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An analysis of value destruction and recovery in the alliance and proposed merger of Volvo and Renault¹

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Abstract

Volvo's attempt to merge with Renault in 1993 temporarily destroyed SEK 8.6 billion (US\$ 1.1 billion) in Volvo shareholder wealth. This study traces the destruction to hubris, managerialism, and the escalation of commitment – elements suggested in previous research. In addition, the case suggests path dependence as a source of wealth destruction in mergers. An elaborate structure of cross-shareholdings, joint committees, and a poison pill made it difficult for the strategic allies (Volvo and Renault) to follow any strategic path other than merger if they wanted to exploit economies more fully. Activism by institutional investors was instrumental in halting the destruction of shareholder wealth and redirecting the firm. This study reveals significant positive abnormal returns associated with the institutional activism. Consistent with Shleifer and Vishny (1986), institutional 'jawboning' is valuable. An analysis of the voting premium between Volvo's 'A' and 'B' shares suggests that the value created by institutional voice derived from the strategic change in the firm's direction rather than the power of the coalition of institutional investors to expropriate wealth. © 1999 Elsevier Science S.A. All rights reserved.

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1. Introduction

On December 2, 1993 the directors of AB Volvo withdrew their proposal to merge the firm's automotive business with Renault, a French state-owned enterprise. This set in motion changes in the firm's governance, ownership structure, and strategy and ended a major strategic alliance between Volvo and Renault. The resignations of the firm's executive chairman, Pehr Gyllenhammar, and four directors accompanied the board's action. While many groups and individuals ultimately influenced the board's decision, almost all observers and participants agree that the main impetus for this change was a rebellion against the merger by a handful of Swedish financial institutions holding a minority of the firm's shares.

The collapse of the Volvo–Renault merger warrants attention for at least two reasons. First, the profitability of alliances and mergers is a question of enduring interest, and this case can shed light on hypotheses about the origins of value destruction in mergers. These hypotheses include hubris, bad judgment, entrenchment, escalation of commitments, and path dependence. The case also illuminates the efficacy of remedies to these problems, including changes in management, strategy and governance.

Second, this case illuminates the types and wealth effects of institutional 'voice' (i.e., influence without control). There are no previous scientific case analyses of institutional activism, and this episode is remarkable for its size and drama, even by American standards. In Europe, this case is arguably the most prominent example of institutional investors' activism to date.

Section 2 summarizes the research objectives and methodology of this study. Section 3 presents the history of the episode and discusses the abnormal returns and voting premiums associated with main events. Section 4 summarizes the study and offers several conclusions.

2. Research objectives and methodology

2.1. *Research objectives*

My study examines the failed Volvo–Renault merger to illuminate three aspects of interest to financial economists.

2.1.1. *The economic profitability of alliances and mergers*

Harrigan (1988) and Levine and Byrne (1986) suggest that 60% of alliances fail to achieve their economic promise. A broad test of profitability is beyond the scope of this study, but this case does afford the opportunity to determine the extent to which investors anticipate failure. Bleeke and Ernst (1995) have also suggested that alliances are often precursors to acquisition. This study

illuminates why alliances may be linked with acquisition, and the effect of this linkage on shareholders' wealth. Volvo's commitment to an alliance with Renault in 1990 created a *path dependence* that contributed to the destruction of wealth in the merger attempt. This case illustrates other hypothesized sources of wealth destruction in mergers, such as hubris (Roll, 1986), managerial entrenchment (Morck et al., 1988), Jensen (1986), bad judgment (Morck et al., 1990), and the escalation of commitment (Lys and Vincent, 1995).

2.1.2. *The value of institutional voice*

Hirschman (1970) contrasts voice with exit as possible actions by a principal who disagrees with an agent's actions. In the context of institutional investors, exit corresponds to the 'Wall Street Rule' (i.e., if you do not like management, sell your shares). Voice, on the other hand, entails a process of exhortation to management and coalition-building among investors and directors to influence a firm's board and managers in response to what Hirschman calls 'an objectionable state of affairs'. Shleifer and Vishny (1986) discuss voice or 'jawboning' along with tender offers and proxy fights as means by which a large minority shareholder can monitor management. They show that the choice of jawboning will depend on the balance of costs and benefits associated with each option.

Black (1992a,b) has argued that institutional voice is potentially valuable because someone must monitor corporate managers. It can add value by increasing the independence of corporate directors, discouraging bad takeovers, encouraging more efficient governance rules, discouraging cash hoarding, and establishing a more arms-length process for setting CEO pay. Gilson (1994) suggests that corporate governance may be linked to economic performance through its ability to monitor and discipline management and to create sufficient stability for a firm to honor implicit contracts necessary to realize internal business transformations through strategies based on lean manufacturing, total quality management, alliance networks, and so on. Stability is one of the purported benefits of the German and Japanese 'relational investing'. Franks and Mayer (1990) argue that implicit contracts are better supported by systems of inside, as opposed to market-style, ownership.

The empirical evidence in support of the value-adding role of institutional monitoring remains relatively scanty, although the evidence is consistent with the hypothesis that voice is valuable. Nesbitt (1994) finds that intervention by CalPERS, a large pension fund, is associated with excess returns of 41% over the five years following intervention. Smith (1996) uncovers significant positive excess returns associated with activism by CalPERS, but no significant effect on operating performance. The Gordon Group (1992) suggests excess returns from institutional activism of up to 30%. Agrawal and Mandelker (1990) show that companies with high institutional ownership experience event returns that are much more positive in response to antitakeover amendment proposals, and

McConnell and Servaes (1990) conclude that institutional ownership correlates with Tobin's q and with accounting measures of profitability. Pound (1988), Jarrell and Poulsen (1987), Brickley et al. (1988) and Gordon and Pound (1993) give evidence that institutional ownership is associated with a higher probability of dissidents winning proxy contests, with lower adoption of value-decreasing antitakeover proposals, and with the success of shareholder-sponsored proposals to change corporate governance structures. Yet the direction of association implicit in these findings is unclear. Corporate performance may improve because of institutional holdings or institutions may tend to concentrate their investment in the shares of well-run companies. Moreover, there may be a selection bias in such research, as the research may ignore bad proposals that were forestalled by watchful institutional investors. As Black (1992b) notes, further study of the association between institutional monitoring and value is 'badly needed'. My study offers evidence about the value of institutional voice.

2.1.3. The value of remedies to 'objectionable states of affairs'

Institutional activists have a variety of remedies, including changes in governance, management, and strategy. It is interesting to consider shareholders' reactions to these types of remedies. Some studies find gains associated with replacing the executives of underperforming firms. Warner et al. (1988) find a significant association between poor stock performance and the frequency of management turnover, but no significant excess returns to shareholders at the announcement of management change; they note that 'the unimpressive magnitude [of abnormal returns at announcement] raises questions about the gains from such an endeavor' (p. 488). Other studies by Bonnier and Bruner (1989), Furtado and Rozeff (1987), and Weisbach (1988) show significantly positive returns when management changes. Yet none of these studies focus specifically on instances of investor activism, nor do they resolve the question whether the gains derive from a change in the individual (consistent with hypotheses of hubris, managerialism, or behaviorism) or a change in the firm's strategy (consistent with the hypothesis of path dependence).

2.2. Field research

The research for this study entailed field interviews of 20 individuals, including senior managers at both Volvo and Renault, institutional investors, journalists, bankers, and the two CEOs who founded the strategic alliance, Pehr Gyllenhammar and Raymond Lévy. These interviews are supplemented by examination of domestic and English-language publications and as well as television news reports. I employed field research to reconstruct the history of the alliance and merger proposal and to understand the motives and perspectives of the various participants.

2.3. Analysis of abnormal returns

To assess the wealth effect associated with institutional voice over this period, I compute abnormal returns for Volvo's 'A' and 'B' shares using market-adjusted returns over the time periods of the alliance, merger proposal, and redirection of the firm. The market adjusted return for day t is calculated as the total percentage return on the Volvo share (change in price plus dividend) at day t , less the total return on the Affärsvarlden Index, a value-weighted index of all shares listed on the Stockholm Stock Exchange, at day t . I focus on the major events – the founding of the alliance, the negotiation of the merger, the response of institutions, and the strategic redirection – and calculate abnormal returns in two-day windows (the day before and the day of publication) in which each event is reported in the press or associated with a press release or conference (in which case I used the day of release and day after). My main source of press dates is the *Financial Times of London*. Spot checking suggests that publication of news in the Financial Times was contemporaneous with publication in the Swedish and French financial press. The date of press release is preferred to the press date on the assumption that it is more closely associated with the arrival of news in the capital markets. Each abnormal return accumulated from day K to day L was tested by $t = AR_{KL}/SD_{KL}$. Following Ruback (1982) the estimate of the standard deviation adjusts for the autocovariance of returns:

$$SD_{KL} = (T * VAR(AR_t) + 2(T - 1) COVAR(AR_t, AR_{t-1}))^{1/2}, \quad (1)$$

where $T = L - K + 1$. I estimate VAR and COVAR from a 202-day hold-out period beginning December 31, 1988 and ending October 10, 1989, just before the first announcement regarding the strategic alliance. The variance and autocovariance of abnormal returns for Volvo's 'A' shares are 0.0000758 and 0.0000078, respectively. For Volvo's 'B' shares, the variance and autocovariance are 0.0001115 and 0.0000030.

The observation period of abnormal returns runs from October 12, 1989, when rumors of an impending alliance were first published, until October 19, 1994, when Volvo sold a block of its shareholdings in Renault. I divide this observation period into several sub-periods, as indicated in Fig. 1. These segments correspond to major phases in the episode and are identified by the nature of the information released to investors.

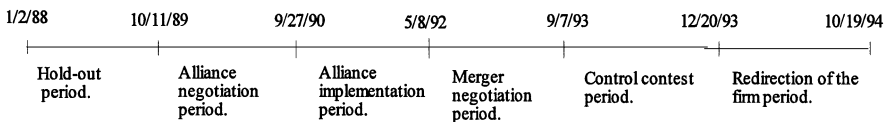


Fig. 1. Observation sub-periods.

2.4. Analysis of the voting premiums

The dual-class structure of Volvo's common equity can help illuminate the nature of the value associated with institutional voice. Studies of firms that have two classes of common stock outstanding show that the class with superior voting rights trades at a material premium relative to the other class. Based on a sample of Swedish firms, Rydqvist (1992a) estimates a premium of 15%. Using data on companies in the United States, Lease et al. (1983) find a premium of 5.44%. From a sample of Israeli companies, Levy (1982) finds a premium of 45.5%; Biger (1991) also uses an Israeli sample and estimates a premium of 74%. With a sample of 133 British firms, Megginson (1990) finds a premium of 13.3%. Using data on Canadian firms, Amoaku-Adu and Smith (1991) estimate a premium of 10%. Zingales (1994) finds a premium of 80% for a sample of Italian firms. Horner (1988) finds a premium of over 10% for a sample of Swiss companies. Finally Kunz and Angel (1996) find premiums of about 18% after controlling for various factors. About 80% of all companies listed on the Stockholm Stock Exchange have a dual-class structure like Volvo's.

Lease et al. (1983) argue that two classes of stock, which have the same explicit payoff per unit of investment and differ only in voting rights, should trade at the same price, unless the class with superior voting rights could receive some incremental benefits that are not available to the other class. From this perspective, the magnitude of the voting premium should vary as the power of one class to appropriate incremental benefits rises or falls. Megginson (1990) and Rydqvist (1992b) extend this argument to the arena of takeovers, predicting that (1) the voting premium will be related to the probability of takeover, (2) the premium will be larger in actual takeover contests, and (3) the premium will be higher in firms with dispersed ownership of votes than in firms with concentrated ownership where hostile takeovers are less likely or may not occur at all if majority control exists. Megginson, however, concludes that the typically observed voting rights premium is too large relative to the expected value of some future takeover premium. Moreover, none of the studies to date considers the exercise of institutional voice as opposed to outright change of control.

If control over Volvo is valuable, it should have been reflected in the price premium between Volvo's two classes of common stock. These classes are similar except for voting rights: the 'A' shares carry voting rights equal to one vote per share, while the 'B' shares carry only one-tenth vote per share.

To assess the behavior of the voting premium in Volvo shares during the control contest a price premium is calculated as follows:

$$\pi_t = \frac{P_{A,t} - P_{B,t}}{P_{B,t}}, \quad (2)$$

where $P_{A,t}$ is the price of an 'A' share and $P_{B,t}$ is the price of the 'B' share on day t . I estimate daily changes in the voting premium, $\Delta\pi_t$, and a t -statistic on these

changes. As in Eq. (1), the estimate of the standard deviation of $\Delta\pi_t$ from day K to day L adjusts for the autocovariance of $\Delta\pi_t$:

$$SD_{KL} = (T * \text{VAR}(\Delta\pi_t) + 2(T - 1) \text{COVAR}(\Delta\pi_t, \Delta\pi_{t-1}))^{1/2}, \quad (3)$$

where $T = L - K + 1$. VAR and COVAR are estimated from a 202-day hold-out period beginning December 31, 1988 and ending October 10, 1989, just before the first announcement regarding the strategic alliance. The variance and autocovariance of $\Delta\pi_t$ are 0.00035815 and -0.00000883 , respectively.

3. Overview of the episode

3.1. Strategic background

In the early 1990s, three developments seemed to indicate a fundamental shift in competition in the worldwide automobile industry. First, growth in unit demand was slackening, reflecting in part the economic recession that began in North America in 1990 and in Europe in 1992. While cyclicity has always been a fact of life in the automobile industry, many observers feared that this recession revealed the increasing saturation of demand in the mature auto markets of the world. Beginning in the mid-1980s in Europe and the U.S., there was little net growth in the number of automobiles in service. Increasingly, new cars were purchased simply to replace old ones. European economic integration and deregulation narrowed the returns to commercial operators of automotive equipment. This reduced demand for trucks and buses, and sharpened price competition. Profitability in the automotive industry fell sharply between 1989 and 1992.

Second, the industry's capacity utilization was declining. In 1993, capacity utilization in Europe was 66%; worldwide it was 73%. High rates of profitability are ordinarily associated with utilization rates of 80% or higher. The lower utilization reflected automakers' strategies of 'building where one sells'. Thus, manufacturers were opening new plants in the high-growth markets of Latin America and Asia, while refusing to reduce capacity in the mature markets. Lower capacity utilization worldwide contributed to declining profitability.

Third, competition increasingly was being decided on the bases of quality, research breakthroughs,² new product cycle times, and new forms of organization. Volume producers exploited 'lean' manufacturing techniques to achieve

² Between 1979 and 1989, Volvo's annual expenditure on truck research and development (R&D) rose from SEK 300 million to SEK 1250 million. Similarly, for cars, the annual R&D expenditure rose from SEK 600 million to SEK 4300. These increases arose from tightening environmental regulations, and increasing competition, which made product enhancement an important competitive tool.

cost and quality advantages. These techniques emphasized the reduction of unnecessary assets and time in the production process, along with continuous improvement in product quality. Successful application of these techniques gave the lean manufacturers cost advantages. For various reasons, smaller manufacturers had been slow to adopt these techniques or resisted adopting them altogether.

In 1993, Maryann Keller, a leading auto industry analyst, published an assessment of the leading automobile manufacturers, concluding that ‘these companies and others will increasingly collide with each other . . . Too many countries [are] employing the same systems and technology to produce an excess of the same kinds of products for markets that are not growing fast enough to accommodate them all’ (Keller, 1993, p. 213).

Volvo is a small player in the global automotive industry. With an annual output of around 208,000 cars, it ranked 27th in the world. In comparison, General Motors had a 1993 output of 4.3 million units, Toyota about 3 million; and Ford with about 3 million; Renault’s output in 1993 was 1.26 million units (Ward’s Automotive Yearbook, 1994, p. 55). Although the firm had enjoyed a niche franchise in the market based on safety and engineering, other manufacturers (notably Toyota and Chrysler) were making inroads to this segment. Volvo’s car sales were heavily concentrated in Scandinavia, the United Kingdom, and the United States. In trucks and buses, Volvo ranked number two in the world on the basis of a volume of 33,191 units.

Gyllenhammar argued that Volvo was strategically vulnerable and needed a sizable partner with whom it could obtain advantageous purchasing arrangements, over whose volume of output it could amortize rising new product development costs, and whose deeper financial pockets could sustain Volvo through a moderately severe recession such as it had experienced in 1992. Although Volvo’s CEO never discussed other strategic alternatives, he probably faced at least two possibilities:

- *Exiting the automobile business.* The firm could have concentrated its resources on the profitable trucks segment, where it was a leader, and discontinued the cars business. It is not clear whether the two segments could have been separated or whether trucks would have been viable without cars. Gyllenhammar believed that the Volvo brand-name in cars was valuable and that it was a serious asset for use in a potential alliance or merger. Moreover, exiting that business would signify a retreat and reduction in the scale of the firm. He appealed to Swedish national pride in arguing that the Volvo marque should be saved.
- *Forming a network of smaller, highly focused alliances.* Instead of cutting a large and comprehensive deal with one partner, Volvo could have remained independent and sought to tailor alliances around specific needs. New

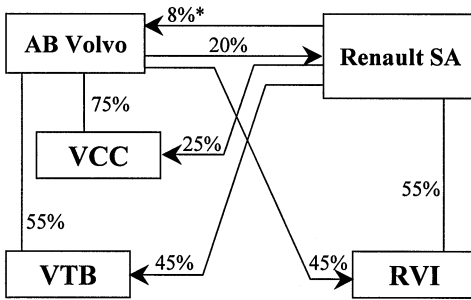
product development could have been financed by selling of non-automotive assets. In essence, this is Volvo's strategy in the mid-1990s. Gyllenhammar showed a proclivity toward large and dramatic deals and had been the architect of Volvo's conglomerate diversification. A strategy based on smaller, focused alliances would have required a major redirection of Gyllenhammar's style and strategy.

Volvo's predicament suggested that some strategic initiative would be necessary, if not immediately, then over the medium term. However there is relatively little to suggest that a single, comprehensive partnership necessarily dominated other alternatives.

3.2. The alliance that predated the merger proposal

Volvo and Renault had a relatively long history of association, beginning with a components swap agreement in 1971, and deepening with Renault's purchase of a minority equity interest in Volvo in 1980. Renault sold those shares at the time of its near-bankruptcy in 1985. With the installation of new Renault management in 1986, Pehr Gyllenhammar offered to acquire Renault's truck-manufacturing business. Renault's CEO, Raymond Lévy, demurred at the time, saying that, as a new executive, he wanted to settle into his new job before deciding on any such proposals. The two CEOs resumed discussions in earnest in the fall of 1989. In an interview, Raymond Lévy told me that initially the CEOs explored the concept of a cross-border merger along the lines of Royal Dutch and Shell. For political reasons, a merger was not an option then. The possibility of a merger, however, appears to have colored the thinking of managers in both companies as they implemented the strategic alliance. In January 1990, Gyllenhammar and Lévy announced a letter of intent for a 'joint venture'. The details of this association did not emerge until September 1990, when it became apparent that this was to be a far-ranging strategic alliance.

The alliance agreement was a complex engagement of the two firms—indeed, Lévy called it a 'marriage'. Fig. 2 gives a diagram of the cross-shareholdings: not only would each ally own a minority interest in the other ally, but each would own a large minority interest in the other's auto and truck manufacturing units. Renault purchased 8.8% of AB Volvo, 25% of Volvo's automobile business, and 45% of Volvo's truck business. Volvo purchased a 20% interest in Renault S.A. and a 45% interest in Renault's truck business. Shortly after the merger announcement, Renault increased its equity interest to 10%. Its interests in Volvo's auto and truck businesses were unchanged from 1990. At the time of the merger proposal, Renault was Volvo's single largest equityholder. The CEOs argued that the direct stakes in each other's manufacturing units would align the firms with each other's fortunes and promote industrial cooperation. Not indicated in

AbbreviationsReference

VCC	Volvo's restructured car operations
VTB	Volvo's restructured truck and bus operations
Renault SA	Parent company of the Renault Group, following conversion to a capital stock company
RVI	Renault Véhicules Industriels SA

*Renault had acquired 8.24% of Volvo's shares and 10% of the votes.

Fig. 2. Structure of strategic alliance and cross-shareholdings of Volvo and Renault as of September, 1993. This figure gives the cross-shareholdings between Volvo and Renault and their subsidiaries. A cross-shareholding is indicated by an arrow (\leftarrow) that emanates from the investor to the investee. Ownership of a subsidiary is indicated by a simple line (i.e., with no arrow). The percentages on the lines and arrows indicate the portion of total shares owned by the investor in the investee. For instance, the top-most arrow shows that Renault S.A. owns 8% of AB Volvo's shares. (AB Volvo, 1990 and 1993b, p. 40)

the diagram was a complex poison pill provision which would make it costly³ for either party to seek to unwind the alliance. The exact terms of the provision have not been disclosed publicly, so it is not possible to know whether the size of the payment was to reflect a recovery of costs and investments, or whether the payment was simply an arbitrary penalty to the departing firm. In toto, this agreement constituted a significant escalation of commitment between the two firms and dedicated them to the path of intimate industrial cooperation. Commitment escalated again in 1993 when the two firms proposed to merge. This pattern bears some similarities to the escalation of commitment described in Lys

³ At the conclusion of this episode, Volvo paid Renault SEK 5.2 billion under the terms of the poison pill provision.

and Vincent's (1995) study of the destruction of value in ATT's acquisition of NCR.

The alliance between Volvo and Renault sought to exploit economies of scale. Volvo estimated that the undiscounted value of economies available through the alliance would amount to SEK 30 billion between 1994 and 2000. With joint purchasing power of FF 200 billion per year, the two firms looked forward to exploiting purchasing economies. They also contemplated developing a range of new car models off of a common platform. Volvo had spent SEK 7 billion and taken 8 years to introduce the Model 850; as a comparatively tiny automobile manufacturer, it could not afford to introduce new models with any regularity. Finally, it was believed that Renault's truck operation would benefit from association with Volvo, the second-ranked heavy truck manufacturer in the world.

The firms consummated the alliance with cross-acquisition of shares in January 1991. Over the next two years their endeavor showed modest success. Although slow to gain momentum, purchasing benefits could be foreseen more clearly by 1993. By most accounts, however, the joint automobile project and rationalization of truck manufacturing were stalling. Interviewees point to many causes, including French protectionism, Swedish-French cultural conflicts, a ponderous alliance bureaucracy of 21 committees, and distant senior leaders. Worse, Volvo's principal market, North America, slid into recession in late 1991, prompting one of the worst declines in reported financial performance in the firm's history.

In general, events surrounding the founding of the strategic alliance (see Table 1, line 4) are associated with significant positive excess returns of 20.27% ($t = 8.78$) for 'A' shares and 11.27% ($t = 4.27$) for 'B' shares. These results are due mainly to returns at two events, October 12, 1989, when newspapers published unconfirmed reports of alliance negotiations (8.54% and $t = 6.47$ for 'A' shares; 4.21%, $t = 2.77$ for 'B' shares) and February 23, 1990, when the companies announced the signing of a letter of intent to negotiate a strategic alliance (9.96% and $t = 7.72$ for 'A' shares; and 7.50% and $t = 4.97$ for 'B' shares).

The actual implementation of the alliance is associated with negative returns. Across all the events during the implementation of the strategic alliance (line 11, Table 1), abnormal returns are -5.83% ($t = -1.94$) for the 'A' shares and -7.79% ($t = -2.28$) for the 'B' shares. The returns on November 8, 1990 (line 7), when Renault announced its first purchase of Volvo shares; are especially noteworthy: the returns to the 'A' shares are significantly negative, -4.23% ($t = -3.22$).

Volvo's voting premium had been in the high teens during the hold-out period in 1988 and 1989, consistent with Rydqvist's finding of an average voting premium in Swedish dual-class shares of 15%. The voting premium stood at 36.99% on September 27, 1990 when Volvo announced the details of the

Table 1
Abnormal returns related to the alliance and proposed merger of Volvo and Renault

Line number	Event date	Volvo A Shares		Volvo B Shares		$L - K + 1$	Event description
		Abnormal return	t -statistic	Abnormal return	t -statistic		
<i>Events leading to implementation of strategic alliance</i>							
1	12 Oct. 1989	8.54%	6.47	4.21%	2.77	2	News report that Volvo and Renault are discussing a combination of their automotive businesses.
2	19 Oct. 1989	1.77%	1.40	-0.44%	-0.28	2	Report that both firms confirm negotiations to found a joint venture.
3	23 Feb. 1990	9.96%	7.72	7.50%	4.97	2	Company announcement: of letter of intent for strategic alliance.
4		20.27%	8.78	11.27%	4.27	6	Cumulative abnormal returns, only specific events in this period.
5		3.86%	0.25	-18.15%	-1.06	251	Cumulative abnormal returns, all trading days 10/11/89 to 9/25/90.
<i>Events during implementation of alliance but before merger discussions</i>							
6	27. Sep. 1990	-0.72%	-0.43	-2.38%	-1.58	2	Company announcement: detailed agreement to implement letter of intent.
7	8 Nov. 1990	-4.23%	-3.22	-2.58%	-1.71	2	Company announcement: Renault has acquired 6.2% of Volvo votes and 4.23% of Volvo capital.
8	9 Jan. 1991	-1.54%	-1.19	0.90%	0.60	2	Company announcement: Renault has increased holdings to 6.78% of Volvo votes and 5.7% of Volvo capital.
9	18 Jan. 1991	1.94%	1.50	-2.45%	-1.63	2	Company announcement: alliance is implemented with exchange of shares in operating units.
10	29 Aug. 1991	-1.28%	-0.99	-1.28%	-0.85	2	Company announcement: Renault has increased holdings to 7.52% of votes and 6.62% of capital.

11	-5.83%	-1.94	-7.79%	-2.28	10	Cumulative abnormal returns, only specific events in this period.
12	8.46%	0.43	37.61%	1.69	421	Cumulative abnormal returns, all trading days 9/26/90 to 5/7/92.
<i>Events during merger negotiation period</i>						
13	4.10%	3.17	2.95%	1.94	2	Report that Volvo and Renault agree to merger, but political hurdles prevent implementation.
14	11.74%	9.27	14.07%	9.09	2	Report that French Minister encourages merger.
15	4.70%	3.59	4.72%	3.09	2	Report that French Minister of industry supports merger.
16	0.87%	0.68	0.39%	0.26	2	Report that Volvo and Renault discuss merger terms.
17	1.80%	1.39	1.57%	1.04	2	Report that French official says merger will be announced before August.
18	3.98%	3.07	4.22%	2.76	2	Report that Volvo and Renault are near to announcing merger terms.
19	27.19%	8.27	27.92%	7.45	12	Cumulative abnormal returns, all specific events in this period.
20	23.21%	7.74	23.70%	6.93	10	Cumulative abnormal returns, specific events in this period.
21	-4.87%	-0.27	-7.48%	-0.37	347	Cumulative abnormal returns, all trading days 5/8/92 to 9/6/93.
<i>Events from announcement to withdrawal of merger terms</i>						
22	6.04%	4.72	6.64%	4.46	2	Report of announcement of merger terms.
23	3.03%	2.35	2.58%	1.70	2	Report of appointments of managers to run RVA.
24	1.33%	1.02	0.61%	0.40	2	Company announcements: Renault has increased Volvo holdings to 9.98% of votes and 8.27% of capital.
25	3.58%	2.76	3.84%	2.52	2	Announcement that the fourth Found will vote 'yes' unless there is no new information.
26	2.45%	1.90	2.45%	1.62	2	Report of a 'stormy' Volvo board meeting in London-terms of golden share are clarified to directors. Small Shareholders Association opposes merger.

Table 1. Continued.

Line number	Event date	Volvo A Shares		Volvo B Shares		$L - K + 1$	Event description
		Abnormal return	t -statistic	Abnormal return	t -statistic		
27	12 Oct. 1993	-5.18%	-4.06	-5.20%	-3.48	2	Report that Small Shareholders Association calls for 2/3 votes on merger.
28	12-13 Oct. 1993	-3.73%	-2.90	-3.97%	-2.64	2	Volvo meets with 10 largest institutional investors, and issues press release clarifying golden share and privatization.
29	26 Oct. 1993	4.27%	3.28	4.77%	3.13	2	Merger prospectus is distributed-it contains no additional explanation of synergies or merger terms. Two unions issue press release opposing merger. Two influential newspapers publish editorials against merger.
30	28 Oct. 1993	5.43%	4.15	4.50%	2.96	2	Report that the 92-94 Fund opposes merger. Skandia insurance delays decision. Qviberg and Hagstromer call for Gyllenhammar's resignation.
31	29 Oct. 1993	1.60%	1.24	-0.45%	-0.29	2	Announcement that SPP Insurance opposes merger.
32	2 Nov. 1993	-1.83%	-1.42	-2.10%	-1.38	2	Report that Volvo delays shareholder meeting to Dec. 7.
33	4 Nov. 1993	3.00%	2.32	2.30%	1.53	2	Volvo's managers give unauthorized release of 9-month profits in trucks.
34	10 Nov. 1993	0.92%	0.71	0.68%	0.45	2	Report that Wasa Forsakring Fund will vote 'no' Soren Gyll acknowledges strong shareholder opposition to the deal.
35	11 Nov. 1993	0.23%	0.18	-0.24%	-0.16	2	Report that Volvo reopens merger negotiations with France.
36	12 Nov. 1993	-1.21%	-0.93	-1.45%	-0.96	2	Report that, without merger, Volvo will require a large rights offering of equity. Skandia Insurance threatens to vote 'no'.

37	18 Nov. 1993	4.47%	3.43	1.84%	1.21	2	Report that the Swedish prime minister doubts that shareholders will approve the merger. Press release of 9-month profits for entire company.
38	25 Nov. 1993	-2.10%	-1.62	-0.91%	-0.60	2	Report that the 10 largest institutional investors visit Renault in Paris. The Fifth Fund opposes merger.
39	26 Nov. 1993	-2.92%	-2.27	-0.78%	-0.51	2	Report that the Fourth Fund and the Folksam Fund support merger.
40	29 Nov. 1993	-0.52%	-0.40	-2.24%	-1.48	2	Report that Foreningsbanken opposes merger.
41	30 Nov. 1993	4.45%	3.43	2.51%	1.73	2	Report that Skandia Insurance opposes merger.
42	2 Dec. 1993	7.37%	5.60	7.32%	4.76	2	Report that S-E Banken opposes merger and that the Fourth Fund will reconsider support.
43	3 Dec. 1993	1.14%	0.98	-0.21%	-0.08	2	Report that the Volvo board has withdrawn merger proposal; Gyllenhammar and four directors resign.
44		-0.03%	0.00	-2.08%	-0.32	36	Cumulative abnormal returns, all specific events in this period.
45		5.52%	0.67	4.25%	0.46	74	Cumulative abnormal returns, all trading days 9/7/93 to 12/19/93.
<i>Period 1: Announcement of merger to publication of proxy, 26 Oct.</i>							
46		-15.02%	-4.38	-17.62%	-4.52	13	Cumulative abnormal returns, all specific events in this period.
47		-22.81%	-4.04	-23.11%	-3.61	35	Cumulative abnormal returns, all trading days 9/7/93 to 10/25/93.
<i>Period 2: Publication of proxy to withdrawal of proposal</i>							
48		10.73%	2.35	10.76%	2.07	23	Cumulative abnormal returns, all specific events in this period.
49		28.33%	4.75	27.36%	4.05	39	Cumulative abnormal returns, all trading days 10/26/93 to 12/19/93.
<i>Cumulative abnormal returns partitioned by institutional support or opposition</i>							
50		0.66%	0.35	3.06%	1.42	4	All reports of institutional support.
51		14.85%	4.51	11.40%	3.04	12	All reports of institutional opposition.

Table 1. Continued.

Line number	Event date	Volvo A Shares		Volvo B Shares		$L - K + 1$	Event description
		Abnormal return	t -statistic	Abnormal return	t -statistic		
<i>Events associated with unwinding the alliance and redirection of the firm</i>							
52	20 Dec. 1993	2.76%	2.13	3.62%	2.38	2	Announcement that insitutions representing 40% of votes propose a new board of directors.
53	19 Jan. 1994	- 2.39%	- 1.83	- 1.79%	- 1.18	2	Report that Volvo will focus on automotive business and sell unrelated assets.
54	20 Jan. 1994	- 3.38%	- 2.62	- 2.94%	- 1.96	2	Report of special shareholders meeting: new board elected.
55	29 Jan. 1994	3.71%	2.85	3.57%	2.35	2	Report that Volvo and Renault will dismantle joint purchasing arrangement.
56	2 Feb. 1994	- 0.75%	- 0.55	- 0.33%	- 0.20	2	Company announcement that Renault has reduced holdings to 8.76% of votes and 3.45% of capital.
57	11 Feb. 1994	- 0.12%	- 0.08	0.18%	0.12	2	Report that Volvo sells an investment unrelated to autos.
58	17 Feb. 1994	0.89%	0.69	- 0.13%	- 0.09	2	Company announcement that Volvo and Renault agree to terminate alliance.
59	11 Mar. 1994	0.06%	0.05	- 1.22%	- 0.81	2	Report that Volvo will pay SKR 5.2 bn under terms of poison pill to unwind alliance.
60	25 Mar. 1994	0.18%	0.14	0.02%	0.01	2	Report that Volvo sells investment unrelated to autos.
61	14 Sep. 1994	- 0.28%	- 0.20	- 0.98%	- 0.65	2	Report that France will partially privatize Renault. Volvo will sell its 3% stake in Volvo Trucks.
62	19 Oct. 1994	- 0.84	- 0.64	- 0.14%	- 0.09	2	Report that the privatization sale is implemented.
63		3.10%	0.71	2.79%	0.56	21	Cumulative abnormal returns, all specific events in the period.
64		23.52%	1.67	25.86%	1.62	218	Cumulative abnormal returns, all trading days in this period, 12/20/93 to 10/19/94.

65	Summary of entire period: 12 Oct. 1989 to 19 Oct. 1994 24.43%	2.88	20.83%	2.16	79	Cumulative abnormal returns, all specific events in the entire episode.
66		0.92	38.77%	0.99	1310	Cumulative abnormal returns, all trading days in the entire episode.
67	<i>Cumulative abnormal returns associated with changes in Renault shareholdings in Volvo</i>					
68		-2.15	-6.01%	-1.76	10	Increases in holdings by Renault.
		-0.55	-1.31%	-0.61	4	Decreases in holdings by Renault.
69	<i>Cumulative abnormal returns associated with announcements about alliance or merger</i>					
70		13.08	37.67%	10.06	12	Announcements about concept of alliance or merger.
		-4.27	-20.48%	-5.47	12	Announcements about specific terms of alliance or merger.
71	<i>Cumulative abnormal returns associated with announcements about dissolution</i>					
72		3.46	7.18%	3.34	4	Divorcing Renault.
		-2.41	-3.58%	-1.25	7	New strategy: independence and focus on auto business.

strategic alliance agreement. It peaked at 46.55% on November 8, 1990, when Renault announced its first acquisition of Volvo shares. The voting premium declined to 2.27% by January 21, 1991 the day after Renault and Volvo exchanged share interests in their operating units. The -34.72% decline in the voting premium over the 83 trading days is significant ($t = -2.06$). Of this change, a decline of -7.39% is associated with two specific events, November 8 and January 9, when Renault announced increases in Volvo shareholdings. This equates to a loss of SEK -2.6 billion of equity value for the 'A' shares, a decline in value of about 25% for the holders of those shares. The loss is estimated as the value of the change in the voting premium divided by the market value of 'A' shares ex ante. The value of the change in voting premium equals -34.72% , times the price of the 'B' share at September 27, 1990, SEK 292, times the number of 'A' shares outstanding at September 27, 25.3 million. The market value of all 'A' shares outstanding equals the 'A' share price, SEK 400, times the number of shares, 25.3 million, or SEK 10.12 billion. This loss in the premium helped motivate investor activism in the autumn of 1993.

The significant drop in the voting premium is consistent with a decline in the probability of a takeover for Volvo. The alliance entailed substantial blocking minority interests in the respective firms and their operating units, as well as a sizable poison pill. As Megginson (1990) and Rydqvist (1992b) suggest, the voting premium is a function of the probability of takeover, which the changes in ownership almost certainly affected.

3.3. *The merger proposal and its motives*

Against this backdrop, Gyllenhammar and Louis Schweitzer (appointed CEO of Renault upon Lévy's retirement in 1992) secretly began negotiating a merger of the two businesses in the fall of 1992. Unfortunately, the French Socialist Party, which was in power at the time, would not consider privatization of the country's largest state-owned enterprise. When the conservatives came to power in the elections of March 1993, negotiations between the two firms reopened. These talks culminated in the merger proposal announced on September 6, 1993.

During the negotiation period, abnormal returns at announcements about a potential merger are uniformly positive. For instance, the sum of announcement returns during this period (Table 1, line 19) is 27.19% ($t = 8.27$) for the 'A' shares and 27.92% ($t = 7.45$) for the 'B' shares. The report on August 27 of surprisingly strong second-quarter earnings for Volvo, however, possibly confounded the return on August 26. The strong earnings are associated with the recovery of demand in the North American auto market in the spring of 1993. Excluding the August 26 event return gives (line 20) a return of 23.21% ($t = 7.74$) for the 'A' shares and 23.70% ($t = 6.93$) for the 'B' shares. Adjusting for the

confounding event does not change the conclusion that shareholder returns associated with the merger negotiation are positive.

The Volvo merger prospectus pointed to three main reasons for the merger: (a) increasing competitive advantages, (b) improving financial strength and the ability to meet new capital requirements (estimated in Volvo's case to amount to between SEK 5 and 8 billion), and (c) exploiting operating efficiencies in procurement, research and development, and production. Gyllenhammar projected these merger economies to amount to SEK 16.4 billion on an undiscounted basis between 1994 and 2000, over and above those expected from the alliance alone (see AB Volvo 1993b,c).

The proposed governance of the new firm included three important elements. First, the new entity, Renault–Volvo Automotive (RVA), would be directed by a management board under the guidance of a supervisory board. The supervisory board would have extended powers and would be called upon to decide major financial issues. Pehr Gyllenhammar, Volvo's executive chairman, would be nominated chairman of RVA's supervisory board. The management board would have overall management responsibility for the running of Renault–Volvo RVA and would report periodically to the supervisory board. The French government would nominate the chairman of the management board and the CEO of RVA, the likely nominee was Louis Schweitzer, CEO of Renault.

Second, the French state would own 65% of RVA, and Volvo 35%. AB Volvo would directly own 17.85% of RVA's shares. The French government would directly own 47.15% of the shares, including the 0.79% share attributable to Renault employees who had been issued non-voting share certificates. A holding company, RVC, would own 35% of RVA. Renault S.A. (a holding company organized by the French government) would in turn own 51% of RVC, and AB Volvo would own 49%. Volvo's 35% holding is the sum of the direct holding, 17.85%, and the indirect holding through RVC (49% times 35%). Fig. 3 shows the structure of ownership interests. The complexity of this structure is impressive, and, as my interviews revealed, contributed to the difficulty in understanding the deal. RVC would not have an operational role; its purpose was to 'secure the fundamental interests of its shareholders and ensure the stability of their investment in Renault–Volvo RVA. It will be called upon to decide on major issues . . . such as capital increases' (AB Volvo, 1993a, p. 3). The shareholder's agreement governing RVC would be valid for 25 years, although each side would have the right to terminate the agreement after the eighth year. The French government and AB Volvo agreed not to sell or pledge their respective holdings in RVC until the privatization of Renault–Volvo RVA. Each also agreed to give the other a right of first refusal on the sale of shares, and not to sell shares to a competitor. Gyllenhammar told me that RVC would have given AB Volvo a stronger voice in the control of RVA, and that a similar holding company structure had been used in other major cross-border mergers, such as the merger of Asea and Brown-Boveri. Ultimately, however, RVC left

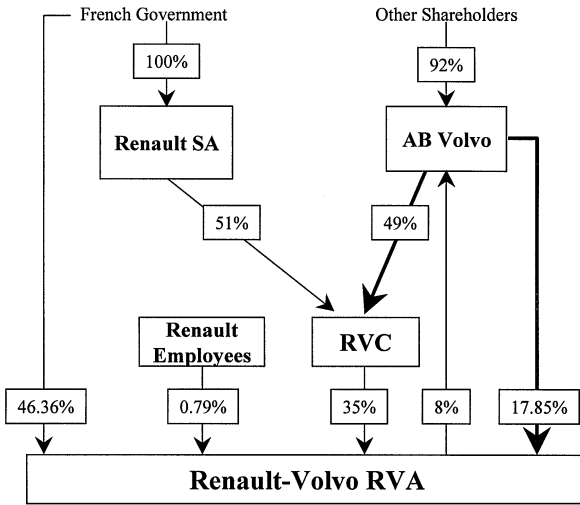


Fig. 3. Proposed structure of ownership of Renault-Volvo RVA following merger of the automotive business. The projected shareholdings in the operating company, Renault Volvo RVA, and in the holding company, RVC, after the proposed transaction is completed. A shareholding is indicated by an arrow (\leftarrow) that emanates from the investor to the investee. The percentage on the arrows indicate the portion of total shares owned by the investor in the investee. For instance, the right most arrow shows that AB Volvo would own 17.85% of RVA's shares directly. (AB Volvo, 1993a, p. 3.)

the balance of control unchanged, since France would retain a majority of votes on the RVC board.

Third, the French government announced that it intended to privatize Renault–Volvo RVA in 1994, and that it would sell its shares principally to a *noyau dur* (or ‘hard core’) of investors. Observers believed that leading candidates for this hard core included Matra-Hachette (a French industrial firm and co-producer with Renault of the *Espace* minivan) and French state-owned banks and insurance companies. The French government would retain an unusual right, an *action spécifique* (popularly called a ‘golden share’) that reserved for the government the ability to prevent an investor from acquiring (or voting) more than a 17.85% direct interest in RVA.⁴ Like a poison pill or control share antitakeover amendment, the golden share could change the voting power of certain (i.e., powerful) shareholders. The French had discretion in using the golden share, however, as the limitation was not automatic. Golden shares are now a common feature in the privatization of state-owned enterprises.

⁴ Later, in a letter to the Swedish prime minister, the French prime minister stated that the ‘golden share’ would not be used against Volvo as long as Volvo’s participation in Renault–Volvo RVA did not exceed a total of 35%. This letter appeared to relax the original golden-share limitation.

Their origin is difficult to ascertain, although many observers cite the wave of British privatizations in the 1980s as the first in Europe to include golden shares. This right would last indefinitely.

In summary, the merger proposal offered Volvo's shareholders participation in the benefits of potential new synergies in exchange for a short position in a bundle of control options (i.e., the golden share, a privatization option concerning the timing and magnitude of any public offering of RVA shares, as well as a *noyau dur* option concerning the targeted purchasers of any shares offered). Collectively, these options granted the French state significant rights to determine RVA's equity clientele and its voting. By virtue of these control options, the merger would escalate the commitment between Volvo's investors and the French government.

At the time of the merger announcement, 19.1% of Volvo's votes were presumed to support the merger. The 'committed' camp included Renault, which owned 10% of Volvo's votes, and two investment companies that had sizable cross-shareholdings with Volvo. Gyllenhammar's task was to increase the supporting coalition to over 50%. Table 2 shows that the 17 largest investors in Volvo held 65.4% of the votes. Of this total, 46.3% were held by 14 uncommitted groups. The remainder, 34.6%, was relatively widely dispersed. Curiously, Gyllenhammar was slow to approach the institutional investors for their support, and many of the meetings that ultimately did occur happened at the initiative of the institutions. He seemed inclined to let the deal speak for itself, rather than to be an advocate. Many interviewees suggest that this was consistent with Gyllenhammar's leadership style of being a grand strategist and visionary.

3.4. Reaction to the merger proposal

We may divide the period in two from the announcement of the merger terms to their withdrawal by Volvo's board: the first seven weeks of relative quiet information-gathering and growing opposition by institutional investors, and then a five-week period of vociferous opposition by institutions.

3.4.1. The first seven weeks: opposition gathers

Volvo's share prices fell dramatically following the announcement of the merger proposal. Abnormal returns on September 6–7 (Table 1, Line 22) are -6.04% ($t = -4.72$) for the 'A' shares, and -6.64% ($t = -4.46$) for the 'B' shares. Over the following seven weeks, abnormal returns accumulate to -22.81% ($t = -4.04$) for the 'A' shares and -23.11% ($t = -3.61$) for the 'B' shares (see Line 47). This cumulative abnormal return represents a decline in equity value of about SEK 8.6 billion (US\$ 1.1 billion). I estimate the loss by summing the losses for 'A' and 'B' shares. For the 'A' shares, the loss is estimated as the product of the number of shares (25.3 million), the stock price per share (SEK 485), and cumulative abnormal return (-22.81%), or SEK -2.799

Table 2

Voting strength in AB Volvo represented by major groups on September 6, 1993

Institution	Percent votes owned
<i>Major investors committed to the merger as of Sept. 6, 1993</i>	
Renault S.A.	10.0
Investment AB Cardo, an investment company	4.8
Protorp Förvaltnings AB, an investment company	4.3
Subtotal, Committed to Merger on Sept. 6, 1993	19.1
<i>Major investors uncommitted as of Sept. 6, 1993</i>	
Fourth Fund, a pension fund	7.5
Skandinaviska Enskilda Banken, a bank	5.8
Svenska Handelsbanken, a bank	5.0
SPP Insurance, an insurance company	4.5
Skandia Insurance, an insurance company	3.7
Folksam Fund, a pension fund	3.6
Parcitas Investments SA, an investment company	3.3
Skandinaviska Banken pension fund	2.6
92–94 Fund, a pension fund	2.5
AMF Pensionsförsäkringar AB, a pension fund	2.5
Nordbanken, a bank	1.9
Trygg-Hansa, an insurance company	1.4
Fifth Fund, a pension fund	1.3
Foreningsbanken, a bank	0.7
Subtotal, Uncommitted on Sept. 6, 1993	46.3
Grand total, committed and uncommitted blocks	65.4

Sources: AB Volvo (1992, 1993d), interviews; newspaper accounts.

billion. For the 'B' shares, the loss is the product of 52.3 million shares, a price of SEK 483, and a cumulative abnormal return of -23.11% , or SEK $-5,838$ billion. The conversion to U.S. dollars is at the exchange rate of 7.83, prevailing on September 6, 1993.

A large portion of this wealth destruction is associated with the release of detailed information about the merger terms. Information was released at four events: the announcement day, Sept. 6, (an abnormal return of -6.04% , Line 22), appointment of specific managers to run RVA (-3.03% , Line 23), the clarification of the golden share terms to Volvo's board⁵ (-2.45% , Line 26),

⁵ Though nominally a private gathering, Sundqvist (1994) reports that the substance of the Volvo board meeting in London on October 6, 1993 leaked quickly to the financial community and set a confrontational tone for the meeting with institutional investors on October 12. As Sundqvist describes it, the board meeting broke into an 'uproar' when Gyllenhammar read to the directors a letter from the French Minister of Industry outlining the terms of the golden share. These detailed terms were not explained to the directors in early September when they were asked to approve the deal.

and a press release containing further clarification of the golden share and privatization intentions of the French (– 3.73%, Line 28). These aggregate to – 15.25%, or about three-quarters of the cumulative abnormal return over the seven weeks following the announcement. The negative abnormal returns at the release of new information about the terms of merger is consistent with investors' growing clarity about the value transfer implicit in the French control options, and with their incredulity at the projected synergies. The Appendix presents an analysis that suggests that if one accepts Gyllenhammar's forecast of synergies, the control options were worth at least SEK 3.12 billion, or 8.3% of AB Volvo's market value of equity just before the merger announcement.

Other parties fanned the growing dissent of the institutional investors. Two Swedish tabloids immediately condemned the merger, largely on nationalistic grounds. The Swedish Small Stockholders Association, a shareholder advocacy group roughly similar to the United Shareholders Association in the U.S., requested information and met with Volvo's management twice following the merger announcement. The Association voiced opposition to the merger on October 7, and solicited proxies from its members. Several publications held that the Swedish Small Shareholders' Association accounted for 7–10% of Volvo's votes, but Lars-Erik Forsgårdh states that in the final event, the Association could muster proxies for only 2% of the votes. It also threatened to sue Volvo's directors. The Association argued that the bylaws of AB Volvo dictated that the firm should be primarily engaged in the automotive industry, and that changes in the bylaws required a two-thirds majority vote of shareholders. Volvo retained a prominent attorney who opined that the merger would require only a simple majority for approval. The Association replied that it would sue the directors to invalidate any simple majority approval of the merger. In late November, the opposition coalition accounted explicitly for about one-third of Volvo's votes. This eliminated any chance for a clear larger-than-two-thirds majority and ensured that the directors would have to deal with a lawsuit. Volvo's blue-collar union expressed support for the merger, believing that the deal would preserve their jobs and possibly seeing some benefit in allying with the Confederation Générale du Travail, Renault's communist-led trade union, but this support for the deal repelled, rather than attracted, the institutional investors. Volvo's white-collar union, representing 5000 employees, voiced opposition, as did the union of Volvo's engineers, representing 900 employees. Three former senior executives of Volvo wrote newspaper columns opposing the deal. Until the end of October, however Volvo's institutional investors offered no public comments.

In mid-October, Swedish investors witnessed the spectacle of a management coup at Air France, another French state-owned enterprise. The CEO, Bernard Attali, had sought to cut wages and jobs and change work rules at France's

worst-performing state ward. The unions struck and began to pressure the government to sack Attali. Swedish investors viewed this confrontation as an acid test of the French government's resolve to run state enterprises in a businesslike fashion, a crucial condition for them to realize acceptable returns from RVA. When Attali was fired on October 16, investors' doubts about the French connection gained momentum.

3.4.2. *The final five weeks: active opposition by institutional investors*

The institutional investors remained silent until they saw the formal merger prospectus, published on October 26. Several institutional investors had hoped that the prospectus would present a detailed justification for the projected merger synergies, and that it would value Renault and Volvo's automotive assets as a foundation for justifying the share exchange ratio in the merger. The prospectus gave no information beyond what was already in the public domain, however, and the institutions would contain their impatience with the merger no longer.

Within three days, two institutions, the 92–94 Fund (2.5% of Volvo's votes) and SPP Insurance (4.5%), declared their opposition to the deal, and a third, Skandia Insurance indicated that it would delay its decision. Two of Stockholm's leading investment managers, Mats Qviberg and Sven Hagstromer, published a newspaper article condemning the deal and calling for Gyllenhammar's resignation. They wrote, 'We don't like the proposed Renault agreement, and we don't like the way Volvo has been abused over the years' (quoted in Bartal and Hardin, 1993). Reeling from the tide of institutional opposition, Gyllenhammar agreed to postpone the shareholder meeting by one month in order to give the institutions added information and time for them to assess it.

On November 4, Volvo's operating managers, at a golf outing in Marbella, Spain, told journalists that nine-month profits in Volvo's truck segment would be up sharply, indicating a strong recovery from a year earlier. This was confirmed at the formal release of nine-month figures on November 18. These revelations triggered a fresh round of accusations from the institutions that the merger had been negotiated when Volvo was at a cyclical low in cash flows and that now, in the face of a buoyant recovery, the automotive business was being given away. Abnormal returns on the 'A' shares of 3.00% and 4.47% at both dates (Table 1, Lines 33 and 37) are significant. More importantly, the buoyant reports turned the merger debate toward the central issue of valuation. One commentator wrote:

Volvo and Renault have refused to break down the values placed on their respective assets, or give detailed performance forecasts, leaving many Swedes suspicious that Volvo, once again profitable, will in effect be milked by Renault which is suffering falling profits. (Carnegy, 1993a).

An institutional investor was quoted as saying,

Renault is basically making a bid for Volvo's cars and trucks and paying with its shares. As Volvo shareholders, we cannot assess what those Renault shares are worth until Renault has a market value. (quoted in Carnegy and Ridding, 1993).

Lars-Erik Forsgårdh, president of the Swedish Small Shareholders Association said, 'The fundamental point is that Volvo has not succeeded in showing that this deal is good for its shareholders'. (quoted in Brown-Humes, 1993).

In mid-November, Volvo undertook two efforts to strengthen institutional support for the merger. First, Volvo tried to reopen its merger negotiations with France, only to be rejected. The French minister of industry did issue a letter guaranteeing that the government would not exercise its golden share against Volvo as long as Volvo's equity interest in RVA did not exceed 35%. This letter was unsatisfactory to the institutions. Second, Volvo said that the company would initiate a large (SEK 5 billion) rights offering if the merger was not approved. The institutions viewed this as an attempt to intimidate them, as it ignored the possibility of selling non-automotive assets to finance the car and truck segments.

Two more funds expressed their opposition on November 24 and 29, and on November 30 Skandia Insurance announced that it would vote against the proposal. Volvo's largest institutional investor, the Fourth Fund, announced that it would vote for the deal. Six days later, however, the Fourth Fund, announced that it would reconsider its previous commitment to vote in favor. The Fourth Fund's board had barely approved its support for the deal, with a vote of 8-to-6, and only after very heavy lobbying by Volvo's blue-collar union representatives on the board.

As Volvo's board meeting approached on December 2, the largest bank in Scandinavia, S-E Banken (SEB) announced that it would vote 'no'. In explaining SEB's opposition, the CEO said,

The information was not up to the standard we like to have in such an important case as this . . . [Also] we are very concerned about the doubts among Volvo's personnel, especially the engineers. If you don't have your employees with you going into a merger like this it will be very damaging. (quoted in Carnegy, 1993b).

In a surprise move on December 2, 25 senior managers informed the board of their opposition to the merger, leaving Pehr Gyllenhammar, Volvo's executive chairman, isolated in his own company. On that date, the board withdrew the proposal; Gyllenhammar and four directors resigned.

The significance of certain institutional announcements in the final days before the board meeting is worth noting. S-E Banken was the largest bank in

Scandinavia, on whose board Gyllenhammar served as a director. Skandia Insurance was the largest insurance company in Scandinavia, and a firm with which Gyllenhammar had personal ties. Gyllenhammar's father had been CEO of Skandia, as had Gyllenhammar himself in his early 30s. Gyllenhammar's inability to sway these two 'lead steer'⁶ institutions may have signaled to Volvo's board the strong hostility of institutional investors to the deal.

The reaction to the news of the first⁷ institutional opposition on 28 October (see Table 1, Line 30) is positive and significant for both classes of shares: 5.43% ($t = 4.15$) for the 'A' shares and 4.5% ($t = 2.96$) for the 'B' shares. None of the other announcements of opposition is significantly positive until those of Skandia Insurance and S-E Banken on 30 November and 2 December (see lines 41 and 42). Skandia's announcement of opposition is associated with an abnormal return on 'A' shares of 4.45% ($t = 3.43$); S-E Banken's announcement is associated with a 7.37% return ($t = 5.60$).

From publication of the proxy statement to the withdrawal of the proposal the period when institutions expressed their 'voice' the returns are significantly positive. The abnormal return on 'A' shares over all trading days is 28.33% ($t = 4.75$) (see Table 1, Line 49); specific events are associated with an abnormal return of 10.73% ($t = 2.35$) (see Table 1, Line 48). Abnormal returns associated with published news of institutional opposition (see Table 1, Line 51) account for 14.85% ($t = 4.51$) for the 'A' shares and 11.40% ($t = 3.04$) for the 'B' shares. Reaction to announcements of institutional support for the merger (Table 1, Line 50) is insignificantly positive, although the only truly definitive statement of support (Table 1, Line 39) is significantly negative, -2.92% ($t = -2.27$) for the 'A' shares. When the Fourth Fund announced on September 23 a preliminary expression of support for the merger, the return was significantly positive 3.58% ($t = 2.76$) (see Table 1, Line 25).

In general, investors' reactions during this period are consistent with the hypothesis that institutional voice is valuable; opposition to the merger terms is, on average, positive. Reaction to news of initial opposition and 'lead steer' opposition is significantly positive; the only expression of definitive support for the merger (Table 1, Line 39) is significantly negative.

It is surprising that the voting premium barely changes during the control contest. The premium rises as high as 3.08% on November 8, 1993 when the Swedish prime minister publicly doubted that the merger would be approved. In

⁶ In the parlance of Wall Street, a lead steer is an investor that by virtue of special expertise, size, or investment record is a closely-watched opinion leader. See Stern (1989) for a discussion of this concept. S-E-Banken and Skandia Insurance were, respectively, the second and fifth largest independent institutional investors in Volvo.

⁷ This study used the conventional definition of an institutional investor as a professional group engaged in fiduciary or proprietary money management. The Swedish Small Shareholders Association, which had expressed its opposition to the merger on October 6, did not fit this definition.

general, however, the voting premium behaves as if there were no control contest, averaging only 1.00% over the entire period. During the period of institutional silence (September 6 to October 25), the voting premium averages 0.51%. Over the period of institutional activism (October 26 to December 19), the premium averages 1.45%.

3.5. *Unwinding the alliance, and redirection of the firm*

Volvo's share prices recovered dramatically in the weeks following the withdrawal of the merger proposal, nearly doubling by the annual meeting in April 1994. The French government partially privatized Renault in October 1994. Three key actions characterize this period.

First, a coalition of the activist Swedish institutional investors jointly nominated a new board of directors in December 1993 and called for a special shareholders' meeting, which elected them in January 1994. Second, Volvo's management negotiated a dissolution of the strategic alliance with Renault. This reversed the cross-shareholdings in the two firms' operating units. Third, Volvo's management announced a new strategy for the firm that entailed focusing on the automotive industry. Volvo would sell investments in other businesses and use the proceeds to finance the development of new products. In addition, Volvo would remain independent, possibly exploiting small highly-focused alliances but avoiding mergers and complex far-ranging alliances.

During the final period of redirecting the firm, abnormal returns are positive but not significant (see Table 1, Lines 63 and 64). Yet, as line 71 shows, abnormal returns are significantly positive at news of the unwinding of the alliance with Renault (6.47% and $t = 3.46$ for the 'A' shares; and 7.18% and $t = 3.34$ for 'B' shares.) In contrast, abnormal returns are significantly negative at news associated with the new strategy of independence and the focus on automobiles, $-6.01%$ ($t = -2.41$) for 'A' shares (see Table 1, Line 72). The results on these two dates are consistent with hypotheses that the proposed merger with Renault would have destroyed the wealth of Volvo's shareholders, and that the new strategy failed to resolve Volvo's strategic predicament. In other words, neither strategy was economically attractive.

Across the entire six-year period (see Table 1, Lines 69 and 70), Volvo shareholders receive positive and significant returns associated with all news about the *concept* of alliance or merger – for the 'A' shares, the cumulative return is 43.02% ($t = 13.08$). This cumulative result is the aggregate of two-day returns at six events: initial rumors of an alliance (Line 1), announcement of a letter of agreement to be allies (Line 3), the agreement in principle to merge thwarted by politics (Line 13), the support of a French minister for merger (Lines 14 and 15), and the announcement that Volvo and Renault were near to announcing a merger agreement (Line 18). When specific terms of alliance or merger were

announced, however, the reaction of investors was negative: Line 70 shows that the cumulative effect of six events for the 'A' shares was -14.03% ($t = -4.27$). The six events are the announcement of the detailed terms of alliance (Line 6), the exchange of shares for the alliance (Line 9), the announcement of merger terms (Line 22), the appointment of managers to run RVA (Line 23), and the clarification of the golden share to directors (Line 26) and to the institutional investors (Line 28).

In short, investors applauded the concept of the alliance and merger but regretted the actual terms. Several interviewees cite this pattern of expectation and disappointment as a recurring feature of Gyllenhammar's relationship with investors.

The voting premium did not change after the control contest. During the entire final period under observation (December 20, 1993 to October 19, 1994), the voting premium does not exceed 3.5%, and averaged only 0.05%.

4. Discussion and conclusions

My study analyzes the governance changes, shareholder returns and voting premiums associated with Volvo's strategic alliance and attempt to merge with Renault. The findings shed light on why firms undertake value-destroying combinations, whether institutional activism is valuable, and why such activism is valuable.

4.1. Why the merger proposal and alliance failed

The interviews and analysis of returns suggest that the merger proposal and alliance failed because of factors with which the literature of financial economics is acquainted: hubris (Roll, 1986) managerial entrenchment (Jensen, 1986; Morck et al., 1988), managerialism (Morck et al., 1990), and the escalation of commitment and endowment effect (Lys and Vincent, 1995).

No interviewee or published source disputes Gyllenhammar's strategic rationale for the alliance or merger. In an industry characterized by scale economies, the small producer will have a cost disadvantage and therefore an incentive to increase size through alliances and mergers. In other words, the merger did not fail for want of a sound strategic motive.

Gyllenhammar himself explained the failure of the merger proposal in behavioral terms: irrationality, Swedish cultural chauvinism, or an envious vendetta against him. In April 1993 the Swedish Small Shareholders Association compelled Gyllenhammar to reveal that his compensation was SEK 9.5 million, revealing that he was the highest-paid executive in Scandinavia at a time when Volvo reported losses and was closing plants. As Dial and Murphy (1995) describe in the case of the restructuring of General Dynamics, CEO

compensation is a lightning-rod for criticism. Gyllenhammar created the impression that he was the victim a ‘gigantic power play’ by the Wallenberg interests, the only other Swedish industrial group of size and significance comparable to Volvo, which sought to ‘cut Volvo down to size’ (Carnegy, 1994c). The chairman of Volvo’s newly-elected board, Bert-Olaf Svanholm, was an executive with Asea, in which the Wallenberg family is a large minority shareholder, an association which appeared to support Gyllenhammar’s claims. Several interviewees, however, discount the significance of this fact. Sundqvist (1994) argues that over time Gyllenhammar had amassed enough enemies in the Swedish business community that he had no base of support with which to confront the opposition. This suggests that the merger failed because of psychology or politics. Yet such an explanation is ultimately unsatisfying, for it sheds little light on the roots of opposition to *this* deal. For instance, if the merger of Renault and Volvo were to have created shareholder value, it seems doubtful that the supposed jealousy and megalomania of Gyllenhammar’s opponents would have successfully defeated the proposal.

A counter-assessment, offered by Swedish institutional investors in interviews and by Sundqvist (1994), explains the failure to merge as follows. Volvo’s shares materially underperformed the Swedish stock market over the term of Gyllenhammar’s leadership (see Fig. 4). Gyllenhammar led the firm into a number of alliances and diversifying acquisitions that failed to deliver the performance

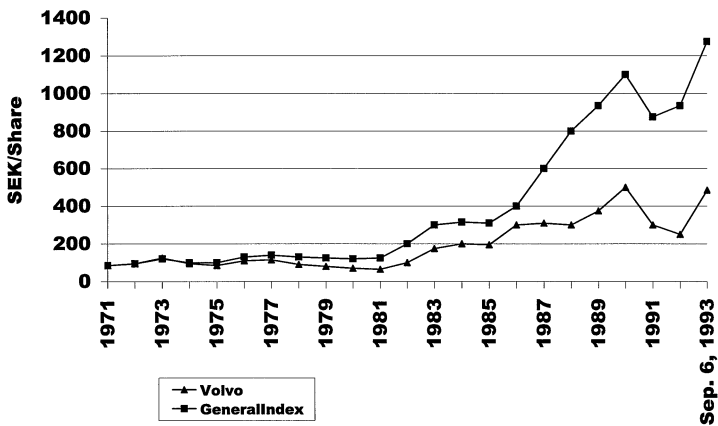


Fig. 4. Share price performance: Volvo vs. Swedish stock market index. This figure gives the time-series of AB Volvo’s share prices and the GeneralIndex, the Swedish stock market index, from 1971 (the year of Pehr Gyllenhammar’s appointment as CEO of Volvo) to September 6, 1993 (the date of announcement of the merger proposal). For comparability, the market index is pegged at the beginning of the time series to Volvo’s share price. Source of data used in this figure: ‘PG sitter kvar,’ *Affarsvärlden*, December 8, 1993, page 7 (in Swedish).

improvements investors expected.⁸ The strategic alliance with Renault that Gyllenhammar personally crafted was not going well, and institutional investors surmised that otherwise Gyllenhammar would not have advocated merger. In 1993 the merger proposal was a bad deal, presented badly: the control provisions were confusing, and the projected synergies were not justified. Eventually it was learned that the synergies were estimated not by Volvo's staff, but by Credit Suisse First Boston and Booz Allen and Hamilton, who were advising Gyllenhammar. Rather than lending the credibility of objective outside advisers, this revelation served to heighten suspicions that Gyllenhammar was manipulating his investors and employees. Eventually, the investors discounted the merger synergies and concluded that the control rights represented an expropriation of Volvo equity value by the French state. From this perspective, the deal failed on its economics.

An internal study (reported in Carnegy, 1994b) by Volvo supports this view. It claims that the golden share and uncertainty about the privatization of Renault were the key drivers of the collapse of the merger proposal. Reflecting on the predicted synergies, the author of the study, Arne Wittlov, is quoted as saying, 'People quite simply did not believe in the benefits of co-operation'.

The centerpiece of the counter-assessment is *managerial entrenchment*. Morck, Shleifer, and Vishny (1988, p. 293) explain: 'When managers hold little equity in

⁸ It is beyond the scope of this study to examine the profitability of Gyllenhammar's individual alliances and acquisitions predating Volvo-Renault. These included eight major transactions of which five represented efforts to diversify out of the automobile industry:

- Attempted merger with Saab-Scania, Sweden's other major car manufacturer. Plans for merger were announced in May 1977 but abandoned in August when opposition to the merger developed.
- Attempted investment in the Norwegian oil industry. In August 1977 Gyllenhammar initiated discussions with Norway's prime minister to exchange Volvo's shares for a 40% interest in Norway's North Sea oil fields. The proposal was abandoned after a majority of Volvo's shareholders opposed the plan.
- Acquisition of Beijerinvest Group in late 1977. Gyllenhammar was attracted by Beijerinvest's oil-trading firm, although the firm also operated food, engineering, and other businesses.
- In 1979, sale of a 9.9% share interest in Volvo to Renault. Renault sold its shares in 1985 as part of a restructuring program.
- In the early 1980s, Volvo acquired a number of minority interests in consumer foods manufacturers.
- In 1986, Gyllenhammar negotiated the sale of Volvo's pharmaceutical businesses to Fermenta AB, and the acquisition of 20 percent of Fermenta's shares. This deal broke down when it appeared that Fermenta's CEO had engaged in fraud.
- In 1986, Volvo acquired 25% interests in each of two pharmaceutical companies, Pharmacia and Sonesson.
- In 1991, Volvo organized NedCar B.V. as a joint venture between Volvo, Mitsubishi, and the Dutch Government. The objective of this joint venture was to manufacture car models in the medium-size segment for sale under the Volvo and Mitsubishi names.

the firm and shareholders are too dispersed to enforce value maximization, corporate assets may be deployed to benefit managers rather than shareholders'. Indeed, Gyllenhammar's weak alignment with shareholders emerged as an issue in the debate over the merger. He owned about 10,000 shares, 0.10% of the total shares outstanding. Gyllenhammar's shareholding in Volvo is reported in Sundqvist (1994, p. 247). At the market values prevailing on the date of the merger announcement, this holding equaled about SEK 4.85 million, or about half of his annual compensation in 1995. Several interviewees contend that Gyllenhammar had stacked the board with his friends and supporters. Jensen (1986), Shleifer and Vishny (1989), and others have argued that, in the absence of significant ownership stakes, managers will undertake wealth-destroying strategies to pursue their own goals to the detriment of the firm's owners. Shleifer and Vishny (1989) suggest that a manager may diversify a firm in a way that increases the firm's demands for his or her particular skills. Amihud and Lev (1981) indicate that diversification may be pursued to reduce the firm's total risk since managers cannot efficiently diversify their risk of employment. Jensen (1986, p. 328) writes: 'The [free cash flow] theory implies managers of firms with unused borrowing power and large free cash flows are more likely to undertake low-benefit or even value-destroying mergers. Diversification programs generally fit this category, and the theory predicts they will generate lower gains'. Critics point toward Gyllenhammar's program of unrelated diversification, several spectacularly poor deals, and generally his long-term managerial record of financial underperformance.

Despite the evidence of entrenchment, there is one important inconsistency: Gyllenhammar's departure is not associated with significant positive abnormal returns, as one would expect if he were associated with expected destruction of shareholder wealth (see Table 1, line 43). Indeed, this fact suggests an alternative hypothesis: the destruction and recovery of value are associated with policies, rather than an individual. The policy of alliance and merger was costly to shareholders: at the announcements of progressively deeper engagement, abnormal returns are significantly negative, returns are significantly positive at announcements of the unwinding of that engagement.

Path dependence may explain a tendency of managers to undertake value-destroying mergers. Bleeker and Ernst (1995) suggest that alliances can set a path dependent strategy toward merger. Extensive cross-shareholdings and a poison pill dictate a costly exit if the allies grow dissatisfied with their partnership. When the CEOs of Volvo and Renault grew dissatisfied with the progress of their alliance, the path pointed toward deeper integration and merger. This case suggests that one of the key roles for institutional voice is to break the grip of value-destroying path dependence through changes in management, the board, the strategy, and the governing coalition of investors.

Path dependence as an explanation for bad mergers complements, rather than excludes, other hypotheses. The failed merger of Volvo and Renault is consistent

with these other hypotheses as well. Roll (1986) argues that hubris, the mistaken belief in takeover gains, drives unprofitable acquisitions. Gyllenhammar plainly believed in takeover gains from a merger with Renault but could not get the institutions to accept them. Repeatedly, in previous acquisitions, he had projected financial gains and then failed to deliver. Numerous interviewees used adjectives to describe Gyllenhammar that suggest a leader who does not shed mistaken beliefs easily: ‘emperor’, ambitious, domineering, dictatorial, and having no particular passion for the products or customers of his firm, but rather for financial deal-doing. Gyllenhammar’s small stake in the firm and a board dominated by his friends insulated him from the consequences of his mistaken beliefs.

Morck et al. (1990, p. 33) hypothesize that ‘bad managers may make bad acquisitions simply because they are bad managers’. They hold that bad managers pursue managerial objectives, such as size maximization and unrelated diversification. The lengthy list of costly diversifying acquisitions by Volvo, Volvo’s long-term underperformance relative to the Swedish stock market, and Gyllenhammar’s own stated objectives for the merger (e.g., ‘to become a player of size’) are broadly consistent with the managerial objectives hypothesis.

Lys and Vincent (1995, p. 375) offered behavioral hypotheses for value-destroying mergers, including an endowment effect and a tendency to escalate commitments: ‘once a decision maker takes action, there are powerful psychological, environmental, and structural pressures to continue the course, regardless of subsequent information to the contrary’. The historical relationship of the two firms reveals an increasing commitment between them from 1971 to 1993. Path dependence and escalation of commitments are similar but not identical: a poison pill and cross-ownership of shares in the alliance committed both firms to a path, and rendered other paths (i.e., exits) costly. The decision to merge (i.e., to proceed farther down that path) was an escalation of commitment.

In short, this case is generally consistent with a range of explanations for bad mergers: path dependence, hubris, entrenchment, pursuit of managerial objectives, and a tendency to escalate commitments.

4.2. *The value of institutional voice*

It is remarkable that Volvo’s board, management, and corporate strategy changed without a formal proxy contest or takeover attempt. Shleifer and Vishny (1986) cite ‘jawboning’ as an alternative to influence a board of directors to abandon a value-destroying course of action. Black (1992a) and others hypothesize that institutional voice is valuable, and this case is consistent with their hypothesis.

First, the contest over the merger terms illustrates the many forms that voice may take:

Asking questions/demanding more information. Press reports and interviews reveal numerous requests for more information about the golden share, merger

synergies, and French intentions for privatizing RVA. The Swedish Small Shareholders' Association is widely credited with asking initial questions that eventually led to a cascade of inquiry by the institutions.

Direct communication with the board of directors. It is not possible to reconstruct a history of informal conversations among opponents of the merger, Volvo's board, or the boards of institutional investors. In the close-knit Swedish business society, however, director interlocks are widespread. One can show the representation of several interested parties on the boards of Volvo and of the institutional investors, where, it is reasonable to assume, the voice of direct opposition was heard.⁹ Gunnar Johansson, former CEO of Volvo and outspoken critic of the merger, and Peter Nygards, head of the while-collar union (which announced its opposition to the merger) sat on the board of the Fourth Fund, Volvo's largest independent institutional investor. Soren Gyll, Volvo's CEO, was a director of Trygg Hansa SPP, one of the earliest institutional opponents of the merger. Gyllenhammar was a director of S-E Banken, whose CEO publicly criticized the merger and Gyllenhammar, and which opposed the merger. Three of Volvo's outside directors, Ulf Laurin, Bo Rydin, and Sven Ågrup, represented Svenska Handelsbanken, which took no public stand in opposition, but which Gyllenhammar cites in an interview with me as one of the leading organizers of opposition.

Announcements of deferral of support. Volvo was never able to develop a 'bandwagon effect' in part because lead-steer institutions (such as Skandia Insurance) announced that they were not yet ready to give their support. Usually these announcements followed the release of additional information by Volvo.

Announcements of opposition. Committing the institution to vote against the proposal signaled the investor's attitude to the board, Volvo's management, and the other institutions. Public expressions of opposition are extremely rare in the Swedish business community, which makes the vocal opposition in this case especially notable.

Threats to sue. The 92–94 Fund and the Swedish Small Shareholders Association publicly threatened to sue the Volvo directors if the merger were implemented without a two-thirds majority vote. There was no precedent in Swedish business history of large investors suing to invalidate a shareholder vote.

Demand for renegotiation of the merger terms. Several institutions called publicly for Gyllenhammar to reopen negotiations with the French. Bjorn Wolrath, CEO of Skandia Insurance, was a leading advocate of renegotiation. In fact, this was tried, but to no avail.

⁹ I am indebted to Sven-Ivan Sundqvist and Kristian Rydqvist for assistance in the identification of these linkages.

Demand for the resignation of the chairman and/or the board. Influential leaders in the Swedish financial community published commentaries or gave interviews that called for Gyllenhammar's resignation. Mats Qviberg and Sven Hagstromer, prominent Stockholm investors, demanded resignation of the entire board. Pehr Thelin, CEO of S-E Banken, demanded Gyllenhammar's resignation. These were extremely strong expressions of sentiment in the Swedish business community.

Second, the case illustrates the value associated with institutional voice. The loss of value at the announcement of the merger and over the initial seven weeks following is material and significant. Abnormal returns associated with institutional activism are positive and significant during the period of active opposition, and they are positive and significant at announcements of opposition by 'lead steer' institutions. Returns are negative and significant at the announcement of institutional support for the merger. The abnormal returns associated with specific reports of institutional opposition (Table 1, Line 51) equate to increases in Volvo equity value of SEK 4.7 billion (US\$ 600 million). I estimate the gain by summing the gains for 'A' and 'B' shares. For the 'A' shares, the gain is estimated as the product of the number of shares (25.3 million), the initial stock price per share (SEK 485), and the cumulative abnormal return (14.85%), or SEK 1.822 billion. For the 'B' shares, the gain is the product of 52.3 million shares, a price of SEK 483, and a cumulative abnormal return of 11.40%, or SEK 2.879 billion. The conversion to U.S. dollars is at the exchange rate of 7.83, prevailing on September 6, 1993.

4.3. *Sources of value recovered by institutional voice*

The analysis of abnormal returns yields insights into the sources of value recovered by institutional activism. Hubris, managerialism, and the escalation of commitment were reversed by changing managers and the board. Path dependence in this case was changed by unwinding the merger and alliance. A new management, new board, and new strategy committed the firm to a new path. Contrary to Gyllenhammar's assertion that the opposition to the merger was really opposition toward him personally, the abnormal returns suggest that the opposition was focused on the path down which he was taking the firm. In short, the source of value recovered in this case was the redirection of Volvo from its path-dependent alliance with Renault.

It is also interesting that the gains from jawboning are not reflected in a widening of the voting premium in Volvo's shares. The voting premium declines sharply at the beginning of the strategic alliance, consistent with the hypothesis that the terms of the alliance effectively blocked other existing or potential control parties. The premium remains small throughout this episode, both in absolute terms and relative to typical premiums found in other research. Moreover, events that marked changes in the political landscape during the

control contest had a relatively immaterial effect on the changes in the voting premiums. The theory of the voting premium, summarized in Rydqvist (1992b), suggests that the recovery of value associated with institutional voice did not derive from the institutions' power to expropriate value – if that were the case, the premium would have risen – but rather from a fundamental redirection of the firm. The redirection reduced the firm's probability of a hostile takeover.

4.4. Implications for further research

The hypothesis of path dependence suggested by this case invites further study. Path dependence can complement hypotheses about bad mergers that originate from managers themselves. This new hypothesis merely recognizes that decisions managers have made in the past may constrain their choices in the present. Of course, it may be that bad decisions in the past originated in hubris or bad judgment. The hypothesis of path dependence invites researchers to look farther back in time than the first announcement of a merger to build a deeper understanding of the origins of bad deals.

As this study and other clinical studies (e.g., Lys and Vincent, 1995) suggest, scholars should work with *joint hypotheses* about wealth effects in mergers. This case also illustrates the slow-building chorus and wide variety of voice or jawboning in institutional activism. The nature of the chorus and variety invites further research.

Appendix A. Valuing the French control options

The control options to be granted to the French government were essentially rights to influence the strategy of RVA. Transfer of these rights from public shareholders to France would affect shareholder wealth. A rational investor would support the merger terms if his or her wealth were greater after the merger (and the transfer of rights) than *ex ante*. Using this insight along with data supplied by the merger prospectus, it is possible to estimate a minimum value for the control options.

After the merger, the Volvo investor's interest in the automotive business would be equal to this aggregate value:

$$\text{Value}_{\text{after merger}} = [(V_o + AS + MS + R) * 0.35] - CO, \quad (\text{A.1})$$

where V_o is the value of Volvo's automotive business on a stand-alone basis, before the effect of any alliance or merger synergies, AS the value of alliance synergies, derived from the alliance with Renault of 1990, MS the value of incremental new *merger* synergies, and CO the value of the bundle of control options.

If the merger were rejected, it was unclear *ex ante* whether the alliance would stand or dissolve. Gyllenhammar and Schweitzer (the CEO of Renault) said on more than one occasion that the alliance would continue, but with the benefit of hindsight, one must question this. One must assume some probability, p , that the alliance would stand if the merger proposal were rejected, and a probability, $(1 - p)$, that the alliance would be dissolved. If the merger were rejected but the alliance continued to stand, one must assume that Volvo would receive its share, k , of the alliance synergies, AS . If the alliance were dissolved, alliance synergies would disappear. One must also assume costs if the alliance were dissolved—these costs would include payments under the poison pill that would be triggered by dissolution. We now know the costs were material. Inserting an assumption about dissolution costs only amplifies the size of the golden-share value, so the value estimated here is probably biased downward. Accordingly, the value of the Volvo investor's interest in the automotive business would be

$$\begin{aligned} \text{Value}_{\text{merger rejected}} = & p * [(0.75 * V_o * W_{\text{Volvocar}}) + (0.55 * V_o * W_{\text{Volvotruck}}) \\ & + (0.20 * R_o * W_{\text{Rencar}}) + (0.45 * R_o * W_{\text{Rentruck}}) \\ & + (AS * k)] + (1 - p) * (V_o - UC), \end{aligned} \quad (\text{A.2})$$

where R_o is the equity value of Renault's car and truck businesses on a stand-alone basis, apart from the benefit of any alliance or merger synergies, p the probability that the alliance would stand if the merger were rejected, W_{Volvocar} the proportion of V_o attributable to Volvo's car business, $W_{\text{Volvotruck}}$ the proportion of V_o attributable to Volvo's truck business, W_{Rencar} the proportion of R_o attributable to Renault's car business, W_{Rentruck} the proportion of R_o attributable to Renault's truck business, and UC the present value of costs associated with unwinding the alliance, should it dissolve.

In short, the rational investor would reject the merger proposal if

$$\text{Value}_{\text{merger rejected}} > \text{Value}_{\text{after merger}} \quad (\text{A.3})$$

Inserting the respective formulas and rearranging to isolate the value of the bundle of control options, CO , the decision rule of the Volvo investor becomes to reject the merger proposal if

$$\begin{aligned} CO > & [(V_o + AS + MS + R) * 0.35] - p * [(0.75 * V_o * W_{\text{Volvocar}}) \\ & + (0.55 * V_o * W_{\text{Volvotruck}}) + (0.20 * R_o * W_{\text{Rencar}}) \\ & + (0.45 * R_o * W_{\text{Rentruck}}) + (AS * k)] - (1 - p) * (V_o - UC). \end{aligned} \quad (\text{A.4})$$

We can derive the values for the variables in this equation directly from public information, or infer them from public statements by Gyllenhammar and others.¹⁰

- MS Merger synergies were estimated at SEK 17.95 billion. The merger prospectus (p. 4) presents a graph of the time distribution of SEK 16.43 billion in savings spread over six years. Taxing these savings (at 35%) including a terminal value for the savings (estimated as the final year's savings capitalized at 10%), and discounting them at 10% to obtain a present value yields SEK 17.95 billion.
- AS Alliance synergies were estimated to be SEK 44.66 billion. The merger prospectus (p. 4) gives a forecast for the realization of SEK 41.07 billion in alliance synergies over six years. As with the merger synergies, the alliance synergies are adjusted for taxes and terminal value and discounted to the present.
- p The probability that the alliance will survive despite a rejection of the merger proposal is estimated to be 1.0, based on public statements by Gyllenhammar and Schweitzer in the fall of 1993. We know that the probability was considerably less than 1.0. The first derivative of CO (the value of control options) with respect to p is negative: assuming certainty biases the resulting estimate of CO downward.
- k Volvo's share of the alliance synergies was estimated to be 0.50. The merger prospectus hypothesizes equal sharing in the benefits of the strategic alliance. Using this value in our analysis here assumes that the division of gains does not change after the merger.
- Ro The equity value of Renault's car and truck businesses on a stand-alone basis, apart from the benefit of any alliance or merger synergies, is estimated to be SEK 37.67 billion. The value of Renault's equity was estimated in September 1993 by analysts to vary between SEK 55 billion (Carnegie International, 1993) and 60 billion (Barclays, 1993). Using the SEK 60 billion figure and backing out Renault's assumed 50% share in the alliance synergies of SEK 44.66 billion yields SEK 37.67 billion. We now

¹⁰ Some quantities are expressed by Volvo and outside observers in French francs, and others in Swedish Kroner. For simplicity of exposition, all quantities are discussed here in Kroner, translated from Francs at 1.369 SEK/FRF, the rate prevailing on the date of merger announcement, September 6, 1993.

know that Renault was partially privatized in October 1994 (a year after the episode discussed in this study) at share prices valuing Renault's equity at SEK 58 billion. The first derivative of CO with respect to R is positive; using the 'perfect foresight' value of Renault's equity (SEK 58 billion) would increase the implied value of CO.

Vo The equity value of Volvo's car and truck businesses on a stand-alone basis, apart from the benefit of any alliance or merger synergies is estimated to be SEK 2.67 billion. In September 1993, analysts estimated that the equity value of Volvo's car and truck businesses was SEK 23.3 billion (Carnegie International, 1993) to 25 billion (Barclays, 1993). Using the SEK 25 billion estimate and deducting Volvo's share (50%) of the expected alliance synergies (SEK 44.66 billion) yields a stand-alone equity value of SEK 2.67 billion.

W_{volvocar} and $W_{\text{Volvotruck}}$ The proportions of Volvo's stand-alone equity value attributable to its automobile and trucks segments are assumed to be 0.50 each. In September 1993, Barclays (1993) published a valuation analysis of AB Volvo that attributed half the equity value of its automotive business to cars, and half to trucks.

W_{Rencar} and W_{Rentruck} The proportions of Renault's stand-alone equity value attributable to its automobile and trucks segments are assumed to be 0.86 (cars) and 0.14 (trucks). There exist no estimates of the distribution of Renault's equity value across its car and truck businesses, but an informational document published by AB Volvo (1993b, p. 5) projects the stand-alone sales of the Renault car and truck businesses through the year 2000. Using the distribution of sales as a proxy for the distribution of equity values yields these weights for cars and trucks. The first derivative of CO with respect to W_{Rencar} is negative. Thus, if the use of the sales-based proxy overestimates the proportion of Renault's equity in cars, the resulting estimate of CO would be biased downward.

UC The costs of unwinding the alliance are estimated to be SEK 5.2 billion. This estimate looks to the actual cost that AB Volvo announced it would incur to terminate the alliance (reported in Carnegie, 1994a). It is impossible to tell how much of this amount was a true cash outlay (i.e., as opposed to an accrual), although Volvo did imply that a substantial portion was a cash payment from Volvo to Renault. Using this figure implies perfect foresight on the part of investors in September 1993. Assuming certain survival of the alliance after a rejection of the merger, however reduces the impact of UC to nil.

Completing the model by inserting assumed values into (A.4) yields

$$\begin{aligned} \text{CO} > & [(2.67 + 44.66 + 17.95 + 37.67) * 0.35] - 1.0 * [(0.75 * 2.67 * 0.50) \\ & + (0.55 * 2.67 * 0.50) + (0.20 * 37.67 * 0.86) + (0.45 * 37.67 * 0.14) \\ & + (44.66 * 0.50)] - (1 - 1.0) * (2.67 - 5.2). \end{aligned}$$

The calculation reveals that rejection of the merger is consistent with a value for the control options that is greater than SEK 3.12 billion (or about US \$398 million using the September 6, 1993 exchange rate). On September 6, 1993, the total market value of AB Volvo's equity was about SEK 37.5 billion. Thus, the implied conservative estimate of the value of the control options was 8.3% of AB Volvo's equity value.

Sensitivity analysis of this model reveals that the implied minimum control option value is sensitive to variations in *R*, Renault's equity. For a 10% variation in Renault's equity value, the resulting control option estimate will vary in the same direction by 14%. It is also sensitive to the probability of the alliance survival. This analysis assumes a 100% probability that the alliance will survive. If the probability is reduced to 50%, the implied value of the control options is SEK 20.8 billion. The estimated value of the control options is sensitive to variations in *AS* and *MS*, the alliance and merger synergies as well. Since the forecast of these synergies emanated from the company (Gyllenhammar) and could have been seen as self-serving, one could discount them, as some interviewees suggested. If the forecasted synergies are discounted to 75% of Volvo's estimate, the resulting implied value of the control options is SEK 2.19 billion. At discounts to 50% and 25% of Volvo's synergy estimate, the implied control option values are SEK 1.26 and 0.33 billion, respectively. This sensitivity analysis suggests an association between forecast optimism and the size of the wealth transfer from Volvo's shareholders to Renault's owner, the French government.

In his public statements, Gyllenhammar seemed to minimize the importance of the control options in the deal. Yet, if he truly believed in the synergy forecasts that Volvo published, the implied value of the control options would be material. This internal inconsistency supports the claims of Sundqvist (1994) and various interviewees that the proposed merger of Volvo and Renault failed in no small part because of doubts about the credibility of its chief advocate. Almost as an epitaph to the entire episode, Gyllenhammar said in an interview with me, 'I did not take the golden share seriously'.

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