

WORKING PAPER · NO. 2018-73

Do the Most Important Artists Make the Most Expensive Paintings?

David W. Galenson

OCTOBER 2018

Do the Most Important Artists
Make the Most Expensive Paintings?

David W. Galenson
University of Chicago
Universidad del CEMA

Abstract

Art experts have disagreed about whether art markets accurately reflect artistic importance. This paper uses published surveys of art history to construct a critical ranking of the 30 most important American painters of the last century, then uses auction records to identify the most expensive paintings by these artists. The results show a strong positive association between critical rankings and auction prices: there is a high rank correlation between the critical ranking of artists and a ranking of the artists by their single highest auction price, and the top artists in the critical ranking are highly disproportionately represented among auction sales over \$10 million, \$30 million, and \$50 million. Auction markets do recognize artistic importance: the greatest artists produce the most expensive paintings, and it is their most important works that sell for the highest prices.

Art Markets

Many experts contend that art markets defy systematic logic. So for example Robert Hughes of *Time* magazine declared that “The price of a work of art is an index of pure, irrational desire,” and Tobias Meyer, Sotheby’s chief auctioneer, described auctions as “magical.”¹ Some experts have specifically denied any connection between artistic importance and market outcomes. Thus Richard Benson, dean of the Yale School of Art, told the *New York Times* that “We don’t consider success in the marketplace has anything to do with being a successful artist,” and Robert Storr, a curator at New York’s Museum of Modern Art, asserted that artistic success “is completely unquantifiable.”²

Other art experts have disagreed. Alan Bowness, former director of the Tate Gallery, observed that “It is only the museum artists whose work begins to rise to exceptional prices,” and the *New Yorker* critic Peter Schjeldahl opined that “Good collectors routinely display keener judgement of relative quality than critics.”³

Do the most important artists produce the most expensive paintings? A number of social scientists have suggested answers, sometimes based on empirical evidence.⁴ Yet these conclusions have been less than compelling, either because their measures of artistic importance have been questionable, or the artists they considered minor. This study proposes to answer the question with rich empirical evidence on a sizeable group of important painters.

Artistic Importance

Distrust of art markets is sometimes a product of a misunderstanding of artistic importance. It is therefore useful to consider what makes an artist important.

As is true for other arts, important painters are members of intellectual genealogies. The poet and critic T.S. Eliot offered a celebrated formulation:

No poet, no artist of any art, has his complete meaning alone. His significance, his appreciation is the appreciation of his relation to the dead poets and artists. You cannot value him alone; you must set him, for contrast and comparison, among the dead.⁵

Artists join these genealogies by changing their disciplines. The painter and critic Walter Sickert explained this in 1910:

Perhaps the importance that we must attach to the achievement of an artist or a group of artists may properly be measured by the answer to the following question: Have they so wrought that it will be impossible henceforth, for those who follow, ever again to act as if they had not existed?⁶

Important artists are therefore innovators; important works of art are those that embody their innovations. The critic Harold Rosenberg expressed this simply: “A vanguard painting is not only itself; it contains the paintings that will be influenced by it. Should there be none of these, the significance of the painting shrinks to zero.”⁷ Artistic genealogies are thus created by artists, in their decisions about which of their predecessors they will follow. This is what T.S. Eliot meant when he wrote that “what happens when a new work of art is created is something that happens simultaneously to all the works of art that preceded it.”⁸ And it was what the painter James McNeill Whistler understood when he explained to critics that they had less power than they believed:

Shall the painter then...decide upon painting? Shall *he* be the critic and sole authority? Aggressive as is this supposition, I fear that, in the length of time, his assertion alone has established what even the gentlemen of the quill accept as the canons of art, and recognize as the masterpieces of work.⁹

Art History Surveys

In a 1957 lecture, the artist Marcel Duchamp contrasted the vast numbers of artists who create with the much smaller number who are remembered, then noted how this consecration was witnessed:

In the last analysis, the artist may shout from all the rooftops that he is a genius; he will have to wait for the verdict of the spectator in order that his declarations take a social value and that, finally, posterity includes him in the primers of Art History.¹⁰

Scholars have devoted enormous amounts of time and effort to producing systematic surveys of art history, in the form of both academic textbooks and books aimed at a wider public. Whatever the intended audience, these surveys all aim to narrate the canon of art history, carefully recording the genealogies of important artistic innovators. So for example Martin Kemp, professor of art history at Oxford, opens his 2014 survey, *Art in History*, by declaring that “The artists and works of art in this book have transformed how art affects us. Over the ages, painters and sculptors have invited us to do radically new things.” Two pages further on, he explains that “We will be encountering our key works in a broadly chronological order because what each artist does is articulated in relation to what went before, and affects our view of the past.”¹¹

These published surveys vary greatly in size, from thousand-page textbooks of world art history to concise analyses of the greatest 50 modern artists. But what they all share is careful attention to the relative importance of the artists within the periods they survey. In 1961, the critic Clement Greenberg observed that taste in art is not merely idiosyncratic, but that there is a broad agreement among experts in each generation, and that “this best taste has always turned out to be unanimous, within certain limits, in its verdicts.” Thus he noted that one expert might prefer Raphael, and another Titian, but that neither critic would be taken seriously if they did not recognize the importance of both artists.¹²

Because there can be these intramural disagreements, no single survey can be assumed to be definitive in its judgements. Yet pooling the evidence of many surveys effectively allows us to poll art scholars’ opinions on the relative importance of many different artists. This study will consider American painters of the past century, and there are scores of books that include surveys

of the work of these artists – a number sufficiently large that no important result will be significantly influenced by the opinions of any single author.

Expert Rankings

The first quantitative task for this study was to identify the most important American painters of the twentieth century. I first selected all the American painters born between 1870 and 1960 whose work was illustrated six or more times in six chosen books of art history published since 2000 that surveyed at least the entire twentieth century.¹³ There were 30 such painters. I then ranked these painters by counting all of the illustrations of the work of each in all available books of art history published since 2000 that surveyed at least the entire twentieth century.¹⁴ The 56 books I found are listed in the Appendix, and the ranking derived from them is shown in Table 1. This effectively constitutes a critical ranking of the most important American painters of the twentieth century, as viewed from the first two decades of the twenty-first.

In many respects the ranking of Table 1 is unsurprising. The six highest-ranked painters are widely acknowledged as the leading members of the two generations of painters who shifted the center of the Western art world from Paris to New York: Pollock, de Kooning, and Rothko were the recognized leaders of Abstract Expressionism, who created an experimental revolution during the late 1940s and the '50s, while Johns, Rauschenberg, and Warhol were the leaders of the conceptual revolution that followed in the late '50s and the '60s.¹⁵

The top of the ranking in Table 1 is similar to a comparable ranking of American artists published in 2002, which analyzed art history surveys published during 1980-2001. Thus the top 10 painters eligible for both rankings are the same. There are some differences in their ordering, however, most conspicuously at the very top. Thus whereas Pollock led the 2002 ranking, followed in order by Johns and Warhol, in the new ranking Warhol is first, followed in order by

Pollock and Johns. Pollock had 18% more illustrations than Warhol in the earlier ranking, whereas Warhol has 6% more than Pollock in the new ranking.¹⁶ This is an interesting change, that appears to reflect the development of American art in recent decades.¹⁷

Price Formation

The market valuation of an artist's work develops over time. Sir Alan Bowness contended that the artist's prices developed in tandem with his importance, and offered an outline of the process by which an artist achieved success. He argued that important artists went through four successive stages: "peer recognition, critical recognition, patronage by dealers and collectors, and finally public acclaim." The first of these was the most important, for "it is always the artists themselves who are first to recognize exceptional talent." At the end of this process lay both museum status and high market prices.¹⁸

Genuinely innovative art nearly always meets initial opposition, because major changes in any artistic practices impose losses on those committed to the older practices. The scholar Leo Steinberg thus proposed "a general rule that whenever there appears an art that is new and original, the men who denounce it first and loudest are artists." Yet over time the advantages of the innovation become apparent, most often to young artists who are not committed to the practices that are being discarded, and the result is that "rapid domestication of the outrageous is the most characteristic feature of our artistic life."¹⁹ Sophisticated art world insiders have long understood this transformation. In 1889, two years before Vincent van Gogh's suicide, his brother Theo, a Paris art dealer, wrote to console him for the lack of demand for his paintings. Theo told his brother that he saw in his latest canvases

a vigor...[which] will undoubtedly be appreciated someday. When we see that the Pissarros, the Gauguins, the Renoirs, the Guillaumins do not sell, one ought to be almost glad of not having the public's favor, seeing that those who have it now

will not have it forever, and it is quite possible that times will change very shortly.²⁰

And in 1936 the great dealer Ambroise Vollard, who had presented Pablo Picasso's first gallery show in 1901, wrote of Picasso that

I can say with truth that I have had in my shop many of his pictures which are the most sought after today, but for which the artist, at that time, could not obtain the price of a stretcher. I can also tell a story of the artist's Cubist period, when not only the man in the street, but amateurs, art critics and even painters still refused to admit that nature might consist of an assemblage of geometrical forms.²¹

Important innovations eventually become widely accepted. Thus Steinberg observed that "Before long, the new looks familiar, then normal and handsome, finally authoritative."²² But just how long this takes is subject to debate. Bowness estimated that it takes "about twenty-five years for the truly original artist to win public recognition;" Steinberg contended that "it takes about seven years for a young artist...to turn from *enfant terrible* into elder statesman."²³ In 1968 the poet John Ashbery, who moonlighted as an art critic, claimed that "looking back only as far as the beginning of the century we see that the period of neglect for an avant-garde artist has shrunk for each generation."²⁴ Although each of these experts spoke from considerable experience, it should be noted that Bowness' schematic path to success has never been subjected to systematic measurement. So while it is important to be aware of the lag between innovation and public – and market – recognition, we should not assume that we know its duration with any precision. It is equally important to be aware of these experts' basic agreement on the key element in the process of price formation, that as neatly stated by the painter and critic Wyndham Lewis in 1940, "it is painters and only painters who, in the end, are the *valuers* of painting. There would be no two-hundred-thousand dollar Rembrandts and Michelangelos today without the recognition and consent of the painters, generation after generation."²⁵

Auction Prices

This study will consider all prices for paintings by the 30 sample members sold at auction during 2000-17. As an initial measure, Table 2 presents the single highest price achieved by the work of each of the 30 painters during this period.

The ranking of Table 2 clearly differs from that of Table 1. The highest price in Table 2, for example, is for Jean-Michel Basquiat, who ranks only twelfth in total illustrations. Yet there are similarities between the two rankings. Thus all of the top ten painters in Table 1 rank in the top half of Table 2. Overall the rank correlation between Tables 1 and 2 is 0.656. To reduce the possible impact of a few exceptional prices for any one artist, we can also consider the rank correlation between Table 1 and the fifth-highest price for each artist; this is slightly higher, at 0.679. Regressions presented in Table 3 show that an artist's total illustrations significantly predict the log of the artist's highest price, and of the artist's fifth-highest price, as in both cases this variable explains more than 40% of the variance of the dependent variable.

The analyses of Tables 2 and 3 obviously fail to consider many of the most expensive paintings. Table 4 gives a more complete view of these, presenting the total number of paintings by each artist that sold for more than \$10 million during 2000-17. In total there were 276 such sales, representing 15 different artists. Remarkably, Warhol had more than twice as many sales of over \$10 million than any other artist. Overall, 12 of the 13 highest-ranked painters from Table 1 had at least one sale over \$10 million, compared to only three of the lowest 17.

Table 4 also shows that 12 sample members had a total of 81 sales for more than \$30 million. Eight of these artists ranked in the top 10 of Table 1, while only two were in the bottom half of the Table 1 ranking.

Finally, Table 4 shows that eight sample members each had at least one sale over \$50 million. These include five of the top 10 from Table 1, and seven of the top 13; among this group only Cy Twombly ranked in the bottom half of Table 1.

Table 5 shows the concentration of sales over \$10 million, \$30 million, and \$50 million, according to artists' rankings in total illustrations. Warhol accounted for more than 30% of total sales in each of these categories. The top five artists from Table 1 accounted for nearly half of sales over \$10 million, and more than 40% of sales in the two higher price categories. The top 10 artists from Table 1 accounted for more than three quarters of sales over \$10 million and \$30 million, and just under that for sales over \$50 million. The top half of artists from Table 1 accounted for roughly 90% of sales in all three price categories.

Outliers

Many of the largest entries in Table 4 belong to the very most famous American painters, the leading Abstract Expressionists and Pop artists. There are two painters, however, who do not fit this description. Jean-Michel Basquiat and Cy Twombly rank third and sixth, respectively, in sales above \$10 million in spite of the fact that Basquiat ranks just twelfth, and Twombly twenty-first, in total illustrations. What accounts for this apparent anomaly?

Basquiat is by far the youngest artist selected for this study: he was born in 1960, fully 20 years later than Chuck Close, the next youngest sample member. Like Warhol, whom he idolized, Basquiat aggressively pursued fame, and to this end, also like Warhol, Basquiat created a persona that complemented his distinctively personal art. Basquiat epitomized celebrity cool. Building on his early prominence as a graffiti artist, he produced a hip-hop record with the pioneer rapper Fab 5 Freddy, appeared in a music video for the Blondie song "Rapture," played in a band with the actor Vincent Gallo, modeled in a runway fashion show for Comme des Garçons, dated the rising

pop star Madonna, and made collaborative paintings with Warhol. He threw \$100 bills from limousine windows to panhandlers, and was photographed for the cover of *New York Times Magazine* in his studio, paintbrush in hand, barefoot, wearing a paint-spattered Armani suit.²⁶ Both his flamboyant behavior and his meteoric rise to fame alienated traditionalists in the art world even as they made him known far beyond the narrow bounds of that world. Basquiat's precocious artistic achievement and his tragic death of an overdose at just 27 prompted comparisons to such earlier self-destructive geniuses as Rimbaud, van Gogh, and another of Basquiat's idols, the jazz great Charlie Parker.

In his art, Basquiat created an instantly recognizable style that was quintessentially conceptual in its abundant allusions, frequent use of collage, and pervasive use of language. His images were often taken directly from books on a wide range of subjects – medical texts and cartoons, as well as art history texts, museum catalogues, and monographs on artists from Old Masters to contemporaries. He made frequent reference to blacks and their history, including tributes to great athletes and musicians, canonizing Joe Louis in *St. Joe*, and bestowing a kingdom on Charlie Parker as *Charles the First*. His painted commentaries on racism ranged from the history of the transatlantic slave trade to the 1983 beating death of a graffiti artist by New York City transit police. Basquiat painted quickly, often while listening to bebop recordings from his collection of more than 3,000 records; his gestural brushstrokes and frequent drips, spatters, and visible corrections reflect the speed with which the paintings were made, as do the improvised all-over compositions in which images and words jostle against each other.²⁷

Reviewing a 2005 museum retrospective of Basquiat, Arthur Danto wrote in *The Nation* of the persistent critical resistance to his art: “Whether because of Basquiat's race or the uncertainty of his association with graffiti, the official art establishment was leery of

him...Basquiat ended up being critically ghettoized, discussed in ethnic rather than philosophical terms. To some extent this is still true today.” But Danto compared Basquiat’s talent to Pollock’s – “brilliant, daring, impulsive” – and believed he had emerged as the greatest artist of his time: “He alone transcended the fevered period he epitomized.”²⁸ In the *New Yorker*, Peter Schjeldahl agreed that Basquiat had turned out to be “the essential American Neo-Expressionist painter of the early 1980s,” but he went further, contending that “As a black artist, Basquiat isn’t the Jackie Robinson of the art world...so much as its Willie Mays, abolishing forever racial identity as remarkable in the field’s top rank.”²⁹ Comparing Basquiat’s rankings in Tables 1 and 4 suggests that the auction market may be in advance of art scholars in recognizing Basquiat’s transformational role in leading a revolution in the very fabric of the art world. This market evidence may thus indicate that in future art surveys Basquiat will join Pollock and Warhol as the key figures in the history of modern American art – Pollock and Warhol as leaders of revolutions in the nature of art, and Basquiat as leader of a revolution in the demographic composition of American artists.

Twombly was considerably older than Basquiat. He was a close friend of Robert Rauschenberg when the two were beginning their careers, and the two traveled to Europe together in their early twenties. Rauschenberg soon returned to the United States, but Twombly remained in Italy, where he spent much of his life. Twombly’s art was less conspicuously innovative than Rauschenberg’s, and his contribution was less highly concentrated in his early career, and this combined with his absence from New York to reduce his influence on younger American artists. Yet the recent sales of his work that are reflected in Table 4 appear to be the result of a reevaluation of his achievement that is due in part to the growing importance of Basquiat.

As noted above, Basquiat's art had myriad sources. Yet from early in his career, critics stressed the importance of Twombly's art to his development. In 1981, in the first significant essay about Basquiat, the critic Rene Ricard wrote in *Artforum* that "If Cy Twombly and Jean Dubuffet had a baby, and gave it up for adoption, it would be Jean-Michel."³⁰ Annina Nosei, who became Basquiat's dealer in that year, recalled that when she first saw his art, "He was very disorderly and very fertile in the drawings and his work reminded me of Cy Twombly."³¹ A collector reported watching Basquiat work, "with a Cy Twombly book in one hand, and painting with the other."³²

Shortly before Basquiat's death, when an interviewer asked him to name his favorite American artists, he replied, "Twombly, Rauschenberg, Warhol, and Johns."³³ The critic Klaus Kertess explained the relationship:

In the mid-1950s, Cy Twombly began to make Pollock's handwriting more literal and literary. Now merging actual handwriting and painterly gesture, Twombly brought graffiti and looping doodles into his work...Basquiat, in turn, extended Twombly's investigation of the relationships between painting gesture, written language, and ideogram.³⁴

A biographer explained it differently: "Basquiat has evolved his style from his own childhood drawings, but Twombly's work gave him permission to take it seriously."³⁵

Private Sales

Public auctions are of course not the only marketplace for expensive paintings. Private sales are more difficult to study, because their results need not be made public. The relevant question here is whether private sales might somehow systematically contravene the patterns found above for auction prices.

Some evidence can be offered. Among Wikipedia's vast catalogue is an entry titled "List of most expensive paintings" – a compilation of the highest known prices ever paid for paintings,

based on newspaper and magazine reports. This is the basis for Table 6, which selects all private sales of works by modern American artists from the Wikipedia entry.

Table 6 suggests that it is the most highly ranked painters from Table 1 whose works have sold privately for the largest sums. Nine of the table's 12 entries represent painters ranked in the top five in Table 1, 11 of the 12 are by top 10 painters, and one of the sales is a painting by Barnett Newman, who ranks eleventh in Table 1. This evidence thus suggests that private sales follow the same basic patterns as the auction prices considered above.

Conclusion

Some art experts have claimed that prices produced by art markets are unrelated to genuine artistic importance. Other experts have disagreed. Yet none of these assertions have been based on systematic quantitative evidence.

This paper used published surveys of art history to construct a critical ranking of the most important American painters of the twentieth century, then used auction records to identify the most expensive paintings by these artists sold during the past two decades. The results showed a strong positive association between the critical rankings and auction prices. Thus the highest single price an artist's work achieved was strongly positively related to that artist's critical ranking, and the highest-ranked artists from the art history surveys were disproportionately represented among the highest-priced paintings sold at auction. Art markets clearly do recognize artistic importance. Earlier studies have shown that this is true within artists' careers, as auction markets consistently assign the highest prices to the period of an artist's career that scholars judge to be the most important.³⁶ And the present study demonstrates that this is also true across artists, as the most expensive sales are dominated by the greatest artists.

The question in the title of this paper is intrinsically quantitative, and it has now been answered with quantitative evidence. The most important artists do produce the most expensive paintings, and it is their most important works that sell for the highest prices.

Footnotes

1. Robert Hughes, *Nothing If Not Critical* (New York: Penguin, 1990), p. 237; David Leonhardt, “The Art of Pricing Great Art,” *New York Times* (Nov. 15, 2006).
2. Sandra Salmans, “The Fine Art of Yale,” *New York Times* (April 24, 2005); Christina Duff, “In Payscale, Life Sometimes Imitates Art,” *Wall Street Journal* (May 22, 1998).
3. Alan Bowness, *The Conditions of Success* (New York: Thames and Hudson, 1990), p. 11; Peter Schjeldahl, *Let’s See* (New York: Thames and Hudson, 2008), p. 10.
4. E.g. Arnold Hauser, *The Sociology of Art* (Chicago: University of Chicago Press, 1982), p. 516; Bruno Frey and Werner Pommerehne, *Muses and Markets* (Oxford: Basil Blackwell, 1989), p. 93; Olav Velthuis, *Talking Prices* (Princeton: Princeton University Press, 2005), p. 113; Don Thompson, *The \$12 Million Stuffed Shark* (London: Aurum Press, 2008), pp. 245-71; Geraldine Keen, *Money and Art* (New York: G.P. Putnam’s Sons, 1971), pp. 39-42; Hans Abbing, *Why Are Artists Poor?* (Amsterdam: University Press, 2002), pp. 76-77; Raymonde Moulin, *The French Art Market* (New Brunswick: Rutgers University Press, 1987), p. 126; William Grampp, *Pricing the Priceless* (New York: Basic Books, 1989), p. 37.
5. T.S. Eliot, *Selected Prose of T.S. Eliot* (San Diego: Harcourt, 1975), p. 38.
6. Walter Sickert, *The Complete Writings on Art* (Oxford: Oxford University Press, 2000), p. 253.
7. Harold Rosenberg, *Discovering the Present* (Chicago: University of Chicago Press, 1973), p. 78
8. Eliot, *Selected Prose of T.S. Eliot*, p. 38
9. James A.M. Whistler, *The Gentle Art of Making Enemies* (New York: G.P. Putnam’s Sons, 1922), p. 30.
10. Michel Sanouillet and Elmer Peterson, eds., *The Writings of Marcel Duchamp* (New York: Da Capo Press, 1989), p. 138.
11. Martin Kemp, *Art in History* (London: Profile Books, 2014), pp. 1, 3.
12. Clement Greenberg, *The Collected Essays and Criticism*, Vol. 4 (Chicago: University of Chicago Press, 1993), p. 118.
13. These books are identified in the Appendix.
14. On the use of illustrations as a metric, see David Galenson, *Artistic Capital* (New York: Routledge, 2006), p.5.

15. David Galenson, "Pricing Revolution: From Abstract Expressionism to Pop Art," *Research in Economics*, Vol. 72 (2018), pp. 86-100.
16. Galenson, *Artistic Capital*, Chap. 3. The earlier ranking was restricted to artists born during 1900-40, so Hopper, O'Keeffe, and Basquiat were excluded.
17. For extended analysis, see David Galenson, "The Rise of Andy Warhol," forthcoming.
18. Bowness, *The Conditions of Success*, pp. 11, 16.
19. Leo Steinberg, *Other Criteria* (London: Oxford University Press, 1972), p. 4-5.
20. Vincent van Gogh, *The Complete Letters of Vincent van Gogh*, Vol. 3 (Greenwich, CT: New York Graphic Society, 1959), p. 543.
21. Ambroise Vollard, *Recollections of a Picture Dealer* (Mineola, NY: Dover Publications, 2002), p. 220.
22. Steinberg, *Other Criteria*, p. 6.
23. Bowness, *The Conditions of Success*, p. 47; Steinberg, *Other Criteria*, pp. 5-6.
24. John Ashbery, *Reported Sightings* (New York: Alfred A. Knopf, 1989), p. 392.
25. Wyndham Lewis, *Creatures of Habit and Creatures of Change* (Santa Rosa: Black Sparrow Press, 1989), p. 291.
26. Phoebe Hoban, *Basquiat* (New York: Penguin, 2004).
27. Richard Marshall, ed., *Jean-Michel Basquiat* (New York: Whitney Museum, 1992); Dieter Buchhart and Eleanor Nairne, eds., *Basquiat* (London: Prestel, 2017); Kobena Mercer, ed., *Exiles, Diasporas, and Strangers* (Cambridge: MIT Press, 2008).
28. Arthur Danto, "Flyboy in the Buttermilk," *The Nation* (April 21, 2005).
29. Schjeldahl, *Let's See*, pp. 213-15.
30. Jordana Saggese, *Reading Basquiat* (Berkeley: University of California Press, 2014), p. 4.
31. Eric Fretz, *Jean-Michel Basquiat* (Santa Barbara: Greenwood, 2010), p. 81.
32. Hoban, *Basquiat*, p. 83.
33. Saggese, *Reading Basquiat*, p. 152.

34. Marshall, *Jean-Michel Basquiat*, p. 54.
35. Fretz, *Jean-Michel Basquiat*, p. 82.
36. E.g. David Galenson, *Painting Outside the Lines* (Cambridge: Harvard University Press, 2001), Chaps. 2-3; Galenson, "Pricing Genius: The Market Evaluation of Innovation," *Journal of Applied Economics*, Vol. 19 (2016), pp. 219-48; Galenson, "Pricing Revolution."

Table 1: Ranking of Artists by Total Illustrations

Artist	Illustrations	Year of Birth	Year of Death
1. Andy Warhol	135	1928	1987
2. Jackson Pollock	127	1912	1956
3. Jasper Johns	99	1930	--
4. Robert Rauschenberg	97	1925	2008
5. Willem de Kooning	92	1904	1997
6. Mark Rothko	88	1903	1970
7. Edward Hopper	78	1882	1967
8. Roy Lichtenstein	74	1923	1997
9. Georgia O'Keeffe	59	1887	1986
9. Frank Stella	59	1936	--
11. Barnett Newman	58	1905	1970
12. Jean-Michel Basquiat	44	1960	1988
12. Arshile Gorky	44	1904	1948
14. Ellsworth Kelly	41	1923	2005
15. Charles Sheeler	39	1883	1965
16. Grant Wood	38	1892	1941
17. Stuart Davis	35	1894	1964
18. Franz Kline	34	1910	1962
19. Thomas Benton	31	1889	1975
20. Charles Demuth	30	1883	1935
21. Morris Louis	28	1912	1962
21. Cy Twombly	28	1928	2011
23. Chuck Close	26	1940	--
23. Helen Frankenthaler	26	1928	2011
23. John Sloan	26	1871	1951
26. Robert Motherwell	24	1915	1991
27. Arthur Dove	19	1880	1946
27. Marsden Hartley	19	1877	1943
29. Philip Guston	18	1913	1980
30. Mark Tobey	15	1890	1976

Source: see text and appendix.

Table 2: Single Highest Auction Price for Each Artist, 2000-2017

	Artist	Price	
		(\$ million)	(Rank)
1.	Andy Warhol	110.47	2
2.	Jackson Pollock	61.15	8
3.	Jasper Johns	37.16	12
4.	Robert Rauschenberg	19.19	14
5.	Willem de Kooning	67.45	7
6.	Mark Rothko	92.24	4
7.	Edward Hopper	42.42	11
8.	Roy Lichtenstein	98.13	3
9.	Georgia O'Keeffe	45.83	9
9.	Frank Stella	14.09	15
11.	Barnett Newman	86.86	5
12.	Jean-Michel Basquiat	110.49	1
12.	Arshile Gorky	9.19	16
14.	Ellsworth Kelly	6.03	19
15.	Charles Sheeler	1.22	29
16.	Grant Wood	8.50	17
17.	Stuart Davis	5.49	22
18.	Franz Kline	42.89	10
19.	Thomas Benton	5.01	23
20.	Charles Demuth	1.77	28
21.	Morris Louis	3.61	26
21.	Cy Twombly	72.58	6
23.	Chuck Close	5.90	20
23.	Helen Frankenthaler	2.91	27
23.	John Sloan	3.90	24
26.	Robert Motherwell	3.89	25
27.	Arthur Dove	5.59	21
27.	Marsden Hartley	7.11	18
29.	Philip Guston	27.12	13
30.	Mark Tobey	0.80	30

Source: Artnet. Prices are in constant 2017 dollars, adjusted with the CPI.

Table 3: Regression Analysis of Prices

Independent Variables	Dependent Variables	
	(1) Highest Price	(2) Fifth-Highest Price
Total illustrations	0.029* (0.006)	0.031* (0.007)
Constant	14.996* (0.386)	13.861* (0.397)
Adj. R²	0.427	0.447
Observations	30	30

Notes: Dependent variables: (1) natural log of artist's highest price, 2000-17; (2) natural log of artist's fifth-highest price, 2000-17. For total illustrations, see Table 1. * denotes significance at the 1% level.

Table 4: Total Number of Auction Sales Over Selected Prices, by Artist

Ranking	Artist	\$10 million	\$30 million	\$50 million
(total illustrations)				
1.	Andy Warhol	85	25	9
2.	Jackson Pollock	9	3	1
3.	Jasper Johns	5	2	--
4.	Robert Rauschenberg	5	--	--
5.	Willem de Kooning	31	4	1
6.	Mark Rothko	41	19	7
7.	Edward Hopper	6	2	--
8.	Roy Lichtenstein	25	7	2
9.	Georgia O'Keeffe	2	1	--
9.	Frank Stella	1	--	--
11.	Barnett Newman	4	2	1
12.	Jean-Michel Basquiat	36	8	3
18.	Franz Kline	5	1	--
21.	Cy Twombly	18	7	3
29.	Philip Guston	3	--	--
Total		276	81	27

Source: see Table 2.

Table 5: Distributions of Sales Over Selected Prices, by Critical Rankings

Ranking	\$10 million		\$30 million		\$50 million	
(total illustrations)	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Top 1	85	31	25	31	9	33
Top 5	135	49	34	42	11	41
Top 10	210	76	63	78	20	74
Top 15	250	91	73	90	24	89
Total	276		81		27	

Source: Critical rankings are from Table 1. For auction prices see Table 2.

Table 6: Highest Prices for Sample Members in Private Sales

	Artist	Painting Date	Sale Date	Price (\$ millions)
1.	Willem de Kooning	1955	2015	304
2.	Jackson Pollock	1948	2015	200
3.	Mark Rothko	1951	2014	190
4.	Roy Lichtenstein	1962	2017	165
5.	Jackson Pollock	1948	2006	164.5
6.	Willem de Kooning	1953	2006	161.6
7.	Jasper Johns	1954	2010	121.1
8.	Andy Warhol	1963	2008	112.3
9.	Barnett Newman	1968	2008	110.2
10.	Jasper Johns	1959	2006	94
11.	Andy Warhol	1964	2007	91.6
12.	Willem de Kooning	1955	2006	74.6

Source: “List of Most Expensive Paintings,” Wikipedia, downloaded May 23, 2018.

Appendix

The 56 books surveyed for this paper are listed here, ordered by date of publication. The six books used to select the artists are indicated by asterisks.

1. Collings, Matthew, *This is Modern Art* (New York: Watson-Guption Publications, 2000).
2. Kemp, Martin, ed., *The Oxford History of Western Art* (Oxford: Oxford University Press, 2000).
3. Bell, Cory, *Modern Art* (New York: Watson-Guption Publications, 2001).
4. Blistène, Bernard, *A History of 20th-Century Art* (Paris: Flammarion, 2001).
5. Bocola, Sandro, *Timelines – The Art of Modernism* (Cologne: Taschen, 2001).
6. Richter, Klaus, *Art* (Munich: Prestel Verlag, 2001).
7. Belton, Robert, *Art* (New York: Watson Guption, 2002).
8. *Doss, Erika, *Twentieth-Century American Art* (Oxford: Oxford University Press, 2002).
9. *Arnason, H.H., *History of Modern Art*, fifth ed. (Upper Saddle River, NJ: Prentice Hall, 2004).
10. Johnson, Paul, *Art* (New York: Harper Collins, 2003).
11. Marchetti, Francesca, *American Painting* (New York: Watson Guption, 2003).
12. Arnold, Dana, *Art History* (Oxford: Oxford University Press, 2004).
13. Foster, Hal, et al., *Art Since 1900* (New York: Thames and Hudson, 2004).
14. *Hunter, Sam; John Jacobus, and Daniel Wheeler, *Modern Art*, third ed. (New York: Vendome Press, 2004).
15. *Bjelajac, David, *American Art*, second ed. (Upper Saddle River, NJ: Prentice Hall, 2005).
16. Carlin, John, and Jonathan Fineberg, *Imagining America* (New Haven: Yale University Press, 2005).
17. Cottingham, David, *Modern Art* (Oxford: Oxford University Press, 2005).
18. Cumming, Robert, *Art* (New York: DK Publishing, 2005).
19. Eschenburg, Barbara, et al., *Masterpieces of Western Art*, Vol. 2 (Cologne: Taschen, 2005).
20. Gowing, Lawrence, ed., *Encyclopedia of Art*, Vol. 5 (New York: Facts on File, 2005).
21. Honor, Hugh, and John Fleming, *A World History of Art*, seventh ed. (Upper Saddle River, NJ: Pearson Education, 2005).
22. *Ruhrberg, Karl, *Art of the 20th Century*, Vol. 1 (Cologne: Taschen, 2005).

23. Stokstad, Marilyn, *Art History*, revised second ed. (Upper Saddle River, NJ: Pearson Education, 2005).
24. Zuffi, Stefano, *Dictionary of Painters* (New York: Barnes and Noble, 2005).
25. Lewis, Michael, *American Art and Architecture* (New York: Thames and Hudson, 2006).
26. Thompson, Jon, *How To Read a Modern Painting* (New York: Abrams, 2006).
27. Adams, Laurie, *Art Across Time*, third ed. (Boston: McGraw Hill, 2007).
28. *Bell, Julian, *Mirror of the World* (New York: Thames and Hudson, 2007).
29. Buchholz, Elke, et al., *Art* (New York: Abrams, 2007).
30. Two books treated as one:
 - Crepaldi, Gabriele, *Modern Art, 1900-45* (New York: Harper Collins, 2007).
 - Poli, Francesco, *Postmodern Art* (Harper Collins, 2008).
31. Davies, Penelope, et al. *Janson's History of Art*, seventh ed. (Upper Saddle River, NJ: Pearson Prentice Hall, 2007).
32. Farthing, Stephen, ed., *1001 Paintings* (New York: Universe, 2007).
33. Strickland, Carol, *The Annotated Mona Lisa*, second ed. (Kansas City: Andrews McMeel, 2007).
34. Gualdoni, Flamino, *Art* (Milan: Skira, 2008).
35. Harrison, Charles, *An Introduction to Art* (New Haven: Yale University Press, 2009).
36. Lucie-Smith, Edward, *Lives of the Great Modern Artists*, revised ed. (London: Thames and Hudson, 2009).
37. Dempsey, Amy, *Styles, Schools, and Movements*, second ed. (London: Thames and Hudson, 2010).
38. Farthing, Stephen, *Art* (New York: Universe, 2010).
39. Marter, Joan, ed., *The Grove Encyclopedia of American Art* (Oxford: Oxford University Press, 2011).
40. Bird, Michael, *100 Ideas That Changed Art* (London: Laurence King, 2012).
41. Gompertz, Will, *What Are You Looking At?* (New York: Dutton, 2012).
42. Paglia, Camille, *Glittering Images* (New York: Pantheon Books, 2012).
43. Parmesani, Loredana, *Art of the Twentieth Century and Beyond* (Milan, Skira, 2012).
44. Pohl, Frances, *Framing America*, third ed. (New York: Thames and Hudson, 2012).

45. Eimert, Dorothea, *Art and Architecture of the Twentieth Century* (New York: Parkstone Press, 2013).
46. Kemp, Martin, *Art in History* (London: Profile, 2014).
47. Kleiner, Fred, *Gardner's Art Through the Ages*, fourteenth ed. (Boston: Wadsworth, 2014).
48. Melick, Tom, ed., *Art in Time* (London: Phaidon Press, 2014).
49. Ball, Larry, et al., *30,000 Years of Art* (London: Phaidon Press, 2015).
50. Koster, Thomas, *50 Artists You Should Know* (Munich: Prestel, 2015).
51. Getlein, Mark, and Annabel Howard, *Art Visionaries* (London, Laurence King, 2016).
52. Fortenberg, Diane, ed., *The Art Museum*, revised ed. (London: Phaidon, 2017).
53. Hodge, Susie, *The Short Story of Art* (London: Laurence King, 2017).
54. Hodge, Susie, *Modern Art in Detail* (New York: Thames and Hudson, 2017).
55. Dempsey, Amy, *Modern Art* (London, Thams and Hudson, 2018).