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Michael J. Schell: Baseball's All-Time Best Slugger

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Guide to the time chart tables

This legend describes the terms in the tables that describe the changes in Figures 3.1–3.24.

Years = years for a given trend

Avg, 2B/500, etc. = model value for the initial year of the period

Rate = the change per year for the event given in the second column

Description/possible explanation

In the description, one of five adjectives is used to describe the sharpness of the rate change, from the first year listed on the line; for a 1-year slope, the change is to the year on the following line. From most extreme to most level, they are: major, sharp, modest, mild, and stable. If the rate change is positive, it is called a “rise”; if the rate change is negative, it is called a “decline” (for major changes the stronger terms “jump” or “drop” are used). The following table defines the use of the adjectives:

	Rate Change in Points				
	Stable	Mild	Modest	Sharp	Major
SLG, OPS	.000	.001–.002	.003–.009	.010–.029	.030+
BA, OBP	0–.0002	.0003–.0009	.001–.002	.003–.009	.010+
SO, BB	0–0.1	0.2–0.4	0.5–1.4	1.5–4.9	5+
2B, HR, SB, EBH	0	0.1–0.2	0.3–0.9	1.0–2.9	3+
3B	0	.03–.09	.10–.29	.30–.99	1.00+
R	0–.014	.015–.049	.05–.14	.15–.49	0.5+

Footnote terms

SLS = *significance-level-to-stay* of least significant slope change

SLS+ = lowest significance-level-to-stay of possible slope changes which was removed from the final model

r^2 = the Pearson correlation coefficient for the final model; it represents the fraction of the variability in the data that is accounted for by the model

Weight = formula for weight used for the weighted piecewise linear regression. If weight is given as *binomial*, it is based on the binomial distribution method for calculating precision as described in a *Stats Fact* presented in Appendix A. In general, it is:

$$\text{Number of chances/event average} \times (1 - \text{event average}).$$

For BA, 2B, 3B, HR, the number of chances equals at-bats; in all other cases, it equals at-bats + walks.

Table for Figure 3.1 National League Batting Average, 1901–2003

Years	Avg	Rate	Description/Possible Explanation
1901–02	.263	.0000	Stable 3-yr period
1903–07	.263	–.005	Sharp 5-yr decline
1908–11	.237	.009	Sharp 4-yr rise—All-time low in 1908
1912–13	.271	–.012	Major 2-yr decline
1914–18	.248	.0012	Modest 5-yr rise
1919–20	.254	.018	Major 2-yr rise—Lively ball era begins
1921–27	.290	–.0012	Modest 7-yr decline
1928–29	.281	.012	Major 2-yr rise—All-time high in 1930
1930	.304	–.024	Major 1-yr drop—New ball used
1931–41	.280	–.002	Modest 11-yr decline
1942–61	.260	.0000	Stable 20-yr period
1962	.260	–.013	Major 1-yr decline—Enlarged strike zone
1963–76	.247	.0008	Mild 14-yr rise
1977–91	.258	–.0005	Mild 15-yr decline
1992	.251	.014	Major 1-yr rise—Colorado franchise added
1993–02	.265	–.0003	Mild 10+ yr decline
2003	.262	—	

Notes: SLS = .0001, SLS+ = .0106, r^2 = .892, Weight = Binomial.

Table for Figure 3.2 American League Batting Average, 1901–2003

Years	Avg	Rate	Description/Possible Explanation
1901	.276	.0000	Stable 2-yr period
1902	.276	–.027	Major 1-yr drop
1903–09	.249	–.0011	Modest 7-yr decline
1910	.241	.032	Major 1-yr jump—With cork-centered ball
1911–13	.273	–.009	Sharp 3-yr decline—Most of 1911 jump is gone
1914–17	.246	.0016	Modest 4-yr rise
1918–20	.253	.013	Major 3-yr rise—All-time high in 1921
1921–32	.292	–.0013	Modest 12-yr decline
1933–35	.276	.004	Sharp 3-yr rise
1936–42	.289	–.005	Sharp 7-yr decline
1943–49	.254	.0013	Modest 7-yr rise
1950–61	.263	–.0009	Mild 12-yr decline—Contrasting the HR, K rises
1962–67	.253	–.003	Sharp 6-yr decline—In big K zone era
1968–69	.233	.010	Major 2-yr rise—With narrower strike zone
1970–71	.252	–.006	Sharp 2-yr decline
1972	.240	.018	Major 1-yr rise—Introduction of the DH
1973–79	.257	.0012	Modest 7-yr rise—With HRs flat, Ks in decline
1980–91	.266	–.0005	Mild 12-yr decline—With HRs, Ks rising
1992–95	.260	.004	Sharp 4-yr rise—Power era, BA and HRs rising
1996–02	.276	–.0015	Modest 7+ yr decline
2003	.266	—	

Note: SLS = .0013, SLS+ = .0154, r^2 = .943, Weight = Binomial.

Table for Figure 3.3 National League Doubles per 500 At-Bats, 1901–2003

Years	2B/500	Rate	Description/Possible Explanation
1901–02	17.4	0.00	Stable 3-yr period
1903–06	17.4	–0.7	Modest 4-yr decline—To all-time low in 1907
1907–11	14.7	1.2	Sharp 5-yr rise
1912–17	20.7	–0.6	Modest 6-yr decline
1918–24	16.8	1.1	Sharp 7-yr rise—Lively ball era
1925–26	24.6	–1.2	Sharp 2-yr decline
1927–29	22.2	1.8	Sharp 3-yr—To all-time high in 1930
1930–32	27.6	–1.5	Sharp 3-yr decline
1933–70	23.2	–0.12	Mild 38-yr decline
1971–76	18.6	0.5	Modest 6-yr rise—Reversing the long decline
1977–90	21.5	0.07	Mild 14-yr rise
1991–02	22.5	0.4	Modest 12+ yr rise
2003	26.9	—	Close to all-time high

Note: SLS = .0003, SLS+ = .0081, $r^2 = .921$, Weight = Binomial.

Table for Figure 3.4 American League Doubles per 500 At-Bats, 1901–2003

Years	2B/500	Rate	Description/Possible Explanation
1901	20.5	0.00	Stable 2-yr period
1902–09	20.5	–0.7	Modest 8-yr decline—To all-time low levels
1910	14.9	4.3	Major 1-yr jump—Cork-centered ball
1911–17	19.1	–0.2	Mild 7-yr decline
1918–19	17.8	3.1	Major 2-yr jump—Lively ball introduced
1920–29	24.0	0.3	Modest 10-yr rise—To all-time high in 1930
1930–32	27.4	–0.8	Modest 3-yr decline
1933–35	24.8	0.7	Modest 3-yr rise—To a second peak in 1936
1936–40	26.9	–0.6	Modest 5-yr decline
1941	24.0	–3.2	Major 1-yr drop—As players go to WWII
1942–52	20.8	–0.03	Stable 11-yr period
1953–54	21.2	–1.1	Sharp 2-yr decline
1955–59	19.0	0.3	Modest 5-year rise
1960–67	20.7	–0.4	Modest 8-yr decline—With enlarged K-zone era
1968–78	17.6	0.4	Modest 11-yr rise—With smaller strike zone
1979–91	22.1	0.10	Mild 13-yr rise
1992–93	23.4	1.4	Sharp 2-yr rise—Into the power era
1994–02	26.3	0.08	Stable 9-yr period—Near all-time highs of 1930s
2003	27.0	—	

Note: SLS = .0017, SLS+ = .0090, $r^2 = .971$, Weight = Binomial.

Table for Figure 3.5 National League Triples per 500 At-Bats, 1901–2003

Years	3B/500	Rate	Description/Possible Explanation
1901–08	6.5	0.00	Stable 9-yr period
1909–10	6.5	1.0	Major 2-yr rise—Cork-centered ball, new parks?
1911–13	8.5	–0.5	Sharp 3-yr decline—More new parks?
1914–20	6.9	0.10	Modest 7-yr rise
1921–41	7.6	–0.2	Modest 21-yr decline—Through lively ball era
1942–52	4.2	0.03	Mild 11-yr rise—WWII replacements alter trend
1953–72	4.6	–0.06	Mild 20-yr decline
1973–76	3.3	0.12	Modest 4-yr rise—AL has DH, NL has speed
1977–02	3.8	–0.04	Mild 26+ yr decline—To all-time low levels
2003	2.7	—	

Note: SLS = .0005, SLS+ = .0075, $r^2 = .958$, Weight = Binomial.

Table for Figure 3.6 American League Triples per 500 At-Bats, 1901–2003

Years	3B/500	Rate	Description/Possible Explanation
1901–06	8.7	–0.5	Sharp 6-yr decline—Just like doubles
1907–11	5.5	0.5	Sharp 5-yr rise—Nearly to 1901 level
1912–17	8.1	–0.3	Sharp 6-yr decline—Just like doubles
1918–20	6.3	0.6	Sharp 3-yr rise—Dead ball era ends
1921	8.1	–1.5	Major 1-yr drop
1922–29	6.6	0.08	Mild 8-yr rise
1930–33	7.2	–0.3	Modest 4-yr decline
1934–71	5.9	–0.09	Mild 38-yr decline
1972–76	2.6	0.2	Modest 5-yr rise—After DH introduced
1977–91	3.8	–0.07	Mild 15-yr decline
1992–02	2.7	0.00	11+ yr stable period
2003	2.7	—	Triples at an all-time low

Note: SLS = .0007, SLS+ = .0027, $r^2 = .970$, Weight = Binomial.

Table for Figure 3.7 National League Home Runs per 500 At-Bats, 1901–2003

Years	HR/500	Rate	Description/Possible Explanation
1901–08	1.9	0.00	Stable 9-yr period—Early deadball era
1909–10	1.9	0.9	Modest 2-yr rise—With cork-centered ball
1911–19	3.6	-0.13	Mild 9-yr decline—Pitchers adjust to new ball
1920	2.4	3.5	Major 1-yr jump—At outset of lively ball era
1921–39	5.9	0.10	Mild 19-yr rise—Throughout lively ball era
1940–42	7.7	-0.7	Modest 3-yr decline—WWII reverses HR trend
1943–54	5.5	0.8	Modest 12-yr rise—Post-WWII, to peak in '55
1955–67	15.2	-0.4	Modest 13-yr decline
1968–69	9.7	1.2	Sharp 2-yr rise
1970–75	12.2	-0.6	Modest 6-yr decline
1976	8.7	3.0	Major 1-yr jump
1977–80	11.6	-0.8	Modest 4-yr decline
1981–86	8.6	0.7	Modest 6-yr rise
1987	12.7	-2.7	Sharp 1-yr drop—Change in baseball manufacturer
1988–02	10.0	0.5	Modest 15+ yr gain—To all-time high levels
2003	16.7	—	1999–2001, 2003—All above prior high in '55

Note: SLS = .0008, SLS+ = .0027, $r^2 = .971$, Weight = Binomial.

Table for Figure 3.8 American League Home Runs per 500 At-Bats, 1901–2003

Years	HR/500	Rate	Description/Possible Explanation
1901–17	1.9	0.00	Stable 18-yr period—During the dead ball era
1918–21	1.9	0.8	Sharp 4-yr rise—Babe Ruth leads the way.
1922–39	5.1	0.3	Mild 18-yr rise
1940–41	9.6	-1.9	Major 2-yr drop—Into WWII era
1942–63	5.9	0.4	Modest 22-yr rise
1964–75	14.1	-0.3	Modest 12-yr decline—With big K zone
1976–86	9.9	0.5	Sharp 11-yr rise—With the league expansion
1987	15.2	-3.6	Major 1-yr drop—Change in baseball manufacturer
1988–02	11.6	0.4	Sharp 15+ yr rise—Continuing early '80s trend
2003	17.5	—	Home runs are at an all-time high

Note: SLS = .0001, SLS+ = .0017, $r^2 = .971$, Weight = Binomial.

Table for Figure 3.9 National League Runs per Game, 1901–2003

Years	R/G	Rate	Description/Possible Explanation
1901–02	4.36	.000	Stable 3-yr period
1903–07	4.36	–.22	Sharp 5-yr decline
1908–11	3.28	.34	Sharp 4-yr rise—Cork-centered ball
1912–15	4.62	–.34	Sharp 4-yr decline
1916–21	3.25	.23	Sharp 6-yr rise—Heading into lively ball era
1922–29	4.63	.06	Modest 8-yr rise
1930–32	5.08	–.24	Sharp 3-yr decline—Less lively ball
1933–61	4.36	.00	Stable 29-yr period
1962–67	4.37	–.12	Modest 6-yr decline—Big strike zone
1968–69	3.63	.25	Sharp 2-yr rise—Strike zone narrowed
1970–91	4.12	.00	Stable 22-yr period
1992–99	4.13	.11	Modest 8-yr rise—Power era; Colorado team
2000–02	4.81	–.18	Modest 3+ yr decline—Reinterpreted K-zone
2003	4.55	—	

Note: SLS = .0030, SLS+ = .0092, $r^2 = .741$, Weight = $G/(\text{Runs}/G)$.

Table for Figure 3.10 American League Runs per Game, 1901–2003

Years	Avg	Rate	Description/Possible Explanation
1901–03	5.38	–.59	Major 3-yr drop—Dropping a total of 1.8 r/game
1904–09	3.61	–.011	Stable 6-yr period
1910	3.54	.81	Major 1-yr jump—Cork-centered ball
1911–17	4.36	–.12	Modest 7-yr decline—To 1910 level
1918–20	3.55	.43	Sharp 3-yr jump—At outset of lively ball era
1921–37	4.85	.03	Mild 17-yr rise
1938–42	5.37	–.29	Sharp 5-yr decline
1943–49	3.91	.11	Modest 7-yr rise
1950–71	4.66	–.04	Mild 22-yr decline
1972	3.71	.45	Sharp 1-yr jump—Introduction of DH
1973–91	4.16	.03	Mild 19-yr rise
1987	4.67	–.53	Major 1-yr drop—Change in baseball manufacturer
1988–95	4.14	.13	Modest 8-yr rise
1996–02	5.18	–.04	Mild 7+ yr decline
2003	4.87	—	

Note: SLS = .0010, SLS+ = .0024, $r^2 = .866$, Weight = $G/\text{Runs per G}$.

Table for Figure 3.11 National League Bases on Balls per 550 NFPs, 1901–2003

Years	BB/550	Rate	Description/Possible Explanation
1901	35.5	0.00	Stable 2-yr period
1902–10	35.5	1.5	Sharp 9-yr climb—Bresnahan’s StL team doubles BB total in 1909 to lead shift
1911–15	49.3	–2.6	Sharp 5-yr drop—With cork-centered ball
1916–27	36.2	0.6	Modest 12-yr rise
1928–32	43.6	–1.3	Modest 5-yr drop
1933–45	37.3	1.2	Modest 13-yr rise
1946–67	52.9	–0.5	Modest 22-yr decline
1968–69	41.6	4.0	Sharp 2-yr jump—With strike zone change
1970–87	49.6	–0.2	Mild 18-yr decline
1988–02	46.7	0.3	Mild 15+ yr rise—With change in baseball manufacturer
2003	51.2	—	All-times highs achieved in 1999 and 2000

Note: SLS = .0004, SLS+ = .0043, $r^2 = .832$, Weight = Binomial.

Table for Figure 3.12 American League Bases on Balls per 550 NFPs, 1901–2003

Years	BB/550	Rate	Description/Possible Explanation
1901	37.6	0.00	Stable 2-yr period
1902	37.6	–6.5	Major 1-yr drop—To all-time low in 1903
1903–14	31.1	1.5	Sharp 12-yr rise
1915–27	49.0	–0.2	Mild 13-yr decline—Leading into lively ball era
1928–37	46.8	0.9	Modest 10-yr rise
1938–43	56.1	–1.3	Modest 6-yr decline—Into the WWII years
1944–48	48.1	2.4	Sharp 5-yr rise—To all-time high in 1949
1949–67	60.2	–0.8	Modest 19-yr decline
1968	44.9	5.6	Major 1-yr jump—With narrowed strike zone
1969–82	50.5	–0.3	Mild 14-yr decline—Return to pre-’69 trend
1983–99	46.8	0.4	Mild 17-yr rise
2000–02	53.0	–2.6	Sharp 3-yr decline
2003	45.0	—	

Note: SLS = .0004, SLS+ = .0007, $r^2 = .882$, Weight = Binomial.

Table for Figure 3.13 National League Strikeouts per 550 NFPs, 1901–2003

Years	SO/550	Rate	Description/Possible Explanation
1901–15	55.5	0.00	Stable 16-yr period—For most of deadball era
1916–21	55.5	-2.9	Sharp 6-yr decline—Leading into lively ball era
1922–40	38.2	0.7	Modest 19-yr rise—Throughout lively ball era
1941–44	51.9	-1.4	Modest 4-yr decline—During WWII era
1945–62	46.3	2.1	Sharp 18-yr rise—In parallel with HR rates
1963–68	84.9	0.5	Modest 6-yr rise—During big K zone era
1969–75	87.7	-2.0	Sharp 7-yr decline—After strike zone shrunk
1976–02	73.7	0.9	Modest 17-yr rise—Starting near '77 expansion
1993–94	89.5	4.2	Sharp 2-yr rise—With league expansion
1995–02	97.8	0.0	8+ yr stable period
2003	97.9	—	

Note: SLS = .0005, SLS+ = .0019, $r^2 = .987$, Weight = Binomial. Changeyear forced into model: 1941.

Table for Figure 3.14 American League Strikeouts per 550 NFPs, 1901–2003

Year	SO/550	Rate	Description/Possible Explanation
1901	36.9	0.00	Stable 2-yr period
1902	36.9	24.3	Major 1-yr jump
1903–13	61.2	-0.1	Stable 11-yr period
1914–23	60.4	-2.2	Sharp 10-yr decline
1924–45	38.8	0.8	Modest 22-year rise
1946–47	55.6	-2.9	Sharp 2-yr decline—After end of WWII
1948–67	49.7	2.0	Sharp 20-yr rise—Accompanies the rise in HRs
1968–78	90.6	-2.4	Sharp 11-yr decline—Matched by drop in HRs
1979–86	64.1	2.2	Sharp 8-yr rise—4 years after HRs began to rise
1987–02	81.5	0.7	Modest 16+ yr rise
2003	92.1	—	Strikeouts are near the all-time high level

Note: SLS = <.0001, SLS+ = .0015, $r^2 = .974$, Weight = Binomial.

Table for Figure 3.15 National League Stolen Bases per 550 NFPs, 1901–2003

Year	SB/550	Rate	Description/Possible Explanation
1901–10	19.1	0.00	Stable 11-yr period—At all-time high levels
1911–18	19.1	–0.6	Modest 8-yr decline—With cork-centered ball
1919	14.6	–3.6	Major 1-yr drop—At outset of lively ball era
1920–29	11.0	–0.6	Modest 10-yr decline—In most of lively ball era
1930–52	5.4	–0.05	Mild 23-yr decline—At all-time low levels
1953–72	4.3	0.2	Mild 20-yr climb
1973–79	7.7	0.8	Modest 7-yr rise—AL has DH, NL has speed
1980–99	13.4	–0.03	Stable 10-yr period
1990–02	13.1	–0.4	Modest 13+ yr decline
2003	7.9	—	Current level near that at outset of lively ball era

Note: SLS = .0010, SLS+ = .0157, r^2 = .969, Weight = Binomial.

Table for Figure 3.16 American League Stolen Bases per 550 NFPs, 1901–2003

Year	SB/550	Rate	Description/Possible Explanation
1901–03	16.5	0.00	Stable 4-yr period
1904–11	16.5	0.7	Modest 8-yr rise—To all-time high in 1912
1912–19	22.5	–1.6	Sharp 8-yr decline
1920–32	9.8	–0.3	Modest 13-yr decline—In the lively ball era
1933–42	6.1	0.03	Stable 10-yr period
1943–49	6.4	–0.4	Modest 7-yr decline—To all-time low in 1950
1950–71	3.4	0.2	Mild 22-yr rise
1972–75	7.1	1.3	Sharp 4-yr rise—After DH introduced
1976	12.1	–2.4	Sharp 1-yr drop in '77
1977–02	9.8	–0.02	26+ yr stable period
2003	9.3	—	SB level same as at beginning of lively ball era

Note: SLS = .0005, SLS+ = .0012, r^2 = .958, Weight = Binomial.

Table for Figure 3.17 National League Percentage Extra-Base Hits, 1901–2003

Year	Pct	Rate	Description/Possible Explanation
1901–06	19.4	0.00	Stable 7-yr period
1907–10	19.4	1.2	Sharp 4-yr rise
1911–17	24.1	–0.4	Modest 7-yr decline
1918–29	21.5	0.5	Modest 12-yr rise—Lively ball era begins
1930–42	27.9	–0.3	Modest 13-yr decline
1943–52	24.5	0.6	Modest 10-yr rise
1953–75	30.1	–0.2	Mild 23-yr decline
1976	25.6	3.0	Major 1-yr jump
1977–83	28.6	–0.3	Modest 7-yr decline
1984–86	26.5	1.6	Sharp 3-yr climb
1987	31.2	–3.4	Major 1-yr drop—Change in baseball manufacturer
1988–02	27.8	0.5	Modest 15+ yr rise
2003	34.9	—	Last 10 years and 1987 are the highest of all-time

Note: SLS = <.0001, SLS+ = .0014, r^2 = .933, Weight = Binomial.

Table for Figure 3.18 American League Percentage Extra-Base Hits, 1901–2003

Year	Pct	Rate	Description/Possible Explanation
1901–02	23.9	0.00	Stable 3-yr period
1903–06	23.9	–1.3	Sharp 4-yr decline—To all-time low in 1907
1907–11	18.6	0.7	Modest 5-yr rise—With cork-centered ball
1912–17	22.2	–0.2	Mild 6-yr decline
1918–20	21.7	1.7	Sharp 3-yr climb—Lively ball era begins
1921–39	26.3	0.2	Mild 19-yr rise—Throughout lively ball era
1940–44	29.7	–1.5	Sharp 5-yr drop
1945	22.4	3.6	Major 1-yr rise
1946–61	26.0	0.2	Mild 16-yr rise
1962–75	29.4	–0.3	Modest 14-yr decline—In enlarged K-zone era
1976	25.4	3.7	Major 1-yr jump—Smaller strike zone, then DH
1977–80	29.1	–0.3	Modest 4-yr decline
1981–86	27.9	0.7	Modest 6-yr rise
1987–88	32.2	–2.3	Sharp 2-yr decline—Change in baseball manufacturer
1989–93	27.6	0.9	Modest 5-yr rise—Continuing trend before '87
1994–02	32.4	0.3	Modest 9+ yr rise
2003	34.6	—	Most recent 10 years & 1987 are all-time highs

Note: SLS = .0003, SLS+ = .0078, r^2 = .965, Weight = Binomial.

Table for Figure 3.19 National League On-Base Percentage, 1901–2003

Year	OBP	Rate	Description/Possible Explanation
1901–07	.312	.0000	Stable 8-yr period
1908–11	.312	.007	Sharp 4-yr rise
1912–15	.339	–.010	Major 4-yr drop
1916–21	.298	.007	Sharp 6-yr rise—Into lively ball era
1922–29	.340	.0013	Modest 8-yr rise—To peak in 1930
1930–32	.350	–.009	Sharp 3-yr decline—With change in ball
1933–46	.324	.0008	Mild 14-yr rise
1947–67	.335	–.0011	Modest 21-yr decline
1968–69	.312	.007	Sharp 2-yr rise—With smaller strike zone
1970–87	.326	–.0003	Mild 18-year decline
1988–02	.321	.0013	Modest 15+ yr rise
2003	.334	—	

Note: SLS = .0004, SLS+ = .0018, $r^2 = .721$, Weight = AB.

Table for Figure 3.20 American League On-Base Percentage, 1901–2003

Year	OBP	Rate	Description/Possible Explanation
1901	.332	.0000	Stable 2-yr period
1902	.332	–.033	Major 1-yr drop
1903–09	.299	.0006	Mild 7-yr rise
1910	.303	.032	Major 1-yr jump—With cork-centered baseball
1911–16	.335	–.003	Sharp 6-yr decline
1917–20	.316	.009	Sharp 4-yr rise—Heading into the lively ball era
1921–37	.351	.0001	Stable 17-yr period
1938–42	.353	–.006	Sharp 5-yr decline
1943–49	.322	.004	Sharp 7-yr rise—Rise fueled by returning WWII players
1950–67	.349	–.002	Modest 18-yr decline
1968	.305	.021	Major 1-yr jump—With pitching mound, K zone changes
1969–71	.326	–.005	Sharp 3-yr decline
1972	.311	.019	Major 1-yr jump—Introduction of DH
1973–87	.330	–.0001	Stable 15-yr period
1988–95	.329	.003	Modest 8-yr rise
1996–02	.349	–.002	Modest 7+ yr decline
2003	.336	—	

Note: SLS = .0002, SLS+ = .0012, $r^2 = .897$, Weight = AB.

Table for figure 3.21 National League Slugging Average, 1901–2003

Year	SLG	Rate	Description/Possible Explanation
1901–07	.323	.0000	Stable 8-yr period
1908–11	.323	.009	Modest 4-yr rise
1912–17	.359	–.007	Modest 6-yr decline
1918–20	.317	.025	Sharp 3-yr rise—Lively ball era begins
1921–29	.391	.002	Mild 9-yr rise
1930–41	.411	–.005	Modest 12-yr decline—All-time high in 1930
1942–52	.353	.005	Modest 11-yr rise
1953–67	.408	–.0026	Mild 15-yr decline
1968–91	.369	.0004	Stable 20-yr period
1988–02	.376	.004	Modest 15+ yr rise—Colorado plus power era
2003	.429	—	Has the rise stopped with 2002–03 seasons?

Note: SLS = .0002, SLS+ = .0028, r^2 = .818, Weight = AB.

Table for Figure 3.22 American League Slugging Average, 1901–2003

Year	SLG	Rate	Description/Possible Explanation
1901	.354	.0000	Stable 2-yr period
1902–09	.354	–.007	Modest 8-yr decline
1910	.295	.052	Major 1-year jump—With cork-centered ball
1911–17	.348	–.004	Modest 7-yr decline
1918–20	.320	.027	Sharp 3-yr rise—With lively ball
1921–39	.400	.0004	Stable 20-yr period
1940–42	.408	–.017	Sharp 3-yr drop
1943–61	.356	.002	Mild 19-yr rise
1962–67	.395	–.006	Modest 6-yr decline—Larger strike zone
1968–02	.359	.002	Mild 35+ yr rise—Larger strike zone, then DH
2003	.439	—	Most recent 10-yr and 1987 are all-time highs

Note: SLS = <.0001, SLS+ = .0004, r^2 = .870, Weight = AB.

Table for Figure 3.23 National League On-Base-Plus-Slugging, 1901–2003

Year	OPS	Rate	Description/Possible Explanation
1901–02	.657	.0000	Stable 3-yr period
1903–07	.657	–.011	Sharp 5-yr decline
1908–11	.604	.028	Sharp 3-yr rise
1912–13	.715	–.037	Major 2-yr drop
1914–18	.641	.0001	Stable 5-yr period
1919–21	.641	.039	Major 3-yr climb—Lively ball era begins
1922–25	.757	–.009	Modest 4-yr decline
1926–29	.723	.017	Sharp 4-yr rise
1930–32	.789	–.038	Major 3-yr drop—Ball deadened in 1931
1933	.676	.058	Major 1-yr jump
1934–41	.734	–.007	Modest 8-yr decline
1942–52	.678	.006	Modest 11-yr rise—Fueled by returning WWII players
1953–67	.741	–.004	Modest 15-yr decline
1968–86	.683	.0014	Mild 19-yr rise
1987	.710	–.035	Major 1-yr drop—Change in baseball manufacturer
1988–98	.676	.008	Modest 11-yr rise
1999–02	.769	–.005	Modest 4+ yr decline
2003	.748	—	Down from recent highs in 1999–2000

Note: SLS = .0020, SLS+ = .0046 $r^2 = .867$, Weight = AB.

Table for Figure 3.24 American League On-Base-Plus-Slugging, 1901–2003

Year	OPS	Rate	Description/Possible Explanation
1901	.700	.0000	Stable 2-yr period
1902–03	.700	–.044	Major 2-yr drop
1904–09	.613	–.0000	Stable 6-yr period
1910	.613	.068	Major 1-year jump—With cork-centered ball
1911–17	.681	–.006	Modest 7-yr decline
1918–20	.637	.040	Major 3-yr rise—With lively ball
1921–34	.758	–.0008	Mild 14-yr decline
1935	.746	.054	Major 1-yr jump
1936–42	.800	–.018	Sharp 5-yr decline
1943–49	.674	.008	Modest 7-yr rise—Post –WW II player return
1950–61	.727	–.0011	Mild 12-yr decline
1962–67	.714	–.011	Sharp 6-yr decline—Strike zone enlarged
1968–69	.649	.029	Sharp 2-yr rise—Strike zone narrowed; mound raised
1970–71	.708	–.019	Sharp 2-yr drop
1972	.670	.012	Sharp 5-yr rise—Introduction of DH
1977–91	.729	–.0001	Stable 15-yr period
1992–95	.728	.016	Sharp 4-yr rise—Power era
1996–02	.793	–.005	Modest 7+ yr decline—from all-time high in 1996
2003	.762	—	

Note: SLS = .0009, SLS+ = .0016, $r^2 = .915$, Weight = AB.