Shareholder Value Effects of Joint Venture Companies in the Amsterdam Stock Exchange

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Abstract

An investigation on the shareholder value effects of 233 joint venture announcements of Dutch public companies was made in the period 1987 till 1998. The research shows that, on average, establishing joint ventures has a positive effect on the market value of Dutch companies. The results indicate that joint ventures are preferred when a company is under pressure. It also shows that the factors of strategic intention, the environment in which the strategy is unfolded and the extent to which the company has control over the implementation strongly explains the extent to which a joint venture can create value.

Key words : joint venture strategy; shareholders value; strategic content, context, control

I. Introduction

An investigation of value effects of 233 joint venture announcements by Dutch public companies was made in the period 1987-1998. The study focuses on joint ventures in which the consequences for the shareholders of the parent companies are key points. Setting up a joint venture involves establishing a separate legal entity, with its own identity, liability and share capital. It shows that companies usually enter into joint ventures when their share price performs below average. Most companies have experienced stagnation in their market value growth and cash flow margins up to three years before the establishment of a joint venture. In the years following the formation of the alliance these growth figures recover and begin to exceed the market average. This paper addresses the joint venture strategy factors that have an impact on the market value of parent companies. Section II outlines data and the sample survey, the applied research methodology and the results. Section III presents the findings of the impact of the joint venture strategy on the market value of companies. Finally, Section IV summarizes the main conclusions of the research.

II. Data and Methodology and Results

1. Data

This research is based on the event study methodology developed by Fama et al.(1969). The initial announcement of a joint venure is defined as the ‘event’, while the market value is studied by examining the development of the share price. The announcements were found in the Dutch financial daily “Het Financieele Dagblad”. The study analyzed a sample of 233 non-financial joint ventures whose announcements met the following criteria:

1) The shares of at least one of the joint venture partners were being traded on the Amsterdam Stock Exchange at the time of the announcement.

2) During the (-20, 20) days in which the market reaction was measured, no other relevant announcements regarding the companies participating in the alliance appeared in Het Financieele Dagblad.

3) The companies involved were not financial institutions.[1)]

Forty-eight Dutch companies, that is, approximately 21% of the companies in the Netherlands accounted for the 233 joint ventures.

Chemical and petrochemical companies are strongly represented in the sample; nearly one-third of the total number of joint ventures were formed by companies in this sector of industry. The most commom motive was marketing development, followed by technology and efficiency.

The distribution by location of the joint ventures and the nationality of the partners is shown in Table 1.

Approximately a quarter of the joint ventures were based in the Netherlands. Note that most of the joint ventures are established in the country of one of the partners.

2. Methodology

The analysis of the value effect of joint ventures includes only the anomalous part of the market reaction in respect to the parent company share price.[2)] The expected returns on

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1) Financial institutions were not included in the sample they are not comparable to other sectors in that they are regulated by the Dutch Central Bank. Moreover their annual accounts differ strongly from those of other companies.

2) In order to verify the stability of the estimated market model, Cannella & Hambrick(1993), three alternative performance criteria have been calculated. They are based on the following:

① Returns corrected for the market(CRM). The return is calculated using the following formula:$CMR_{it} = R_{it} - R_{mt}$. This method comprises the detected effective return minus the market return, i.e. without estimating the parameters alpha and beta as in performance criteria(1).

② Returns corrected for the average(CGR). The return is calculated by subtracting the average return of the share in the estimation period from the effective return.

③ Effective return(CER). The uncorrected return during the announcement.

In addition a verfication analysis wad also performed based on the 'buy & hold' invertment strategy.

the relevant days were estimated b means of the market model approach. The abnormal return (AR_{it}) of a share i at time t is calculated as follws:[3)]

$$AR_t = R_{it} - (a_i + b_i R_{mt})$$

Where:

R_{it} = the effective return of share *I* at time *t*

R_{it} = constant term of share *i*

a_i = constant term of share *i*

b_i = systematic risk of share *i*

R_{mt} = the market return at time *t*

$a_i + b_i R_{mt}$ = the expected return on share *I* according to the estimated market model

To measure the full effect of the announcement, the abnormal return (AR) of the announcement day and the following day were computed and averaged for all sample companies to obtain the cumulative abnormal return(CAR). The standard deviation of the abnormal return of each share in the sample was estimated through observations made during the estimation period (from 200 to 51 days before the announcement). A test was used to determine whether the market reaction on and around the day of the announcement significantly deviates from zero (Brown and Warner, 1985.). In addition to CAR, the standardized cumulative abnormal return oor SCAR, was included in the analysis.[4)]

In the decision-marking process involved in formulating a joint venture, three strategy dimensions are distinguished: Strategy Content, Strategy Context and Control.

The extraordinary buy & hold return(EBHR) is also based on the market model; however a composite return is the starting point

3) The parameters a and b were estimated using the least square method, based on observations made during the estimation period. The estimation period runs from 200 to 51 days before the publication of the announcement.

4) Unlike CAR, SCAR is not distributed normally for each hypotheses(Strong, 1992).

1) The strategy content of a joint venture concerns the content of the decision. The strategic intention is the functional motive underlying a joint venture and the company's position in the existing product/market combination. Research into motives distinguishes between motives stemming from market and technology developments (Koh and Venkatraman, 1991; Das, Sen and Sengupta, 1998). The studies in question show that alliances primarily motivated by technological issues have a move positive impact on the market value of companies than marketing-oriented joint ventures. These studies did not examine efficiency improvement as a motive. Depending on the theoretical concepts used, diversification influences the value effect of the alliance either positively(Balakrishnan and Koza, 1993) or negatively (Koh and Venkatraman, 1991). To explain the value effects, the authors respectively applied the transaction cost approach and the strategic behavior perspective.

2) The strategy context defines the decision-making parameters of the environment. Important elements are partner selection, the nationalities involved, and the associated cultural differences. Mohanram and Nanda(1998) and Joh and Vendatraman (1991)found that smaller companies gain more excess returns if they enter into an alliance with a larger partner. The relative size of the partner appears to be a relevant factor in establishing the value potential of a joint venture. Closely examined in the relationship between partners is the effect of the relatedness of the partners, i.e., the degree of similarity between their activities. Reserch conducted by Koh and Venkatraman (1991) and Balakrishnan and Koza (1993) produced conflicting conclusions and, as a consequence, have been a source of debate. Studies of the impact of nationality have so far yielded few results. The studies focused on American companies(Lee and Wyatt, 1990 and Borde, Whyte, Wiant and Hoffman, 1998) and produced contradictory lists of countries and economic regions where joint ventures were either successful or unsuccessful in generating shareholder value. Folling Datta and Puia(1995) and Kogut and Singh(1988), for the purposes of this study cultural difference, measured by the variable individualism, was selected as the distinguishing indicator of nationality, since

it was also used in qualitative studies by Bleeke and Ernst(1993) and others. As a rule, these studies show that cultural differences can lead to management problems. We therefore expected this dimension to have a negative effect.

3) Finally, Strategic control is the extent to which and enterprise can exert influence on the further development of the joint venture. The ownership structure is a clear manifestation of the degree of influence that a company can exert on the joint venture. The distribution of power within joint ventures is discussed in depth in qualitative studies(e.g. Bleeke and Ernst, 1993). Koh and venkatraman(1991)found that one party having more power within and alliance had a positive effect. In contrast, Bleeke and Ernst(1993)argue that an equal balance of power makes it easier to manage a joint venture and consequently increases the probability of success. None of the studies in Table 2 attempted to develop an integral model to determine the conditions under which a joint venture creates value.

III. Results

1. Results of the Event study

On average, joint venture announcements have a positive impact on the share price of the companies involved. Table 3 provides the results obtained by testing the CAR and SCAR of the 233 joint venture announcements. Over the two-day testing period positive market reactions were found with a significance level of 0.01 for both performance criteria(CAR and SCAR). The CAR is equal to 0.40%. The reactions to joint ventures were both strongly positive(1.77% on average) and negative (-1.34% on average), according to the CAR. Longer testing periods produced negative results both before and after the announcement date. However, these results are statistically insignificant.

The results show the development of the CAR for the negative and positive two-day market reactions, based on a buy and hold strategy. Investors always respond strongly to

an announcement, but their reactions may be either positive or negative. The longer testing periods are more strongly affected by the increasingly negative development of the share price of value-destroying joint ventures.

57% of the joint ventures established in this period have an average positive impact of 1.77%. The announcements added value to the shares on the days around the time of the announcements. The added value remained steady in the days that followed. On average, the value generated was retained over the long term.

43% showed an average negative effect of -1.33% in the two days around the announcement.

2. Impact of the joint venture strategy on CAR

None of the American studies attempted to develop an integrated model that reveals the dynamics among the strategic factors and the value effects of the joint ventures. The distribution of the factors according to strategic dimensions is addressed above in section 2. Investor's interpretation of the strategy content, the context in which this strategy must function, and the extent of the company's control over the implementation of the strategic option determine how much shareholder value is generated. The variables investment climate (risk-free return), industry, trend-relatedness (time), and relative over- or under-valuation (market value) of the parent company were included in the analysis as control variables to ensure that they did not have any impact on the research

3. Joint venture strategy

This section describes the variables used to identify factors that influence the shareholder wealth effects. Each strategic dimension is discussed in terms of what factors were examined and how the variables were examined and calculated. In the regression

analysis, the CAR is the dependent variable for the following variables:

$$CAR_j = \beta_0 + \beta_1 Mot + \beta_2 Div + \beta_3 Size + \beta_4 Ind + \beta_5 OS + \varepsilon_j \qquad (2)$$

Where :

Mot = Motive of the joint venture

Div = Diversification

Size = Relative Size

Ind = Individualism

OS = Ownership structure

① Strategy Content

Three dichotomous variables are used to test the impact on the parent company of the underlying motive of the joint venture. The value of the dichotomous variable is 1 if there is a distinguishable motive, otherwise it is 0. The dummy variables are *technology*, in the case of a technology development joint venture; *marketing*, for a market development joint venture; and *efficiency*, for an efficiency-driven joint venture.

The *diversification* variable represents the relatedness between the activities of the parent company and those of the joint venture. The relatedness is the difference between the primary three-digit US-SIC classification number for the parent company[5] and the joint venture[6]. The relatedness is divided by 899, the maximum possible relatedness used by Balkishnan and Koza (1993) in their research.

② Strategy Context

The dimension of *individualism* is a criterion for the way in which an individual views his or her relationship with the rest of the collective.[7] The variable represents the

5) Source : Worldscope

6) Source : KPMG

absolute difference between the scores of the nationalities in these studies, divided by the standard deviation of the scores for all countries. A study by Franke, Hofstede and Bond(1991) revealed that there exists a correlation between *individualism* and the per capita Gross National Product(GNP), but not between *individualism* and economic growth. Their interpretation indicates that individualism is a cultural quality that is based on economic achievements rather than on recent changes in the economy. This study also uncovered a relationship between *individualism* and *legal origin*. This distribution by La Porta, Lopez-De-Silanese, Scheifer and Vishny(1997) is based on the differences in the protection of shareholders' rights. The degree and form of protection are rooted in the origins of the legal system.

The relative size of the partner is calculated by dividing the number of staff the partner employs by the number of staff working for the company whose shares are currently at issue.[8)]

③ Strategy Control

The ownership structure within the joint venture is represented by three dummy variables. Three structures are possible: the company can have a majority, a minority or an equal distribution of shares in the joint venture. It is a assumed that the ownership structure correlates with the degree of power and control on the joint venture.

4. Control variables

The standard deviation of the Market Value to Book Value(*SDMVtBV*) variable is used to test the impact of over-and undervaluation of the company at the tine of the announcement. 'Market Value to Book Value' (Mvtbv) is compared with the average Mvtbv calculated over a five-year period prior to the announcement. The average Mvtbv

7) also used in the Hofstede(1980)

8) Das, Sen and Sengupta(1998) also used this proxy for the partners on the joint venture.

is subtracted from the current Mvtbv and the result is divided by the standard deviation of Mvtbv.

The variable *Risk-Free Return* (*Rf*) is added to measure the impact of the investment climate, measured by. This return is equal to the yield of ten-year government bonds.

The *Time* variable is introduced in order to verify trend-relatedness of joint ventures and is defined as the year in which the announcement was made minus 1986.[9)]

The study also takes *industry effects* into account. Based on SIC classifications,[10)] the companies in the sample are classified into the following sectors of industry: construction, food, publishing, (petro) chemical, steel and rubber, electronics, logistics, and services. *Industry effects* are measured using dummy variables.

5. Autonomous relationships

When entering a joint venture related to its own activities, a company tends to seek joint venture partners involved in similar activities. The primary underlying motive of these related joint ventures is efficiency. Dutch companies engaging into joint ventures for efficiency reasons often establish the joint venture in Europe and select European partners.

6. Estimated functions and testing results

A regression analysis was conducted to measure the explanatory power of the synthesis model. There appeared to be little difference between the results of the various performance criteria. The results presented here are based on the CAR and SCAR

9) This method corresponds to the one used by Sirower(1997).
10) Standard Industry Classifications

performance criteria. Only the significant effects are shown table 4. The results reveal that all the given strategic factors help to explain the performance of joint ventures. The model that incorporates the strategic dimensions provides a stronger, more substantial explanation for the variation in the cumulative abnormal returns than the control variables alone.

The contribution of the control variables on R^2 of the estimated functions is 5% on average. The variables from the synthesis appear to be relevant to the explanation of the shareholder wealth effects of joint ventures. The estimated regressions are checked for multi-collinearity using VIF-statistics. The few correlations between the explanatory variables are not significant, as the value of VIF-statistics of approximately 1 is low.

IV. Summary and Conclusions

On average the joint ventures that Dutch companies entered in the period 1987-1998 generated value. Notably, companies tended to enter joint ventures when their performance was less than adequate. The statistics show that company performance was below the average stock market performance in the years before the joint venture announcement. This means that we now have an explanation for the negative relationship between return and joint venture activities observed by Berg and Friedman (1977). Our results demonstrate that companies were already performing poorly prior to enter a joint venture and that joint venture decisions were a reaction to the poor results rather than their cause. Joint ventures appear to be defensive in nature. In bad times, when shareholder value is deteriorating, joint ventures can provide rays of hope. In this study, the intensity of these rays is expressed through characteristics of the strategy dimensions: Strategy Content, Strategy Context and Strategy Control.

1. Strategy Content

The substantive function that a joint venture fulfils for a company is an important component in the evaluation of a joint venture. As shown by the results of Koh and Venkatraman (1991) for joint ventures and Das, Sen and Sengupta (1998) for alliances without share participation, technology development joint ventures have a higher impact on a company's market value than market development joint ventures. The average value crated by efficiency-driven joint ventures lies somewhere in between.

The less the activities of the joint venture are related with those of the parent company, the less enthusiastic the investor reacts. In order to create shareholder value it is essential for a company's core competencies to be utilized. The greater the distance between the new activities and the core activities, the smaller the chance that the company's competencies will be deployed effectively. Moreover, there is less potential for the joint venture to affect the core activities and, since most of the cash flow stems from the core activities, the joint venture is less likely to be able to generate significant value. Investors are usually not in favor of companies using joint ventures for reasons of diversification.

2. Strategy Context

The U.S. studies show the various impacts of partner nationality. In our study we found that joint venture partners that scored high on individualism have a positive impact on value creation. As no other economic variables appear to make any contribution, it is plausible that investor reaction is partly based on the perception of the economic power of the partner's country of origin and business location.

Research shows that the relatedness of the partner's activities are of less importance in determining the value generated by a joint venture. Investors focus on the activities of the joint venture. However, the analysis reveals that horizontal partners are usually selected for horizontal joint ventures and vice versa. Neither conventional testing of differences in

means nor regression analysis uncovered any impact on value creation by joint ventures. The overlap in the partners' activities is the result, rather than the cause, of the joint venture and its objective. The debate conducted in the literature on the impact of overlapping strategic activities appears to be irrelevant in our research.

Partner size has a strong effect on the performance of a joint venture. The variable is highly significant and positive for all performance criteria. In their qualitative study, Bleekd and Ernst(1993) concluded that a stronger partner is a prerequisite for a successful joint venture. The regression results and the univariate tests support this theory. Relative size is equal to strength or power of the joint venture

3. Strategy Conrol

Asymmetrical joint ventures are valued higher than symmetrical ones. The valuation of a joint venture is especially positive for companies that have a majority interest. A majority interest gives a company a dominant position in the collaboration ensuring that the company has more control over the achievement of the objectives of the joint venture. The results contradict the prevailing paradigms that assert the importance of equality in cooperative alliances. Bleeke and Ernst(1993), Harrihan(1988) and Copeland et al.(1995) underlined the importance of equality in the ownership structure. If shareholder value is the target, then equality within an alliance is not essential. It is more important that the rations should be fair and bear a connection to the resources(assets and knowledge) in which each party invests in the joint venture. It appears that the equal distribution of share capital at any cost is not appreciated by investors and has a negative impact on market value. Furthermore, investors have more confidence in joint ventures with one captain than those with two. The synthesis of the aggregate strategic dimensions explains a deal of the share price reaction. Clearly, investors respond consistently enough to venture announcements to justify the development of an analytical model based on these factors.

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List of Table

Table 1: Location of the joint venture and nationality of the partners

This table shows the location and nationality of partners for a sample 0 233 joint venture announcements of Dutch public companies in the period 1987 till 1998.

	Location fo JV						
Nationality of Partner	Nether lands	Europe	Nafta	Japan & S. Korea	China	Other	Total
Dutch	25	1	0	0	1	3	30
European	10	27	0	0	2	5	44
Nafta	11	9	11	0	0	2	33
Japanese & S. Korean	3	1	1	13	0	2	20
Chinese	0	0	0	0	21	0	21
Other	0	1	1	0	1	32	35
Total							

Table 2 : Overview of the results of the studies.

The table lists explanatory variables of various previous event studies and groups these according to strategic dimensions.

Dimension	Variable	Expectation	Aulthors
Content	Technology	+	Das, Sen and Sengupta (1998) Chan,
	Marketing	-	Kensigner, Keown and Martin(1997)
	Efficiency	±	
	Diversification	±	Koh and Venkatraman (1991); Mohanran and Nanda (1998)
Context	Partner relatedness	±	Koh and Venkatraman (1991); Balakrishnan and Koza (1993)
	Individualism	-	Datta and Puia(1995); Bleeke and Ernst (1993)
	Relative size	+	Mohanram and Nanda (1998);Koh and Venkatraman(1991);McConnell and
Control	Majority	+	Nantell (1985)
	Equality	+	Bleeke and Ernst (1993);Copeland et al. (1995)
	Minority	-	

Table 3 : test results of CAR and SCAR

This table shows the CAR and SCAR for various event windows for a sample of 233 joint venture announcements by Dutch public companies in the period 1987 till 1998.

Period t(i,j)	CAR %	SCAR
(-1, 0)	0.40***	3.50***
(-1, 1)	0.39***	3.15***
(-2, 2)	0.39**	2.15**
(1,20)	-0.66*	-1.65
(-20,20)	-0.68	-0.94
*** p≤0.01 **0.01< p ≤0.05 *0.05<p≤0.10		

Table 4: Estimated functions and test results

This table shows the results of the estimated functions of the cumulative abnormal returns of a sample of 233 joint venture announcements of Dutch public companies in the period 1987-1998

			SCAR	CAR
Strategy Dimension	Variable	Expected result	Result	Result
	Constant		1.357***	2.492***
Content	Technology	+	0.832***	1.584***
	Efficiency	±	0.843**	1.570***
	Diversification	±	-2.877***	-5.180***
Context	Individualism	-	0.287**	0.433**
	Rel. Size	+	0.057***	0.101***
Control	Majority	+	0.975**	2.134***
Control Variable	Rf		-0.244**	-0.478**
	Publishers		2.685*	5.245*
R^2			0.492	0.492
Adj. R^2			0.399	0.399
F value			5.530***	5.303***
N			110	110
*** p≤0.01 **0.01<p≤0.05 *0.05<p≤.010				