Quantitative and qualitative analysis of valuation methods used by valuators and independent experts within the context of public offers (100 transactions)

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This survey is taken from a thesis which was awarded a ESCP Europe in 2007

"Analysis of the valuation methods applied within the framework of public offerings"

Horwath Audit France

Survey purposes

Evaluation punctuates the main stages in the life of a firm (takeover offers, asset valuations, impairment tests, restructurations, public offers, acquisitions, disposals, mergers…). Many evaluation techniques and models allow managing the diversity and the complexity of the situations. However, because of the volatility of the markets and the bursting of the speculative internet bubble, it is now justified to wonder about the relevance of the valuation methods used. Thereby, it is essential to understand the foundations, the scope and the limits of these methods.

The survey carried out by HORWATH AUDIT FRANCE tries to answer these questions by analyzing the methods used by valuators and independent experts within the context of takeover offers. The selected transactions are extracted from the AMF (Autorité des Marchés Financiers, French equivalent of the SEC) internet site which lists the performed transactions. This survey has been completed on the basis of a sample of 100 transactions (delisting offers and take-over bids), relative to the period 2001-2007, on which valuators and independent experts have been called upon.

This survey is structured on three parts:

- ✓ firstly, a quantitative study, which indicates that only a few methods are really used by valuators and experts,
- ✓ the comparative analysis between the methods employed in 1996 and those employed between 2001 and 2007, and the analysis of the AMF jurisprudence, which allows to understand the evolutions observed concerning the choice of methods employed and retained as references,
- ✓ Lastly, the qualitative analysis of the correlation between the values accepted by valuators and experts and the offered prices, which shows the supremacy of some methods, called « main methods».

Reminder of the applicable regulation in France

Resorting to an independent expertise is imposed by article 5.7.1 of the Conseil des Marchés Financiers regulation. This regulation provides for the intervention of an independent expert in charge of assessing the fairness of the offered price in case of buy-out offers followed by a squeeze-out (OPRO); the squeeze-out is subject to the condition that the majority-shareholder(s) hold at least 95% of the company's capital and rights to vote.

The correct valuation methods within the context of a public offer of withdrawal are indirectly specified in this regulation.

According to this regulation, « *at the conclusion of a buy-out offer, the securities that have not been tendered to the offer by the minority-shareholders can be transferred to the majority-shareholder(s) from the moment that they represent 5% or less. In support of the offer project, the offeror provides the Board of Directors with a valuation of the securities of the targeted firm. This evaluation uses the objective methods applied in case of asset transfers taking into account the assets value, the achieved profits, the stock-exchange value, the existing subsidiaries and the perspectives* *in terms of activity, with an appropriate balancing for each case. This valuation is accompanied with the opinion of an independent expert, whose approval has previously been submitted to the Board of Directors and notified by it to the AMF Board that has a right to oppose* ».

Moreover, the court of appeals in Paris has several times pointed out (litigations SOGENAL in May 1995 and ELYO in May 1998) the possibility for the valuator and the independent expert « *to set aside, if the case arises, some criteria accepted by law, that are not relevant, and to retain some methods, non-provided for in law, in the name of a legitimate valuation of the firm* ».

New regulation: European Directive 2004/15 - 21 April 2004

The new European Directive 2004/15 of the 21st of April 2004 concerning take-over bids will introduce a new regulation framework. The transposition deadline is the 20th of May 2006.

This European Directive does provide neither admissibility nor multi-criteria analysis, "the Member States can actually provide for additional conditions and arrangements stricter than those held by the Directive".

It must be interpreted as an instruction of minimal harmonization, leaving the possibility for each authority to put forward some specific measures in its general regulation aimed at protecting minority-shareholders.

The only measures laid down by the European Directive are:

- for mandatory offers (article 5): the control authorities must impose the respect of the « fair price » defined as the higher price paid for the same securities by the bidder during a period fixed by the Member States from 6 months minimum to 12 months maximum before the targeted bid (a price indexing is compulsory if some shares are bought at a higher price during the offer).

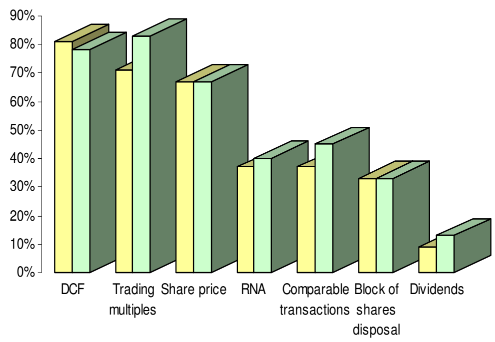
However, the Member States can let their controlling authorities accept a reduction or a rise in price according to clearly defined criteria: for example if the highest price was fixed in accordance between the purchaser and the vendor, if the market prices have been manipulated, if the market prices are modified by exceptional events**,** to allow the rescue operation of a company which has financial difficulties.

- For isolated or consecutive squeeze-outs (art 15), the « fair price » principle applies. If a squeeze-out follows a voluntary offer, the offered price is assumed to be fair if the bidder has acquired by acceptance of the offer 90% at least of the shares accompanied with rights to vote. If the squeeze-out follows a mandatory offer, the offered price is assumed to be fair.

1. Valuation methods analysis

1.1 Quantitative analysis of applied methods

Applied methods	Expert		Valuator	
	Number	%	Number	%
Discounted Cash Flow (DCF)	81	81%	78	78%
Trading multiples	71	71%	83	83%
Share price	67	67%	67	67%
Revalued Net Assets (RNA)	37	37%	40	40%
Comparable transactions	37	37%	45	45%
Block of shares disposal	33	33%	33	33%
Dividends	9	9%	13	13%
Total	335		359	

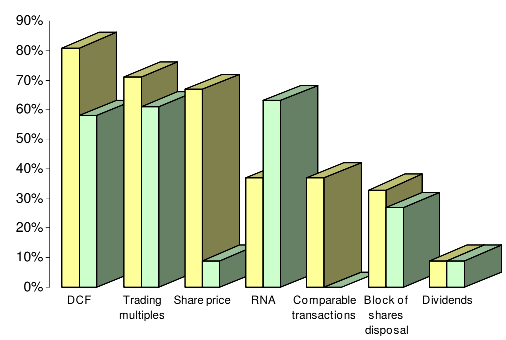


Among the selected 100 operations, 335 valuation methods have been used by an independent experts, that is to say an average of 3, 35 methods for each operation.
Among the selected 100 operations, 359 valuation methods have been used by independent experts that is to say an average of 3, 59 methods for each operation.
The main methods applied in the selected sample by the independent experts are:

- The discounted cash flow method concerning 81% of the operations,
- the trading multiples method (71%),
- the share price method (67%).

This report has been compared with an analysis made on the basis of a first sample of OPRO, published by LAZARD in April 1996. The table below makes a comparison between the most frequently used methods in 2001/2007 taken from the analyzed sample, and those taken from the analysis published in 1996 in AGEFI. It is aimed at understanding the evolution of the methods used by independent experts.

Applied methods	% of utilisation by the expert	
	2001 / 2004	1995 / 1996
Discounted cash flow (DCF)	81%	58%
Trading multiples	71%	61%
Share price	67%	9%
Revalued net assets (RNA)	37%	63%
Comparable transactions	37%	NA
Block of shares disposal	33%	27%
Dividends	9%	9%
Total		



The discounted cash flow method is currently retained in 81% of the cases against 58% in 1996. It has become the most frequently used method by valuators; it is based on the company's internal data and is the only method that takes into account the company's activity forecasts. This method cannot be ignored.

According to this method, the company's equity value is the discounted projected debt-free cash flows added up with a terminal value; the discount rate is the weighted average cost of capital.

In the analyzed sample, the usual method consists in discounting:

- The cash flow projection generally covering a 4 to 7-year period,
- A perpetual discounted cash-flow (terminal value).

The discount rate in the analyzed sample ranges from 5, 6% to 16, 8% with an average value amounting to 10, 4%. This rate depends on the company's financial structure and on its business segment. The perpetual growth rate applied to the perpetual discounted cash-flow retained for the analyzed sample ranges from 0,5% to 3,8%, with an average value amounting to 1,8%.

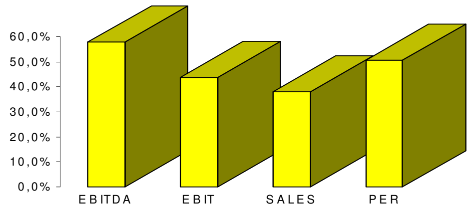
In a decision of April 2004 (OPRO France Telecom / Orange), the Court of Appeal in Paris accepted the possibility to retain some parameters different from those used in the social accounts, in order to value a company with the discounted cash flow method within the context of a delisting offer ; « *the valuators (…) could take into account different hypothesis or parameters because the regulation and methodological framework is different for each accounting year of valuation* ».

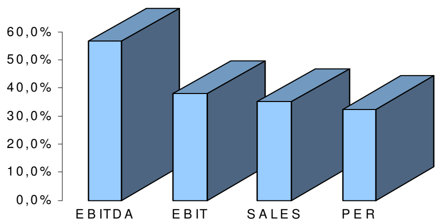
Moreover the Naulot report recommends to apply the DCF method to all takeover offers and suggests certain recommendations concerning the implementation of this method. Those are aimed at determining at best the terminal value.

The trading multiples method has been used in 71% of the cases against 61% in 1996. However, the study in 1996 did not differentiate the trading multiples method from the comparable transactions method currently used in 37% of the cases. In general, the analogical methods (trading multiples and comparable transactions) are thereby more often applied today than in 1996, in particular because of the development of means of information and the internationalization of the markets that make researches on trading multiples and comparable transactions easier. The internet development allows in particular having easier access to accurate financial information.

The analyzed sample shows the following conclusions in connection with the implementation of the multiples:

Retained multiples	Trading multiples		Comparable transactions	
	Number of uses	Use rate	Number of uses	Use rate
EBITDA	41	57,7%	21	56,8%
EBIT	31	43,7%	14	37,8%
Sales	27	38,0%	13	35,1%
PER	36	50,7%	12	32,4%
Others	22	31,0%	9	24,3%
Total	**157**	**71**	**69**	**37**





The multiples commonly used within the context of analogical methods are the EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) multiple, the EBIT (Earnings Before Interest and Taxes) multiple, the sales multiple and the PER (Price Earning ratio) multiple. The EBITDA multiple is the most commonly used multiple.

The share price method is currently used in 67% of the operations against only 9% in 1996. The test case « Remy Cointreau / Piper Heidsieck » explains this evolution. In this legal precedent, the AMF mentioned that this criterion could not be ignored for listed companies, which led to widen to delisting offers (OPR) the rules peculiar to takeover bids (OPA). These rules mention that the offered price cannot be lower than the latest 60 trading day average.

Since that, valuators and independent experts make sure that this regulation is respected. As a consequence, this method is retained in independent expertise reports.

The reference to the disposal of a block of shares is used in 33% of the operations of the current sample against 27% in 1996.

However it is not possible to speak of methodological choice because this criterion depends on the operation and not on the independent expert's choice.

The Elyo litigation reminds us of the inescapable nature of this method and the necessity for the independent expert confronted with a transaction value higher than the offered price, even if the transaction value is old, to wonder about this value and, if necessary, to obtain an adjustment of the offered price.

Article 5 of the new European Directive leads to add as a minimum price the reference to the transactions made by the offeror during the previous year for mandatory offers.

The **revalued net assets method** has been used in 37% of the cases of the sample, against 63% in 1996. This fall is explained on the one hand by the type of company (the revalued net assets method is suitable for holding companies that have produced many OPRO's in 1996) and, on the other hand, by « the fashion effect » that requires that DCF has replaced the revalued net assets as the main method.

According to many independent experts, the revalued net assets method is limited because it does not take into account the company's future prospects. However, this standpoint is risky considering the evolution of case law.

However, a legal precedent has led to debate on the necessity to apply the net book value in case of a delisting offer. A judgment of the Court of Appeal in Paris on April 9th 2002, confirms the AMF's decision of November, 23rd 2001, rendered in the Louis Dreyfus

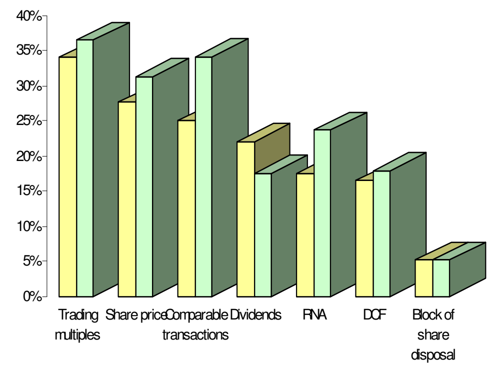
Citrus case and requires proposing a minimum price at least equal to the « revalued » net book value in connection with the delisting offer.

The dividends method remains suddenly applied (9% in the current statistic study as in the sample of 1996). The reason is that this method is redundant with the discounted cash flow method and is based on the analysis of data solely dependent on the majority shareholder's will and does not respond to the objectivity criterion required by law (judgment of the Court of Appeal in the Geniteau/Elyo case in 1998).
This jurisprudence is also expressed in the Tissot/Genefim case of May 5th, 1998 in which the Court of Appeal stated « *that the independent expert could not be blamed for not having retained the discounted dividends method from the moment that this method would have led to take into account an uncertain event (…)* ».

1.2 Analysis of the average premiums in the valuation methods used by independent experts and valuators

Among the 100 analyzed operations, 335 methods have been applied by independent experts and 359 methods have been applied by valuators. Among these, 321 methods have been applied in common. The table below sums up, method by method, the average premiums obtained in comparison with the offered price for each operation.

Applied methods	Expert		Valuator	
	Number	Average premium	Number	Average premium
Trading multiples	71	34,0%	71	36,5%
Share price	64	27,7%	64	31,4%
Comparable transactions	36	25,0%	36	34,2%
Dividends	7	22,1%	7	17,5%
Revalued net assets (RNA)	35	17,6%	35	23,7%
Discounted cash flow (DCF)	78	16,5%	78	17,9%
Block of share disposal	30	5,1%	30	5,1%
Total	**321**	**21,1%**	**321**	**23,7%**



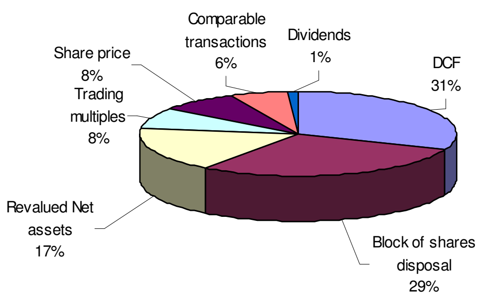
The derived average premium in the 321 implemented methods amounts to 21,1% according to independent experts and to 23,7% according to valuators.
The premiums calculated by the independent experts are lower than those calculated by the valuators for all the valuation methods except the dividends methods.
The most important premiums, calculated by independent experts, concern the analogical methods (34% for the trading multiples and 25% for the comparable transactions) and the share price method (27, 7%).

The premiums are lower for the intrinsic valuation methods (16,5% for the DCF, 22,1% for the dividends and 17,6% for the revalued net assets) and for the references to a block of shares disposal. In this latest case, they amount to 5,1% of the offered price only because many operations have an offered price equal to the one retained for the block of shares disposal.

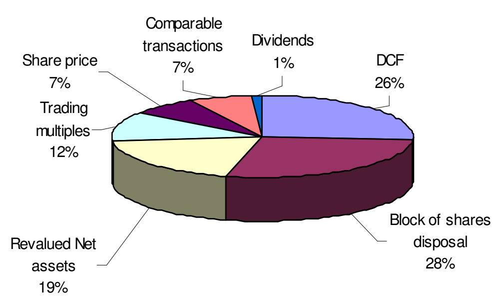
2. Analysis of the different offered prices in connection with the different applied methods

This analysis is aimed at showing which methods allow to determine the bid price and those which are rather used as a way of control or crosscheck.

Reference method	Expert		Valuator		Difference
	Number	%	Number	%	
Discounted cash flow	31	31,0%	26	26,0%	5
Block of shares disposal	29	29,0%	28	28,0%	1
Revalued Net assets	17	17,0%	19	19,0%	-2
Trading multiples	8	8,0%	12	12,0%	-4
Share price	8	8,0%	7	7,0%	1
Comparable transactions	6	6,0%	7	7,0%	-1
Dividends	1	1,0%	1	1,0%	0
Total	100	100%	100	100%	



Expert



Valuator

The analysis of the table above calls for the following comments:

Concerning the independent experts, the bid price has been determined according to the sale price of a controlling interest for 29% of the operations and it has been determined according to the discounted cash flow method for 31% of the operations. Both methods are inescapable. Otherwise 17% of the operations have had their bid price determined according to the revalued net assets method.

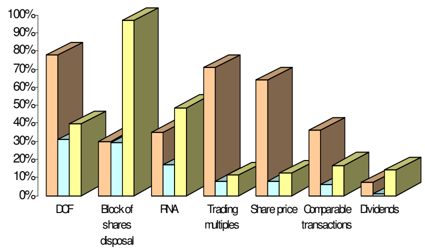
These three methods determine therefore by themselves 77% of the bid prices and constitute some main methods.

Conversely, the trading multiples, share price, comparable transactions and dividends methods are used in only 23% of the cases to determine the bid price and remain therefore methods of secondary importance.

3. Synthetic analysis of valuation methods used by independent experts within the context of delisting offers

The table below sums up, as a synthesis, the developed analysis in the previous paragraphs by adding up the applied methods / reference methods ratio (B/A).

Methods	Independent expert				(B)/(A)
	Applied (A)	%	Reference (B)	%	
Discounted cash flow	78	78%	31	31%	39,7%
Block of shares disposal	30	30%	29	29%	96,7%
Revalued net assets	35	35%	17	17%	48,6%
Trading multiples	71	71%	8	8%	11,3%
Share price	64	64%	8	8%	12,5%
Comparable transactions	36	36%	6	6%	16,7%
Dividends	7	7%	1	1%	14,3%
Total	321		100		



The block of shares disposal has been retained as a reference criteria by the independent experts in 29% of the cases for an implementation rate of 30%, that is to say a use rate of 96,7%.

The discounted cash flow and revalued net assets methods have been retained as reference criteria respectively in 31% and 17% of the cases with respective implementation rates of 78% and 35%. Their use rate are then 39,7% and 48,6%.

Conversely, the trading multiples, the share price and the comparable transactions methods have a weak use rate as reference method, notwithstanding their implementation rate.

Thus, two groups of valuation methods can be distinguished:

- ☐ the intrinsic methods (discounted cash flow and revalued net assets) and the block of shares disposal that have high use rates as reference methods ; these methods can be considered as reference methods to determine the offered price;

- ✓ the analogical methods (trading multiples, comparable transactions), the share price method and the dividends method which have weak use rate as reference methods; these methods are thus used as a way of control but rarely contribute to the offered price fixing.

CONCLUSION

The study made on the basis of 100 public offers, which identifies the practices as regards independent expertise, sets the block of shares disposal method as the main method fixing the offered price. Article 5 of the new European Directive which leads to add as a minimum price the reference to the transactions made during the previous year will therefore not modify the current practices.

According to this study, among the great number of existing methods, 7 valuation methods are commonly used by independent experts: the reference to a block of shares disposal, the discounted cash flow, the revalued net assets, the trading multiples, the share price, the comparable transactions and the dividends methods.

According to this report, the reference to a block of shares, the discounted cash flow and the revalued net assets methods are the main methods employed to determine the offered price. Therefore, it will be difficult for the independent experts to ignore these methods and to justify an offered price lower than one of these values without being confronted with the AMF asking for a rise of the offered price.

Conversely, the trading multiples and comparable transactions methods can be

described as « secondary » methods, mainly used as a crosscheck.
As regards principles, the multi-criteria analysis remains the favorite method to assess a company's price and therefore to determine the fairness of an operation.

Even if the multi-criteria approach is a necessity, some litigation has made their contribution to the choice of the methodology to be retained within the context of independent expertises.
The regulation regarding independent expertises is currently evolving. That is why the independent experts will have to keep in mind the rules related to the application of the new European Directive.
The independent expert and the valuator confronted with the great number of existing valuation methods will thus be able to rely on the conclusions underlined by this report, by referring at the same time to the financial theory.

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