SOCIAL MEDIA MARKETING AND THE PERFORMING ARTS INDUSTRY: THE EFFECT OF TWITTER ON BROADWAY TICKET SALES

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Abstract

The integration of social media marketing into the Theatre District has shifted Broadway from a passive experience to a multi-dimensional dialogue. A Broadway show's cast and creative team now have the opportunity to connect with fans directly as well as to release social media content to the public for further show enjoyment. What research has yet to address, however, is the extent to which an effective social media presence directly translates into increased ticket sales. My research explores this question by analyzing the effect an active Twitter presence has on weekly ticket grosses for six long running Broadway shows. To examine this relationship, I first performed a series of difference-in-difference estimations to determine if simply creating a Twitter account impacted weekly ticket grosses. I then went into greater depth and ran a multiple regression analysis to determine the extent to which volume of show-related tweets impacted weekly ticket grosses. The results indicate that Twitter and volume of tweets likely do not have a discernable impact on ticket sales.

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Introduction

Whether posting an entire show on Twitter 140 characters at a time (*Next to Normal*) or releasing music videos featuring a 360-degree view of the set and cast (*The Lion King*), Broadway has found multiple ways to leverage social media to raise the awareness of and increase support for its shows. By eliminating barriers to show content and audience connection, Broadway shows are able to engage an audience that is younger and more diverse than their standard patron base. Furthermore, interested patrons are now able to interact with artists and immerse themselves in new as well as familiar Broadway shows. These behind-the-scenes the scenes opportunities have allowed some shows to transcend the stage and cross over into mainstream consciousness, such as *Hamilton* and *Dear Evan Hansen.* What research has yet to address, however, is to determine the extent to which an effective social media presence directly increases ticket sales.

My honors thesis explores the possible effects an official Twitter account might have on the ticket revenue of a Broadway show. I analyze this relationship using data from six Broadway shows: *The Phantom of the Opera*, *Chicago*, *The Lion King*, *Wicked*, *Mamma Mia!,* and *Jersey Boys*. I gathered weekly ticket grosses from The Broadway League archive spanning two years before and after each show established their official Twitter account. Additionally, I aggregated tweets from each of the six Broadway shows' Twitter accounts for two years after they established their official Twitter account. I then ran a series of difference-in-difference analyses and a multiple regression analysis to determine how variables such as a Twitter presence and the number of tweets posted each week might influence weekly ticket grosses. I am hopeful that the results presented here might help Broadway shows better understand the extent to which their investment in social media marketing might provide a positive return on investment.

Background: Social Media in Broadway

Over the course of this section, I will analyze both the academic and popular literature that speaks to social media marketing and its possible effect on Broadway shows. The following sections will examine (1) marketing strategies made more relevant through social media that add value to a show, (2) the types of content often put out by and about Broadway shows, and (3) the finances associated with social media marketing, specifically the expenses of and possible returns on such investments.

Marketing Strategies

The introduction of social media, and the subsequent use of social media marketing in the performing arts sector, changed the traditional dynamic between Broadway shows and their patrons. From what has traditionally been a one-way dynamic (show → patron), Broadway shows could now connect more directly with patrons (show← →patron) and hopefully use these new connections to generate and even control some of the buzz surrounding their show. In this subsection, I outline two social marketing strategies—Relationship Marketing and Electronic Word-of-Mouth Marketing—that can be implemented through the use of social media and that might positively contribute to the more general marketing strategy of Broadway shows.

Relationship Marketing

Relationship marketing is a subset of customer relationship management that focuses on customer retention, customer loyalty, and overall long-term customer engagement. Zhang, Watson, Palmatier, & Dant (2016) propose that relationship marketing strategies are more or less effective depending on the quality of the current relationship between the costumer and the organization. A successful relationship marketing strategy is defined by its ability to elevate a

customer to a higher relationship state (Zhang et al., 2016). Payne & Frow (2017) add to this idea by recognizing the active role of customers within the relationship state. Rather than put the onus solely on the organization, Payne & Frow (2017) encourage customers to contribute to and enhance relational outcomes. Relationship marketing is dependent upon both organizations and potential customers working to create mutual value.

Broadway shows have the opportunity to use social media to hone essential elements of relationship marketing: audience development and show/patron interactions. Arts engagement is a potential relationship marketing strategy that Broadway shows might use to promote audience development (Kemp, 2015). Arts engagement refers to an individual's affective, cognitive, social and/or behavioral responses to an artistic experience (Kemp, 2015). Kemp (2015) proposes that these responses may lead patrons to form an experience-based relationship and, eventually, a sense of self-connectedness with a Broadway show. Besana et al. (2018) extend this argument by suggesting that audience development should be a proactive process that educates communities and encourages them to participate in different elements of the show experience (attending the show, following the show, actors, and creative team on social media, buying the cast album, etc.). By posting show related content on social media and increasing opportunities for interactions between shows and patrons, Broadway shows have the opportunity to foster longer-term relationships with its patron base.

Electronic Word-of-Mouth Marketing

The expansive reach and speed of information diffusion associated with social media allows for a heightened form of word-of-mouth marketing: electronic word-of-mouth marketing (Coleman et al., 2019). Huete-Alcocer (2017) refers to electronic word-of-mouth as the Internet based communication between customers regarding a product, service, or organization.

Customers perceive the information received from these interpersonal exchanges as honest and credible because the senders are supposedly independent of the organization (Huete-Alcocer, 2017). With the creation of social media platforms, electronic word-of-mouth has gained power as a customer-dominated marketing channel (Huete-Alcocer, 2017). The presence of online reviews has allowed for weighing the opinions of virtual strangers to become normalized part of customer behavior (Cantallops and Salvi, 2014; Gómez-Suárez, Martínez-Ruiz, & Martínez-Caraballo, 2017; Huete-Alcocer, 2017). Organizations must be cognizant of the positive and negative influences of electronic word-of-mouth and must adapt their digital marketing strategies accordingly.

On Broadway, electronic word-of-mouth can be leveraged to create buzz and boost ticket sales for a show. Patrons often rely on recommendations received through electronic word-of-mouth as a result of a Broadway show being an intangible and experiential based product (Hausmann & Poellmann, 2016; Coleman et al., 2019). Hausmann & Poellmann's (2016) study highlights the importance of social media reviews in providing potential theatregoers with quick, effective, accurate, and detailed show reviews that can be used to assuage buyer uncertainty and validate a show. Coleman et al. (2019) asserted that the intrinsic characteristics of social media—instantaneous broad reach and speed of information dissemination—working in congruence with word-of-mouth can promulgate a viral marketing effect for certain shows. Broadway shows can harness the power of electronic word-of-mouth to manage some of the narrative surrounding their show, possibly offsetting any damage caused by negative newspaper and theatre critic reviews.

Show-Generated Social Media Content

Through the use of social media, Broadway shows have the opportunity to release content that brings their dramatic work to life beyond the physical walls of the theatre. This content can allow shows to gain momentum without fans being put off by typical marketing tactics, such as ticket discounts (Newman, 2009). In this subsection, I provide specific examples of types of firm-generated content Broadway shows have posted to get patrons invested in their show and motivated to buy a ticket for a Broadway, West End, and/or touring production: (1) show content, (2) fan interactions, and (3) activism content.

Show Content

Prior to social media, patrons did not have the opportunity to experience elements of a show before buying a ticket. Patrons had to decide whether or not to see a show based solely on the information available through a theatre critic's review, newspaper advertisements, billboards, posters, and traditional word-of-mouth channels (Reddy, Swaminathan, & Motley, 1998). All of these media are limited in the type of message they are able to convey, with print forms of advertising often featuring only pictures, taglines, and/or quotes from reviews. Through the capabilities of social media, however, Broadway shows are now able to diversify content for public consumption, making it more readily accessible. This content serves two primary functions: (1) Patrons are provided with previews of shows and behind-the-scenes looks, which allow them to believe they are making a more informed decision when choosing to buy a Broadway ticket. (2) Broadway shows are able to employ technological innovation to run more innovative, interactive marketing campaigns.

Next to Normal revolutionized the use of Twitter in a marketing campaign when, six weeks after opening, it began tweeting an adapted version of the show one character line at a

time (Newman, 2009). Three weeks into the campaign, @N2NBroadway (the Twitter handle for *Next to Normal*) had 30,000 followers; upon completion of the campaign, the account had 145,000 followers (Newman, 2009). Over the course of this marketing campaign—May 12, 2009–June 7, 2009—weekly ticket grosses steadily increased from $278,881to $418,664 and the percentage of seats sold steadily increased from 86% to 97% of theatre capacity ("Weekly Grosses by Show", n.d.). *Next to Normal*'s Twitter campaign is an excellent example of how the content of the show itself can be enough to sell the show.

Fan Interactions

By maintaining an active social media presence, many Broadway shows have transformed how fans interact with members of the cast, creative team, and press representatives of the show. Fans have the opportunity to ask questions—on a virtual forum such as a Twitter feed or Facebook page—about artistic decisions made when writing the book or staging the production, or choices the actors made when interpreting their characters. Fans can also direct message (DM) specific cast members on any of the social platforms, a way to more intimately express their connection to a show. For example: Alex Boniello played Connor in *Dear Evan Hansen* and Moritz in *Spring Awakening;* in both musicals, his character commits suicide. While playing these roles, he received a flood of DMs from fans who wanted to share their own battles with mental health issues or surface their thoughts of suicide (Thielking, 2019). This heightened level of access to Broadway shows and their casts is unprecedented (Fitzpatrick, 2015). Fans value these types of interactions because online exchanges make them feel like part of the narrative, a manifestation of participatory and performative fandom[1] (Hillman-McCord, 2017).

[1] Participatory and performative fandom refers to the phenomenon in which patrons view their virtual interactions with cast and creative team members as performative in nature because they are expressing their admiration in front of other fans on the social media platform.

Broadway shows are able to leverage these types of interactions to increase buzz surrounding their show through positive electronic word-of-mouth.

Lin Manuel Miranda has incited change within the Broadway industry by revolutionizing the ways in which Broadway shows connect with fans. Although *Hamilton* remains one of the most exclusive tickets on Broadway, Miranda has expanded access to the show content by developing a Twitter presence in which he actively engages with fans. Twitter data from 2016 (a year after the show officially opened on Broadway) revealed that 65% of Miranda's tweets consisted of some form of fan engagement, such as liking, retweeting, and responding to fan questions about the show (Dale, 2016). Miranda expanded fan access to Hamilton content even further with the creation of the #Ham4Ham shows. Praised as "the best thing on Broadway", #Ham4Ham was a free preshow outside of the Richard Rogers Theatre featuring a variety of performing arts acts (Bonanos, 2015). For fans unable to come to the theatre in person, virtual versions of the #Ham4Ham shows were made available and easily found by following Miranda's personal Twitter account or by tracking the #Ham4Ham hashtag (Fitzpatrick, 2015). Although this content does not replace seeing the show in person, it sparked enthusiasm for an unorthodox show (a rap-based musical about the founding fathers of America) and increased patron's willingness-to-pay so they can fully experience the show.

Activism Content

Many contemporary Broadway shows use their digital platform to raise awareness of and support for causes that relate to the subject matter of the show. For example: *To Kill A Mockingbird* donates proceeds from merchandise sales to the Trayvon Martin Foundation (Fierberg, 2019). *Mean Girls* works with the Kind Campaign to create social media campaigns that emphasize the negative effects of girl-on-girl bullying (Fierberg, 2019). *Wicked* partners

with the Broadway Green Alliance, BullyBust.org (as depicted in Figure 2.1 below), and other similar organizations dedicated to preventing bullying in schools (Fierberg, 2019). Through their online platforms, shows are able to inspire a dialogue about topical issues, reducing the stigma around discussions of often-taboo subjects—such as mental health and addiction (Fierberg, 2019). Broadway shows also have the opportunity to use this form of content to educated patrons on such issues, as these posts inject gravitas into subjects that may be shaded by humor and music when intertwined into the plot of the show.

Figure 2.1

Media asset for Wicked and BullyBust.org joint anti-bullying campaign

Dear Evan Hansen has used its international platform to advocate for a number of not-for-profit organizations whose missions align with the central themes of the show: mental health treatment and suicide prevention. All of the organizations that partnered with *Dear Evan Hansen* can provide resources for people struggling with their mental health. These include such groups as Speak Your Mind, Child Mind Institute, Crisis Text Line, JED, The Trevor Project, and Born This Way Foundation (Dear Evan Hansen, n.d.). The show shares general and contact information for these organizations in the *Dear Evan Hansen* playbill, on the show's official website, and with fans who come to greet the actors at the stage door if need be. Additionally, the show has sponsored a number of social media campaigns in support of these organizations. For example, *Dear Evan Hansen*'s stirring anthem "You Will Be Found" became impactful beyond the scope of the musical when the show asked for fans to send in user-generated videos of themselves singing songwriters' Pasek and Paul's breakout Broadway hit (Gans, 2018). Alex Lacamoire and Nevin Steinberg, the show's music supervisor/orchestrator and the head of sound design, integrated the video submissions into one seamless virtual choir and posted the video on the social media accounts for *Dear Evan Hansen* (Gans, 2018). This social media campaign was orchestrated to echoes the core beliefs addressed in the song, in the show, and by the varied partnered foundations: *You Are NOT Alone* (Dear Evan Hansen, 2017).

Finances

In this section, I will discuss the possible financial implications for Broadway shows that invest in the development and maintenance of a social media presence. Specifically, I will discuss the (1) cost structure of social media marketing and the (2) expected social media return on investment.

Cost Structure

Most Broadway shows have a Broadway advertising/marketing firm manage their social media marketing as well as the other elements of their marketing strategy. Three companies dominate the Broadway marketing scene: Serino Coyne; SpotCo; and Eliran Murphy Group (NYTIX, n.d.). These firms have provide marketing advice for some of the biggest shows on Broadway—*The Phantom of the Opera, Chicago, and Hamilton*—and are responsible for some of the most innovative digital marketing campaigns on Broadway. Broadway shows can choose one of these firms to handle all of their marketing requirements, or choose different divisions from each company to handle different aspects of their marketing campaign (NYTIX, n.d.). The costs of each firm's services are not public information, as the work done for each Broadway show's campaign is specialized and dependent upon the goals and marketing strategy of the show.

Return on Investment

Mounting a Broadway production is not cheap. Shows cost millions of dollars to produce, while only approximately 25% of the shows that make it to Broadway are actually profitable in the course of their run (Long, 2016). For this reason, shows must be intentional about their marketing strategy to optimize the number of potential ticket buyers reached and tickets sold. Montenegro (2018) argues that social media return on investment (SMROI) can be broken down into two elements: (1) how much is spent on social marketing (the investment)? and (2) how much does social media benefit the production (the return)? Broadway shows must keep these questions in mind when crafting a social media marketing strategy. The goal of a Broadway show is to raise enough revenue that investors will recoup their initial investments and the show will turn a profit (Rogers, 2016).

Identifying key performance metrics is one way that Broadway shows can stay up to date on their SMROI. Key performance metrics for a Broadway show's SMROI are dictated by a show's main business objectives. For example: a show trying to increase engagement on social media will likely focus on the number of times consumers clicked on a post or the number of likes/shares/comments a post receives as relevant metrics to measure the success of their initiatives. I used weekly Broadway ticket sales as one metric to assist in my calculation of SMROI for each show. This decision was based on the assumption that a Broadway show's ultimate goal is to optimize revenue generated to insure a positive return on investment.

Methodology

The purpose of this methodology is to explain how I collected the data I will use to investigate the following research question: *To what extent does the use of Twitter affect the ticket revenues of Broadway shows?* In this section, I will describe (1) the individual Broadway shows that I selected as a sample for my research (2) the data collected to investigate my research question, and (3) the methods used to analyze the data.

Broadway Shows

I chose six Broadway shows as a sample to test my research question. In this subsection, I will detail the criteria used to choose the Broadway shows as well as describe each of those Broadway shows: *The Phantom of the Opera*, *Chicago (1996 Revival)*, *The Lion King*, *Wicked*, *Mamma Mia!*, and *Jersey Boys*.

Sample Selection Criteria

In choosing my sample of Broadway shows, I specifically selected long-running Broadway shows with an established Twitter account. I wanted to ensure I could gather enough data for a comprehensive analysis of Twitter's effect on Broadway shows' weekly ticket grosses. The shows in my sample had to have an established Twitter account so, when it came to data analysis, I had tweets to analyze. Furthermore, I could be confident I was analyzing tweets posted by the show itself as opposed to by a fan account. I used each show's published Playbill page as a primary resource for authenticating Broadway show Twitter accounts; then, I compared the Twitter usernames I collected to the Twitter usernames linked to each show's official website to confirm I had the correct accounts.

My second sample criterion required that the shows in my sample had to have opened at least two years before the show created a Twitter account, and are still running or closed at least two years after the show created a Twitter account. I chose these time intervals so that I could track trends in weekly ticket grosses across multiple Broadway seasons before and after a show established its Twitter presence. By tracking ticket grosses across multiple Broadway seasons, I am able to reduce some of the impact of confounding variables such as other Broadway shows and forms of entertainment available across the years.

The following six Broadway shows—*The Phantom of the Opera, Chicago, The Lion King, Wicked, Mamma Mia!,* and *Jersey Boys*—included in this study were the only shows found that met the criteria listed.

Phantom of the Opera

With over 13,000 performances completed to date, Andrew Lloyd Webber's *The Phantom of the Opera* is the longest-running musical in the history of Broadway (Broadway, n.d.). The show opened on Broadway on January 26, 1988 in the Majestic Theatre ("The Phantom of the Opera @ Majestic Theatre", n.d.). Following its opening, *The Phantom of the Opera* received 10 nominations for the 1988 Tony Awards ("The Phantom of the Opera Tony Awards Info", n.d.). The show went on to win 7 Tony awards for Best Musical, Best Direction of a Musical, Best Actor in a Musical, Best Performance by an Actress in a Featured Role in a Musical, Best Costume Design, Best Lighting Design, and Best Scenic Design ("The Phantom of the Opera Tony Awards Info", n.d.). The show also received recognition by the Drama Desk Awards, New York Drama Critics' Circle, and Outer Critics Circle ("The Phantom of the Opera @ Majestic Theatre", n.d.). As of March 1, 2020, *The Phantom of the Opera* has grossed $1,252,951,458, with an average ticket price of $65.41 and the average percentage of seats sold

per show represented 89.72% of theatre capacity ("The Phantom of the Opera @ Majestic Theatre", n.d.). *The Phantom of the Opera* created their official Twitter handle in March 2011.

Chicago (1996 Revival)

The original Broadway production of *Chicago* had an approximately two year long run consisting of 936 performances at the 46th Street Theatre, opening on June 3, 1975 and closing on August 27, 1977 ("Chicago Broadway @ 46th Street Theatre", n.d.). Picking up where the original left off, the 1996 revival of *Chicago* is now the second longest-running musical in the history of Broadway (Broadway, n.d.). The current revival opened on November 14, 1996 and has completed 9,682 performances as of March 1, 2020 ("Chicago Broadway @ Ambassador Theatre", n.d.). Following its revival, *Chicago* received 8 nominations for the 1997 Tony Awards ("Chicago Tony Awards Info", n.d.) and won 6 Tony awards for Best Actor in a Musical, Best Actress in a Musical, Best Choreography, Best Direction of a Musical, Best Revival of a Musical, and Best Lighting Design ("Chicago Tony Awards Info", n.d.). The show also received recognition by the Drama Desk Awards, Drama League, New York Drama Critics' Circle, Outer Critics Circle, and Theatre World Awards ("Chicago Broadway @ Ambassador Theatre", n.d.). As of March 1, 2020, *Chicago* has grossed $680,534,518, with an average ticket price of $72.61 and the average percentage of seats sold per show represented 89.7% of theatre capacity ("Chicago Broadway @ Ambassador Theatre", n.d.). *Chicago* created their official Twitter handle in March 2009.

The Lion King

Based on the 1994 Academy Award-winning Disney film, the Broadway adaptation of *The Lion King* has presented 9,291 performances as of March 1, 2020, *The Lion King* is the third longest-running musical in the history of Broadway ("The Lion King @ Minskoff Theatre", n.d.

Broadway, n.d.). The current show opened on November 13, 1997 ("The Lion King @ Minskoff Theatre", n.d.). *The Lion King* received 11 nominations for the 1998 Tony Awards ("The Lion King Tony Award Info", n.d.) and won 6 Tony awards for Best Musical, Best Choreography, Best Direction of a Musical, Best Costume Design, Best Lighting Design, and Best Scenic Design ("The Lion King Tony Award Info", n.d.). The show also received recognition by the Drama Desk Awards, Drama League, New York Drama Critics' Circle, Outer Critics Circle, and Theatre World Awards (Playbill, n.d.). As of March 1, 2020, *The Lion King* has grossed $1,680,389,579, with an average ticket price of $107.24 and the average percentage of seats sold per show represented 97.69% of theatre capacity ("The Lion King @ Minskoff Theatre", n.d.). *The Lion King* created their official Twitter handle in September 2009.

Wicked

With 6,825 performances completed as of March 1, 2020, *Wicked* is the fifth longest-running musical in the history of Broadway ("Wicked @ Gershwin Theatre", n.d.; Broadway, n.d.). The current show opened on October 30, 2003 in the Gershwin Theatre ("Wicked @ Gershwin Theatre", n.d.). *Wicked* received 10 nominations for the 2004 Tony Awards ("Wicked Tony Awards Info", n.d.), and won 3 Tony awards for Best Actress in a Musical, Best Costume Design, and Best Scenic Design ("Wicked Tony Awards Info", n.d.). The show also received recognition by the Drama Desk Awards, Drama League, and Outer Critics Circle ("Wicked @ Gershwin Theatre", n.d.). As of March 1, 2020, *Wicked* has grossed $1,366,649,766, with an average ticket price of $111.53 and an the average percentage of seats sold per show represented 97.16% of theatre capacity ("Wicked @ Gershwin Theatre", n.d.). *Wicked* created their official Twitter handle in September 2009.

Mamma Mia!

With 5,758 total performances, *Mamma Mia!* is the ninth longest-running musical in the history of Broadway ("Mamma Mia! Broadway @ Winter Garden Theatre", n.d.; Broadway, n.d.). The show opened on October 18, 2001 in the Winter Garden Theatre and closed September 12, 2015 in the Broadhurst Theatre ("Mamma Mia! Broadway @ Winter Garden Theatre", n.d.). *Mamma Mia!* received 5 nominations for the 2002 Tony Awards ("Mamma Mia! Tony Awards Info", n.d.). The show also received recognition by the Drama Desk Awards, Drama League, Outer Critics Circle, and Theatre World Awards ("Mamma Mia! Broadway @ Winter Garden Theatre", n.d.). During its run, *Mamma Mia!* grossed $624,391,693 with an average ticket price of $82.23 and the average percentage of seats sold per show represented 89.73% of theatre capacity ("Mamma Mia! Broadway @ Winter Garden Theatre", n.d.). *Mamma Mia!* created their official Twitter handle in March 2009.

Jersey Boys

The jukebox musical *Jersey Boys* pays tribute to Frankie Valli & the Four Seasons. With 4,642 total performances, *Jersey Boys* is the twelfth longest-running musical in the history of Broadway ("Jersey Boys Broadway @ August Wilson Theatre", n.d.; Broadway, n.d.). The show opened on November 6, 2005 and closed January 15, 2017, spending its entire run in the August Wilson Theatre ("Jersey Boys Broadway @ August Wilson Theatre", n.d.). *Jersey Boys* received 8 nominations for the 2006 Tony Awards ("Jersey Boys Tony Awards Info", n.d.) and won 4 Tony awards for Best Musical, Best Actor in a Musical, Best Featured Actor in a Musical, and Best Lighting Design of a Musical ("Jersey Boys Tony Awards Info", n.d.). The show also received recognition by the Drama Desk Awards, Drama League, Outer Critics Circle, and Theatre World Awards ("Jersey Boys Broadway @ August Wilson Theatre", n.d.). During its

run, *Jersey Boys* grossed $558,416,084 with an average ticket price of $106.88 and the average percentage of seats sold per show represented 89.49% of theatre capacity ("Jersey Boys Broadway @ August Wilson Theatre", n.d.). *Jersey Boys* created their official Twitter handle in June 2009.

Data

I collected information about show produced-tweets and weekly ticket grosses to examine how the creation of a Twitter presence as well as how the number of tweets posted by a show in a given week might affect the amount of revenue generated by ticket sales in the subsequent week. In this subsection, I detail (1) my primary independent variables: having a Twitter account and number of tweets posted, (2) my dependent variable: weekly ticket grosses, and (3) the approach I took to gather data to address my research question.

Independent Variables: Twitter and Tweets

My first independent variable of interest is the creation of a Twitter account. Many Broadway shows are active on a plethora of social media platforms, such as Facebook, Instagram, YouTube, and Twitter. To examine the potential impact of social media marketing on weekly ticket grosses, I chose to focus specifically on Twitter because it is a communication-based platform that encourages conversations between users. Given that Broadway produces an experiential-based product, a platform that supports and archives conversations between fans and with the cast/creative team and that highlights elements of the show and the theatre going experience should be a strong marketing tool within the Broadway sector (Seymour, 2016).

My second independent variable of interest is the number of tweets posted on the Broadway show's official account in the week prior to the week of ticket gross in question ("# tweets_previous week"). For example: when looking at ticket grosses generated by *The Phantom*

of the Opera the week of July 10, 2011, the number 7 within the "# tweets_previous week" column represents the number of tweets posted by @PhantomBway the week of July 3, 2011. Used in this way, tweets serve as the metric of social media activity for each Broadway show. This variable is included in the thesis to measure the impact of the number of tweets on ticket purchasing decisions. Given that tweets are only lagged a week, this variable likely affects the purchasing decisions of people who live close enough to Broadway that they could buy tickets only one week in advance of the show date.

Dependent Variable: Weekly Ticket Gross

My dependent variable of interest is weekly ticket grosses because weekly ticket grosses allow Broadway shows to evaluate their relative success in attracting audiences to the theatre each week. A variety of factors from both the demand and supply side of Broadway are involved in determining the most lucrative ticket prices for generating weekly grosses. These factors are important to understand when interpreting trends in weekly ticket grosses. From the demand side, patrons must be motivated to go to the theatre and demonstrate a willingness to pay for tickets to see certain shows. Dynamic pricing is one technique used by all Broadway shows to optimize their potential revenue based on demand. When using dynamic pricing, shows adjust their ticket prices to reflect the changes in demand for seats in different sections of the theatre as well as for performances on different days of the week (Paulson, 2017). This pricing strategy can possibly account for some of the trends in weekly ticket grosses.

From the supply side, Broadway shows are limited in the amount of tickets that are able to sell because Broadway shows run a fixed 8 performances a week, and the largest theatres on Broadway have the capacity to fit up to 2,000 people ("No business like show business", 2016). This scarcity in supply, however, allows some Broadway shows to set an elevated ticket price as

compared to other forms of entertainment. Sought-after shows can truly leverage the disparity between supply and demand to set a ticket price that will optimize revenue; for example: Hamilton has an average Broadway ticket price of $249.00 which is much larger than the industry wide average of about $116.00 ("Hamilton @ Richard Rogers Theatre", n.d.).

Data Collection

The data collection process consisted of pulling tweets, gathering weekly ticket grosses, and combining the data for all six Broadway shows into an integrated Excel worksheet. To pull tweets for each Broadway show, I worked with the Kenan Center Data Scientist, David Fisher. The process of scraping tweets consisted of first applying for Twitter Application Programming Interfaces (API) access from Twitter. After Twitter API approval was granted from Twitter, the "Full Archive" tweet search was used to request access to tweets spanning two years after each respective show created a Twitter account. At completion, 5,828 tweets were gathered in relation to six long-running Broadway shows: 1,554 tweets for *The Phantom of the Opera*, 1,739 tweets for *Chicago*, 396 tweets for *The Lion King*, 1,100 tweets for *Wicked*, 402 tweets for *Mamma Mia!*, and 637 tweets for *Jersey Boys*. I then sorted the tweets by the week they were posted to provide counts for the independent variable: "# tweets_previous week".

To gather weekly ticket grosses, I went to the Broadway League's official website. The Broadway League is a national trade association for the Broadway industry. The League has archived information about weekly ticket grosses, attendance, and percentage of theatre capacity filled per performance for every Broadway show since 1984. For each show, I pulled ticket grosses spanning approximately five years: two years prior to the show's creation of a Twitter account, the year the show created a Twitter account, and two years after the show established a Twitter account.

After gathering both sets of data, I organized an Excel worksheet in which I combined data for all six Broadway shows (See Appendix A). In organizing the worksheet, I had five major sections: Week, Broadway shows, Seasonality, ticket grosses, and # tweets_week prior.
The column "Week" contained the dates that the other information in the row represented. The section "Broadway shows" consisted of five dummy variables that represented the six Broadway shows featured in this research, with *Jersey Boys* serving as the base case. The section "Seasonality" consisted of three dummy variables that represented the four seasons in which the week of shows could have taken place (Summer: June, July, August; Fall: September, October, November; Winter: December, January, February; and Spring: March, April, May), with fall serving as the base case. The column "ticket grosses" represented the amount of revenue the show made that week. The column "# tweets_week prior" represented the number of tweets posted by the show's official handle in the week prior to the week for which revenues are reported

Analytical Models & Data Analysis

In this subsection, I describe the analytical models chosen for this study: (1) Difference-in-Difference Estimation and (2) Multiple Regression Analysis and how I used these models in Excel to analyze my data.

Difference-in-Difference Estimation

Difference-in-difference estimation is an analytical tool that mimics the format of an experiment. Within this quasi-experimental design, longitudinal data from treatment and control groups is used to estimate the causal effect of a specific intervention.

Difference-in-difference estimation is calculated using four variables:

- (A) represents the baseline average for the treatment group prior to the intervention

- (B) represents the baseline average for the control group prior to the intervention
- (C) represent the average for the treatment group after the intervention
- (D) represents the average for the control group after the period in which the intervention is applied to the treatment group.

The difference in changes over time can then be calculated with the following formula:

$$\text{Difference-in-difference estimation} = (C-A) - (D-B)$$

In my thesis, difference-in-difference estimations are used to gauge the causal effect of the establishment of a Broadway show twitter presence on weekly ticket grosses. A positive difference-in-difference value would reflect that the presence of a Twitter account has a positive impact on weekly ticket grosses, and vice versa for a negative value. When using this tool, I paired shows that had relatively parallel trends in weekly ticket grosses during the pre-treatment period. I assigned one show to be the treatment group and one show to be the control group. The intervention was defined as the creation of a Twitter presence by the show assigned to be the treatment group.

- (A) represented the average weekly ticket grosses for the treatment show before it established a Twitter account.
- (B) represented the average weekly ticket grosses for the control show before the treatment show established a Twitter account.
- (C) represented the average weekly ticket grosses for the treatment show after it established a Twitter account.
- (D) represented the average weekly ticket grosses for the control show after the period of time in which the treatment show established a Twitter account.

Multiple Regression Analysis

Multiple regression analysis is used to explain the possible relationships between a dependent variable and two or more independent variables. The dependent variable is typically continuous in nature while the independent variables can be either continuous or categorical. Multiple regression analysis has the capacity to forecast the impact of an independent variable on a dependent variable as well as predict trends in the future values of the dependent variable. The multiple regression output provides the percent variance in the dependent variable that is explained by the independent variables (R^2), the incremental impact of the independent variables (coefficients) among other data, and the independent variables that have a significant impact on the dependent variable (p-value).

I used a multiple regression analysis to examine the joint impact of multiple independent variables on weekly ticket grosses. The multiple regression analysis has three independent variables—Broadway show, Seasonality, and "# tweets_week prior" —and one dependent variable—weekly ticket grosses. I included seasonality in the analysis because it historically is an influential factor in determining ticket sales (i.e. ticket sales are usually higher in the summer and during the holiday season). Broadway shows and seasonality were represented as indicator variables, resulting in a baseline configuration that is productions of Jersey Boys that took place in the Fall (September, October, November). The volume of tweets ("# tweets_week prior") was represented as a continuous variable.

Results

In order to provide a comprehensive understanding of the extent to which Twitter affects ticket revenues of Broadway shows, I chose to separate my primary research question into two distinct sub-questions:

(1) Does having a Twitter account affect a Broadway show's average weekly ticket gross?

(2) Does the number of tweets affect a Broadway show's weekly ticket gross?

My results are divided into two sections: (1) the results of the difference-in-difference estimations and (2) the results of the aggregate multiple regression analysis.

Difference-in-Difference Estimation

The difference-in-difference analysis was used to gauge the effect that the creation of a Twitter account had on weekly ticket sales. I performed a difference-in-difference estimation for five of the six Broadway shows in my sample to gauge the individualized impact of a Twitter account on each show. *The Phantom of the Opera* was not included in the difference-in-difference estimation because the show created a Twitter account approximately two years after all of the other shows in the sample. There would have been no difference between the pre-treatment and post-treatment data of the control group, resulting in a difference-in-difference estimation value that would have not been an accurate representation of the effect of a Twitter account on weekly ticket grosses.

(1) *Chicago* and *Jersey Boys* were paired for a difference-in-difference estimation because they had relatively parallel trends in weekly ticket grosses during the pre-treatment period (the time period before *Chicago* established a Twitter account). *Chicago* was designated as the treatment group and *Jersey Boys* was designated as the control group. *Chicago* established a Twitter account in March 2009, so the pre-treatment data was pulled from March 2007 to February 2009 and the post-treatment data was pulled from April 2009 to March 2011. The resulting value of the difference-in-difference analysis was 8.66% indicating that weekly ticket grosses increased on average 8.66% over the course of the two years after *Chicago* created a Twitter account. The calculations are further detailed in *Table 4.1* below.

Table 4.1

Difference-in-Difference Estimation: Chicago

Diff-in-Diff: **Chicago**			
Chicago		Jersey Boys	
Twitter Creation Date:	Mar-09		
Before [A]	$488,221.05	Before [B]	$1,169,069.50
After [C]	$539,154.99	After [D]	$1,085,690.54
Total (A+C)	$1,025,532.74	Total (B+D)	$2,254,760.04
Before [A/(A+C)]	47.61%	Before [B/(B+D)]	51.85%
After [C/(A+C)]	52.57%	After [D/(B+D)]	48.15%
Difference (C-A)	4.97%	Difference (D-B)	-3.70%
Difference [(C-A)-(D-B)]	8.66%		

(2) *The Lion King* and *Mamma Mia!* were paired for a difference-in-difference estimation because they had relatively parallel trends in weekly ticket grosses during the pre-treatment period (the time period before *The Lion King* established a Twitter account). The *Lion King* was designated as the treatment group and *Mamma Mia!* was designated as the control group. *The Lion King* established a Twitter account in September 2009, so the pre-treatment data was pulled from September 2007 to August 2009 and the post-treatment data was pulled from October 2009 to September 2011. Because *Mamma Mia!* established a Twitter account in March 2009, I excluded March 2009 through August 2009 from the show's pre-treatment data. The resulting value of the difference-in-difference analysis was 15.77%, indicating that weekly ticket grosses increased on average 15.77% over the course of the two years after *The Lion King* created a Twitter account. The calculations are further detailed in *Table 4.2* below.

Table 4.2

Difference-in-Difference Estimation: The Lion King

Diff-in-Diff: **The Lion King**			
The Lion King		Mamma Mia!	
Twitter Creation Date:	Sep-09		
Before [A]	$1,169,660.32	Before [B]	$899,734.86
After [C]	$1,470,706.73	After [D]	$824,364.91
Total (A+C)	$2,640,367.05	Total (B+D)	$1,724,099.77
Before [A/(A+C)]	44.30%	Before [B/(B+D)]	52.19%
After [C/(A+C)]	55.70%	After [D/(B+D)]	47.81%
Difference (C-A)	11.40%	Difference (D-B)	-4.37%
Difference [(C-A)-(D-B)]	15.77%		

(3) *Wicked* and *Mamma Mia!* were paired for a difference-in-difference estimation because they had relatively parallel trends in weekly ticket grosses during the pre-treatment period (the time period before *Wicked* established a Twitter account). *Wicked* was designated as the treatment group and *Mamma Mia!* was designated as the control group. *Wicked* established a Twitter account in September 2009, so the pre-treatment data was pulled from September 2007 to August 2009 and the post-treatment data was pulled from October 2009 to September 2011. Because *Mamma Mia!* established a Twitter account in March 2009, I excluded March 2009 through August 2009 from the show's pre-treatment data. The resulting value of the difference-in-difference analysis was 9.82%, indicating that weekly ticket grosses increased on average 9.82% over the course of the two years after *Wicked* created a Twitter account. The calculations are further detailed in *Table 4.3* below.

Table 4.3

Difference-in-Difference Estimation: Wicked

Diff-in-Diff: **Wicked**			
Wicked		Mamma Mia!	
Twitter Creation Date:	Sep-09		
Before [A]	$1,449,746.77	Before [B]	$899,734.86
After [C]	$1,616,706.04	After [D]	$824,364.91
Total (A+C)	$3,066,452.81	Total (B+D)	$1,724,099.77
Before [A/(A+C)]	47.28%	Before [B/(B+D)]	52.19%
After [C/(A+C)]	52.72%	After [D/(B+D)]	47.81%
Difference (C-A)	5.44%	Difference (D-B)	-4%
Difference [(C-A)-(D-B)]	9.82%		

(4) *Mamma Mia!* and *The Lion King* were paired for a difference-in-difference estimation because they had parallel trends in weekly ticket grosses during the pre-treatment period (the time period before *Mamma Mia!* established a Twitter account). *Mamma Mia!* was designated as the treatment group and *The Lion King* was designated as the control group. *Mamma Mia!* established a Twitter account in March 2009, so the pre-treatment data was pulled from March 2007 to February 2009 and the post-treatment data was pulled from April 2009 to March 2011. The resulting value of the difference-in-difference analysis was -14.63%, indicating that weekly ticket grosses decreased on average -14.63% over the course of the two years after *Mamma Mia!* created a Twitter account. The calculations are further detailed in *Table 4.4* below.

Table 4.4

Difference-in-Difference Estimation: Mamma Mia!

Diff-in-Diff: **Mamma Mia!**			
Mamma Mia!		The Lion King	
Twitter Creation Date:	Mar-09		
Before [A]	$902,108.01	Before [B]	$1,160,733.66
After [C]	$861,914.15	After [D]	$1,488,025.13
Total (A+C)	$1,764,022.16	Total (B+D)	$2,648,758.79
Before [A/(A+C)]	51.14%	Before [B/(B+D)]	43.82%
After [C/(A+C)]	48.86%	After [D/(B+D)]	56.18%
Difference (C-A)	-2.28%	Difference (D-B)	12%
Difference [(C-A)-(D-B)]	-14.63%		

(5) *Jersey Boys* and *Chicago* were paired for a difference-in-difference estimation because they had relatively parallel trends in weekly ticket grosses during the pre-treatment period (the time period before *Jersey Boys* established a Twitter account). *Jersey Boy* was designated as the treatment group and *Chicago* was designated as the control group. *Jersey Boys* established a Twitter account in June 2009, so the pre-treatment data was pulled from June 2007 to May 2009 and the post-treatment data was pulled from July 2009 to June 2011. Because *Chicago* established a Twitter account in March 2009, I excluded March 2009 through May 2009 from the show's pre-treatment data. The resulting value of the difference-in-difference analysis was -7.69% indicating that weekly ticket grosses decreased on average 7.69% over the course of the two years after *Jersey Boys* created a Twitter account. The calculations are further detailed in *Table 4.5* below.

Table 4.5

Difference-in-Difference Estimation: Jersey Boys

Diff-in-Diff: **Jersey Boys**			
Jersey Boys		Chicago	
Twitter Creation Date:	Jun-09		
Before [A]	$1,128,515.63	Before [B]	$482,754.76
After [C]	$1,082,541.77	After [D]	$540,111.72
Total (A+C)	$2,211,057.40	Total (B+D)	$1,022,866.49
Before [A/(A+C)]	51.04%	Before [B/(B+D)]	47.20%
After [C/(A+C)]	48.96%	After [D/(B+D)]	52.80%
Difference (C-A)	-2.08%	Difference (D-B)	6%
Difference [(C-A)-(D-B)]	-7.69%		

Multiple Regression Analysis

My multiple regression analysis was used to gauge the joint impact of three independent variables—the Broadway show, seasonality, and the number of tweets posted on the show's official Twitter account in the week prior to the week of interest—on Broadway show weekly ticket grosses. I performed this analysis on the aggregate level (Table 4.6) to be able to report on potentially significant findings that might be influential across the six Broadway shows.

Table 4.6

Multiple regression analysis of aggregate data

SUMMARY OUTPUT: Multiple Regression

Regression Statistics	
Multiple R	0.90
R Square	0.82
Adjusted R Square	0.81
Standard Error	178521.78
Observations	798

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1025980.14	18765.46	54.67	0.00	989143.95	1062816.34	989143.95	1062816.34
Phantom of the Opera	-136853.86	21924.14	-6.24	0.00	-179890.48	-93817.23	-179890.48	-93817.23
Chicago	-529438.78	22087.30	-23.97	0.00	-572795.69	-486081.86	-572795.69	-486081.86
The Lion King	442487.89	22684.95	19.51	0.00	397957.82	487017.97	397957.82	487017.97
Wicked	575435.28	22866.80	25.16	0.00	530548.23	620322.33	530548.23	620322.33
Mamma Mia	-222263.45	21636.52	-10.27	0.00	-264735.49	-179791.40	-264735.49	-179791.40
Summer	84192.48	17259.82	4.88	0.00	50311.81	118073.15	50311.81	118073.15
Spring	39700.54	17825.18	2.23	0.03	4710.09	74690.99	4710.09	74690.99
Winter	19076.05	17710.67	1.08	0.28	-15689.62	53841.72	-15689.62	53841.72
# tweets week prior	501.43	641.93	0.78	0.43	-758.67	1761.52	-758.67	1761.52

The R squared value of this data is 0.82, indicating that 82% of the variance in weekly ticket grosses is explained by the joint impact of the independent variables.

The coefficients indicate the relative impact that each independent variable has on weekly ticket grosses as compared to the base case (productions of Jersey Boys that took place in the Fall). The coefficients are detailed below:

(1) Broadway shows: The coefficients for Broadway shows provide insight into the comparative average ticket revenue generating capabilities of each show.

   a. *Phantom of the Opera*: The coefficient of -136,853.86 indicates that, compared to the base case, *Phantom of the Opera* makes $136,853.86 less in ticket grosses per week.

   b. *Chicago*: The coefficient of -529,438.78 indicates that, compared to the base case, *Chicago* makes $529,438.78 less in ticket grosses per week.

   c. *The Lion King*: The coefficient of 442,487.89 indicates that, compared to the base case, *The Lion King* makes $442,487.89 more in ticket grosses per week.

   d. *Wicked*: The coefficient of 575,435.28 indicates that, compared to the base case, *Wicked* makes $575,435.28 more in ticket grosses per week.

   e. *Mamma Mia*!: The coefficient of -222,263.45 indicates that, compared to the base case, *Mamma Mia!* makes $222,263.45 less in ticket grosses per week.

(2) Seasonality: The coefficients for seasonality provide insight into the comparative effects the different seasons have on ticket revenue.

   a. *Summer*: The coefficient of 84,192.48 indicates that, compared to the base case, shows in the summer season make $84,192.48 more in ticket grosses per week.

   b. *Spring*: The coefficient of 39,700.54 indicates that, compared to the base case, shows in the spring season make $39,700.54 more in ticket grosses per week.

c. *Winter*: The coefficient of 19,076.05 indicates that, compared to the base case, shows in the winter season make $19,076.05 more in ticket grosses per week.

(3) Volume of Tweets: The coefficient of 501.43 for the variable # tweets_week prior indicates that weekly ticket grosses increases by $501.43 every time the number of tweets posted in the week prior to the week of interest increases by 1.

The P-value indicates the statistical significance of each independent variable's impact on weekly ticket grosses. Given that the number of tweets in the week prior is my primary independent variable of interest, the p-value of this variable is particularly important. The 0.43 p-value means that the number of tweets posted in the week prior does not have a statistically significant impact on weekly ticket grosses.

Discussion

In this section, I discuss (1) the results from the difference-in-difference estimations and multiple regression analysis, (2) weaknesses in the design of the methodology of my study, and (3) possible avenues for future social media research within the performing arts industry.

Results

The two analytical models used in this study—difference-in-difference estimation and multiple regression analysis—provide information regarding the potential importance of Twitter when marketing a Broadway show. The difference-in-difference estimation values represent the impact that the creation of a Twitter account has on a show's average weekly ticket grosses. The multiple regression analysis enumerates the impact that the number of tweets posted by a show has on weekly ticket grosses. The results of the difference-in-difference estimations indicate that three out of the five Broadway shows in the sample saw an increase in their average weekly ticket grosses after the creation of a Twitter account. The results of the multiple regression analysis indicate that the number of tweets posted did not have a significant impact on weekly ticket grosses for the shows in aggregate. Overall, the findings suggest that Twitter and volume of tweets do not appear to be strong drivers of ticket sales for the shows in my sample. This result may have occurred because people have to opt in to a show's Twitter account, by "following" the account, to see the tweets posted by that Broadway show. A show may not experience an increase in brand awareness or ticket revenue because the show is marketing to a pre-existing fan base that likely has already seen or has planned to see the show.

In interpreting the significance of these results, I must acknowledge that some of the assumptions required to interpret the results of these methodologies may impact the validity of the findings. In regard to the difference-in-difference estimation, I assumed that the launch of a

Broadway show's Twitter account was not associated with any other promotional activities, such as the creation of a Facebook or Instagram account. However, the creation of a Twitter account was likely an endogenous variable within a show's marketing strategy. In regard to the multiple regression analysis, I assumed that the number of tweets posted in the week prior to the revenue measure had the same effect on all of the shows in the sample. However, the impact of the number of tweets likely differed across shows as a result of variables such as degree of show recognition.

Weaknesses in the Study

By testing the impact of Twitter only on weekly ticket grosses, I have ignored the possible impact of other relevant social media platforms—such as Facebook, Instagram, YouTube, and Snapchat—as well as the joint impact of these various social media platforms on a show's success. Each social media platform plays a distinct role within a Broadway show's marketing strategy. For example, Facebook is one of the most widely used social media platforms and responsible for approximately 71% of the traffic driven to a Broadway show's website from social media ("Social Media Fact Sheet", 2019; Seymour, 2016). Instagram and Snapchat are both platforms that are well designed for posting and sharing videos, allowing for Broadway music videos to become a popular piece of social media content (Criscitiello, 2017). Each social media platform also caters to a distinct target audience. Facebook attracts the stereotypical Broadway ticket buyer: female, Caucasian, 40-45 years old, high socioeconomic standing ("The Demographics of the Broadway Audience 2018-2019 Season", n.d.). Conversely, Twitter and Instagram both have a user base that skews younger, more diverse, and less financially stable (Seymour, 2016). By exclusively focusing on Twitter, I overlook the impact

that a well-rounded social media presence can have on promoting diverse content and capturing mass appeal.

By specifically testing the impact of individual tweets on weekly ticket grosses, I am categorizing Twitter as a sales platform and holding it to the standards of measurement dictated by direct response marketing (Seymour, 2016). I am setting the expectation that Twitter is an algorithm that pushes content designed to urge users to take action by opting in to a ticket offer to come see a show. Although some of the tweets posted by the six Broadway shows in my subsample did feature persuasive call to actions and the links to buy tickets, Twitter might be better judged by the standards set for traditional advertising than for traceable sales (Seymour, 2016). When configuring a social media marketing strategy, Broadway shows should keep in mind that content posted on Twitter functions best as an entry point that generates awareness, interest, and potential leads that—further down the marketing funnel—could possibly be converted into concrete purchases.

Future Research

Future research in this area has the opportunity to improve upon these two areas of weakness in the study. My first recommendation for future social media research focused on the Broadway industry is to expand upon this methodology to include data from other relevant social media platforms, such as Facebook, Instagram, YouTube, and Snapchat. Given the knowledge that most Broadway shows use multiple platforms when promoting a show, such an approach to analysis might provide a more comprehensive understanding of the effect of social media on ticket sales as well as the potential social media return on investment in the Broadway sector. To perform this research, I would recommend applying a longitudinal approach in which an independent variable of interest that is applicable to all of the social media platforms—such as

number of followers/subscribers —is measured over a designated period of time. Using this data, I would then perform a multiple regression analysis to gauge the joint impact of social media on ticket sales. The detailed results could possibly provide Broadway shows with a better understanding of how social media engagement and an online fan base translates into ticket sales.

My second recommendation for future social media research is to identify independent variables that better capture the value that each social media platform might contribute when marketing a show. In my study, I used volume of tweets as my primary independent variable to measure the effectiveness of Twitter in increasing weekly ticket grosses. This specific independent variable possibly proved to be problematic when studying Twitter because the value of Twitter lies in being a platform that supports communication between users. The volume of tweets posted does not provide any information regarding whether or not Twitter is succeeding in its primary purpose as a communication platform. Independent variables that may be better suited for Twitter are average number of user comments or likes on a show's post to gauge engagement or the average number of times a show's hashtag is used. When performing future research, I would recommend identifying and defining the purpose of each social media platform in marketing a show and then choose independent variables accordingly. This approach will allow a more accurate depiction of the importance of a social media platform within a Broadway show's marketing strategy.

My third recommendation is to expand the sample of shows used when analyzing the impact of social media marketing on the performing arts sector. My thesis focused on the impact of Twitter on long-running Broadway shows, which limits the generalizability of the results to shows with such track records. Future researchers could build on this study by including limited

run and/or lesser-known shows in their samples. Given that these shows do not have the name recognition or marketing reach of a long-running Broadway show, researchers may find the impact of Twitter on weekly ticket grosses to be more significant. Furthermore, the insights gained regarding social media return on investment also help smaller performing arts organizations decide how best to allocate their limited marketing budget.

Conclusion

In a 2009 interview with the New York Times, Brian Yorkey—who wrote the book and lyrics for the Broadway show *Next to Normal*—praised Twitter following the success of the *Next to Normal* Twitter campaign outlined earlier in this thesis. He writes:

> In the process of this I became a Twitter convert, and I don't say that lightly. I'm always a little skeptical of whatever next new big thing comes out. I know that all of the half million followers are not equally engaged, but to think that we can have a relationship with an audience this size—far more than will ever see the show live—feels really new to me. (Newman, 2009)

This quote emphasizes the power of Twitter in its capability to make Broadway content accessible to a greater range of people—no matter their gender, ethnicity, location, or socioeconomic status. By eliminating some barriers to content, social media has allowed Broadway shows to engage an audience that is different from their standard patron base.

The purpose of this thesis was to take an in-depth look at the possible monetary significance of Twitter engagement by asking: *To what extent does the use of Twitter affect the ticket revenues of Broadway shows?* The results of analyzing the Twitter presence, tweets and weekly ticket grosses of six Broadway shows—*The Phantom of the Opera*, *Chicago*, *The Lion King*, *Wicked*, *Mamma Mia!,* and *Jersey Boys*— indicate that Twitter and volume of tweets likely do not have a discernable impact on ticket sales. Future research should expand upon the ideas raised in this thesis by conducting studies that are focused on understanding the social media return on investment within the Broadway industry.

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APPENDIX

APPENDIX A

Broadway shows data Excel worksheet

	Broadway Shows					Seasonality				
Week	Phantom of the Opera	Chicago	The Lion King	Wicked	Mamma Mia	Summer	Spring	Winter	Ticket Grosses	# tweets_week prior
4/3/11	1	0	0	0	0	0	1	0	871,091.00	0
4/10/11	1	0	0	0	0	0	1	0	844,979.00	0
4/17/11	1	0	0	0	0	0	1	0	877,438.00	0
4/24/11	1	0	0	0	0	0	1	0	1,325,964.00	0
5/1/11	1	0	0	0	0	0	1	0	952,171.00	0
5/8/11	1	0	0	0	0	0	1	0	877,716.00	0
5/15/11	1	0	0	0	0	0	1	0	819,388.00	0
5/22/11	1	0	0	0	0	0	1	0	991,756.00	0
5/29/11	1	0	0	0	0	0	1	0	944,855.00	0
6/5/11	1	0	0	0	0	1	0	0	806,956.00	0
6/12/11	1	0	0	0	0	1	0	0	894,974.00	0
6/19/11	1	0	0	0	0	1	0	0	914,213.00	0
6/26/11	1	0	0	0	0	1	0	0	1,006,430.00	0
7/3/11	1	0	0	0	0	1	0	0	926,045.00	0
7/10/11	1	0	0	0	0	1	0	0	931,783.00	7
7/17/11	1	0	0	0	0	1	0	0	990,002.00	9
7/24/11	1	0	0	0	0	1	0	0	1,026,795.00	6
7/31/11	1	0	0	0	0	1	0	0	1,006,176.00	17
8/7/11	1	0	0	0	0	1	0	0	999,773.00	16
8/14/11	1	0	0	0	0	1	0	0	986,477.00	19
8/21/11	1	0	0	0	0	1	0	0	899,120.00	32
8/28/11	1	0	0	0	0	1	0	0	607,372.00	10
9/4/11	1	0	0	0	0	0	0	0	762,551.00	28
9/11/11	1	0	0	0	0	0	0	0	644,832.00	17
9/18/11	1	0	0	0	0	0	0	0	711,060.00	15
9/25/11	1	0	0	0	0	0	0	0	833,171.00	6
10/2/11	1	0	0	0	0	0	0	0	806,189.00	28
10/9/11	1	0	0	0	0	0	0	0	849,480.00	12
10/16/11	1	0	0	0	0	0	0	0	898,830.00	5
10/23/11	1	0	0	0	0	0	0	0	901,756.00	10
10/30/11	1	0	0	0	0	0	0	0	827,073.00	13
11/6/11	1	0	0	0	0	0	0	0	754,279.00	6
11/13/11	1	0	0	0	0	0	0	0	806,818.00	8

11/20/11	1	0	0	0	0	0	0	0	647,460.00	8
11/27/11	1	0	0	0	0	0	0	0	1,118,532.00	3
12/4/11	1	0	0	0	0	0	0	1	701,171.00	11
12/11/11	1	0	0	0	0	0	0	1	806,048.00	18
12/18/11	1	0	0	0	0	0	0	1	765,267.00	10
12/25/11	1	0	0	0	0	0	0	1	1,038,045.00	6
1/1/12	1	0	0	0	0	0	0	1	1,579,428.00	3
1/8/12	1	0	0	0	0	0	0	1	913,022.00	11
1/15/12	1	0	0	0	0	0	0	1	779,751.00	10
1/22/12	1	0	0	0	0	0	0	1	684,134.00	8
1/29/12	1	0	0	0	0	0	0	1	654,734.00	14
2/5/12	1	0	0	0	0	0	0	1	638,467.00	5
2/12/12	1	0	0	0	0	0	0	1	604,378.00	27
2/19/12	1	0	0	0	0	0	0	1	804,109.00	6
2/26/12	1	0	0	0	0	0	0	1	985,906.00	7
3/4/12	1	0	0	0	0	0	1	0	621,644.00	12
3/11/12	1	0	0	0	0	0	1	0	767,945.00	8
3/18/12	1	0	0	0	0	0	1	0	1,012,149.00	10
3/25/12	1	0	0	0	0	0	1	0	941,101.00	9
4/1/12	1	0	0	0	0	0	1	0	972,899.00	7
4/8/12	1	0	0	0	0	0	1	0	1,262,881.00	7
4/15/12	1	0	0	0	0	0	1	0	1,134,951.00	6
4/22/12	1	0	0	0	0	0	1	0	836,141.00	7
4/29/12	1	0	0	0	0	0	1	0	890,181.00	11
5/6/12	1	0	0	0	0	0	1	0	893,609.00	9
5/13/12	1	0	0	0	0	0	1	0	800,916.00	7
5/20/12	1	0	0	0	0	0	1	0	935,358.00	6
5/27/12	1	0	0	0	0	0	1	0	991,815.00	8
6/3/12	1	0	0	0	0	1	0	0	887,413.00	21
6/10/12	1	0	0	0	0	1	0	0	873,562.00	9
6/17/12	1	0	0	0	0	1	0	0	870,975.00	5
6/24/12	1	0	0	0	0	1	0	0	890,564.00	7
7/1/12	1	0	0	0	0	1	0	0	889,043.00	6
7/8/12	1	0	0	0	0	1	0	0	938,917.00	14
7/15/12	1	0	0	0	0	1	0	0	914,957.00	9
7/22/12	1	0	0	0	0	1	0	0	1,022,487.00	8
7/29/12	1	0	0	0	0	1	0	0	1,016,697.00	10
8/5/12	1	0	0	0	0	1	0	0	979,594.00	15
8/12/12	1	0	0	0	0	1	0	0	991,092.00	10
8/19/12	1	0	0	0	0	1	0	0	925,633.00	16
8/26/12	1	0	0	0	0	1	0	0	884,788.00	11

9/2/12	1	0	0	0	0	0	0	0	829,029.00	8
9/9/12	1	0	0	0	0	0	0	0	829,896.00	11
9/16/12	1	0	0	0	0	0	0	0	864,177.00	10
9/23/12	1	0	0	0	0	0	0	0	803,236.00	8
9/30/12	1	0	0	0	0	0	0	0	853,340.00	10
10/7/12	1	0	0	0	0	0	0	0	975,303.00	10
10/14/12	1	0	0	0	0	0	0	0	912,429.00	14
10/21/12	1	0	0	0	0	0	0	0	899,485.00	22
10/28/12	1	0	0	0	0	0	0	0	833,059.00	17
11/4/12	1	0	0	0	0	0	0	0	505,593.00	9
11/11/12	1	0	0	0	0	0	0	0	647,157.00	9
11/18/12	1	0	0	0	0	0	0	0	659,195.00	10
11/25/12	1	0	0	0	0	0	0	0	1,125,470.00	7
12/2/12	1	0	0	0	0	0	0	1	682,365.00	6
12/9/12	1	0	0	0	0	0	0	1	758,912.00	8
12/16/12	1	0	0	0	0	0	0	1	757,858.00	9
12/23/12	1	0	0	0	0	0	0	1	978,948.00	11
12/30/12	1	0	0	0	0	0	0	1	1,751,458.00	13
1/6/13	1	0	0	0	0	0	0	1	1,052,613.00	22
1/13/13	1	0	0	0	0	0	0	1	762,638.00	11
1/20/13	1	0	0	0	0	0	0	1	722,379.00	9
1/27/13	1	0	0	0	0	0	0	1	572,561.00	36
2/3/13	1	0	0	0	0	0	0	1	748,949.00	58
2/10/13	1	0	0	0	0	0	0	1	684,437.00	9
2/17/13	1	0	0	0	0	0	0	1	929,435.00	12
2/24/13	1	0	0	0	0	0	0	1	950,908.00	11
3/3/13	1	0	0	0	0	0	1	0	787,625.00	10
3/10/13	1	0	0	0	0	0	1	0	864,609.00	8
3/17/13	1	0	0	0	0	0	1	0	1,065,032.00	14
3/24/13	1	0	0	0	0	0	1	0	1,042,563.00	11
3/31/13	1	0	0	0	0	0	1	0	1,562,855.00	9
4/7/13	1	0	0	0	0	0	1	0	1,368,904.00	9
4/14/13	1	0	0	0	0	0	1	0	958,802.00	6
4/21/13	1	0	0	0	0	0	1	0	952,478.00	7
4/28/13	1	0	0	0	0	0	1	0	985,895.00	12
5/5/13	1	0	0	0	0	0	1	0	1,091,887.00	8
5/12/13	1	0	0	0	0	0	1	0	1,039,572.00	16
5/19/13	1	0	0	0	0	0	1	0	1,078,051.00	10
5/26/13	1	0	0	0	0	0	1	0	1,174,102.00	7
6/2/13	1	0	0	0	0	1	0	0	1,100,715.00	7
6/9/13	1	0	0	0	0	1	0	0	1,010,069.00	15

6/16/13	1	0	0	0	0	1	0	0	1,097,933.00	13
6/23/13	1	0	0	0	0	1	0	0	1,103,158.00	8
6/30/13	1	0	0	0	0	1	0	0	1,124,860.00	11
7/7/13	1	0	0	0	0	1	0	0	1,158,635.00	15
7/14/13	1	0	0	0	0	1	0	0	1,101,647.00	8
7/21/13	1	0	0	0	0	1	0	0	1,147,544.00	11
7/28/13	1	0	0	0	0	1	0	0	1,173,574.00	13
8/4/13	1	0	0	0	0	1	0	0	1,182,528.00	11
8/11/13	1	0	0	0	0	1	0	0	1,232,628.00	13
8/18/13	1	0	0	0	0	1	0	0	1,167,085.00	9
8/25/13	1	0	0	0	0	1	0	0	1,068,863.00	12
9/1/13	1	0	0	0	0	0	0	0	958,454.00	9
9/8/13	1	0	0	0	0	0	0	0	894,516.00	9
9/15/13	1	0	0	0	0	0	0	0	898,375.00	7
9/22/13	1	0	0	0	0	0	0	0	896,703.00	29
9/29/13	1	0	0	0	0	0	0	0	848,934.00	11
10/6/13	1	0	0	0	0	0	0	0	850,637.00	9
10/13/13	1	0	0	0	0	0	0	0	1,023,947.00	11
10/20/13	1	0	0	0	0	0	0	0	1,044,707.00	13
10/27/13	1	0	0	0	0	0	0	0	960,578.00	10
11/3/13	1	0	0	0	0	0	0	0	836,302.00	13
11/10/13	1	0	0	0	0	0	0	0	790,698.00	7
11/17/13	1	0	0	0	0	0	0	0	731,704.00	8
11/24/13	1	0	0	0	0	0	0	0	702,263.00	10
12/1/13	1	0	0	0	0	0	0	1	1,220,246.00	12
12/8/13	1	0	0	0	0	0	0	1	863,893.00	10
12/15/13	1	0	0	0	0	0	0	1	809,501.00	31
12/22/13	1	0	0	0	0	0	0	1	1,005,309.00	43
12/29/13	1	0	0	0	0	0	0	1	1,843,296.00	20
10/4/09	0	0	0	1	0	0	0	0	1,470,532.00	0
10/11/09	0	0	0	1	0	0	0	0	1,552,645.00	0
10/18/09	0	0	0	1	0	0	0	0	1,554,561.00	0
10/25/09	0	0	0	1	0	0	0	0	1,525,772.00	0
11/1/09	0	0	0	1	0	0	0	0	1,489,548.00	0
11/8/09	0	0	0	1	0	0	0	0	1,511,167.00	0
11/15/09	0	0	0	1	0	0	0	0	1,549,328.00	0
11/22/09	0	0	0	1	0	0	0	0	1,430,006.00	0
11/29/09	0	0	0	1	0	0	0	0	2,086,135.00	0
12/6/09	0	0	0	1	0	0	0	1	1,535,600.00	0
12/13/09	0	0	0	1	0	0	0	1	1,624,400.00	0
12/20/09	0	0	0	1	0	0	0	1	1,604,791.00	0

12/27/09	0	0	0	1	0	0	0	1	2,092,745.00	0
1/3/10	0	0	0	1	0	0	0	1	2,125,740.00	0
1/10/10	0	0	0	1	0	0	0	1	1,539,959.00	0
1/17/10	0	0	0	1	0	0	0	1	1,460,131.00	0
1/24/10	0	0	0	1	0	0	0	1	1,377,097.00	0
1/31/10	0	0	0	1	0	0	0	1	1,337,056.00	0
2/7/10	0	0	0	1	0	0	0	1	1,285,902.00	0
2/14/10	0	0	0	1	0	0	0	1	1,359,810.00	0
2/21/10	0	0	0	1	0	0	0	1	1,602,783.00	0
2/28/10	0	0	0	1	0	0	0	1	1,353,808.00	0
3/7/10	0	0	0	1	0	0	1	0	1,337,882.00	0
3/14/10	0	0	0	1	0	0	1	0	1,505,286.00	0
3/21/10	0	0	0	1	0	0	1	0	1,583,765.00	0
3/28/10	0	0	0	1	0	0	1	0	1,565,719.00	0
4/4/10	0	0	0	1	0	0	1	0	1,686,510.00	0
4/11/10	0	0	0	1	0	0	1	0	1,678,013.00	0
4/18/10	0	0	0	1	0	0	1	0	1,561,198.00	0
4/25/10	0	0	0	1	0	0	1	0	1,565,019.00	0
5/2/10	0	0	0	1	0	0	1	0	1,510,925.00	1
5/9/10	0	0	0	1	0	0	1	0	1,529,199.00	0
5/16/10	0	0	0	1	0	0	1	0	1,549,754.00	4
5/23/10	0	0	0	1	0	0	1	0	1,576,010.00	2
5/30/10	0	0	0	1	0	0	1	0	1,570,390.00	2
6/6/10	0	0	0	1	0	1	0	0	1,570,925.00	7
6/13/10	0	0	0	1	0	1	0	0	1,614,485.00	1
6/20/10	0	0	0	1	0	1	0	0	1,620,876.00	3
6/27/10	0	0	0	1	0	1	0	0	1,641,718.00	3
7/4/10	0	0	0	1	0	1	0	0	1,620,851.00	2
7/11/10	0	0	0	1	0	1	0	0	1,650,562.00	7
7/18/10	0	0	0	1	0	1	0	0	1,681,570.00	4
7/25/10	0	0	0	1	0	1	0	0	1,707,154.00	4
8/1/10	0	0	0	1	0	1	0	0	1,720,540.00	3
8/8/10	0	0	0	1	0	1	0	0	1,745,925.00	1
8/15/10	0	0	0	1	0	1	0	0	1,733,834.00	4
8/22/10	0	0	0	1	0	1	0	0	1,688,034.00	5
8/29/10	0	0	0	1	0	1	0	0	1,664,108.00	5
9/5/10	0	0	0	1	0	0	0	0	1,622,078.00	7
9/12/10	0	0	0	1	0	0	0	0	1,400,569.00	3
9/19/10	0	0	0	1	0	0	0	0	1,479,055.00	9
9/26/10	0	0	0	1	0	0	0	0	1,495,013.00	7
10/3/10	0	0	0	1	0	0	0	0	1,507,992.00	6

10/10/10	0	0	0	1	0	0	0	0	1,602,698.00	7
10/17/10	0	0	0	1	0	0	0	0	1,576,947.00	5
10/24/10	0	0	0	1	0	0	0	0	1,573,370.00	5
10/31/10	0	0	0	1	0	0	0	0	1,541,013.00	7
11/7/10	0	0	0	1	0	0	0	0	1,547,866.00	4
11/14/10	0	0	0	1	0	0	0	0	1,567,087.00	3
11/21/10	0	0	0	1	0	0	0	0	1,509,711.00	6
11/28/10	0	0	0	1	0	0	0	0	2,150,665.00	3
12/5/10	0	0	0	1	0	0	0	1	1,566,919.00	4
12/12/10	0	0	0	1	0	0	0	1	1,645,313.00	5
12/19/10	0	0	0	1	0	0	0	1	1,631,743.00	4
12/26/10	0	0	0	1	0	0	0	1	2,153,110.00	4
1/2/11	0	0	0	1	0	0	0	1	2,228,235.00	5
1/9/11	0	0	0	1	0	0	0	1	1,588,456.00	2
1/16/11	0	0	0	1	0	0	0	1	1,540,868.00	3
1/23/11	0	0	0	1	0	0	0	1	1,401,082.00	2
1/30/11	0	0	0	1	0	0	0	1	1,308,560.00	5
2/6/11	0	0	0	1	0	0	0	1	1,214,880.00	6
2/13/11	0	0	0	1	0	0	0	1	1,436,121.00	7
2/20/11	0	0	0	1	0	0	0	1	1,526,036.00	7
2/27/11	0	0	0	1	0	0	0	1	1,660,095.00	5
3/6/11	0	0	0	1	0	0	1	0	1,388,574.00	4
3/13/11	0	0	0	1	0	0	1	0	1,545,232.00	1
3/20/11	0	0	0	1	0	0	1	0	1,670,779.00	6
3/27/11	0	0	0	1	0	0	1	0	1,627,422.00	6
4/3/11	0	0	0	1	0	0	1	0	1,623,653.00	2
4/10/11	0	0	0	1	0	0	1	0	1,646,991.00	6
4/17/11	0	0	0	1	0	0	1	0	1,663,270.00	6
4/24/11	0	0	0	1	0	0	1	0	1,843,855.00	21
5/1/11	0	0	0	1	0	0	1	0	1,736,420.00	16
5/8/11	0	0	0	1	0	0	1	0	1,599,916.00	18
5/15/11	0	0	0	1	0	0	1	0	1,606,974.00	13
5/22/11	0	0	0	1	0	0	1	0	1,696,763.00	12
5/29/11	0	0	0	1	0	0	1	0	1,732,752.00	30
6/5/11	0	0	0	1	0	1	0	0	1,705,602.00	30
6/12/11	0	0	0	1	0	1	0	0	1,752,076.00	13
6/19/11	0	0	0	1	0	1	0	0	1,775,427.00	12
6/26/11	0	0	0	1	0	1	0	0	1,830,739.00	8
7/3/11	0	0	0	1	0	1	0	0	1,835,710.00	8
7/10/11	0	0	0	1	0	1	0	0	1,867,819.00	5
7/17/11	0	0	0	1	0	1	0	0	1,863,700.00	16

7/24/11	0	0	0	1	0	1	0	0	1,882,731.00	6
7/31/11	0	0	0	1	0	1	0	0	1,892,399.00	12
8/7/11	0	0	0	1	0	1	0	0	1,887,489.00	7
8/14/11	0	0	0	1	0	1	0	0	1,886,230.00	15
8/21/11	0	0	0	1	0	1	0	0	1,820,989.00	13
8/28/11	0	0	0	1	0	1	0	0	1,031,290.00	9
9/4/11	0	0	0	1	0	0	0	0	1,602,104.00	10
9/11/11	0	0	0	1	0	0	0	0	1,253,990.00	13
9/18/11	0	0	0	1	0	0	0	0	1,479,369.00	44
9/25/11	0	0	0	1	0	0	0	0	1,561,913.00	56
10/2/11	0	0	0	1	0	0	0	0	1,593,748.00	31
10/9/11	0	0	0	1	0	0	0	0	1,656,867.00	38
10/16/11	0	0	0	1	0	0	0	0	1,675,421.00	36
10/23/11	0	0	0	1	0	0	0	0	1,698,824.00	40
10/30/11	0	0	0	1	0	0	0	0	1,629,545.00	42
11/6/11	0	0	0	1	0	0	0	0	1,535,611.00	47
11/13/11	0	0	0	1	0	0	0	0	1,646,583.00	43
11/20/11	0	0	0	1	0	0	0	0	1,535,489.00	33
11/27/11	0	0	0	1	0	0	0	0	2,205,025.00	21
12/4/11	0	0	0	1	0	0	0	1	1,656,955.00	34
12/11/11	0	0	0	1	0	0	0	1	1,777,817.00	43
12/18/11	0	0	0	1	0	0	0	1	1,762,301.00	38
12/25/11	0	0	0	1	0	0	0	1	2,107,015.00	26
1/1/12	0	0	0	1	0	0	0	1	2,712,535.00	21
4/5/09	0	1	0	0	0	0	1	0	498,849.00	0
4/12/09	0	1	0	0	0	0	1	0	764,173.00	0
4/19/09	0	1	0	0	0	0	1	0	620,809.00	13
4/26/09	0	1	0	0	0	0	1	0	516,557.00	15
5/3/09	0	1	0	0	0	0	1	0	517,626.00	40
5/10/09	0	1	0	0	0	0	1	0	450,791.00	45
5/17/09	0	1	0	0	0	0	1	0	486,110.00	65
5/24/09	0	1	0	0	0	0	1	0	564,982.00	52
5/31/09	0	1	0	0	0	0	1	0	481,815.00	69
6/7/09	0	1	0	0	0	1	0	0	487,493.00	95
6/14/09	0	1	0	0	0	1	0	0	564,928.00	77
6/21/09	0	1	0	0	0	1	0	0	602,240.00	62
6/28/09	0	1	0	0	0	1	0	0	619,808.00	50
7/5/09	0	1	0	0	0	1	0	0	571,015.00	51
7/12/09	0	1	0	0	0	1	0	0	617,379.00	37
7/19/09	0	1	0	0	0	1	0	0	649,444.00	46
7/26/09	0	1	0	0	0	1	0	0	708,630.00	21

8/2/09	0	1	0	0	0	1	0	0	689,628.00	14
8/9/09	0	1	0	0	0	1	0	0	722,127.00	0
8/16/09	0	1	0	0	0	1	0	0	704,829.00	0
8/23/09	0	1	0	0	0	1	0	0	655,111.00	0
8/30/09	0	1	0	0	0	1	0	0	585,951.00	0
9/6/09	0	1	0	0	0	0	0	0	650,132.00	0
9/13/09	0	1	0	0	0	0	0	0	536,891.00	0
9/20/09	0	1	0	0	0	0	0	0	535,545.00	0
9/27/09	0	1	0	0	0	0	0	0	571,719.00	0
10/4/09	0	1	0	0	0	0	0	0	532,360.00	0
10/11/09	0	1	0	0	0	0	0	0	707,294.00	0
10/18/09	0	1	0	0	0	0	0	0	683,045.00	0
10/25/09	0	1	0	0	0	0	0	0	615,447.00	0
11/1/09	0	1	0	0	0	0	0	0	452,812.00	0
11/8/09	0	1	0	0	0	0	0	0	484,255.00	0
11/15/09	0	1	0	0	0	0	0	0	444,816.00	0
11/22/09	0	1	0	0	0	0	0	0	405,115.00	26
11/29/09	0	1	0	0	0	0	0	0	576,139.00	5
12/6/09	0	1	0	0	0	0	0	1	533,651.00	16
12/13/09	0	1	0	0	0	0	0	1	519,535.00	18
12/20/09	0	1	0	0	0	0	0	1	528,598.00	5
12/27/09	0	1	0	0	0	0	0	1	690,667.00	4
1/3/10	0	1	0	0	0	0	0	1	888,536.00	18
1/10/10	0	1	0	0	0	0	0	1	523,974.00	9
1/17/10	0	1	0	0	0	0	0	1	494,751.00	16
1/24/10	0	1	0	0	0	0	0	1	366,154.00	24
1/31/10	0	1	0	0	0	0	0	1	335,045.00	5
2/7/10	0	1	0	0	0	0	0	1	331,071.00	4
2/14/10	0	1	0	0	0	0	0	1	578,407.00	4
2/21/10	0	1	0	0	0	0	0	1	537,616.00	13
2/28/10	0	1	0	0	0	0	0	1	343,596.00	9
3/7/10	0	1	0	0	0	0	1	0	372,677.00	7
3/14/10	0	1	0	0	0	0	1	0	483,133.00	8
3/21/10	0	1	0	0	0	0	1	0	612,180.00	17
3/28/10	0	1	0	0	0	0	1	0	567,195.00	9
4/4/10	0	1	0	0	0	0	1	0	788,247.00	6
4/11/10	0	1	0	0	0	0	1	0	667,531.00	8
4/18/10	0	1	0	0	0	0	1	0	537,442.00	5
4/25/10	0	1	0	0	0	0	1	0	488,219.00	9
5/2/10	0	1	0	0	0	0	1	0	470,535.00	1
5/9/10	0	1	0	0	0	0	1	0	468,269.00	7

5/16/10	0	1	0	0	0	0	1	0	498,742.00	1
5/23/10	0	1	0	0	0	0	1	0	597,460.00	3
5/30/10	0	1	0	0	0	0	1	0	526,435.00	2
6/6/10	0	1	0	0	0	1	0	0	459,486.00	5
6/13/10	0	1	0	0	0	1	0	0	474,700.00	1
6/20/10	0	1	0	0	0	1	0	0	437,533.00	4
6/27/10	0	1	0	0	0	1	0	0	509,112.00	4
7/4/10	0	1	0	0	0	1	0	0	444,009.00	3
7/11/10	0	1	0	0	0	1	0	0	502,065.00	4
7/18/10	0	1	0	0	0	1	0	0	536,308.00	22
7/25/10	0	1	0	0	0	1	0	0	596,025.00	12
8/1/10	0	1	0	0	0	1	0	0	582,973.00	5
8/8/10	0	1	0	0	0	1	0	0	580,558.00	3
8/15/10	0	1	0	0	0	1	0	0	587,660.00	7
8/22/10	0	1	0	0	0	1	0	0	534,347.00	0
8/29/10	0	1	0	0	0	1	0	0	485,398.00	3
9/5/10	0	1	0	0	0	0	0	0	542,621.00	3
9/12/10	0	1	0	0	0	0	0	0	421,946.00	1
9/19/10	0	1	0	0	0	0	0	0	476,061.00	1
9/26/10	0	1	0	0	0	0	0	0	469,963.00	2
10/3/10	0	1	0	0	0	0	0	0	459,692.00	1
10/10/10	0	1	0	0	0	0	0	0	571,547.00	3
10/17/10	0	1	0	0	0	0	0	0	530,213.00	3
10/24/10	0	1	0	0	0	0	0	0	499,930.00	1
10/31/10	0	1	0	0	0	0	0	0	428,321.00	1
11/7/10	0	1	0	0	0	0	0	0	420,138.00	3
11/14/10	0	1	0	0	0	0	0	0	459,796.00	1
11/21/10	0	1	0	0	0	0	0	0	360,247.00	12
11/28/10	0	1	0	0	0	0	0	0	541,267.00	13
12/5/10	0	1	0	0	0	0	0	1	457,936.00	3
12/12/10	0	1	0	0	0	0	0	1	446,401.00	1
12/19/10	0	1	0	0	0	0	0	1	431,498.00	2
12/26/10	0	1	0	0	0	0	0	1	512,065.00	11
1/2/11	0	1	0	0	0	0	0	1	921,309.00	3
1/9/11	0	1	0	0	0	0	0	1	548,562.00	4
1/16/11	0	1	0	0	0	0	0	1	492,842.00	4
1/23/11	0	1	0	0	0	0	0	1	330,062.00	5
1/30/11	0	1	0	0	0	0	0	1	335,106.00	7
2/6/11	0	1	0	0	0	0	0	1	343,159.00	75
2/13/11	0	1	0	0	0	0	0	1	404,225.00	13
2/20/11	0	1	0	0	0	0	0	1	571,383.00	5

2/27/11	0	1	0	0	0	0	0	1	540,310.00	1
3/6/11	0	1	0	0	0	0	1	0	430,503.00	3
3/13/11	0	1	0	0	0	0	1	0	517,529.00	1
3/20/11	0	1	0	0	0	0	1	0	615,208.00	1
3/27/11	0	1	0	0	0	0	1	0	551,844.00	4
4/3/11	0	1	0	0	0	0	1	0	515,641.00	4
4/10/11	0	1	0	0	0	0	1	0	559,493.00	6
4/17/11	0	1	0	0	0	0	1	0	597,004.00	8
4/24/11	0	1	0	0	0	0	1	0	903,226.00	4
5/1/11	0	1	0	0	0	0	1	0	654,136.00	7
5/8/11	0	1	0	0	0	0	1	0	609,623.00	7
5/15/11	0	1	0	0	0	0	1	0	576,924.00	15
5/22/11	0	1	0	0	0	0	1	0	679,786.00	3
5/29/11	0	1	0	0	0	0	1	0	654,479.00	12
6/5/11	0	1	0	0	0	1	0	0	542,814.00	6
6/12/11	0	1	0	0	0	1	0	0	555,229.00	6
6/19/11	0	1	0	0	0	1	0	0	564,188.00	18
6/26/11	0	1	0	0	0	1	0	0	547,868.00	12
7/3/11	0	1	0	0	0	1	0	0	584,230.00	9
7/10/11	0	1	0	0	0	1	0	0	491,696.00	10
7/17/11	0	1	0	0	0	1	0	0	502,452.00	12
7/24/11	0	1	0	0	0	1	0	0	531,562.00	5
7/31/11	0	1	0	0	0	1	0	0	555,488.00	9
8/7/11	0	1	0	0	0	1	0	0	568,596.00	26
8/14/11	0	1	0	0	0	1	0	0	516,692.00	8
8/21/11	0	1	0	0	0	1	0	0	505,113.00	13
8/28/11	0	1	0	0	0	1	0	0	306,025.00	18
9/4/11	0	1	0	0	0	0	0	0	495,473.00	14
9/11/11	0	1	0	0	0	0	0	0	428,329.00	16
9/18/11	0	1	0	0	0	0	0	0	477,729.00	9
9/25/11	0	1	0	0	0	0	0	0	509,898.00	11
10/2/11	0	1	0	0	0	0	0	0	542,711.00	6
10/9/11	0	1	0	0	0	0	0	0	589,391.00	11
10/16/11	0	1	0	0	0	0	0	0	587,780.00	8
10/23/11	0	1	0	0	0	0	0	0	564,558.00	31
10/30/11	0	1	0	0	0	0	0	0	533,300.00	21
11/6/11	0	1	0	0	0	0	0	0	457,708.00	27
11/13/11	0	1	0	0	0	0	0	0	550,003.00	16
11/20/11	0	1	0	0	0	0	0	0	411,738.00	43
11/27/11	0	1	0	0	0	0	0	0	614,925.00	2
12/4/11	0	1	0	0	0	0	0	1	466,285.00	5

12/11/11	0	1	0	0	0	0	0	1	490,581.00	6
12/18/11	0	1	0	0	0	0	0	1	465,898.00	10
12/25/11	0	1	0	0	0	0	0	1	476,857.00	7
1/1/12	0	1	0	0	0	0	0	1	1,065,501.00	6
4/5/09	0	0	0	0	1	0	1	0	848,021.00	4
4/12/09	0	0	0	0	1	0	1	0	1,021,653.00	0
4/19/09	0	0	0	0	1	0	1	0	1,005,981.00	6
4/26/09	0	0	0	0	1	0	1	0	875,597.00	0
5/3/09	0	0	0	0	1	0	1	0	901,230.00	0
5/10/09	0	0	0	0	1	0	1	0	830,636.00	6
5/17/09	0	0	0	0	1	0	1	0	869,495.00	0
5/24/09	0	0	0	0	1	0	1	0	894,070.00	0
5/31/09	0	0	0	0	1	0	1	0	848,808.00	0
6/7/09	0	0	0	0	1	1	0	0	845,592.00	0
6/14/09	0	0	0	0	1	1	0	0	962,048.00	0
6/21/09	0	0	0	0	1	1	0	0	964,786.00	0
6/28/09	0	0	0	0	1	1	0	0	988,427.00	9
7/5/09	0	0	0	0	1	1	0	0	953,712.00	0
7/12/09	0	0	0	0	1	1	0	0	994,321.00	0
7/19/09	0	0	0	0	1	1	0	0	1,017,703.00	0
7/26/09	0	0	0	0	1	1	0	0	1,076,030.00	0
8/2/09	0	0	0	0	1	1	0	0	1,079,916.00	0
8/9/09	0	0	0	0	1	1	0	0	1,100,641.00	0
8/16/09	0	0	0	0	1	1	0	0	1,085,725.00	0
8/23/09	0	0	0	0	1	1	0	0	1,019,887.00	0
8/30/09	0	0	0	0	1	1	0	0	992,079.00	0
9/6/09	0	0	0	0	1	0	0	0	967,078.00	0
9/13/09	0	0	0	0	1	0	0	0	920,797.00	0
9/20/09	0	0	0	0	1	0	0	0	958,245.00	0
9/27/09	0	0	0	0	1	0	0	0	950,422.00	0
10/4/09	0	0	0	0	1	0	0	0	914,114.00	0
10/11/09	0	0	0	0	1	0	0	0	1,057,283.00	2
10/18/09	0	0	0	0	1	0	0	0	1,049,340.00	3
10/25/09	0	0	0	0	1	0	0	0	980,401.00	4
11/1/09	0	0	0	0	1	0	0	0	922,676.00	0
11/8/09	0	0	0	0	1	0	0	0	965,548.00	2
11/15/09	0	0	0	0	1	0	0	0	811,600.00	2
11/22/09	0	0	0	0	1	0	0	0	743,680.00	6
11/29/09	0	0	0	0	1	0	0	0	972,818.00	3
12/6/09	0	0	0	0	1	0	0	1	950,139.00	1
12/13/09	0	0	0	0	1	0	0	1	902,406.00	2

12/20/09	0	0	0	0	1	0	0	1	765,079.00	1
12/27/09	0	0	0	0	1	0	0	1	1,137,628.00	2
1/3/10	0	0	0	0	1	0	0	1	1,315,354.00	0
1/10/10	0	0	0	0	1	0	0	1	814,674.00	0
1/17/10	0	0	0	0	1	0	0	1	746,046.00	1
1/24/10	0	0	0	0	1	0	0	1	591,889.00	3
1/31/10	0	0	0	0	1	0	0	1	573,759.00	2
2/7/10	0	0	0	0	1	0	0	1	553,179.00	2
2/14/10	0	0	0	0	1	0	0	1	771,095.00	4
2/21/10	0	0	0	0	1	0	0	1	855,846.00	4
2/28/10	0	0	0	0	1	0	0	1	600,043.00	2
3/7/10	0	0	0	0	1	0	1	0	661,456.00	2
3/14/10	0	0	0	0	1	0	1	0	718,613.00	1
3/21/10	0	0	0	0	1	0	1	0	830,279.00	2
3/28/10	0	0	0	0	1	0	1	0	865,702.00	2
4/4/10	0	0	0	0	1	0	1	0	1,066,795.00	1
4/11/10	0	0	0	0	1	0	1	0	973,906.00	2
4/18/10	0	0	0	0	1	0	1	0	853,873.00	0
4/25/10	0	0	0	0	1	0	1	0	827,589.00	0
5/2/10	0	0	0	0	1	0	1	0	775,311.00	0
5/9/10	0	0	0	0	1	0	1	0	780,950.00	1
5/16/10	0	0	0	0	1	0	1	0	836,492.00	1
5/23/10	0	0	0	0	1	0	1	0	913,498.00	0
5/30/10	0	0	0	0	1	0	1	0	829,089.00	0
6/6/10	0	0	0	0	1	1	0	0	755,992.00	1
6/13/10	0	0	0	0	1	1	0	0	798,510.00	0
6/20/10	0	0	0	0	1	1	0	0	772,589.00	0
6/27/10	0	0	0	0	1	1	0	0	844,768.00	0
7/4/10	0	0	0	0	1	1	0	0	813,658.00	0
7/11/10	0	0	0	0	1	1	0	0	851,495.00	1
7/18/10	0	0	0	0	1	1	0	0	915,829.00	1
7/25/10	0	0	0	0	1	1	0	0	967,944.00	0
8/1/10	0	0	0	0	1	1	0	0	963,375.00	0
8/8/10	0	0	0	0	1	1	0	0	978,701.00	3
8/15/10	0	0	0	0	1	1	0	0	923,650.00	3
8/22/10	0	0	0	0	1	1	0	0	886,815.00	2
8/29/10	0	0	0	0	1	1	0	0	830,277.00	1
9/5/10	0	0	0	0	1	0	0	0	818,526.00	3
9/12/10	0	0	0	0	1	0	0	0	775,403.00	2
9/19/10	0	0	0	0	1	0	0	0	798,971.00	2
9/26/10	0	0	0	0	1	0	0	0	821,598.00	1

10/3/10	0	0	0	0	1	0	0	0	840,632.00	2
10/10/10	0	0	0	0	1	0	0	0	949,532.00	3
10/17/10	0	0	0	0	1	0	0	0	988,857.00	6
10/24/10	0	0	0	0	1	0	0	0	889,970.00	4
10/31/10	0	0	0	0	1	0	0	0	784,309.00	5
11/7/10	0	0	0	0	1	0	0	0	794,941.00	3
11/14/10	0	0	0	0	1	0	0	0	836,660.00	5
11/21/10	0	0	0	0	1	0	0	0	706,711.00	3
11/28/10	0	0	0	0	1	0	0	0	838,078.00	3
12/5/10	0	0	0	0	1	0	0	1	777,759.00	3
12/12/10	0	0	0	0	1	0	0	1	817,276.00	2
12/19/10	0	0	0	0	1	0	0	1	713,888.00	1
12/26/10	0	0	0	0	1	0	0	1	866,804.00	2
1/2/11	0	0	0	0	1	0	0	1	1,353,837.00	0
1/9/11	0	0	0	0	1	0	0	1	802,972.00	0
1/16/11	0	0	0	0	1	0	0	1	695,507.00	2
1/23/11	0	0	0	0	1	0	0	1	527,026.00	1
1/30/11	0	0	0	0	1	0	0	1	508,770.00	1
2/6/11	0	0	0	0	1	0	0	1	541,521.00	2
2/13/11	0	0	0	0	1	0	0	1	580,278.00	3
2/20/11	0	0	0	0	1	0	0	1	764,201.00	0
2/27/11	0	0	0	0	1	0	0	1	800,980.00	2
3/6/11	0	0	0	0	1	0	1	0	580,815.00	0
3/13/11	0	0	0	0	1	0	1	0	703,222.00	3
3/20/11	0	0	0	0	1	0	1	0	845,480.00	5
3/27/11	0	0	0	0	1	0	1	0	709,895.00	4
4/3/11	0	0	0	0	1	0	1	0	710,008.00	4
4/10/11	0	0	0	0	1	0	1	0	745,627.00	6
4/17/11	0	0	0	0	1	0	1	0	818,975.00	3
4/24/11	0	0	0	0	1	0	1	0	1,167,769.00	3
5/1/11	0	0	0	0	1	0	1	0	943,467.00	2
5/8/11	0	0	0	0	1	0	1	0	865,824.00	2
5/15/11	0	0	0	0	1	0	1	0	775,420.00	4
5/22/11	0	0	0	0	1	0	1	0	859,579.00	4
5/29/11	0	0	0	0	1	0	1	0	813,461.00	5
6/5/11	0	0	0	0	1	1	0	0	786,844.00	2
6/12/11	0	0	0	0	1	1	0	0	785,948.00	5
6/19/11	0	0	0	0	1	1	0	0	774,101.00	6
6/26/11	0	0	0	0	1	1	0	0	892,334.00	4
7/3/11	0	0	0	0	1	1	0	0	792,888.00	4
7/10/11	0	0	0	0	1	1	0	0	787,741.00	5

7/17/11	0	0	0	0	1	1	0	0	807,798.00	7
7/24/11	0	0	0	0	1	1	0	0	897,983.00	6
7/31/11	0	0	0	0	1	1	0	0	917,532.00	5
8/7/11	0	0	0	0	1	1	0	0	860,053.00	5
8/14/11	0	0	0	0	1	1	0	0	878,148.00	5
8/21/11	0	0	0	0	1	1	0	0	801,197.00	6
8/28/11	0	0	0	0	1	1	0	0	588,493.00	5
9/4/11	0	0	0	0	1	0	0	0	709,417.00	5
9/11/11	0	0	0	0	1	0	0	0	585,783.00	9
9/18/11	0	0	0	0	1	0	0	0	676,262.00	9
9/25/11	0	0	0	0	1	0	0	0	825,127.00	11
10/2/11	0	0	0	0	1	0	0	0	819,826.00	7
10/9/11	0	0	0	0	1	0	0	0	831,999.00	7
10/16/11	0	0	0	0	1	0	0	0	847,844.00	10
10/23/11	0	0	0	0	1	0	0	0	835,972.00	19
10/30/11	0	0	0	0	1	0	0	0	848,721.00	10
11/6/11	0	0	0	0	1	0	0	0	666,325.00	5
11/13/11	0	0	0	0	1	0	0	0	745,600.00	7
11/20/11	0	0	0	0	1	0	0	0	604,742.00	5
11/27/11	0	0	0	0	1	0	0	0	817,860.00	4
12/4/11	0	0	0	0	1	0	0	1	670,115.00	9
12/11/11	0	0	0	0	1	0	0	1	717,738.00	7
12/18/11	0	0	0	0	1	0	0	1	560,395.00	6
12/25/11	0	0	0	0	1	0	0	1	704,380.00	6
10/4/09	0	0	1	0	0	0	0	0	1,161,854.00	0
10/11/09	0	0	1	0	0	0	0	0	1,413,511.00	0
10/18/09	0	0	1	0	0	0	0	0	1,373,872.00	0
10/25/09	0	0	1	0	0	0	0	0	1,291,847.00	0
11/1/09	0	0	1	0	0	0	0	0	1,136,368.00	0
11/8/09	0	0	1	0	0	0	0	0	1,244,389.00	0
11/15/09	0	0	1	0	0	0	0	0	1,166,487.00	0
11/22/09	0	0	1	0	0	0	0	0	1,191,066.00	0
11/29/09	0	0	1	0	0	0	0	0	1,693,074.00	0
12/6/09	0	0	1	0	0	0	0	1	1,356,260.00	0
12/13/09	0	0	1	0	0	0	0	1	1,428,646.00	0
12/20/09	0	0	1	0	0	0	0	1	1,489,984.00	0
12/27/09	0	0	1	0	0	0	0	1	1,714,566.00	0
1/3/10	0	0	1	0	0	0	0	1	1,740,130.00	0
1/10/10	0	0	1	0	0	0	0	1	1,377,959.00	0
1/17/10	0	0	1	0	0	0	0	1	1,287,715.00	0
1/24/10	0	0	1	0	0	0	0	1	1,029,469.00	0

1/31/10	0	0	1	0	0	0	0	1	939,523.00	0
2/7/10	0	0	1	0	0	0	0	1	944,733.00	0
2/14/10	0	0	1	0	0	0	0	1	1,213,222.00	0
2/21/10	0	0	1	0	0	0	0	1	1,454,918.00	0
2/28/10	0	0	1	0	0	0	0	1	1,012,545.00	0
3/7/10	0	0	1	0	0	0	1	0	1,042,653.00	0
3/14/10	0	0	1	0	0	0	1	0	1,191,289.00	0
3/21/10	0	0	1	0	0	0	1	0	1,328,250.00	0
3/28/10	0	0	1	0	0	0	1	0	1,357,896.00	0
4/4/10	0	0	1	0	0	0	1	0	1,544,633.00	0
4/11/10	0	0	1	0	0	0	1	0	1,530,532.00	0
4/18/10	0	0	1	0	0	0	1	0	1,378,187.00	0
4/25/10	0	0	1	0	0	0	1	0	1,412,843.00	0
5/2/10	0	0	1	0	0	0	1	0	1,299,404.00	0
5/9/10	0	0	1	0	0	0	1	0	1,371,385.00	0
5/16/10	0	0	1	0	0	0	1	0	1,391,151.00	0
5/23/10	0	0	1	0	0	0	1	0	1,406,974.00	0
5/30/10	0	0	1	0	0	0	1	0	1,415,009.00	0
6/6/10	0	0	1	0	0	1	0	0	1,472,188.00	0
6/13/10	0	0	1	0	0	1	0	0	1,495,996.00	0
6/20/10	0	0	1	0	0	1	0	0	1,527,708.00	0
6/27/10	0	0	1	0	0	1	0	0	1,551,798.00	0
7/4/10	0	0	1	0	0	1	0	0	1,583,358.00	8
7/11/10	0	0	1	0	0	1	0	0	1,634,367.00	6
7/18/10	0	0	1	0	0	1	0	0	1,624,092.00	23
7/25/10	0	0	1	0	0	1	0	0	1,617,207.00	2
8/1/10	0	0	1	0	0	1	0	0	1,643,193.00	11
8/8/10	0	0	1	0	0	1	0	0	1,636,598.00	7
8/15/10	0	0	1	0	0	1	0	0	1,643,356.00	3
8/22/10	0	0	1	0	0	1	0	0	1,632,627.00	1
8/29/10	0	0	1	0	0	1	0	0	1,546,227.00	2
9/5/10	0	0	1	0	0	0	0	0	1,467,779.00	2
9/12/10	0	0	1	0	0	0	0	0	1,228,315.00	0
9/19/10	0	0	1	0	0	0	0	0	1,210,030.00	0
9/26/10	0	0	1	0	0	0	0	0	1,269,344.00	0
10/3/10	0	0	1	0	0	0	0	0	1,266,452.00	0
10/10/10	0	0	1	0	0	0	0	0	1,544,241.00	0
10/17/10	0	0	1	0	0	0	0	0	1,452,507.00	2
10/24/10	0	0	1	0	0	0	0	0	1,411,468.00	2
10/31/10	0	0	1	0	0	0	0	0	1,259,380.00	1
11/7/10	0	0	1	0	0	0	0	0	1,366,498.00	0

11/14/10	0	0	1	0	0	0	0	0	1,371,477.00	2
11/21/10	0	0	1	0	0	0	0	0	1,331,448.00	1
11/28/10	0	0	1	0	0	0	0	0	1,870,565.00	0
12/5/10	0	0	1	0	0	0	0	1	1,529,019.00	1
12/12/10	0	0	1	0	0	0	0	1	1,575,589.00	1
12/19/10	0	0	1	0	0	0	0	1	1,571,953.00	3
12/26/10	0	0	1	0	0	0	0	1	1,823,766.00	2
1/2/11	0	0	1	0	0	0	0	1	1,993,520.00	6
1/9/11	0	0	1	0	0	0	0	1	1,550,640.00	2
1/16/11	0	0	1	0	0	0	0	1	1,334,354.00	1
1/23/11	0	0	1	0	0	0	0	1	993,169.00	1
1/30/11	0	0	1	0	0	0	0	1	1,139,161.00	0
2/6/11	0	0	1	0	0	0	0	1	1,089,357.00	2
2/13/11	0	0	1	0	0	0	0	1	1,282,552.00	1
2/20/11	0	0	1	0	0	0	0	1	1,534,779.00	1
2/27/11	0	0	1	0	0	0	0	1	1,541,682.00	0
3/6/11	0	0	1	0	0	0	1	0	1,212,418.00	0
3/13/11	0	0	1	0	0	0	1	0	1,498,910.00	1
3/20/11	0	0	1	0	0	0	1	0	1,612,549.00	9
3/27/11	0	0	1	0	0	0	1	0	1,577,631.00	8
4/3/11	0	0	1	0	0	0	1	0	1,580,848.00	5
4/10/11	0	0	1	0	0	0	1	0	1,560,631.00	8
4/17/11	0	0	1	0	0	0	1	0	1,619,576.00	3
4/24/11	0	0	1	0	0	0	1	0	1,911,078.00	1
5/1/11	0	0	1	0	0	0	1	0	1,754,459.00	1
5/8/11	0	0	1	0	0	0	1	0	1,601,654.00	7
5/15/11	0	0	1	0	0	0	1	0	1,562,498.00	2
5/22/11	0	0	1	0	0	0	1	0	1,649,365.00	1
5/29/11	0	0	1	0	0	0	1	0	1,652,879.00	0
6/5/11	0	0	1	0	0	1	0	0	1,656,189.00	4
6/12/11	0	0	1	0	0	1	0	0	1,690,120.00	0
6/19/11	0	0	1	0	0	1	0	0	1,734,459.00	0
6/26/11	0	0	1	0	0	1	0	0	1,748,215.00	1
7/3/11	0	0	1	0	0	1	0	0	1,753,577.00	0
7/10/11	0	0	1	0	0	1	0	0	1,849,388.00	0
7/17/11	0	0	1	0	0	1	0	0	1,841,720.00	1
7/24/11	0	0	1	0	0	1	0	0	1,854,764.00	0
7/31/11	0	0	1	0	0	1	0	0	1,855,567.00	5
8/7/11	0	0	1	0	0	1	0	0	1,851,542.00	6
8/14/11	0	0	1	0	0	1	0	0	1,842,424.00	7
8/21/11	0	0	1	0	0	1	0	0	1,790,309.00	14

8/28/11	0	0	1	0	0	1	0	0	1,081,144.00	19
9/4/11	0	0	1	0	0	0	0	0	1,592,469.00	5
9/11/11	0	0	1	0	0	0	0	0	1,299,169.00	3
9/18/11	0	0	1	0	0	0	0	0	1,414,948.00	7
9/25/11	0	0	1	0	0	0	0	0	1,352,896.00	4
10/2/11	0	0	1	0	0	0	0	0	1,414,779.00	3
10/9/11	0	0	1	0	0	0	0	0	1,660,023.00	6
10/16/11	0	0	1	0	0	0	0	0	1,669,563.00	2
10/23/11	0	0	1	0	0	0	0	0	1,561,390.00	1
10/30/11	0	0	1	0	0	0	0	0	1,537,920.00	2
11/6/11	0	0	1	0	0	0	0	0	1,579,280.00	5
11/13/11	0	0	1	0	0	0	0	0	1,567,670.00	21
11/20/11	0	0	1	0	0	0	0	0	1,532,701.00	17
11/27/11	0	0	1	0	0	0	0	0	2,079,616.00	25
12/4/11	0	0	1	0	0	0	0	1	1,682,555.00	24
12/11/11	0	0	1	0	0	0	0	1	1,791,917.00	28
12/18/11	0	0	1	0	0	0	0	1	1,833,881.00	20
12/25/11	0	0	1	0	0	0	0	1	1,981,442.00	12
1/1/12	0	0	1	0	0	0	0	1	2,444,132.00	14
7/5/09	0	0	0	0	0	1	0	0	1,101,363.00	4
7/12/09	0	0	0	0	0	1	0	0	1,151,026.00	5
7/19/09	0	0	0	0	0	1	0	0	1,147,932.00	3
7/26/09	0	0	0	0	0	1	0	0	1,155,417.00	5
8/2/09	0	0	0	0	0	1	0	0	1,150,344.00	3
8/9/09	0	0	0	0	0	1	0	0	1,162,436.00	0
8/16/09	0	0	0	0	0	1	0	0	1,154,537.00	0
8/23/09	0	0	0	0	0	1	0	0	1,126,088.00	0
8/30/09	0	0	0	0	0	1	0	0	1,143,248.00	0
9/6/09	0	0	0	0	0	0	0	0	1,129,108.00	0
9/13/09	0	0	0	0	0	0	0	0	1,134,039.00	0
9/20/09	0	0	0	0	0	0	0	0	1,126,009.00	0
9/27/09	0	0	0	0	0	0	0	0	1,146,890.00	0
10/4/09	0	0	0	0	0	0	0	0	1,142,846.00	0
10/11/09	0	0	0	0	0	0	0	0	1,167,196.00	0
10/18/09	0	0	0	0	0	0	0	0	1,160,186.00	0
10/25/09	0	0	0	0	0	0	0	0	1,175,433.00	0
11/1/09	0	0	0	0	0	0	0	0	1,112,351.00	0
11/8/09	0	0	0	0	0	0	0	0	1,179,345.00	0
11/15/09	0	0	0	0	0	0	0	0	1,191,398.00	0
11/22/09	0	0	0	0	0	0	0	0	1,149,626.00	0
11/29/09	0	0	0	0	0	0	0	0	1,323,745.00	0

12/6/09	0	0	0	0	0	0	0	1	1,226,872.00	0
12/13/09	0	0	0	0	0	0	0	1	1,227,946.00	0
12/20/09	0	0	0	0	0	0	0	1	1,159,833.00	0
12/27/09	0	0	0	0	0	0	0	1	1,290,426.00	0
1/3/10	0	0	0	0	0	0	0	1	1,440,456.00	0
1/10/10	0	0	0	0	0	0	0	1	1,135,065.00	0
1/17/10	0	0	0	0	0	0	0	1	1,124,807.00	0
1/24/10	0	0	0	0	0	0	0	1	1,072,634.00	0
1/31/10	0	0	0	0	0	0	0	1	1,067,889.00	0
2/7/10	0	0	0	0	0	0	0	1	946,813.00	0
2/14/10	0	0	0	0	0	0	0	1	986,753.00	0
2/21/10	0	0	0	0	0	0	0	1	1,145,386.00	0
2/28/10	0	0	0	0	0	0	0	1	986,266.00	0
3/7/10	0	0	0	0	0	0	1	0	987,427.00	0
3/14/10	0	0	0	0	0	0	1	0	1,052,412.00	0
3/21/10	0	0	0	0	0	0	1	0	1,055,904.00	0
3/28/10	0	0	0	0	0	0	1	0	1,043,861.00	0
4/4/10	0	0	0	0	0	0	1	0	1,094,039.00	0
4/11/10	0	0	0	0	0	0	1	0	871,955.00	0
4/18/10	0	0	0	0	0	0	1	0	1,042,614.00	0
4/25/10	0	0	0	0	0	0	1	0	1,079,432.00	0
5/2/10	0	0	0	0	0	0	1	0	1,034,232.00	0
5/9/10	0	0	0	0	0	0	1	0	1,036,665.00	0
5/16/10	0	0	0	0	0	0	1	0	1,096,659.00	0
5/23/10	0	0	0	0	0	0	1	0	1,110,496.00	0
5/30/10	0	0	0	0	0	0	1	0	1,065,157.00	0
6/6/10	0	0	0	0	0	1	0	0	963,853.00	0
6/13/10	0	0	0	0	0	1	0	0	1,069,344.00	0
6/20/10	0	0	0	0	0	1	0	0	1,070,258.00	0
6/27/10	0	0	0	0	0	1	0	0	1,083,587.00	2
7/4/10	0	0	0	0	0	1	0	0	959,230.00	8
7/11/10	0	0	0	0	0	1	0	0	938,983.00	3
7/18/10	0	0	0	0	0	1	0	0	1,035,256.00	2
7/25/10	0	0	0	0	0	1	0	0	1,024,188.00	8
8/1/10	0	0	0	0	0	1	0	0	1,001,306.00	7
8/8/10	0	0	0	0	0	1	0	0	1,025,072.00	12
8/15/10	0	0	0	0	0	1	0	0	1,012,390.00	5
8/22/10	0	0	0	0	0	1	0	0	1,020,157.00	9
8/29/10	0	0	0	0	0	1	0	0	1,014,108.00	8
9/5/10	0	0	0	0	0	0	0	0	1,017,390.00	11
9/12/10	0	0	0	0	0	0	0	0	961,606.00	10

9/19/10	0	0	0	0	0	0	0	0	1,046,786.00	8
9/26/10	0	0	0	0	0	0	0	0	1,088,466.00	12
10/3/10	0	0	0	0	0	0	0	0	1,086,925.00	9
10/10/10	0	0	0	0	0	0	0	0	1,166,656.00	8
10/17/10	0	0	0	0	0	0	0	0	1,112,513.00	7
10/24/10	0	0	0	0	0	0	0	0	1,106,734.00	3
10/31/10	0	0	0	0	0	0	0	0	1,011,799.00	5
11/7/10	0	0	0	0	0	0	0	0	1,063,655.00	7
11/14/10	0	0	0	0	0	0	0	0	1,104,868.00	9
11/21/10	0	0	0	0	0	0	0	0	1,068,792.00	4
11/28/10	0	0	0	0	0	0	0	0	1,269,247.00	5
12/5/10	0	0	0	0	0	0	0	1	1,237,955.00	4
12/12/10	0	0	0	0	0	0	0	1	1,249,427.00	3
12/19/10	0	0	0	0	0	0	0	1	1,133,645.00	3
12/26/10	0	0	0	0	0	0	0	1	1,156,942.00	3
1/2/11	0	0	0	0	0	0	0	1	1,372,391.00	4
1/9/11	0	0	0	0	0	0	0	1	1,068,423.00	6
1/16/11	0	0	0	0	0	0	0	1	974,615.00	7
1/23/11	0	0	0	0	0	0	0	1	933,386.00	6
1/30/11	0	0	0	0	0	0	0	1	962,259.00	7
2/6/11	0	0	0	0	0	0	0	1	866,391.00	9
2/13/11	0	0	0	0	0	0	0	1	981,264.00	8
2/20/11	0	0	0	0	0	0	0	1	986,328.00	8
2/27/11	0	0	0	0	0	0	0	1	1,062,895.00	5
3/6/11	0	0	0	0	0	0	1	0	855,041.00	7
3/13/11	0	0	0	0	0	0	1	0	962,541.00	8
3/20/11	0	0	0	0	0	0	1	0	1,064,222.00	6
3/27/11	0	0	0	0	0	0	1	0	1,011,357.00	8
4/3/11	0	0	0	0	0	0	1	0	992,577.00	8
4/10/11	0	0	0	0	0	0	1	0	1,009,006.00	7
4/17/11	0	0	0	0	0	0	1	0	991,371.00	7
4/24/11	0	0	0	0	0	0	1	0	1,166,314.00	7
5/1/11	0	0	0	0	0	0	1	0	1,060,504.00	8
5/8/11	0	0	0	0	0	0	1	0	1,006,650.00	8
5/15/11	0	0	0	0	0	0	1	0	1,061,397.00	12
5/22/11	0	0	0	0	0	0	1	0	1,113,978.00	11
5/29/11	0	0	0	0	0	0	1	0	1,033,254.00	6
6/5/11	0	0	0	0	0	1	0	0	974,481.00	8
6/12/11	0	0	0	0	0	1	0	0	1,056,720.00	8
6/19/11	0	0	0	0	0	1	0	0	1,034,856.00	7
6/26/11	0	0	0	0	0	1	0	0	1,068,423.00	7

7/3/11	0	0	0	0	0	1	0	0	979,761.00	6
7/10/11	0	0	0	0	0	1	0	0	956,355.00	4
7/17/11	0	0	0	0	0	1	0	0	982,118.00	5
7/24/11	0	0	0	0	0	1	0	0	987,461.00	10
7/31/11	0	0	0	0	0	1	0	0	956,795.00	8
8/7/11	0	0	0	0	0	1	0	0	959,486.00	8
8/14/11	0	0	0	0	0	1	0	0	958,824.00	7
8/21/11	0	0	0	0	0	1	0	0	925,196.00	8
8/28/11	0	0	0	0	0	1	0	0	535,578.00	9
9/4/11	0	0	0	0	0	0	0	0	899,240.00	11
9/11/11	0	0	0	0	0	0	0	0	806,153.00	9
9/18/11	0	0	0	0	0	0	0	0	982,489.00	21
9/25/11	0	0	0	0	0	0	0	0	1,030,749.00	8
10/2/11	0	0	0	0	0	0	0	0	1,046,561.00	9
10/9/11	0	0	0	0	0	0	0	0	1,083,996.00	14
10/16/11	0	0	0	0	0	0	0	0	1,068,613.00	6
10/23/11	0	0	0	0	0	0	0	0	1,063,572.00	6
10/30/11	0	0	0	0	0	0	0	0	956,800.00	7
11/6/11	0	0	0	0	0	0	0	0	941,158.00	15
11/13/11	0	0	0	0	0	0	0	0	1,019,387.00	9
11/20/11	0	0	0	0	0	0	0	0	937,930.00	6
11/27/11	0	0	0	0	0	0	0	0	1,099,523.00	4
12/4/11	0	0	0	0	0	0	0	1	1,045,834.00	3
12/11/11	0	0	0	0	0	0	0	1	1,133,208.00	6
12/18/11	0	0	0	0	0	0	0	1	1,051,507.00	17
12/25/11	0	0	0	0	0	0	0	1	916,585.00	13
1/1/12	0	0	0	0	0	0	0	1	1,375,368.00	3