# CORPORATE GOVERNANCE, MINORITY SHAREHOLDERS AND DYNAMIC VALUE: THE ITALIAN EXPERIENCE OF THE FREEZE-OUT

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**Abstract**

The principal subject of this paper is the analysis of the main corporate governance profiles that are directly or incidentally affected by the freeze-out and the study of the positive and normative factors impacting the determination of the strike price of the freeze-out. The work first aims to investigate the effect that can be generated by the forced exclusion of minority shareholders during the processes of acquisition and replacement of corporate control and, secondly to examine the share value drivers of the freeze-out, with the aim of combining the legislative functions with the laws of economic dynamics. The regulatory framework, which in Italy has recently undergone a major evolution as a result of approval, with Legislative Decree dated November 19th 2007 n. 229 of the 2004/25/EC Directive concerning tender offer process, is the background to issues of economic nature which will be investigated in this work.

Keywords: corporate governance, minority shareholders, Italy

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## 1. Introduction

The study of the formal freeze-out profiles in the international experience and in the studies reported in the extensive legal and economic literature, both Italian and international, reveals that the recognition of a potestative freeze-out of the residual shares in favour of the nearly totalitarian shareholder can occur in different contexts.

The prevailing practice places the freeze-out within the rules regulating tender offer process, giving the law a connotation of a benefit granted to the shareholder which has come to hold almost a totalitarian participation following a takeover bid on all target company shares. Such context certainly appears to be the most natural *habitat* for the right to forcibly exclude the minority shareholders, as it clearly emerges from the functional analysis of the law that the endpoints related to the protection of the large (almost totalitarian) shareholder's interests to be entitled, on an exclusive basis, to the benefits of the takeover, in fact, are widely sustainable from a positive and normative point of view as well as the limitation of opportunistic behaviours on the part of the minorities and the substantial application of the equal shareholder treatment principal through which the economic interests of the minorities that participated to the tender offer are protected.

The protection of other general positions of interest (such as the interest to the structure ownership efficiency or to the proper market functioning) or other specific positions (such as the interest of the nearly totalitarian shareholder to retain for himself a voluntarily way-out of the listing or the possibilities to reduce costs related to the presence of the minority) appears to be more of an incidental effect in the application of the regulation, rather than an interest specifically and directly protected by the freeze-out.

The legislator does not also clearly express the rationale of the law, leaving room for interpretation of the different purposes which are not always strictly and properly coordinated with one another.

In the peculiar perspective of analysis of the corporate governance, adopted for the purpose of this work, the mechanisms for the determination of the strike price of the freeze-out become also important in light of a more reasoned and complete definition of the purpose of the law.

In this regard, by taking into consideration the dynamic laws of company value, we attempted to interpret the accepted solutions found in the academic studies (Grossman-Hart, 1980; Yarrow, 1985; Amihud-Kahan-Sundaram, 2002) with the belief that the proper definition of the mechanism for determining the freeze-out price can contribute to finalize the freeze-out more effectively within the corporate processes of control and replacement and more generally the acquisitive transactions aimed at creating value.

The solution adopted in the communitarian context of Directive 2004/25/EC and of Legislative Decree 229/2007 which acknowledges the directive in Italy, creates an automatism for the determination of the strike price of the freeze-out: with the assumption of the former mandatory tender offer that the *freeze-out* of residual minority shareholders should take place for the same amount of the tender offer (Burkart-Panunzi, 2003). This solution seems, from the legislator's point of view, preferable in terms of price *fairness* and for the effectiveness in suppressing behaviours of immobility on the part of the minority shareholders. Under the value dynamics, this solution leaves reasonable doubt, on one side with regards to the relationships between value and price, and on the other to the principal of equal shareholder treatment and, in a nutshell to the finalism of the freeze-out law.

## 2. The minority shareholders in view of corporate governance: the role and the costs of their presence

The close examination of the minority shareholders' role in a business enterprise, executed here with no claim to completeness, will preliminarily highlight that the concept of "*minority shareholders"* includes many figures with distinctive traits and significantly varied behaviours.

Next to the "*minimum shareholder*" figure which owns a limited or negligible number of shares and is often uninterested in company life, we often find the "*omnipresent shareholder*" which although having a small amount of shares, participates to meetings out of curiosity or habit affecting at times the process by expressing exceptions and requests which are often not acceptable nor sound (for these reasons, he may also be referred to with a more negative connotation such as the "*professional shareholder disturber*").

There are other figures such as the "*significant minority shareholders"* who operate as entrepreneurs-investors, frequently also found grouped together or in accordance with other aggregations which are often able to submit their claims, having special knowledge and skills or being assisted by corporate law experts; and the "*institutional shareholders"*, disinterested in the direct management of the company, but present, involved, informed and interventionists during meetings, caring for their main interest represented by the prospect of a return of investment (Onesti, 2004).

The presence of minority shareholders in the ownership structure of the modern and large size company finds its genesis in the continuous change of capital needs induced by the specialization of knowledge, by the increase of technology importance and by the reference competitive dynamics. The increased financial need pushes, with the progression of time, in the direction of shattering ownership: the extent of needs surpasses the financial capabilities of individual owners and of their families and reduces the real possibility of maintaining shares that allow an exclusive and safe management control (Onida, 1971; Zanda, 1974).

The essential role of the minority shareholders is therefore to contribute to the company financing which "opens itself to the market of savings", in order to collect funds to be allocated to the financial requirements generated by management. When shares are excluded from control, they spread to numerous savers and the protection requirements of the minorities end up overlapping with the general interest of protecting savings.

In second order of importance to the role outlined above, the minority shareholders especially when they reach significant importance in the corporate structure, contribute albeit in an inferior numerical position, to improve the dialectic process of decision-making and play a truly independent action of monitoring the work of the executive directors generally appointed by the majority.

The fundamental financial contribution of the minority shareholders allows to "accept" the costs associated with their presence in the corporate structure.

Such costs are expressed as financial expenses when they take on an "administrative" nature (for example the necessary burdens to ensure the normal functioning of corporate life, as well as the costs for organizing meetings in the presence of numerous shareholders, or the costs incurred at the time of dividend payment), but they take a figurative nature in as much as they delineate a limit to freedom of action of the person exercising control.

These limitations make it difficult for the economic entity to extract private control benefits (Dick-Zingales, 2004), affecting the choices dictated by the pursuit of group economy logics, the aggregative or internal restructuring operations aimed at promoting the emergence of synergistic benefits (Bradley-Desai-Kim, 1988; Damodaran, 2006), and the decisions regarding directors' remuneration or the *stock option* plans (Bebchuk-Fried-Walker, 2002).

There are also other types of costs associated with the presence of minorities in the corporate structure posing a potential risk to the economic entity. It is known in fact, that the existence of a large float in the hands of small and numerous shareholders exposes, at least in principle, the controlling shareholder to the risk of a hostile takeover.

Fees arising from potential disputes of certain minorities must be added to the cost-risk category as some minorities are at times ready to activate the mechanisms of protection devised by law, exercising formal powers of complaint ex Arts. 2408 and 2409 of the Civil Code only out of mere purposes of blackmail or disturbance.

It seems clear that when shares held by persons other than those in control thin out around percentages less than 5-10%, the main function of the minorities to contribute to the issuer financing with capital risk becomes less and the costs consequently associated with the presence of these very same minorities become less tolerable.

This situation physiologically fosters the phenomena of minorities exclusion through the activation of instruments specially designed by law (*freeze-out* and specifically exercising freeze-out) either by conduct or by business choices with the aim to induce the minority shareholders to leave the corporate structure (*freeze-out*).

The different types and formal mechanisms to access the "freeze-out" in light of the experience of the rules of corporate law and of the financial markets on a European and international level makes the attempt to identify the purpose of the freeze-out in the *corporate governance* mechanisms uneasy and for certain reasons inefficient.

In some systems, in fact, the forceful exclusion of minorities is recognized outside the context of regulated markets, as a rule of company law organized in a corporate form. In other systems, the freeze-out regulation (or other forms of minority *freeze-out*) is solely included in the company legislation with listed securities, regardless of the modalities through which the almost totalitarian shareholder has come to hold equity interests higher than the threshold beyond which the freeze-out is recognized. Lastly, in other systems the prevailing practice is characterizing the freeze-out as a benefit granted to the shareholder following a full takeover bid, which has come to hold almost a full equity stake of the *target* capital (Perrone, 2005; Romano, 2008). Even in the latter case, namely the one with tender offer rules, the regulation however is developed unevenly, recognizing now the *freeze-out* of all the shareholders of the listed company (regardless of the possible difference in share types remaining in circulation), and the differentiated *freeze-out* for each share class ("*class by class basis"*).

From the analysis carried out, it was observed that starting from the most extensive assumption, that is the one that would bring to recognize the right to forcedly exclude the minority shareholdings even in the context of unlisted company regulation, towards the most restrictive assumption which would include the freeze-out right only for those listed companies and limited to the regulation on tender offer for the entire share capital, gradually expanding the goals of the legislation.

In the legislation framework of tender offer, which seems to be the most natural context from a positive and normative point of view to tackle the endpoints related to the protection of the almost full shareholder's interests to be entitled, on an exclusive basis, to the benefits of the recent *takeover*, limiting the opportunistic behaviours of minorities and the substantial application of the principal of equal shareholder treatment through which the economic interests of the minorities that participated to the tender offer are protected.

The protection of other general positions of interest (such as the interest to the structure ownership efficiency or to proper market functioning) or specific ones (such as the interest of the nearly totalitarian shareholder to retain for himself a voluntarily way-out of the listing and/or reduce costs associated to the presence of the minority) appears to be more of an incidental effect in the application of the regulation rather than an interest specifically and directly protected by the freeze-out (De Angelo-De Angelo-Rice, 1984; Shleifer-Vishny, 1986; Ritter, 1987; Bagnoli-Lipman, 1988; Bebchuk, 1989; Holmstrom, Nalebuff, 1992; Harrington Jr.-Prokop, 1993; Gomes, 2001; Cornelli-Li, 2002; Van der Elst-Van Den Steen, 2006; Maug, 2006).

The legislator does not also clearly express the *rationale* behind the law, leaving room for interpretation to different purposes which are not always strictly and properly coordinated with one another.

## 3. The regulatory approach to the study of the strike price effects of the freeze-out

Studies conducted on an international level on the strike price determination modalities of the freeze-out focus attention on two basic requirements: the price *fairness* and the *freeze-out rules* efficiency in view of the efficient exchange of corporate control.

### 3.1. Fairness of the strike price of the freeze-out

With regard to the fairness of the residual value of the shares held by minority shareholders, it is possible to envisage two alternatives solutions, namely that (Bebchuk, Kahan, 1999; McCahery-Renneboorg-Ritter-Haller, 2004):

- the strike price of the freeze-out is determined by an independent expert after estimating the economic value of the issuer company capital ("*independent expert valuation*");
- the strike price of the freeze-out is set considering the previous public bidding, when it has been "validated" and "accepted" by the settled shareholders which have taken part in the bidding to a particularly high extent ("*equitable price presumption*"), or rather in order to allow the bidder to have a stake equal or higher than the threshold level indicated by law.

### 3.2. The efficiency of the freeze-out rules in view of the efficient changes in corporate control

The abundant literature, predominantly international, must be invoked when dealing with the efficiency aspects involved in the change of corporate control indirectly connected with the modalities to determine the *freeze-out* price, which starting from 1980 and following the work of Grossman and Hart on tender offer mechanisms and on the problems related to *free-riding*, focused on deepening knowledge on the existing relationships between company value (*pre* and *post* takeover) and the residual share value.

The Grossman and Hart model is based on the assumption according to which when the shareholder holds a minimum amount of shares *(i)* is convinced that the bidder will be able to gain control, *(ii)* is aware that the takeover will increase the value of the company for the effects of an improvement management and for the synergistic benefits activated and *(iii)* is certain that the decision to join or not accept the offer will not be critical for the success of the company, and it might rationally decide not to join the bidding hoping to obtain economic benefits arising from the *change of control*. Such behaviour, extended from the individual to the collective level, without detriment to the impossibility or the inability of minority shareholders to coordinate themselves in order to take on consistent positions, tends to declare the failure of the efficient transfer of control, meaning those control takeovers that the market considers being able to increase the economic value of the company. To overcome this problem, defined as *free-riding* or minority opportunism, two solutions seem possible on a theoretical level.

The first solution consists in offering during a tender offer, a higher price or at least, equal to the economic value of the company *post*-acquisition. In other words:

$$p \geq v$$

where:

$p$ is the price of the takeover bid;

$v$ indicates the economic value of the company following the transfer of control.

It seems clear that this solution is not feasible in terms of economic rationality since the payment during a takeover bid of a price superior to the expected value of the *target* company would end up cancelling the convenience of the bidder to acquire control, making the operation inconvenient under an economic and financial profile.

The second solution, proposed by Grossman and Hart, consists as mentioned in the second chapter of this work, in creating a "diaphragm" between the economic value of the *post*-acquisition perceived by the minority shareholders and the one determined by the buyer (so-called *dilution*).

Such solution, so called *free-rider condition*, can also be written as follows:

$$v \geq p \geq vs$$

where next to the known symbols, *vs* indicates the economic value that the minority shareholders will assign to the shares under the management of the new parent company following acquisition.

The difference between the economic value of the shares *post*-acquisition for the bidding shareholder ($v$) and the value perceived or expected by the minority shareholder ($vs$) would be explained in terms of *dilution factor* ($\Phi$), as shown from the formal relation that follows:

$$v - vs = \Phi.$$

The $\Phi$ factor indicates, in other words, the effect of dilution of the economic value that the management of the new parent company will procure to the minority shares.

The consequence of this theoretical definition is that the problem of minority opportunism can be overcome by providing, during a takeover bid, a lower price than the actual economic value of *post*-acquisition (meaning as such the value determined in the subjective perspective of the new parent company).

Indeed, the *free-riding condition* can be written as follows:

$$p \geq vs$$

and therefore:

$$p \geq v - \Phi$$

where the above symbols have been already defined.

The two researchers add to the abovementioned condition an additional formal requirement that must be met in order to ensure the success of the bid: the price of the takeover bid $p$ should be at least equal to the greater of the economic value of the company for the minority shareholders, expected during the bidder's management ($vs$) and the market value of the shares of the *target* in the period before the launch of the takeover bid ($q$). The latter requirement has been formalized as follows:

$$p \geq q$$

Therefore, according to Grossman and Hart, the *free-riding condition* may be stated as follows:

$$\left.\begin{array}{l} p \geq vs \\ p \geq q \end{array}\right\}$$

more precisely:

$$p \geq max\ \{v - \Phi;\ q\}$$

where the above symbols have been previously defined.

A valuable review of the Grossman and Hart's model especially in view of the *freeze-out* price which is of most interest in this paper was proposed by Yarrow, who after having executed a critical analysis of the limits of the *dilution,* identified in the *compulsory acquisition of shares* the most effective remedy to the problem of minority opportunism. In other words, the researcher states that the existence of a rule that ensures the new parent company the potestative acquisition of the residual shares at the same price of the takeover bid cancels out or significantly reduces the problem of *free-riding*. More precisely, the settled shareholders, in deciding whether or not to join the takeover bid, are aware *a priori* that the possible success of the takeover bid will enact their exclusion from the corporate structure at the same price of the bid, regardless of the economic value that the company will have after the replacement of the corporate control. Should the takeover bid be successful, the *freeze-out rule* provides that the shareholder that has not joined will be excluded at the same amount of the takeover bid. In this perspective, one can say that $vs = p$.

As mentioned, the minority shareholder will not be able to undertake a decision with regard to the economic value of the *post-takeover*, as he will already know that the access to this value will be prevented by the exercising of the freeze-out right on the part of the new controlling company. The *post*-acquisition value of the shares held by the shareholders who did not participate in the bidding will reach a minimum limit in the very same price of the bid.

Wanting to formalize Yarrow's proposal, we can write the *free-riding condition* as such:

$$p = vs$$

and therefore:

$$\Phi = v - p$$

where the above symbols have already been defined previously and it is assumed that *post*-takeover value of the minority shares that have not joined the bid ($vs$) coincide with the strike price of the *freeze-out*.

A recent study conducted by three American authors proposes a different solution than Yarrow's to counteract the phenomenon of *free-riding* during full takeover bids aimed at transferring control.

Amihud, Kahan, and Sundaram suggest the adoption of a rule that allows the new parent company to exercise the freeze-out to purchase the residual shares at a higher price than the takeover price and the market price that the shares of the *target* company had before launching the bid.

The rule on the *freeze-out* price proposed by Amihud, Kahan, and Sundaram can be written with the following formula:

$$vs = max \{r, p\}$$

where, next to the known symbols, $r$ indicates the share market price of the *target* company before launching the takeover bid.

According to the model developed by the authors, the residual price forecast for shares which did not participate to the bid corresponding to the higher of the correspondent takeover bid price and the market price of the shares before the takeover bid would have the effect of discouraging opportunism on behalf of minorities because the price of the *freeze-out* is known or otherwise definable during the validity period of the takeover bid.

It should be noted that the *freeze-out rule* suggested by Amihud, Kahan, and Sundaram encourages on the one hand, the transfer of control taking place at bid prices that settled shareholders judge "fair", limiting opportunism attitudes and discouraging on the other hand, lower takeover bid prices because, assuming that the takeover price ($p$) is lower than the market price of the shares before the bid ($r$), the settled shareholders will not join the very same bid hoping to obtain with the *freeze-out* the highest $r$ value should the takeover succeeded. Such attitude extended to several minority shareholders, will lead however to the failure of the takeover bid with lower prices respect to the current market value of the shares.

The described mechanism fixes, in other words, a lower limit (*lower bound*) to the *freeze-out* price as it ensures that the forceful exclusion of the minority shareholders who did not participate the takeover bid, shall in no case, take place at a price below the market value of the shares in the period before the bid (for other studies: Brudney-Chirelstein, 1978; Burkart, Gromb, Panunzi, 1998; Bebchuk, Kahan, 2000; Goshen-Wiener, 2003; Atanasov-Ciccotello-Gyoshev, 2004; Subramanian, 2004; Bates, Lemmon, Linck, 2006).

## 4. The positive approach applied to the study of the strike price effects of the takeover bid

### 4.1. The price fairness of the takeover right according to Italian legislation

Before the Directive on takeover bids, the Italian legislation on the freeze-out rights entrusts the price *fairness* to the *expertise* of an independent body appointed by the President of the Court where the target company holds headquarters.

Art. 111 of the TUIF establishes in fact that *"The purchasing price is fixed by an expert nominated by the President of the Court where the target company holds headquarters, also taking into consideration the bidding price and the market price of the previous semester"*.

The legislator makes a clear choice in favour of the option defined as an "*independent expert valuation*", while aware of the critical issues related to it.

On a *price fairness* level, the choice raises specific issues with regard to the quality of the information underlying the activity to be performed and to the high degree of technical discretion inherent in the expert valuation.

It seems clear therefore that the option to match the strike price of the freeze-out with the previous price of the takeover bid responds, in a most appropriate manner, to the instance of encouraging a fair price formation ("*fair price*").

The high level of information transparency provided during the takeover bid by law and by the financial markets regulations; the power of the bidders to decide whether or not to participate to the bidding, decreeing the success or the failure and the high degree of takeover bid participations required for the attainment of the strike threshold of the *freeze-out*, are in fact elements that concur in reinforcing the price *fairness* requirement of the strike price of the freeze-out in the "*equitable price presumption*" solution (Pritchard, 2004).

Regarding the evaluation discretion inherent in determining the strike price of the freeze-out, please note that the wording of Art. 111 of the TUIF provides that the price should be determined by the expert appointed by the President of the Court "*taking into consideration also the bidding and the market price of the last six months.*" In other words, the rule requires the expert to determine the price (and not the *value*) of the residual shares, having "*also*" considered the bidding and the market price of the last six months (Iovenitti, 1999; Tizzano, 2004).

The unfortunate literal expression has already been commented during the second chapter of this work given that a third party is unable to determine a price but can *only* come to a value estimation (or better yet of a *fair market value*).

But even assuming that the price of the residual shares can be recognized in their *fair market value*, it still needs to be clarified how the three prices referred to by the norm (the price estimated by the expert, the takeover price and the market price of the last semester) can contribute to the price determination of the *freeze-out*. On this point, it must be necessarily inferred that the expert should refer to methodologies developed by the doctrine and by the practice in company evaluation in estimating the *fair market value* of the shares to be redeemed, however, also considering the indications coming from takeover bid price and the market price of the shares in the last semester.

In other words, according to the wording of Art. 111 of the TUIF, the strike price of the freeze-out could be written as follows:

$$P_{freeze\text{-}out} = \alpha * FMV_{freeze\text{-}out\ shares} + \beta * P_{OPA} + \gamma * Pm$$

where:

$P_{freeze\text{-}out}$ is the strike price of the freeze-out;

$FMV_{freeze\text{-}out\ shares}$ is the *fair market value* of the shares on which the freeze-out right must be exercised;

$P_{OPA}$ is the price of the previous takeover bid;

$Pm$ is the average market price of the shares in the last semester;

$\alpha$, $\beta$, and $\gamma$ indicate the weights that the expert ex Art. 111 of the TUIF will respectively assign to the *fair market value* of the residual minority shares, at the price of the previous takeover bid and at the market price of shares in the last semester.

## 4.2. Expert estimation of the fair market value of residual shares

The *fair market value* identifies a value configuration assimilated to the feasible price on a market abstract from generic entities, that has normal capacity and with no particular strategic intent and thus excludes any potential synergies (achievable by industrial clients on the basis of integration plans between buyers and target) (Guatri-Bini, 2005).

On an equitable level, the *fair market value* is considered to answers at its best, the goals of the *freeze-out* as it also identifies a value configuration which is at the same time also a price configuration, although abstract and theoretical, measurable by an independent expert using the common methods employed for the evaluation of companies.

Article 111 of the TUIF does not contain indications on the methodologies to be followed for determining the strike price (*rectius*: the consideration) of the freeze-out.

It should be however noted that when direct methods of assessment are employed, the *fair market value* estimation of the residual shares without intermediate steps is obtained, as indeed only shares independent from controlling interests are traded on the financial market, their market value is therefore already incorporated the minority discount. The expert should also weigh carefully whether the conditions exist for the application of a discount for lack of negotiability, taking particularly into account factors such as the reduced volume of thin stock trading, the price influence by the takeover bid launched by the new controlling shareholder, the time frame for observing the prices used for the estimation of the *fair market value*.

Should the expert decide to follow an indirect method of assessment (typically a *Discounted Cash Flow*, a *Discounted Dividend Model* or an *Economic Value Added*), the estimated fair market value of the shares to be redeemed in accordance with Art. 111 of the TUIF, consists, in general, in the following fundamental steps:

- the determining of the economic value of the minority shares;
- the application of possible minority discounts and discounts for lacking negotiability.

The economic value estimate of minority shares is perceived as the sum of two divisible components, proportionally considered: that is, the *stand alone* economic value of the *target* company and the value of the divisible universal synergies.

Such configuration value represents, as widely discussed in the previous chapter, the basis for the application of discounts.

On the specific issue of minority discounts, it should be noted that:

- the *freeze-out* shares certainly belong to very small minority packages (in total, equal to the threshold complement for the exercise of the freeze-out: in Art. 111 of the TUIF, this is 2% of the shares with voting rights). There is therefore no doubt that the conditions exist for the application of the minority discount;
- the small size of the share holdings on which to exercise the right to freeze-out warrant the application of the minority discount to the full extent, to be determined on the basis of the arguments made in the previous chapter.

As for the discounts due to lack of negotiability, the subject matter of the freeze-out requires the assessment of two contrasting ideas.

On one hand, a title with a float equal to or less than 2% is so thin as to be withdrawn from the listing, for example in the case of a residual takeover bid. The fifth point of Art. 2.5.1. of the *Regulation of the New Market managed by Borsa Italiana S.p.A.* provides that: "*When performing a residual takeover bid according to Art. 108 of the Unified Finance Law, that is if the result of a takeover bid concerning the totality of the voting shares, the bidder states the willingness to exercise the right to squeeze-out according to Art. 111 of the Unified Finance Law, the shares subject of the bidding are excluded from trading with effect on the day the market opens following the last day of payment of the bidding consideration*".

In general, the thinning of the float and the consequent listing withdrawal have a heavy negative impact on the negotiability requirement, with the effect of increasing the risk of liquidity implied with the possession of the securities: for evaluation purposes this would make the discount application necessary for lack of negotiability.

It should be however considered on the other hand, that the legal commitment assumed by the bidder and stated in the bidding document is binding: in fact, such commitment ratifies the existence of a way out forced by the investment at a price indicated by the expert appointed by the President of the Court, thus rendering irrelevant the effect on the value of the supervening illiquidity of the share.

The reasons cited above lead therefore to believe that the expert should not apply discounts in determining the strike price of the freeze-out for lack of negotiability.

In light of the above, the fair market value of shares can be estimated as follows:

$$FMV_{freeze\text{-}out\ shares} =$$

$$Economic\ value\ of\ the\ minority\ shares\ (W_{minority\ shares}) * (1 - Minority\ discount)$$

## 4.3. The price of tender offer

The market for the control of companies listed on the stock market is subject to precise rules aimed at ensuring transparency in the operations of control replacement and to ensure equal treatment for all shareholders (*Equal Opportunity Rule*).

The legislation, starting from the mandatory takeover bid pursuant to Art. 106 of the TUIF in the formulation prior to the transposition of the takeover directive, imposes on the buyer which has come to hold more than 30% of the listed company capital, to promote a tender offer for the entire share capital.

In the presence of purchases made by the bidder before launching the tender offer, the *minimum* obligatory price for share on all target company shares can be determined as follows (Massari-Zanetti, 2008):

$$P'_{OPA} = \{ [Ppc + Pm] / 2 \}$$

where:

$P'_{OPA}$ is the minimum price of the mandatory tender offer for the entire share capital;

$Ppc$ is the unit price of the titles that belong to the package purchased outside the Stock Exchange or, in any way before launching the bid;

$Pm$ is the average market price of the 12 months before the launching of tender offer.

The price of the mandatory tender offer, determined as prescribed by Art. 106 of the TUIF represents, as mentioned, the minimum price configuration that the bidder may propose to the market. In general, the unit price-limit for the acquisition of the controlling interest in the presence of the obligation to launch a takeover bid on all shares of the target company could go up to the unit value for the acquisition, beyond which the buyer would lose the convenience to conduct the transaction as the benefits related to the acquisition would become null (or even negative). We can therefore state that:

$$Ppc * \alpha + \{ [Ppc + Pm] / 2 \} * \beta \quad \leq \quad W_{acq}$$

where:

$Ppc$ is the unit price of the titles that belong to the package purchased outside the Stock Exchange;

$\alpha$ indicates the capital percentage represented by the package purchased outside the Stock Exchange (not inferior to 30%);

$Pm$ is the average market price of the twelve months before the launch of tender offer;

$\beta$ represents the percentage of the shares which have participated to tender offer;

$W_{acq}$ is the unitary value of acquisition.

The *delta* existing between the acquisition unit value and the unit price of the controlling interest during a mandatory tender offer for the entire share capital can be explained in different ways: in addition to a portion of the control premium (the mechanism for determining the price of tender offer provides for it to be attributed to the settled shareholders), the bidder may also go as far as incorporating in the offered price, doses of indivisible values with the objective of ensuring the success of the bidding, as said, below the acquisition value limit.

Such mechanism of inclusion in the tender offer price of unitary portions of the control premium and of indivisible parts of benefits is more noticeable in the case of voluntary tender offers on the entire share capital, when the takeover price is freely quantified by the bidder which will be encouraged to make the offer more attractive allowing a higher price on a parity with the other conditions.

### 4.4. The market price of shares of the previous semester

Reference made by Art. 111 of the TUIF to the market price of the last six months will determine whether such time frame should or should not include the bidding period or, conversely, if the semester to be considered should be the one preceding the launching of tender offer.

On this issue, the legal doctrine, although in a non-unitary manner, tends to prefer the solution that the semester to be considered for determining the market price of the shares should be the one preceding the moment in which the expert makes his assessment. With the opposite interpretation (that is, the one referring to the six months preceding the publication of the bidding document), the strike price determination of the freeze-out would be levelled out with the assessments made by Consob (the National Commission for Companies and the Stock Exchange) during price determinations of the residual takeover bid *ex* Art. 108 of the TUIF, depressing in such manner the differentiation needs between the residual takeover bid aims and those related to the freeze-out.

The considerations made so far on the mechanisms for determining the strike price of the freeze-out must be revisited in light of the choices made by the legislator with Legislative decree dated November 19th, 2007 no. 229 transposing the Directive 2004/25/EC concerning takeover bids.

### 4.5. The new rules introduced by Legislative Decree no. 229/2007 in the implementation of the Communitarian Directive on takeover

The transposition of Directive 2004/25/EC concerning the rules on tender offers occurred with Legislative Decree dated November 19th, 2007 no. 229, rewrites the predominant profile of the legislation, that is the mechanism for determining the tender offer price.

Art. 106 of the TUIF as amended by the above-mentioned rule provides that the entity, as a result of an acquisition, that comes to hold a participation superior to the threshold of 30% promotes a tender offer, addressed to all shareholders of titles negotiated on a regulated market and on the total of all titles held by them "*at a price not lower than the highest paid by the bidder and by persons acting in concert with him, in the twelve months prior to the communication as set forth in Art. 102, paragraph 1, concerning purchases of securities of the same class*".

The new wording of Art. 106 of the TUIF consistent with the options permitted by the Communitarian Directive, allows Consob to set a takeover bid price below or higher than the highest paid in clearly stated circumstances and in accordance with the predefined criteria.

On a formal level, it can be stated that:

$$P_{OPA} = max\ \{Ppc\}$$

where:

$P_{OPA}$ is the minimum price of the mandatory tender offer for the entire share capital, determined pursuant to Art. 106 of the TUIF for a homogenous share class;

$Ppc$ indicates the unit prices of securities acquired by the bidder (or by entities acting in concert with the bidder) in the twelve months preceding the launch of the offer.

In the event that there were no purchases by the bidder in the twelve months preceding the launching of the offer, the minimum price for the mandatory tender offer is equal to:

$$P_{OPA} = Pm$$

where, next to the symbols previously defined, $Pm$ is the average market price of the last twelve months or of the shorter period available.

The differences compared to the previous mechanism for determining the price of the mandatory tender offer are immediately visible, even on a formal level. More precisely, comparing the two main rules:

$$P_{OPA} = \{\ [Ppc + Pm] / 2\ \} \qquad \textit{ante D.Lgs. 229/2007}$$

$$P_{OPA} = max\ \{Ppc'\ \} \qquad \textit{post D.Lgs. 229/2007}$$

It can be observed that:

*if Ppc> Pm, that is if the unit price of the securities purchased by the bidder in the period prior to the launch of the offer is greater than the average market price observed in a time frame of twelve months*, assumption which is generally valid when purchasing control packages, as the relative price includes the control premium unlike the float circulating on the market, it follows that the new mechanism leads to the determination of a minimum offer consideration which is higher compared to the rules in force before the adoption of the communitarian directives.

This phenomenon is more evident in the Italian context, where the high extent that the control premium generally assumes entails the idea by which the price of the offer can be "mediated" with the market price, producing the effect of reducing the total bidder's financial disbursement. Only in cases more theoretical than real, in which the average market price of the securities in the twelve months prior to the launch of the offer should be greater than the highest price paid in the same timeframe for the purchase of securities of the same class (that is , $Ppc < Pm$), the new mechanism would lead to a determination of the takeover price lower than that determined under the former rule.

As considered, the "*fair price*" mechanism sought by the Communitarian Directive should make the mandatory tender offer more costly and would favour a more equitable distribution of the control premium and of the benefits (also private) generated by the *takeover* (Jensen-Ruback, 1983; Kaplan-Weisbach, 1992; Boone-Mulherin, 2000).

The problems related to the mechanism for the determination of the mandatory tender offer is, in the new legislation, closely tied to the strike price of the freeze-out, given that as previously mentioned, the Legislative Decree 229/2007 has introduced the following key innovations of law:

- The threshold for exercising the freeze-out right has been reduced from 98% to 95% ("*the bidder who comes to hold following a tender offer for the entire share capital a participation equal to at least ninety-five percent of the capital securities has the right to purchase the residual securities [...]*");
- the deadline for exercising the freeze-out right has been reduced from four months to three months starting from the closing date of bid acceptance, provided that the bidder has indicated in the offer document the intention of exercising such right;
- the bidder may exercise the right to freeze-out for a homogeneous class of actions (we speak in this regard, of "*freeze-out on a class by class basis*");
- the consideration of the freeze-out *"is equal to the previous tender offer for the entire share capital, provided that, in case of voluntary bidding, the bidder has acquired following the very same bidding, securities representing not less than ninety per cent of capital with voting rights contained in the offering"* (Art. 108 of the TUIF, paragraph 3), out of the above mentioned case, the consideration is determined by Consob, *"also taking into account the market price of the last six months or of the consideration of any previous offer"*;
- the consideration may take the same shape of the bidding. The possibility of the holder of securities to require the price to be paid in cash, "*to the extent determined by Consob, according to general criteria defined by this Regulation*" (Art. 108 of TUIF, paragraph 5) is nevertheless left open.

The determination of the freeze-out consideration is, therefore, closely related tender offer for the entire share capital which allows the bidder to meet the *freeze-out* requirement (threshold). In fact:

- if the previous tender offer has a mandatory nature, the strike price of the freeze-out coincides with the consideration of the takeover bid, as determined by the above-mentioned rules;
- if the previous tender offer has a voluntary nature, the price of the freeze-out coincides with the consideration of the tender offer only in case the bidder has acquired, following the very same bidding, shares representing not less than ninety percent of the capital with voting rights included in the bidding;
- if the voluntary takeover bid did not allow the bidder to reach ninety percent of the participation of the target company capital and in all other cases involving the exceeding of a ninety-five percent participation, the price of the freeze-out is determined by Consob which will also take into consideration the market price of the last six months or the consideration of any previous bid.

The described automatic determination of the freeze-out price excludes, except in exceptional cases in which the intervention by Consob is required, the possibility that the *freeze-out* of the remaining minorities corresponds to a higher consideration compared to the one concerning a tender offer: this choice would have the effect of discouraging individual behaviours inspired by positions of wait and see and opportunism on the part of the minority shareholders.

The idea designed by the new Art. 111 of the TUIF also responds to the need to eliminate room for technical discretion potentially inherent in the expert's opinion, and states the belief that a widely accepted price by the settled shareholders (that is in a voluntary tender offer, the acceptance index corresponds to surpassing the ninety per cent participation quota of the *target* capital) should be considered fair and therefore extendable also on remaining minorities when assumptions provided by law are applicable.

Appendix A shall examine and interpret, with reference to the Italian financial market, the empirical results of the conducted analysis on the strike price of the freeze-out from the entry in force of Legislative Decree no. 58/1998.

## 5. Value dynamics and governance aspects in determining the price of the freeze-out. Concluding remarks

The conclusions of this present work intend to interpret, taking the unique and strict perspective of the dynamic laws of company value, the solutions accepted in the studies of Grossman and Hart, of Yarrow and Amihud, Kahan, and Sundaram in the belief of being able to contribute to the fervent debate, also on an international level, on the conditions that influence the effectiveness of corporate control replacement and in general to the success of acquisitive operations aimed at creating value.

The Grossman and Hart model identifies, in a nutshell, a hindrance to the efficient corporate control replacement in the individual conduct of the settled shareholder who do not participate to the tender offer, sensing that the unit value of the shares of the company *post*-acquisition will be higher than the takeover price. Such individual attitude when extended to the collective proclaims the failure of the control transfer.

The proposed solution, according to which it would be sufficient to generate in the minority shareholder a different perception of the value of which it may have access (*dilution* mechanism), appears to be exceeded by the evolution of studies on the nature and extent of private control benefits.

The minority shareholder is aware of the fact that:

- he may never access the full strategic value of acquisition ($v$);
- the price of the bidding ($p$) will be placed in an intermediate position between the economic value of the company for the minority shareholders ($vs$, similar to the *fair market value* of the minority shares) and the market price of the shares of the *target* in the period before the offer ($q$) on one hand, and the strategic value of acquisition ($v$), on the other.

He will, however, tend to assess the magnitude of the dilution effect (i.e. dilution factor), based on a number of conditions hardly appreciable in a formal model, such as, for example, the *management* quality of the bidder, the past history of the buyer in the M&A operations, his ability to generate shareholder value, the quality of his strategic projects, the capacity to grow though external lines, that is without resorting to continuous social capital increases, etc.

The solution of legalized dilution of proprietary rights of the minority shareholders in terms of value dynamics is therefore not only inelegant but also ineffective.

The proposal of Yarrow to address the problem of minority opportunism in the context of freeze-out rights is certainly interesting on a practical level: the settled bidder who is aware that, in case of takeover success, will be forcibly removed from the corporate structure at the same amount of the offer, will tend to limit the scope of action of his arbitration. He may, at most, bet on the success or on the failure of the offer, but should he gain perception of the success of the takeover, he will not be able to take a decision with regard to the economic value of the *post-takeover* shares. Should the tender offer have success, such value in the said *freeze-out* rule, will necessarily coincide with the price at which the bidder will exercise the right to purchase, that is at a price that is coincident with the consideration of the previous bid.

Yarrow's solution is in fact the one adopted by the Directive 2004/25/EC and is currently being implemented in Legislative Decree 229/2007 which amends art. 111 of the TUIF.

Setting a minimum price limit (*lower bound*), as suggested by Amihud, Kahan, and Sundaram, should also discourage low takeover bid prices, that is with lower considerations than the market value of the shares in the period before the offer. In these cases, the freeze-out will be exercised at the higher of the consideration of the tender offer and the market value of the shares *before* the bidding.

The solution to create an automation able to let the strike price of the freeze-out coincide with the consideration of the previous tender offer requires some reflection on the underlying economic significance. More precisely, we want to investigate the relationship between the price of the mandatory tender offer and the *fair market value* of the residual shares.

To do this, it is necessary to recall the mechanisms for determining the price of the takeover. In fact:

- if the *minimum* price the mandatory tender offer is equal to the arithmetic average between the unit price of the securities that are part of the package purchased before the launch of the offer (*Ppc*) and the average unit price of the market in the twelve months preceding the launch of offer (*Pm*) (*solution adopted by the previous formulation of Art. 106 of the TUIF*), the exercise right to purchase at the corresponding value of the takeover bid means to recognize to the shareholders (*pro-quota*) that did not participate to the bidding *at least* half of the premium paid during the acquisition of the controlling package or of the relevant package, leaving them the same emoluments of the settled shareholders that have participated to the bid;
- if the *minimum* mandatory tender offer is equal to the maximum price paid by the bidder for the same securities in the twelve months preceding the offer ($P_{OPA} = max\ \{Ppc'\ \}$), the recognition of the consideration for the tender offer to the minority shareholders holding the shares to be redeemed with the freeze-out has the effect of extending to them (of course, on a *pro-rata* basis) the entire extent of the premium paid to the holder of the control package and to the shareholders who have subscribed to the offer (*solution adopted by the Directive 2004/25/EC and implemented in the new formulation of Art. 106 of the TUIF, from Legislative Decree 299/2007*).

The question of how to determine the freeze-out price should be addressed on two distinct levels.

In terms of economic rationality and value dynamics, the extension of the control premium to the remaining shareholders, or even part of the synergistic indivisible benefits, components which are often implied in the takeover price, does not respond to any logic (Gurney, 1987; Copeland-Koller-Murrin, 1990; Zanda-Lacchini-Onesti, 2005). On the contrary, by arguing on the estimated *fair market* value of the shares subject to the *freeze-out*, it was noted that conditions do apply for the application of a minority discount.

By addressing the issue on this ground, the sharing of the control premium components or of indivisible parts of the acquisition value with the remaining minorities ends up creating a treatment disparity between the settled shareholders, who have joined the bid, and those that did not.

If in fact, the tender offer responds to the logic in which the leading bidder extends to the minority shareholders the extent of the premium paid to the former parent (logic also enhanced by the mechanism of the *best price rule* laid down by Directive 2004/25/EC) it seems clear that to deal, on an economic level, in the same manner with the participating shareholders and the shareholders on std-by or opportunistic, creates a substantially obvious disparity. In other words, participation to the control premium should be recognized only to shareholders who have accepted the offer and its terms.

The freeze-out is evidently addressed to the shareholder who decides to wait, that is, to bet on the outcome of the bid or rather, on the failure to reach the threshold level in order for the bidder to exercise the freeze-out.

In this circumstance, in fact, on one hand, the shareholder *free-rider* could, in the effective control acquisition, benefit from the share value increase resulting from a better management that the new parent company should be able to ensure. On the other hand, the shareholder who joined the tender bid would collect the offer amount, forgoing the possibility of accessing the benefits arising from the higher post-takeover value of the shares in his possession.

It seems clear that the rule that raises the price of the freeze-out corresponding to the consideration of the takeover, waivers to assign a value to the bet made by the *free-rider*. These, in fact, will receive even in if the event the wager should not take place (that is, the assumption that the bidder reaches the threshold level to exercise the *freeze-out*) the very same treatment (*pay-off*) of the shareholder that has not made any wager in participating to the tender offer (in other words, it will be recognized during the freeze-out, the consideration of the offer).

Yarrow's solution sterilizes or attenuates the opportunistic behaviour of minorities as far as share price/value arbitration is concerned (price of the tender offer and share value *post-takeover*), but does not affect the bet on the event represented by the threshold achievement to exercise the freeze-out. To discourage this form of opportunism, it would be favourable to introduce a mechanism to determine the price of the freeze-out in a position to exclude *free riders* from participating in the control premium inherent in the takeover bid price, thus creating a substantial equal treatment of all settled shareholders. Shareholders who do not participate to the offer, would be recognized during the *freeze-out*, a value which would not be punitive (i.e. not detrimental to their legitimate property rights) represented by the *fair market value* of the shares in their possession.

The *delta* existing between the price of tender offer and the (lower) *fair market value* of the minority shares would constitute the "price" (*pricing*) of the bet.

One could argue that this type of solution would have the effect of increasing the pressure on the settled to sell, but as it has been widely noted such problem can be effectively confronted also through other instruments, such as the establishment of rules designed to encourage maximum transparency in the bidding process or the approval of appropriate powers of self protection for the shareholders or for the directors of the target company.

Moreover, the establishment of the right to freeze-out, if wedged on a lower level than the one relative to the exercise of the freeze-out, could generate the effect of loosening the coalition to sell, without however prejudging the effectiveness of the plans designed to prevent the occurrence of opportunism behaviours.

On a subjective level, however, the question of the mechanism for determining the price of the *freeze-out* could be addressed in other terms.

In other words, the subjective profile of the target minority of the freeze-out should be clarified, it should be understood who the shareholders are that hold 5% (in the old formulation of the TUIF, 2%) of the capital that did not participate to the tender offer.

It is clear that, if the conviction is rooted that these residual shareholders belong to the class of shareholder investors or disturbing shareholders, i.e. informed and updated subjects on the evolution of corporate events, familiar with the instruments to protect their patrimonial interests, the considerations made previously remains valid: they are considered aware *free riders*, informed betters, which must be attributed with a *price* combination, a different *pay off* from the settled shareholders who have decided to participate to the offer.

But if the profile of the target shareholder of the freeze-out is that of many small investors which are defined as accidental, disinterested, not updated on the company events (known as "*atomistic stakeholders*") or, as often happens, the "unintentional" shareholders, the issue of the strike price determination of the freeze-out may be addressed and resolved on a different level from value dynamic laws. In this perspective, the price of the freeze-out takes on an equitable valence, that is regardless of the logic of economic rationality and, therefore, the solution to recognize the price of the tender offer to these residual shareholders, uninformed and disinterested, may be considered acceptable.

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## Appendix 1

*Subject of investigation*

The subject of analysis of the conducted investigation is represented by all exercise cases of freeze-out pursuant to Art. 111 of the TUIF, recorded in Italy since the entry in force of Legislative Decree dated February 24th 1998 no. 58 (July 1st 1998) until the entry in force of the Legislative Decree dated November 19th 2007 no. 229 (December 28th 2007).

*Method of analysis*

**The chosen methodology for the empirical analysis**

The data collection covered the wide scope of reference of tender offers conducted in Italy in the period ranging from July 1st 1998 to December 28th 2007 and ended with the bidder's exercise of the right to freeze-out.

*Sample*

46 operations were overall detected in which the target company was divided between segments of Borsa Italiana and by trade sectors:

| | No target company | N. target companies in the bank/ insurance sector. | No. target companies in the industrial sector |
|---|---|---|---|
| Blue Chip | 2[54] | 2 | - |
| Star | 14 | 5 | 9 |
| Standard | 30 | 7 | 23 |
| New Market | - | - | - |
| Total | 46 | 14 | 32 |

**The strike price of the freeze-out in Italy in the period ranging from July 1st 1998 to December 28th 2007**

| *N.* | *Offerente* | *Target* | $P_{OPA\ mandatory}$ $\Phi$ | $P_{OPA\ voluntary}$ $\Psi$ | $P_{OPA\ residua}$ $\Omega$ | $P_{FREEZE\text{-}OUT}$ $A$ | *Delta* $(A-\Phi)$ % | *Delta* $(A-\Psi)$ % | *Delta* $(A-\Omega)$ % |
|---|---|---|---|---|---|---|---|---|---|
| 1. | *Siemens* | *Teleco Cavi* | - | - | 4,545 | 4,545 | - | - | 0,00 |
| 2. | *Sparta* | *Zucchini* | - | 8,000 | 7,940 | 7,940 | - | -0,76 | 0,00 |
| 3. | *Fiat* | *Comau* | - | 3,250 | 6,250 | 6,250 | - | +48,00 | 0,00 |
| 4. | *Ina* | *Assitalia* | - | 5,920 | - | 5,450 | - | -8,62 | - |
| 5. | *Finmeccanica* | *Fiar* | - | 3,099 | 3,600 | 3,560 | - | +12,95 | -1,12 |
| 6. | *Milano Centrale* | *Unim* | - | 0,490 | 0,520 | 0,520 | - | +5,77 | 0,00 |
| 7. | *Cinquedi* | *Castelgarden* | 4,650 | - | 5,320 | 5,010 | +7,19 | - | -6,19 |
| 8. | *Nuova Strategia* | *Deroma Holding* | 7,075 | - | 7,870 | 7,870 | +10,10 | - | 0,00 |
| 9. | *Dieci* | *Cartiere Burgo* | - | 10,200 | 10,200 | 10,200 | - | 0,00 | 0,00 |
| 10. | *Fiat* | *Magneti Marelli* | - | - | 5,500 | 5,000 | - | - | -10,00 |
| 11. | *Fiat* | *Toro Assicurazioni* | - | 16,000 | 16,860 | 16,150 | - | +0,93 | -4,40 |
| 12. | *Fonspa* | *Credito Fondiario* | 1,451 | - | 1,451 | 1,000 | -45,10 | - | -45,10 |
| 13. | *Ieffe* | *Italfondiario* | - | - | 6,311 | 6,080 | - | - | -3,80 |
| 14. | *San Paolo Imi* | *Banco di Napoli* | 1,533 | - | 1,549 | 1,549 | +1,03 | - | 0,00 |
| 15. | *Reale Mutua Assicuraz.* | *Italiana Assicurazioni* | - | 13,750 | - | 13,750 | - | 0,00 | - |
| 16. | *Banca Pop. Milano* | *Banca di Legnano* | 15,797 | - | - | 15,715 | -0,52 | - | - |

[54] Of the two freeze-out operations on listed shares in the Italian *blue chip* segment, one involved the shares of a listed company in the Mib 30. It is the *freeze-out* of minorities by BNP Paribas on the residual shares of Banca Nazionale del Lavoro.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17. | *Programma 2002* | *Safilo* | 12,500 | - | 14,480 | 12,940 | +3,40 | - | -11,90 |
| 18. | *Asio* | *Immobiliare Metanopoli* | - | - | 2,000 | 1,890 | - | - | -5,82 |
| 19. | *Finos* | *Rotondi Evolution* | - | 2,400 | - | 3,500 | - | +31,43 | - |
| 20. | *Macchine Utensili* | *Gildemeister Italiana* | - | - | 4,519 | 4,495 | - | - | -0,53 |
| 21. | *FINMA-MAGIMA* | *Marangoni* | - | 2,700 | 3,004 | 2,850 | - | +5,26 | -5,40 |
| 22. | *Impe Lux - Coci* | *Ferretti* | - | 4,350 | 4,350 | 4,3275 | - | -0,52 | -0,52 |
| 23. | *Selfin* | *CALP* | - | 3,220 | 3,220 | 3,220 | - | 0,00 | 0,00 |
| 24. | *Eni* | *Italgas* | - | 13,000 | - | 13,000 | - | 0,00 | - |
| 25. | *Bracco Biomed* | *Esaote* | - | 5,165 | 5,192 | 5,180 | - | +0,29 | -0,23 |
| 26. | *Deutsche Lufthansa* | *Air Dolomiti* | - | 14,680 | - | 12,200 | - | -20,33 | - |
| 27. | *San Paolo – IMI* | *Banca Pop. dell'Adriatico* | - | 7,260 | - | 7,260 | - | 0,00 | - |
| 28. | *Antoniana Pop. Veneta* | *Interbanca* | - | 19,500 | - | 19,500 | - | 0,00 | - |
| 29. | *Palio* | *Savino Del Bene* | - | 2,500 | 2,500 | 2,500 | - | 0,00 | 0,00 |
| 30. | *Wide Design* | *Italdesign-Giugiaro* | - | 4,400 | 4,400 | 4,400 | - | 0,00 | 0,00 |
| 31. | *Cortiplast* | *Saiag* | - | - | 4,010 | 4,010 | - | - | 0,00 |
| 32. | *FINM* | *MRI* | - | 1,900 | 2,224 | 2,081 | - | +8,70 | -6,87 |
| 33. | *UniCredito Italiano* | *Locat* | - | 0,900 | 1,024 | 1,070 | - | +15,89 | +4,30 |
| 34. | *Giro Investimenti I* | *Saeco Intern. Group* | - | 3,590 | 3,590 | 3,590 | - | 0,00 | 0,00 |
| 35. | *Nicri* | *Procomac* | - | 3,500 | - | 3,500 | - | 0,00 | - |
| 36. | *Roland Europe* | *Roland Europe* | - | 1,600 | 1,656 | 1,656 | - | +3,38 | 0,00 |
| 37. | *Zi.Fi.* | *Ind. Zignago S. Margherita* | 18,600 | - | 18,600 | 18,600 | 0,00 | - | 0,00 |
| 38. | *ABN AMRO* | *Banca Antonveneta* | 26,500 | - | - | 26,500 | 0,00 | - | - |
| 39. | *BNP Paribas* | *BNL* | 2,9275 | - | 2,9275 | 2,9275 | 0,00 | - | 0,00 |
| 40. | *Glass Italy* | *Partecipazioni Italiane* | - | - | 0,2079 | 0,1788 | - | - | -16,28 |
| 41. | *Assicurazioni Generali* | *Toro Assicurazioni* | 21,200 | - | - | 21,200 | 0,00 | - | - |
| 42. | *Finmeccanica* | *Datamat* | 9,650 | - | 9,911 | 10,040 | +3,88 | | +1,28 |
| 43. | *Eurizon* | *Banca Fideuram.* | - | 5,000 | 5,000 | 5,000 | - | 0,00 | 0,00 |
| 44. | *Impresa Pizzarotti* | *Garboli* | 2,309 | - | 2,550 | 2,373 | +2,70 | - | -7,46 |
| 45. | *Wizard* | *Marzotto* | 3,990 | - | 3,990 | 3,852 | -3,58 | - | -3,58 |
| 46. | *Consulting 2* | *Targetti Sankey* | 7,400 | - | - | 7,400 | 0,00 | - | - |

## Empirical analysis results

The empirical analysis was set-up to record three possible differentials:

a) the differential between the strike price of the freeze-out and the price of the mandatory bid ($A - \Phi$) determined according to the rules of Art. 106 of the TUIF;

b) the differential between the strike price of the freeze-out and the price of the voluntary tender offer ($A - \Psi$), the latter freely established by the bidder according to the objectives of the offer;
c) the differential between the strike price of the freeze-out and the price of the residual takeover ($A - \Omega$) that is, as known, determined by Consob on the basis of Art. 108 of the TUIF.

**Summary of the empirical results conducted on the strike price of the freeze-out in Italy**

| *Delta (A – Φ)* | | | | | |
|---|---|---|---|---|---|
| *Positive delta (43% of cases)* | | *Negative delta (21% of cases)* | | *Overall delta (100%)* | |
| Media | Median | Media | Median | Media | Median |
| +4.72% | +3.64% | -16.40% | - 3.58% | -1.49% | 0.00% |

| *Delta (A – Ω)* | | | | | |
|---|---|---|---|---|---|
| *Positive delta (40% of cases)* | | *Negative delta (16% of cases)* | | *Overall delta (100%)* | |
| Media | Median | Media | Median | Media | Median |
| +13.26% | +7.24% | -7.56% | -4.69% | +4.27% | 0.00% |

| *Delta (A – Ψ)* | | | | | |
|---|---|---|---|---|---|
| *Positive delta (6% of cases)* | | *Negative delta (46% of cases)* | | *Overall delta (100%)* | |
| Media | Median | Media | Median | Media | Median |
| +2.79% | +2.79% | -8.08% | -5.61% | -3.53% | 0.00% |