

# **Does The Ruling to Break Up Microsoft Add Value to Its Competitors and Other High Tech Companies?**

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## **Abstract**

In this study, we examine the impact of the announcements of the ruling to break up Microsoft into two independent companies on the market values of Microsoft, Microsoft's competitors and other firms operating in computer related industry. Our empirical results show that the stock price of Microsoft declined substantially on the day when the Department of Justice proposed to break up the company. In addition, significant negative abnormal returns are also observed for Microsoft's competitors and other firms operating in the computer industry. This result contradicts the belief that a stricter enforcement of the antitrust laws will benefit Microsoft's competitors. Although significant negative abnormal returns are also observed on the final hearing day, the abnormal negative returns on the ruling day is not statistically significant. This is perhaps an indication that the market has already factored in a high likelihood that the judge will rule to break up Microsoft as a remedy.

## **I. Introduction**

The study by Bittlingmayer and Hazlett (2000) [hereafter refers to as BH] examines the impact of a series of antitrust actions taken against Microsoft by the Department of Justice [DOJ] on the market value of Microsoft and firms operating in the computer-related industry. Of the 54 antitrust related announcements they examined for the period from 1991 to 1997, 29 are identified to be pro-antitrust enforcement. Their results show that pro-antitrust enforcement actions taken by the DOJ have resulted in a statistically significant decline in the stock prices of Microsoft and firms operating in the computer industry. On the other hand, stock prices react positively to the news on the setbacks of the DOJ's enforcement actions. Since the market reacts negatively to the news of stricter enforcement of the antitrust laws and positively to the news of a setback or a more lax in the enforcement of the laws, the empirical findings provided by BH (2000) contradict the argument that the business practices of Microsoft are anti-competitive and/or the enforcement of antitrust policy increases efficiency.

The aim of this paper is to extend the BH (2000) study to include the proposal by the DOJ to breakup Microsoft and the ruling by the federal judge to break it up. Our study examines the stock price reactions of Microsoft, its competitors and other firms operating in the high-tech industry on three announcement dates, namely, (i) April 24, 2000, the day on which the DOJ and 19 states announces their intention to file a lawsuit to break up Microsoft; (ii) May 25, 2000, the first trading day after the last hearing day, and (iii) June 8, 2000, the first trading day after the ruling made by Judge Thomas Penfield Jackson to breakup Microsoft into two independent companies.

We expect a stronger reaction on April 24, 2000, the first time the DOJ suggested that the appropriate anti-trust remedy is to breakup Microsoft. The reaction to subsequent pro-antitrust enforcement announcements can be used to assess the initial market perception of the likelihood that the judge will rule in favor of the DOJ. If the reactions to subsequent pro-antitrust

announcements are weakly negative or positive, it is perhaps an indication that the market has initially perceives that it is highly likely that the judge will rule in favor of DOJ to breakup Microsoft.

In this study, we also examine whether competitor firms and non-competing firms react differently to the announcements. One would expect that the ruling to break up Microsoft to be beneficial to Microsoft's competitor firms since some its competitors, namely, Sun Microsystems, Oracle, IBM, Netscape, and Novell have lobbied strongly for strict antitrust enforcement against Microsoft (Economides, 2001).

Our results show that the stock price of Microsoft declines substantially on the announcement of the proposal by the Department of Justice to break up Microsoft. In addition, significant negative abnormal returns are also observed for Microsoft's competitors and other firms in the computer industry. Similar to the findings of BH (2000), our result contradicts the belief that a stricter enforcement of the antitrust laws will benefit Microsoft's competitors. Although significant negative abnormal returns are also observed on the last hearing day, the stock market reaction to the ruling to split up Microsoft is not statistically significant. This is perhaps an indication that the market has already anticipated on the last day of hearing that the judge will rule to breakup Microsoft into the two independent companies.

## II. Antitrust Law Suit Against Microsoft

The 1995 consent decree, which Microsoft agreed to, explicitly prohibits contractual bundling but it does allow Microsoft to incorporate additional functions and features into its existing products, particularly, its Windows operating system. However, in October 1997, the DOJ sued Microsoft for violating the 1995 consent decree in that Microsoft required PC makers to install Microsoft's web browser, the Internet Explorer [IE], as the default browser. In December 1997, a preliminary injunction was issued by Judge Thomas Penfield Jackson, the presiding federal judge, to stop Microsoft from bundling its web browser with its Windows operating system. However, in May 1998, the DC Circuit Court of Appeals voided the preliminary injunction, and later it ruled that Microsoft did not violate the 1995 consent decree.

The DOJ's antitrust case against Microsoft began in court in December 1998, and a year later, in December 1999, Judge Jackson found that **harm** was done to consumers in view of Microsoft's monopoly power in the personal computer operating system market and its practice of bundling of IE with its operating system as being anti-competition (Brinkley and Lohr, 2000).

On April 24, 2000, 19 states and the DOJ together proposed that the appropriate remedy to their antitrust case against Microsoft is to split Microsoft's operating system from its application software, such as Office suite and IE, and they also sought immediate curb on the company's current practice of bundling. It is the first official announcement demanding the breakup of Microsoft since the beginning of the battle between the DOJ and Microsoft in 1998. On April 28, 2000, the DOJ together with the 19 states officially filed their proposal demanding to split Microsoft into two as a punishment for violating the antitrust laws.

On May 24, 2000, after the market closed, the result of last scheduled hearing was released. Judge Jackson, the presiding judge for the case, appeared to be moving swiftly and

leaning towards a breakup of the company. In after-hours trading, the stock price of Microsoft fell to near its 52-week low.

On June 7, 2000, after the market closed, Judge Jackson rules that Microsoft should be split in two: one to make and sell operating systems for personal computers, such as Windows; and another firm to make and market Microsoft's other software and online businesses. The two companies can do business with each other so long as outside companies are not disadvantaged. Jackson's order and final ruling also include restrictions on Microsoft's corporate behavior. These remedies include publishing the source code used by programmers to design software applications for Windows. Other behavioral remedies regulate Microsoft's relations with computer makers and software companies. The conduct remedies are scheduled to go into effect in 90 days but the breakup order can be stayed pending future court appeal. After the release of the ruling, Microsoft announced its plans to file its appeal and a motion to stay the order, and Microsoft is confident that the ruling will be overturned.

Although the antitrust case against Microsoft has further developments, this study focuses only on the initial proposal to break up Microsoft, and we only examine the event window from April 24, 2000 to June 8, 2000.

### **III. Data definition and sources**

Our sample firms are chosen using Hoover's online. A sample of 37 competitor firms and a sample of 26 non-competing high tech companies are identified. Tables I and II provide a list of competitor and non-competitor companies, respectively. From the tables, we noticed that on average, the competitor firms have substantially higher beta and also larger market capitalization.

We employ an event study approach (Fama et al., 1969 and Hilmer and Yu, 1979) to examine the market reaction to the ruling on Microsoft, and we have selected an event window from April 11, 2000 to June 20, 2000. To allow for any leakage of information and delayed reaction, the event window starts 8 days before April 24, 2000, the day on which the breakup of Microsoft is proposed and 8 days after the ruling to break up Microsoft on June 8, 2000. In order to compute the abnormal returns, we collect another 60 days of returns prior to our event period for estimating the betas of the firms. The daily stock prices and dividend information for all companies are gathered from Yahoo! Finance's website.

The parameters of the market model, alpha ( $\alpha_i$ ) and beta ( $\beta_i$ ), are estimated for each security  $i$  over a period of 60 days prior to the event period using the S&P 500 index as the market index. Similar to the procedure used by Brown and Warner (1980), these parameters are then used to calculate the expected returns over the event window. The abnormal returns ( $AR_t$ ) for each firm are obtained by computing the difference between the observed returns and the expected returns for each day. The cumulative abnormal return ( $CAR_t$ ) for day  $t$  for each stock is then computed.

### **IV. Empirical Results**

Table III presents the market-model adjusted abnormal return for Microsoft, the average abnormal return for Microsoft's competitors and Microsoft's non-competing high tech firms. On

April 24, 2000, the day on which the proposal to split Microsoft into two is announced, the stock price of Microsoft declines by 15.14% on a risk-adjusted basis. Statistically significant reactions are also observed for both the competitor and non-competing high tech firms, and their abnormal returns are -5.50% and -3.76%, respectively.

From Figures I, we observe that after the first event day, Microsoft stock price bounces back slightly. Surprisingly, on April 28, 2000, the day on which the DOJ and 19 states filed their proposed punishment to split Microsoft into two, Microsoft's share price shows a slight positive reaction, and both its competitor firms and non-competing high tech firms show a significant positive reaction to the news. However, thereafter, the stock prices of the two groups trend downward to the lowest point around May 25<sup>th</sup> 2000, the first trading day after the final hearing.

On May 24, 2000 after the close of the market, Judge Jackson ended the hearing on the proposal to breakup Microsoft, and the indication was that the judge was leaning towards splitting Microsoft into two firms. The next day on May 25, 2000, Microsoft stock price declines by 4.73% on a risk-adjusted basis. The average abnormal returns for competitor firms and non-competing high tech firms are -1.92% and -2.14%, respectively, and they are statistically significant at 10% and 5% level, respectively. The cumulative abnormal return up till May 25, 2000 is about -19% for Microsoft whereas both competitor firms as well as non-competing high tech firms show a loss of approximately 38% and 26%, respectively. In other words, the other high tech firms seem to suffer bigger losses than Microsoft due to the actions taken by DOJ.

On the third event day, June 8, 2000, the first trading day after the ruling to split Microsoft, both Microsoft and its competitor firms reacted negatively to the news, albeit statistically not significant. On the other hand, the non-competitor firms show a positive average abnormal return of 0.98%. On the day after event day, the share price of Microsoft rebounded, and both its competitor and the non-competing high tech firms also show a positive but statistically insignificant reaction.

To make sure that the results we obtained are not an artifact of the risk adjustment process, we also perform a similar analysis using market-adjusted returns. Since similar results are obtained and to conserve space, the results using market-adjusted returns are not reported.

## V. Conclusions

Similar to the findings by BH (2000), our results show that DOJ's proposal to break up Microsoft into two independent firms harms not only Microsoft but also firms operating in the computer related industry. At the lowest point, both its competitor's firms and non-competing high tech firms suffer, on average, a loss of value of about 38% and 26%, respectively, on risk-adjusted basis. Furthermore, we find that the reaction is the strongest on the first day on which the government announces its intention to breakup Microsoft. Our findings, similar to those of BH (2000), contradict the common believe that Microsoft's market dominance in the operating system as well as its business practices of bundling have harm not only the consumers but also its competitors. In fact, the market reacts negatively to the remedy as proposed by the DOJ and the 19 participating states.

**Table I. List of Competitor Firms and Their Descriptive Statistics**

Type of Firm	Ticker	Name	Beta	Market Capitalization (in billion \$s on 3/5/01)
Operating system	SUNW	Sun Microsystem	1.40	61.00
	CORL	Corel	0.39	0.15
	NOVL	Novell	2.78	1.64
	RHAT	Red Hat	1.14	0.84
	BEOS	Be	0.37	0.06
	SCOC	Santa Cruz Operation	0.48	0.05
Database system	ORCL	Oracle	1.75	86.50
	BORL	Inprise	0.50	0.40
	SYBS	Sybase	0.98	1.39
Computer hardware and Software	AAPL	Apple Computer	1.73	7.48
	HP	Hewlett-Packard	0.81	2.52
	IBM	IBM	0.38	156.90
Application software	ADBE	Adobe	1.71	8.67
	ERTS	Electronic Arts	1.70	0.07
	RNWK	Real Network	1.80	1.06
	BVSN	Broad Vision	1.17	1.51
	IFMX	Informedix	0.53	1.28
	INTU	Intuit	1.97	6.30
	SYMC	Symantec	0.61	3.30
	LBRT	Liberate Techonology	1.14	0.83
	MACR	Macromedia	0.65	0.96
	PRGY	Prodigy	1.00	0.19
Internet service and content provider	YHOO	Yahoo!	1.58	8.39
	AOL	AOL	1.08	156.90
Wireless software	T	AT&T	0.67	84.00
	3COM	3Com	1.60	2.01
	QCOM	Qualcomm	1.87	42.00
<b>Average</b>			1.18	23.57

**Table II. List of Non-Competing High Tech Firms and Their Descriptive Statistics**

Type of Firm	Ticker	Name	Beta	Market Capitalization (in billion \$s on 3/5/01)
Computer hardware	DELL	Dell Computer	0.94	67.00
	CPQ	Compaq computer	0.46	32.90
	GTW	Gateway Computer	0.84	5.40
Networking software	BEAS	BEA systems Inc.	0.69	13.07
	CCRD	Concord Communications	0.34	0.13
	LGTO	Legato System	1.05	1.15
Networking device	CSCO	Cisco Systems	1.33	143.70
	CRDS	Crossroads Systems	0.36	0.15
	CMNT	Computer Network Tech	0.49	0.42
	SNWL	Sonicwall	0.35	0.75
	ZOOM	Zoom Technologies	-0.40	0.02
Telecom – Internet service provider	MFNX	Metromedia Fiber Network	0.85	2.74
	EXDS	Exodus Communications	0.91	5.60
	DSLN	DSL Net	0.66	0.07
	NPNT	Northpoint Communication	0.38	0.01
Data storage	ADIC	Advanced Digital Information Co.	0.50	0.84
	AXC	Ampex corporation	0.71	0.02
	EMC	EMC Corp.	1.05	79.00
	NTAP	Network Appliance	1.65	7.30
Media –Internet and online content providers	BOUT	About.com	0.80	0.47
	CNET	CNET Networks	1.10	1.23
	WOMN	Woman.com	0.22	0.01
	VERT	VerticalNet	0.18	0.15
<b>Average</b>			0.67	11.13

**Table III. Risk-Adjusted Abnormal Returns**

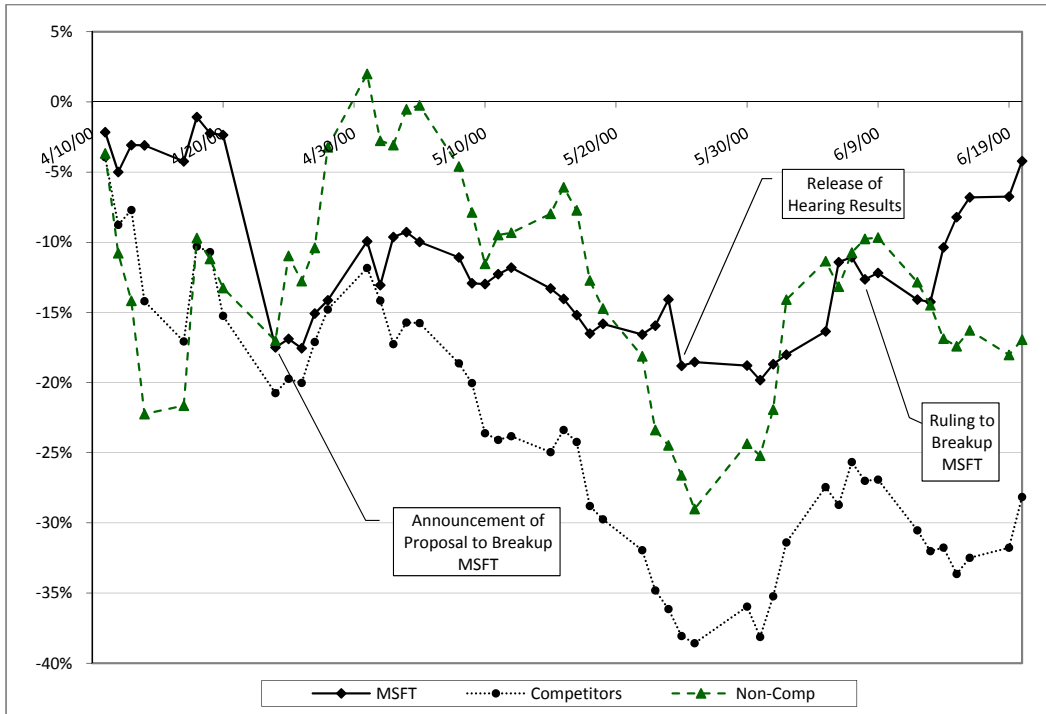
For each of the 37 stocks that make up the group of competitors and the 26 stocks for the non-competitor group, the daily risk-adjusted returns are estimated using the market model where the S&P 500 Index is used as the market portfolio. The market-model-adjusted abnormal returns are calculated as:  $AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$ . The event window is from April 11, 2000 to June 20, 2000. The  $AR$  reported in the table is the mean for each group, and the reported t-statistic is to test if the mean is different from zero. Highlighted in bold are the dates on which major announcements relating to the ruling to break up Microsoft are reported.

Date	MSFT	Competitors		Non-Competitors	
	AR	AR	T-Test	AR	T-Test
04/11/00	-2.16%	-3.94%	-4.49	-3.67%	-2.66
04/12/00	-2.84%	-4.83%	-4.90	-7.11%	-9.70
04/13/00	1.92%	1.06%	1.02	-3.39%	-2.20
04/14/00	-0.02%	-6.50%	-3.00	-8.07%	-3.41
04/17/00	-1.14%	-2.86%	-1.59	0.60%	0.23
04/18/00	3.16%	6.76%	3.66	11.94%	5.29
04/19/00	-1.16%	-0.40%	-0.30	-1.49%	-1.15
04/20/00	-0.12%	-4.54%	-2.47	-2.07%	-1.08
<b>04/24/00</b>	<b>-15.14%</b>	<b>-5.50%</b>	<b>-4.78</b>	<b>-3.76%</b>	<b>-2.21</b>
04/25/00	0.61%	1.02%	1.14	6.04%	3.06
04/26/00	-0.67%	-0.30%	-0.27	-1.80%	-1.09
04/27/00	2.47%	2.92%	2.16	2.37%	1.65
<b>04/28/00</b>	<b>0.94%</b>	<b>2.31%</b>	<b>2.43</b>	<b>7.16%</b>	<b>3.66</b>
05/01/00	4.20%	2.96%	2.20	5.23%	2.12
05/18/00	-1.32%	-4.56%	-4.20	-5.00%	-4.48
05/19/00	0.69%	-0.95%	-1.24	-2.00%	-2.69
05/22/00	-0.76%	-2.20%	-2.85	-3.40%	-4.56
05/23/00	0.63%	-2.87%	-3.16	-5.25%	-4.78
05/24/00	1.86%	-1.33%	-0.80	-1.09%	-0.71
<b>05/25/00</b>	<b>-4.73%</b>	<b>-1.92%</b>	<b>-1.90</b>	<b>-2.14%</b>	<b>-2.27</b>
05/26/00	0.28%	-0.51%	-0.46	-2.40%	-1.77
05/30/00	-0.25%	2.61%	3.41	4.66%	2.52
05/31/00	-1.04%	-2.16%	-1.92	-0.85%	-0.74
06/01/00	1.14%	2.90%	3.51	3.28%	2.48
06/02/00	0.67%	3.84%	3.49	7.84%	4.89
06/05/00	1.66%	3.94%	2.32	2.74%	2.11
06/06/00	4.94%	-1.26%	-1.34	-1.82%	-1.36
06/07/00	0.35%	3.05%	2.56	2.43%	2.36
<b>06/08/00</b>	<b>-1.58%</b>	<b>-1.33%</b>	<b>-1.37</b>	<b>0.98%</b>	<b>1.18</b>
06/09/00	0.45%	0.09%	0.12	0.09%	0.14
06/12/00	-1.90%	-3.62%	-3.14	-3.18%	-3.78
06/13/00	-0.17%	-1.48%	-2.57	-1.64%	-1.29
06/14/00	3.89%	0.25%	0.21	-2.38%	-2.62
06/15/00	2.16%	-1.88%	-1.66	-0.54%	-0.43
06/16/00	1.41%	1.15%	1.48	1.13%	0.93
06/19/00	0.05%	0.73%	0.90	-1.74%	-0.79
06/20/00	2.53%	3.61%	3.10	1.08%	0.85

Note: In order to display the data in a page, data from 05/02/2000 to 05/18/2000 are omitted but will be furnished upon request.

**Figure I. Cumulative Abnormal Returns for Microsoft, and Average Cumulative Abnormal Returns for Competitor and Non-Competitor Firms.**

For each of the 37 stocks that make up the group of competitors and the 26 stocks for the non-competitor group, the daily risk-adjusted returns are estimated using the market model where the S&P 500 Index is used as the market portfolio. The market-model-adjusted abnormal returns are calculated as:  $AR_{it} = R_{it} - (\alpha_i + \beta_i R_{m_t})$ . The cumulative abnormal return ( $CAR_t$ ) for day  $t$  for each group is then computed as:  $CAR_t = \sum_{k=1}^t AR_k$ . The event window is from April 11, 2000 to June 20, 2000. The solid line shows the cumulative abnormal returns for Microsoft, the dotted line for competitors, and the dashes for non-competitors.





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