venues including regulated markets and multilateral trading facilities (MTF), "off-book on exchange" to bilaterally pre-arranged transactions reported to an exchange (also known as cross trades) and benefiting from the waiver of "negotiated transactions"<sup>2</sup>, while the term "Dark" refers to volumes traded on trading venues that are not subject to pre-trade transparency under the "Large-In-Scale" (LIS) or "Reference Price" (RP) waivers, commonly referred to as "dark pools".

Following the clarification<sup>3</sup> of how transactions should be reported under the SI system, this downward revision of the figures has confirmed suspicions that the figures observed soon after the new regulation entered into force had been overestimated. Nevertheless, the share of SIs as published by data providers still seems higher than expected.

Furthermore, in 2019 and at the beginning of 2020, the ESMA register recorded a 48% increase in the number of entities (225 SIs in March 2020 compared with 152 in the third quarter of 2018).<sup>4</sup> In the first quarter of 2020, some of these new players in the French equity market (5 out of a total of 36 active SIs, accounting for a total of 7.7% of amounts traded on SIs) were entities of players from the United Kingdom who currently have an SI operating in Great Britain and a second in mainland Europe (Brexit).

In order to analyse the liquidity that SIs bring to the market as a whole, one would first need to compare their volumes with those published in LIT trading venues. This is because similarly to these trading venues, SIs are subject

<sup>2</sup> In other words, volumes that use negotiated transaction waiver for pre-trade transparency.

<sup>3</sup> [https://www.esma.europa.eu/sites/default/files/library/esma70-872942901-35\\_gas\\_transparency\\_issues.pdf](https://www.esma.europa.eu/sites/default/files/library/esma70-872942901-35_gas_transparency_issues.pdf)

<sup>4</sup> All the SIs listed in the ESMA register are not active on equities.

to pre-trade transparency requirements<sup>5</sup> and are also supposed to contribute to the price formation process. To this end, it is important to differentiate between the activity of SIs that contribute to the price formation process and the activity involving technical transactions. If SIs do not report their technical transactions in OTC, they are required to flag those of their transactions (the basis used by data providers) that do not contribute to the price formation process.

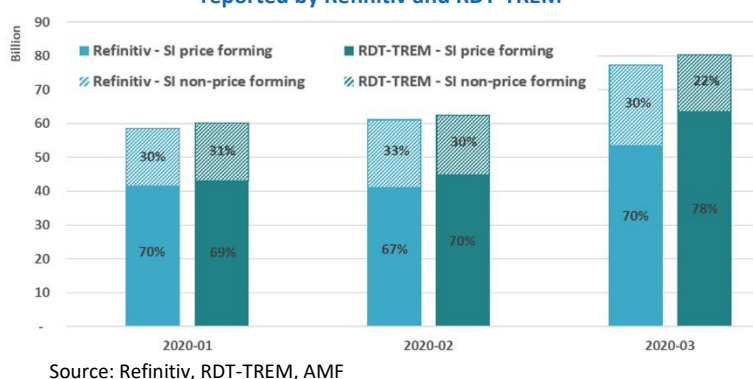
According to Refinitiv, nearly 30% of the amounts traded via SIs in the first quarter of 2020 did not contribute to the price formation process. Over this same period, the share of transactions via SIs that contributed to price formation was therefore between 11% and 14% of the total amounts traded in French equities (see chart 2 below).

**Chart 2: Weight of SIs in total volumes including non-price forming amounts**



With transaction reporting imposed on investment firms by MiFID II, the AMF has access to all transactions executed by SIs on French instruments. The chart below compares the volumes obtained from this source, referred to in this study as RDT-TREM<sup>6</sup>, with those of Refinitiv.

**Chart 3: Comparison of amounts traded via SIs reported by Refinitiv and RDT-TREM**



**The amounts reported to the AMF are practically identical to the amounts published by Refinitiv, with the exception of the proportion of volumes reported as not contributing to the price formation process, which would seem to have been underestimated in RDT-TREM for March. A study of the use of the “non-price forming” flag<sup>7</sup> in the report to the AMF shows that some reporting entities never use the flag, leading to consider their entire flow**

<sup>5</sup> A focus on the SI pre-trade transparency regime is proposed later in this document.

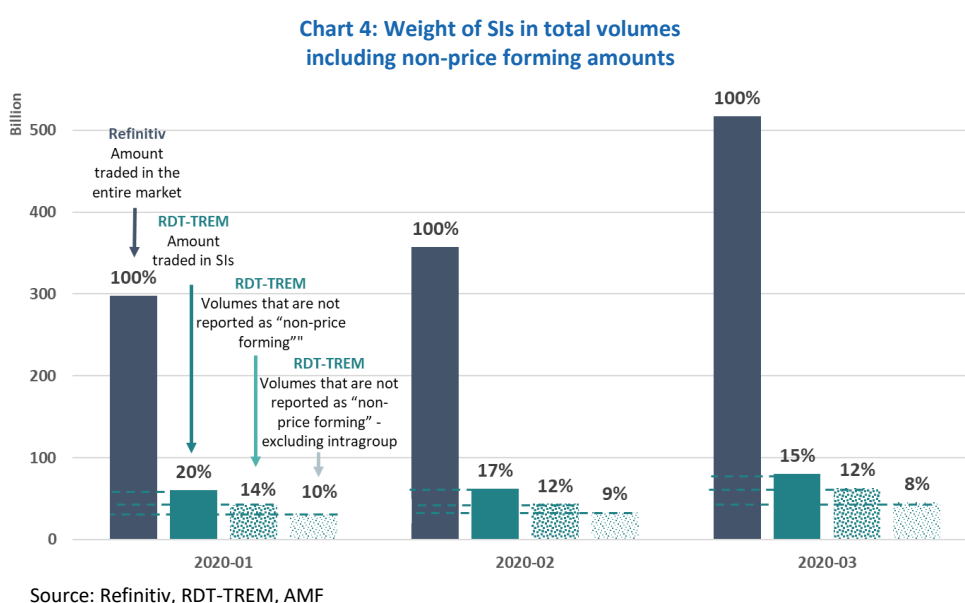
<sup>6</sup> Reporting Des Transactions - Trade Reporting Exchange Mechanism.

<sup>7</sup> Note that this flag is used to characterise transactions that do not contribute to price formation.

as price forming and to overestimate the real percentage of price forming transactions, in spite of cases that are presumed to be unjustified.

In order to assess more precisely what the SI price forming flow accessible to the market would be, it is proposed, in addition to the non-price forming flag, to deduct intragroup transactions from volumes that have not been reported as non-price forming<sup>8</sup>, by analysing the SI counterparties based on RDT-TREM data.

Based on this rationale, the chart below illustrates the results obtained on the best estimate of the share of the price forming amounts obtained from RDT-TREM data. For the sake of clarity, these volumes (volumes that are not reported as “non-price forming” and exclude intragroup) will be referred to in the rest of this study as the “maximum addressable” volumes of SIs.



Based on these observations, this study reassesses the share of price forming SI transactions accessible by the market at between 8% and 10% of the total amounts traded on French equities during the first quarter of 2020 (compared with 12% on the average published by Refinitiv).

<sup>8</sup> For this study, based on repeated/successive observations, all intra-group transactions are considered to be non-price forming despite the fact that it is possible to identify those that do contribute to price formation on a case-by-case basis.

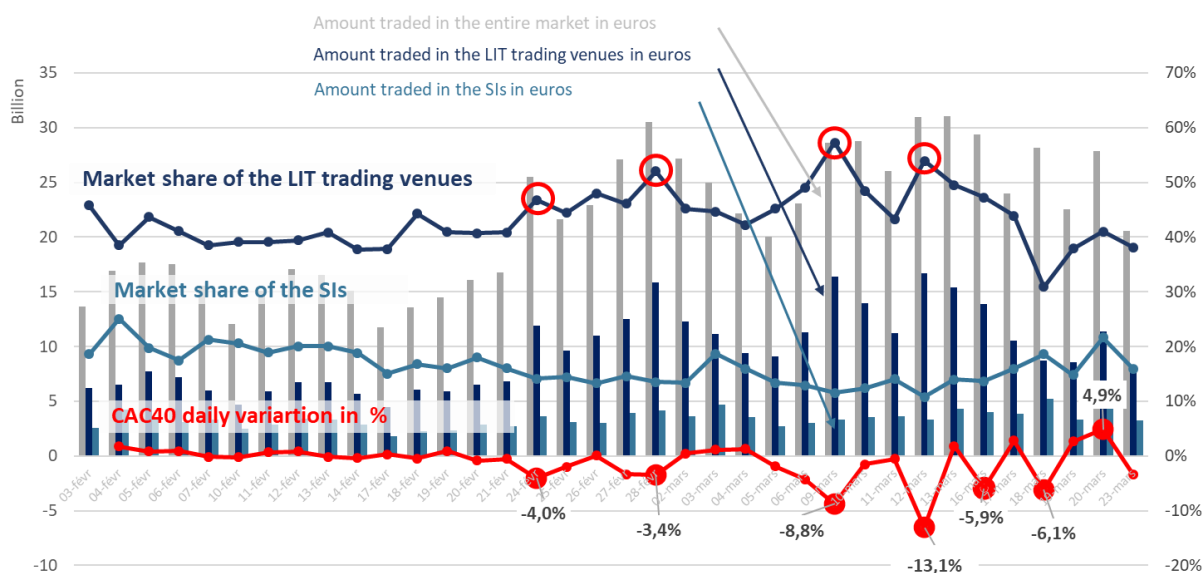
**Box 1: Focus on the Covid-19 crisis period: what is the impact on the SI market share?**

The pandemic that hit the world at the beginning of the year has led to an exceptional crisis in financial markets, comparable to the 2008 crisis. In particular, towards the end of February and in March 2020, volumes and volatility reached their highest levels in 10 years. The chart below presents in histogram form (left axis), for French equities, the daily amounts traded in the **entire market** (grey) and on **LIT trading venues** (dark blue). The daily market share of **LIT trading volumes** is represented by the dark blue curve while that of **SIs** is traced in turquoise (right axis). Lastly, the close-to-close **variation of the CAC 40 index** is illustrated by the red curve (right axis) and the sessions marked by the sharpest drops are identified by round markers.

Whereas the **SI market share remained relatively stable** during the period, **the market share of LIT trading venues rose significantly**, in particular reaching its extremes during the sessions where the index fell the most. Conversely, the sessions with sharp declines were also marked by particularly high market shares of LIT trading venues, except for the 18 March session<sup>9</sup>.

During these days of extreme volatility, LIT trading venues are preferred to SIs because they are the source of price formation compared with other execution venues that are likely to exhibit some lag with their prices, frequently obsolete and mismatched.

**Market share trend of SIs and LIT trading volumes during the crisis**



Source: Refinitiv, RDT-TREM, AMF

<sup>9</sup>The reason for this divergent behaviour has not been identified; however, without being able to explain a causal relationship, it can be observed that 18 March 2020 was in France the first day of the ban on creating or increasing net short positions (short ban) - that followed a one-day ban on short selling.



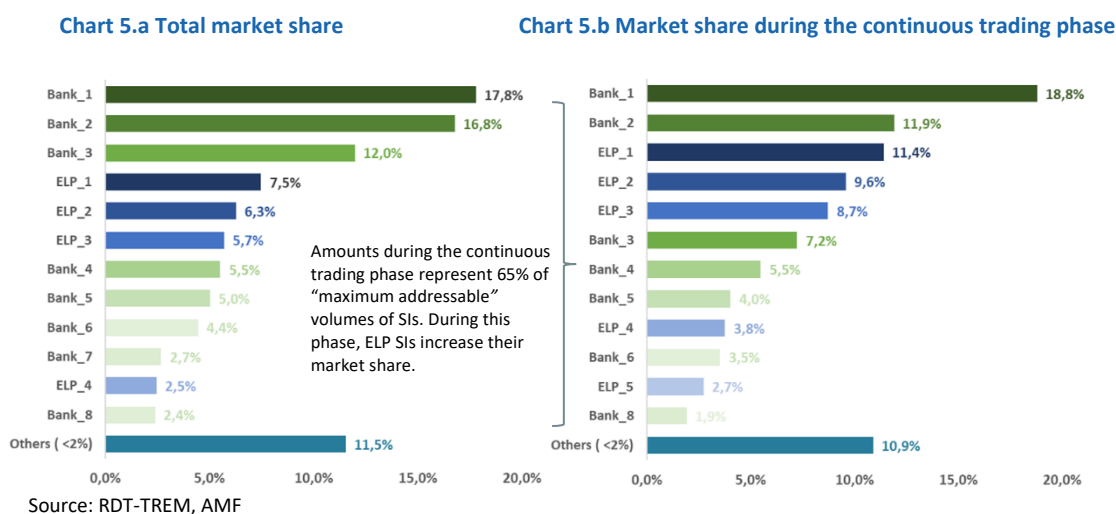
## 1.2. OVERVIEW OF STAKEHOLDERS

In the first quarter of 2020, the RDT-TREM report observed 36 active SIs. A systematic distinction will be proposed in the rest of this study between investment bank SIs (28 entities)<sup>10</sup> and those of HFT market-makers (8 entities)<sup>11</sup>, commonly referred to respectively as Bank SIs and ELP SIs (Electronic Liquidity Provider SIs).

### 1.2.1. Bank SIs and ELP SIs: what market share per participant?

ELP and Bank SIs account for 24% and 76% of “maximum addressable” volumes on SIs (see chart 5.a).

**Chart 5: Market share of ELP SI and Bank SI players in Q1 2020 of “maximum addressable” volumes**



Moreover, **65% of volumes** among the “maximum addressable” volumes **are executed during the Euronext Paris continuous trading phase** (i.e. before the closing auction). During this continuous trading phase, **ELP SIs account for 37% of total amounts traded with SIs** (see chart 5.b). In comparison, for CAC 40 shares, HFTs have an estimated 58% market share in terms of amounts traded on Euronext Paris before the auction<sup>12</sup>.

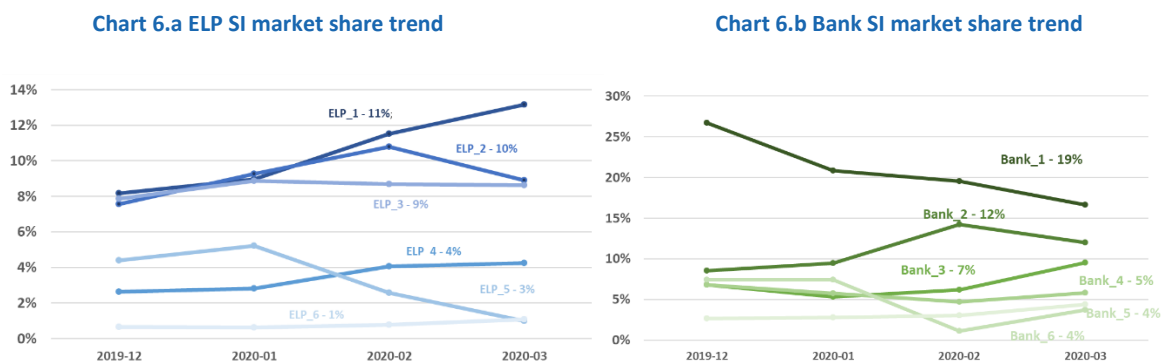
In the first quarter of 2020, during the continuous trading phase of the Paris stock exchange, there were wide divergences between the individual market share of participants: the market share of the leading Bank SI participant (in terms of volumes traded), which accounts for nearly 19% of average volumes over the period, dropped from 26% in December 2019 to 16% in March 2020 (see Chart 6.b). At this point, it is not possible to determine whether this drop is the result of an adjustment in reporting or the result of competition that might have led the participant to lose part of its flows to a rival. At the same time, the market share of the first ELP SI, which represented a little over 11% of the activity, rose from 8% to 13% (see Chart 6.a).

<sup>10</sup> Of which four Bank SIs with a market share of under 0.01%.

<sup>11</sup> Of which one ELP SI with a market share of under 0.01%.

<sup>12</sup> This market share, which traditionally increases with volatility, rose to 68% on 11 March 2020.

Chart 6: SI market share trend during the continuous trading phase

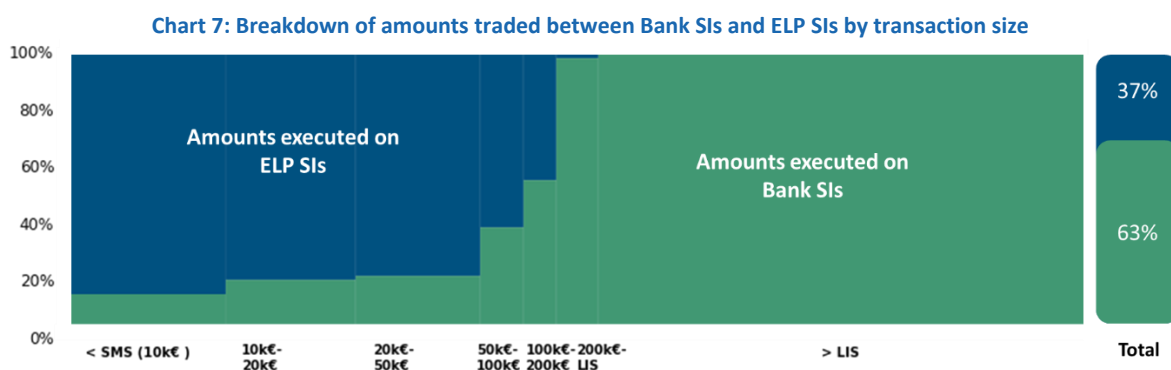


Source: RDT-TREM, AMF – for Q1 2020

### 1.2.2. For which transaction sizes are SIs preferred?

To understand the level of liquidity that SIs provide to market participants, we propose a comparison of the breakdown of amounts per SI transaction with the breakdown observed for French equities (Euronext Paris). Accordingly, from this section onwards, **references to the volumes considered for SIs will concern only those resulting from "maximum addressable" transactions carried out before the close<sup>13</sup>**. A focus on the post-auction activity of SIs is available in appendix.

The breakdown of the amounts traded between Bank SIs and ELP SIs based on the size of transactions highlights a sharing of flows between the two groups of participants: **ELP SIs deal more with small transactions while Bank SIs are preferred for transactions above the Large In Scale (LIS) threshold** – ranging from €500,000 to €650,000 for CAC 40 equities (see Chart 7).



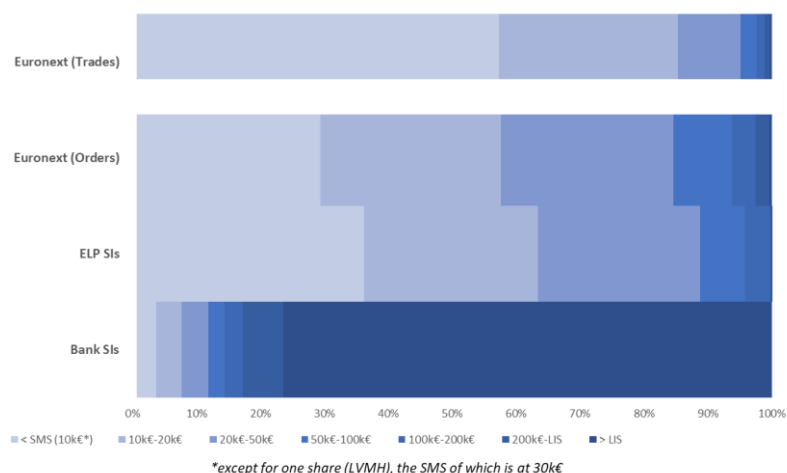
Source: RDT-TREM, AMF – for Q1 2020

Note: In Chart 7, as in all the charts of the same type that will follow, the width of the columns is proportional to the corresponding aggregated amount. The "Total" column to the right of the chart gives the breakdown between Bank and ELP SIs, regardless of transaction size.

Furthermore, while **ELP SIs have transaction sizes highly similar to those observed on the Paris stock exchange, most of which are less than €50,000, the activity of Bank SIs differs greatly, mainly comprising large transactions involving over €200,000** (see Chart 8).

<sup>13</sup> It should be noted that these volumes represent 65% of the "maximum addressable" volumes and 47% of the total amounts traded with SIs, i.e. 8% of the total market volumes (considering an average SI market share of 17% over the first quarter of 2020).

**Chart 8: Breakdown of amounts traded on Euronext and on SIs by transaction size**

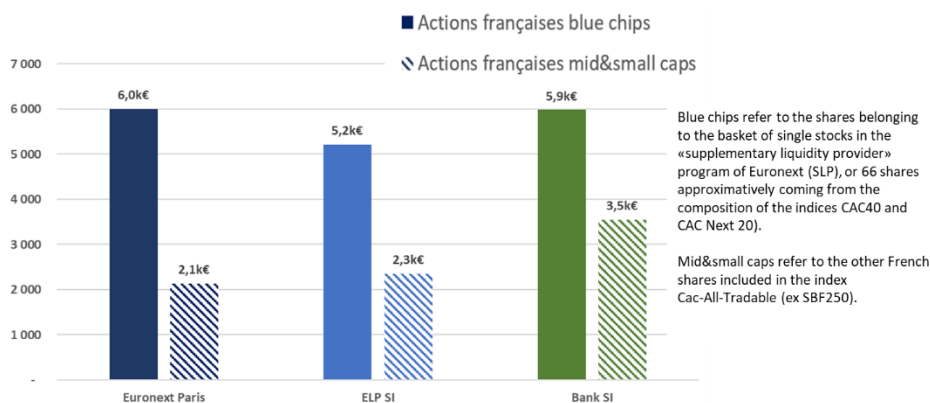


Source: Euronext, RDT-TREM, AMF – for Q1 2020

In this analysis, one would need to take into account the structural difference between SIs, who negotiate transactions bilaterally, and the Euronext Paris continuous order book in which the size of transactions is fragmented by passive orders. SI transaction sizes are therefore compared with those of “aggressive” orders<sup>14</sup> executed on the Paris stock exchange. We note that in this case, **transaction amounts under €10,000 account for a total of 30% of euro-denominated trading on Euronext Paris** (in the (usual) case where it is the transaction size that is taken into account, these amounts account for 58% of volumes traded).

The median size of transactions<sup>15</sup> calculated on SIs is slightly lower than that of Euronext Paris (€6,000): €5,900 on Bank SIs and €5,200 on ELP SIs (see Chart 9).

**Chart 9: Median size of transactions on Euronext and SIs**



Source: Euronext, RDT-TREM, AMF – for Q1 2020

<sup>14</sup> An aggressive order is an order that will meet one or more passive orders, resulting in one or more transactions.

<sup>15</sup> Although these metrics are usually expressed as an average, since the volumes traded on Bank SIs are very scattered, the median would seem more representative and appropriate for a comparison between trading systems. Note that the average size of Bank SI transactions is €62,000 compared with €12,000 for Euronext and €10,000 for ELP SIs.

## 2. LIMITED CHALLENGE OF PRE-TRADE TRANSPARENCY ON SIs

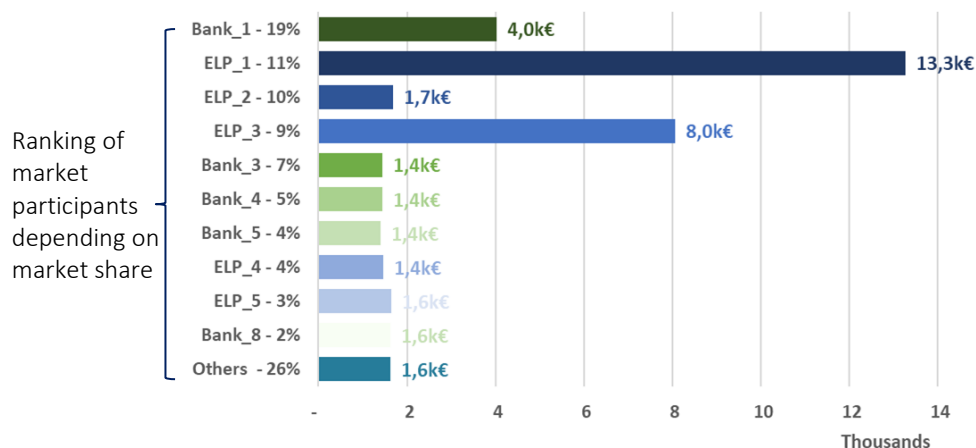
Pre-trade transparency requirements for the SI regime apply only to liquid equities<sup>16</sup> (as well as to equity-like liquid instruments such as ETFs and certificates)- involving some 150 French equities for the present study. They are defined around the Standard Market Size (SMS) concept – which is €10,000 for nearly all equities<sup>17</sup>. Under these pre-trade transparency requirements, SIs are required to continuously publish firm bid and offer quotes, for a size at least equal to 10% of the SMS for all equities for which they have SI status. Nevertheless, in addition to their public quotes, SIs are still free to offer their clients bilateral quotes which are not subject to pre-trade transparency requirements when they are larger than the SMS.

### 2.1. WHAT LEVEL OF LIQUIDITY IS PROVIDED BY THE SYSTEMATIC INTERNALISERS?

SIs have three options for publishing their quotes: on their websites, through a trading venue or an Approved Publication Arrangement (APA)<sup>18</sup>. They must comply with a specific format, that can be used by machines and that identifies the SI in question in order to enable participants to access the SI’s quotes. In practice, most SIs have opted for the publication channel made available by CBOE Global Markets’ APA and that of the London Stock Exchange Group, TRADEcho. Both channels are relayed by data providers.

For this part of the analysis, the AMF studied the quote data of SIs in September 2019 for French equities (collected from Refinitiv). The outcome, on the average, is that **most SIs offer a public quote for a size between 15% and 40% of the SMS (€1,500-€4,000). Most of them however offer a public quote for a size just above the required minimum threshold (€1,000).** Only two ELP SIs publish sizes close to or exceeding the SMS threshold (see Chart 10).

Chart 10: Average quantity offered by SIs for public quote



Source: Refinitiv, AMF – September 2019

Note: Since the quote levels offered by the second and sixth Bank SIs were not available from Refinitiv, because they had chosen a channel other than an APA channel, they are not represented.

In comparison with the best limit of Euronext Paris, the average depth of which was nearly €40,000 in September 2019 on liquid shares (calculated outside auction phases), this **liquidity based on the public quotes of**

<sup>16</sup> For the purposes of Article 2(1)(17)(b) of EU regulation (EU) No 600/2014, a share is considered to be liquid if it is traded daily, if its floating capitalisation is at least equal to €100 million for securities admitted to trading on a regulated market (€200 million for securities traded only on MTFs), if it has a daily average number of transactions of more than 250 and if the average daily volume traded in euros is higher than €1 million.

<sup>17</sup> All French liquid shares have an SMS equal to €10,000, except for LVMH, which has an SMS of €30,000.

<sup>18</sup> Entities regulated under MiFID II in charge of publishing OTC transactions (including from SIs).

SIs appears to be relatively marginal. Nevertheless, this liquidity **does not reflect the actual amounts traded** by SIs: although the first and third ELP SIs in terms of market share are characterised by an average public quote (€13,300 and €8,000 respectively) that is higher than the median volumes of their transactions, **for most participants the average sizes offered for public quote are well below the median sizes of transactions**. With such a difference between the quantity offered and volumes executed, **it seems that a significant proportion of transactions comes from flows that are different from those published by SIs through APAs. These flows would therefore not fall under the pre-trade transparency requirements of the SI regime**. This outcome is also confirmed by the price analysis (see below).

## 2.2 WHAT IS THE PROPORTION OF AMOUNTS EXECUTED VIA SYSTEMATIC INTERNALISERS SUBJECT TO PRE-TRADE TRANSPARENCY?

As argued in the previous section, this part of the analysis, is based on the quote data of SIs in September 2019 for French equities (collected from Refinitiv). If one crosschecks the public quote data of SIs with the transactions received in the reports to the AMF (RDT-TREM) over the same period, the proportion of amounts that benefited from the pre-trade transparency of the SI regime is estimated by aggregating transaction volumes, for which:

- the price quoted at the same time corresponds to the price traded, and,
- the size executed is lower than or equal to the quantity offered that is published by the SI.

In September 2019, **the share of amounts** that had benefited from pre-trade transparency **represented 22% of the amounts traded by SIs in the continuous trading phase, i.e. 1.4%<sup>19</sup> of the total amounts traded in the market during this period**. The contribution of SIs with respect to transparency therefore appears very limited and can be attributed to the various practices implemented by the sector. Discussions between the AMF and some SIs show that:

- 1) Bank SIs, preferred for large transactions (higher than €200,000), carry out a significant proportion of voice broking with their clients (high touch). Given their size, these transactions are not subject to the pre-trade transparency requirements of the SI regime;
- 2) The main ELP SIs have set up bilateral flows of automatic quotes with their clients for sizes larger than SMS (€10,000). These flows are not public, and a single SI may sometimes send different flows to different clients. For example, an SI offers its clients the choice between a flow that gives preference to large sizes and a flow with more competitive prices but smaller sizes. In September 2019, the amounts aggregated on ELP SIs for transactions below the SMS represented 25% of their total amounts, i.e. 75% of their activity was not subject to the pre-trade transparency requirements of the SI regime.

## 3. FOCUS ON THE QUALITY OF PRICES OFFERED BY SIs

To study the quality of the prices proposed by SIs, it may be worthwhile to compare the prices published by SIs under pre-trade transparency requirements to which they are subject (source: Refinitiv for September 2019) with the bid/ask spread published by Euronext Paris. Nevertheless, after analysing transactions reported to the AMF by SIs, it emerges that **only 31% of the amounts reported over this period are actually executed at the price published at the same time by the SI**, regardless of the size offered. **It therefore appears that public quotes of SIs are not representative of the prices at which these participants ultimately trade**. To carry out this analysis, it is therefore relevant to compare the prices executed on SIs (RDT-TREM source) with the bid/ask spread published on Euronext Paris (the results of the analysis below are based on Q1 2020 data).

Since price quality must be assessed in compliance with the tick size regime - to which SIs were not yet subject in the first quarter of 2020 - the first section of this part proposes to highlight the portion of SI activity that can no

<sup>19</sup> In September 2019, SIs represented 19% of the entire French equity market, 13% if only price forming volumes were considered and 10% for maximum addressable volumes. Continuous trading phase amounts over this period represented 63%. Thus, the 22% corresponding to transparent quotes applies to 6.3%, i.e. 1.4%.

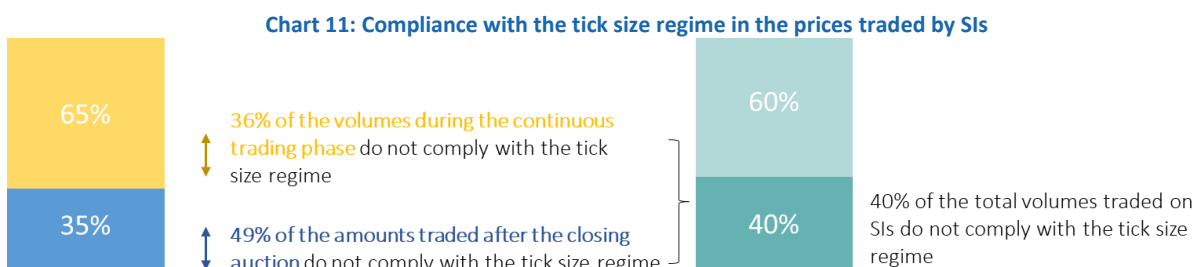
longer be carried on after the tick size regime is extended to SIs. As a reminder, the tick size regime, which is one of the provisions of MiFID II, harmonises minimum tick sizes among LIT trading venues<sup>20</sup>.

It is also reminded that the results in the section below are based on the "maximum addressable" volumes of SIs, i.e. the transactions most likely to have contributed to price formation.

### 3.1. COMPLIANCE WITH THE TICK SIZE REGIME

The extension of the tick size regime to SIs, which was initially scheduled for 26 March 2020, has been postponed to the end of June 2020 and will concern quoted, improved and traded prices.

Chart 11 below introduces the share of amounts traded via SIs, where the price does not comply with the tick size regime, depending on whether the transaction takes place before or after the close of Euronext. Overall, **40% of the total volumes traded via SIs are traded at a price that will no longer be possible after the tick-size regime is applied to SIs.**

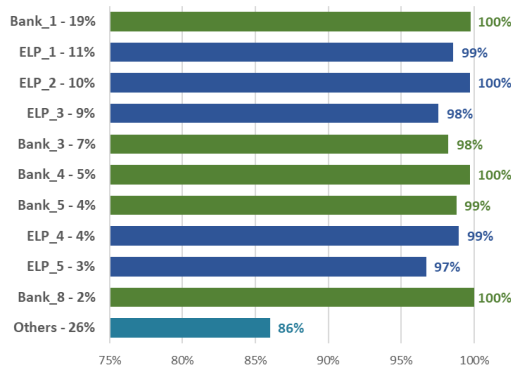


Source: Refinitiv, RDT-TREM, AMF – for Q1 2020

In fact, it is likely that some of the amounts traded that do not comply with the post-auction tick size regime do not contribute to price formation (even if they are reported as such, in the absence of the "non-price forming" flag). Therefore, once the prices at which these volumes are traded are no longer allowed via SIs, these transactions will most probably be switched to OTC.

Conversely, although public prices quoted by SIs are not representative of those that are ultimately traded by these participants, all SIs would already appear to comply with the tick size regime in the prices offered for public quote (see Chart 12) – with the exception of one participant, who has a market share of less than 2%.

**Chart 12: Proportion of the time during which quotes are compliant with the tick-size regime**



Source: Refinitiv, AMF – September 2019

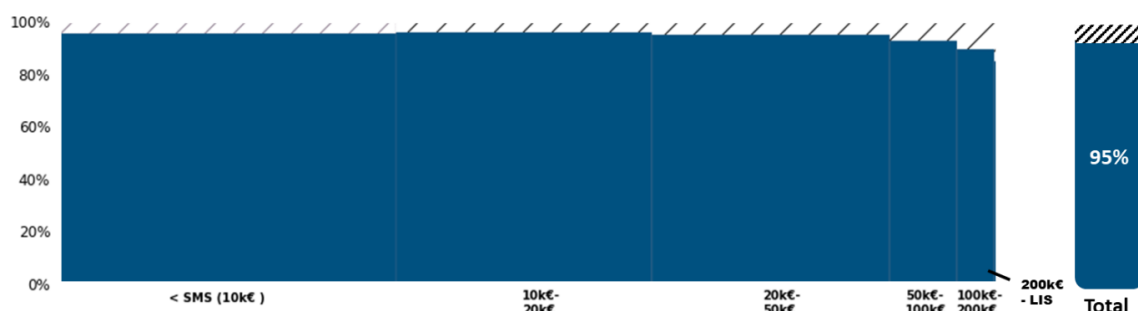
<sup>20</sup> Under MiFID II, the calculation of the minimum tick size is based on the price and liquidity of the financial instruments concerned (namely shares, certificates of deposit and ETFs traded on European trading venues).

### 3.2. WHAT IS THE MARKET SHARE FOR THE FLOW OF IMPROVED PRICES ON SIs ?

To counter any problems of data quality concerning the time-stamping of transactions reported in RDT-TREM, which could compromise cross-checking with order data from Euronext Paris, SI price improvements were studied only when the executed price is within the Euronext spread.

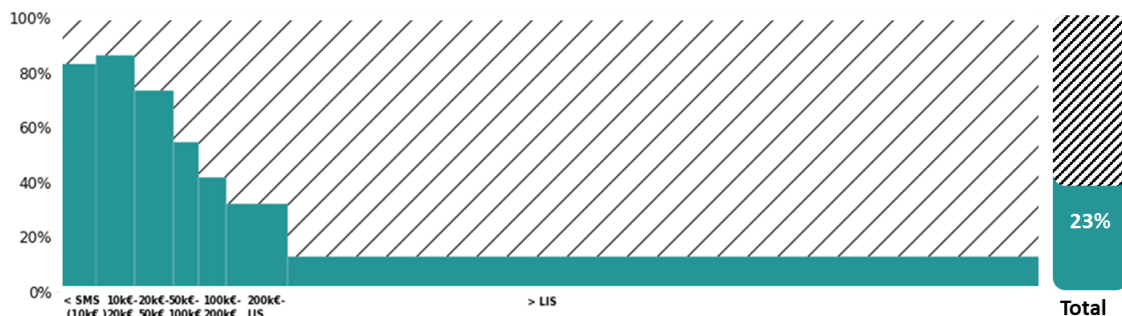
Charts 13 and 14 below present the breakdown of the amounts executed via ELP and Bank SIs where the prices applied are in the reference market spread.

**Chart 13: Share of amounts traded via ELP SIs where the price applied is within the Euronext spread by transaction size**



Source: Euronext, RDT-TREM, AMF – for Q1 2020

**Chart 14: Share of amounts traded via Bank SIs where the price applied is within the Euronext spread by transaction size**

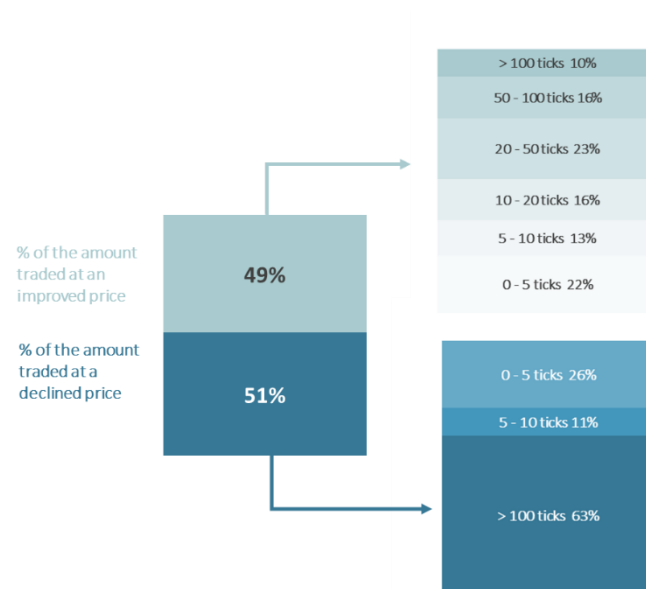


Source: Euronext, RDT-TREM, AMF – for Q1 2020

The share of amounts executed within the Euronext spread decreases as transaction sizes grow larger. With the exception of transactions above the LIS, nearly all the amounts reported by ELP SIs are within the spread. This is not surprising since their systems are based on fully automated processes that are similar to those of trading venues ("low touch") generally involving good quality reporting at time stamp level, whereas Bank SIs are likely to engage in more voice trading with their customers ("high touch"). Furthermore, since Bank SIs deal mainly in large amounts, it may be normal for their price to diverge more frequently from the continuous quotation in the reference market.

For transactions where the price is outside the spread, no pattern has emerged: prices are widely dispersed and may vary by a single tick or by hundreds of ticks. A case-by-case study would be necessary for these transactions. Chart 15 below shows an approximate breakdown of amounts once the price of transactions via SIs falls outside the spread established at the same time on the Paris stock exchange, depending on whether the price has declined or improved, and on number of ticks (compared with the Euronext price). Of the transactions concerned, the CAC 40 stocks aggregate more than 90% of volumes where prices have improved (here, a tick refers primarily to a unit of €0.05 or €0.01).

**Chart 15: Breakdown of amounts in number of ticks when the price falls outside the spread published on Euronext Paris**



Source: Euronext, RDT-TREM, AMF – for Q1 2020

In actual fact, it is most unlikely that SIs offer price improvements above the Euronext spread. The volumes traded at prices outside the spread as presented here (chart 15) could therefore be the result of a RDT-TREM reporting error: either at the transaction time-stamp level (which would lead to the comparison of the SI price with a Euronext spread published at another time) or due to the absence of the non-price forming flag (which, if it had been used, would have removed the transaction from the study's scope).

We have therefore preferred, for the rest of the analysis, to use only amounts executed in the Euronext spread, i.e. half the amounts traded in SIs, which are maximum addressable and executed during the continuous trading phase.

Chart 16 highlights the breakdown of portions of amounts depending on SI price improvement (still compared with Euronext amounts) in number of ticks.

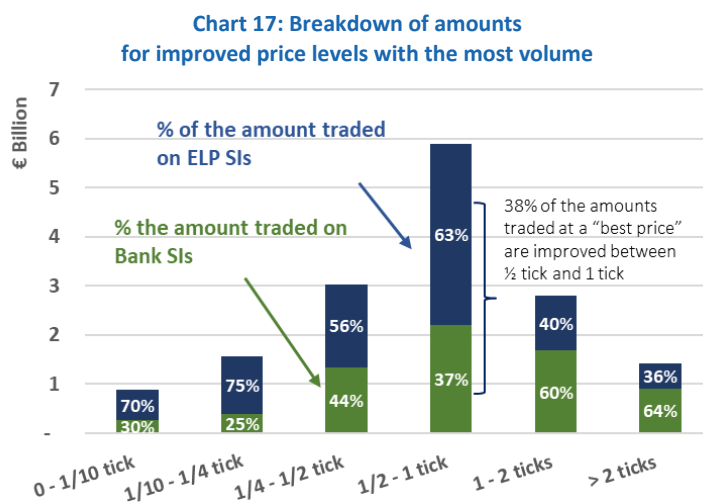
**Chart 16: Breakdown of amounts by price improvement level in number of ticks**



Source: Euronext, RDT-TREM, AMF – for Q1 2020



Of the amounts executed on SIs where the price falls within the Euronext spread, 54% are executed at the same price as the price available at the same time in the Paris stock exchange order book. The remainder, **which is nearly half the traded amounts, is executed at an improved price** which can range from a tenth of a tick to several ticks (see Chart 17).



Source: Euronext, RDT-TREM, AMF – for Q1 2020

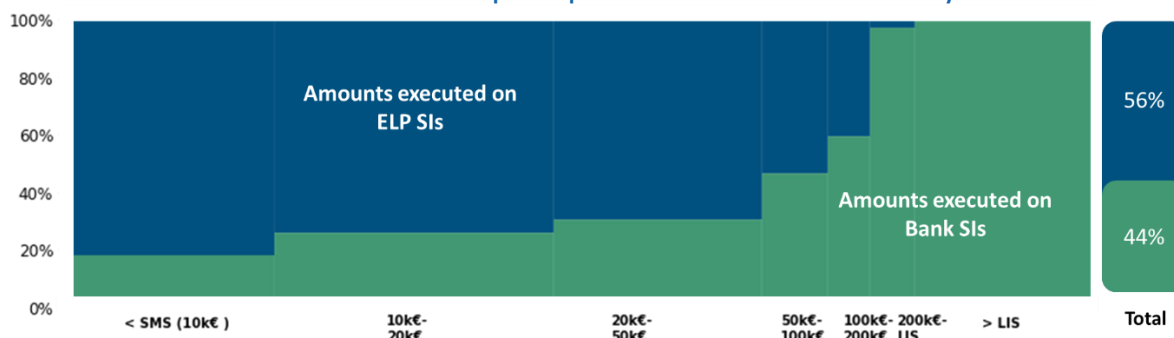
It should be remembered that the analysis of price quality becomes more difficult by the fact that reporting is sometimes unreliable, and the study could therefore only be carried out on half of the amounts traded (i.e. only transactions where SI prices are traded within the Euronext spread). **For example, on half the maximum addressable volumes, for which prices were studied for Q1 2020, only 46% were traded with a price improvement**, including 12% with a significant improvement (i.e., greater than one tick). Nevertheless, with the extension of the tick size regime to systematic internalisers, most of the price improvements mentioned above, since they are considered insignificant, will no longer be permitted. During the first quarter, 43% of improved prices were lower than one tick and would not have been compliant with the tick size regime.

Moreover, whereas ELP SIs represent the majority of price improvements of up to one tick, for improvements greater than that (at least one tick) it is Bank SIs that account for the largest share of the volumes of these transactions (nearly two-thirds).

### 3.3. BANK SIs AND ELP SIs: WHICH ONES OFFER THE LARGEST PRICE IMPROVEMENTS?

Chart 18 shows the breakdown of amounts with price improvements between Bank SIs and ELP SIs (this chart is to be read in comparison with Chart 6: Breakdown of amounts traded between Bank SIs and ELP SIs by transaction size).

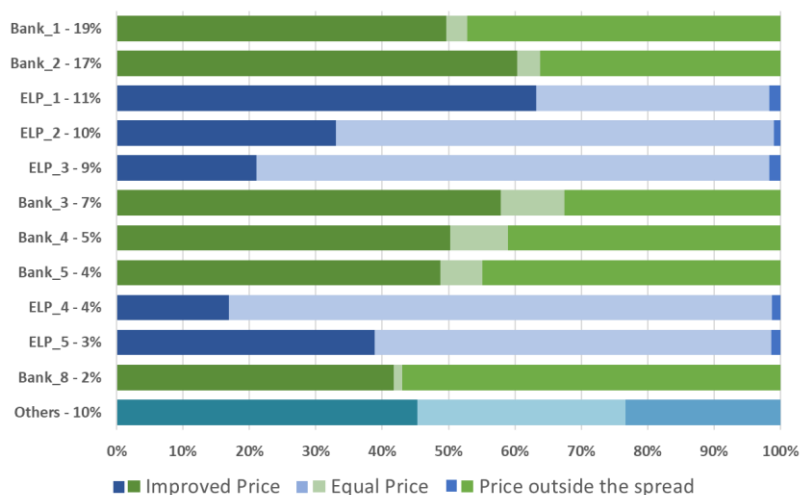
Chart 18: Breakdown of amounts with improved prices between Bank SIs and ELP SIs by transaction size



Source: Euronext, RDT-TREM, AMF – for Q1 2020

Proportionally, ELP SIs account for the majority of the amounts offering a price improvement but, at the level of each participant, the flow that improves prices (compared with Euronext prices) generally represents 50% of the total volumes traded by SIs among Bank SIs, compared with between 17% and 60% for ELP SIs. Conversely, the remainder of the amounts executed by Bank SIs are executed at a price outside the reference ELP market spread, while ELP SIs, aside from their “improved” flow, perform the rest of their transactions at the same prices as Euronext Paris (see Chart 19).

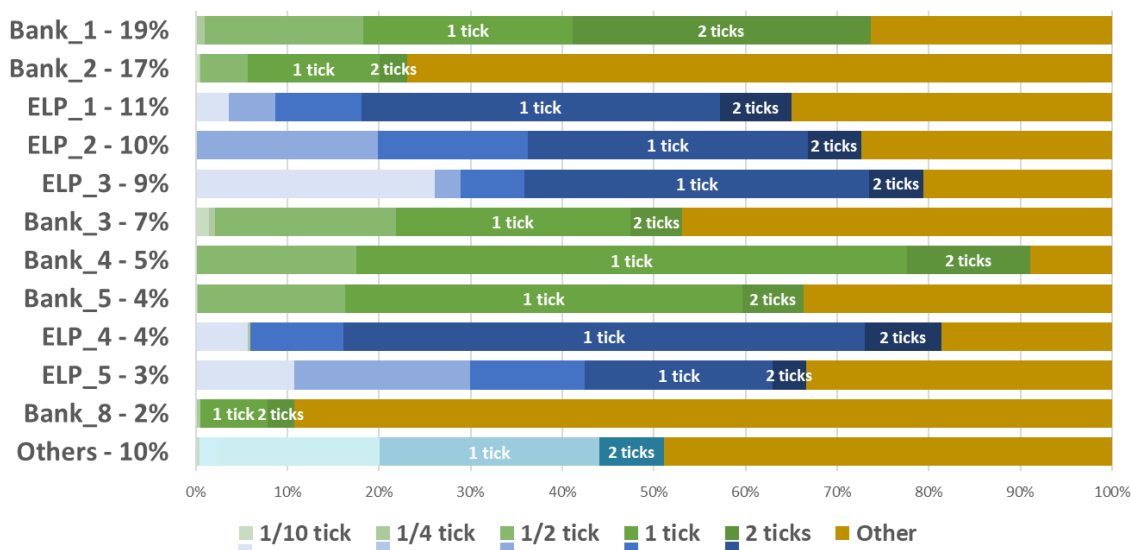
Chart 19: Proportion of “price improvement” flows per participant



Source: Euronext, RDT-TREM, AMF – for Q1 2020

With the extension of the tick size regime to SIs scheduled for 26 June 2020, part of the flow of price improvements of participants by a tenth or half a tick will no longer be permitted. For Q1 2020, 57% of “improved prices” were not compliant with the tick size regime (and more generally, 36% of volumes traded in the continuous trading phase). In particular, the third largest ELP SI (in terms of market share), whose price improvement is mostly concentrated around one tenth of a tick should revise its client offering (see Chart 20).

Chart 20: Focus on the “price improvements” of the largest participants



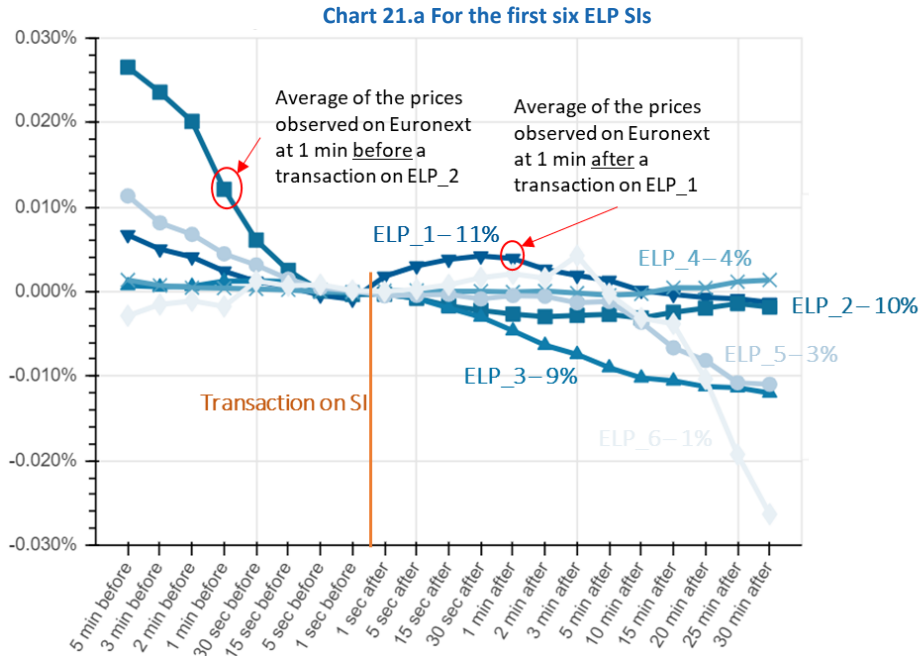
Source: Euronext, RDT-TREM, AMF – for Q1 2020

### 3.4. PRICE REVERSION

To assess the quality of these execution venues from the client’s perspective, we analysed the price trend observed on the French equity reference market (Euronext Paris) around an SI transaction. In Chart 21 below, Charts 21.a & 21.b present this price trend observed for the 12 largest ELP SIs and Bank SIs (totalling 88% of maximum addressable volumes in the continuous trading phase).

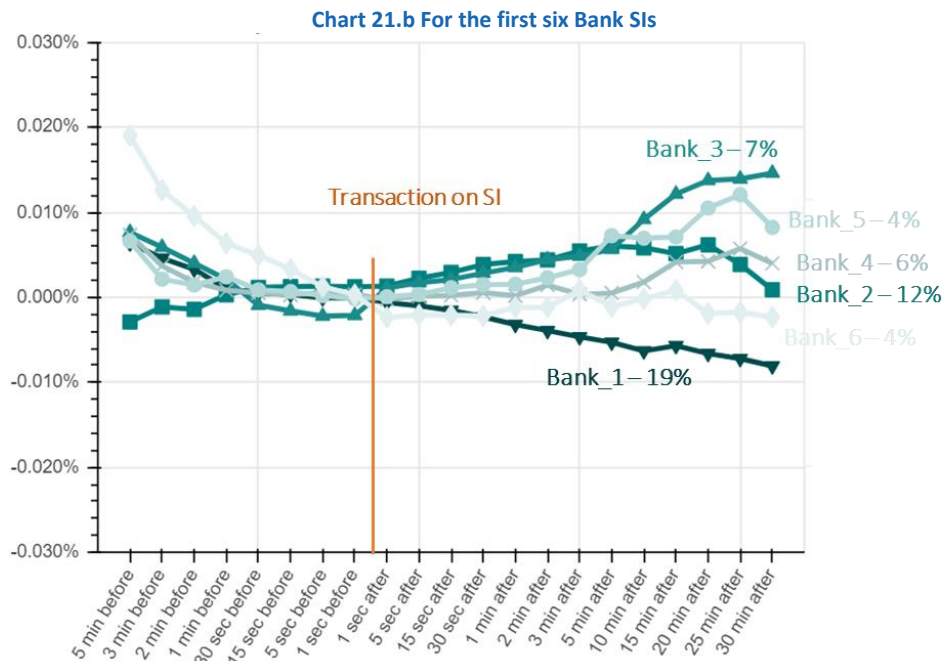
For a given SI, each curve represents the average of the prices observed on Euronext Paris over various time horizons around a transaction via this SI: between 5 minutes and 1 second before and between 1 second and 30 minutes after. The data were harmonised on the buy side for SIs (i.e. the sell side for SI clients) so the curves can represent the price trend regardless of the direction of the SI transactions (i.e. purchase or sale).

Chart 21: Price trend observed on Euronext after a transaction via SIs



Note: Side of the transaction: buy for the SI (i.e. sell for the client)

Source: Euronext, RDT-TREM, AMF – for January and February 2020



Note: Side of the transaction: buy for the SI (i.e. sell for the client)

Source: Euronext, RDT-TREM, AMF – for January and February 2020

The part of the chart to the left of the orange vertical line, which represents the time when the SI transaction took place, shows the configuration in which each of the SIs usually carries out a transaction (i.e. which prices trade on Euronext at the same time). Given the obligation imposed on SIs to quote firm prices on a permanent basis<sup>21</sup>, a transaction on a given SI reflects, in addition to the client's willingness to trade via that SI, conditions that are by comparison at least as favourable on that SI as in the rest of the market (including Euronext) with more competitive prices and/or sizes.

The right-hand side of the chart shows the change in the prices traded on Euronext after the transaction on the SI. This price impact may result in particular from transactions originating from (i) the SI (in the opposite side of the SI's initial transaction, in the event of an unwinding or hedging on the market of the position acquired by the SI vis-à-vis the client, for example, or in the same direction as the SI's initial transaction); (ii) the client (who would continue in the market the transactions carried out with the SI, thus increasing the risk of adverse selection of the SI); (iii) or other participants (transactions likely to reflect a market trend).

This study reveals a wide variety of profiles depending on the participants.

First of all, the time frame over which a price reversion may be observed (i.e. when prices return to the initial level of the SI transaction after a deviation) differs depending on the type of SI:

- since ELP SIs primarily deal in small sizes (around the size of the SMS), price reversion is mainly observed a few minutes after the transaction;
- since Bank SI transactions are usually over €200,000, the reversion occurs in a more distant time window, in this case, up to 30 minutes after the transaction.

Among the two main categories of participants, certain characteristic profiles stand out in particular.

Among ELP SIs:

- ELP\_1 and ELP\_4 offer competitive prices in the absence of a marked previous trend (the left-hand side of the curves is relatively flat). After a transaction via these SIs, practically no movement was observed in Euronext prices (prices do not fall (resp. do not rise) significantly after a purchase by the SI (resp. sale)). This price trend is particularly favourable after the transactions made on ELP\_1 and seems to show the ability of some SIs to hold the positions originating from their client, or at least to manage and possibly hedge them without causing a price impact that could jeopardise the continuation of their client's executions. Under these conditions, these execution venues prove to be attractive sources of liquidity for their clients.
- ELP\_2 appears particularly competitive in periods/spells of strong market movement (buying (resp. sell) after a significant fall (resp. rise) in prices). The left-hand side of the participant's curve has the steepest slope of all the SIs shown here. A slight impact is observed, which starts to diminish 2 minutes after the initial transaction. The slight slope of the right-hand side of the curve could be due to the continued marked trend that seems to have been created ahead of the transaction via the SI.
- However, ELP\_3, ELP\_5 and ELP\_6 seem to be the participants (among the SIs represented here) that are associated with the sharpest drop in prices following the sale of clients via an SI. While no trend can be observed on the left-hand side of their curves, the slope of the curves increases significantly after the transaction via the SI. This decline could be caused by these SIs, suggesting that these participants do not keep the position they have acquired vis-à-vis the client for long and quickly unwind it in the market, passing the impact on to the market that the client might have had if it had dealt directly with it. It cannot be ruled out, however, that this price trend may be unrelated to the SI (and attributable to the client instead or even other participants), but should this trend adverse to the SI last over time, it will likely lead the SI to revise its strategy (in particular vis-à-vis its most unprofitable clients), or risk jeopardising the profitability and sustainability of its business.

---

<sup>21</sup> As a reminder, on liquid shares.

For Bank SIs, most participants do not show a negative trend for the continuation of the client's executions (in the case of the 30-minute window represented here) with the exception of Bank\_1 whose impact after one of these transactions is particularly significant. This participant has moreover experienced a sharp drop in its market share - nearly 10% - since December 2019 (see Chart 6 above).

This analysis was conducted on the basis of SI transactions regardless of their counterparty. However, as mentioned above, prices offered by the SI may vary depending on the client. Such analysis, which is an essential component of the MiFID II best execution/selection process,<sup>22</sup> should therefore be carried out by each participant based on their own trading prices or the prices that they receive from the SI, where applicable.

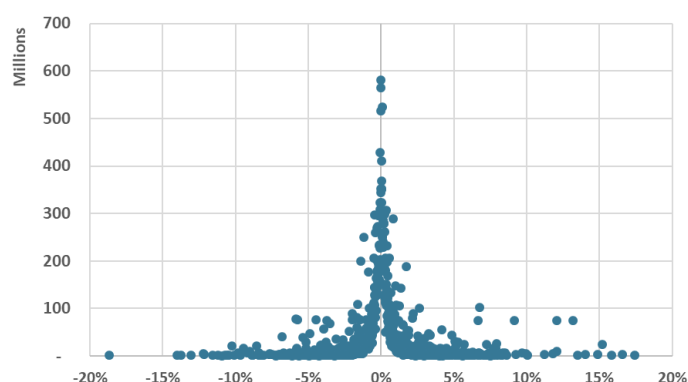
---

<sup>22</sup> Best execution/best selection refers to the duty of an investment firm that is executing orders on behalf of clients to ensure the best possible execution for their clients' orders, including by selecting the best price available on the market that could meet the characteristics of the orders (quantity, urgency, etc.).

## APPENDIX 1: CLOSING POST-AUCTION

Of the amounts traded via SI after the closing auction of Euronext Paris (only Bank SIs are concerned), which represent 35% of the amounts not reported as non-price forming (excluding intragroup), only 36% are executed at the closing price imported from the reference market. For the remaining 64%, the prices are very scattered and require a case-by-case study to draw any robust conclusions.

### Distribution of amounts traded on post-auction SI per price level (compared with auction price)



Source: Euronext, RDT-TREM, AMF – for Q1 2020

In the chart above, a point represents the sum of amounts traded for transactions whose traded price is at the same distance, as a percentage, from the reference price. Nearly 77% of the amounts executed after closing (at a different price from the Euronext auction price) do not comply with the tick size regime – in other words, 49% of the volumes traded post-closing on SIs.

It is important to note that a transaction reported after closing does not necessarily mean that it was at risk: in the middle of the day, an investment firm may accept a client order at risk by guaranteeing the client that it will execute the order at the future auction price (guaranteed auction) or at the volume weighted average price (VWAP) until the auction. However, the flags currently defined by MiFID II do not make it possible to specify the exact nature of these flows.