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TRANSPARENCY ON SECONDARY MARKETS

A SURVEY OF ECONOMIC LITERATURE  
AND CURRENT REGULATION IN ITALY

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N. 50 - MAGGIO 2002

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*Quaderni di Finanza*

Autorizzazione del Tribunale di Roma n. 432 del 4-7-1990

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# **Transparency on Secondary Markets.**

## **A Survey of Economic Literature and Current Regulation in Italy \***

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### **Introduction**

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\* This paper is a revised version of the author's contribution to the work undertaken by IOSCO Standing Committee 2 on "Transparency and Market Fragmentation". The authors would like to thank all the members of this Committee for many valuable conversations and helpful comments. The view expressed in this paper are solely those of the authors and do not necessarily reflect the view of the CONSOB. This report is based on the information available to the authors as at December 2001.

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## Introduction

Information in securities markets plays a central role and, certainly, constitutes a more important factor than in markets for other goods and services in the economy.

The role of transparency in securities markets is even more central and important in the actual debate, looking at some forces that are now accelerating the rate of change thereby increasing the current emphasis on it: improvements in technology have facilitated dissemination of real-time prices, quotes and volumes; the advancing technology together with a continued growth in the demand for trading services has raised the value of the information produced by equity markets; trading and markets are rapidly becoming more global bringing more direct competition across previously uncrossed international boundaries; buy-side participants (mutual and pension funds) are becoming far more aware of the extent to which trading costs impair portfolio performance; finally, new trading systems are attracting attention of a number of participants and they are exerting competitive pressure on traditional trading systems and market centers<sup>1</sup>.

The issue of market transparency refers to the clarity with which market participants (and the public at large) can perceive the process of securities trading. All else remaining equal, a market becomes more transparent with prompt and comprehensive disclosure of the terms of actual transactions and quotes or orders which represent potential transactions<sup>2</sup>. In other words, it refers to the degree to which real-time dissemination of information about orders and trades is made publicly available. Clearly the benefits of transparency are informational because individuals can make better economic decisions if they know how much their assets are worth. In some respects, a perfectly transparent market resembles the economist's notion of a perfectly competitive market where knowledge is equally available and dispersed to all market participants.

The theoretical and empirical literature is used to distinguish, looking at secondary market information, between pre-trade and post-trade transparency. As well known, the former refers to the wide dissemination of current bids and offers in order to enable investors to know bid and ask quotations, depths, information about limit orders and any other trade related information. The post-trade transparency concerns prices and volumes of all the transactions already concluded as well as execution time and information to identify buyers and sellers.

Hence, transparency basically depends on:

a) *the willingness of participants to show and share private information*: as it will become clear in the following sections, they often prefer to remain anonymous and reveal information only

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<sup>1</sup> See R.A. Schwartz (1995).

<sup>2</sup> See J. Hasbrouck (1995).

to those with whom they are trading, because of the potential losses of costly information about the value of securities they are trading on and of the possibility of being anticipated by other market participants;

*b) the exchange's ability to publicly display information:* the debate here is essentially over auction vs dealer markets giving space to the idea that market transparency is a direct function of the trading mechanism chosen on the market.

The need for transparency is not costless and these are operational as well as informational costs. Thus a fundamental economic issue is who should have the property rights to the prices that are established in a market: the market centre itself, the traders whose orders have established the prices at which others might trade or the brokerage houses that provide the information and other services that bring the customers to the market. The answer might well be all three!! (see note 22 in Schwartz, 1995).

This paper reviews the most recent theoretical literature on market transparency having in mind that “how much of, what part of and by whom the order flow is observed are important issues if we assume, as it is, that transparency has many dimensions because a market has many kinds of participants and many types of information” (Ui, 1999).

## **1. The influence of transparency on trading process and market performance**

The guiding framework in such analysis is the idea that exchanges are competitive firms with the objective of producing prices for the traded financial instruments. As such, they compete on the price quality level enhanced by transparency by comparing costs and benefits coming from that.

In the economic literature, it is well accepted the conclusion that perfect transparency, if attainable, is not always desirable, so that exchanges face the problem of providing the appropriate level of transparency by finding the most acceptable balance between costs and benefits.

At first instance, transparency is thought to attract investors thereby improving liquidity. The latter, in equity markets, may be defined as the market's capacity to absorb customers' buy and sell orders at or near the last sale price of a particular stock (assuming no other factor affecting the stock underlying supply and demand). The greater the number of orders and volume of shares that a market can trade with little or no change in market price the greater the market's liquidity (see TSE Special Committee Report on Market Fragmentation). Thus, liquidity in equity markets relies basically on their depth (as a significant number of shares traded at prices above and below the

market price), breadth (as orders at each price level are sufficiently large to absorb reasonable order flow) and resiliency (as price changes resulting from order imbalances attract offsetting orders relatively quickly).

Because transparency increases and enhances the integrity of the market and fosters investors confidence in it, it encourages greater participation by investors. Therefore, the more liquidity an exchange provides the greater is the probability that it will attract more investors' orders.

Viewing an exchange as a competitive firm, in order to be successful, it must reach and maintain critical mass of orders to face the competition of other exchanges and alternative trading systems.

In auction markets, liquidity is provided by investor's limit orders entered in the order book: the more limit orders are exposed the more visible the market liquidity and, thus, the greater are (a) the willingness of potential buyers and sellers to enter the market, (b) the assurance of participants to obtain the best available price in that moment and (c) the efficiency of the pricing mechanism. In dealer markets, the concept of liquidity is related to the willingness of market makers to promote trade; because they are objected to make the market, everything is reflected in their quotes characterized by the spreads. The more willing a market maker is, the narrower the spread will be, the cheaper will be to trade on the market and the more liquid a market will be (Huisman and Koedijk, 1998).

### **1.1 Transparency and liquidity**

Despite increasing research attention, there is little consensus as the overall effects of market transparency on liquidity. Although no conclusion can be reached in order to assert that greater transparency in the trading process enhances market liquidity, a common idea can be found in the economic literature: late trade reporting has strategic components so that market makers choose to delay the reporting of those trades which either contain information about short-term price movements or reflect deviations from implicit quoting convention.

In terms of post-trade transparency, *Flood et al. (1997)* find that an increase of disclosure widens opening spreads and that this difference disappears as time goes by. This is also present in *Madhavan (1995)* who explains that market makers are willing to pay for order flows by imposing small spreads only if they can keep price information confidential. Thus, in multi period setting, the market is more liquid in an opening phase when little information is spread among the market makers and they compete under a non post-trade transparency. As trading goes on, more

information is transmitted, market makers lose the incentive to compete strongly thereby reducing liquidity. Hence, opening liquidity is reduced by an increase in the level of post-trade transparency.

The issue of delayed reporting has relevant implications also on large blocks trading. The issue has been controversial and many authors provide analysis of the effects of delayed trade reporting on different exchanges. They all start from the evidence that not all the investors want to have information about their trading habits available to other investors. Specially when they have large trades to conclude, they prefer less disclosure in order to reduce the market impact of their trades.

Someone claims that post-trade transparency of large trades increases market makers' position risk, reducing their willingness to quote in size. Some others argue that the effect has more to do with larger spreads in order to compensate for possible losses with more informed traders that use the information provided. In either case, the consequence of a mandate of transparency is the reduction of trades made by some investors thereby decreasing the level of liquidity and of the overall information in the market. Thus, benefits in terms of liquidity coming from large block trading seem to suggest not to encourage an increase in post-trade transparency. This policy implication is also supported by some economists that believe that investors are not disadvantaged by the opacity of block-trade reporting because price normally rebounds after a block trade. The block price, it is explained, reflects a "temporary price" change rather than a "permanent price" change that, in contrast, would be caused by information about the company. In this way, by hiding block trades, dealers only gain the advantage of the temporary price change and avoid the competition of other dealers. However, this argument ignores the fact that price pressure and liquidity may be the main forces of supply and demand and that, in this case, the distinction between "permanent" and "temporary" price change can have no meaning (SEC, 1994). *Gemmill (1996)* specifically tests the hypothesis that a block trade has a temporary impact on the price level but no permanent impact and his results lead to reject this hypothesis.

The results obtained by Flood et al (1997) and Madhavan (1995), under the post-trade transparency hypothesis, are very similar to those found by *Bloomfield and O'Hara (1999)* who use experimental economics to investigate the effects of transparency and where trade takes place in three different settings: in a transparent setting (where both market makers' quotes and trades are publicly disclosed after each round of trading), in a semiopaque setting (where trades are not disclosed) and in the opaque one (where neither trades nor quotes are disclosed). They find that trade disclosure causes opening spreads to widen dramatically. This occurs primarily because of market makers' reduced incentive to compete for order flow, with the direct effect of increasing spreads and therefore trading costs. They also find differential effects of quote transparency and

trade transparency: trade disclosure can have important effects on informational efficiency and bid-ask spreads while quote disclosure seems to have little effect on any of these characteristics. This seems to suggest that trade transparency provides information that cannot be obtained from knowing only quotes.

In terms of pre-trade transparency, these results may be contrasted with those of *Flood et al (1999)* who investigate quote disclosure in a setting where trade information is never revealed and quote data may be available. They analyse the spreads faced by two different kind of agents: one of them always observes the best bid and ask prices, thus knowing where to buy and sell, while the other does not observe directly the best prices and has to “shop around” to gather information, thus facing high search costs reflected in their quotes. The authors show that opening spreads in a market without public disclosure of price quotes are wider than in a pre-trade transparent market because dealers must spend time to search for a counterpart with whom to trade: quote disclosure makes it easier for dealers to trade with each other and this encourages competition on spreads. Although their results contrast with those of Bloomfield and O’Hara (1999), it has to be taken into account that differences in the settings considered by the two studies make the results not easy to compare.

## **1.2 Transparency and trader identity**

The practical importance of market pre-trade transparency for the provision of liquidity and inter-market competition has given rise to an extensive theoretical and empirical literature. The debate has basically regarded three issues: the effect of disclosing information about traders’ identity (Madhavan, 2000), the pre-disclosure of intentions to trade such as sunshine trading and the public display of limit order books.

Studies in this area consider the presence of three classes of agents in the market: informed, uninformed traders and liquidity providers. The former possess private information about future asset value, uninformed traders are liquidity motivated and liquidity providers, such as market makers, adjust prices on the net order imbalance.

*Forster and George (1992)* specifically address the effect of disclosing information about traders’ motivations in order to see if there is any effect on prices. They show that, if market makers can have an idea on direction and magnitude of liquidity trades, trading costs for liquidity traders are smaller because the problem of adverse selection, that may arise for the possibility of some traders having private information, disappear.



*Benveniste, Wilhelm and Marcus (1992)* reaches the same conclusions considering the role of traders' reputation, for either being informed or uninformed, in helping dealers to distinguish different components of order flows. Thus the ability of them to achieve the separation between liquidity motivated and informed traders can reduce bid-ask spreads for both kind of traders inducing larger volumes of trading than would otherwise prevail in a fully anonymous market (for a complete discussion see Madhavan, 2000).

On the same way, *Admati and Pfleiderer (1991)* analyse the possibility of *sunshine trading* where some liquidity traders can preannounce the size of their orders while others cannot. The effect is that the trader able to preannounce his trades benefits of lower trading costs, because the market can infer that his trades are not information motivated, but traders not able to convey that information suffers higher costs because of the adverse selection problem.

All the articles considered analyse the issue of trade disclosure in the context of financial markets using the intuition that disclosure is good for risk-neutral uninformed investors because it reduces adverse selection problems. *Naik, Neuberger and Viswanathan (1999)* article differs from all these on disclosure in two critical ways: it explicitly models a market as a two-stage trading process involving risk-averse intermediaries and it considers risk averse suppliers of order flow who are concerned not only about quantity risk but also about price revision risk. Hence, the authors underline the double function of the market as a mechanism for both trading information and for risk sharing. The latter feature is analysed distinguishing between quantity risk and price revision risk. The first one arises because the public investor faces an endowment shock and has to readjust his holdings. In this respect, greater transparency reduces the ability of the winning dealer in the first-stage to manipulate beliefs of the other dealers in the second-stage trading decision. Consequently other dealers are more willing to share the public trade. Hence greater transparency leads to better quantity risk sharing between dealers. Price revision risk arises when the investor negotiates with the dealer and in the process reveals private information about the true value of the asset. With greater transparency of first-stage trades, the other dealers are able to observe the price offered for the public trade and infer the information contained so that second-stage prices reflect the private information fully. Hence, with greater transparency, the public investor is forced to bear more of the price revision risk thereby reducing his welfare.

The paper of *Madhavan, Porter and Weaver (1999)* explicitly address the type of pre-trade transparency related to the public display of limit order books. As usual, they assume the existence of three kind of traders (uninformed, informed and liquidity providers) and analyse the issue of free options offered by the limit order book. Informed traders hit these options responding quickly before limit order traders can revise their orders and, thus, such traders use market orders

exclusively. They obtain information at cost and so they enter the market if their expected profits are higher than the costs of acquiring information. Uninformed traders are liquidity motivated and also trade market orders exclusively. Limit orders are placed by agents that do not possess private information. Clearly, profits to informed traders are higher in a transparent system and a move to transparency should then be associated with higher profits to market orders and higher losses to limit orders, with the consequence that limit order traders will not place orders at any given price thereby decreasing liquidity. Moreover, assuming the fraction of exogenous market orders placed by uninformed traders constant, the reduction in liquidity is associated with greater price volatility.

The same results are obtained by *Madhavan (1996)* but in a different context where disclosing information about noise in the market system increases the effect of asymmetric information. Therefore, greater transparency of retail order flow can reduce liquidity and exacerbate price volatility. It is also shown that the potentially adverse effects of transparency are likely to be greatest in thin markets.

*Madhavan (1996)* model is extended by *Ui (1999)* who studies the relationship between transparency and price volatility as a measure of liquidity, investigating the optimal level of transparency that minimizes price volatility. He considers two types of transparency: *transparency for public information*, where all traders commonly observe the same order flow, and *transparency for private information*, where different traders observe different and independent order flow. The main results of the analysis, when the variance of order flows is large enough, are that in presence of the first kind of disclosure and when the market is not transparent increasing transparency reduces price volatility but too much transparency increase it; in presence of the second kind of disclosure, increasing transparency reduces price volatility and the most transparent market enjoys the least price volatility.

### **1.3 Transparency and fairness**

Market's fairness is often associated with the situation in which all participants operate under the same rules and conditions and there is not excessive and persistent disparity in terms of information availability, access to the market and priority of execution. Then a fair market can be characterized by the presence of both measures for promoting market integrity and fair treatment of investors.

Market fairness, usually referred to the confidence that investors and market participants in general have in an exchange, is thus promoted by enhancing the conditions to have a market in

which investors are protected from fraudulent practises and manipulations (such as insider trading and front-running) and they are treated in an equitable manner by market professionals (see IOSCO “Transparency on Secondary Markets”).

As far as the public perceives that trading is opened to manipulations (dissemination of false information or deceptive trading practises), that insiders can take advantages of their special knowledge or the market systematically discriminates against some investors, they will lose confidence in the market with clear and explained effects on its liquidity and competitiveness.

Disagreement emerges regarding the role of transparency in achieving fairness.

The fair disclosure of information actually means to avoid excessive disparity of information on the factors that are likely to have an impact on prices. Some authors argue that all investors should be provided with equal opportunities to gain access to real-time market information in order to ensure efficient pricing of securities and efficient allocation of capital. According to another view, the benefits in terms of price formation mechanism might be weighted against the need to retain risk-bearing intermediaries.

Actually, the economic literature has concentrated its attention on the role of transparency to detect insider trading, manipulation and ensure best execution valuing its effects on investors welfare. In particular, the need for full or minimal disclosure of all secondary market information is analysed contrasting the two ideas that see, on one side, the need to report all the information to exchanges and to regulators in order to enforce anti-manipulation and anti-insider laws and, on the other, the importance to disclose information in a real-time basis to the market at large by arguing that individual investors are in a better position to choose and value their opportunities and that competitive economic forces alone can assure the transmission of relevant information and deter fraudulent practises.

A large academic and regulatory controversy has arisen about the adverse effects of the practises of preferencing and internalisation on the quality of execution in dealership markets. The issue of those order preferencing practises go through the purview of best execution and has implications on the necessity for orders to be exposed to the market in order, if they cause welfare losses, to preclude such practises.

The term preferencing is usually defined as “the act of directing an order to a market maker who is not posting the best price but who has agreed in advance to execute the order at best quoted price” (Hansch et al, 1999). A manifestation of preferencing is the practise of “internalisation” in which the broker and the designated dealer are part of the same firm thereby creating vertical integration of the order process.

*Chordia and Subrahmanyam (1994)* argue that order purchase agreements might be viewed as contributing to best execution by providing the potential for a lower total transaction cost for the retail broker. Since the dealer pays the broker for the order, the retail trader may gain if the broker in turn uses the rebate to lower trading commissions. Allowing for vertical integration, if there are vertical economies of scale, such arrangements hold the potential to improve executions cost for traders. However, there are serious issues connected with the effects of order purchase agreements on the markets as a whole. It is possible that vertical integration could reduce customer welfare due to the dealer's ability to exploit its oligopolistic position more fully and because the dealer takes the other side of every transaction, the agency relationship connected with its broker role may conflict with the principal role of its dealer position.

As shown by *Macey and O'Hara (1997)*, these order preferencing arrangements are inconsistent with price-time priority, which requires that orders flow to the first dealer quoting the best price. With preferencing agreements, orders can flow to a dealer who merely agrees to match the best existing price. Thus, opponents of preferencing argue that the violation of time priority increases spreads in dealer markets by the decreasing the incentive to post better prices. In particular, *Dutta and Madhavan (1997)* investigate whether preferencing facilitate collusion and have detrimental effects on overall market spreads thereby undermining best execution. Using a game-theoretic analysis, they show that a collusive equilibrium is easier to sustain when preferencing arrangements are allowed than when they are not. Moreover, preferencing reduces incentives to actually set the best price since dealers receive orders in any case while setting a better price they will not obtain the preferred order flow. The end result can be that quotes and prices remain above the level that would prevail in the absence of preferencing. Additionally, the model imply that as the extent of preferencing increases, the inside spread widens, the average execution quality worsens and market welfare decrease.

The effects of preferencing are examined also by *Bloomfield and O'Hara (1998)* who provide evidence that it can have striking effects on market behaviour. In particular, increasing the percentage of order flow that is preferred increase bid-ask spreads, reduces informational efficiency and enriches dealers at the expense of liquidity and informed traders when preferred orders are received by all dealers in a market. Tacit collusion is more likely and the effects more pronounced when preferred orders are a large share of the market. Moreover, preferencing seems unlikely to harm markets that are already competitive but it can substantially degrade market performance if the practise is widespread.

*Hansch, Naik and Viswanathan (1999)* results do not lend support to the collusion hypothesis and do not find a relation between the extent of preferencing or internalisation and spreads across

stocks. But they find that preferenced order flow receives worse execution than nonpreferenced order flow and that internalized order flow receives better execution than noninternalised order flow. Their results are interestingly consistent with costly negotiations with heterogeneous dealers and customer-dealer trading relationship hypothesis. If customers require immediacy, they do not pay cost of negotiating quotes and go to their regular dealer irrespective of their quotes; if customers are more patient, they search and negotiate for the best price and receive better execution. As a result, preferenced order flow pays a higher spread margin.

Another area of research, strictly linked with the previous one, has more to do with the effect of transparency on market participants welfare. Most authors argue that transparent markets are more informationally efficient and, if informational efficiency is viewed as the goal of market design, then the “winner” is the most transparent market and its participants. As shown, the enhanced informational efficiency of the transparent market is purchased at the expense of grater transactional inefficiency. Moreover, *Bloomfield and O’Hara (1999)* show that transparent markets are not always welfare improving. In fact, from a welfare perspective, the “winner” from transparency are the market makers while the “losers” are traders without the ability to time their trades (informed and uninformed traders with immediate liquidity needs).

Welfare implications of information disclosure are analysed also by *Naik, Neuberger and Viswanathan (1999)*, who follow the traditional belief that full and prompt public disclosure of trades is optimal because it reduces adverse selection and lowers the costs of trading for uninformed investors, emphasizing the fact that such disclosure also leads to better quantity risk sharing. However, they show that there is the issue of price revision risk that leads to an unambiguous welfare effect. This is because a lack of trade disclosure worsens quantity risk sharing but improves price revision risk sharing, while full and prompt disclosure improves quantity risk sharing but worsens price revision risk sharing. This causes the welfare comparison to be ambiguous.

Finally, part of the economic literature has investigated the possibility of the existence of some factors that may induce dealers to desire greater transparency. *Chowdhry and Nanda (1991)* describe a model in which market makers voluntarily disclose trading information to discourage insider trading, making the market more attractive to uninformed traders. The idea is that a market able to develop a reputation of being “clean” may benefit from reduced adverse selection costs. In particular, by revealing trades and trader identities, trading by insiders and informed traders can be reduced allowing dealers to decrease their bid-ask spreads and attract more liquidity traders. Obviously, the paper is part of the economic thought that indicates that, even in the absence of statutory regulation, competitive economic forces can facilitate both the transmission of information and deterrence of insider trading.

## **1.4 Transparency and efficiency**

In efficient markets, all information about a particular stock is impounded in the stock price. An agent who has superior information cannot exploit systematically this informational excess because the information will be recognized by the market with a price changing until the price has reached its new level. It is generally assumed that providing more information to market participants, as in transparent markets, will enhance price efficiency because it allows traders to extract information from outstanding quotes, leading to prices impounding a maximum of available information. Using *O'Hara (1995)* words, “transparency of prices allows traders better ability to extract price information from the market price, a process that surely abets the goal of equilibrium price discovery”.

Price discovery, as well known, is “the interactive process through which the execution price for a trade is established” (see TSE Special Committee Report on Market Fragmentation). More specifically, it is the process by which a market attempts to find transaction prices that are in reasonable alignment with theoretically desirable equilibrium values that are themselves rapidly changing. Equilibrium theoretical prices are rarely attained in security markets basically because of the presence of market imperfections and for the buy-side participants reluctance to reveal their full demand to the market.

For a trade to occur, buyers and sellers need an efficient process to identify a transaction price at which each is willing to trade and, in turn, the effectiveness of the price discovery process refers to the degree to which agreed prices reflect the fundamental value of a security.

Therefore, an effective price discovery process is highly dependent on an exchange's market structure reflected in the public disclosure and reporting of orders and trading data, the degree to which orders consolidate in a central location, the trading rules governing the way the orders interact and the way in which market participants operate and contribute to the information sharing mechanism. *Madhavan (1992)* distinguishes between order-driven and quote-driven markets, comparing their relative price efficiency. In the latter, investors trade against outstanding prices, while in the former participants must submit orders first, after which prices are determined: in this respect, quote-driven markets can be more pre-trade transparent and thus more price efficient than the order-driven ones.

*Flood et al (1997)* concentrate on the effects of post-trade transparency on market performance and they find that it enhances price efficiency. The reason is found in that public

disclosure of transaction information fully informs market makers on all transactions, including those initiated by informed traders, giving them a market-wide overview of what has been done, which causes the market to be more price-efficient. In markets where no transaction information is disclosed, market makers have a limited information set that contains only the transactions in which he participated.

*Flood et al (1999)* examine the issue of pre-trade transparency and investigate how the degree of public quote disclosure affects important market characteristics, such as transaction costs and the dynamic adjustment to strong-form efficient prices. They compare directly two market structures and their effects on the pricing and trading strategies of professional market makers. The markets differ only in the way quotes are disclosed: in the transparent one, all quotes are disclosed publicly and immediately (all market makers have all outstanding quotes presented on their private trading screen) while, in the opaque market no quotes are publicly disclosed (market makers must call one another for price quotes). They find that in markets where all quotes are disclosed publicly, opening spreads are smaller and volume higher but the market is much poorer in terms of price efficiency. Dealer prices are less responsive to new information and price errors decline less rapidly than in the opaque market. The economic explanation is found in the negligible search costs in the transparent market implying that speculating dealers see more clearly how to set their prices in order to avoid of being picked off in a trade with the wrong side of the market. As a result, rational speculating dealers use less aggressive price adjustment in the transparent market, thus slowing price discovery. In contrast, in the opaque market, where search costs prevent the accurate observation of prices, price adjustments are more aggressive.

*Bloomfield and O'Hara (1999)* study the effects of both pre-trade and post-trade transparency in a noncontinuous sequential trade setting. They find that trade disclosure improves the informational efficiency of the markets considered: the midpoint of the market bid and ask converges to true values more quickly when trades are disclosed. What they find is consistent with *Pagano and Roell (1996)* findings. In fact, the authors' analysis predicts that transparency matters because patterns in trades, such as imbalances of buy or sell orders across the market, may be more easily discerned in transparent markets and this, in turn, allows market makers to learn any information from trades more quickly thereby setting their prices more efficiently.

More recently, works on market microstructure construct models of the impact of information (its arrival, dissemination and processing) on market prices distinguishing between liquidity motivated traders who possess no special informational advantages and informed traders with private information.

The argument is that disclosure is a relevant issue only when asymmetric information is important, so that price discovery becomes a critical element of market fairness and efficiency. Thus the various papers concentrate on the extent of asymmetric information in the market, in order to understand if real-time disclosure of quotes, prices and volumes can improve price discovery, trying to capture the way in which different operators react to such asymmetry and adapt their strategies. If the market is populated by different types of agents with different information endowments and objective functions, then a given set-up may benefit one group at the expense of the other (Scalia and Vacca, 1999). Private information of some agents can cause an update of beliefs and may be profitably exploited at the expense of other market participants, according to a notion that is also at the basis of the literature on block trading and dual-trading.

*Kyle (1985)* presents a model, in which only market orders are permitted, where a single trader places orders over time to maximize his profits before the information becomes common knowledge. The market maker observes net order flow and then sets the price. The author shows that market prices will eventually incorporate all available information but the weak part in Kyle's model is that the market maker is assumed to act simply as an order processor setting market clearing prices and that a single trader can have a monopoly of information. The implicit assumption in information models is that market makers are uninformed but there can be situations in which they might have better information than the average trader.

The learning process of market makers is the subject of the paper by *Easley and O'Hara (1987)*. Basically their model predicts that the entire sequence of trades and not merely the aggregate volume, determines the relationship of prices to quantities. They start from the idea that trade direction and volume provide signals to market makers allowing them to update their price expectations. In an efficient market, the price of a security should reflect the value of its underlying assets. Easley and O'Hara show that the adjustment path of prices not converge to the theoretical price immediately because it is determined by the history of trades, which reflects actions liquidity motivated traders, market size, depth and volume. The authors identify two important effect of information on the price-quantity relationship related to two kind of uncertainty for the market makers. In their model, trade size affects security prices because it changes perceptions of the value of the underlying asset and the market maker face the uncertainty about whether any individual trader is informed: an adverse selection problem arises because informed traders prefer to trade larger amounts at any given price but, since the uninformed traders do not share this quantity bias, the larger the trade size the more likely is that the market maker is trading with an informed trader. This information effect dictates that the market maker's optimal pricing strategy also depends on quantity with large trade price reflecting this increased probability of information-based trading.



The other uncertainty about whether any new information exists dictates that both the size and the sequence of trades matter in determining the price-quantity relationship.

*Foster and Viswanathan (1996)* develop a generalization of Kyle's model where there are a number of differentially informed traders, liquidity traders and market makers. Modelling markets with heterogeneous information means that traders infer the value of an asset from not only their own private information but also using any information revealed by other traders through trading. They find that the initial correlation among informed traders' signals has a significant effect on their profits. The basic idea is that each trader has some degree of monopoly power, because part of his information is known only to him, and this reduces the degree of competition between traders providing an incentive to trade less aggressively. In addition, the correlation between the signals of the informed traders falls as more trading occurs and, after a number of trading periods, this yields to a negative correlation between the residual information known only by each informed trader and the information known by the market maker. Knowing this will happen, every informed trader have an incentive to make smaller trades hoping that other informed traders make large trades (*waiting game*). This means that there is less competition and greater profits to the informed traders than would be found with highly correlated private information.

## **2. The effect of market structure on transparency**

The issue of market transparency focuses on the way information is transmitted among market participants through the trading mechanism. Thus the degree in which a financial market is transparent is a direct function of the trading mechanism chosen on that market, explaining why, in the debate over auction vs dealer markets, transparency is the major factor.

Following *Madhavan (2000)* taxonomy, the market type can be described by:

a) *reliance on market makers*. In an auction or order-driven market, all client orders for a security are directed to a central location without the intervention of an investment dealer or professional market maker. The latter provide these markets with regular, continuous and competitive bid and offer quotations at which they stand prepared to buy and sell some quantities of stocks. In a dealer or quote-driven market, a market maker takes the opposite side of every transaction with the public declaration of buy and sell prices. In these markets, actual prices at which transactions are negotiated and executed may differ from publicly displayed prices: trades may take place at any price upon which client's broker and dealer agree in private negotiations. In this respect, these markets are in a better condition to accomodate large equity orders that need to

trade anonymously but, since the information of actual trading details is disclosed after the transaction is made, they offer less visibility to investors with respect to auction markets.

b) *degree of automation*. The debate is between floor and screen-based electronic systems following the idea that the technology of order submission is very important. It is evident that the concept of market transparency employed here is the pre-trade disclosure of information to market participants. Such information might come from an order book or from a trading screen on which quotes are disclosed. Trading mechanism, characteristics such as whether or not quotes are disclosed publicly or the type of order book that is installed, directly influence the degree of pre-trade transparency. Floor systems generally do not display customer limit orders unless they represent the best quote; by contrast, electronic limit order book systems disseminate not only the current quotes but also information on limit orders away from the best quotes.

*Pagano and Roell (1996)* consider this issue theoretically by analysing how market outcomes differ across various types of auction and dealer markets. Their analysis predicts that transparency matters because patterns in trades, such as imbalances between buy and sell orders in the market, may be more easily discerned in transparent markets; this in turn will allow market makers to learn more information from trades thereby setting their prices more efficiently.

Auction markets are inherently more transparent than dealer markets in the sense that more information can be made directly available to all market participants. They provide greater pre-trade transparency, i.e., greater visibility of the best price at which any incoming order can be executed. In contrast, dealer markets display only very limited information: in practice, the quotes do not give more than a vague indication of the real transaction prices, which are arrived at by telephone negotiations. Post-trade transparency, i.e., the public visibility of recent trading history, also tends to be lower in dealer markets: this reflects both technical factors and deliberate choices by exchange authorities that have tended to grant publication delays to large transaction under pressure from market makers.

As observed by *Huisman and Koedijk (1998)*, although quotes displayed on screen are rather indicative and trades are mostly the result of telephone negotiations with prices set in the screen-quoted spreads, these markets offer a high degree of transparency because much price information is publicly available. At the same time, floor based systems may be more transparent because traders can observe the identities of brokers submitting orders and can make inferences regarding their motivations (Madhavan, 2000). Such inferences can be extremely difficult in an electronic-order submission system that offers anonymity. The consequences are well explained by *Kofman and Moser (1995)*: computerized systems anonymity confronts market makers with uncertainty about whom they are trading with, increasing their bid-ask spread for protection against informed

traders and, hence, the cost of trading. This will induce noise traders to leave the market segment (because of their lowest cost motivation) that in turn will cause a reduction of the liquidity in the system making more difficult for informed traders to see absorbed their trades.

*Naik, Neuberger and Viswanthan (1999)* suggest, in line with this area of research, that rules of trade disclosure and their impact on the welfare on the public investor is intimately connected with the structure of the market. In fact, in a pure automated market, trading information is public knowledge and the agent doing trade does not learn anything that is not public knowledge; in contrast, in markets where trades are negotiated, each part may learn more about the other's motives for trading and dealers, who are the counterparts to many trades, have much information about the order flow that is not available to public investor. In particular, when dealers are able to learn information about the motive of trade and when the desire to insure the endowment risk is more important than adverse selection problems, prompt trade disclosure can actually reduce the welfare of the public investor.

*Pagano (1997)* shows how trading mechanism become the key variable to deal with the increased competition pressure and a variety of microstructures evolved with electronic screen-based trading combined with limit order books. That differences between trading mechanism are not only found across exchanges but also within them. The need for a dual structure organization of trading is also related to the transaction size. There is unlikely to be adverse impact from pre-trade disclosure of a small order: these kind of orders benefit from wide exposure because they attract an increasing number of offsetting orders and facilitate the best price. In contrast, investors ask to disclose their trading intentions of a block order preferring to trade under more relaxed transparency rules because of the risk of other investors trading ahead of their order.

As in TSE Special Committee Report on Market fragmentation underlined, just because of the different needs and preferences of different groups, it is difficult for any market to satisfy all customers with one trading process or market structure.

### **3. The role of transparency in the competition process**

“Globalisation and computerization of financial markets has led to intensive competition among exchanges, not only in a complementary sense but also in a substitutionary sense. The former may add to the completeness of the market and, as such, may absorb latent liquidity and raise new trading volume; the latter, to the contrary, usually plunges the competing exchanges in a battle for contract survival” (see Kofman and Moser, 1995).

In a fully efficient market situation, if an asset is traded simultaneously in two exchanges, news flows should be incorporated in both exchanges' transaction prices; however, the presence of frictions and differences in trading costs, may stimulate traders to migrate and choose one exchange in favour of the other.

In their role as price producers, financial exchanges face many trade-offs. In order to attract business, exchanges should disseminate information on recent prices and volume as well as the level and depth of price quotes, but they do not reveal all information for free because the information is costly to produce and it is of direct value for investors. Because full information might dissuade some investors from submitting orders, exchanges must estimate how much and what information dissemination will maximize total exchange profits. In making such decisions, an exchange is competing against the services provided by other exchanges .

From a practical viewpoint, it is important to understand how fragmentation affects transparency and information sharing processes in financial markets. A consolidated market provides more conditions supportive of transparency. The latter is easier to monitor and enforce and the incentives for evading it are lessened if there are few opportunities for trading away from the central market. On the other side, a fragmented market system is likely to play stress on trade reporting procedures. Since transparency imposes private costs, it is feasible only if it is enforceable across all markets and participants. It is relatively easy to enforce trade reporting in a central physical exchange because monitoring is also centralized; fragmentation complicates matters.

In a consolidated market, all orders for a particular security flow to a single location for execution and all buying and selling interests are shown in the order book or declared in the market. In theory, it maximizes competition between buyers and sellers of a security and enables orders to be executed in accordance with priority rules encouraging investors to compete for execution. In turn, competition between bids and offers improves prices, ensuring that the best available prices are displayed and that the spread is minimized. In fact, in visible consolidated markets, traders know the size of the orders that can be executed immediately in the marketplace at the current market price or with minimal changes in it (see TSE Special Committee Report on Market Fragmentation).

In a fragmented market, orders for a particular security are dispersed away from a single market and distributed across a number of separate markets linked, to a greater or lesser degree, by the dissemination of market information. Thus, priority of orders may not be achieved because "order books" are numerous and can be disconnected so that investor's trades may execute at different prices or face different waiting periods before execution at the same price. In such a

market, it becomes increasingly difficult for investors to know if they have received best execution for their orders (see TSE Special Committee Report on Market Fragmentation).

It is well recognized that market fragmentation may have adverse impacts on the quality of services provided by exchanges. They can be summarized in a decreasing liquidity, increasing costs for providing immediacy, impaired efficiency and effectiveness of the price discovery process, higher transaction costs, reduced fairness, etc. etc. However, it has also been shown that market consolidation could have negative consequences for the performance of securities markets as a whole recognizing significant benefits that can be realized through market structure diversity: these include prevention of monopolistic inefficiencies, more choices and options available to investors and better incentives for innovation. In this respect, it has been recognized that transparency rules have a central role in counterbalancing the effects of market fragmentation while preserving competition among multiple markets. An increased diffusion of order flow coupled with multiple market trading raise the possibility that the same security is traded at different prices in the various markets but this pricing inefficiencies will occur if they are traded “in the dark” with little or no transparency. If a market permits such a opaque trading, it prevents other markets to assess the overall supply and demand for the security and the determination of the optimal price may be inaccurate; full transparency allow this inefficiency to be eliminated enhancing the price discovery process.

There is wide consensus on the fact that transparency feature of trading mechanisms is a key variable in the competition among exchanges.

From a theoretical viewpoint, differences in trade disclosure between markets may induce order flow migration, affecting liquidity and the cost of trading: absence of transparency may attract order flow from other markets where disclosure rules are more stringent. For this reason, many articles argue that consolidation is inevitable because traders gravitate to the most liquid and efficient market. According to *Madhavan (1994)*, the most liquid market will attract all volume leading to eventual consolidation of the market because the lower cost exchange tends to dominate the market and “crowd-out” its competitor.

The same conclusion, but for different reasons, is reached by *Chowdhry and Nanda (1991)* whose analyses suggest that one market will dominate and emerge as dominant location. They analyse a situation in which a security trades at multiple locations simultaneously so that an informed trader has several avenues in which to exploit his private information. They assume that the information possessed by informed traders is short-lived so that there is essentially no learning between markets before this information becomes public; large liquidity traders split their trades across markets in order to minimize costs while small liquidity traders are assumed to trade their

entire requirement on a single market even if some of them may have discretion concerning the market in which they transact. Naturally, the latter will choose the market in which their expected trading costs are the smallest. The authors show that small liquidity traders with discretion will concentrate, in equilibrium, in the market that has the largest amount of trading by liquidity traders unable to move between markets. This market, in turn, will attract more trading by the informed traders as well as large liquidity traders. Thus, if a financial instrument trades on several locations, there is a concentration of trading to the location that has the largest number of traders with no discretion to move between markets.

Despite fragmentation in security markets is a complex phenomenon dependent on many factors (e.g., communications technology, inter and intramarket competition, etc. etc.), transparency plays a central role as a source of segmentation. The important feature of the new market competition is that it more often involves differences in market transparency as markets compete head-to-head for trading volume. There is been increasing attention from the economic literature about the need and the consequences of improving information transmission between various markets trading identical or similar securities.

*Madhavan (1995)* focuses on the effect of disclosing trading information to market participants and shows that fragmented market need not coalesce into a single market unless trade disclosure is mandatory. In particular, they analyse the issue of trade disclosure developing a model in which investors have heterogeneous motives for trade and dealers compete to attract order flow. They demonstrate that a consolidated market will experience order flow fragmentation unless trade disclosure is mandatory, even if there are potential informational economies. Market fragmentation occurs because traders are heterogeneous and demand a variety of market mechanisms to satisfy their needs. Specifically, large liquidity and informed traders front-run their own trades in a consolidated market raising their execution costs: in a fragmented market, they can obtain better executions through their dynamic trading, creating a demand for no-transparent trading systems. Dealers, in turn, profit from fragmentation because there is less price competition: no-disclosing dealers can selectively participate in future trading to profit from their private information on past trades.

It can be noticed that in the model provided by *Madhavan (1995)* is the lack of mandatory disclosure to result in a market fragmentation. That is because orders are assumed to be executed sequentially so that last-trade reporting provides important information to potential competitors. However, as shown also by *Chowdhry and Nanda (1991)*, there are factors that can induce investors to desire greater transparency: market makers can voluntarily make information public to discourage insider trading while making the market more attractive to uninformed traders, a market

that can develop a reputation of being clean may benefit from reduced adverse selection costs and, finally, if inside information is long-lived, informed traders may avoid markets with disclosure to avoid revealing their private information thus creating incentives for dealers to disclose trades.

Recent studies investigate more specifically the issue of how transparency affects the competition among markets. They build on the large body of research investigating how transparency affects market behaviour (see Pagano and Roell, 1996; Madhavan, 1996; Naik et al., 1997; Gemmill, 1996; Porter and Weaver, 1996; Bloomfield and O'Hara, 1999; Flood et al., 1999). This attention reflects the growing market concern that the ability to hide trades in less transparent regimes can undermine the attractiveness of established markets, thereby reducing their price discovery role; moreover, it is important to address the question of whether competition will force all markets to adopt the same transparency level or whether market forces will allow different markets to co-exist.

Many researches suggest that transparent markets operate at a disadvantage to low transparency settings because of the informational gap: in effect, the ability of dealers in the less transparent market to know their own trades as well as those in the transparent market induce a kind of free-riding problem leading to a failure of transparent markets to provide a competitive venue.

*Bloomfield and O'Hara (2000)* use experimental economics to address these issues and investigate whether transparent markets, that must report trades, can survive when faced with direct competition from less transparent market. Two types of forces seem important in determining how transparent markets compete with low transparent markets. *Informational forces* apply directly to dealers and arise because different trading reporting rules allow dealers in low transparency markets to gain monopoly power over information by capturing order flow that do not need to be disclosed. *Strategic preference forces* apply indirectly to dealers through the strategic action of traders: if liquidity traders and informed traders show different preferences for different types of dealers, then the latter may face different degrees of adverse selection that will cause them to set different quotes.

The authors show that low transparency dealers are able to outdo their more transparent counterparts. What drives this dominance is the enhanced ability of them to set price more efficiently, thereby allowing them greater opportunities to set and trade at the inside spread. This advantage derives from an increased aggressiveness on the part of low transparency dealers to attract order flow and from their subsequent ability to reduce their losses due to adverse selection. High transparency dealers are handicapped both by reduced access to information and by the strategic trading decisions made by uninformed traders making large trades. Thus they find that dealers naturally gravitate towards less transparency but as the number of non-transparent dealers increases, the informational advantage of any one dealer becomes small.

The trend toward low transparency in the markets seems to be in contrast with the results obtained by *Bloomfield and O'Hara (1999)* which showed that dealers earn higher profits in markets in which all dealers are transparent than in markets in which all dealers are of low-transparency. As suggested by the authors, “it seems that all dealers might be better off if they were all transparent, but each individual dealer has an incentive to defect to low transparency. Therefore, dealers might prefer a world in which transparency is mandated by regulation” (see Bloomfield and O'Hara, 2000).

#### **4. Current regulation on Italian secondary markets**

Rules governing regulated and non-regulated Italian financial markets are set in the LEGISLATIVE DECREE 58 OF 24 FEBRUARY 1998 (Consolidated Law on Financial Intermediation). Article 63 of the above Public Regulation establishes that the existence and operativeness of a regulated market is subject to the authorization of the regulatory authority (Commissione Nazionale per le Società e la Borsa - Consob), after checking the possession of fixed requirements and the suitability of the regulation issued by the market management company (Rules of the Market organized and managed by the Italian Exchange) “*to ensure transparency, fair and orderly conduct of business and investor protection*”.

Article 62 of the Consolidated Law on Financial Intermediation establishes that the organization and management of a market shall be governed by rules that in all cases specifies “*...the procedures for ascertaining, publishing and distributing prices ...*”. Moreover, according to article 63 of the same Law and Consob Regulation n.11768 of 23/12/1998 (as amended by Consob Resolution n.12479 of 20/4/2000), the market management company has to carry on “*preparation, operation and maintenance of software, hardware and electronic networks for trading, order transmission and data transmission systems*” and “*processing, distribution and marketing of data concerning financial instruments traded in the market they manage and data relating to the markets*”. Therefore, the idea behind the Public Regulation requirements on transparency is that market participants should be provided with sufficient information to develop a full and clear understanding of the rules, procedures, governing laws, rights and obligations connected with securities trading.

The Consolidated Law, following the principle that markets constitute and develop on the private enterprises basis, widens the possibilities for producers of trading services to compete. It is also well recognized that regulatory requirements on information dissemination can affect in a



considerable way the competition between private enterprises in their financial instruments trading services. Thus, in considering transparency requirements, it is necessary to avoid the risk of introducing elements of distortion, not justified by the difference of the interests in place, in the competition process.

The Consolidated Law disciplines the procedure to acquire the “status” of regulated market in article 61 and, among other requirements, it establishes that the rules of the markets organized and managed by the authorized company has to be suitable to ensure transparency, fair and orderly conduct of business and investor protection. At the same time, article 78 recognizes that, even in the case of financial instruments traded in unregulated markets, a minimal level of transparency has to be guaranteed.

Hence, the regulatory approach has been to encourage organized trading outside the regulated markets without excessive “regulatory burdens” trying to avoid, at the same time, the growth of “regulatory arbitrage opportunities” from such alternatives able to compromise the competitiveness of regulated markets and the objective of investor protection.

Part III Title 1 of the Consolidated Law disciplines financial markets in two sections: the first chapter is about regulated markets and the second one is on unregulated markets. The Public Regulation recognizes that it is necessary to guarantee a minimal level of transparency and investor protection both in the case of transactions involving financial instruments admitted to trading in a regulated market but concluded outside such market (Off Exchange Market) and transactions in unregulated markets (Organized Trading).

### **A) Off Exchange Market**

Article 65 of the Consolidated Law gives the Consob the task to fix through its regulation “*the recording requirements of all transactions carried out on financial instruments and the reporting requirements of intermediaries authorized to provide trading services for transactions involving financial instruments admitted to trading in a regulated market concluded outside such market*”. Then, article 64 specifies that the market management company provide the market with information concerning transactions involving financial instruments admitted to trading but concluded outside regulated markets.

The Consob regulation n.11768 of 23/12/1998 (as amended by Consob Resolution n.12479 of 24/04/2000) implements the provisions on markets of the Consolidated Law and fixes some rules<sup>3</sup>.

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<sup>3</sup> Article 11 of Consob Regulation n.11768 establishes that “*Authorized intermediaries shall report, for each individual trading involving financial instruments concluded outside regulated markets, the following information to the management company within 15 minutes of the time the trade was concluded:*

## **B) Organized Trading**

Article 78 of the Consolidate Law, on unregulated markets, disciplines organized trading of financial instruments and establishes that:

*“Consob may require organizers, issuers and intermediaries to provide information and records concerning organized trading of financial instruments. For the purpose of protecting investors, Consob may:*

- *establishes the procedures, time limits and conditions for providing information on trading to the public;*
- *suspend and, in the most serious cases, prohibit trading where this is necessary to prevent the protection of investors from being seriously prejudiced”.*

Then, the Consob release n.DM/98097747 of the 24/12/1998 better specifies the transparency requirements, both in the pre-trade and post-trade level, to be made available to participants to Organized Trading of financial instruments<sup>4</sup>.

- 
- *the financial instrument involved;*
  - *the date and time of execution;*
  - *the type of transaction;*
  - *the unit price net of any commissions;*
  - *the quantity;*
  - *the counterparty;*
  - *whether the transaction was concluded for own account or for customer account.*

*For transaction concluded outside trading hours, the reporting requirements shall be fulfilled before 9.00 am on the next trading day. Reports shall be made using the means and technical procedures established by management companies in the rules referred to in article 62 of the Consolidated Law”.*

It is important to specify that this article shall not apply to trades involving Italian or foreign government or government-guaranteed securities, securities issued by international organizations in which governments participate, odd lots and traditional options contracts or any other derivative financial instrument.

Moreover, article 12 of the same Consob Regulation establishes that *“Management companies shall disclose the following information to the market in the manner established in the rules referred to in Article 62 of the Consolidated Law for each individual trade concluded outside the market that is reported to them:*

- *the financial instrument involved;*
- *the quantity traded;*
- *the unit price net of any commissions;*
- *the date and time of execution.*

*The above information shall be disclosed to the market 60 minutes after the time of execution of the transaction. Exclusively as regards transactions not involving blocks that are executed outside official trading hours in organized trading systems referred to in article 78 of the Consolidated Law, management companies shall disclose the information to the market without delay. Information concerning transactions concluded after the close of trading or for which the time limit referred in paragraph 2 expires after the close of trading shall be disclosed to the market before the subsequent opening of trading”.*

<sup>4</sup> The amount of trade information is made strictly dependent on the monetary value of each single transaction, so that:

*“Organizers of organized trading systems, that make provision for a minimum lot of a single transaction less than 300 million lire, have to ensure the following information to be available to the public:*

- a) *procedures of the trading system behind the price formation process and the description of the financial instruments traded in the market;*
- b) *during continuous trading:*
  - *prices and quantities of the best buy and sell orders;*

When the access to the trading system and the order transmission are through magnetic medium, the above information have to be made available to the public by the means of the magnetic medium itself; otherwise, the same information have to be exposed in the same place where orders are received or made available to the public by other means suitable to guarantee an equal degree of diffusion<sup>5</sup>.

The approach followed by the Public Regulation shows the appreciation of the extent to which transparency contributes to the stability and smooth functioning of financial markets. In general, financial markets operate most efficiently when participants have access to relevant information concerning the risks to which they are exposed and, therefore, take subsequent actions to manage those risks. As a result, there has been a significant effort to improve public disclosure of any relevant information related to securities trading in financial markets, regarding to the information provided (a) to approved intermediaries, and (b) to the public:

(a) Part IV, title 4.9 of the “Rules of the Market organized and managed by the Italian Exchange” is about the **information provided to approved intermediaries**. The general principle is that approved intermediaries shall be provided with the information needed for the proper performance of the trading functions and the settlement of trades. Such information shall be made available via the electronic data processing and telecommunication systems put in place by the Italian Exchange as promptly as possible and with intermediaries on an equal footing insofar as this is compatible with the technological equipment in their possession.

Article 4.9.2 of the “Rules of the Market organized and managed by the Italian Exchange” specifies the information, both on a pre and post-trade level, provided to the intermediaries in the electronic share market (MTA)<sup>6</sup>.

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- *price of the last contract concluded, time of execution and the quantity traded;*
  - c) *within the subsequent opening of trading and for each financial instrument:*
    - *the number of contracts concluded;*
    - *the total quantity traded and respective value;*
    - *the lowest and highest price;*

*the price of the last contract concluded.*

<sup>5</sup> “At least ones a month, organizers of Organized Trading should disseminate to the public the following information for each financial instrument traded:

- a) *number of contracts concluded through the system and total quantity traded;*
- b) *the lowest and the highest price registered in the month considered;*
- c) *the weighted average price of the contracts concluded through the system;*

*the price of the last contract concluded, time of execution and the quantity traded”.*

<sup>6</sup> “In the opening pre-auction phase, approved intermediaries shall have access to information updated in real time relative to reference prices, control prices and the theoretical opening prices that are determined and the total quantities tradable at such prices, and any non-tradable quantities referred to in article 4.1.7, paragraph 1b)”.

“Throughout the Stock Exchange session, approved intermediaries shall have access to at least the following information updated in real time:

- I. *the trading book with all the individual buy and sell orders, showing the approved intermediaries that entered them, the quantities and the prices;*

(b) Part VI of the “Rules of the Market organized and managed by the Italian Exchange” on Market Transparency explicitly fix the general principle that in order to facilitate investment and disinvestments decisions and the verification of the conditions at which transactions are executed in the markets, the Italian Exchange shall arrange for the prompt *disclosure to the public* via the electronic trading support system, and third parties where appropriate, of information on market conditions and the contracts concluded for each financial instrument. Moreover, “*every day, at the end of trading, the Italian Exchange shall also publish the Official List on a magnetic medium containing information on the contracts concluded for each financial instrument. The Italian Exchange shall not disclose information to the public on the identity of the parties of trades*”.

The assumption behind these regulation requirements is that the characteristics investors look for when seeking to transact business are prices in which they can have confidence, liquidity and the ability to obtain the best price available at the time for their size and type of trade. It is well recognized that the way in which prices are determined reflects, among other factors, transparency arrangements - reflecting the amount of trading information, both pre and post-trade, available to users of the regulated market – order handling and algorithms adopted for trading execution<sup>7</sup>.

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II. *a summary of the trading conditions for each financial instrument, containing the trading parameters, the market phase, the reference price, the control price, the opening price, the last price, the best buy price, the best sell price and the cumulative volume of trades;*

III. *the situation regarding the approved intermediary’s own orders and trades;*

IV. *a list of the individual trades for each financial instrument, showing the time, quantity and execution price”.*

*In the closing pre-auction phase approved intermediaries shall have access to information updated in real time relative to the reference prices, control prices and theoretical closing prices that are determined and the total quantities tradable at such prices, and any non-tradable quantities referred to in article 4.1.7, paragraph 1b)”*

<sup>7</sup> Article 6.1.2 of the “Rules of the Market organized and managed by the Italian Exchange” sets in more details the information available to the public on the electronic share market (MTA). In terms of pre-trade transparency, it is established that the following information shall be available to the public in real time for each financial instrument:

I. in the opening pre-auction phase:

- the theoretical opening price and related tradable quantity;
- prices and quantities for the best buy and sell orders;
- the control price;
- buy and sell quantities on the book for the five best prices;

II. during continuous trading:

- prices and quantities of the best buy and sell orders;
- buy and sell quantities on the book for the five best prices;
- the control price

In terms of post-trade transparency:

- price of the last contract concluded, the time of the execution and the quantity traded;
- the cumulative quantity and value traded;

III. in the closing pre-auction phase:

- the theoretical closing price and related tradable quantity;
- the prices and quantities of the best buy and sell orders;
- the control price;
- the buy and sell quantities on the book for the five best prices

IV. the Official List shall give at least the following information for each financial instrument:

- number of contracts concluded;
- total quantity traded;
- the lowest and the highest prices and respective quantities traded;

## 5. The ISD provisions on transparency

It is a common view that a high level of transparency is an hall-mark of an efficient market and that is the best safeguards for investors interests. Transparency is critical for market participants and investors in assessing the value of prospective trades and, above all, it is the means by which the price discovery process is rendered efficient.

With a view to bolstering investor protection, it has been proposed to strengthen the existing transparency requirements under the Investment Service Directive (ISD). FESCO paper on Standards for Regulated Markets already fixes principles on the general need for a high level of transparency.

The problems seems to be more in:

- The need that both regulated markets and ATS ensure the same level of pre-trade and post-trade transparency;
- The need to find mechanism which promote a consolidation of information. In other words, the same high levels of transparency in the different trading platforms, without mechanism that gather the fragmented source of information, do not permit to reach the attributes of an ideal market strictly linked to the degree of transparency.

These observation clearly regard two different, but strong related, issues.

On one side, the need to establish a level playing field for the transparency requirements imposed to regulated and unregulated markets. This issue clearly needs the definition of an Alternative Trading System (ATS). On the other side, the need to analyse the rationale of a concentration rule and its relationship with transparency on secondary markets.

The proposal clearly aims to take into account the possible deterioration in the efficiency of the price discovery mechanism if the details are not made available to the market as a whole. “This concern has been frequently expressed in respect of order-matching by broker-run ATS and order internalisation practises”.

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- the opening auction, last, control, reference, closing auction and official prices

The FESCO Working Group on ATS has already identified potential consequences for transparency with the emergence of ATS<sup>8</sup>.

Another concern relates to the consolidation of information in a trading environment where a security or instrument may be admitted to trading on several regulated markets in parallel.

The issue calls obviously for the analysis of the desirability, continued rationale and validity of the present form of the concentration rule (art. 14 of the ISD), under which national authorities have now the option - in the interest of ensuring that investors benefit from best price interaction - of requiring that certain transactions be performed on a regulated market.

The first step would be to remember what is or was the rationale of the option requiring the execution of transactions in certain financial instruments on a regulated market. The concentration rule has been always identified as the main instrument to reach a high quality level of market prices. Thus the need to ensure greater liquidity to regulated markets so to have significant prices coming out from the interactions of supply and demand and to reduce any obstacle to the transparency of the supply and demand schedule.

In Italy, the option given by the ISD is reflected in the art. 25 of the Legislative Decree of the 1998 n. 58 and in the two CONSOB market and intermediaries regulation which both link the concentration rule to the best execution principle and the need to guarantee the efficiency of the price discovery process avoiding the fragmentation of the transactions.

It can certainly be argued that the quality of the price discovery process is greater in the case of transaction having place in regulated markets because of the status recognised to them and coming out from their more stringent supervision by the competent authorities and from the greater number of requirements to fulfil in order to be recognised regulated markets. It is something like the prices on them are more official compared with the ones resulting from the transactions having place in other markets and despite of the for-profit nature of the entities managing and organizing them. If this is the case, it can be discussed if a solution can be found in the attempt to reach the same goal of an efficient price discovery process and best execution using other means and instruments that in fact ensure a concentration of the information.

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<sup>8</sup> FESCO has adopted a document for a harmonised regulatory treatment of ATS in Europe and it is currently examining standards for transparency to be applied to ATS operating as investment firms, additional to ordinary conduct of business rules. However, this seems to be more a short-term solution. In fact, what is needed is a choice between a revision of the ISD following a functional approach or a clear regulatory framework for ATS as new financial players. We think that a functional approach would be appropriate and better able to answer to the innovative trends which characterise financial markets. We recognise that such approach is more demanding in terms of time and efforts. Costs and benefits of such an approach are still under valuation.

The discussion thus leads to both:

- transparency requirements (in terms of a set of minimum amount of pre-trade and post-trade information that both regulated markets and ATS should give to market participants);
- the mechanism able to gather the information given in the different marketplaces. Because, the first provision in fact does not ensure the ability of the investors to have their orders best executed.

Although the concentration rule has the just mentioned benefits in terms of price discovery process and best execution, it may raise potential problems in terms of competition between markets (and maybe that is why the ISD gives an option to Member State trying to avoid a trend towards an excessive protectionism). It should be made clear however that in fact, given also the mutual recognition, the concentration rule is not an obstacle to the competition between regulated markets (as mentioned in the communication from the commission to the European parliament) but it could be to the competition between regulated markets and ATS.

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