The "Death-Effect" on Collectible Prices

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ABSTRACT:

It has been widely observed that the price of celebrity memorabilia rises around the time of that person’s death. Previous authors attribute this “death-effect” primarily to expectations on the part of collectors concerning the future supply of collectibles about the public figure as in the case of a durable goods monopolist. Our observations of the sports memorabilia market suggest that the increase in prices is instead due to a “nostalgia effect” as a result of the media attention that surrounds the death of a prominent public figure.

Introduction

It has been widely observed that the price of celebrity memorabilia rises substantially around the time of the person's death. In examining the art market, Ekelund, Ressler and Watson, (2000) suggest a demand-side explanation for this rise in prices. They attribute the "death effect" primarily to expectations on the part of art collectors concerning the future supply of the artist's works as in the case of a durable good monopolist. The value of an artist's work is partly a function of the number of their works, and, as with any good, an increase in supply, *ceteris paribus*, will lead to a decrease in price. (Grampp, 1989) A collector who purchases the work of a living artist must be resigned to the fact that the artist may produce additional works in the future which will tend to lower the price of their acquisition. The prospect of future increases in supply, therefore, tends to reduce the current price of works by living artists. This is the classic problem faced by durable good monopolists which has been addressed by Coase (1972) among others. The death of the artist removes the threat of future increases in supply and therefore increases the price of an artist's work. Ekelund, et al, noted that an artist's serious illness or old age can also increase the value of the artist's work as these factors also reduce the expectations of future artistic output. This reasoning, of course, can apply to personal memorabilia from any public figure. A celebrity's death means that Elvis Presley can play no more guitars, Joe DiMaggio can sign no more autographs, and Marilyn Monroe can wear no more dresses.

In their analysis of 21 Latin American artists who died between 1977 and 1996, Ekelund, et al, found that the prices at auction (corrected for factors such as size, signature, etc.) of paintings by these artists did indeed increase significantly immediately following the artists' death. The authors concur that

"the death effect is a demand rather than a supply phenomenon. It is not the fixed

> supply *per se*, but the after-death certainty that a supply or a supply-rate will be reduced to zero that stimulates demand for an artist's work. In short, the demand problem facing the durable goods monopolist may be applicable to artists as well." (Ekelund, et al, 2000)

Ekelund, et al, also noted, however, that in the years following the death of an artist prices "then decline, maintaining a slightly elevated level relative to the year prior to death." It is not clear how the death of an artist would cause this short-term peak in prices if the death effect is solely due to changed perceptions about future supplies, i.e. the elimination of the durable goods problem. Ekelund, et al, suggest that supply-side forces may be at work as "rising prices begin to pull artists' work out of collections and gallery holdings." This explanation, however, is better defined as a movement along a supply curve rather than a shift in supply and, therefore, is not sufficient to explain the subsequent fall in prices.

We believe that other demand forces must also be a factor. In particular, the media attention that surrounds the death of a prominent artist or another notable figure increases the public interest in the person and the person's life and works. This increased interest, which we will refer to as a "nostalgia effect," will increase demand for the collectibles and thereby increase their prices. If this public interest is short-lived, the increase in prices will result in a "nostalgia spike," where prices increase immediately after the death of the celebrity but then fall back as the celebrity's death recedes into the past.

An examination of the art market alone cannot separate the price effects of the "durable good monopolist effect" and the "nostalgia effect" except by noting, as Ekelund, et al, did, that prices tend to rise quickly following an artist's death and then fall back over time, a situation that is inconsistent with

the durable good monopolist effect but is explainable by the nostalgia effect. The sports memorabilia market, however, can provide a method to test whether the nostalgia effect holds in cases where the effect of a fixed future supply cannot possibly explain the pattern of price changes following the death of an athlete.

The Sports Memorabilia Market

There exists a large market for collectibles related to the sports industry including items such as jerseys, balls, autographs, and trading cards. Much like other souvenir markets, sports memorabilia is collected both by investors hoping for a monetary return on their assets as well as enthusiasts interested more in the amenity value of their collection rather than its investment value. (Burton and Jacobsen, 1999) The sports memorabilia market consists of two distinctly separate types of goods: signed items and sports trading cards. Signed memorabilia is most like the art market in that a living athlete can always sign additional jerseys or bats or balls. The value of a particular signed object is constrained by the possibility that the athlete will later flood the market with similar autographed items. Indeed, some athletes' signatures are more valuable than others in large part due to the fact that certain athletes consciously restrict the number of autographs they give. The signed memorabilia market is also like the art market in that much of the work is traded through auction houses and in recent times increasingly through Internet auction sites such as e-bay.

Sports trading cards are issued annually in limited quantities by private companies. The cards, which are dated, are each devoted to a specific player who is currently active in the sport and usually have the player's picture on one side of the card and a short biography or a list of the player's statistics

on the other. Sports cards exist for all major team sports in the U.S. but are most popular for Major League Baseball. They are widely traded in secondary markets with the price of a particular card depending on its age and condition as well as the skill and popularity of the player depicted. Nardinelli, et al, (1990) and Gabriel, et al, (1995, 1999) provide interesting discussions of the factors (including racism) that may affect baseball card prices. Since it is easy to determine the player, date, and manufacturer of a card, and since it is easy to proscribe uniform standards for its condition, price lists for baseball cards are widely available much like price lists for rare coins and stamps. In particular, Beckett Services publishes monthly price guides for baseball cards and has done so since 1985. Beckett assembles their price lists by surveying a large number of dealers nationwide about the prices they are charging for specific items. These price lists, therefore, should not be seen as arbitrary numbers set by a single company but rather as a close estimate of the actual average price at which different cards are being sold nationwide.

The durable good monopoly problem that faces the collector of signed memorabilia of a living player does not affect the collector of baseball cards. The player himself cannot affect the supply of his own trading card. In fact, once a player retires, there is little he can do to affect the price of his own cards short of receiving unanticipated publicity. Of course, while a player is still in the league, he can certainly affect the price of his own cards by putting up impressive playing statistics since better players' cards sell for higher prices.

The Death-Effect in Sports Memorabilia

As in the art market, many observers of the sports industry believe there is a death effect in the

sports memorabilia market as well. The durable good monopolist effect cannot possibly change the price of baseball cards following the death of an athlete, since these cards are fixed in supply. Therefore, if an increase in the baseball card prices for a particular player follows soon after the player's death, then another explanation for the price increases, such as the nostalgia effect, must be offered.

A group of deceased players must be selected to test the existence of a nostalgia effect. Since it relies on publicity surrounding a player's death increasing the demand for memorabilia relating to the athlete, this effect would be most pronounced in relativity well-known athletes for whom the media response to the player's death would be greatest. Only athletes who have been selected to the Baseball Hall of Fame, therefore, are examined in this study.

The players selected have also been constrained by the availability of data. Baseball cards have been regularly issued since 1948. Prior to that time, a variety of companies sporadically issued cards. These earlier cards, however, tend to be quite rare and are traded in relatively thin markets so that price data is less available. Our data set includes semi-annual data from 1990 to 2001 on cards issued since 1948. Since a test of the nostalgia effect requires price data on the player's cards both before and after the player's death, our data set requires that the player have died between 1990 and early 2001. In addition, it is essential that the player have played at least part of his career in Major League Baseball after 1948 to ensure that the player has observable card prices. These restrictions leave a group of 13 players who are listed in Table 1.

For each player, all cards of the player issued during the player's career are analyzed with the exception of Catfish Hunter for whom only cards issued up to 1969 are examined. Often, prices are

available for the same card in two different conditions in which case both prices are used in the calculations effectively doubling the number of observations. To test whether card prices increase around the time of the player's death, the price of the player's cards about 6 months before the player's death is compared to the price of the same cards about 6 months after the player's death. The data set includes prices in January and July of each year. To allow the full effect of the player's death to be reflected in the card prices, if a player died between April and September, the prices from the previous January are compared to the prices in the following January. For deaths that occurred between October and March, the card price of the previous July are compared to the prices in the next July.

Care must be taken to ensure that changes in an individual player's card prices are due to the nostalgia effect and not due to changing price levels in the sports card market overall. For example, if a player's card prices increased by 10% around the time of the player's death but other players' card prices increased 6%, it would be misguided to attribute all of the 10% increase to the nostalgia effect. Only the 4% differential between changes in general card prices and the individual player's card prices is significant. This detail assumes particular importance due to the fact that the baseball card industry experienced a boom and bust cycle during the 1990s. Nearly every player's card price increased in the early 90s regardless of whether the player died during this time period.

Fortunately, Becketts also publishes prices for complete sets for every year that manufacturers issued baseball cards. By comparing changes in the price of an individual player's card to the price of the complete set of which that card is member, a true measure of the nostalgia effect can be estimated. Table 2 shows the number of observable card prices, the change in individual players' card prices, the change in the corresponding complete set card prices, and the difference in the two changes for each of

the 13 players in the data set as well as for the 13 players combined. In addition, the final column of Table 2 shows the t-statistic and corresponding p-value for the test of the null hypothesis, the difference between changes in the individual player and complete set prices are equal to zero, against the alternative hypothesis, the individual player card prices increased compared to complete sets for each of the players.

The results presented in Table 2 strongly support the hypothesis that a nostalgia effect exists for unsigned sports memorabilia. The prices of cards of the individual players increased compared to cards in general in 9 of 13 cases and declined for only 3 of 13 athletes. In addition, in each of the 3 cases where individual players experienced relative declines in card prices, none of the declines were statistically significant while in 8 of the 9 cases where the Hall of Famers experienced a relative increase in their card prices, statistical significance at the 1% significance level was achieved.

An examination of the players whose card prices increased provides further evidence of the nostalgia effect. One prediction regarding the nostalgia effect would be that the better known the player, the greater the nostalgia effect since more media attention will surround the athlete's death. In our sample, the players who experienced the greatest increases in card prices tend to be household names while those who experienced relative declines tend to be lesser known. One good measure of the fame or popularity of a baseball player is how quickly he is elected to the Hall of Fame. The best athletes, such as Mickey Mantle in the sample, tend to be selected as soon as they are eligible for induction. Marginal players have to wait longer before being so honored. The 8 Hall of Famers with statistically significant relative increases in their card prices earned election an average of 13.6 years after their retirement while the remaining players in the data set averaged 24 years of retirement before induction.

The final piece of the nostalgia effect to be examined is the extent to which the effect wears off over time. If the nostalgia effect is due to an increased demand for a star's memorabilia as a result of the media attention surrounding a player's death then as the media attention fades, demand should also fall off over time. The prediction is that the nostalgia effect should be, at least to some extent, a temporary phenomenon.

To test whether the nostalgia effect is temporary in nature, we examined the card prices for an additional year past the athlete's death for seven of the eight players who experienced a statistically significant increase in the relative prices of their cards in Table 2. Eddie Matthews had to be excluded from the sample because his death occurred too recently to examine. Table 3 shows the increase in price of each player's cards relative to complete sets for the year around their death as well as the relative change in each player's card prices between the half-year before the player's death and an additional year past the post-death date used previously. For several other athletes, price data is not available for all cards or all card conditions for every year past the player's death so the sample size for each Hall of Famer may not be the same between Tables 2 and 3. In addition, the change in relative prices between the time period just after a player's death and the time period one year hence is also shown.

The increase in card values following a player's death is indeed at least partially a temporary effect. While relative card prices for the seven remaining players in our sample rose an average of 13.85 percent in the 6 to 9 months following the stars' deaths, over the following year roughly one-quarter of that increase disappears so that 18 to 21 months past the players' deaths, average card prices were up only 10.76 percent relative to complete card sets. Of the 7 players examined, 4

experienced a decrease in card prices after the immediate upward surge while only 2 experienced further increases. Furthermore, three of the players whose card prices retreated from their highest level, experienced statistically significant price decreases while neither of the additional price increases was so. For the seven players as a whole, the average decline of 3.09% was significant at the 1% level.

Conclusions

Evidence indicates that the price of celebrity memorabilia rises substantially immediately after the person's death. One explanation offered for this phenomenon centers on the increased demand for these items in anticipation of the higher prices they will command as a consequence of a supply fixed by the person's death. This argument, however, fails to adequately explain the transient nature of the postmortem price increase. The purpose of this paper was to offer an explanation for the temporary increase in the price of a collectible following the death of the celebrity with whom it is associated.

In analyzing the value of baseball cards for deceased hall-of-fame players, we found that the prices of these collectibles, adjusted for changes in card prices overall, increased immediately after their deaths, but the higher prices were not sustained. This phenomenon, which we labeled the "nostalgia spike," reflects heightened interest in the Hall of Famer as a consequence of his death and the media attention surrounding the event. There is some evidence to indicate that the more famous the player, the greater the spike. Of particular importance is the fact that due to the nature of the collectible, the increase in the value of the baseball cards immediately following the death of a star player cannot be attributed to the elimination of the durable good monopoly problem as a result of the

death of the player.

The pattern of prices for artistic work following the death of an artist exhibits a similar pattern that may well be explained by a temporary increase in demand for an artist's work at the end of the artist's life due to the nostalgia effect.

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TABLE 1

Players Included in Sample

Player	Date of Death	Playing Years	Years as an All-Star	Total Seasons in MLB	Hall of Fame Induction
Luke Appling	1/3/91	1930-1950	7	20	1964
Richie Ashburn	9/9/97	1948-1962	5	15	1995
Roy Campanella	6/26/93	1948-1957	8	10	1969
Joe DiMaggio	3/8/99	1936-1951	13	13	1955
Don Drysdale	7/3/93	1956-1969	8	14	1993
Catfish Hunter	9/9/99	1965-1979	8	15	1987
Bob Lemon	1/11/00	1941-1958	7	15	1976
Mickey Mantle	8/13/95	1951-1968	14	18	1974
Eddie Matthews	2/18/01	1952-1968	9	17	1978
Johnny Mize	6/2/93	1936-1953	10	15	1981
Hal Newhouser	11/10/98	1939-1955	7	17	1992
Pee Wee Reese	8/14/99	1940-1958	10	16	1984
Early Wynn	4/4/99	1939-1963	6	23	1972

TABLE 2

Change in Card Values for One Year Around Player's Death

Player	Number of cards	% increase in player	% increase in set	Difference	T-stat / P-value
Luke Appling	4	3.65%	8.58%	-4.93%	-0.90 / (0.2095)
Richie Ashburn	16	-1.67%	0.02%	-1.69%	-1.46 / (0.0818)
Roy Campanella	24	3.94%	-6.41%	10.34%	5.07 / 0.0000
Joe DiMaggio	6	8.37%	-2.48%	10.84%	3.21 / 0.0092
Don Drysdale	26	10.62%	-5.48%	16.09%	8.13 / 0.0000
Catfish Hunter	10	0.00%	0.00%	0.00%	0.00 / 0.5000
Bob Lemon	11	11.24%	-0.07%	11.31%	2.77 / 0.0091
Mickey Mantle	42	12.89%	-4.41%	17.30%	7.20 / 0.0000
Eddie Matthews	40	11.12%	-0.28%	11.40%	4.20 / 0.0000
Johnny Mize	16	-2.67%	-6.41%	3.75%	1.57 / 0.0680
Hal Newhouser	6	0.00%	0.69%	-0.69%	-1.51 / (0.0909)
Pee Wee Reese	26	10.23%	-0.01	10.24%	3.20 / 0.0018
Early Wynn	32	12.45%	0.02%	12.43%	3.82 / 0.0003
Total	**259**	**8.26%**	**-2.19%**	**10.47%**	**12.40 / 0.0000**

TABLE 3

Change in Card Values Immediately After and 1 Year After a Player's Death

Player	**Number of cards**	**% increase within first 6 months**	**% increase +1 year**	**% change between first 6 months and +1 year**
Roy Campanella	24	10.34%	7.24%	-3.10%
		(5.07*)	(2.91*)	(-2.16*)
Joe DiMaggio	6	10.84%	-11.00%	-21.84%
		(3.21*)	(-0.88)	(-1.70*)
Don Drysdale	26	16.09%	5.36%	-10.73%
		(8.13*)	(1.92*)	(-4.52*)
Bob Lemon	11	11.31%	11.31%	0.00%
		(2.77*)	(2.77*)	(0.00)
Mickey Mantle	42	17.30%	18.06%	0.76%
		(7.20*)	(5.82*)	(0.49)
Pee Wee Reese	14	11.71%	10.99%	-0.72%
		(3.02*)	(2.84*)	(-0.29)
Early Wynn	16	11.13%	13.27%	2.14%
		(2.65*)	(3.20*)	(1.29)
Total	**139**	**13.85%**	**10.76%**	**-3.09%**
		(12.40*)	**(7.60*)**	**(-3.41*)**

*Significant at 5% significance level.

Note: The t-statistics are shown in parentheses for the hypothesis test of whether or not relative card prices increased between the time immediately prior to the death of the player and the time immediately after the death of the player as well as the time one full year after his death. The t-statistics in the third column are for the hypothesis test of whether or not relative card prices decreased between the time immediately after the death of the player and one full year past that time.