

## How Do You Like Them Apples?

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**Abstract:** Apple is a company that has long intrigued investors, mutual funds, and hedge funds alike. Beginning with the introduction of the iMac in 1998, Apple has experienced a meteoric rise in its stock price, for a total return of 58,160 percent. Driven by underlying fundamentals and product innovation, we seek to investigate how Apple's product innovation contributed to the company's success by investigating the impact of product innovation on both return and trading volume. In light of the current trading environment based on rumors and collectivist trading around rocket emojis posted on sites such as Reddit, the story of AAPL reminds us that lasting success is built not on supply and demand but on ultimately strong fundamentals underlying a company's business model. Our results indicate that Apple's stock price reacts very strongly to new product innovations, particularly innovations that are non-competitor related and which, in the long run, have proven to be best sellers in the Apple stable of products.

### I. Introduction

Apple's journey has been an interesting one! For many years throughout the 1980s and early 1990s, Apple's stock price was largely stagnant, with little movement at all. However, the company held its own, with a very loyal customer base swearing by Apple's superior product, which at that point consisted almost solely of the Macintosh computer. Things began to change in 1997, when then CEO Amelio quit and Steve Jobs returned to Apple. Shortly thereafter, the iMac was introduced in 1998. Since then, a variety of Apple products have been introduced, contributing to a technological revolution. Most recently, the Apple Watch and AppleTV added to the company's increasing array of products.

The purpose of this study is to investigate the impact of Apple's product innovation on both the company's stock price and on its trading volume. Apple tends to not disclose new product innovations prior to their announcement, which creates a great opportunity to study the pure impact of such announcements on the company's stock price. Moreover, being a leader in its industry, it allows us to investigate what impact, if any, cutting edge product innovations have on a company's stock price performance. Apple is a company that has long intrigued investors, mutual funds, and hedge funds alike. Beginning with the introduction of the iMac in 1998, Apple has experienced a meteoric rise in its stock price, for a total return of 58,160 percent. Driven by underlying fundamentals and product innovation, we seek to investigate how much Apple's product innovation contributed to the company's success by investigating the impact of product innovation on both return and trading volume. In light of the current trading environment based on rumors and collectivist trading around rocket emojis posted on sites such as Reddit, the story of AAPL reminds us that lasting success is built not on supply and demand but on ultimately strong fundamentals underlying a company's business model.

For a long time now, event studies have measured the effect of particular events on stock prices and other firm-specific variables. Among early such studies are the ones by Ball and Brown (1968), studying the information content of earnings, and Fama et al. (1969), who looked into stock splits after accounting for simultaneous dividend increases. A plethora of studies have followed these early ones, many with slightly varying methodologies. One notable study relevant to the present paper is the one by Baginski et al. (1991), who investigate the impact of the MGM Grand fire on MGM's stock price.

### II. Data and Methodology

We chose to focus on five major events in Apple's history. First, the return of Steve Jobs to Apple is investigated. This is an important event, as Steve Jobs is highly representative of the company itself. There are several sub-events associated with Jobs' return. Specifically, Apple first hired Jobs as a part-time consultant. However, when CEO Amelio quit in 1997, rumors that Steve Jobs might return to Apple's helm. This ultimately occurred approximately a month after Apple and Microsoft combined forces in early August of 1997.

The remaining four events that are analyzed here constitute Apple's major product innovations since Jobs was re-appointed as Apple's CEO. We are particularly interested in the introduction of 1) the iMac, which arguably was Apple's major comeback into the computer business; 2) the iPod, which was viewed by many as the Cadillac of music players at the time it was introduced; 3) the iPhone, whose revolutionary multifunctional capabilities effectively competed with existing products such as Cisco's iPhone; and 4) the iPad, which was introduced in 2010. We focus on these early product innovations to capture the period in Apple's life which set it on the path of an industry leader.

For each of the four new product introductions, various sub-events are investigated that should effectively capture all the information for each product. For example, the iPhone has a lot of news items associated with it. First, it was rumored that Apple would introduce an iPhone through Helio, about one year before the actual iPhone was introduced. Next, competitor Cisco announced that it launched an iPhone. Subsequently, Apple files a patent for a music player-mobile phone combination, before the iPhone was finally introduced at the MacWorld Expo in 2007. However, as many customers remember, this is not where the story ended. Subsequent to the iPhone launch in June of 2007, Apple then reduced the price of the iPhone significantly and provided refunds up to \$200 to customers who had already paid the higher prices. The story of the iPhone illustrates that multiple sub-events have to be identified in order to capture the full effect of an overall event.

As for the iPhone, these sub-events were identified for all events. Specifically, in order to identify the various events identified above, we utilized the Lexis/Nexis database. Searching all major U.S. news publications, we identified 1) all majors news items related to each event and 2) the first date on which the information was available in the press. In an efficient market, the news should be reflected in Apple's stock price on the day the news first becomes publicly available. Consequently, we expect Apple's stock price to react to the news items on the dates we identified, but not after those dates. Similarly, if the market already expects an event to occur, that information should already be reflected in the stock's price when the event is officially announced, and there should be no reaction on the official announcement date. The various sub-events associated with the five main events are summarized in Table 1.

Apple is a good company to investigate in terms of market efficiency; as a matter of company policy, Apple does not discuss future product plans until they are officially announced. This implies that there should be minimal information leakage prior to official product announcement by Apple. Thus, stock market participants should impound new information into Apple's stock price when Apple announces it. Other companies often hint at new product development, and the resulting new information may be impounded into their stock prices slowly over time as the information becomes available.

In order to investigate the stock market reaction to Apple's various news announcements, we use an event study methodology similar to Baginski et al. (1991). Specifically, we use a dummy variable technique that is econometrically equivalent to the traditional event study methodology. This dummy variable technique computes the estimated market model parameters and unexpected security returns by appending a dummy variable for each event day of interest to the OLS regression used to estimate the market model parameters. This approach is especially appropriate in the current setting, since Apple has five main events, each with several sub-events. As in Baginski et al. (1991), an advantage of this method is that the economic significance of Apple's event-specific returns are assessed relative to the company's normal return-generating process.<sup>1</sup>

The following regression model was estimated for Apple for each main event:

$$AAPL_t = \alpha + \sum_{i=1}^n \tau_i (D_{it}) + \beta_1 R_{mt} + \beta_2 (POST_t \times R_{mt}) + \varepsilon_t, \quad (1)$$

where:

$AAPL_t$  = day t return for Apple,

$\alpha$  = intercept,

$\tau_i$  = dummy variable coefficient on event day i,

$D_{it}$  = dummy variable for event i (of n events) equal to one on day t

<sup>1</sup> As pointed out by Baginski et al. (1991), most event studies rely on cross-sectional mean abnormal returns and standard errors to test for significance, thereby characterizing the significance of a single firm's residual return in terms of sample-wide rather than firm-specific residual return variability.

$\beta_1 =$  corresponding to event  $i$  and zero otherwise,  
 slope (systematic risk) parameter,  
 $\beta_2 =$  increase in post-announcement slope parameter (shift in systematic risk),  
 and  
 $\varepsilon_t =$  error term on day  $t$ .

Equation (1) was applied to each of the five main events. For example, for the event of Steve Jobs returning to Apple, there are five sub-events (consultant, Amelio quitting, etc) identified in Table 1. Consequently, there are five  $\tau$  coefficients associated with this regression. The other four regressions were applied similarly.

It is noteworthy to mention that the time series is different for each of the five regressions. Baginski et al. (1991) used a period from -150 to +150 (301 trading days total) to investigate the stock price reaction surrounding the MGM fire. Since each of our regressions has multiple sub-events, we used a period from 150 prior to the first event to +150 subsequent to the last event. Thus, for instance, to investigate the market reaction to Steve Jobs returning to Apple, the time series stretches from 150 trading days prior to December 20, 1996 (when Steve Jobs returned to Apple as a part-time consultant) to 150 trading days after September 16, 1997 (when Steve Jobs was officially reappointed as Apple's CEO). One exception to this procedure is the introduction of the iPod. For this main event, the four sub-events were analyzed in three different regressions. This was done because the events stretch from October 2001 to the end of April 2003, and we wanted to avoid using a long period that was not representative of Apple's normal performance.<sup>2</sup>

In addition to the return reaction, it is also important to investigate whether the trading volume was substantially higher on the event days in question. If the volume on event days was substantially higher, it stands to reason that market participants are trading actively on the information contained in the news announcements. Consequently, this provides confirmation that the market incorporates news associated with Apple efficiently. In order to investigate whether the trading volume was substantially different on the event days from Apple's normal trading volume, we defined abnormal trading volume as follows:

$$AV_t = V_t - AVV_t, \quad (2)$$

where:

$AV_t =$  Apple's abnormal return volume on day  $t$ ,  
 $V_t =$  Apple's trading volume on day  $t$ , and  
 $AVV_t =$  Apple's average trading volume over the period (-51,-2) prior to the event on day  $t$ .<sup>3</sup>

Next, the abnormal volume was tested for significance to determine if it was substantially different from the average daily volume on the previous fifty trading days.

### III. Results

The results of the above analysis are displayed in Tables 2 and 3 for the return analysis, focusing on the announcement date and the (-1, 0) window, respectively, and in Table 4 for the volume analysis. The results in each table are discussed next.

Table 2 is structured into seven panels to correspond to the various events listed in Table 1. Panel A presents the results related to Steve Jobs' return to Apple. As is evident from Panel A, the model overall is highly significant, with an adjusted R-square of almost 26%, indicating that 26% of the variation in Apple's stock price was explained by the events surrounding Steve Jobs' return. Interestingly, the event that has the most significant impact was the company's deal with MSFT, followed by the two events associated with the switch in CEOs.

Regarding the results in Panel B of Table 2, the only significant event associated with the iMac was the pre-sales announcement. This is interesting, as we tend to view the iMac as a resurrection of Apple in retrospect. This result suggests, however, that the ultimately great product was viewed with some skepticism at the time, and

<sup>2</sup> We did run the regression using a period from 150 trading days prior to October 2001 to 150 days subsequent to April 2003. The results are not substantially different from the results reported here and are available from the authors upon request.

<sup>3</sup> If the (-51,-2) window overlapped with another event that had significant abnormal trading volume associated with it, we used the (-51,-2) window that was used for the earlier event.

that Jobs return to Apple and Apple's deal with Microsoft was considered to be more important to the company's shareholders.

In Panels C through E of Table 2, the results are even more surprising, revealing that both the iPod launch and the launch of a windows-compatible iPod had a *negative* impact on Apple's stock price. Moreover, in Panel E, when Apple announced a new iPod version, there was no impact on Apple's stock price. So far, it appears that the market views "pure" Apple products as superior to products that are compatible with competitors or that could easily be simulated by them. It could also indicate that the market foresaw this as one of the weaker Apple products, which turned out to be true in the long run. The notion that purer Apple products are valued more by the market appears to be further confirmed by the results in Panel F of Table 2, which shows a strong market reaction to both the rumored iPhone launch and the introduction of the iPhone. The iPad introduction (Panel G) also had a strong market reaction.

The results in Table 3 mirror the results in Table 2 for the (-1, 0) event window of the event. All the findings from Table 2 are either less significant for the event window or cease to be significant when expanded from just the announcement date to the (-1, 0) window. This again confirms that Apple is a good company to investigate for an event study, as very little information is revealed about an event prior to the announcement date, which reduces information leakage.

Table 4 reveals the abnormal volume information related to the events in Table 1. As shown in Table 4, and perhaps as expected, the news surrounding CEO Amelio's resignation and Steve Jobs' return to Apple are associated with significantly abnormal trading volume. Although the Steve Jobs-related events had the highest levels of abnormal trading volume, the iMac, iPod, iPhone, and iPad event dates also reveal significantly abnormal trading volumes on the announcement dates, and mostly on the product launch dates. One interesting observation in Table 4 is the significant abnormal trading volume associated with the windows-compatible iPod introduction. In Tables 2 and 3, the abnormal returns were significantly negative associated with this event, indicated a large amount of sell orders when this event occurred. This again confirms that Apple's shareholders did not see Apple's innovation of products that feed into their competitors' sales as a viable long-run strategy.

#### **IV. Conclusion**

Our purpose is to investigate the impact of Apple's product innovation on the company's stock price and on its trading volume. Being a leader in its industry, this allows us to investigate what impact, if any, cutting edge product innovations have on a company's stock price performance.

Our results indicate that Apple's stock price reacts very strongly to new product innovations, particularly innovations that are non-competitor related and which, in the long run, have proven to be best sellers in the Apple stable of products. The return of Steve Jobs, the introduction of the iMac, iPhone, and iPad, have all had significantly positive abnormal returns and trading volumes on the announcement date of the product launch. Conversely, the introduction of the iPod, particularly the windows-compatible version, saw a significant negative stock price reaction accompanied by large abnormal trading volumes. It is fascinating that Apple was able to survive its slump in the 1980s and early 1990s, and it appears that Apple shareholders foresaw that being a unique and creative company would ultimately propel it forward and render it the industry leader it is today.

#### **References**

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**Table 1.** Major Apple News Announcements Associated with Five Events.

	<b>Steve Jobs Returns to Apple</b>	<b>iMac</b>	<b>iPod</b>	<b>iPhone</b>	<b>iPad</b>
12/20/96	Jobs returns as part-time consultant				
7/11/97	CEO Amelio quits				
7/17/97	“Jobs Heads Apple” headline				
8/6/97	Deal with MSFT				
9/16/97	Jobs appointed as CEO				
5/6/98		iMac introduced			
8/11/98		iMac pre-sales announced			
8/15/98		iMac retail sales start			
10/23/01			iPod launched		
5/2/02			Competitors launch products		
7/17/02			Windows-compatible iPod		
4/29/03			iTunes sales and new iPod version announced		
3/29/06				Rumored iPhone launch	
11/30/06				Patent filed	
12/9/06				Cisco launches “iPhone”	
1/9/07				iPhone introduced	
6/4/07				Confirmed 6/29 launch date	
6/29/07				iPhone launched	
9/7/07				Price cuts and refunds	
12/9/09					Expected iPad launch rumored
12/25/09					Rents stage for late January
1/27/10					iPad launched

**Table 2.** Effect of Various Apple Events from 1996 to 2010 on the Stock Price of Apple on the Announcement Date.

<b>Panel A: Steve Jobs</b>			
Model F = 25.268    probability = 0.000    R-square = .2701    Adjusted R-square = .2594			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	-0.001	-0.93
Jobs returns as part-time consultant	$\tau_1$	0.064	1.88*
CEO Amelio quits	$\tau_2$	0.142	4.15***
“Jobs Heads Apple” headline	$\tau_3$	0.074	2.17**
Deal with MSFT	$\tau_4$	0.328	9.60***
Jobs appointed as CEO	$\tau_5$	0.002	0.07
Nasdaq	$\beta_1$	1.366	4.94***
Beta Shift	$\beta_2$	-0.415	-1.29
<b>Panel B: iMac</b>			
Model F = 21.377    probability = 0.000    R-square = .2265    Adjusted R-square = .2159			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000504	0.29
iMac introduced	$\tau_1$	0.025959	0.77
iMac pre-sales announced	$\tau_2$	0.056054	1.66*
iMac retail sales start	$\tau_3$	0.033472	0.99
Nasdaq	$\beta_1$	0.929105	4.45***
Beta Shift	$\beta_2$	0.181188	0.75
<b>Panel C: iPod Launch</b>			
Model F = 90.627    probability = 0.000    R-square = .4779    Adjusted R-square = .4726			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.001712	1.15
iPod launched	$\tau_1$	-0.04555	-1.76*
Nasdaq	$\beta_1$	1.015139	12.73***
Beta Shift	$\beta_2$	0.123369	0.91
<b>Panel D: iPod Competitors and Windows-Compatibility</b>			
Model F = 90.024    probability = 0.000    R-square = .5093    Adjusted R-square = .5036			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000751	0.67
Competitors launch products	$\tau_1$	0.005534	0.26
Windows-compatible iPod	$\tau_2$	-0.13978	-6.61***
Nasdaq	$\beta_1$	1.046284	11.30***
Beta Shift	$\beta_2$	-0.12513	-1.10

<b>Panel E: iTunes Sales and New iPod Version</b>			
Model F = 66.766    probability = 0.000    R-square = .4028    Adjusted R-square = .3967			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	-0.00027	-0.25
iTunes sales and new iPod version announced	$\tau_1$	0.007701	0.41
Nasdaq	$\beta_1$	0.817352	10.25***
Beta Shift	$\beta_2$	0.31278	2.24**
<b>Panel F: iPhone</b>			
Model F = 36.091    probability = 0.000    R-square = .3298    Adjusted R-square = .3207			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.001632	2.04**
Rumored iPhone launch	$\tau_1$	0.041955	2.03**
Patent filed	$\tau_2$	-0.00292	-0.14
Cisco launches "iPhone"	$\tau_3$	0.011285	0.55
iPhone introduced	$\tau_4$	0.078552	3.82***
Confirmed 6/29 launch date	$\tau_5$	0.021025	1.02
iPhone launched	$\tau_6$	0.013107	0.64
Price cuts and refunds	$\tau_7$	-0.00239	-0.12
Nasdaq	$\beta_1$	1.580712	7.09***
Beta Shift	$\beta_2$	-0.33081	-1.40
<b>Panel G: iPad</b>			
Model F = 54.885    probability = 0.000    R-square = .5846    Adjusted R-square = .5739			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000643	0.78
Expected iPad launch rumored	$\tau_1$	0.034042	2.94***
Rents stage for late January	$\tau_2$	0.023565	2.03**
iPad launched	$\tau_3$	-0.00272	-0.23
Nasdaq	$\beta_1$	0.973571	13.02***
Beta Shift	$\beta_2$	0.459093	2.66***

Notes to Table 2:

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

**Table 3.** Effect of Various Apple Events from 1996 to 2010 on the Stock Price of Apple Over the (-1,0) Period.

<b>Panel A: Steve Jobs</b>			
Model F = 13.984    probability = 0.000    R-square = .1700    Adjusted R-square = .1578			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	-0.00124	-0.74
Jobs returns as part-time consultant	$\tau_1$	0.009842	0.38
CEO Amelio quits	$\tau_2$	0.054301	2.10
“Jobs Heads Apple” headline	$\tau_3$	0.042456	1.64
Deal with MSFT	$\tau_4$	0.160186	6.20***
Jobs appointed as CEO	$\tau_5$	-0.00572	-0.22
Nasdaq	$\beta_1$	1.365527	4.63***
Beta Shift	$\beta_2$	-0.45679	-1.33
<b>Panel B: iMac</b>			
Model F = 22.032    probability = 0.000    R-square = .2318    Adjusted R-square = .2213			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000259	0.15
iMac introduced	$\tau_1$	0.027465	1.16
iMac pre-sales announced	$\tau_2$	0.049969	2.10**
iMac retail sales start	$\tau_3$	0.025897	1.09
Nasdaq	$\beta_1$	0.938	4.50***
Beta Shift	$\beta_2$	0.168193	0.70
<b>Panel C: iPod Launch</b>			
Model F = 89.176    probability = 0.000    R-square = .4739    Adjusted R-square = .4686			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.00167	1.11
iPod launched	$\tau_1$	-0.01652	-0.90
Nasdaq	$\beta_1$	1.015094	12.68***
Beta Shift	$\beta_2$	0.131168	0.96
<b>Panel D: iPod Competitors and Windows-Compatibility</b>			
Model F = 81.860    probability = 0.000    R-square = .4855    Adjusted R-square = .4796			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000807	0.70
Competitors launch products	$\tau_1$	-0.00067	-0.04
Windows-compatible iPod	$\tau_2$	-0.07767	-5.07***
Nasdaq	$\beta_1$	1.046026	11.03***
Beta Shift	$\beta_2$	-0.1395	-1.20

<b>Panel E: iTunes Sales and New iPod Version</b>			
Model F = 67.128    probability = 0.000    R-square = .4041    Adjusted R-square = .3981			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	-0.00032	-0.29
iTunes sales and new iPod version announced	$\tau_1$	0.01195	0.91
Nasdaq	$\beta_1$	0.817503	10.26***
Beta Shift	$\beta_2$	0.303365	2.16**
<b>Panel F: iPhone</b>			
Model F = 34.332    probability = 0.000    R-square = .3189    Adjusted R-square = .3096			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.001781	2.20**
Rumored iPhone launch	$\tau_1$	0.016265	1.11
Patent filed	$\tau_2$	-0.00758	-0.52
Cisco launches "iPhone"	$\tau_3$	-0.00261	-0.18
iPhone introduced	$\tau_4$	0.039755	2.70***
Confirmed 6/29 launch date	$\tau_5$	-0.00423	-0.29
iPhone launched	$\tau_6$	-0.00059	-0.04
Price cuts and refunds	$\tau_7$	-0.01052	-0.71
Nasdaq	$\beta_1$	1.579281	7.03***
Beta Shift	$\beta_2$	-0.32372	-1.36
<b>Panel G: iPad</b>			
Model F = 54.281    probability = 0.000    R-square = .5819    Adjusted R-square = .5712			
Independent Variable	Coefficient	Estimate	t-statistic
Intercept	$\alpha$	0.000486	0.58
Expected iPad launch rumored	$\tau_1$	0.024774	3.01***
Rents stage for late January	$\tau_2$	0.010314	1.24
iPad launched	$\tau_3$	0.007752	0.94
Nasdaq	$\beta_1$	0.975079	12.99***
Beta Shift	$\beta_2$	0.491838	2.84***

Notes to Table 3:

- \*        Significant at the 10% level.
- \*\*       Significant at the 5% level.
- \*\*\*     Significant at the 1% level.

**Table 4.** Abnormal Trading Volume Associated with Various Apple Events on Trading Days -1 and 0.

	Event	Day	AV <sub>t</sub>	t-statistic
Steve Jobs	Jobs Part-Time Consultant	-1	(1,637,160)	(0.31)
		0	12,994,352	2.47**
	CEO Amelio Quits	-1	12,960,296	4.68***
		0	8,525,096	3.08***
	"Jobs Heads Apple" Headline	-1	11,301,496	4.08***
		0	22,013,096	7.95***
Deal with MSFT	-1	4,194,696	1.51	
	0	145,025,096	52.36***	
Jobs Appointed as CEO	-1	(1,172,904)	(0.42)	
	0	166,296	0.06	
iMac	iMac Introduced	-1	(727,112)	1.43
		0	16,171,192	3.05***
	iMac Pre-Sales High	-1	5,417,000	0.42
		0	50,821,400	3.92***
	iMac Retail Sales Start	-1	1,938,200	0.15
		0	4,071,400	0.31
iPod	iPod Launched	-1	3,492,688	0.82
		0	13,972,248	3.28***
	Two Competitors Offer MP3 Players	-1	(3,348,892)	(0.64)
		0	(2,483,732)	(0.47)
	Windows Compatible iPod Announced	-1	3,941,692	0.49
		0	31,355,428	3.91***
Pay-per-song downloads and new iPod version	-1	13,761,236	1.73*	
	0	7,400,728	0.93	
iPhone	Rumored iPhone launch through Helio	-1	13,390,498	1.23
		0	48,389,282	4.49***
	Patent for Phone and Music Player combo filed	-1	17,689,340	2.19**
		0	7,453,740	0.92
	Cisco announces competing iPhone version	-1	2,135,540	0.26
		0	8,915,140	1.11
	iPhone introduced at MacWorld Expo	-1	4,833,040	0.60
		0	95,982,740	11.91***
	Apple confirms June 29 launch	-1	6,058,222	0.61
		0	5,531,372	0.54
iPhone launched	-1	3,798,172	0.37	
	0	14,501,672	1.41	
33% price cut on iPhone and customer refunds	-1	28,646,982	1.46	
	0	10,863,340	0.53	
iPad	Expect iPad Launch Spring 2010	-1	6,417,640	0.87
		0	5,981,726	0.80
	Apple rents stage for late January	-1	(6,116,074)	(0.82)
		0	(543,074)	(0.07)
	iPad launch	-1	48,173,226	6.48***
		0	43,046,426	5.79***

Notes to Table 4:

- \* Significant at the 10% level.
- \*\* Significant at the 5% level.
- \*\*\* Significant at the 1% level.