РАЗДЕЛ 3
УГОЛОК ПРАКТИКА

SECTION 3
PRACTITIONER'S CORNER

VALUATION OF VOTING SCHEME CHANGES THE CASES OF ELECTROLUX AB AND SKF AB

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Abstract

This paper studies the effects of the change of voting scheme on the market prices of Electrolux and SKF AB using standard event study methodology and a clinical approach. The economic effect of the voting scheme change is assessed using the market model. We investigate the loss of control due to the change of the voting scheme. The degree of the change of power is calculated using Shapley power index (SPI) and Banzhaf power index. There is a wealth transfer from the high vote shareholders to low vote shareholders in the process since in both cases the high power shareholders required no compensation. We expect that share price to have a positive response to such an announcement due to the reduced power discount and corporate governance improvement. The magnitude of the response on the event day depends also on the information structure of the period leading to the announcement.

Keywords: voting, corporate governance, voting premium, Shapley power indices

Corporate Governance: Theories and Hypothesis

Agency theory and corporate governance

Corporate governance is not relevant in a world without agency cost. It is relevant if and only if there is agency cost and incomplete contract (Olive Hart, 1996). Who makes residual decision and how to govern firms efficiently comprise the main tasks of corporate governance. Agency theory provides a framework to analyze the effects of separation of ownership and control. The origin of modern agency theory can be retrieved as far as Adam Smith's "the Wealth of Nations", 1776, "the directors of such companies…cannot be well expected…Negligence and profusion, therefore, must always prevail…". More recently, see Berle and Means, 1932, on separation of ownership and control. This provides effective tools to solve the principal-agent problem generated by conflicts of interests. The ways to minimize agency costs are through better information disclosure, promotion of shareholder activism, and better

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small shareholder protection, and other market disciplinary mechanisms. Under an effective governance system, the board and the executive management are expected to act according to their best judgment on corporate affairs, this does not guarantee a perfect match with outside shareholders' interests. This refers to agency cost both generated by conflict of interests and lack of self-control, see, Michael C. Jensen, 1994. Conflicts of interests between controlling owners as agents and other shareholders as principal generate agency costs that both parties as rational self-interested people have incentives to reduce in order to generate firm value. Agency theory provides a general structure therein a variety of classes of solutions to these problems contain. Empirical studies drawn from corporate practices have provided examples of linkage between corporate governance and value creation. It has enriched the theory and practices of corporate governance. Miron Stano, 1976, shows that, in US, shareholders of owner-controlled firms have been provided with a significantly higher rate of return than shareholders of management controlled firms. See, for example, Peter Dodd and J. B. Warner, 1983, for a study of proxy contest, Demsetz and Lehn, 1985, for an empirical test on Berle and Means theory. For more recent studies, see James S. Ang, et al. 2000, Hauser and Lauterbach, 2000.

Jensen-Meckling Model: REMM model of human behaviour

Jensen and Meckling (1994) describes an economic agent/individual as resourceful, evaluative and maximizing (REM). In Jensen and Meckling, The Nature of Man, 1994, an individual is characterized as REM, i.e., resourceful, evaluative and maximizing. They are capable of making trade-offs among different goods. They are interested not only in material goods but also in intangible goods such as respect, honesty, love, fame, morality and immortality. This theory departs from Economic Model (Money Maximizing Model), Sociological Model (Social Victim Model) and Political Model (Perfect Agent Model) by adding new dimensions in evaluating human behavior. An individual falls short of a perfect agent (as in Political Model) since a 'perfect agent' is deemed as a robot that has all the capability of a man except one flaw: his own self-interest. On the contrary, an individual in REMM has his own self-interest and is resourceful, evaluative and maximizing but imperfect. A typical agent in REMM has his own desires and wants and is perfectly willing to make trade-offs. Self-interested individual in the REM model has the capacity for altruism, cares about others and take other people's interests into account while maximizing his own welfare. REMM provides a sound and flexible predictive framework for evaluating human behavior. REMM is consistent with agency theory because there are conflicts of interests between agent and principal in REMM. REMM explains human behavior. It assumes that each individual is always willing to give up some sufficiently small amount of any particular good for some sufficiently large amount of other goods. Agency Theory aims at solving the principal-agent problem (minimize the agency cost not eliminate) by improving corporate governance that is based on understanding of human behavior. For example, a typical agent might maximize his own self-interest taking into account that other people get minimum of their shares. Or he might harm other people's interest by increasing the risk of the firm and benefit from the volatility. This clearly calls for corporate governance to work. Power is a common good that derives positive utility for the individual possessing it. Voting rights are power to run the firm. There is a market for power and an equilibrium price for it in order for the "power market" to function well. Exchange of the power should be priced in terms of the amount of power being transferred, the resulting power structure and the total value of the firm after the transaction. In general, the higher the expected benefit of power, the higher the market price of power. In Hauser and Lauterbach, 2000, where 67 dual class stock unifications are studied, they found out that the compensation to loss of power and price of vote depend strongly on the position and perspective of the majority shareholders.

There are cases where the power is locked in and not subject to contest, e.g., extreme cases where firms have an absolute controlling owner (s). This provides room for corporate governance improvements and market disciplinary forces to work, e.g., shareholder activism, market pricing mechanism.

It is widely recognized that active owner control and entrepreneurship in Sweden have contributed to a major industry boom and laid foundation for long-term economic growth in Sweden (Rolf Carlsson, 2001). An absolute controlling owner in this case is not that controlling at all. He or she often takes into account of others' interests other than his or her private benefits[1], sometimes even counter his or her private benefits for the benefit of the firm. There obviously exists altruistic behavior during the early stages much like parents nurture young child. REM model is therefore relevant in explaining the Swedish case.

In this paper, active owners' strategic decision of voting scheme change is evaluated under the framework of shareholder wealth redistribution, the power redistribution of the owners and the implicit trade-offs. The trade-off is made through exchanging sufficiently big amount of power with sufficiently big amount of other goods: management's inner pro-

[1] Economic benefits derived from control.

pensity to thrive for excellence, improve outside shareholder relationship, to compete for capital, to comply with domestic and international rules, and to re-balance portfolio composition of the main owners. This study also has policy implications on the issue of facilitating the market for corporate control. EU proposal of one-share one-vote has met strong resistance from countries with dual-class of shares notably Sweden[2] for the concern that a uniform one-share one-vote would change the current Swedish corporate power structure and ownership of the large Swedish firms which can be potentially harmful for Swedish national interests. In addition, this study provides a unique method in using power index to quantify the controlling shareholders change of power and its economic value.

Model of owner control

Consider a model of ownership and control. A strong owner owns a majority of votes and can decide on all the important issues concerning a firm. He has reputation capital (R) and social capital (S), which restricts him from harming the firm. His utility function is twice differentiable and concave. U_i =U(S) +U(R) +U(V) + U(H) where V is the votes, and H is the income stream he gets from his shareholdings and i denotes the owner.

At each period, the controlling owner convinces the stockholders to entrust their funds to him by promising to increase the value of the firm. When the firm performs well, the other shareholders are quiet. But when the firm performs bad, the other shareholders investigate by going through company accounts and/or sell their shares. Under such situation, the share price falls and he decides to give some control rights back. If he gives the votes for free, he will gain some social capital and reputation capital d(S)+d(R) but lose his voting power d(V). And the value of the voting change will be equally spread over both the A and B share owners. If he demands fair compensation, he will be compensated for the value of the votes he gives up according to the market value of the votes. The change of his social capital and reputation capital is 0.

Evaluate the voting change

Electrolux AB and SKF AB were two of the core holdings of the well-known Swedish family, the Wallenberg Sphere[3]. Wallenberg family exercises active ownership through its holding company Investor[4].

Active owner control adds value to the firm, but absolute control using voting difference decreases the value of the firm through the power discount. Thus, the economic value of reducing voting difference is expected to be positive because it is viewed as a corporate governance improvement. The loss of power of the controlling owner without direct compensation indicates transfer of wealth from controlling owner to shareholders holding lower voting shares. The total economic value of the voting change is composed of two parts: the value due to reduced expected agency cost plus the would-be compensation to the A share owners. The reduced expected agency cost is the additional increase in the market value of the firm. The transfer of wealth is, therefore, the percentage of the lower vote shares (B) over the total amount of shares (A+B) times the amount of the would-be compensation to the high vote shareholders. Suppose two classes of shares A and B. Total amount of A share is A, total amount of B share is B, the compensation to the A share owners is V(C), then, the wealth transfer from the A share owners to B share owners is

(B/ (A+B)) *V(C)

where V(C) is determined by the price difference of the A and B shares, P_a-P_b, the change of B shares voting rights from 1/1000 to 1/10, the amount of shares of each class, A and B. Assuming the marginal vote price we observe on the market equals to the equilibrium vote price and there is no liquidity premium associated with high vote shares, then, the marginal value of 1% vote is[5]

$$MP(V) = -\frac{\Delta(equity)\%}{\Delta(votes)\%} = \frac{\left(\frac{P_a}{P_b} - 1\right)\frac{1}{A+B}}{\left(1 - \frac{P_a}{P_b 1000}\right)\frac{1}{A + \frac{B}{1000}}} \quad (1)$$

In reality there can be negative voting premium as in case of SKF, where we set the compensation as 0. The negative premium can be due to lack of trading interest in A shares.

The new voting structure of A and B shareholding is (V_a, V_b), V_a is the proportion of the total vote

[2] Dual-class of shares is not in conflict with an effective takeover market except absolute control and where there is no market for high voting shares.

[3] See Håkan Lindgren, 1994. Wallenberg sphere refers to a group of firms in which the Wallenberg family has exercised some form of active ownership either via providing members to serve on the Board of Directors or direct management.

[4] See Sven-Olof Collin, 1998, for a definition of business group. Business group is defined as a supra-organization consisting of legally independent firms joined together by some mechanism, particularly by equity ownership, and coordinating the use of one or more resources. For example, benefits of information sharing and sharing of an internal capital market among other things.

[5] See the calculation in detail in Hauser and Lauterbach, 2000.

assigned to A shares, V_b is the proportion of the total vote assigned to B shares.

$$\left[\frac{A}{A+\frac{B}{10}},\ \frac{B}{A+\frac{B}{10}}\right],$$

the total loss of voting rights of A shares (in percentage point) is

$$\frac{A}{A+\frac{B}{1000}}-\frac{A}{A+\frac{B}{10}} \qquad (2)$$

the total compensation to A share owners is (1) times (2).

The loss of votes (%) of the controlling owners in the case of Electrolux: 93,6%-22,3% = 71,3 %

The loss of votes (%) of the controlling owners in the case of SKF: 32,1%-28,42% = 3,68%

The price premium of Electrolux A share over the 3 month period towards the voting change is 3,03% (see graph 6 in attachment). 1 percentage of voting loss corresponds to 0,000857841 % of equity gain. The compensation would be 223964 Electrolux B shares. The approximate value is 31,33 Million Swedish Kronor.

SKF has a negative premium during the period indicating a 0 premium (see graph 7 in attachment). However the amount of compensation to the loss of the voting power should be, the actual compensation of A-share holders of both companies is none. An arbitrageur would make money by selling his B shares and buys A share for the same amount of investment, and end up making a gain after the voting scheme change. Since the premium is expected to be larger after the voting change.

Methodology

We employ clinical study (R. H. Carlsson, 2000) methods to the two events of voting scheme changes. Clinical study method is best suited when few observations are available[6]. We use stock market value change as the measure to the economic value of the voting change. The market model is used to estimate the economic gains (Appendix A: Event Study Methodology). The power of the controlling owner is calculated by Shapley-Shubik power indices (Shapley, 1953; Shapley and Shubik, 1954) and Banzhaf power indices (Banzhaf, 1965).

The calculation is based on all possible voter permutations, from which all the decisive positions for a voter i is analyzed. The sum of all the decisive positions is divided by all possible orderings (voter permutations) giving voter i's share on all pivots (decisive positions). Formally voter i's Shapley-Shubik index value is calculated as

$$\phi_i = \sum_{S \subseteq N} \frac{(s-1)!(n-s)!}{n!}\left[v(S)-v(S/\{i\})\right]$$

$$\frac{(s-1)!(n-s)!}{n!}$$

Each swing is given a weight of , the power index value for i is then obtained by adding up all the weights. s is the number of actors in S, n is the total number of voters in the voting body. The Shapley-Shubik power indices add up to 1. The standardized Banzhaf index, or the normalized Banzhaf index was introduced two decades after Shapley-Shubik index by John F. Banzhaf (Banzhaf 1965). The standardized Banzhaf index value for voter i is obtained by dividing the sum of i's swings (regarding all possible 2^n combinations) by the sum of all voters' all swings hence giving i's proportion of all swings. Formally voter i's standardized Banzhaf index is calculated as

$$\overline{\beta_i} = \frac{\sum\left[v(S)-v(S/\{i\})\right]}{\sum_{j\in N}\sum_{S\subseteq N}\left[v(S)-v(S/\{j\})\right]}.$$

The difference of these two indices are that Banzhaf Power indices calculate how many times the voter can swing and change the winning coalition to a losing one. We use standard Banzhaf indices where all the power indices assigned to voters in the game sum up to 1. Shapley indices calculate how many times the voter are pivotal in all possible permutations of a winning coalition. Note that the voting game described here is non-cooperative.

The case of Electrolux

Electrolux AB and SKF AB, implemented voting scheme changes in 1998 and 1999 respectively. The voting difference after change complies with the Swedish Company Act which set the highest voting difference to 1: 1/10 among common stocks.

Background study

Electrolux AB was established in 1912 by Swedish salesman Axel Wenner-Gren and it became a Wallenberg company under the leadership of Marcus Wallenberg (MW) in 1959, one of the many excellent acquisitions[7] accomplished by generations of Wallenberg family leaders. Due to some mysterious reasons, Marcus Wallenberg (MW) was offered a dominating stock post by the founder of Electrolux,

[6] The depth of discussion often offsets the defects of lack of statistical significance.

[7] Acquisitions of Stora in 1870s, Scania and Astra in 1924, Ericsson in 1932, SKF 1932, WM data in 1994, to mention but a few.

which amounted to 70 percent of the voting rights[8]. MW took the opportunity in the belief that Electrolux and Asea together could create synergies and enhance value[9].

From the late 19th century to the 20th century, the acquisition of many industrial firms had transformed Wallenberg sphere to an industrial group. Its holding company Investor introduced in 1916 and Förvaltnings AB Providentia in 1945 due to regulatory reasons have developed into industrial holding companies. Incentive founded in 1963 was intended to buy and develop small companies with interesting technology in cooperation with research. It acted also as a vehicle to restructure companies with possible gains through rationalization. Constant renewing and constant value enhancing as the group's deep-rooted tradition have been practiced constantly and the result has been extraordinary (R. H. Carlsson, 2001)[10]. It has facilitated numerous ownership reshuffling. Active ownership has differentiated Investor AB from other institutional owners such as insurance companies and mutual funds. Investor AB as the working horse of the Wallenberg Sphere has itself a highly concentrated control profile (41,7% voting rights and 19,6% shareholding) (see also graph 3 in attachment for the concentration of power of the biggest owners) thus enabling the control of the other companies within the Wallenberg sphere.

There were, however, practical reasons for the voting schemes to change in the Wallenberg group companies besides the openly-stated need to attract international investments and improve the company's governance structure. Incentive AB was seeking an exit from owning 48,3% of the voting rights (see table 1) and merging into medical technology company Gambro AB. The massive voting rights became an obstacle for Investor AB to acquire the holding. By relaxing the high voting ratio Investor could acquire Electrolux shares from Incentive AB without having to consolidate Electrolux into its balance sheet.

From inside, Investor AB needed to minimize its power discount imposed on its net asset value. The discount was estimated at about 14% of Investor's net asset value as of Feb. the 10th, 1998, a phenomenon usually associated with mutual funds. To reach its goal of shrinking and eventually eliminate the power discount, Investor has resorted to increase its overall risk and concentrate on major holdings and its core competence area. This, however, has not worked to reduce the power discount. One way to change that image is to lower the power distance of the dual-class of shares. If that is the goal then the effort is bitterly failed since the level of the power discount has increased to around 30% of its net asset value as of year 2001. However the risk tied up to Investor is more related to information asymmetry, meaning that there can be highly risky investments, that is, out of balance sheet activities and agency cost associated with control. Public opinion perceived the almost non-existent voting rights of B shares as increasingly negative, particularly investors in the international market (Foreign ownership accounts for 59,9% share capital of Electrolux AB by Feb. 1998, mostly held by unknown foreign owners and trustees). After the change, the company's voting scheme would be brought in line with the current Swedish Company Act which allows 1 to 1:10 voting difference. The liquidity of the A-shares would also improve partly due to the expected additional demand to the higher voting shares, partly due to the prospect of an outsider gaining a corner position in the company. All factors considered it was in favor of the change of the voting scheme. We expect the change of the voting scheme have a positive effect on the price movement of Electrolux shares.

Market reaction to the news

According to the press release of March 10, 1998, the Board of directors had proposed for an amendment of the Articles of Association that will give each B-share 1/10 of a vote instead of 1/1000 and A-share with 1 vote. Upon the news release, Electrolux share posted a 3,57% gain.

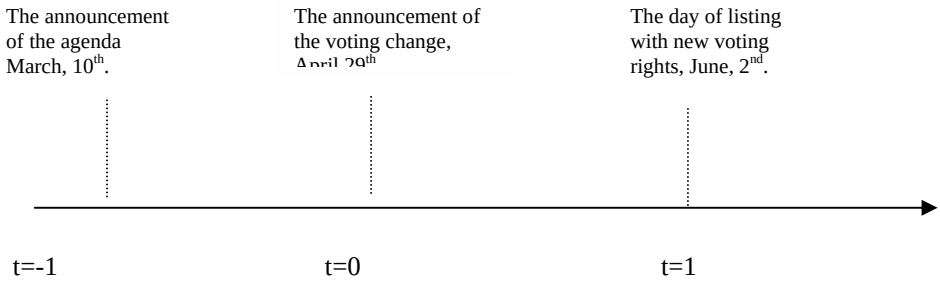
The proposal was approved at the 1998 ASM (04/29) of Electrolux AB (a qualified majority of both A and B shares were required at the AGM). The change of the voting scheme was not unexpected due to the announcement of the agenda on the 10th of March. As a result, the share of the total voting rights in the Company represented by B-shares increased from 3,4% to 78,1%, and the share of A-shares decreased from 96,4% to 21,9%. An unchanged dividend of 2,5 SEK per share and an authorization of a stock split of 1:5 were approved in accordance with the Board proposal. The first day of the new par value and the new voting rights of the shares to be quoted on SSE is 2nd of June. This suggests three event dates. The first date is when the expectation of a voting change was formed. The second date has multiple events of a confirmation of the expected events in combination with the first quarter result. The third date is the date for the listing of the new voting rights and the new par value in the stock market.

[8] The main part was placed under AB Separator, in 1962 transferred to Asea, the remainder was assumed by MW, Investor and Providentia. See Investor, 1916-1991.

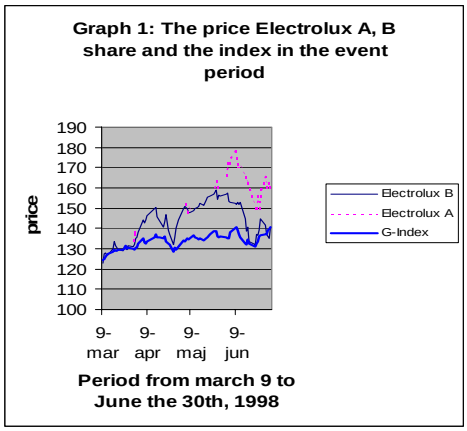
[9] Asea's daughter company Helios was transferred to Electrolux in exchange for new share emission.

[10] There are, however, other opinions based on the rate of return to shareholders where Investor AB, among all 8 investment companies, rank the last, see article: Investor sämst - och dyrast, by Simon Blecher, Affärsvärlden Nr. 17, 2003.

The event time line:



The effect has been built up since the release of the agenda of the annual shareholder meeting given that the board's proposal had a good chance to be endorsed by the ASM. This has largely been priced in the stock by the time it was confirmed. Conditional event methodology should be applied here. This would mean the effect at the announcement day ought to be not as strong as what it would have been had it been a totally unexpected event (Prabhala, 1997).



Graph 1 shows the stock price movement of Electrolux around the event period.

The data has been modified to calculate the model parameters (the no trading day data has been filled by smoothing out the two nearest trading price) since the trading volume of A-shares was extremely thin and un-continuous. This phenomenon was due to the fact that the largest 25 shareholders own 99,1% of the A-shares outstanding. Thus, the liquidity of A shares are extremely low comparing to B shares, the voting premium of A shares is determined by the demand for A-shares for control reason (the expected probability of a takeover) and the liquidity of the A shares. The low liquidity could partly explain the depressed price of the stocks (Roger Huang and Hans Stoll, 1997). The average daily trading volume of A and B shares on the SSE is shown below (in thousands of SEK):

Table 1.A. Average daily trading volume of Electrolux A and B-shares

	1998	1997	1996	1995	1994
A-Shares	89	17	27	9	58
B-Shares	136353	130378	64441	77736	93720
Total	136442	130395	64468	77745	93788

data source: Electrolux AB annual report of 1998.

The loss of control analysis using Shapley-Shubik and Banzhaf indices

A simple voting ratio and a power indices measure of voting rights of the shareholders are presented in Table 1.B. and Table 2. It is obvious that the voting power of the controlling owner has reduced from absolute voting control (power equals to 1) to a block voter meaning any winning coalition would include the controlling owner (Burgin and Shapley, 2000).

Table 1.B. The change of voting structure of Electrolux AB (ownership data of 1998, 02, 16)

	Votes before	Votes after	Share Capital
Incentive	48,3%	11%	1,4%
Investor	45,3%	11,3%	2,5%
Wallenberg Sphere	93,6%	22,3%	3,9%
Fjärde AP-fonden	0,3%	5,8%	7,3%
SPP	0,1%	2,1%	2,3%
Skandia	1,1%	2,1%	2,3%

data source: Owners and power in Sweden's listed companies, 1999. Investor and incentive are two holding companies of Wallenberg sphere.

By examining the biggest shareholders' relative voting power using Power Indices, we identify a moderate change in the voting pattern. The big owner lost absolute control in qualified majority voting but retained control in simple majority voting provided by Shapley and Banzhaf index, given that small owners (each owns less than 0,1% of the shares) are not interested in voting.

Overall, Investor's decision to eliminate the extreme type of voting scheme, a big step towards one-share one-vote system received much credit from the public. It was nevertheless a calculated move since it would not lose control in the near term even though an absolute control was replaced with a veto control (Nevertheless, the possibility of an outside interest for acquiring a corner position in the company has increased as shown by the increased voting premium (see graph 1). This is consistent with Rydqvist Kristian (1996) that the voting premium increases as the power of the biggest owner decreases.

Table 3 shows the abnormal return of the 11-day window and the significance of the abnormal return around the release of the news of the voting scheme changer.

Table 2

	Before the change of the voting scheme						After the change of the voting scheme				
Electrolux 1998 Feb.	owner name	votes	Shapley 1 MWC=1/2	Shapley2 MWC=2/3	Banzhaf 1 MWC=1/2	Banzhaf2 MWC=2/3	votes	Shapley MWC=1/2	Shapley2 MWC=2/3	Banzhaf 1 MWC=1/2	Banzhaf2 MWC=2/3
1	Wallenberg-sfären*	0,94	1	1	1	1	0,223	1	0,683	1	0,561
2	Skandia	0,011	0	0	0	0	0,021	0	0,036	0	0,056
3	SHB-sfären	0,006	0	0	0	0	0,003	0	0,005	0	0,007
4	Fjärde AP-Fonden	0,003	0	0	0	0	0,058	0	0,096	0	0,090
5	SPP	0,001	0	0	0	0	0,023	0	0,041	0	0,062
6	S-E-B-sfären	0,001	0	0	0	0	0,014	0	0,023	0	0,036
7	S-E-Bankens Aktiefonder	0,001	0	0	0	0	0,013	0	0,021	0	0,033
8	Templeton Growth Fund Ltd	0	0	0	0	0	0,01	0	0,016	0	0,025
9	Merrill Lynch fonder (USA)	0	0	0	0	0	0,006	0	0,009	0	0,015
10	Schroder investment	0	0	0	0	0	0,004	0	0,006	0	0,010
11	GMO international funds	0	0	0	0	0	0,004	0	0,006	0	0,010
12	Fidelity fonder	0	0	0	0	0	0,004	0	0,006	0	0,010
13	Lazard fonder(USA)	0	0	0	0	0	0,004	0	0,006	0	0,010
14	AIM fonder (USA)	0	0	0	0	0	0,002	0	0,003	0	0,005
15	Prudential fonder (USA)	0	0	0	0	0	0,001	0	0,002	0	0,003
16	Konsumentkooperationen	0	0	0	0	0	0,009	0	0,014	0	0,023
17	SHB:s aktiefonder	0	0	0	0	0	0,008	0	0,013	0	0,020
18	AMF sjukförsäkring AB	0	0	0	0	0	0,009	0	0,014	0	0,023

* Incentive and Investor owns 48,3% and 45,7% respectively.

note:

1. Data source is Ägarna och Makten, 1998.
2. MWC stands for minimal winning coalition.

Table 3

The effect of voting scheme change on APRIL 29th, 1998
as evaluated by the sample period 250 trading days before the event period.

	11 day window											
	Event day											
	4-22	4-23	4-24	4-27	4-28	4-29	4-30	5-4	5-5	5-6	5-7	
	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	CAR
Return on Electrolux A	-0,0079	-0,0080	0,0101	0,0100	0,0099	0,0098	0,0167	-0,0033	0,0000	-0,0263	0,0135	0,0243
Return on Electrolux B	0,0237	-0,0518	-0,0144	-0,0365	0,0288	0,0339	0,0434	0,0417	0,0067	-0,0066	-0,0147	0,0542
Return on General index	-0,0210	-0,0059	-0,0059	-0,0253	0,0167	-0,0084	0,0128	0,0207	-0,0023	0,0122	-0,0043	-0,0106
AR for Electrolux A	-0,0059	-0,0085	0,0096	0,0127	0,0056	0,0097	0,0131	-0,0082	-0,0011	-0,0298	0,0128	0,0101
Significance level	(-0,747)	(-0,762)	(0,863)	(1,897)*	(0,385)	(0,912)	(0,928)	(-0,538)	(-0,092)	(-2,127)**	(1,123)	
AR for Electrolux B	0,0499	-0,0446	-0,0072	-0,0050	0,0077	0,0442	0,0272	0,0156	0,0094	-0,0221	-0,0094	0,0657
Significance level	3,721)***	(-2,363)**	(-0,379)	(-0,436)	(0,308)	2,444)**	(1,135)	(0,603)	(0,470)	(-0,927)	(-0,486)	

the critical value of the t distribution, two sided test, for n>100 is 1,645(10%), 1,96(5%) and 2,576(1%).

Table 3c
the effect of the subsequent period of listing with new par value and voting rights

	5-25	5-26	5-27	5-28	5-29	6-2	6-3	6-4	6-5	6-8	6-9	
	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	CAR
Electrolux A	-0,0034	0,0172	-0,0167	0,0116	0,0103	0,0115	0,0350	-0,0011	0,0118	0,0134	-0,0190	0,0706
Significance level	(-0,244)	(1,4121)	(-2,001)**	(0,997)	(0,816)	(1,006)	(2,954)***	(-0,095)	(0,746)	(0,947)	(-1,485)	
Electrolux B	-0,0073	0,0107	-0,0051	0,0167	-0,0069	0,0116	0,0051	-0,0230	-0,0352	-0,0204	-0,0086	-0,0623
Significance level	(-0,306)	(0,517)	(-0,357)	(0,846)	(-0,319)	(0,601)	(0,254)	(-1,148)	(-1,311)	(-0,843)	(-0,396)	

the critical value of the t distribution, two sided test, for n>100 is 1,645(10%), 1,96(5%) and 2,576(1%).

The sample period is 250 days before the event period. The market model is used to estimate the estimated normal return by using the sample period standard deviation to calculate the event day standard deviation conditioned on the market return. The abnormal return is calculated and a significance test is performed.

Interpretation of the regression result

There were significant event period gains as shown in Table 3. Electrolux A-shares were not traded on the event day in this event window. There was moderate movement in consistent to the price of B-shares after the trading resumed. B-shares posted a 4,42% abnormal return on the event day (t=0). The cumulated abnormal return of the 11-day event window is 6,57 percentage point. There is a time lag between the release of the news and the actual day of the new votes to be listed on the SSE, which was June the 2nd, A-shares responded significantly on the first trading day with the new votes (See table 3c). The cumulated abnormal return of the 11-day event window is 7,05 percentage point. After the reintroduction with the new votes, the Premium of A-share increased significantly indicating an increased liquidity of A-shares and the voting premium increase due to the new profile of voting and lowered grip on the control (Rydqvist Kristian, 1996).

The case of SKF: background study

The other two firms in Sweden having the extreme voting scheme were SKF (Aktiebologet Svenska Kullagerfabriken) and Ericsson (L.M.Ericsson). SKF AB reversed the extreme voting scheme in 1999 after being rejected by the controlling owner Investor at 1998 ASM. A little less-known fact is that the major owner vetoed the proposal of a free converting right from A-share to B-share.

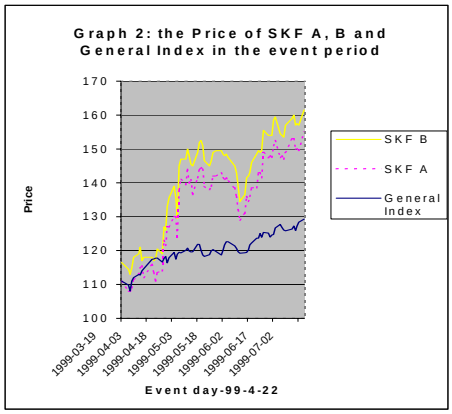
Established in 1907 based on Sven Winquist (1876-1953), one of its original founder's invention of single-row ball bearing, SKF was to become the global leading ball bearing manufacturer (82% of the bearings market). Wallenberg family had 9% voting rights before the Kreuger crash in 1932 while Skandinaviska Banken held 17% of voting rights (Investor, 1916-1991). The merger of Stockholms Enskilda Bank and Skandinaviska Banken took place in 1971. At Dec. 31, 1999, SKF accounted for 2% of Investor's core holding (Rolf Carlsson, 2001).

The timing of the change of the voting scheme coincided with a time of industrial down turn. SKF had been losing market shares and profit margin due to vigorous competition in its product market. The company was forced to reduce dividend payment by 60% comparing to the year before 1999. The market had been expecting a turn around this year since the stock price increased some 35% already since the turn of the year. The Annual Shareholder Meeting was scheduled at the 1999 ASM, on 22nd April.

Market reaction

The market reacted positively to the change of voting scheme proposed by the board of directors and endorsed by the ASM. The share price of A and B advanced 11,29% and 11,97% respectively the day the proposal was approved by the ASM. The abnormal return of SKF A and B shares are 10,91 % and 11,59% respectively. The change has appeared to be sustainable in the long run. Typically there are other releases from the ASM and this has not been the single event case. The result could be interpreted as either that the market is reacting to the "better than expected" quarterly result or to both the result and the voting change. However, we expect that the voting premium increases marginally after the voting change since the biggest owners power reduced marginally (Rydkvist Kristian, 1996).

SKF B-share price and A-share price around the event relative to the general index is shown in graph2. There seems to be market expectations built on gradually before the ASM[12].



The market's perception of the governance condition of the firm is an important factor. It directly related to the perceived value of the firm undergone governance structure changes. The bigger the voting pattern changes, the larger the market reaction to the change. It would be prudent to say that the abnormal return experienced on the day of the announcement was due to partly the changes of the ownership arrangement and partly the first quarter report that turned out to be not as bad as the market believed. SKF had experienced large loss over 1998, but re-

[12] Although the threshold of passing the proposed change is unusually high: for the ASM to decide such a change of voting power, the proposal must be supported by two thirds of the votes given the shares represented at the ASM as well as by half of all A shares and nine tenth of the A shares represented at the ASM.

turned to profit the first quarter of 1999[13]. In addition, a dividend of 2 SEK was proved by the ASM corresponding to a 61,9% fall comparing to the year before (i.e. 5,25 per share for the year 1997).

Graph 2 shows the stock price movement of SKF around the event period. Note that SKF A shares has a negative premium over B shares at the time period of the voting changes (see graph 7 in attachment). The change was announced at the 1999 ASM, on 22nd April. An 11-day event window is chosen including the event day, 5-day before and after the event day. The sample period is 250 trading days before the event window. The market reaction to the event at the event period conditional on the market return of the event period is tested using the market model. The general index of the SSE is chosen to be the bench mark index. Table 5 shows the abnormal return of the 11-day window and the significance of the abnormal return. Interpretation of the result the market data indicates that SKF's market capitalization increased during the 11 day window by 17,44% (A) and 17,02% (B) corresponding to 1090,97 MSEK in A-shares and 1461,9 MSEK in B-shares. The total market value of SKF increased by 2552,87 MSEK in the selected 11 day event window. The price of B share has been traded above A share most of the recent history (see graph 7 in attachment). The underlying change implied by the altering of the voting scheme has been viewed by the market as positive. The reason is two-fold: there should be moderate gain in removing a governance hurdle, that is, giving up highly geared voting scheme. Second, the resulting change indicated more chance of a wider coalition within current owners and possibly an outside interest to establish a corner position.

The loss of control analysis

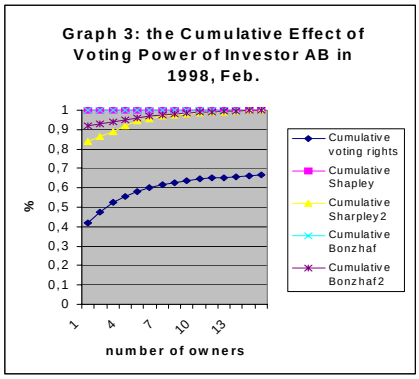
However, the change of the voting ownership is not significant by measures of power indices. Wallenberg sphere weakly dominate other parties.

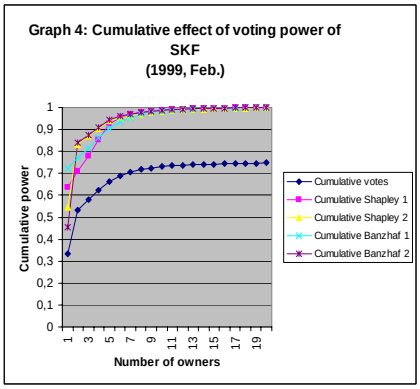
A simple voting ratio and a power indices analysis of the voting rights of the shareholders are presented in Table 4 and Table 6, respectively.

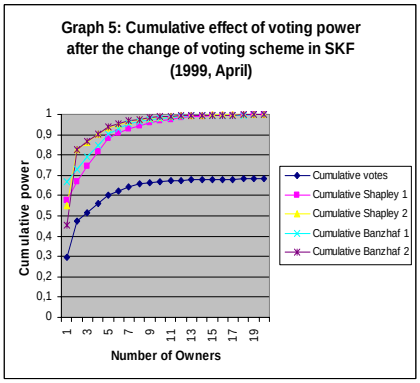
The Shapley indices for simple majority voting changes from 63% to 57 %, the qualified majority voting power changes from 54,5% to 54,9%. Similarly, Banzhaf power indices change only marginally (graphs 4 and 5). This means there is no significant loss of power due to the change of voting scheme.

Concluding remark

The voting scheme changes and the firm value are related because market price of the firm reacts to governance issues via expected agency cost of the firm. The magnitude of the change in market value depends on the market perception of the improvement towards better corporate governance and the actual loss of power.







In these two cases, we found that Electrolux AB case experienced significant loss of control interest. This has lead to enlarged voting premium as expected. Also, no compensation was demande from the A-share owners' side has a wealth transfer effect to the B-share owners.

However, reducing the voting dominance of the controlling owner does not necessarily mean reducing de facto dominance. But it provides a possibility and the governance practice can be expected to change over time.

This effect, however small, is decisive in the evolution of corporate control and power shifting process.

[13] The original words of the press release commented on the first quarter report was: "the sales are still declining at the SKF's main markets, the bottom of the business cycle has not yet been reached. In Asia, however, SKF sales have started to grow again".

Table 4

The change of the voting rights before and after the change of voting scheme in SKF.

	Votes before	Votes after	Share Capital
Wallenberg-sfären	33,3%	29,5%	14,7%
Skanska	20%	17,71%	8,7%
SPP	4,7%	4,54%	3,9%
Nordbankens aktiefonder	4,3%	4,49%	5,4%
Fjärde AP-fonden	4,1%	3,95%	3,3%
AMF Försäkring AB	2,3%	2,16%	1,6%
Skandia	1,9%	2,08%	2,7%

*data source: Owners and power in Sweden's listed companies.

Table 5

The effect of voting scheme change on APRIL 22nd, 1999
as evaluated by the sample period 250 trading days before the event period.

	11 day window											
	Event day											
	15/4	16/4	19/4	20/4	21/4	22/4	23/4	26/4	27/4	28/4	29/4	CAR
	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	
Return on SKF A shares	0,0453	0,0000	0,0236	0,0000	-0,0462	0,1129	0,0217	-0,0106	0,0323	0,0141	0,0071	
Return on SKF B shares	0,0556	0,0188	0,0258	-0,0252	-0,0443	0,1197	0,0138	0,0000	0,0204	0,0000	-0,0169	
Return on SSE General index	-0,0159	0,0131	0,0132	-0,0168	0,0126	0,0049	-0,0016	0,0063	0,0055	-0,0068	-0,0028	
AR for SKF A shares	0,0624	-0,0119	0,0116	0,0180	-0,0576	0,1091	0,0391	-0,0158	0,0279	-0,0198	0,0112	0,1744
Significance level	(2,699)***	(-0,423)	(0,412)	(0,785)	(-2,049)**	(4,065)***	(1,519)	(-0,582)	(1,037)	(-0,792)	(0,437)	
AR for SKF B shares	0,0726	0,0070	0,0140	-0,0073	-0,0555	0,1160	0,0304444	-0,0050	0,0162	-0,005363	-0,01285	0,1702
Significance level	(3,361)***	(0,267)	(0,531)	(-0,338)	(-2,117)**	(4,626)***	(1,267)	(-0,198)	(0,643)	(-0,231)	(-0,538)	

the critical value of the t distribution, two sided test, for n>100 is 1,645(10%), 1,96(5%) and 2,576(1%).

Table 6

		Before the change of the voting scheme					After the change of the voting scheme				
SKF	*owner name*	*votes*	*Shapley 1*	*Shapley2*	*Banzhaf 1*	*Banzhaf2*	*votes*	*Shapley 1*	*Shapley2*	*Banzhaf 1*	*Banzhaf2*
1999 Feb.			MWC=1/2	MWC=2/3	MWC=1/2	MWC=2/3		MWC=1/2	MWC=2/3	MWC=1/2	MWC=2/3
1	Wallenberg-sfären	0,333	0,6353	0,5458	0,7224	0,4555	0,295	0,577	0,5496	0,6708	0,4532
2	Skanska	0,2	0,0728	0,285	0,046	0,3854	0,177	0,0894	0,2757	0,0594	0,375
3	SPP	0,047	0,0728	0,0405	0,046	0,035	0,045	0,0761	0,0383	0,0591	0,0382
4	Nordbankens aktiefonder	0,043	0,0728	0,0351	0,046	0,0345	0,045	0,0761	0,0383	0,0591	0,0382
5	Fjärde AP-Fonden	0,041	0,0728	0,032	0,046	0,0337	0,04	0,0629	0,0322	0,0567	0,0355
6	AMF försäkring AB	0,023	0,0238	0,013	0,028	0,0156	0,022	0,025	0,0144	0,0248	0,0151
7	Skandia	0,019	0,0176	0,0114	0,02	0,0118	0,021	0,0241	0,0141	0,0231	0,0144
8	Kunskap och kompetens stift	0,012	0,0119	0,0079	0,0165	0,007	0,011	0,0145	0,0097	0,0123	0,0068
9	SHB:s aktiefonder	0,006	0,0044	0,006	0,006	0,0044	0,007	0,0123	0,0077	0,0084	0,0059
10	praktikertj pens stiftelser	0,006	0,0044	0,006	0,006	0,0044	0,006	0,0106	0,0069	0,0071	0,0052
11	Konsumentkooperationen	0,004	0,0028	0,0038	0,004	0,003	0,004	0,0081	0,0038	0,0051	0,0033
12	Merrill Lynch fonder (USA)	0,003	0,002	0,0029	0,003	0,0022	0,003	0,0069	0,0026	0,0039	0,0025
13	GMO international funds	0,003	0,002	0,0029	0,003	0,0022	0,003	0,0069	0,0026	0,0039	0,0025
14	DFA fonder	0,001	0,0007	0,0011	0,001	0,0008	0,001	0,002	0,0008	0,0012	0,0008
15	SKF:s allemonsfond	0,001	0,0007	0,0011	0,001	0,0008	0,001	0,002	0,0008	0,0012	0,0008
16	Timber hill Europe AG	0,001	0,0007	0,0011	0,001	0,0008	0	0	0	0	0
17	Norska staten	0,001	0,0007	0,0011	0,001	0,0008	0	0	0	0	0
18	UBS Schweiz Stockholm	0,001	0,0007	0,0011	0,001	0,0008	0,001	0,002	0,0008	0,0012	0,0008
19	FPG/AMFK	0,001	0,0007	0,0011	0,001	0,0008	0,001	0,002	0,0008	0,0012	0,0008
20	Förenade Liv	0,001	0,0007	0,0011	0,001	0,0008	0,001	0,002	0,0008	0,0012	0,0008

note:
1. Data source is Ägarna och Makten, 1999.
2.MWC stands for minimal winning coalition.

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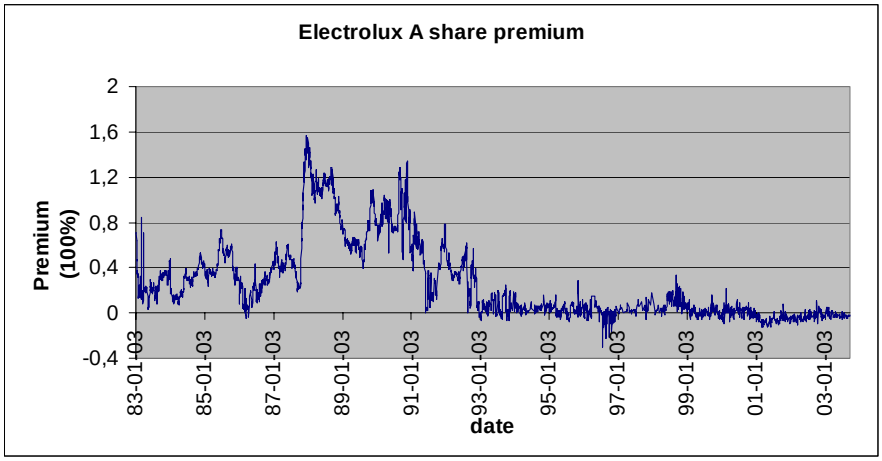
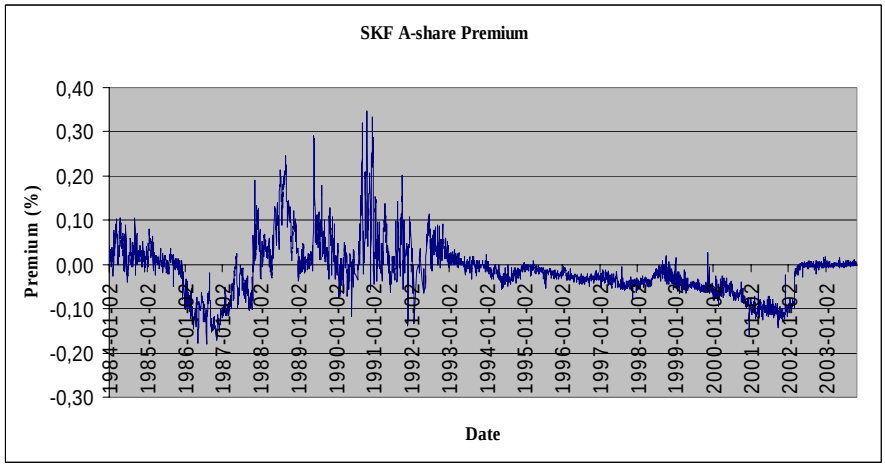
Appendix 1: Graph 6. A share premium (%) of Electrolux AB from 1983 to 2003.



Graph 7. A share premium of SKF AB from 1984 to 2003.



Appendix 2

This paper employs the market model of event study to assess the economic impact of a voting scheme change to the value of firm. The estimation procedure is described below.

For a given firm, I, we consider a date t, occurring during an event period as well as an estimation period containing T observations distinct from the event period. The abnormal return A_{it} for the date t is computed as

$$A_{it} = R_{it} - \hat{\alpha} - \hat{\beta}\, R_{mt}, \cdots\cdots\cdots\cdots (1)$$

Where the parameters of the equation are obtained using the estimation period data. Since $R_{it}=\alpha+\beta R_{mt}+\varepsilon_{it}$ the abnormal return in (1) can be written as

$$A_{it} = (\alpha - \hat{\alpha}) + (\beta - \hat{\beta}) R_{mt} + \varepsilon_{it}, \cdots\cdots\cdots\cdots (2)$$

The variance–covariance matrix of the market model coefficients is (conditioned on the market returns):

$$\mathrm{var}\begin{Bmatrix}\hat{\alpha}\\ \hat{\beta}\end{Bmatrix} = \frac{1}{T}\begin{bmatrix}1+\hat{\mu}_m^2/\hat{\sigma}_m^2 & -\hat{\mu}_m/\hat{\sigma}_m^2\\ -\hat{\mu}_m/\hat{\sigma}_m^2 & 1/\hat{\sigma}_m^2\end{bmatrix}\sigma_\varepsilon^2 \cdots\cdots\cdots\cdots (3)$$

Combining (2) and (3) gives the variance of A_{it} (conditioned on the market returns):

$$\mathrm{var}\{A_{it}\} = \left[1 + \frac{1}{T} + \frac{(R_{mt} - \hat{\mu}_m)^2}{T\hat{\sigma}_m^2}\right]\sigma_\varepsilon^2 \cdots\cdots\cdots\cdots (4)$$

Abnormal returns for a single firm or a cross section of firms are arranged in event time. T refers to the time in the event period. The significance of the abnormal return can be obtained by the magnitude of the abnormal return on the standard deviation of the abnormal return at t using (4).

The average abnormal return in event time is computed as

$$\bar{A}_i = \frac{1}{N}\sum_{t=0}^{K} A_{it}$$

where t refers to the date during firm i's event period .

The statistical significance of $\bar{A}_i$ *is assessed by standardizing each abnormal return using* (4).

$$SA_{it} = A_{it} / s_{it}$$

with s_{it} *representing the standard diviation of* A_{it}.

Then compute the test statistic:

$$Z_t = \frac{1}{\sqrt{N}}\sum_{i=1}^{N} SA_{it}.$$

Under the null hypothesis of zero abnormal return, the test statistic obey the unit normal distribution for large N. Each SA_{it} is distributed Student-t with (T-2) degrees of freedom or unit normal for large T.

The cumulative abnormal return over K dates during the event period is often investigated. It is given by

The test statistic is distributed unit Normal for large T.

The above framework has become a standard one when using market model. For an early exposition and example of its use, see Dodd and Warner (1983). However, if the information or announcements are not entirely unexpected, the standard event study method needs to be modified and adapted accordingly. The unexpected part of the information should decide the stock-price reaction of the event. This resulted a new branch of literature, namely, the conditional methods in event studies (see, Acharya, 1988, Prabhala, 1997). Information Structures (Prabhala, 1997):

1. Markets know, prior to the event, that the event-related information has arrived at firm I (but not its exact content).
2. Markets do not know, prior to the event, that the event-related information has arrived at firm i.
3. Markets know the probability of the event-related information has arrived at firm i.

The information effect is stronger if the markets do not know that the event-related information has arrived at the firm.