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THE EFFECTS OF CREATIONS AND REDEMPTIONS IN THE INDEX PARTICIPATION UNIT MARKET: EVIDENCE OF THE DOWNWARD SLOPING DEMAND CURVE FOR EQUITY

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Abstract

The Effects of Creations and Redemptions in the Index Participation Unit Market:
Evidence of the Downward Sloping Demand Curve For Equity

By

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A number of finance papers have shown that the downward sloping demand curve for equity exists. Many of these previous studies have come to their conclusion via one of two ways. The first method looks at new equity offerings by companies and their affect on stock returns due to increase in supply. The second looks at company inclusion into the S&P 500 Composite Index and its effect on company returns due to increase in demand from index mutual funds. In both cases there has been evidence of the downward sloping demand curve but skeptics still persist due to the inability of these techniques to eliminate company specific information. The use of creations and redemptions of IPUs in the verification of the downward sloping demand curve has the benefit of being free of company specific pressures since they are stand alone equity products.

Standard & Poor's Depository Receipts (SPDRs) are the IPU under study in this paper. Through the use of standard event studies we have found that with larger or infrequent creations and redemptions there exists support for the downward sloping demand curve exists. More specifically, with creations we observe negative abnormal returns and with redemptions we observe the reverse.

When new creations and redemptions in SPDR units take place, a demand and supply shift occurs in the market due to purchases and sales of S&P 500 portfolio baskets. We found strong evidence that redemptions of SPDRs affects the returns of the underlying stocks of the S&P 500. The negative significance would imply that redeeming parties are not liquidating the equity basket upon receipt. When we eliminate company specific information results persist in large redemptions.

In Loving Memory of
Anita, Marc
Sara & Elena

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Table of Contents

Summary of Tables

The Effects of Creations and Redemptions in the Index Participation Unit Market:
Evidence of the Downward Sloping Demand Curve For Equity

I. Introduction

Just a few short years ago, the term 'index participation unit' was but an idea in the mind of financiers like former American Stock Exchange executive Nathan Most. Index Participation Units (IPUs) are financial tools that allow both large and small investors to benefit from broad based diversification that can only be truly obtained by investing in the market as a whole. Before the advent of these IPUs, the idea of investing in the entire market was reserved to large institutional investors that could bear the tremendous costs associated with the underlying transactions. In March of 1990, the Toronto Stock Exchange launched the first IPU. This groundbreaking product was termed 'TIPs' and represented participation in the Toronto 35 Index (T35). By purchasing this security, investors receive the full benefits of the index, including its growth potential, at one tenth of the price. From a risk management viewpoint, there is also support for the view that IPUs can successfully be used to hedge the risks associated with holding diversified equity portfolios (Switzer & Zoghaib, 1999).

IPUs are still relatively new products on the financial landscape. Although many benefits to trading them exist, how important are they? Since the TIPs inception in 1990, the proliferation of various IPUs has been tremendous. On January 29, 1993,

the American Stock Exchange launched its own IPU, the Standard & Poor's Depositary Receipts (SPDRs) that base themselves on the S&P 500 Composite Index. This trend continued with the launch of the Morgan Stanley Capital International linked product, World Equity Benchmark Shares (WEBS), on March 18, 1996, and The Dow Jones Industrial Average linked product, DIAMONDS, on January 20, 1998. Today, including the previously mentioned, more than sixteen IPUs are available to investors. Traders can now not only touch upon all major indexes, including the Nasdaq-100[1], but sub-sectors of popular indexes with products such as the S&P Select Sector Indexes. With the advent of the nine S&P Select Sector SPDRs, which derive their values from nine separate industries from utilities to consumer services[2], investors can now custom tailor their portfolios to have their desired asset allocation.

In Canada, the IPU market is also evolving. Barclays Global Investors Canada, the group responsible for the transformation of the TIPS 35 and TIPS 100 to the i60s, is planning on launching four more IPUs. State Street Global Advisors is also said to be undertaking a project to launch an IPU on the Dow Jones 40 Index, which would compete with the i60s.

In a recent press conference, Nathan Most, the designer of the SPDR, stated that his beliefs are that the IPU market will eventually overthrow Mutual Funds, in

[1] The Nasdaq-100 Index Tracking Stock was launched in March 1999.
[2] The nine S&P Select Sector SPDR Funds were launched in December 1998. The nine industries are: Basic Industries, Consumer Services, Consumer Staples, Cyclical/Transportation, Energy, Financial, Industrial, Technology, and Utilities.

part due to the lower management fees[3]. This may very well be the case when we consider that the TSE i60s regularly lists as one of the most actively traded securities on the TSE[4]. This also holds true on the American Stock Exchange (AMEX), where the Nasdaq-100 units far out trade any standard equity tool. At market closing, March 5, 2001, Nasdaq-100 index units had a share volume of 24,923,759, and the SPDR units had volumes of 3,265,722. The closest stock only had volumes of 768,400.

This study goes far beyond the standard trading that we have spoken about thus far. This study ignores the activities of basic investors and looks at the activities of the investors who do not trade these securities, but rather those investors who have the capability to create the IPUs. IPUs are traded on the market much like any security, and can be purchased by any investor who has the financial means to do so. However, the IPUs being traded must first be created, and at the same token, deleted, or using the proper term, redeemed. The creation and redemption process leads to abnormal supplies and demands in the market for not only IPU units but for the companies underlying the index. It is this abnormal supply and demand that becomes of major importance for this study. The process of creating and redeeming IPU units will be explained in later sections.

The IPU that will be under investigation in this study will the S&P 500 Index IPU, named Standard & Poor's Depository Receipts, or commonly known through the acronym SPDRs (pronounced 'Spiders'). Although the SPDRs are not as highly

[3] Quoted from the Montreal Gazette, September 25, 2000, p.F1
[4] At closing of market, March 5, 2001, i60 units were ranked 11th in volume trading with a volume of 1,729,120.

traded as their U.S. counterparts, the Nasdaq-100 units, they are the only U.S. IPU to exist for a long enough period to provide significant results.

The remainder of this study will be structured as follows: Section II will provide readers with the background information on SPDRs that will be required to understand the remainder of the work. Section III will look at the previous literature that enabled us to formulate our hypotheses. Section IV will set forth the hypotheses that will be under investigation in this study. Section V will describe the data used. Section VI will gauge whether SPDR units can successfully be used as a hedging tool. Section VII will look at the methodology that we have undertaken in our event study. Section VIII will put forth our findings. Finally, section IX will provide a summary and conclusion.

II. Background on SPDRs

As previously mentioned, SPDRs are an investment tool based closely on the S&P 500 Composite Stock Price Index and are normally one tenth of its value. The S&P 500 was selected as the basis for this IPU because it is viewed by many as the most representative benchmark of the publicly traded U.S equity market encompassing not only stocks traded on the New-York Stock Exchange, but also stocks listed on the American Stock Exchange and the Nasdaq Stock Exchange. With a roster of five hundred companies, spanning over 107 separate industry groups, the S&P 500 is one of the most complete indexes. The index is not designed to be glamorous, rather it is merely attempting to represent the broader market. As Lamoureux & Wansley (1987) state: "...its composition is designed not to beat the market, but to reflect the market".

A SPDR should not be confused with an index mutual fund linked to the S&P 500. SPDRs differ from mutual funds on two major points. First, their prices are set by supply and demand, and not necessarily by net asset value. Second, SPDRs trade on the secondary market and are listed on the American Stock Exchange and thus face bid/ask spreads as detailed in Table #1. As a secondary market instrument, in other words a tool for standard investors, SPDRs are billed as having many benefits, namely: diversification, low costs, quarterly dividends, tax efficiency, margin

eligibility, short selling on 'downticks', to name a few[5]. These benefits help to explain their attraction to investors and the reason for the large trade volumes.

In the introduction, we eluded to alternative actions undertaken using SPDRs. These actions become the main focus of this paper and therefore must be clearly understood. The actions in question are the creation and redemption of SPDR units. To begin we must explain exactly what a SPDR represents. We know that a company stock represents proportionate ownership in a company. Alternatively, SPDRs represent proportionate interest in a portfolio of securities. This portfolio, named SPDR Trust Series 1 (the Trust), consists of substantially all the securities in the S&P 500 with approximately the same weightings.

The Trust is constructed by institutional investors that create and redeem SPDR units. The creation process begins with the 'Transmittal Date', the date where the order to create a SPDR is placed. Creation orders must be made in block-sizes, 'Creation Units', of 50,000 SPDRs, or multiples thereof. Following the transmittal date, the person placing the order has three business days to fulfill their part of the agreement. In order to fulfill

the agreement, the ordering party must deposit with the Trusts trustee, more specifically State Street Bank and Trust, a basket of the S&P 500 as well as a cash component representing accumulated dividends. Therefore, for each creation unit,

[5] Benefits are listed in SPDR information brochure, produced by the American Stock Exchange, Feb 3, 2000.

50,000 baskets of the S&P 500 enter the Trust. Once the Trust receives the index baskets, the appropriate number of SPDRs is placed on the market.

The redemption process follows much the same steps. Once an order to redeem SPDRs is placed, the Trust has three business days to deliver to the ordering party their baskets of equity. Once the basket is delivered, the SPDR units are removed from the exchange. Much like creation orders, redemption orders must be made in multiples of 50,000. It is important to note that parties redeeming units must accept delivery of the physical securities, in kind, and cannot opt to receive cash settlement.

To determine the make up of the portfolio or basket that must be delivered in either creation or redemption transactions, the Trust calculates the net asset value per Creation Unit (NAV). Baskets of portfolios can therefore have a different make up from one day to the next. The process of calculating the NAV is as follows: At the close of the market, the trustee calculated the net asset value of the Trust. This value is divided by the number of outstanding SPDRs and is multiplied by 50,000 to represent a Creation Unit. The trustee then calculates the number of shares of each of the component stocks of the S&P 500 Index that would compose the basket portfolio such that the stocks market value plus dividends would equal the NAV, while maintaining the relative weights set forth in the S&P 500.

As mentioned in the opening paragraph of this section, SPDR prices are determined by supply and demand. However, as one can see by Table #2, the SPDR closing prices on the AMEX, although free to move at ease, remain extremely close to the Trusts net asset value. The findings of Ackert & Tian (2000) support the above statement in that they find no economically significant deviations from fundamental prices in the SPDR market.

III. Literature Review

The efficient markets hypothesis states that under no circumstances can an investor make abnormal returns on a continual basis relying on public information. This hypothesis reduces the idea that prices are affected by abnormal supply and demand to be mere unfounded speculation. Market efficiency also rejects the thought that abnormal returns can be made using publicly available information. Market efficiency therefore reduces the entire fields, and all the theories behind them, of fundamental and technical analysis to pure gibberish. The question then becomes: does market efficiency hold true, for if it does, why perform the tests that are to follow?

Throughout the years financial analysts have prided themselves in publishing papers that directly contradict the efficient markets hypothesis. Works such as Keim (1985) acknowledged the existence of what is commonly known as the 'January Effect'. This finding states that investors can make abnormal returns in the month of January. These findings have been related for the most part to tax implications.

Dividend initiations, announcements and increases have also been a great thorn in the back of the efficient markets hypothesis. Asquith & Mullins (1983) found that the initiation of dividend payments lead to increased returns upon announcement. Bajaj & Vijh (1995) find similar results for surprise dividend announcements. Aharony & Swary (1980) term this phenomenon as the 'information content of

dividends' hypothesis. We use these examples strictly to show that the efficient markets hypothesis is indeed fallible, and therefore leaves room for our study.

Our study relies on the idea that demand curves are downward sloping. To be more precise, as supply for a security abnormally increases, its price, and in turn its return, will abnormally decrease. Conversely, as demand for a security abnormally increases, its price and return will abnormally increase. Although the results are not always conclusive, there are many pieces that do find, with statistical significance, that these results occur.

First let us look at the case of an abnormal increase in a firms supply of equity. The most common form of increased levels of supply arises from an equity offering. Asquith & Mullins (1986), Mikkelson & Partch (1985), all find with statistical significance that new equity offerings depress the equity price of the issuing firm. Loderer & Zimmermann (1988) state that these findings hold true not only in the U.S. but in Switzerland also. Switzerland is used due to the differences in security laws, namely limitations on insider trading. Loderer et al. (1991), account for the release of adverse information at the time of issue. Still, the results persist, and the downward sloping demand curve is supported.

There is also the case of increases in demand. To show support that abnormal increases in demand lead to abnormal increases in returns, we shall look at the case of company inclusions to the S&P 500 Index. Pruitt & Wei (1989), Harris & Gurrel

(1986), Shleifer (1986), all find, with statistical significance, that the inclusion into the S&P 500 index invariably leads to an increase in returns. The reasoning behind this phenomenon is that with the inclusion, comes added demand from index mutual funds that now must purchase the stock to truly mirror the index and stay true to their stated objective. Dhillon & Johnson (1991) best describe the results of these pieces by stating that: "these studies are an important challenge to the efficient markets hypothesis".

As conclusive as these results may be, there is still room for the theory that the downward sloping demand curve for stocks stems solely from company specific information. Loderer et al. (1991) mentions that the decision to issue stock may contain information about future cash flows. Resulting abnormal returns may therefore not be related to changes in supply but to underlying information. The same caveats exist in the S&P 500 company inclusion studies. Jain (1987) states that increases in stock prices following inclusion into the S&P 500 has nothing to do with increased demand by index funds but rather that the decision to include a company into the index contains favorable information.

As noted in Switzer & Zoghaib (1999), creations and redemptions of IPUs, in their case TIPs, are unrelated to company specific information. Since no information can be derived from the creation or redemption of IPUs, studies of the results of creations and redemptions of SPDRs on their underlying prices bring new, and unhampered proof of the existence of the downward sloping demand curve.

IV. Hypothesis

Dhillon & Johnson (1991) and Kallay & Shimrat (1987) both discuss the price-pressure hypothesis and the imperfect-substitute hypothesis. These two hypotheses postulate exactly what we have looked at in the previous section in that increased supplies will have as a result a decrease in returns and that an increase in demands will have for a result an increase in returns. The two hypotheses differ solely on the idea that the price-pressure hypothesis states that there will be a reversion back to normality whereas that imperfect-substitute hypothesis does not. For our study we ignore whether there is reversion or not, we are interested in the immediate results of supply and demand changes.

Our hypotheses can be separated in two distinct sections, the first set of hypotheses are based on SPDR returns in relation to their creations and redemptions. The second set of hypotheses relate to returns of the companies underlying the S&P 500 index and their correlation to the creations and redemptions of SPDR units.

A. Creation and Redemption Effects on SPDRs

As previously mentioned, analyzing the returns of SPDRs in connection to their creations and redemptions brings new insight to the study of the downward sloping demand curve because they are free of company specific information. We know that creations and redemptions of SPDR units affect its supply. Creations will

have as a result increased levels of supply and redemptions will lead to decreases. Taking the theories set forth in equity issue papers, we can hypothesize that creations will put downward pressure on SPDR prices leading to abnormal negative returns. Alternatively, redemptions will be favorable action with regards to SPDR prices.

Since the action of creating and redeeming SPDRs occur three days following the order, we would expect results to lie between days –3 to day 0. This holds true for both this set of hypotheses and the next.

B. Creation and Redemption Effects on S&P 500 Companies

We have discussed the creation and redemption process in detail in the SPDR background section. We have mentioned that when creating a SPDR, the ordering party must deposit a basket of equity with the trustee. In other words, when a creation order is placed, an increase in demand in S&P 500 companies arises due to the ordering parties requirement to purchase these securities. Taking into account the studies relating to S&P 500 listings, where with increased demands come increased returns, we can hypothesize that with SPDR creations, will come positive abnormal returns for the companies underlying the S&P 500.

By the same token, parties requesting the redemption of a SPDR unit will receive a basket of equity securities from the trustee. We can assume that a vast majority of the parties receiving this basket will not hold the securities but will rather

sell them in the open market. This open market sale of a large block of equity becomes much like an equity offering in that the supply has increased, thus deflating the equity price.

The redemption process is not as straightforward. Switzer & Zoghaib (1999) explain that the redemption process may be undertaken for altogether different reasons. Investors may wish to accumulate positions in the underlying securities because of expected short run increases in price. They may also wish to hold the equity securities to capture their dividends. In both of these cases, positive abnormal returns may be seen around the event date.

What is important to note here, is that we are able to make these hypotheses because of the shear size of the actions. As noted, each creation or redemption has a minimum transaction size of 50,000 units. Transactions of this size will therefore translate into abnormal changes in supply and demand.

V. Data

The SPDR Trust commenced operations on January 29th, 1993 upon which the initial issuance of 150,000 SPDRs hit the market. Following this initial issuance, the next creation took place on January 3rd, 1994. Our study will therefore span the period from January 29th, 1993 to September 29th, 2000.

This study is based on the creations and redemptions of SPDR units. Taking this into account, the most important information was obtaining the list of creations and redemptions for our period. A list of outstanding SPDR units was obtained from the American Stock Exchange. A detailed list of all creations and redemptions dates and amounts was obtained from the SPDR trustee, State Street Bank and Trust.

Our first major hypothesis in the previous section addresses the relationship between creations and redemptions and the returns of the listed SPDRs. Price information for SPDRs was collected from the Bloomberg Data Base. This hypothesis, as well as the next one, also required price information on the S&P 500, which was also obtained from the Bloomberg Data Base.

Our second major hypothesis looks at the relationship between creations and redemptions and individual companies in the S&P 500 Index. The index composition and company weightings as of September 29th, 2000 were acquired from Standard & Poor's. Additions and deletions to the index, running from 1993 to 2000, were also

acquired from Standard & Poor's. The additions and deletions were used to determine index composition on individual event dates. The return information for individual companies was obtained from the Center for Research in Security Prices (CRSP) for January 1993 to December 1999. Data for the year 2000 was obtained from the Bloomberg Data Base.

VI. Hedging with SPDRs

Although this does not directly relate to the hypotheses set forth, it is an important exercise for two reasons. First, we stated in the openings of this paper that one advantage of SPDRs is the ability for investors to use them as a hedging tool. Second, it is only if SPDRs can truly be used to hedge the S&P 500 that we can address the second section of our hypotheses, for it is only then that we can truly use the S&P 500 underlying stocks and expect to find results that are meaningful.

The SPDR Trust should have a make up that corresponds substantially to the S&P 500. It should be noted however that in cases where changes to the trust are not cost efficient, the Trust is not required to rebalance itself to follow the S&P composition. This means that certain company weightings may not correspond with exactitude. An example of inexact makeup, as of September 30th, 1999, the SPDR trust included 499 of the 500 companies encompassed in the S&P 500[6].

A. Testing Hedging Efficiency Using Tracking Error Technique

One way to gauge the effectiveness using a security as a hedging tool is to look at its ability to track the equity that it is expected to hedge. Switzer & Varson (2000) performed the tracking test for the SPDR on the S&P 500 for the sample running from inception to July 23rd, 1998. We update these results for our sample

[6] Source: Standard & Poor's Depositary Receipts, SPDR Trust Series 1, Prospectus Dated January 26, 2000

period in Table #3. Tracking error is defined as the difference between daily returns of the SPDR and the S&P 500. Our results are consistent with the findings of Switzer & Varson (2000), in that they too found that the average tracking error was less than .05 basis points. This small percentage difference is also found in TIPs[7]. Using tracking error solely, as a gauge for hedging ability, we can state these IPUs are in fact a valid hedging tool.

B. Testing Hedging Efficiency using Granger et al. Technique

The second technique that we use to gauge the possible effectiveness of SPDRs as a hedging tool is to set forth the methodology of Engle & Granger (1987).

1. Unit Root Test

This technique follows a three step process starting with testing for the order of integration of the variables. We test for the order of integration via the unit root test. Results of this test can be one of two, first stationarity may exist between variables, or second, the variables may follow a random walk. If we find that the series follows a random walk we must adjust the regression used for causality.

We test for unit roots using both Dickey-Fuller and Philip-Peron tests on a regression with trend and without. The results shown in Table #3 panel #1 shows that

[7] Source: Switzer & Zohaib (2000)

for both data series unit root exists and we must therefore adjust the test that we will use when verifying causality.

2. Cointegration Test

The degree of cointegration between variables indicates to what degree one variable can be used to forecast the next. In our case, to what extent we can use the S&P 500 index prices to forecast the SPDR prices and vice versa. Cointegration follows the following relationship:

$$Y_t = \alpha + \beta X_t + \varepsilon_t$$

where Y_t and X_t are non-stationary series and ε_t is the error term that is stationary if this relationship exists. For the cointegration test, we once again use Dickey-Fuller and Philip-Perron tests. In the cointegration test we look at the series residuals and they follow a unit root:

$$\Delta\varepsilon_t = -b\ \varepsilon_{t-1} + \theta_t$$

where $\Delta\varepsilon_t$ is the change in the error term from the cointegration equation and θ_t ia a random error[8].

In Table #3 panel #2, we see that there does exist a strong cointegration between our variables. This implies that there exists a long-term equilibrium between our variables.

[8] Switzer & Zoghaib (1999)

3. Causality Test

We would assume that since SPDRs are created from the S&P 500 that the S&P 500 would have a causal relationship on SPDRs. In other words, if causality does indeed exist, changes in SPDR prices would be caused by changes in S&P 500 price. Using Akaike and Schwartz information criteria we find the optimal lag to be 1. With this we set forth two null hypotheses:

1- Coeffecient SPDR lag {1} is zero

2- Coefficient S&P 500 lag {1} is zero

The first hypothesis tests whether or not changes in SPDR prices cause changes in the S&P 500. The computed F is .83007 with a significance level of .3623. A slight causal relationship is present but at a low significance level. The second hypothesis addresses what we would expect, a causal relationship of the S&P 500 on SPDRs. We compute F to be 3.3303 with a significance level of .0681. Here a strong relationship exists.

Our findings are consistent with Switzer & Zoghaib (1999) that changes in the index prices strongly cause changes in the IPU.

VII. Methodology

To calculate whether abnormal returns exist in our sample we follow the example of most pieces named within this paper, namely a standard event study. The event study framework that we will be using is set forth in Brown & Warner (1985), more specifically their OLS market model:

$$A_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t}$$

Where α_i and β_i are OLS values from the estimation period. The term market return, $R_{m,t}$, is the return on the S&P 500 index.

Using their terminology, we define the creation or redemption day as the 'event day'. We designate our 'estimation period' as encompassing 160 days (-120 through –11 and +11 through +60). Our 'event period' is composed of the 21 remaining days (-10 through +10).

VIII. Results

A. Results of Events on SPDR Returns

We begin by looking at all event dates for the entire period. We should note that, as per Switzer & Zoghaib (2000), when events were performed within five business days of themselves, we chose the largest one and ignored the others. In the period running from 1998 to 2000, this occurs on a much more frequent basis.

For both creations and redemptions, use of the entire sample, with no limitations as to the size of the event, resulted in very mediocre results. Table #4 highlights the detailed results of the event study on the entire creation sample. As we can see by looking at the z-statistic, solely day –1 has results that are significant and that only at a 10% level. For the redemptions sample on the entire period, results are insignificant surrounding event day 0 (Table # 5).

B. Results of Events on SPDR Returns with Volume Limitation

Seeing the disappointing results obtained for the entire sample, we began placing certain selection criteria on the sample. Asquith & Mullins (1986) found that larger equity offerings lead to more significant negative returns. Taking this theory and transposing it on our study provided interesting results. Table #6 highlights the findings when we only take into account creation orders were more than 5 million

SPDRs were introduced to the market. With this limitation in place, we now observe significant results in the desired period from (-3,0). Table #7 provides us with the Z-statistic results for various limit levels. We can see that as we increase the creation size limitation, the significance in turn increases from at 5% for the sample of three million and higher to a 1% level for the five million sample. For the redemption sample, solely the five million level post significant results, and these at a 5% level (Table #8). All other levels are deemed insignificant (Table #9).

It is important to note, that as various selection criteria are placed on the sample, the number of events under study are reduced. For the creation sample 53 events exist for the 2 million sample, and solely 8 events for the 5 million sample.

As important as finding significant results, the results shown support our hypothesis that creations of SPDRs will lead to negative returns due to the over abundance of supply. There is therefore support for the downward sloping demand curve theory in the creation sample. The significant results at the 5 million level in the redemption sample however, provides us with a negative result, as opposed to the hypothesized positive return.

C. Results of Events on SPDR Returns with Period Limitation

The market for creations and redemptions of SPDRs has greatly changed over the years. In Table #10 we see the great disparity between the volumes in years prior

to 1998 and years following 1998. Seeing this prompted us to split our sample in pre and post 1998. We also performed, for a matter of completeness, pre-1997. For the two subsections pre-1998 and pre-1997 we looked at volume limitations of 750,000 and 1 million. For the redemption sample we also used size limitation of 2 million for the pre-1998 sample. Our reasoning for doing this is that the post-1998 period is marked with a large number of these transactions, in other words, supply and demand changes due to these transactions may no longer be abnormal. However in the period of pre-1998, although the events have much smaller dollar values, the number of creations and redemptions is drastically less. It can thus be argued that since the transactions are few and far between, abnormal demand and supply will exist even for lesser amounts.

In Table #11 through Table #13 we find support for the notion that significant results may exist in the creation sup-periods were transactions occur less frequently. For most of the sub periods, we find negative abnormal returns as hypothesized.

Table #14 through Table #16 set forth the findings for the redemption samples for both periods, pre-1997 and pre-1998. As shown, within these sub-period samples, as the volume per transaction increases, so does the level of significance. The significance levels and positive signs in this case are very supportive of our hypothesis, i.e. with redemptions comes positive returns due to diminishing supplies.

D. Results of Events on S&P 500 Companies with Volume Limitations

Because of its shear size, using the entire S&P 500 index was a task outside of our reach. Due to this limitation, our study focuses of the top 50% of the index, which represents thirty-seven companies. We were then forced to eliminate certain candidates due to their unavailability in the CRSP database. Our final sample includes thirty-four companies representing 47.83%. For certain event dates, the full thirty-four companies where not used since they were not included in the index as of yet. An example of this is that Microsoft was only added to the index on 6/6/94, and thus events prior to this did not include it (Table #17).

As shown by the Z-Statistic results in Table #18, only the redemption sample with a 4 million volume limitation has a significant level of returns (Table #19). Furthermore, the sign is positive. This positive sign would indicate that investors are redeeming the SPDRs to hold the underlying securities, however, results are too sporadic to set forth a definite finding. We also performed with a 5 million limitation, event studies on the top 25% of the S&P index, 11 companies, but the results are found to be insignificant.

E. Results of Events on S&P 500 Companies with Period Limitations

Much in the manner of the previous section, we constructed a table for the top 47.83% and 25% of the S&P 500 companies but now with sub samples pre-1998 and pre-1997. In Table #20 we find that the most significant results within days –3 to 0 exist in the redemption sample, and highest level of significance is found in the pre-1998, 2 million sub-sample (Table #21). For each of the significant results in the redemption sample, we observe positive returns much like we observed in Table #19 and as we observe when looking at the top 25% of the S&P 500 for the pre-1997 sample. These findings both support the idea that investors opt to hold the underlying baskets of securities and not to liquidate them are exercising redemptions of SPDRs. Since the baskets are not being liquidated, an excess supply of the securities are not hitting the markets and depressing the price.

Event studies were also performed for each of the individual companies representing the top 25% of the index to see whether there were some consistent trends (Table # 22). Event Studies were also performed on each individual event date for the top 47.83% of the companies to see whether there were seasonal trends (Table # 23). In both cases, lack of consistency inhibited further findings.

F. Results of Events on S&P 500 Companies Adjusted for Company Specific News

When looking at the results for the sample built from the S&P 500 underlying companies, we obtain significant results in the two above mentioned samples, namely the redemption sample with 4 million volume limit, and redemption pre-1998 sample with 2 million volume limit. With these results we concluded that our hypotheses that redemptions of SPDRs will affect the underlying companies was indeed correct. Furthermore, with the positive returns observed, we further conclude that redeeming parties are not liquidating their received baskets and are therefore redeeming for other reasons. One problem still exists. We mentioned that as per Switzer & Zoghaib (1999), IPUs are a useful tool to use in event studies since they are void of company specific information. However, when gauging the effects on the underlying companies, the results may be tainted by company specific information that must be accounted for.

In their paper, Switzer & Zoghaib (1999) account for the possible skewness brought forth by company specific information. We will use much the same methodology in that we will eliminate any event date were company specific news existed two business days prior or two business days after. This will account for both information leakage and delayed investor reaction.

We gathered company specific information using the Lexis-Nexis Database. Taking the advice of Roll (1987), we limited our search to major newspapers such as

the Wall Street Journal and the New York Times. The reasoning behind the use of the major papers, as explained by Roll, is that any information that is not large enough to be covered in these papers will not have any major impact of the stock price. Table #24 and Table #25 set forth the event days that we eliminated for specific companies. The 'Event Type' refers to the company specific information that we felt warranted elimination due to its possible effect on stock prices. Typical information that warranted event date deletion were announcements relating to financial statements.

We opted to look at the two samples. The first was chosen because it had the highest level of significance out of all the volume limitation sub-samples as shown by Table #18. The second was chosen because it posted the highest significance levels in the period limitation sample of the top 47.83% of the S&P 500.

In the redemption pre-1998 sub-sample, adjusted for company specific information, the significance level is eliminated (Table # 26). In this sample, only 15 event days were deleted, leaving a sample of 205. With the small amount of events taken away and the drastic change in return significance, the possibility that one event had an extremely large effect exists.

The redemption sample with 4 million volume limitation provides much more interesting results. First of all, a larger number of event days are eliminated (events are reduced from 437 to 361). Second, positive abnormal returns persist, once again supporting earlier findings.

IX. Summary and Conclusion

This study had as a main objective to support or reject the notion that the downward sloping demand curve for stocks exists. If support for the downward sloping demand curve does indeed exists, using IPUs provide the finance field with new and more robust insight since they are free of company specific information. Using findings in previous finance pieces we set forth certain hypotheses.

Using theories by Mikkelson & Partch (1986), Loderer & Zimmermann (1988), related to abnormal changes in supply, our first set of hypotheses addressed the effect that creations and redemption in the SPDRs market has on their underlying prices. Using the entire sample, our findings were less than mediocre. Taking the notion of Asquith & Mullins (1986) in which large equity offerings produced more significant results, we opted to place certain selection criteria on our sample. In both the creation and redemption cases, once selection criteria with regards to size and time period were placed on the sample, we obtained significant results that supported the hypotheses that with SPDR creations (redemptions), supply increased (decreased), and returns decreased (increased).

Our second set of hypotheses relied on the notion that with abnormal changes in demands come abnormal changes in returns. Works by Pruitt & Wei (1989) and Harris & Gurrel (1986), which looked at increases in demand due to company inclusion into the S&P 500, allowed us to formulate these hypotheses. This section

looked at the results that creations and redemptions of SPDRs has on the returns of the S&P 500 underlying companies, or more specifically the top 47.83%. The hypothesis that redemptions affect the company returns was strongly supported, however the sign of the returns was counter intuitive. The significant returns observed in the redemption sample were positive, implying that redeeming parties were redeeming the trust baskets not for liquidation purposes but rather to maintain the holdings. When studying the 4 million size limited sample, the findings persist even when company specific information is accounted for.

Our findings support the idea of the downward sloping demand curve. But supporting this more evidence now exists to contradict the efficient market hypothesis since our findings imply that if investors have access to timely information regarding creations and redemptions of SPDRs, they can successfully obtain abnormal returns.

With the proliferation of the IPU market both in Canada and the United States, it would be interesting to see whether the results found here and in Switzer & Zoghaib (1999) hold true throughout the IPU market.

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Table 1: SPDR Bid/Ask Spread Distribution

(for the year 1999) [9]

Range	% of Total
1/64 - 1/16	0.83%
5/64 - 1/8	10.41%
9/64 - 3/16	67.15%
13/64 - 1/4	20.99%
17/64 - 5/16	0.36%
21/64 - 3/8	0.14%
>25/64	0.12%
Total	100.00%

[9] Source: Standard & Poor's Depositary Receipts, SPDR Trust Series 1, Prospectus Dated January 26, 2000

Table 2: Frequency Distribution for SPDR Trust: Closing Price Vs. Net Asset Value

(From inception of Trust through 12/31/99)

	Closing Price on AMEX Above Trust NAV		Closing Price on AMEX Below Trust NAV	
Range	Frequency	% of Total	Frequency	% of Total
0 - .25%	755	88.62%	739	83.22%
.25 - .5%	89	10.45%	124	13.96%
.5 - 1%	7	0.82%	25	2.82%
1 - 1.5%	1	0.12%	0	0.00%
1.5 - 2%	0	0.00%	0	0.00%
2 - 2.5%	0	0.00%	0	0.00%
2.5 - 3%	0	0.00%	0	0.00%
3 - 3.5%	0	0.00%	0	0.00%
> 3.5%	0	0.00%	0	0.00%
Total	852	100.00%	888	100.00%

Note: The closing price on the AMEX equaled the NAV on nine days.[10]

[10] Source: Standard & Poor's Depositary Receipts, SPDR Trust Series 1, Prospectus Dated January 26, 2000

Table 3: SPDRs as a Hedging Tool

1. S&P 500 Tracking Error and Absolute Tracking Error of SPDRS

(January 29, 1993 - September 29, 2000)

	Tracking Error	Absolute Tracking Error
Average	0.000695%	0.202394%
Median	0.005290%	0.143285%
Maximum	3.098584%	3.098584%
Minimum	-2.890001%	0.000012%
Skewness	0.35162531	4.45806740
Kurtosis	16.5258202	39.0016789

2. Unit Root Test Statistics for the SPDRs and the S&P 500 Index

	Levels				Differences			
Data Series	DF	DFT	PP	PPT	DF	DFT	PP	PPT
SPDR	-0.33802	-3.24197	-0.27167	-3.02933	-366.00010	-365.63359	-401.72527	-401.37151
S&P 500	-0.27341	-3.04816	-0.24556	-2.97204	-632.74694	-632.11263	-659.12107	-658.55001
95% Critical Value	-3.37	-3.8	-3.37	-3.8	-3.37	-3.8	-3.37	-3.8

3. Cointegration Regressions for the SPDRs and the S&P 500 Index

		X - Y			
X	Y	DF	DFT	PP	PPT
SPDR	S&P 500	-31.7007 *	-31.6927 *	-32.8825 *	-32.8752 *
S&P 500	SPDR	-31.7023 *	-31.6943 *	-32.884 *	-32.8768 *
95% Critical Value		-3.37	-3.8	-3.37	-3.8

*p < .05

Table 4: Market Model Abnormal Returns for SPDRs For Entire Creation Sample

(113 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z
-10	-0.0297%	0.0001%	-0.8112%	0.6309%	-0.0297%	50.44%	-1.0277
-9	0.0038%	-0.0177%	-0.8039%	1.2500%	-0.0259%	46.90%	-0.0339
-8	-0.0624%	0.0051%	-2.8900%	0.6444%	-0.0883%	50.44%	-1.5313
-7	0.0456%	-0.0107%	-1.3100%	2.8600%	-0.0428%	48.67%	0.6798
-6	0.0250%	0.0130%	-0.8879%	1.0500%	-0.0177%	53.10%	1.3707
-5	0.0049%	0.0384%	-2.9000%	0.8298%	-0.0128%	58.41%	0.6442
-4	0.0552%	0.0288%	-0.8389%	2.8400%	0.0424%	54.87%	0.9009
-3	-0.0403%	-0.0364%	-0.9607%	0.9210%	0.0021%	44.25%	-0.6678
-2	0.0215%	0.0374%	-1.1200%	0.9336%	0.0236%	51.33%	0.8809
-1	-0.0493%	-0.0160%	-1.4200%	1.0100%	-0.0257%	45.13%	-1.6911 *
0	0.0088%	0.0055%	-0.8541%	0.9341%	-0.0169%	51.33%	0.4656
1	-0.0165%	-0.0041%	-2.8900%	0.8512%	-0.0334%	48.67%	-0.3249
2	0.0363%	0.0364%	-1.7000%	2.8500%	0.0029%	53.98%	0.7146
3	0.0080%	-0.0199%	-1.4700%	3.2100%	0.0108%	47.79%	0.4509
4	-0.0183%	-0.0041%	-0.9189%	1.8300%	-0.0075%	48.67%	-0.5775
5	0.0623%	0.0362%	-0.6039%	1.2400%	0.0548%	53.98%	1.9743 **
6	-0.0395%	-0.0240%	-0.7396%	0.7682%	0.0153%	45.13%	-1.3025
7	-0.0224%	-0.0121%	-1.4300%	0.8757%	-0.0071%	47.79%	-0.5303
8	0.0055%	-0.0085%	-0.9560%	1.1400%	-0.0016%	47.79%	0.2796
9	-0.0014%	0.0473%	-2.8900%	0.8519%	-0.0029%	56.64%	0.0700
10	0.0413%	0.0426%	-1.4900%	2.8500%	0.0384%	56.64%	1.3174

** $p < .05$, * $p < .10$

Table 5: Market Model Abnormal Returns for SPDRs For Entire Redemption Sample

(83 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	-0.0256%	0.0307%	-2.8900%	0.9189%	-0.0256%	56.63%	-0.4087
-9	0.0499%	-0.0177%	-0.7290%	3.1500%	0.0244%	48.19%	0.7700
-8	-0.0078%	0.0121%	-1.0200%	1.1500%	0.0166%	50.60%	-0.2626
-7	0.0276%	0.0376%	-1.4900%	0.9397%	0.0442%	57.83%	0.7781
-6	-0.0413%	-0.0510%	-0.9523%	1.1300%	0.0029%	45.78%	-1.4785
-5	0.0340%	0.0356%	-0.6092%	0.9276%	0.0369%	55.42%	0.7102
-4	-0.0540%	-0.0441%	-1.4700%	0.6927%	-0.0171%	35.40%	-1.3407
-3	0.0539%	0.0310%	-0.8035%	1.1500%	0.0368%	55.42%	1.0974
-2	-0.0136%	0.0208%	-1.6100%	0.9842%	0.0232%	54.22%	0.0233
-1	-0.0147%	-0.0148%	-0.8067%	1.4400%	0.0086%	46.99%	-1.1346
0	-0.0017%	0.0034%	-0.7778%	1.1400%	0.0069%	50.60%	0.3045
1	-0.0292%	-0.0210%	-1.1300%	0.8732%	-0.0223%	48.19%	-0.9504
2	-0.0407%	-0.0031%	-2.8800%	1.0000%	-0.0630%	49.40%	-0.7227
3	0.0721%	0.0279%	-0.4847%	2.8600%	0.0091%	53.01%	1.2318
4	-0.0289%	0.0162%	-1.4200%	0.9819%	-0.0198%	51.81%	-0.4509
5	-0.0392%	-0.0443%	-1.7000%	0.9218%	-0.0590%	38.55%	-1.2661
6	0.0591%	0.0403%	-0.6051%	3.2000%	0.0002%	56.63%	1.6187
7	-0.0226%	-0.0257%	-0.9081%	1.2300%	-0.0225%	44.58%	-0.3042
8	0.0189%	0.0504%	-1.3600%	0.6840%	-0.0036%	48.19%	0.9158
9	0.0215%	-0.0099%	-1.1400%	1.8400%	0.0180%	42.17%	-0.2473
10	-0.0893%	-0.0447%	-2.9000%	1.0100%	-0.0714%	45.78%	-1.9272 *

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 6: Market Model Abnormal Returns for SPDRs For Creation Sample with 5 Million Volume Limit

(8 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	0.0259%	0.0575%	-0.3097%	0.2568%	0.0259%	62.50%	0.3390
-9	0.0138%	0.0148%	-0.1745%	0.1851%	0.0398%	50.00%	0.0495
-8	0.1249%	0.0838%	-0.2129%	0.3939%	0.1646%	87.50%	0.7234
-7	-0.0136%	0.0751%	-1.2500%	0.9161%	0.1511%	50.00%	0.1599
-6	-0.0715%	-0.1050%	-0.8836%	1.0400%	0.0795%	37.50%	-0.5864
-5	-0.3113%	-0.2780%	-0.5626%	-0.0654%	-0.2318%	0.00%	-2.1208 **
-4	0.2611%	0.2850%	-0.2333%	0.9556%	0.0293%	75.00%	1.7455 *
-3	-0.2672%	-0.2360%	-0.9541%	0.3712%	-0.2379%	25.00%	-2.0300 **
-2	0.1696%	0.3550%	-1.7000%	1.2500%	-0.0682%	75.00%	1.8258 *
-1	0.2048%	-0.0381%	-1.4700%	3.2000%	0.1366%	50.00%	1.3164
0	0.1603%	0.1680%	-0.7338%	1.1500%	0.2969%	75.00%	1.0186
1	0.0097%	0.0068%	-0.5212%	0.9758%	0.3066%	50.00%	-0.1096
2	-0.1108%	-0.0948%	-0.5768%	0.4430%	0.1958%	50.00%	-0.7433
3	0.0697%	0.0891%	-0.2625%	0.6412%	0.2656%	62.50%	0.7291
4	-0.0038%	0.1160%	-0.7125%	0.3308%	0.2617%	62.50%	-0.2772
5	-0.0817%	-0.1420%	-0.5893%	0.4451%	0.1800%	25.00%	-0.5379
6	0.1367%	0.1770%	-0.6554%	0.8221%	0.3167%	62.50%	0.7487
7	0.0071%	0.0259%	-0.8528%	0.6849%	0.3239%	62.50%	0.1365
8	-0.1989%	-0.1390%	-0.9571%	0.1421%	0.1249%	62.50%	-1.2342
9	-0.0685%	-0.0933%	-0.3745%	0.3115%	0.0564%	37.50%	-0.6607
10	0.1221%	0.0673%	-0.1583%	0.5508%	0.1786%	62.50%	0.8691

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 7: Z-Statistic Results for Abnormal Returns on SPDRs Surrounding Creation Days with Volume Limitations

For entire sample

Size	none	2 million	3 million	4 million	5 million
Events	113	53	28	19	8
Day					
-10	-1.0277	-0.49922	0.9643	0.46808	0.33899
-9	-0.03391	0.18599	-1.16649	-0.9627	0.04953
-8	-1.53131	-0.66944	0.73208	0.60724	0.72337
-7	0.67983	1.25366	-0.38386	0.08523	0.15991
-6	1.37067	0.61336	0.43387	-0.08325	-0.58637
-5	0.6442	-1.99184 **	-1.57804	-1.56528	-2.12083 **
-4	0.90087	0.79076	1.18127	1.24254	1.74549 *
-3	-0.66779	-0.52321	-1.69668 *	-1.86861 *	-2.03 **
-2	0.88087	-0.71677	0.52293	1.11762	1.82581 *
-1	-1.69109 *	1.44561	1.59641	1.29214	1.31635
0	0.46562	-0.46268	-0.70649	-0.36807	1.01859
1	-0.32493	0.26296	0.28521	0.47624	-0.10964
2	0.71456	-0.46442	-0.78717	-0.43298	-0.74325
3	0.45094	-1.57824	-0.94133	-0.61318	0.72913
4	-0.57746	1.08184	0.72312	0.95118	-0.27722
5	1.97432 **	-0.75848	-0.85371	-1.64904	-0.53793
6	-1.30248	0.12884	0.75056	1.3859	0.74868
7	-0.53029	2.16138 **	1.12237	0.79658	0.13647
8	0.27958	-2.05235 **	-1.47614	-1.60598	-1.23422
9	0.07003	0.48444	-0.10341	0.65567	-0.66072
10	1.31736	-1.05617	-0.38936	-0.92083	0.86914

* $p < .10$, ** $p < .05$

Table 8: Market Model Abnormal Returns for SPDRs For Redemption Sample with 5 Million Volume Limit

(7 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	-0.3251%	-0.1280%	-1.7000%	0.3259%	-0.3251%	28.57%	-1.7432 *
-9	0.5609%	0.2300%	-0.1482%	3.2000%	0.2358%	57.14%	3.3849 ***
-8	-0.2204%	-0.3630%	-0.9496%	1.1500%	0.0153%	28.57%	-2.0633 **
-7	0.2215%	0.2900%	-0.4571%	0.6630%	0.2369%	71.43%	1.5862
-6	-0.2742%	-0.1490%	-0.9615%	0.2658%	-0.0373%	28.57%	-1.4371
-5	0.1598%	0.1800%	-0.2747%	0.5712%	0.1225%	85.71%	1.0591
-4	0.0507%	0.1240%	-0.3777%	0.3285%	0.1731%	57.14%	0.3287
-3	-0.0585%	-0.1330%	-0.4463%	0.4590%	0.1146%	28.57%	-0.5323
-2	0.2133%	0.2250%	-0.4273%	0.7607%	0.3280%	71.43%	1.2186
-1	-0.4062%	-0.3200%	-0.8520%	-0.0248%	-0.0782%	0.00%	-2.5158 **
0	0.1324%	0.1250%	-0.1739%	0.4457%	0.0542%	85.71%	1.0609
1	-0.0591%	-0.0179%	-0.6469%	0.2248%	-0.0050%	42.86%	-0.5434
2	0.0817%	0.0270%	-0.4811%	0.5494%	0.0767%	57.14%	0.6368
3	-0.0396%	-0.0884%	-0.5504%	0.5782%	0.0371%	42.86%	-0.2310
4	-0.2483%	-0.1640%	-0.8550%	0.1411%	-0.2112%	14.29%	-1.7209 *
5	0.0886%	0.1400%	-0.4829%	0.6200%	-0.1226%	57.14%	0.6702
6	0.1525%	0.2570%	-0.2397%	0.5809%	0.0299%	71.43%	0.8252
7	-0.2347%	-0.2860%	-0.8255%	0.2557%	-0.2047%	28.57%	-1.1856
8	0.2642%	0.2360%	-0.3986%	0.8434%	0.0594%	28.57%	1.6081
9	-0.1556%	0.0441%	-1.6100%	0.4216%	-0.0962%	57.14%	-1.2626
10	0.1052%	-0.2170%	-0.4214%	1.4400%	0.0090%	42.86%	0.8729

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 9: Z-Statistic Results for Abnormal Returns on SPDRs Surrounding Redemption Days with Volume Limitations

For entire sample

Size	none	2 million	3 million	4 million	5 million
Events (#)	83	42	24	13	7
Day					
-10	-0.4087	-1.59517	-1.67957 *	-1.28294	-1.74317 *
-9	0.76995	1.28112	3.40814 ***	2.557 **	3.3849 ***
-8	-0.26256	0.24434	-1.11666	-1.79537 *	-2.06331 **
-7	0.77813	0.233	0.00661	0.25694	1.58617
-6	-1.4785	-1.33497	-0.97259	-1.62696	-1.43713
-5	0.71017	0.36162	0.19876	0.93187	1.05909
-4	-1.34066	0.08178	1.34385	1.02389	0.32868
-3	1.09737	0.63254	0.49469	-0.14891	-0.53233
-2	0.02332	-0.30958	-1.0335	-0.63006	1.21863
-1	-1.13464	-0.93945	-0.42307	0.11227	-2.51584 **
0	0.30448	0.14828	1.29136	0.36054	1.06091
1	-0.95039	0.61665	-1.24305	-0.71073	-0.54344
2	-0.72265	0.82634	1.53358	0.57281	0.63682
3	1.23176	-0.71139	-1.22032	-0.42385	-0.23097
4	-0.45094	-0.03135	0.43923	-0.28853	-1.72087 *
5	-1.26605	-0.11152	0.67616	0.13055	0.67017
6	1.61865	0.66657	-0.08873	0.32982	0.82521
7	-0.30421	-1.75272 *	-2.24016 **	-1.78744 *	-1.18564
8	0.91577	0.99803	0.75677	1.09085	1.60805
9	-0.24725	-0.03847	0.7396	0.36164	-1.26255
10	-1.92719 *	0.56572	-1.04	0.21547	0.87291

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 10: Trust Transactions in SPDRs

	Year Ending 1999	Year Ending 1998	Year Ending 1997	Year Ending 1996
SPDRs Created	136,600,000	123,400,000	23,800,000	15,750,000
SPDRs Redeemed	113,200,000	86,900,000	8,150,000	4,900,000[11]

[11]Source: Standard & Poor's Depositary Receipts, SPDR Trust Series 1, Prospectus Dated January 26, 2000

Table 11: Market Model Abnormal Returns for SPDRs for Creation Pre-1997 Sample with .75 Million Volume Limit

(21 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.	
-10	-0.0092%	0.0350%	-0.6298%	0.3688%	-0.0092%	57.14%	-0.2011	
-9	-0.0260%	-0.0550%	-0.6120%	0.2833%	-0.0353%	38.10%	-0.6332	
-8	0.0349%	0.0266%	-0.1856%	0.2806%	-0.0003%	57.14%	0.8537	
-7	-0.1047%	-0.0503%	-1.1000%	0.2358%	-0.1050%	28.57%	-2.7660	***
-6	0.1172%	0.0843%	-0.2811%	0.6209%	0.0122%	76.19%	2.8622	***
-5	0.0261%	0.0342%	-0.1553%	0.2880%	0.0383%	57.14%	0.7417	
-4	-0.0092%	0.0090%	-0.5080%	0.4812%	0.0291%	57.14%	-0.4046	
-3	-0.0778%	-0.0447%	-0.6304%	0.2003%	-0.0488%	33.33%	-2.1032	**
-2	0.0210%	0.0490%	-0.3122%	0.2613%	-0.0277%	61.90%	0.5811	
-1	0.0663%	0.0597%	-0.1823%	0.3520%	0.0385%	66.67%	1.6330	
0	-0.0228%	-0.0204%	-0.4773%	0.6108%	0.0158%	42.86%	-0.5518	
1	-0.0929%	-0.0642%	-0.7248%	0.2586%	-0.0771%	33.33%	-2.2074	**
2	-0.0877%	-0.0363%	-0.7553%	0.2624%	-0.1648%	28.57%	-2.2455	**
3	0.0559%	0.0085%	-0.1821%	0.5115%	-0.1090%	52.38%	1.3958	
4	-0.0310%	0.0356%	-0.7993%	0.3076%	-0.1399%	57.14%	-0.7869	
5	-0.0164%	0.0616%	-0.5926%	0.2842%	-0.1563%	57.14%	-0.4543	
6	0.0568%	0.0212%	-0.4372%	0.7418%	-0.0995%	66.67%	1.5459	
7	-0.0565%	-0.0203%	-0.6305%	0.0915%	-0.1560%	47.62%	-1.4939	
8	0.0294%	-0.0210%	-0.2415%	0.8080%	-0.1266%	47.62%	0.4795	
9	0.0692%	0.0532%	-0.2008%	0.3521%	-0.0574%	71.43%	1.8656	*
10	-0.1181%	-0.1150%	-0.8157%	0.2676%	-0.1755%	33.33%	-2.7963	***

* p < .10, ** p < .05 , *** p < .01

Table 12: Market Model Abnormal Returns for SPDRs for Creation Pre-1998 Sample with .75 Million Volume Limit

(35 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	-0.0290%	0.0047%	-0.7674%	0.6016%	-0.0290%	51.43%	-0.6705
-9	-0.0468%	-0.0551%	-0.8062%	0.4717%	-0.0758%	42.86%	-1.1205
-8	0.0170%	0.0466%	-0.7213%	0.2885%	-0.0588%	60.00%	0.5465
-7	-0.0078%	-0.0118%	-1.1000%	0.3496%	-0.0666%	45.71%	-0.9653
-6	0.1061%	0.1050%	-0.3667%	0.6214%	0.0396%	77.14%	2.9294***
-5	-0.0466%	-0.0034%	-0.5542%	0.2880%	-0.0070%	45.71%	-0.7321
-4	0.0670%	0.0187%	-0.5086%	1.0800%	0.0600%	62.86%	1.2541
-3	-0.0910%	-0.0443%	-0.7274%	0.3739%	-0.0310%	40.00%	-2.5289**
-2	0.0044%	0.0315%	-0.5667%	0.5273%	-0.0265%	51.43%	0.2986
-1	0.0791%	0.1020%	-0.3898%	0.8294%	0.0526%	65.71%	2.0640**
0	-0.0698%	-0.0624%	-0.5274%	0.6113%	-0.0172%	40.00%	-1.6499
1	-0.0398%	-0.0210%	-0.7253%	0.4220%	-0.0570%	45.71%	-1.3729
2	-0.0394%	-0.0350%	-0.8039%	1.0800%	-0.0964%	34.29%	-1.4033
3	-0.0140%	-0.0076%	-0.7342%	0.5117%	-0.1103%	42.86%	0.0722
4	0.0063%	0.0311%	-0.7984%	0.4031%	-0.1040%	60.00%	-0.0829
5	-0.0217%	0.0609%	-0.6279%	0.4643%	-0.1257%	60.00%	-0.5977
6	0.0750%	0.0680%	-0.4363%	0.7413%	-0.0508%	68.57%	2.0258**
7	-0.0265%	0.0083%	-0.6301%	0.5710%	-0.0772%	51.43%	-0.9601
8	0.0140%	-0.0208%	-0.4400%	0.9086%	-0.0632%	51.43%	0.2813
9	0.0230%	0.0461%	-0.3607%	0.4421%	-0.0402%	54.29%	1.0276
10	-0.0825%	-0.0636%	-0.8154%	0.3804%	-0.1226%	42.86%	-2.3896**

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 13: Z-Statistic Results for Abnormal Returns on SPDRs Surrounding Creation Days with Period Limitations

Size		.75m	1m	.75m	1m
Period		pre-1998	pre-1998	pre-1997	pre-1997
Event (#)		35	18	21	7
Day					
	-10	-0.67051	-1.41751	-0.20109	-0.44509
	-9	-1.12045	-1.18228	-0.6332	-1.04409
	-8	0.54649	0.03503	0.85369	0.61491
	-7	-0.96534	-0.4249	-2.766***	-2.9056***
	-6	2.92941***	2.27377**	2.86223***	1.97086**
	-5	-0.73211	-0.95994	0.74174	0.25732
	-4	1.25411	2.4081	-0.4046	1.40304
	-3	-2.52887**	-1.99439**	-2.10323**	-1.15793
	-2	0.29863	0.17977	0.58109	0.55508
	-1	2.06399**	1.41481	1.63297	0.05446
	0	-1.64986	-1.5439	-0.55183	0.12998
	1	-1.37289	-0.3421	-2.20737**	-1.58617
	2	-1.40328	-1.40059	-2.24553**	-2.15319**
	3	0.07222	0.15608	1.3958	1.10256
	4	-0.08289	0.70746	-0.78694	0.72977
	5	-0.59767	-0.62048	-0.45433	0.02816
	6	2.02575**	1.04529	1.5459	-0.2673
	7	-0.96008	-1.03648	-1.49385	-1.11311
	8	0.28127	1.42235	0.47947	1.49262
	9	1.02764	0.09412	1.86559*	1.03895
	10	-2.38959**	-1.70474*	-2.79629***	-1.79892*

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 14: Market Model Abnormal Returns for SPDRs for Redemption Pre-1997 Sample with 1 Million Volume Limit

(7 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	-0.0371%	0.0255%	-0.6295%	0.3727%	-0.0371%	71.43%	-0.5922
-9	0.0618%	-0.0236%	-0.2387%	0.5001%	0.0247%	42.86%	0.8301
-8	0.0266%	0.0605%	-0.3181%	0.2267%	0.0514%	57.14%	0.4305
-7	-0.0872%	-0.0310%	-0.4607%	0.0696%	-0.0359%	14.29%	-1.2778
-6	-0.0615%	-0.0425%	-0.2813%	0.0875%	-0.0974%	42.86%	-0.9147
-5	-0.0320%	-0.0232%	-0.1513%	0.0973%	-0.1293%	42.86%	-0.4180
-4	-0.0279%	-0.0100%	-0.1847%	0.2643%	-0.1572%	28.57%	-0.3426
-3	-0.1275%	-0.0611%	-0.7628%	0.1743%	-0.2847%	28.57%	-1.6243
-2	-0.0235%	-0.0146%	-0.5635%	0.5148%	-0.3082%	42.86%	-0.3969
-1	0.2251%	0.1450%	-0.2753%	0.7128%	-0.0830%	85.71%	3.1036***
0	-0.1064%	-0.0594%	-0.7984%	0.2827%	-0.1894%	42.86%	-1.4389
1	-0.0364%	-0.0373%	-0.1572%	0.0638%	-0.2258%	42.86%	-0.5252
2	0.1013%	0.1160%	-0.1599%	0.3909%	-0.1245%	85.71%	1.3794
3	-0.0876%	-0.0832%	-0.2268%	0.0350%	-0.2121%	14.29%	-1.2439
4	0.0749%	0.0701%	-0.1385%	0.4839%	-0.1373%	57.14%	1.1363
5	0.0670%	0.0421%	-0.0898%	0.2766%	-0.0703%	71.43%	0.9010
6	-0.0099%	-0.0127%	-0.2681%	0.2256%	-0.0802%	42.86%	-0.1896
7	-0.0259%	-0.0472%	-0.3000%	0.2673%	-0.1061%	42.86%	-0.4613
8	-0.0178%	-0.0851%	-0.1631%	0.3452%	-0.1238%	42.86%	-0.2044
9	0.0544%	0.0461%	-0.2637%	0.3140%	-0.0694%	71.43%	0.7715
10	-0.1524%	-0.0122%	-0.8047%	0.1900%	-0.2218%	28.57%	-2.0258**

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 15: Market Model Abnormal Returns for SPDRs for Redemption Pre-1998 Sample with 2 Million Volume Limit

(7 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	-0.0411%	0.0314%	-0.6295%	0.3727%	-0.0411%	71.43%	-0.6091
-9	-0.0257%	-0.0684%	-0.2387%	0.2831%	-0.0669%	28.57%	-0.2614
-8	0.1191%	0.1480%	-0.0873%	0.2871%	0.0523%	71.43%	1.2468
-7	-0.1362%	-0.1230%	-0.4607%	0.0938%	-0.0839%	14.29%	-1.6957*
-6	-0.1484%	-0.2060%	-0.3703%	0.0875%	-0.2324%	28.57%	-1.6532*
-5	0.0486%	0.0053%	-0.1088%	0.2534%	-0.1837%	71.43%	0.3270
-4	0.0427%	0.0287%	-0.1847%	0.2655%	-0.1410%	57.14%	0.4130
-3	0.0242%	0.0815%	-0.2911%	0.3213%	-0.1168%	57.14%	0.1958
-2	-0.0728%	-0.0146%	-0.5635%	0.3267%	-0.1897%	42.86%	-1.0394
-1	0.1792%	0.1450%	-0.3154%	0.7128%	-0.0105%	85.71%	2.5834***
0	-0.1550%	-0.0630%	-0.7984%	0.4182%	-0.1655%	28.57%	-2.1172*
1	0.0005%	-0.1260%	-0.5637%	1.0800%	-0.1650%	28.57%	-0.1226
2	-0.0439%	0.0550%	-0.7270%	0.3909%	-0.2088%	71.43%	0.0408
3	-0.0527%	-0.0832%	-0.2268%	0.3174%	-0.2615%	28.57%	-0.8511
4	0.1327%	0.1120%	-0.0484%	0.4839%	-0.1288%	85.71%	1.7472*
5	0.0222%	0.0408%	-0.1206%	0.1625%	-0.1066%	57.14%	0.2500
6	-0.0233%	-0.0100%	-0.2681%	0.1278%	-0.1299%	42.86%	-0.4722
7	-0.0473%	-0.0472%	-0.3000%	0.2673%	-0.1772%	42.86%	-0.7119
8	-0.0620%	-0.0521%	-0.3552%	0.3452%	-0.2392%	42.86%	-0.4102
9	0.1180%	0.1040%	-0.2637%	0.3952%	-0.1212%	85.71%	1.1141
10	0.0147%	-0.0122%	-0.1540%	0.2012%	-0.1065%	28.57%	0.1877

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 16: Z-Statistic Results for Abnormal Returns on SPDRs For Redemption Days with Period Limitations

Size	.75m	1m	2m	.75m	1m
Period	pre-1998	pre-1998	pre-1998	pre-1997	pre-1997
Events	18	14	7	9	7
Day					
-10	-0.10901	-0.13304	-0.60913	-0.58237	-0.59219
-9	0.09336	0.31999	-0.26144	0.18417	0.83009
-8	1.42675	1.32618	1.24679	1.05193	0.43046
-7	-0.7377	-0.83551	-1.6957 *	-1.1941	-1.27778
-6	-2.02372 **	-1.8273 *	-1.65322 *	-1.08688	-0.91472
-5	0.45644	0.24997	0.32697	-0.12457	-0.41799
-4	0.52338	0.44734	0.413	-0.48924	-0.34263
-3	-1.46189	-1.0637	0.19575	-1.99007 **	-1.6243
-2	0.53542	0.27183	-1.03944	0.1498	-0.3969
-1	0.96532	1.25966	2.58342 ***	2.39583 *	3.10362 ***
0	-0.41114	-0.48746	-2.11721 **	-1.003	-1.43887
1	1.19805	0.547	-0.12257	-0.2105	-0.52522
2	-0.52692	-0.10648	0.0408	1.006	1.37942
3	-0.81313	-1.26457	-0.85106	-1.0794	-1.24388
4	1.32125	1.26471	1.74718 *	1.24357	1.13631
5	0.83231	0.93841	0.24995	1.2992	0.90099
6	0.671	-0.25133	-0.47215	-0.1742	-0.18962
7	-0.22647	0.47081	-0.71193	-0.35201	-0.46127
8	-0.47197	-0.52744	-0.4102	-0.416	-0.2044
9	0.17836	0.23973	1.11413	0.58287	0.7715
10	-0.47308	-0.1211	0.18766	-2.57393 **	-2.02581 **

* $p < .10$, ** $p < .05$

Table 17: Standard & Poor's 500 Composite Index

As of Friday September 29, 2000

Rank	Ticker	Company	%	Cumulative	Addition to Index
1.	GE	General Electric	4.53	4.53	
2.	CSCO	Cisco Systems	3.11	7.64	
3.	MSFT	Microsoft Corp.	2.51	10.15	6/6/94
4.	XOM	Exxon Mobil Corp.	2.46	12.61	
5.	PFE	Pfizer, Inc.	2.25	14.86	
6.	INTC	Intel Corp.	2.21	17.07	
7.	C	Citigroup Inc.	1.93	19	
8.	ORCL	Oracle Corp.	1.76	20.76	
9.	AIG	American Int'l. Group	1.75	22.51	
10.	EMC	EMC Corp.	1.71	24.22	3/27/96
11.	WMT	Wal-Mart Stores	1.7	25.92	
12.	IBM	International Bus. Machines	1.57	27.49	
13.	SUNW	Sun Microsystems	1.47	28.96	
14.	NT	Nortel Networks Corp. Hldg. Co	1.41	30.37	
15.	MRK	Merck & Co.	1.36	31.73	
16.	SBC	SBC Communications Inc.	1.34	33.07	
17.	KO	Coca Cola Co.	1.08	34.15	
19.	JNJ	Johnson & Johnson	1.03	35.18	
20.	RD	Royal Dutch Petroleum	1.02	36.2	
21.	AOL	America Online	0.98	37.18	
22.	HD	Home Depot	0.97	38.15	
23.	BMY	Bristol-Myers Squibb	0.89	39.04	
24.	T	AT&T Corp.	0.87	39.91	
25.	TWX	Time Warner Inc.	0.82	40.73	
26.	MWD	Morgan Stanley, Dean Witter &	0.81	41.54	
28.	HWP	Hewlett-Packard	0.77	42.31	
29.	LLY	Lilly (Eli) & Co.	0.73	43.04	
30.	VIA.B	Viacom Inc.	0.7	43.74	9/29/94
32.	PG	Procter & Gamble	0.69	44.43	
33.	TYC	Tyco International	0.69	45.12	
34.	GLW	Corning Inc.	0.69	45.81	
35.	WCOM	WorldCom Inc.	0.69	46.5	3/29/96
36.	BAC	Bank of America Corp.	0.68	47.18	3/30/98
37.	TXN	Texas Instruments	0.65	47.83	

Table 18: Z - Statistic for Abnormal Returns on the S&P 500 Underlying Companies with Volume Limitations

	Top 50% of S&P 500				Top 25% of S&P 500	
	creation	creation	redemp	redemp	creation	redemp
Size	4m	5m	4m	5m	5m	5m
Events (#)	646	272	437	238	88	77
Day						
-10	0.276564	0.65619	0.7883	0.16886	0.99153	0.99522
-9	-1.15063	0.84129	0.3757	0.61835	-0.21859	-0.00919
-8	0.3011	1.29613	0.51112	0.57105	2.36854**	-0.20205
-7	0.64096	0.07834	0.99282	0.79619	0.64306	2.03363**
-6	-1.43834	-1.36539	0.90577	0.96868	-1.14723	1.20143
-5	-0.24017	-0.57875	1.10892	0.9371	-0.64368	0.15918
-4	-0.93044	0.17101	-1.40561	-1.03658	0.00439	-1.5546
-3	-1.20594	-1.30127	0.12655	-0.11238	0.32793	1.46079
-2	-0.08891	-0.10587	2.06459**	0.84584	0.74846	-0.56718
-1	-0.30011	0.25279	-0.33543	-0.32981	0.91393	-0.14128
0	1.34741	0.60635	0.20923	-0.35938	-0.40669	-1.00153
1	0.97533	-0.05981	1.0854	0.49519	-1.12749	-0.83541
2	0.49949	0.47942	0.00862	0.25365	1.95923*	0.38957
3	1.13312	1.16042	-1.12966	-0.87544	-0.1216	0.36472
4	0.94053	-0.41317	-1.40657	-0.32893	-1.26708	-0.04675
5	-0.61346	-0.90857	0.01993	-0.56897	0.01133	0.16805
6	0.02623	0.7558	0.85046	1.83015*	-0.18955	0.60752
7	-1.14564	-1.65967	0.22097	0.22516	0.81388	1.21038
8	-1.08669	-0.83221	0.28424	1.0477	0.46424	-0.50971
9	-0.62128	0.04039	-1.04422	-0.73732	-0.44977	0.42587
10	-0.5794	-0.0418	0.41487	0.02079	-0.67035	-0.72318

* $p < .10$, ** $p < .05$

Table 19: Market Model Abnormal Returns for Companies Representing Top 50% of S&P 500 For Redemption Sample With 4 Million Volume Limit

(437 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	0.0709%	-0.0384%	-14.8100%	13.2200%	0.0709%	47.83%	0.7883
-9	0.1070%	-0.1310%	-6.5800%	16.2800%	0.1779%	48.05%	0.3757
-8	0.1001%	-0.1840%	-8.5900%	41.3400%	0.2780%	48.51%	0.5111
-7	0.0788%	0.0231%	-28.9000%	10.6700%	0.3568%	50.57%	0.9928
-6	0.0159%	0.0608%	-6.9100%	9.3300%	0.3727%	50.80%	0.9058
-5	0.1979%	-0.1610%	-10.7600%	10.7400%	0.5706%	46.68%	1.1089
-4	-0.1083%	-0.3740%	-6.6400%	12.5300%	0.4622%	43.71%	-1.4056
-3	0.0276%	-0.0973%	-9.0600%	15.4200%	0.4898%	47.14%	0.1266
-2	0.2372%	0.0727%	-7.2400%	8.9000%	0.7270%	52.17%	2.0646**
-1	-0.0287%	-0.1810%	-9.9900%	17.1500%	0.6984%	47.14%	-0.3354
0	0.0048%	-0.0622%	-11.2900%	9.5900%	0.7032%	48.28%	0.2092
1	0.1424%	0.0108%	-6.6100%	9.0400%	0.8456%	50.57%	1.0854
2	0.0340%	-0.0735%	-7.6900%	8.7200%	0.8796%	46.91%	0.0086
3	-0.2054%	-0.2890%	-8.0000%	9.8500%	0.6742%	43.25%	-1.1297
4	-0.1446%	-0.1050%	-7.4000%	9.0200%	0.5295%	48.74%	-1.4066
5	-0.0390%	0.0028%	-8.0800%	8.6100%	0.4906%	50.11%	0.0199
6	0.1030%	0.0166%	-9.6800%	7.2400%	0.5936%	50.34%	0.8505
7	0.0285%	0.0100%	-6.2900%	9.4200%	0.6220%	50.11%	0.2210
8	0.0455%	-0.1400%	-12.7100%	11.3000%	0.6676%	50.11%	0.2842
9	-0.1308%	-0.1100%	-8.8900%	10.5600%	0.5368%	45.54%	-1.0442
10	0.0254%	-0.0777%	-8.4100%	11.2900%	0.5622%	47.37%	0.4149

* p < .10, ** p < .05 , *** p < .01

Table 20: Z- Statistic for Abnormal Return of S&P 500 Underlying Companies with Period Limitations

	Top 50 % of S&P 500				Top 25% of S&P 500		
	Creation		Redemption		Creation	Redemption	
Size	1m	1m	1m	2m	1m	1m	2m
Period	pre-1997	pre-1998	pre-1997	pre-1998	pre-1997	pre-1997	pre-1998
Events	217	580	216	220	70	70	72
Day							
-10	-1.10459	-0.43477	0.70648	1.57361	-1.27563	1.05204	0.99854
-9	0.16732	0.4597	3.15283***	1.35286	-0.99191	2.24477**	1.04816
-8	0.14205	0.56623	-0.09293	-0.54231	0.84688	-1.35629	0.18198
-7	-1.69953*	-0.88533	-0.27477	-1.97207**	-1.39751	0.16283	-0.99677
-6	0.95015	-0.86163	1.86084*	1.93955*	1.78633*	1.32202	0.40147
-5	1.50433	0.95872	1.12011	0.90026	-0.7616	-0.50622	-0.09056
-4	0.5858	0.6792	-1.14923	-2.2184**	0.81001	-1.23169	-2.52407**
-3	-0.5568	-1.36131	-1.07083	1.64746	-0.0688	-0.70859	1.55689
-2	0.31701	0.74269	0.65543	2.23177**	0.16053	0.21237	1.76939*
-1	0.49149	1.81737*	1.76898*	1.37945	0.21497	2.83322***	1.43518
0	-1.384	-1.53025	0.39495	0.10767	0.56271	1.3185	1.20068
1	-0.05916	0.25661	-1.42643	-1.20142	-0.44607	0.55747	-0.69049
2	-1.1725	-1.08659	-0.92805	0.65772	-0.49096	-1.07468	-1.36391
3	0.33577	0.67071	1.74436*	0.22523	-0.54214	0.98714	0.3287
4	0.59431	-0.76082	0.85611	-0.23713	0.12857	-0.90524	-2.04581**
5	-0.43536	-0.80329	0.15139	-0.78171	-1.82732*	0.04706	-0.82114
6	-0.93048	-0.33099	-1.2816	-1.51177	-0.41451	-0.75957	-1.88202*
7	-0.16904	-1.15916	-1.07233	-1.50598	-0.10918	-1.46972	-2.01951**
8	1.31956	-0.28884	-0.05719	-0.72944	0.21273	0.38936	0.06725
9	0.60145	2.06272**	-0.61462	-1.52748	1.15481	0.54189	-0.39543
10	0.04689	0.6418	1.46251	1.50844	0.07048	0.16041	1.59739

* p < .10 , ** p < .05 , *** p <.01

Table 21: Market Model Abnormal Returns for Companies Representing Top 50% of S&P 500 For Redemption Pre-1998 Sample with 2 Million Volume Limit

(220 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	0.1104%	-0.0030%	-7.8300%	7.2800%	0.1104%	49.55%	1.5736
-9	0.2196%	0.0529%	-7.8200%	9.7500%	0.3300%	50.91%	1.3529
-8	-0.0552%	-0.0782%	-5.1800%	8.5900%	0.2748%	46.82%	-0.5423
-7	-0.2128%	-0.2650%	-10.0600%	5.9400%	0.0620%	42.27%	-1.9721 **
-6	0.2404%	0.1940%	-5.9000%	11.8500%	0.3024%	53.18%	1.9396 *
-5	0.0925%	0.0697%	-10.7600%	10.1400%	0.3949%	51.82%	0.9003
-4	-0.2862%	-0.3820%	-6.2100%	6.7400%	0.1088%	42.27%	-2.2184 **
-3	0.0679%	0.0621%	-10.2800%	6.3300%	0.1766%	51.36%	1.6475
-2	0.3728%	0.0645%	-4.6800%	10.8200%	0.5494%	51.82%	2.2318 **
-1	0.2324%	0.0714%	-8.3100%	11.2200%	0.7819%	52.27%	1.3795
0	-0.0577%	-0.0213%	-16.8400%	6.1900%	0.7241%	49.09%	0.1077
1	-0.1592%	-0.1930%	-9.9300%	4.4600%	0.5649%	42.73%	-1.2014
2	0.1148%	-0.0371%	-9.6200%	11.0000%	0.6797%	47.73%	0.6577
3	-0.0120%	-0.0736%	-6.5100%	12.6900%	0.6677%	48.18%	0.2252
4	-0.0392%	-0.1670%	-4.1900%	7.7200%	0.6285%	45.00%	-0.2371
5	-0.0900%	-0.0759%	-6.5600%	4.9800%	0.5385%	48.18%	-0.7817
6	-0.3774%	-0.0400%	-28.0500%	6.8400%	0.1612%	49.55%	-1.5118
7	-0.3465%	-0.0547%	-10.0500%	4.2400%	-0.1853%	48.64%	-1.5060
8	-0.1088%	-0.0474%	-12.7100%	9.9800%	-0.2941%	48.64%	-0.7294
9	-0.2693%	-0.1210%	-9.1100%	6.1800%	-0.5634%	43.64%	-1.5275
10	0.1831%	0.1720%	-5.8200%	9.6200%	-0.3803%	53.64%	1.5084

* p < .10, ** p < .05 , *** p < .01

Table 22. 1: Z- Statistic for Abnormal Returns on the Top 10 Companies In the S&P 500 Index for Creation Dates for Entire Period With 5 Million Limitation

Comp.	GE	CSCO	MSFT	XOM	PFE	INTC	C	ORCL	AIG	EMC
%	4.53	3.11	2.51	2.46	2.25	2.21	1.93	1.76	1.75	1.71
Ev.(#)	8	8	8	8	8	8	8	8	8	8
Day										
-10	-0.44838	1.99348**	0.54684	-1.10995	-1.31455	1.38236	-1.31334	-0.87759	0.49437	4.22952***
-9	2.24135**	-0.36709	-1.15884	0.48684	-0.90135	-1.08742	1.16231	0.17961	0.51976	-1.78979*
-8	0.53889	0.35907	1.29818	1.49737	2.29735**	-1.05242	0.28631	1.87288*	0.41111	0.39807
-7	1.32116	0.24614	-0.21171	0.69781	0.39446	-0.49278	0.27079	-0.92373	0.93345	-0.7431
-6	-0.43084	-1.02357	-0.27178	1.06709	-1.32766	-1.05087	-0.24766	-0.87642	1.75553*	-1.98552**
-5	-1.3184	-0.31513	-0.36123	-2.21374**	-0.59022	0.81741	-0.1586	1.01427	0.06718	0.53072
-4	-0.29921	-0.34719	-0.0734	-0.58269	0.2675	-0.58697	0.88466	-1.93475*	0.43264	0.88961
-3	1.86397*	0.42943	2.51034**	-0.05898	-1.07441	0.41012	0.1906	-1.03421	-0.99179	0.11409
-2	1.41227	0.80073	1.04064	-0.42854	1.28439	-1.02757	1.90541*	0.80666	-1.46223	-0.72867
-1	0.72418	-0.23126	-1.09248	-1.30769	0.13849	0.84054	-0.32697	-0.32781	1.0293	1.58212
0	-0.75084	2.01165**	0.31236	-1.55779	-1.26003	2.41979**	-2.5901**	2.6607**	-1.29146	1.08958
1	-0.55285	0.03585	-0.9233	0.64633	-0.65757	-0.29815	-0.27188	0.0554	-0.1987	-0.19643
2	0.07948	1.16697	-1.00363	0.66581	-0.19647	1.40753	2.32769**	-0.22458	0.52436	0.62466
3	0.6961	-2.12136**	-0.61882	1.94727*	0.74709	-0.55826	-2.12705**	1.18009	0.30752	-0.23436
4	-0.20124	-1.98877**	-0.50293	-0.45909	-2.19878**	0.6597	-0.05819	-0.27697	0.9477	-1.5825
5	0.1591	1.23277	0.78446	-1.32894	-1.31069	0.26	-0.77867	0.9821	-0.18802	-0.50721
6	0.43257	0.46414	-1.21743	1.68531	-0.74794	-0.52404	-0.10444	0.1457	-1.57678	1.4939
7	-1.34541	-0.19191	1.01095	2.04145**	-0.75328	1.03181	-1.66315	2.09378**	0.2938	1.72424
8	-2.22247**	0.47606	0.91892	0.04777	0.85157	0.06944	-1.27774	2.17188**	-0.41546	1.68907
9	-2.5656**	1.03298	1.82144*	0.87006	0.4115	-0.16918	-0.69753	-0.57905	-1.07463	-1.04553
10	0.644	0.27715	1.07215	-1.96466**	-0.90828	0.28719	-0.81738	1.19947	-2.91247***	1.62638

Table 22. 2: Z- Statistic for Abnormal Returns on the Top 10 Companies In the S&P 500 Index for Redemption Dates for Entire Period with 5 Million Limitation

Comp.	GE	CSCO	MSFT	XOM	PFE	INTC	C	ORCL	AIG	EMC
%	4.53	3.11	2.51	2.46	2.25	2.21	1.93	1.76	1.75	1.71
Ev.(#)	7	7	7	7	7	7	7	7	7	7
Day										
-10	0.7574	0.30668	-0.85582	0.0113	0.42918	-0.38465	1.42443	0.35219	-0.27017	0.55156
-9	-0.55927	-0.38704	0.14098	-0.62614	1.06295	-0.84626	0.588	-0.1335	0.75083	0.51558
-8	-0.65297	0.65475	1.17551	-0.77169	-0.50961	1.18484	-1.65378	0.78927	-0.37059	1.18567
-7	0.27115	0.78893	1.78131	0.37687	0.06019	1.17649	0.63328	0.63645	-1.59698	2.03621 **
-6	0.7743	-1.56795	-0.01164	-0.02895	3.15113	0.32278	1.90796 *	-0.13195	0.52787	-1.10075
-5	-2.32342 **	1.63995	0.82094	0.1239	0.87911	1.57771	0.50054	0.29485	-0.94839	-1.29649
-4	-0.58346	-1.06227	-0.31685	-0.811	-0.16169	0.38828	-1.61576	-1.13692	0.9691	-0.89271
-3	-1.48412	1.14788	0.26941	-0.41217	-0.97522	3.23999 ***	2.05719 **	1.37269	-1.01359	1.0205
-2	0.94174	-1.16288	-2.58316 ***	0.13474	-0.03825	-0.6487	0.86202	-0.16259	0.07287	0.12443
-1	-0.79962	-0.99639	-0.44426	-1.2457	1.74793 *	-1.01729	-0.08281	0.93168	2.06671 **	-1.05622
0	0.34467	0.73102	-2.36953 **	-0.02238	-0.20183	-0.1485	-2.17836 **	-0.48655	1.24014	-0.36549
1	0.35645	-1.21126	0.58271	-0.34406	-0.26596	1.47115	-0.56831	-0.59953	-0.8381	0.2532
2	-0.61174	0.22285	-0.21457	-0.4988	-0.791	1.07954	-0.02294	0.54831	0.92152	0.14453
3	0.79822	-1.38165	1.27805	0.87487	1.34419	-2.50443 **	2.54948 **	-0.42687	0.17178	-2.1389 **
4	-0.98981	0.12896	1.23644	0.19998	-0.96528	0.77018	1.65382	-1.5633	0.76534	-1.12244
5	0.18033	0.18286	2.08557 **	-0.45191	0.42914	-2.08958 **	1.22279	-0.81852	-0.26303	-0.0587
6	-0.43322	1.80361 *	0.90311	1.11201	-0.07582	0.99185	-1.13541	-0.13777	-0.61189	1.04885
7	-0.48568	1.13302	-0.86943	-0.76848	1.04704	2.42937 **	-0.87382	2.70498 ***	-0.98996	-0.71628
8	-1.04435	-0.94722	0.19219	0.30029	-0.45299	-0.37097	-0.39849	0.02317	0.31972	0.97364
9	1.9828 **	-0.27754	-0.20985	-0.62587	0.53576	-0.05187	-0.14189	-0.69583	0.26276	0.73718
10	1.33002	-0.37524	-1.49901	-1.61183	0.74009	0.03674	0.32868	-1.21833	1.10286	-1.46885

* p < .10 , ** p < .05 , *** p < .01

Table 22. 3:Z-Statistic for Abnormal Returns on the Top 10 Companies In the S&P 500 Index for Creation Dates for Pre-1997 Sub-Sample with 1 Million Limitation

Comp.	GE	CSCO	MSFT	XOM	PFE	INTC	C	ORCL	AIG	EMC
%	4.53	3.11	2.51	2.46	2.25	2.21	1.93	1.76	1.75	1.71
Ev.(#)	7	7	5	7	7	7	7	7	7	2
Day										
-10	-0.94525	0.76908	-0.11757	-0.70623	-2.90609***	0.40382	-1.83846*	0.38299	-0.24624	0.05466
-9	0.92254	-0.00401	-0.07634	-0.84868	-0.05368	-0.80699	0.77812	-0.77415	-0.18259	0.70159
-8	0.60754	1.70092*	1.97306**	-0.25815	1.91802**	-2.03322**	-0.61759	0.34679	-0.31178	-0.21998
-7	0.35514	-0.6603	0.54793	-0.68207	-0.72754	-0.06259	-2.41958**	-0.03201	-0.23509	1.00572
-6	0.76765	0.90292	1.05708	0.31337	0.62595	0.09793	0.55134	-0.04679	1.74208*	0.27125
-5	0.105	-0.1225	-0.9705	1.2203	-2.08803**	2.19476**	0.13119	-0.06524	-0.82876	-0.59333
-4	-1.58862	0.52152	1.87526*	2.12352**	-0.29115	0.48217	-0.24927	0.84524	-1.04016	-0.9553
-3	-0.70929	0.87393	-1.98947**	-0.34633	0.76372	0.86221	-0.02411	0.74792	-0.33212	0.09878
-2	0.37589	-0.03742	-0.69349	0.61291	0.35737	0.30067	-0.41818	0.82449	-2.12189**	0.13449
-1	2.0994**	0.07726	-0.29668	0.97802	-1.50298	0.0906	-0.28895	0.66703	-0.44373	1.86775
0	0.25448	-0.9039	0.18193	2.30925**	0.65259	-1.10982	0.15069	-1.55396	0.91505	0.49759
1	-0.80835	0.12907	-0.50088	-1.44639	-1.40168	0.91365	-0.21888	0.95363	0.28506	-1.25278
2	0.20093	-0.62489	0.00116	-0.2817	0.08531	-0.97152	-0.14771	-0.05087	0.28706	0.13647
3	0.05847	-0.91641	-0.82578	-0.25456	-0.48553	0.57027	0.77449	-0.76364	0.25206	1.67542
4	-1.36963	0.13127	0.07379	-1.0385	-1.39873	1.02062	0.90575	-0.7345	-0.02253	0.2646
5	-2.02389**	-1.65068	-1.53618	0.53482	-0.64094	0.25161	0.07673	-1.57653	7.56E-04	0.46252
6	-2.09109**	0.18029	0.11797	-0.42634	0.95338	0.63812	1.67098	-0.19306	-1.51787	-0.58845
7	-0.26189	1.38377	-0.46215	-0.08444	-1.36271	0.51743	-1.07259	0.87049	0.04464	-0.11978
8	0.05945	0.82457	0.26721	-0.06456	-0.33858	0.34391	0.22236	-0.11388	0.32093	0.38679
9	-0.23551	0.08353	2.33928	0.08886	0.07601	0.78401	1.17396	0.84082	-0.85314	-0.50791
10	0.0093	0.89623	-0.26287	0.92529	-2.26219**	-0.06864	0.17205	0.73646	0.99242	-0.00933

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 22. 4:Z-Statistic for Abnormal Returns on the Top 10 Companies In the S&P 500 Index for Redemption Dates for Pre-1997 Sub-Sample with 1 Million Limitation

Comp.	GE	CSCO	MSFT	XOM	PFE	INTC	C	ORCL	AIG	EMC
%	4.53	3.11	2.51	2.46	2.25	2.21	1.93	1.76	1.75	1.71
Ev.(#)	7	7	5	7	7	7	7	7	7	2
Day										
-10	1.7773*	0.40238	-1.5593	0.00866	0.62757	2.12692**	0.13099	-0.20084	1.51768	-0.83502
-9	-1.59078	1.08767	0.89953	-3.18178***	1.55823	1.25118	0.86784	3.36834***	0.12136	0.93904
-8	0.92752	-0.97383	-1.05511	1.6198	-1.39374	-0.19431	-1.17354	-1.4656	-1.02544	0.23016
-7	-0.5036	1.26191	0.24641	1.17313	-1.07172	0.63388	0.40499	0.13539	0.41603	-0.38141
-6	0.51433	-0.49392	0.25974	-0.42676	0.92726	-0.39369	0.30381	1.67143	2.08837**	0.08605
-5	-1.72571	-0.65675	0.44717	-1.21882	1.6364	0.46626	-0.89506	1.17657	-1.69275*	-0.66362
-4	-0.14298	-0.80409	-0.45106	-0.98176	-1.41506	0.46607	0.24292	-0.08281	-0.93905	0.42186
-3	0.48693	-1.19743	-1.35094	-0.22735	2.24874**	-0.55546	-1.00603	-0.99552	0.32089	0.64552
-2	-0.06282	0.20909	0.1199	-1.04961	-0.38726	1.44534	0.57432	1.42738	-1.87897*	1.52275
-1	2.05715**	1.39057	0.91589	-1.39344	0.22364	1.06794	2.25739**	0.00121	0.38927	1.55959
0	-0.27157	0.01338	-1.66059	-0.98237	-0.05322	1.04141	0.88528	0.13078	2.8765***	0.1195
1	-0.68143	0.71537	0.67798	0.82358	0.80488	-0.78794	1.38233	-0.23264	-0.31167	0.25314
2	0.23778	-0.49324	-0.54524	-0.44422	-0.30052	-0.09207	-1.28961	-0.03005	-0.34965	0.43247
3	0.05511	-0.01814	-0.34391	0.86977	1.29929	0.70831	-1.01797	1.37693	0.51951	-0.176
4	0.08153	0.54922	-1.52486	-1.35697	0.97753	-0.5928	0.13542	-1.16833	1.00659	-0.84259
5	-0.2244	-0.23071	0.87207	-0.07813	-1.23198	-0.50273	0.70056	1.92316**	-0.12889	-0.28977
6	1.79166*	-3.8312***	0.6807	-0.18524	-0.24417	-1.04454	0.74546	-1.25186	0.27981	-1.9152
7	-0.43277	-1.07123	-0.87904	0.47457	1.52803	-1.76721	1.15377	-2.32565**	1.69472*	-0.6289
8	-0.89827	0.06221	-0.48125	1.6328	1.76918*	-1.06854	-1.04118	0.8102	0.65971	-0.21807
9	-0.34705	0.40986	0.35334	1.33682	-0.74433	1.02954	0.37532	0.28661	-1.08189	-0.93091
10	-1.74809*	0.22326	0.16265	0.79505	-0.23411	0.9169	0.17681	1.31101	0.20505	-0.6265

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 22. 5:Z- Statistic for Abnormal Returns on the Top 10 Companies In the S&P 500 Index for Redemption Dates for Pre-1998 Sub-Sample with 2 Million Limitation

Comp.	GE	CSCO	MSFT	XOM	PFE	INTC	C	ORCL	AIG	EMC
%	4.53	3.11	2.51	2.46	2.25	2.21	1.93	1.76	1.75	1.71
Ev.(#)	7	7	5	7	7	7	7	7	7	4
Day										
-10	0.76183	1.33769	-0.0072	-0.37232	1.47421	0.17046	0.29767	-0.21423	0.3241	-0.34645
-9	-0.20051	0.7949	0.06731	-2.25917**	0.73302	0.66397	0.45216	1.73728*	1.40467	-0.88165
-8	-0.32244	-1.3228	-0.77972	2.20682**	-1.32586	-0.13422	0.44672	-0.65652	0.77624	0.52435
-7	-0.67361	-0.28533	0.38908	-0.14079	-0.15402	0.42566	0.03572	-0.06214	-0.37313	-1.44125
-6	-0.1637	-0.39965	-0.02433	-0.62738	-0.01179	-0.38201	0.74119	-0.60807	0.66873	1.6342
-5	-0.81202	-0.4624	0.97394	-1.12649	1.20544	-0.19269	-0.40767	1.87882*	-1.95997**	0.2511
-4	-0.95383	-0.94174	-0.77797	0.78201	0.20724	-1.00119	-0.89729	-1.24947	-2.02649**	-0.7743
-3	2.14706**	-0.47998	0.51398	-1.52795	3.36396***	0.10515	-0.94268	0.73042	1.01899	0.03455
-2	0.53516	2.22322**	0.71085	-0.5422	-1.06556	2.43863**	0.68189	2.83451**	-1.72511*	0.95195
-1	2.04271**	1.01075	-0.16055	-1.65972	-0.30736	-0.28143	2.13066**	-0.92424	1.67741	0.77215
0	-0.74482	0.86233	-0.94402	0.12756	0.87979	0.32497	1.06618	-0.81697	1.89772*	-0.52385
1	-0.70766	-0.36413	-0.17982	0.7726	0.0833	-1.3389	0.82506	-0.16143	-0.34383	-0.7052
2	-1.27983	-0.1519	-0.25192	-0.82392	0.91558	0.06573	-0.64965	-0.62916	-1.82062*	1.0112
3	0.14091	-0.39278	-1.20251	0.72036	0.15769	-0.14907	0.6995	0.95357	0.70434	0.1693
4	0.02479	0.72547	-2.62675**	-1.07164	0.65263	-1.21701	-0.51607	-0.08599	0.83678	-2.1228**
5	0.49445	-1.04828	0.72122	-0.12821	-1.61969	-1.48793	0.82219	1.3973	-0.90145	-0.71345
6	2.26465**	-4.11293***	0.21976	0.12307	0.3235	-0.46384	-0.0226	-5.22963***	0.93724	-1.05725
7	-1.09073	-1.93813*	-1.09219	1.38637	0.70664	-0.79535	-0.85356	-1.21863	0.7486	-1.12835
8	-0.79471	-0.35627	-0.81125	1.46298	0.3159	-0.98067	0.00193	-0.38405	-0.00282	2.2629
9	-0.93214	-1.85853*	-0.42883	0.26938	-1.51469	-0.16268	-0.15856	0.26359	1.06208	-0.7156
10	1.47512	1.02028	-0.02773	0.02381	0.66662	1.21508	0.25823	0.63037	0.03678	0.43475

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 23. 1:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Creation Dates

Date	2/15/94	3/9/94	10/13/94	12/28/94	1/23/95	11/25/96	12/19/96	4/7/97	4/30/97	7/3/97
Obs.	29	29	31	31	31	33	33	33	33	33
Size	1m	1.750m	1.250m	1m	1.500m	2.250m	1m	1m	1m	1.650m
Day									-1.59218	0.8233
-10	-0.4497	1.05865	0.36341	-1.18101	-0.86893	-0.33754	-1.43123	0.1209	-0.0807	0.47737
-9	0.70095	-0.07086	-0.4582	0.40237	1.62546	-2.24449**	0.56156	-1.58571	-0.64153	1.11528
-8	-0.62873	0.28942	-0.19951	-0.51048	-0.47692	0.41662	1.4161	0.21363	-0.22151	-0.3405
-7	-1.05005	-0.53592	-0.27034	-1.29346	-0.30619	-0.58965	-0.4693	1.53646	-0.7954	0.8067
-6	1.51483	0.11962	0.15202	-0.40504	-0.52193	0.19049	1.46492	0.31879	-0.1357	-0.43333
-5	-0.16566	0.40706	1.30911	1.01942	1.04462	-0.07062	-0.43258	-0.43913	0.45182	-0.35068
-4	-0.56979	-0.20894	0.41135	2.91683***	0.65662	-1.48853	-0.14143	1.59079	-0.75814	1.54835
-3	0.41839	-0.72547	0.47425	-1.07729	0.53287	-1.08757	0.01564	-1.0812	0.51074	-0.29735
-2	0.3624	-0.66867	0.28676	0.97698	0.80267	0.23215	-1.13493	2.18187**	0.36703	-0.7449
-1	0.44816	-0.1015	0.09902	1.08665	-1.62988	0.4558	0.91011	1.46117	-0.1731	-0.92536
0	-0.51367	0.44458	-0.64762	-0.83015	-0.67057	-1.0857	-0.31632	0.33959	0.92931	1.2179
1	0.2957	0.58391	-1.1844	0.47883	0.05311	0.39984	-0.74375	-1.1678	0.1334	0.32539
2	-0.09706	-0.46565	-0.24436	-2.89967***	-0.38964	0.81816	0.12758	-0.62978	-1.35028	1.21306
3	0.34573	0.27338	2.23801**	-1.67534	-0.24588	0.31282	-0.33921	-0.31449	-1.09404	-1.17367
4	-0.33651	0.05008	0.72701	-1.61327	1.5654	1.14104	-0.00679	1.92854**	0.61745	0.51771
5	0.87589	-1.64836	0.97878	-0.87254	0.13537	-0.09233	-0.53411	2.10766**	-1.0115	0.03334
6	-0.22854	-0.10263	0.90088	-0.33826	-0.41487	-1.06396	-1.15485	-1.06899	-0.33195	0.67626
7	0.33602	-0.09223	0.61095	-0.95378	-0.97822	-1.42425	2.04264**	-1.61464	-0.1425	0.7042
8	-0.42918	2.44583**	-0.89503	1.49789	-0.16709	0.58709	0.48384	0.02846	2.22646**	1.43501
9	0.04835	-1.67794	1.22816	-0.47639	0.8882	1.47498	0.00547	-0.58978	-1.02238	0.98551
10	0.41581	-0.3715	0.2758	-0.36038	0.06227	-0.49142	0.59176	0.0423		

* p < .10 , ** p < .05 , *** p < .01

Table 23. 1:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Creation Dates

Date	7/30/97	8/19/97	9/23/97	10/9/97	11/6/97	11/17/97	11/28/97	12/17/97	4/29/98	6/8/98
Obs.	33	33	33	33	33	33	33	33	34	34
Size	2.500m	1.400m	3.500m	1m	2m	2m	2m	2m	4.300m	4m
Day										
-10	0.68188	0.51952	-1.28967	-0.38186	-0.18816	-0.14489	1.33303	1.12795	0.46454	-0.89586
-9	1.53442	-1.07033	0.7436	-0.59529	-0.90921	-0.31922	3.38988***	-0.08665	0.40191	0.86535
-8	0.81218	0.09056	0.51703	-0.34989	1.76809*	0.52551	-1.22857	-0.8127	0.54607	0.5565
-7	-0.02531	0.39359	-0.64792	-1.07176	2.01507**	-1.16731	-0.26691	0.44263	1.85467*	0.38385
-6	-0.73273	-2.5055**	0.8055	-1.29709	-0.37686	-0.00712	-0.12454	-2.14051**	0.28799	-1.78665*
-5	-0.71262	-0.30525	1.02765	0.95739	0.56823	-1.13251	1.02412	-0.25714	-0.45121	-1.6609
-4	-0.58936	-0.03342	-0.51445	0.17974	0.23145	-0.16323	-0.70051	1.24312	0.93115	-0.32302
-3	-0.50423	0.44985	-1.37332	-0.34593	-0.18522	-1.24546	-0.95638	0.17239	1.41805	-0.53257
-2	-0.66774	-1.3917	1.05587	1.2031	-0.36622	1.27846	-0.17991	-1.02643	-0.04185	2.48989**
-1	-1.93929*	0.74051	1.42408	0.04171	0.59636	3.32471***	-0.51544	1.60277	0.29023	-0.59843
0	0.16563	2.0182**	-1.35452	-0.88216	-1.18511	-1.20451	-0.12379	0.45882	-0.11142	-0.0438
1	0.01112	-0.32157	-0.43154	-0.07981	0.047	-0.32142	1.20964	0.13468	-0.1007	1.24727
2	0.04817	0.50448	-0.31663	0.15385	-1.13918	-0.18149	-1.30805	0.8612	-1.57472	0.37286
3	0.19953	-1.34156	-0.50117	0.71053	-0.16433	1.0362	1.15697	0.67736	0.643	0.3935
4	0.51003	-1.2919	-0.36419	0.33179	-1.18977	-0.65895	-0.13833	-1.57312	-0.33541	0.98317
5	-1.26927	-1.43221	-0.99901	0.97229	1.28372	-0.9138	-0.76404	-0.42717	0.23574	-1.28098
6	0.22997	0.08934	-1.18501	0.19209	3.43227***	-0.28608	0.39206	0.56514	0.46296	1.2785
7	0.56516	-1.09034	0.9564	0.18795	-1.24032	-0.5672	-2.34216**	0.3747	-0.23572	-1.61407
8	-2.81198***	0.38863	0.08881	-1.44133	-0.29821	-0.12873	-0.32474	-0.6573	-1.06464	0.71506
9	-0.23598	1.99241**	-0.26491	1.04937	-0.22244	1.31321	1.04649	-0.64451	0.6942	1.91896*
10	-0.02369	0.07398	1.18366	-0.25471	1.05371	-1.20476	0.22146	1.51531	0.24318	0.46797

* p < .10 , ** p < .05 , *** p < .01

Table 23. 1:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Creation Dates

Date	7/10/98	8/6/98	9/1/98	9/21/98	10/16/98	10/26/98	3/5/99	4/20/99	5/12/99	10/29/99
Obs.	34	34	34	34	34	34	34	34	34	34
Size	4m	5.500m	10m	4m	4.2m	12m	4m	4m	4.350m	5.9m
Day										
-10	0.30377	2.02797**	0.60018	0.3761	-2.99485***	-0.8903	0.99549	-0.25176	-2.01248**	1.72709*
-9	-0.09198	0.26797	-0.06297	-1.88557*	-2.8721***	-0.13462	-1.15933	0.12089	-2.65752***	0.17694
-8	-0.75813	-0.5135	-1.02174	-0.24468	0.69092	1.8521*	0.96811	-0.48243	-1.01402	1.35528
-7	-0.0307	0.30998	0.70864	1.58941	0.24313	0.46859	-0.49352	0.26329	-2.07371**	-2.34305**
-6	-1.9569*	-0.0084	-1.18185	-1.46997	-0.39338	-0.25608	1.56223	-0.26497	-0.00008	0.96245
-5	-0.67322	0.58817	-0.17197	-1.79911*	2.57865**	0.59826	-0.86319	-0.52878	0.75645	-0.43514
-4	-1.01047	0.21316	1.55644	-1.51757	-0.87854	0.07601	-0.00233	-2.52616**	-0.07332	0.32029
-3	1.2609	-0.34076	0.17731	-0.18033	-0.16555	1.07761	0.06488	-3.79977***	-0.93676	-0.16512
-2	0.69892	0.94738	-2.11302**	-0.24003	2.05659**	1.93915*	-0.08321	-1.99149**	-0.41626	-0.80237
-1	1.35479	1.35456	-2.74828***	-1.34947	0.73825	0.87828	-0.74768	-3.40675***	-0.10953	0.12504
0	0.34336	-0.26634	1.8089*	1.21044	-0.27711	-0.07482	-0.42683	1.02704	1.32723	-1.03739
1	1.44956	0.22856	-0.18538	-0.0686	0.73909	-0.74362	1.3069	2.07476**	-0.45649	0.79165
2	-0.0633	0.9304	0.47399	-0.53312	-0.07558	1.28669	0.5944	0.50743	0.55572	-0.71367
3	0.88349	-0.55509	0.34284	-0.20047	1.25422	0.8259	-0.75024	-0.05918	0.60126	-0.11185
4	-0.15539	-1.2049	-0.95281	0.79298	2.10334**	-2.19398**	-0.0267	1.13992	1.56655	-0.50342
5	1.83324*	0.28121	-0.34482	-1.24407	1.0038	-1.2069	-1.05744	-1.1695	-0.45991	-0.35992
6	0.98097	-0.12674	1.29543	-2.21093**	-0.00444	-0.43928	0.33722	-2.33205**	-0.76094	0.51484
7	0.00278	0.49603	-0.89305	2.20954**	-0.8156	-0.22156	0.20231	-2.82106***	-1.10527	0.33922
8	-0.37654	0.65184	-1.36435	-1.21282	1.44283	-1.34885	-0.12125	-1.08912	-1.04698	0.21775
9	2.22593**	0.01665	-1.2557	-3.22968***	0.88938	-0.21662	-0.8413	-2.077**	0.05683	0.53151
10	0.36342	-0.84659	0.03776	-2.47517**	-2.24018**	0.88111	-0.03212	-0.25998	1.2642	-0.44413

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 23. 1:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Creation Dates

Date	12/3/99	12/17/99	1/10/00	2/25/00	5/19/00	6/5/00	6/20/00
Obs.	34	34	34	34	34	34	34
Size	5.4m	12.6m	7.5m	5.2m	4.5m	4.8m	4.05m
Day							
-10	1.05957	-0.12519	0.45902	-0.07851	-0.24828	0.34516	0.34418
-9	0.42069	0.35164	-0.4707	1.23318	0.19808	-0.36112	0.64381
-8	1.65522	0.58124	-1.3795	0.0669	-0.16229	-0.78807	-0.59551
-7	0.54506	1.61184	-0.43905	-0.7143	-0.13276	0.43991	0.60257
-6	-0.3354	0.15795	-0.57178	-0.85055	-0.97125	0.14671	0.66109
-5	0.15399	0.32927	0.4479	-0.89838	0.47387	-0.06923	0.57768
-4	0.2235	-0.04881	-1.66271	0.34199	-0.28874	0.53566	0.07777
-3	-1.74393*	-0.87876	-0.47661	-1.13848	-0.22707	0.54368	0.7867
-2	0.16807	-0.40908	-2.19637**	0.62426	-0.16896	-0.37539	-0.47378
-1	-0.95635	0.07155	3.81152***	0.13166	-0.55036	0.81544	-0.41261
0	-0.11821	-0.63681	2.52894**	-0.71179	0.33094	0.71467	0.28626
1	0.28217	-1.09848	-0.32	-0.43077	-0.34241	0.20821	-0.61832
2	0.53252	-0.87094	-0.18698	0.46155	-0.81237	0.65948	0.63093
3	1.74631*	0.67748	0.73458	-1.32661	0.31225	-0.59745	0.12519
4	0.14848	0.23192	-0.3485	1.46652	0.11501	0.60035	0.67253
5	0.22293	0.50064	1.13278	-1.23355	-0.06097	0.61355	-0.07985
6	-0.13781	-0.58467	1.15151	-0.9408	0.4276	0.57378	0.62917
7	-0.75974	-1.54585	0.38592	-0.38515	0.49609	0.05701	1.21445
8	-0.60338	-0.55243	-0.08148	0.66382	-0.40655	0.75306	0.08728
9	-0.06284	-0.77041	-0.21017	0.17949	0.73738	-0.51218	-0.78253
10	-0.81509	0.54391	0.20798	-0.99774	0.72463	-0.36468	1.21598

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 23. 2:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Redemptions Dates

Date	4/4/94	5/5/94	1/5/95	6/2/95	6/4/96	9/20/96	4/14/97	5/15/97	10/17/97	10/30/97
Obs.	29	29	31	31	33	33	33	33	33	33
Size	2m	2m	1.750m	1m	1m	2.800m	1m	1m	1m	2.500m
Day										
-10	-0.01965	-0.20757	1.19005	0.04704	0.06929	0.18433	-0.4937	0.85956	0.19326	-1.00082
-9	2.44124**	3.55798***	3.05349***	1.21941	-0.71614	-1.25294	1.56734	0.19735	-0.33891	-0.18222
-8	-1.82524*	-0.01276	-1.03645	0.97811	0.34499	1.37723	-1.12484	-1.17412	1.26138	0.09416
-7	-0.52151	-1.18968	1.0872	-0.44979	0.93802	-1.02473	2.10939**	-1.0841	0.11511	-1.37824
-6	-0.1116	1.45048	1.12473	1.18353	0.40767	0.5337	1.49089	0.54098	-0.85197	1.13374
-5	0.71617	0.68191	-0.79157	-0.33911	1.24451	1.20728	0.28798	-0.92616	-0.04047	-0.18616
-4	-0.75046	-1.04366	0.56229	0.01424	-0.32347	0.49114	-1.14827	-0.30108	0.1508	-0.92655
-3	0.28554	2.5719**	-2.81844***	-2.80276***	1.06502	-0.19225	-0.6739	-0.05663	0.74079	2.00097**
-2	0.95155	-0.47194	-1.71166*	-1.1272	0.92225	1.30473	0.30702	2.18652**	0.32556	1.79079*
-1	1.83972*	0.626	-1.57968	1.11321	0.37613	1.46941	1.7758*	-0.98931	-0.9287	-0.41932
0	-1.68561	1.15215	-0.82336	1.44564	0.50839	-0.33281	2.10606**	0.5137	-0.14664	0.57641
1	-1.68145	-0.52541	-0.25534	-1.1635	0.74239	-0.87751	-0.98495	0.19695	0.18273	0.16637
2	-1.01052	1.49569	-0.84917	-1.14385	0.06192	-0.15998	-1.55789	-0.40712	-1.36765	-0.31304
3	0.96289	0.89104	1.48186	0.97822	-0.41016	0.98138	-0.03151	0.65112	1.11138	-0.39317
4	0.38788	-0.15396	-0.46882	1.38964	1.2642	1.1325	-0.60619	0.19272	-0.2091	0.54749
5	-0.39542	-1.05155	-0.31623	1.32383	0.35092	0.33245	-0.05886	-0.13742	-0.87847	-1.18347
6	-1.04485	-0.87583	-0.54891	-0.4763	-1.19073	0.42263	-0.54197	-0.48119	1.89967*	0.03396
7	-1.11324	0.01831	0.92033	-1.5452	-0.08318	-0.94888	-0.07261	0.86886	1.94321*	-1.14968
8	-1.7735*	1.21767	0.73931	1.0649	-0.14255	-0.26086	0.59661	-0.47997	-0.42769	-0.18873
9	-0.93893	0.60247	0.59613	-0.27625	-0.06275	0.34069	-0.65975	-0.12495	0.61134	-1.14843
10	0.38121	0.17901	0.98657	0.83985	-0.76277	0.54344	0.59385	-1.04119	0.22222	1.23402

* p < .10 , ** p < .05 , *** p < .01

Table 23. 2:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Redemptions Dates

Date	11/12/97	12/1/97	6/28/94	9/18/97	4/27/98	8/4/98	11/2/98	11/18/98	1/14/99	2/2/99
Obs.	33	33	30	33	34	34	34	34	34	34
Size	1.500m	2m	4.850m	4.100m	4m	4m	10m	5m	5m	6m
Day										
-10	-0.39143	3.35409***	0.59538	1.17059	0.35387	0.0047	0.53317	-0.26918	-0.32567	1.12217
-9	0.56694	-1.24815	0.28319	0.28249	-0.3678	-0.53235	-0.03044	-1.42289	-0.53866	0.99233
-8	0.22214	-0.27537	-0.18922	-0.69283	0.46197	1.99196**	1.06883	-0.20962	-0.33182	-0.46041
-7	-0.15918	-0.14361	0.388132	-1.31124	0.46183	0.26433	1.81754*	0.90538	0.5472	-0.46233
-6	-0.31228	0.98805	0.33322	0.77021	0.48459	-0.52753	0.84468	1.37583	-1.46556	1.16755
-5	0.53041	-0.72845	0.20892	0.52197	1.84097*	0.31758	-0.08393	0.63033	0.37398	0.8458
-4	-1.15236	-0.94124	-2.08166**	-0.68458	0.27971	-0.00286	-0.77682	-0.3971	-1.33868	1.20732
-3	0.00715	-0.20139	-0.88401	0.8106	-0.44674	0.58673	1.27187	-0.21506	-0.59277	-0.1567
-2	-1.11324	-0.51973	1.73728*	0.98523	0.99858	0.20309	0.76216	0.10655	-0.49637	0.08441
-1	-0.15187	-0.13804	0.86097	-0.48268	1.49815	-0.34714	-2.19765**	-0.17469	1.66849	0.14061
0	-1.20218	1.18857	0.76754	-1.3859	0.06783	0.9385	-1.2492	1.21958	1.69645*	-0.60625
1	1.27454	-1.29892	-0.07374	1.04709	0.30573	1.3131	-0.46871	1.58572	-0.84144	0.83497
2	3.36015***	1.13173	-0.83842	1.38409	-0.13695	-0.28332	-0.23175	-1.15811	1.15173	0.05617
3	-1.25136	-0.14884	-0.24198	-1.36505	-0.15869	0.22765	-1.36499	0.28189	0.99925	-1.6689
4	-0.31799	-0.78793	-1.38252	-0.40543	-1.58863	0.92596	-0.23451	0.01616	-0.7371	0.27219
5	-0.21365	0.38675	0.08787	-0.28143	0.64981	-0.54994	0.87672	0.22324	-0.72673	-0.75206
6	1.03087	-2.33341**	0.29725	-0.50945	-0.28908	-1.22004	1.3831	1.08536	1.24412	1.06367
7	-0.65173	-0.32649	-0.0832	-0.35763	0.29355	0.28549	0.60561	-0.67033	0.94631	1.7888*
8	-0.87025	1.04314	-1.01789	-0.98538	0.53393	-0.10439	-0.35485	0.21379	1.1122	0.73846
9	-0.29297	0.20856	-1.93505*	-1.18435	-0.2853	0.46883	-0.14214	-0.29093	-0.1822	-0.90805
10	-0.56441	-1.02365	1.74696*	0.95013	-1.03248	0.61105	0.09717	-1.12923	-0.05908	1.00169

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 23. 2:Z- Statistic for Abnormal Returns for Top 50% of Companies Underlying S&P 500 for Redemptions Dates

Date	7/12/99	8/3/99	1/21/00	3/16/00	5/16/00
Obs.	34	34	34	34	34
Size	4.200m	4m	7.2m	9m	6m
Day					
-10	0.24917	0.05913	-2.16414**	1.38423	0.16618
-9	0.18378	-11703	3.65939***	-1.21589	0.19216
-8	-0.86162	-0.41045	2.50724**	-0.87914	-0.18424
-7	1.2386	0.4153	-0.0827	-0.35659	-0.26196
-6	0.28215	-0.62659	-0.20168	0.62827	0.1838
-5	-0.29064	-1.08216	0.74803	0.12449	-0.1539
-4	-0.00497	0.06119	-0.41743	-0.92402	-0.09578
-3	0.33955	0.3033	1.09687	-0.71042	-0.99113
-2	0.77216	0.49361	1.10953	0.19832	0.47327
-1	-0.70172	-1.11244	0.33248	-0.33355	-0.3083
0	0.14929	1.1897	-0.1016	-1.65672	-0.2531
1	0.33199	-0.33201	-0.16803	0.53007	-0.16242
2	-0.42753	-0.36843	0.20036	1.21663	-0.56393
3	-0.19595	-0.03461	0.20511	-1.09721	0.32864
4	-1.05793	-0.75375	0.11977	0.03819	-0.34497
5	0.45536	1.2163	0.35058	-0.63697	-0.84014
6	0.30841	-0.36977	0.07971	-0.3148	0.30096
7	-0.17157	0.21947	-1.48098	-0.71084	0.11715
8	-0.33154	0.07603	0.63182	0.4927	-0.06217
9	0.46295	0.54511	-0.98382	0.14871	0.40767
10	-0.53542	-0.18783	0.07229	-0.44073	0.51289

* p < .10 , ** p < .05 , *** p < .01

Table 24: Company Specific Information on Particular Event Dates Entire Redemption Sample with 4 Million Volume Limit

Date	Company Name	Event Type
6/28/94	Oracle Corp.	Increase in Earnings (Fourth Quarter)
9/18/97	Microsoft Corp.	Delay in Product Launch
	Oracle Corp.	Decrease in Sales (First Quarter)
	Home Depot	Legal Settlement (Against)
4/27/98	Pfizer Inc.	New Product Development
	Citigroup Inc.	Merger
	American Int'l Group	Merger Rumors
	Johnson & Johnson	Legal Settlement (In Favor of)
	Hewlett-Packard	Credit Rating Change (In Favor of)
	Proctor & Gamble	Increase in Earnings (Third Quarter)
8/4/98	Cisco Systems	Increase in Profits (Fourth Quarter)
	SBC Communications	Merger Rumors
	America Online	Increase in Earnings (Year)
	AT & T	Acquisition
	Hewlett-Packard	Decrease in Earnings
	Proctor & Gamble	Increase in Earnings (Year)
	WorldCom Inc.	Bond Sale
11/2/98	Cisco Systems	Increase in Earnings (First Quarter)
	Citigroup Inc.	Management Departure
	Sun Microsystems	Increase in Earnings
	Merck & Co.	Increase in Profits
	SBC Communications	Merger
	WorldCom Inc.	Reported Loss (Third Quarter)
11/18/98	Cisco Systems	Credit Rating Change (In Favor of)
	Microsoft Corp.	Legal Settlement (Against)
	Sun Microsystems	Legal Settlement (In Favor of)
	America Online	Merger Rumors
	Home Depot	Increase in Profits (Third Quarter)
	Bristol-Myers Squibb	Legal Settlement (Against)
	AT & T	Increase in Expenses
	Time Warner Inc.	Credit Rating Change (In Favor of)
	Hewlett-Packard	Increase in Earnings (Fourth Quarter)
	Lilly (Eli) & Co.	Sale of Subsidiary
1/14/99	Intel Corp.	Increase in Profits (Fourth Quarter)
	International Business Machines	Awarded Contract
	Time Warner Inc.	Merger Rumors
	WorldCom Inc.	Awarded Contract

Table 24: Company Specific Information on Particular Event Dates Entire Redemption Sample with 4 Million Volume Limit

Date	Company Name	Event Type
2/2/99	General Electric	Acquisition
	Cisco Systems	Increase in Profits (Second Quarter)
	EMC Corp.	Increase in Profits (Fourth Quarter)
	Nortel Networks	Awarded Contract
	SBC Communications	Merger Rumors
	America Online	Acquisition
	Morgan Stanley, Dean Witter...	Acquisition
7/12/99	General Electric	Increase in Earnings (Second Quarter)
	Wal-Mart Stores	Increase in Sales
	International Business Machines	Acquisition
	Coca Cola Co.	Increase in Expenses
	Hewlett-Packard	Awarded Contract
8/3/99	Sun Microsystems	New Product Development
	Nortel Networks	Awarded Contract
	Coca Cola Co.	Acquisition
1/21/00	General Electric	Increase in Profits (Fourth Quarter)
	Cisco Systems	Acquisition
	Microsoft Corp.	Decrease in Earnings (Second Quarter)
	Citigroup Inc.	Acquisition
	International Business Machines	Decrease in Profits (Fourth Quarter)
	America Online	Increase in Income (Second Quarter)
	Time Warner Inc	Acquisition
	Proctor & Gamble	Acquisition Rumors
	Tyco International	Stock Repurchase
3/16/00	Cisco Systems	Acquisition
	Intel Corp.	Acquisition
	American International Group	Stock Repurchase
	Nortel Networks	Acquisition
	America Online	Acquisition
	Corning Inc.	Increase in Earnings (First Quarter)
	WorlCom Inc.	Merger
5/16/00	Cisco Systems	Acquisition
	Pfizer Inc.	Merger
	Intel Corp.	Increase in Dividends
	Citigroup Inc.	Acquisition
	Coca Cola Co.	Decrease in Profits (Year)
	America Online	Strategic Alliance
	Home Depot	Decrease in Profits (First Quarter)
	Hewlett-Packard	Increase in Earnings (Second Quarter)

Table 25: Company Specific Information on Particular Event Dates Pre-1998 Redemption Sample with 2 Million Volume Limit

Date	Company Name	Event Type
4/4/94	American Int'l Group	Stock Repurchase
	Sun Microsystems	Decrease in Revenues (Year)
	America Online	Takeover Speculations
	Bristol-Myers Squibb	Legal Settlement (Against)
5/5/94	Time Warner Inc.	Takeover Speculations
	Corning Inc.	Company Acquisition
6/28/94	Oracle Corp.	Increase in Earnings (Fourth Quarter)
9/20/96	Intel Corp.	Increase in Revenues (Third Quarter)
	Coca Cola Co.	Decrease in Sales
	Worldcom Inc.	Company Acquisition
9/18/97	Microsoft Corp.	Delay in Product Launch
	Oracle Corp.	Decrease in Sales (First Quarter)
	Home Depot	Legal Settlement (Against)
10/30/97	Microsoft Corp.	Decrease in Earnings (First Quarter)
	International Business Machines	Stock Repurchase

Table 26: Market Model Abnormal Returns for Companies Representing Top 50% of S&P 500 for Redemption Pre-1998 Sample With 2 Million Volume Limit Adjusted for Company Specific Information

(205 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	0.1515%	0.0062%	-7.8300%	7.2800%	0.1515%	50.24%	1.8759 *
-9	0.2368%	0.0717%	-7.8200%	9.7500%	0.3883%	51.22%	1.5800
-8	-0.0701%	-0.0788%	-5.1800%	8.5900%	0.3183%	46.34%	-0.4942
-7	-0.2523%	-0.2400%	-10.0600%	5.5300%	0.0659%	42.93%	-2.1248 **
-6	0.2332%	0.2190%	-5.9000%	7.3900%	0.2991%	53.66%	2.0011 **
-5	0.0951%	0.0073%	-10.7600%	10.1400%	0.3942%	50.73%	0.6182
-4	-0.2482%	-0.3270%	-6.2100%	6.7400%	0.1459%	43.41%	-2.0208 **
-3	0.0574%	0.0596%	-10.2800%	6.3300%	0.2033%	51.22%	1.4368
-2	0.2638%	0.0466%	-4.6800%	8.3600%	0.4671%	50.73%	1.2190
-1	0.2683%	0.0727%	-5.1100%	11.2200%	0.7354%	52.68%	1.4568
0	0.0342%	-0.0133%	-7.8000%	6.1900%	0.7696%	49.27%	0.7715
1	-0.1366%	-0.1900%	-9.9300%	4.4600%	0.6330%	42.44%	-0.9338
2	0.1670%	-0.0162%	-9.6200%	11.0000%	0.8000%	48.29%	0.9813
3	-0.0679%	-0.1020%	-6.5100%	7.1700%	0.7322%	47.32%	-0.1232
4	-0.0386%	-0.1450%	-4.1900%	7.7200%	0.6935%	45.37%	-0.1434
5	-0.0815%	-0.0530%	-6.5600%	4.9800%	0.6121%	48.29%	-0.7538
6	-0.3897%	-0.0398%	-28.0500%	6.8400%	0.2224%	49.76%	-1.6499
7	-0.3073%	-0.0112%	-10.0500%	4.2400%	-0.0849%	49.76%	-1.0066
8	-0.1470%	-0.0291%	-12.7100%	6.7100%	-0.2319%	49.76%	-0.6745
9	-0.2823%	-0.1280%	-9.1100%	6.1800%	-0.5142%	42.93%	-1.6724
10	0.2103%	0.1730%	-5.8200%	9.6200%	-0.3040%	54.15%	1.6192

* p < .10, ** p < .05 , *** p < .01

Table 27: Market Model Abnormal Returns for Companies Representing Top 50% of S&P 500 For Redemption Sample With 4 Million Volume Limit Adjusted for Company Specific Information

(361 Event Days)

Day	AAR	Median	Minimum	Maximum	CAAR	% Positive	Z-Stat.
-10	0.1024%	-0.0317%	-14.8100%	13.2200%	0.1024%	49.55%	1.0304
-9	0.2235%	0.0201%	-6.5800%	16.2800%	0.3260%	50.91%	1.3568
-8	-0.0458%	-0.2530%	-8.5900%	14.8300%	0.2801%	46.82%	-0.6637
-7	0.0386%	-0.0062%	-28.9000%	10.6700%	0.3187%	42.27%	0.3501
-6	0.0812%	0.0745%	-6.1100%	9.3300%	0.4000%	53.18%	1.0542
-5	0.1741%	-0.1690%	-10.7600%	10.7400%	0.5741%	51.82%	0.7888
-4	-0.0725%	-0.3510%	-6.6400%	12.5300%	0.5016%	42.27%	-0.9903
-3	-0.0751%	-0.1180%	-9.0600%	13.6000%	0.4265%	51.36%	-0.6984
-2	0.2438%	0.0845%	-6.7700%	8.5900%	0.6703%	51.82%	2.0053 **
-1	0.0349%	-0.1810%	-9.9900%	17.1500%	0.7051%	52.27%	-0.0154
0	0.1249%	-0.0133%	-6.2900%	8.3400%	0.8300%	49.09%	1.0927
1	0.1379%	0.0096%	-6.6100%	9.0400%	0.9679%	42.73%	0.9844
2	0.0821%	-0.0404%	-7.6900%	8.7200%	1.0500%	47.73%	0.3252
3	-0.2036%	-0.2890%	-8.0000%	6.7400%	0.8464%	48.18%	-1.0307
4	-0.2734%	-0.1950%	-7.4000%	4.3400%	0.5730%	45.00%	-2.0938 **
5	-0.0219%	-0.0847%	-7.3300%	8.6100%	0.5511%	48.18%	0.1751
6	0.1603%	0.0928%	-9.6800%	7.2400%	0.7114%	49.55%	1.1627
7	0.0777%	0.0320%	-6.2900%	9.4200%	0.7891%	48.64%	0.6384
8	0.0427%	-0.0498%	-12.7100%	11.3000%	0.8318%	48.64%	0.3541
9	-0.0589%	-0.1010%	-8.8900%	10.5600%	0.7729%	43.64%	-0.6486
10	0.0826%	-0.0750%	-8.4100%	11.2900%	0.8556%	53.64%	0.7132

* p < .10, ** p < .05 , *** p < .01