

A Test of Conglomerate Merger Hypotheses

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I. Introduction

Empirical research on mergers seemed to have made a significant progress as a result of the use of residual analyses employing the stock market data.⁽¹⁾ Despite this advance, it appears that economists are not entirely confident on the general motivation behind conglomerate mergers.

An *ex post* difficulty with the residual analysis as it has been used thus far—and a major reason why confidence is lacking—arises because acquiring firms are in general five to ten times larger than acquired firms⁽²⁾ and thus the effect of an acquisition to the former firms' stock prices cannot be significantly (in absolute magnitude) large. Most residual analyses have found that the abnormal returns to the acquired firms (measured by the market model or the CAPM residuals around the time of merger) are around 20 percent of their equity values. But the gain or loss to the acquiring firms tends to be insignificant,

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(1) The earliest application of the residual analysis to the study of mergers is by Halpern(1973).

See also the studies cited in note 3 below for other examples of the residual analysis.

(2) Halpern reports that in his sample the larger firms in individual mergers are about ten times larger than the smaller firms in terms of equity value. See also Table 1 below for our own evidence.

both absolutely and statistically, and even varies from positive to negative across studies.⁽³⁾ This poses a problem to the students of mergers because the different hypotheses on conglomerate mergers are all consistent with the gains to the acquired firms and therefore the critical test is whether the acquiring firm gains or loses. The average residual for the acquiring firms is too small to allow confident judgements. Different estimation models and periods, different samples, and the presence of "outlier firms" with large (positive or negative) residuals can easily affect the sign of the average residual and its statistical significance. Thus, examining simply the average magnitude of the residuals as in past studies may not be sufficient to resolve the merger questions and could be complemented by alternative tests.

In this paper, we propose such an alternative procedure to provide further empirical evidence on conglomerate merger hypotheses. The procedure does not rely on the average magnitude of residuals and is less sensitive to the presence of outliers or to chance events that are not related to the merger but nonetheless affect empirical estimates of residuals. Instead of examining the average residuals, the procedure analyzes the correlation of the residuals for the acquiring and acquired firms in each merger to test the different merger hypotheses which have different implications with respect to the correlation. The merger hypotheses include the replacement of inefficient management, the managerialism (or size maximization), and the synergy (managerial and/or financial) hypotheses. In addition, unlike most existing studies which do not differentiate between the types of mergers, the sample used in this study includes only conglomerate mergers and further separates them into "product extension" and "pure conglomerate" mergers. The results suggest that the

(3) Asquith (1979) finds positive abnormal returns before and on the month of merger announcement, whereas Malatesta (1982) reports negative residuals for the five months ending in the date of merger approval by the board/management. The results of Dodd and Ruback (1977) indicate positive residuals on the month of tender offer announcement but Dodd (1980) has negative residuals on the day of merger proposal announcement. Malatesta suggests that different methods of estimating residuals could be responsible for (at least a part of) the discrepancy in average magnitudes of residuals.

Halpern (1982) provides a detailed survey of the literature.

principal motivation behind mergers is the realization of synergy effects. We first discuss the implications of the hypotheses, describe the methodology, and present the test results.

II. Implications of Conglomerate Merger Hypotheses

1. Managerialism

This hypothesis, as advanced by Reid (1968) and Mueller (1969), states that conglomerate mergers occur primarily because managers pursue the goal of maximizing firm size in order to get higher pay, prestige, etc. The underlying theoretical assumption is the separation of ownership and control in the modern corporations. This hypothesis may be interpreted as suggesting that the acquiring firms suffer from the existence of agency costs and the resulting inability of owners to discipline their managers. It further implies that neither the internal and external managerial labor markets nor the markets for corporate control are working efficiently under the hypothesis.

Since conglomerate mergers on average do not generate gains according to this hypothesis, a large "premium payment" to the acquired firm should result in a negative value change for the acquiring firm. Hence the market returns to the acquiring firm at the time of merger announcement will be negatively correlated with the returns to the acquired firm, if this "pay more, lose more" proposition is valid.

It is sometimes argued that even a size-maximizing firm will not pass up profitable merger opportunities and that a managerial firm may engage in a value-creating merger but overpay so that the acquiring firm's shareholders lose. Although these certainly are valid arguments, they do not pose problems for the purpose of the present and existing studies using residual analyses since the concern is with the effect of an average (as opposed to a particular) merger, that is, with whether the mergers on average create value. If they do, the correlation will not be negative and the purely managerial motive as

a general explanation of conglomerate mergers cannot be accepted.

2. Replacement of Inefficient Management

For theoretical and empirical purposes, we distinguish two variants of this hypothesis. In its strong and pure form, the hypothesis argues that a merger (conglomerate or not) occurs simply to replace the acquired firm's inefficient management. It appears that this has been the dominant interpretation in the literature for mergers and corporate control (e.g., Mandelker (1974)). In its weak form, it may be argued that the acquiring firm seeks to complement the management of the acquired firm so as to improve the managerial performance of the latter. This argument is implicit, for example, in Bradley (1980). The weak form argument can be treated as a kind of managerial synergy hypothesis, and is included in the discussion of that hypothesis below. The original proponent of this hypothesis is Manne (1965, 1967), although the distinction is not made between the two versions.

Underlying the (strong form) hypothesis is the assumption that, at least for the acquired firms, agency costs and/or information costs are large enough to make their owners unable to replace the present management. Thus it becomes necessary to invoke the the mechanism of outside takeovers or mergers for the purpose of replacing the inefficient management. This hypothesis does not presume or require greater efficiency of the acquiring firm management relative to an "average" management.

An implication of this hypothesis is that, under the assumption of competitive merger markets, the net gains to individual acquiring firms will on average be zero because they acquire firms to replace their inefficient managers and this function can be performed by other potential acquirers with necessary resources. All gains will simply accrue to the shareholders of the acquired firm because of competition in the market for corporate control. Thus in this case, the correlation between the acquiring and acquired firm's gains (abnormal returns) will approximate zero. It should be noted that competition in the merger market

does not require a large number of potential acquirers. As implied by Fama and Laffer (1972), the existence of a single potential competitor can effect the competitive outcome.

3. Synergy

The synergy hypothesis holds that mergers create efficiencies or economies which cannot be achieved without the combination of the constituent firms. In the case of managerial synergies, a party to the merger (typically the acquiring firm) have underutilized managerial resources either in the area of generic management functions such as planning and control or in specific management functions related to the characteristics of R&D, production and marketing in particular industries. The firm utilizes the excess capacity in managerial resources by acquiring a firm that is inefficiently managed due to shortages in such resources in certain managerial functions. The acquiring firm cannot simply release its excess resources to the market if managerial capabilities are the output of teams organized in and specialized to the firm. Thus, "indivisibilities" are seen to be the underlying theoretical rationale. This managerial synergy hypothesis is implicit in Rubin (1973) and possibly in Manne (1965) and Weston and Mansinghka (1971).

Financial synergy refers to any of the economies in financing that may become available as a result of the merger: namely, (1) utilization of internal cash flows (Weston (1970) and Williamson (1970)), (2) increase in debt capacity (Lewellen (1971), Galai and Masulis (1976), Stapleton (1982)), and (3) economies of scale in floatation (Levy and Sarnat (1970)). First, one of the firms may have excess internal funds that can be transferred to the other firm having excess demand for investment funds. The internal transfer of funds avoids transaction costs of financing in the market and may have tax advantages if capital gains tax rates are lower than dividend income tax rates. Second, mergers increase the capacity to raise debt as the risk to lenders is lowered and the increased use of debt brings the advantage of tax deductibility of

interest payments. Third, there are fixed costs in floating securities and mergers will realize economies of scale in financing.⁽⁴⁾

The two synergy hypotheses are different in theoretical bases but are not mutually exclusive (i.e., they can coexist in a single merger). Further, in terms of our purposes, their predictions on the correlation of merger gains are same. If conglomerate mergers are synergistic, there will be a sharing of the merger gains between the two partners. This proposition on the sharing of gains will be confirmed if the gains to the acquiring firms are significantly positively correlated with the gains to the acquired firms. The present test, however, is not designed to determine which synergy effects are more important in conglomerate mergers.⁽⁵⁾

III. Methodology and the Data

The returns to mergers are measured in this study by the abnormal stock market returns to the stockholders around the time of merger announcement. The normal return on the common stock of firm j in period t is obtained here by estimating the market model⁽⁶⁾

$$r_{jt} = \alpha_j + \beta_j r_{mt} + \varepsilon_{jt} \quad (1)$$

where r_{jt} is the return to the common stock of firm j in t , r_{mt} is the return on the market portfolio in t , α_j and β_j are regression coefficients and ε_{jt} is the random error. The model is estimated against the return data for a period sufficiently removed from the merger event date. With the parameters estimated, the abnormal return (or the residual) for period t , e_{jt} , is obtained as

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- (4) One might further argue that some mergers occur to take advantage of opportunities to save income taxes by acquiring firms with accumulated tax losses. It is questionable, however, that the majority of conglomerate mergers occur due to this onetime tax effect.
- (5) Positive correlation may also result from mergers enhancing collusion in a single product market. Since the sample employed in the present study includes only conglomerate mergers, the collusion motive can presumably be disregarded. Some have argued that even conglomerate mergers give rise to collusion through mutual competitive forbearance by diversified firms. But this argument has not received strong theoretical support. See, e.g., Weston (1981), p. 57.
- (6) See Fama (1976, pp. 63-132) for a theoretical exposition of this model.

$$e_{jt} = r_{jt} - \hat{\alpha}_j - \hat{\beta}_j r_{mt} \quad (2)$$

The returns data are taken from the Center for Research in Security Prices (CRSP) monthly returns tape. Thus t denotes months in the present study. Using the unweighted version of the market index (r_{mt}), the market model is estimated for the 60 month period $[-84, -25]$, with the calendar month of the "merger event" designated as month 0 ($t=0$). The merger event month in the study is defined as the month in which information on the merger first became publicly available, typically called the merger announcement month.⁽⁷⁾

The return from a merger, denoted RET1, is measured here as the residuals accumulated over the four month period $[-3, 0]$,

$$\text{RET1} = \sum_{t=-3}^0 e_{jt} \quad (3)$$

Some comments on this particular choice of the accumulation period is in order. First, the residuals are accumulated only up to month 0 because the completion dates of the merger vary widely from less than a month to more than a year with an average of 5 months for the sample employed in this study and because the longer the accumulation period the more noise the measure will include. Thus we ignore the portion of returns that are not reflected in the stock prices by the end of the announcement month and are attributed to the uncertainty about whether the merger will actually be consummated. This will not cause any problem to the present test if the returns that are unaccounted for are proportional to the measured returns or at least if they do not systematically bias the measurement. Second, it is well known that information on forthcoming mergers is frequently leaked to the market well before their public announcement. Thus month -3 is chosen as the beginning month of the measurement period to incorporate this information leakage.⁽⁸⁾ Information on the possibilities of some mergers may be leaked even before

(7) The merger announcement date is obtained from the Wall Street Journal Index. To identify this date, the Journal Index has been checked over the two-year period prior to the merger completion month as given in the FTC report.

(8) The average abnormal return to the acquired firms typically turns positive two to three months prior to the announcement. See, for example, Malatesta (1982). This is also the case for the sample employed in the present study.

month -3. Again there is no reason to suspect that this fact will systematically bias the results.

Letting RET_1 represent the acquired firm's abnormal return and $BRET_1$ (defined the same as RET_1) the acquiring firm's abnormal return, tests of the implications discussed above can be conducted by regressing $BRET_1$ on RET_1 and examining the sign of the coefficient for RET_1 . Thus the first test involves estimating the coefficient for RET_1 in the equation

$$BRET_1 = f(RET_1) \quad (4)$$

Another variable which will sharpen the results is the size of the acquired firm relative to that of the acquiring. This will control for the effect of acquiring different relative size firms on the acquiring firms' returns from merger. The sign of the coefficient of this variable as predicted by the three merger hypotheses is the same as that of RET_1 . The managerialism hypothesis implies a negative coefficient because the acquiring firm loses more by acquiring a larger firm, given that the the percentage return to the acquired firm is also included in the equation. On the other hand, the synergy hypothesis may predict a positive sign if it can be assumed that synergy effects are proportional to the relative size of the acquired firm, other things being equal. This will be the case, for example, if large acquisitions are in general associated with more underexploited (managerial or financial) resources. Again the replacement of inefficient management hypothesis implies that the coefficient will not be different from zero.

We measure the relative size variable ($SIZE$) by dividing the market equity value of the acquired firm (VAL) by that value of the acquiring firm ($BVAL$). The market values are measured at the end of month -4. Thus the second testing equation is

$$BRET_1 = f(RET_1, SIZE) \quad (5)$$

Equations (4) and (5) relate the percentage abnormal returns of the two firms. An alternative is that we directly relate the dollar returns to the merging firms. Thus the third equation that will be estimated has the (appro-

ximate) dollar values of the abnormal returns on both sides of the equation:

$$\text{BRET1} \times \text{BVAL} = f(\text{RET1} \times \text{VAL}) \quad (6)$$

It has been recognized that the *ex post* returns to stocks are significantly related to the industry returns in addition to the overall market returns.⁽⁹⁾

Introducing this industry factor into the market model, we have

$$r_{jt} = \alpha_j + \beta_j r_{mt} + c_j r_{it} + u_{jt} \quad (7)$$

where r_{it} is the industry index, i.e., the average return on the stocks of the other firms in the industry of firm j . r_{it} is measured from the CRSP data using the three-digit industry code.⁽¹⁰⁾ Estimated residuals (\hat{u}_{jt}) from (7) are accumulated for the four months to obtain an alternative measure of the abnormal returns:

$$\text{RET2} = \sum_{t=-3}^0 \hat{u}_{jt} \quad (8)$$

The three equations (4), (5), and (6) can alternatively be estimated using RET2 and BRET2 instead of RET1 and BRET1.

The merger sample used here is based on the Federal Trade Commission large merger series. The "other" category in the series is taken as pure conglomerate mergers (PCM), which the FTC defines as mergers between firms in completely unrelated operating areas. The product extension merger (PEM) category is also used as a second sample. The PEMs are mergers between firms in operationally related but not directly competing business areas.⁽¹¹⁾ Having two samples can be advantageous because the merger hypotheses may be more relevant for one of the conglomerate merger categories than the other. For example, the managerialism or the replacement of inefficient management hypothesis might be more manifest in the PCM sample, while the synergy effect might be so in the PCM sample; such a result could be obtained if managerial synergy is important but financial synergy is not and if managerial

(9) See Fertuck (1975). A model similar to the two factor model (7) was also used by Langetieg (1978).

(10) The industry codes are from the CRSP tape. Since the codes for many firms have been changed over time, the one that is effective for the model estimation period is used.

(11) See the FTC report for more detailed definitions.

synergy is facilitated in mergers between operationally related firms.

The sample period covers 1958 through 1977. Only those mergers in which both firms were listed on the New York Stock Exchange are included in the sample because only these are available from the CRSP tape. Mergers are also excluded if the acquired firm's asset size is less than ten percent of the acquiring firm's. This eliminates small acquisitions whose effects on the acquiring firm's values will generally be small and difficult to measure. If the acquiring firm is engaged in more than one merger included in the FTC series during a 12-month period, these mergers are not included.⁽¹²⁾ Finally, for the PEM sample, mergers in which both the acquiring and the acquired firms reside in the same three digit industries are dropped from the sample to eliminate any common industry effects on the residuals. This was done even though we also use the two factor model having the industry index as a factor. There are no such eliminations for the PCM sample since the merger partners in these mergers rarely belong even to the same two digit industries. In the case of the two factor model, the number of mergers in each sample is decreased drastically because industry indices are not constructed if there are fewer than two nonmerging firms in the three digit industries of merging firms'.

The summary statistics of the variables are given in Table 1. The acquiring firms are on average about five times larger than the acquired firms in terms of the market value of equity. The acquiring and especially the acquired firms in PCMs appear to be larger on average than their counterparts in PEMs although, judging from the standard deviations of the equity values, this will hardly be statistically significant. Also it may seem that the average profitability of mergers to acquiring firms is greater for PEMs than for the PCMs, as the mean residual is positive for the former whereas it is slightly negative for the latter. Again, the residuals are not statistically significant as in most studies

(12) This condition tends to eliminate firms that are engaged in multiple-acquisitions. Schipper and Thompson (1983) take these firms as the sample for an alternative test and find that their acquisitions represent value-maximizing activity. This result is consistent with that reported below.

and, for reasons discussed in the introduction of the present study, these average residuals alone are not sufficient to allow convincing conclusions in one way or another.

IV. Results

The results of estimating the three equations (4), (5), and (6) for both the PCM and PEM samples are given in Table 2. When RET1 and BRET1 (as opposed to RET2 and BRET2) are used, the results are similar for both types of mergers and give clearer indications with respect to the merger

Table 1—Summary Statistics of Variables

Variable*	PCM (Pure Conglomerate)			PEM (Product Extension)		
	n	Mean	Std. dev.	n	Mean	Std. dev.
Acquired firms						
RET1	49	22.9	29.2	68	23.9	24.5
VAL	49	132.0	218.6	68	92.4	98.6
RET1×VAL	49	19.8	55.2	68	13.1	14.8
SIZE	49	0.41	0.56	68	0.38	0.32
RET2	25	20.5	26.8	29	18.0	16.6
VAL	25	124.8	140.2	29	91.6	71.7
RET2×VAL	25	14.9	30.0	29	13.5	14.1
SIZE	25	0.48	0.59	29	0.41	0.34
Acquiring firms						
BRET1	49	-0.6	16.2	68	3.1	16.0
BVAL	49	710.5	1,461.1	68	530.4	689.7
BRET1×BVAL	49	-9.9	68.8	68	6.1	52.9
BRET2	25	-1.1	9.8	29	2.8	14.6
BVAL	25	502.4	533.6	29	485.3	556.4
BRET2×BVAL	25	-3.9	23.6	29	4.36	47.8

*Variable definitions are as follows:

RET1=cumulative residuals for the four months ending in the announcement month (%);

VAL =market value of common equity in month -4 with the announcement month as month 0 (\$ million);

SIZE =VAL/BVAL; and

RET2=same as RET1 except that the two factor model is used.

The acquiring firm variables are similarly defined and the product variables (e.g., RET1×VAL) are in million dollars.

Table 2—Estimates of Regression Coefficients*

Dependent variable	Const.	RET1** (RET2)	SIZE	RET1×VAL** (RET2×VAL)	R ²	n
1. Pure Conglomerate Mergers						
BRET1	-4.14	0.16 (1.99)			0.08	49
BRET1	-9.34	0.23 (2.62)	8.46 (2.58)		0.22	49
BRET1×BVAL	-24.61			0.74 (2.77)	0.14	49
BRET2	-4.70	0.17 (2.60)			0.23	25
BRET2	-5.76	0.19 (2.53)	1.59 (0.50)		0.24	25
BRET2×BVAL	-6.30			0.16 (0.87)	0.03	25
2. Product Extension Mergers						
BRET1	-0.49	0.15 (1.80)			0.08	68
BRET1	-9.06	0.21 (2.39)	18.78 (2.80)		0.21	68
BRET1×BVAL	-9.72			1.21 (2.15)	0.09	68
BRET2	-3.15	0.33 (1.75)			0.12	29
BRET2	-7.98	0.37 (1.95)	10.15 (1.29)		0.19	29
BRET2×BVAL	-6.81			0.83 (1.26)	0.07	29

* t-values are in parentheses.

** If the dependent variable is BRET1 then RET1 is used and if it is BRET2 then RET2 is used.

hypotheses. The abnormal returns for the acquiring firms are positively correlated with those for the acquired firms and this is significant in all equations at least at the 10 percent level. This is consistent with the synergy interpretation of conglomerate mergers but not with the managerialism or the replacement of inefficient management hypotheses. The introduction of the relative size variable reinforces this result; acquisitions of larger firms do not cause the acquiring firm to lose more but, on the contrary, are associated with larger abnormal returns to acquiring firms. Using the dollar return measures rather than the percentage return variables gives consistent results.

A close examination of the magnitudes of the coefficients for the return vari-

ables, RET_1 and $RET_1 \times VAL$, yields an interesting point. The coefficients for $RET_1 \times VAL$ are close to and statistically not different from unity. This may well suggest that the gains to merger are divided evenly between the acquiring and acquired firms, after the acquiring firms incur the "costs of merger" (as given by the intercepts 24.6 million dollars in PCMs and 9.72 million dollars in PEMs). This phenomenon is also suggested by the coefficients of RET_1 , once we recall that the size of the acquiring firms is about five times larger than the acquired firms.

Thus the results using RET_1 and $BRET_1$ strongly indicate that synergy effects are the underlying motivation behind conglomerate mergers. When we use RET_2 and $BRET_2$, the results are not as strong. But in this case we should be cautioned that the sample size is only about one half the size that is available when we use abnormal returns measured from the one factor model. The RET_2 variable is still significantly positively correlated with $BRET_2$. However, the relative size variables and the dollar measures of abnormal returns are not statistically significant although they are close to significance in the PEM sample. Still these results are not consistent with the managerialism hypothesis and the question is which of the synergy and the inept management replacement hypotheses is more relevant.

V. Summary and Conclusion

We have employed a new method to test for the three major conglomerate merger hypotheses—the managerialism, replacement of inept management, and synergy. Although the method uses residuals calculated from the market model, it is different from the techniques used in past studies which rely on the magnitudes of average residuals for the acquiring and acquired firm groups. Instead, the method focuses on the correlation of the residuals for the merger partners in individual mergers. Given that the tests based on average residuals often yield ambiguous implications, the correlation test complements the pre-

vious. An advantage of the present test is that it utilizes information on individual mergers that is lost once the merger partners are separated into the groups of acquiring and acquired firms.

Under the assumption that the merger market is competitive, the correlation test of conglomerate merger hypotheses favors the synergy interpretation of mergers over the pure managerialism and the replacement of inefficient management hypotheses. If the assumption of competition is not valid, then the inept management hypothesis cannot be rejected by the evidence presented here alone and the possibility remains that it may explain conglomerate mergers, presumably together with the synergy hypothesis. However, there is no *a priori* reason to suggest that the merger market may be non-competitive.

The results are consistent with the findings of Conn and Nielsen (1977) who calculated stock price changes for merging firms over time intervals around merger announcement and also merger consummation (without adjusting for general price movements in the market). They found that in 50 to 60 percent of the mergers in their sample, depending on the measurement period, both the acquiring and acquired firms experienced positive price changes; in the rest of the mergers both firms lost or one firm gained while the other lost.

The results reported here do not necessarily imply that only the synergy rationales are operating, but that they are the more important cause of conglomerate mergers. It would still be important to pursue in what types of mergers a particular hypothesis is more relevant than the others. For example, are tender offers caused more frequently by the motivation to replace inefficient management? Also, the acceptance of the synergy hypothesis will only call for further studies. An important inquiry will be what factors cause the synergy effects. The literature has suggested several possible sources as discussed above. One way of delineating the empirical importance of these sources will be to explain the abnormal returns with variables measuring the managerial, financial and other characteristics of merger partners.

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〈國 文 要 約〉

本 研究는 混合型合併(conglomerate mergers)에 관한 假說들의 새로운 解釋과 아울러 株式收益을 이용한 殘差分析(residual analysis)의 새로운 適用을 통하여 이들 合併의 動機를 分析하였다.

現存하는 實證的 研究들이 殘差, 즉 非正常收益(abnormal return)의 平均 크기만을 고려함으로써 合併動機에 대하여 明確한 結論을 提示하지 못하고 있는데 反하여, 이 研究에서의 檢證方法은 取得企業(acquiring firm)과 被取得企業의 非正常收益間의 相關關係를 分析함으로써 資料로부터 보다 많은 情報를 얻도록 고안되었다. 즉, 이 方法은 合併에 관한 主要假說들이 그 相關關係에 대하여 각기 相異한 示唆를 하도록 解釋될 수 있음으로써 利用 可能해진다.

또한 大部分의 既存研究가 많은 種類의 異質的인 合併을 標本에 포함시킨데 반하여 이 연구는 混合型的 合併만을 對象으로 하여 結果解釋上的 模糊함을 회피하였다.

1. 混合合併의 假說

企業規模極大化 또는 經營者主義(Managerialism)라고 불리는 假說은 混合合併이 새로운 經濟的 價値를 創出하려는 目的으로 發生되는 것이 아니며, 주로 所有와 經營이 分離된 企業의 經營者들이 自身이 經營하는 企業規模의 極大化를 追求하는 과정에서 발생한다고 주장한다. 그러므로 被取得企業이 얻는 收益, 즉 合併前의 株價에 더하여 받는 프리미엄은 곧 取得企業의 損失, 즉 株價의 下落을 의미한다. 이 경우 兩企業의 非正常收益은 負의 相關關係를 가질 것이다.

다음으로 企業合併은 被取得企業의 經營陣이 敏腕하지 못할 때 이를 逐出하기 위한 方法의 하나라는 假說이 있다. 이 때 取得企業의 經營陣은 '平均水準'이거나 또는 그 以上일 수도 있다. 만약 取得企業의 經營陣이 우수하다면 이는 아래에서 說明하는 相乘效果(synergy effect)假說에 포함되어야 할 것이므로 여기서는 取得企業 經營陣의 水準이 平均以上이라는 기준을 요구하지 않는 것으로 해석한다. 合併이 이루어지는 市場이 競爭的이라고 假定한다면 非能率的 經營陣의 更迭이라는 假說下에서는 取得企業의 純所得은 零에 지나지 않을 것이다. 이것은 企業支配를 위한 이 市場에서의 競爭으로 인하여 合併에 따르는 모든 利益이 被取得企業의 株主에게 귀속될 것이기 때문이다. 그러므로 이 假說에 따르면 兩企業의 非正常收益間의 相關係數는 零이 된다.

마지막으로 相乘效果 假說에 의하면 合併에 參與하는 두 企業의 結合이 없이는 達成될 수 없는 經濟的 效率이 合併을 통하여 創出된다는 것이다. 이 相乘效果는 흔히 經營上의 相乘效果와 財務的인 相乘效果로 나누어진다. 만약 混合型合併이 이러한 效果를 갖는다면 合併利益은 兩企業間에 分配되는 현상을 보일 것이며 非正常收益間에는 正의 相關關係가 나타날 것이다.

2. 檢 證

이 研究에서는 市場模型(market model)과 이 模型에 業種의 收益指數를 더한 二因子(two-factor) 모델을 利用하여 구한 非正常株式收益을 合併公表時까지 三個月間 累積하여 이를 合併利得으로 사용한다. 模型의 推定期間은 合併公表日을 基準하여 24個月前까지의 60個月로 한다.

合併利得 또는 非正常收益間의 相關關係는 세 가지 方法으로 推定된다. 첫째는 取得企業 非正常收益의 被取得企業 非正常收益에의 回歸式을 推定한다. 둘째는 위의 回歸式에 被取得企業規模(株式總價値로 測定함)의 取得企業規模에 대한 比率를 獨立變數로 追加하여 推定한다. 이 變數는 被取得企業의 相對的 規模가 取得企業의 收益에 미치는 影響을 통제하기 위한 것이며 合併假說들이 豫測하는 그 係數의 부호(sign)는 收益變數의 그것과 同一하다. 셋째는 非正常收益의 金額換算值, 즉 非正常收益率에 株式의 總價値를 곱한 結果를 위의 두 變數 대신에 사용한다.

이 研究의 企業合併 標本은 美國聯邦去來委員會의 資料를 취한 것으로 混合合併을 구성하는 68개의 生産品目擴大合併(product extension merger)과 純混合合併(pure conglomerate merger)이라고 할 수 있는 49개의 '其他(other)' 合併으로 이루어진다.

株式收益 등의 資料로는 시카고大學의 CRSP 데이프를 사용한다.

3. 結 果

市場模型을 사용하여 推定한 非正常收益을 사용했을 때 取得企業과 被取得企業의 收益間에는 正의 相關關係가 나타나며 이것은 적어도 10퍼센트水準에서 統計的 有意性을 갖는다. 이 結果는 相乘效果 假說에 符合한다. 相對的 企業規模 變數를 追加했을 때 이 結果는 더욱 강하게 나타난다. 合併利得을 金額으로 測定할 경우에도 같은 結果를 얻게 되며, 이 때 흥미로운 것은 兩企業이 合併利得을 兩分하나 取得企業은 合併에 소요되는 費用을 負擔한다는 '시나리오'와 合致되는 結果를 보여주고 있다는 것이다.

業種指數를 사용하는 二因子模型을 사용할 경우 그 結果가 統計的 有意性을 缺하고 있을 때 도 있으나 全體의으로는 위의 類似하다.

結論的으로 이 연구는 종래 取得企業群과 被取得企業群을 分離시켜 非正常收益을 관찰함으로써 喪失되었던 個個合併에 관한 情報를 活用하고 있으며, 檢證結果는 企業規模極大化 또는 非能率的 經營陣更迭 假說보다는 相乘效果假說에 符合하고 있다.