

Does Losing Lead to Winning?

An Empirical Analysis for Four Sports

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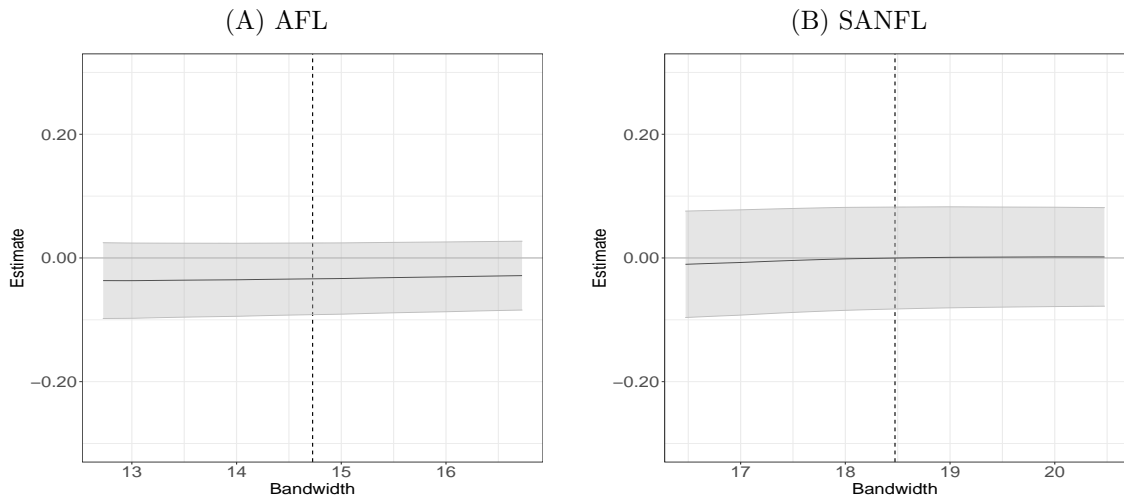
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Online Supplement

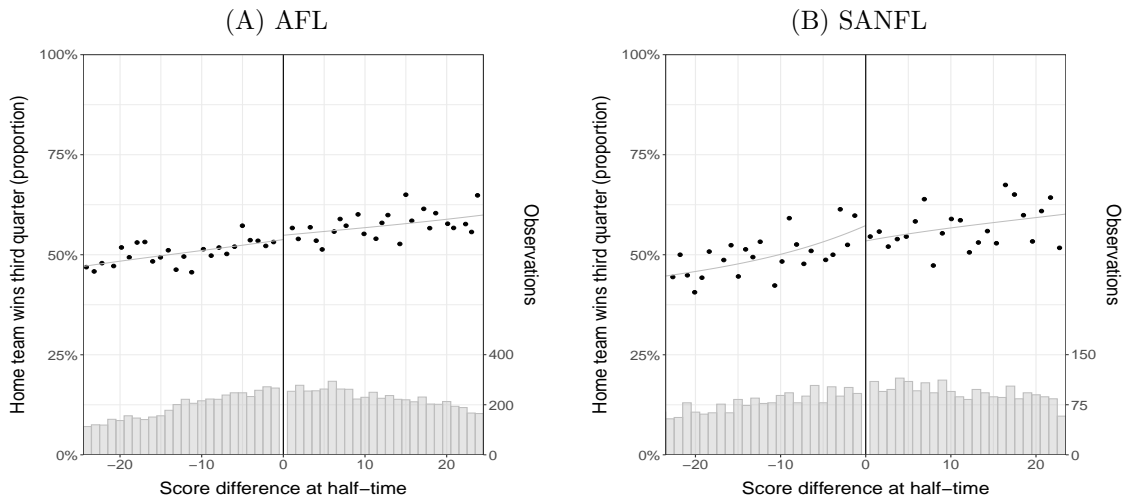
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Figure S1: Bandwidth sensitivity Australian football



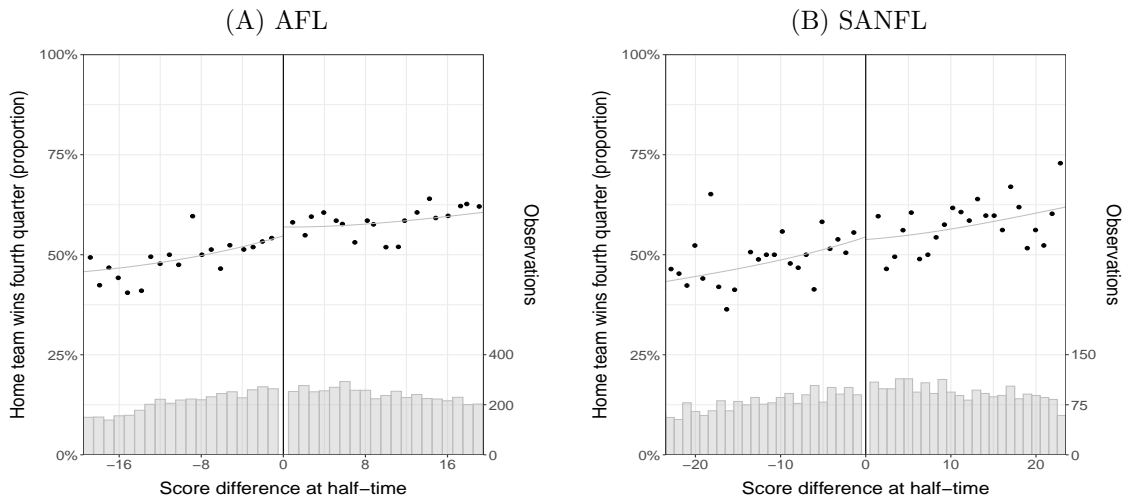
Notes: The figure shows the sensitivity of the results of the main analyses for Australian football to a range of imposed alternative bandwidths. The dashed vertical line marks the bandwidth that minimizes the mean squared error. Compared to this optimal bandwidth, the smallest included bandwidth is two points narrower and the largest is two points wider. The curves show the point estimates, the grey regions represent the 95 percent confidence intervals.

Figure S2: RD plots for Australian football accompanying Table 2, Panel B



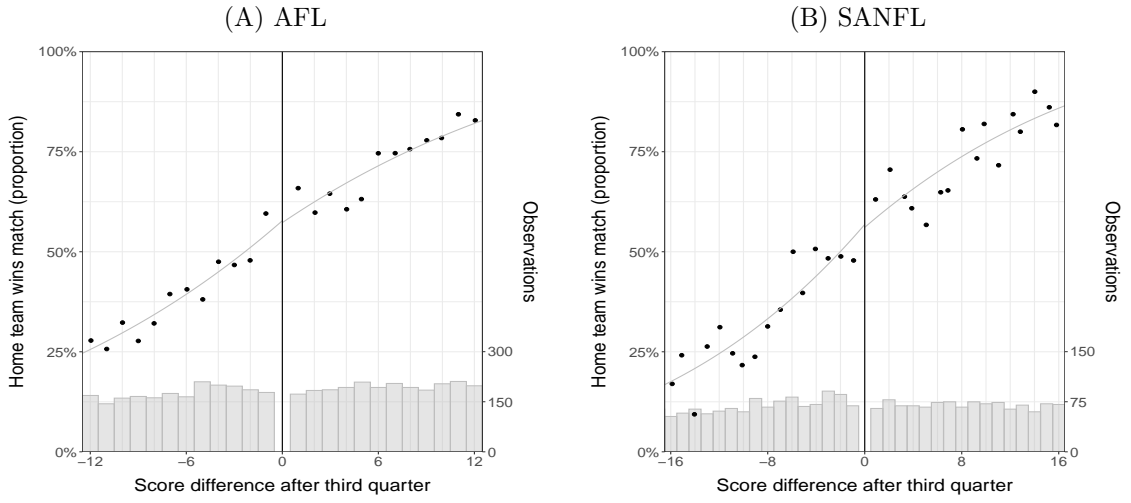
Notes: The figure shows the regression discontinuity plots for AFL (Panel A) and SANFL (Panel B) that accompany Table 2, Panel B, where the outcome variable is *Home team wins third quarter* and the running variable is *Score difference at half-time*. The plots are constructed using the approach proposed by Calonico et al. (2015). The curves on both sides of the cutoff are fourth-order polynomials. Bars depict the number of observations.

Figure S3: RD plots for Australian football accompanying Table 2, Panel C



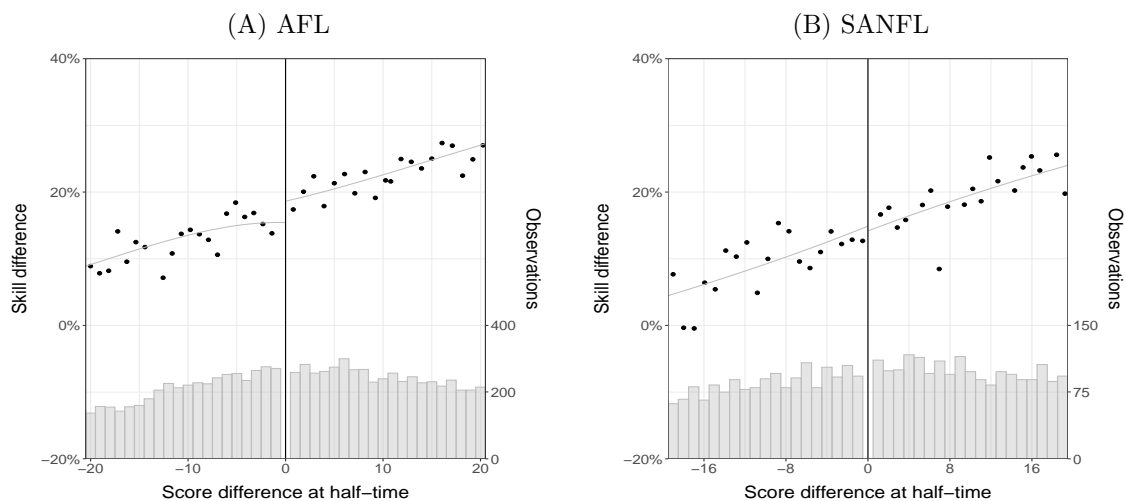
Notes: The figure shows the regression discontinuity plots for AFL (Panel A) and SANFL (Panel B) that accompany Table 2, Panel C, where the outcome variable is *Home team wins fourth quarter* and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S4: RD plots for Australian football accompanying Table 2, Panel D



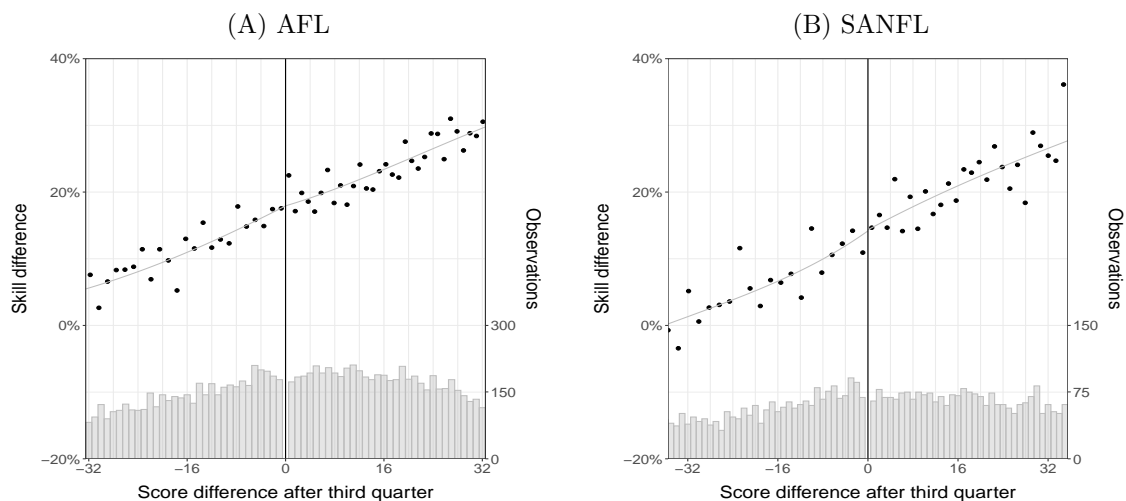
Notes: The figure shows the regression discontinuity plots for AFL (Panel A) and SANFL (Panel B) that accompany Table 2, Panel D, where the outcome variable is *Home team wins match* and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S5: RD plots for Australian football accompanying Table S1, Panel A



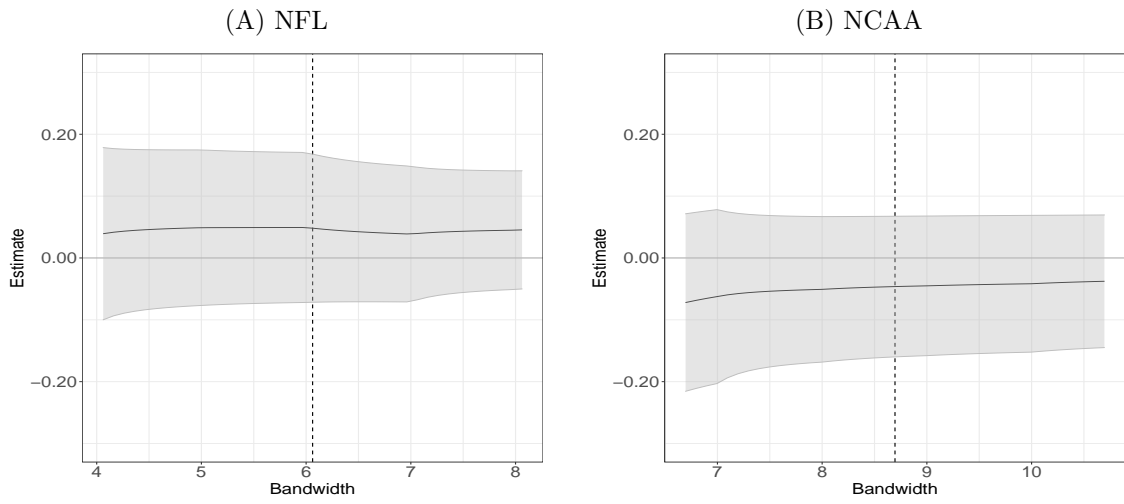
Notes: The figure shows the regression discontinuity plots for AFL (Panel A) and SANFL (Panel B) that accompany Table S1, Panel A, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S6: RD plots for Australian football accompanying Table S1, Panel B



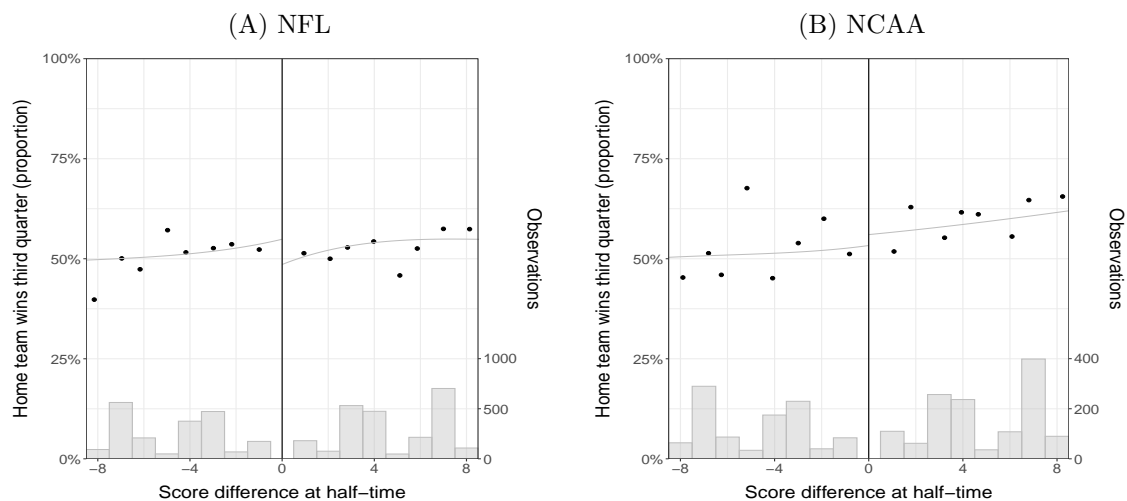
Notes: The figure shows the regression discontinuity plots for AFL (Panel A) and SANFL (Panel B) that accompany Table S1, Panel B, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S7: Bandwidth sensitivity American football



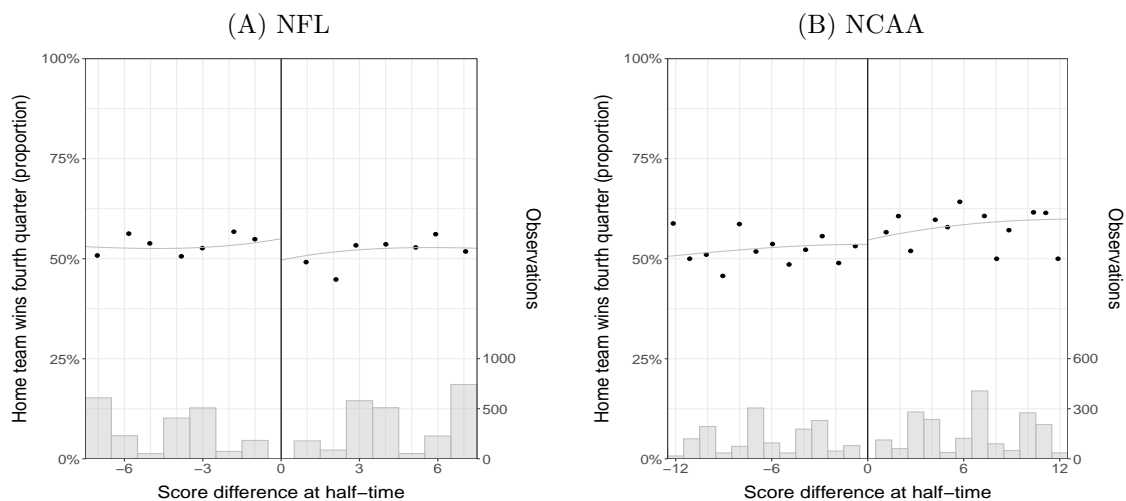
Notes: The figure shows the sensitivity of the results of the main analyses for American football to a range of imposed alternative bandwidths. Definitions are as in Figure S1.

Figure S8: RD plots for American football accompanying Table 4, Panel B



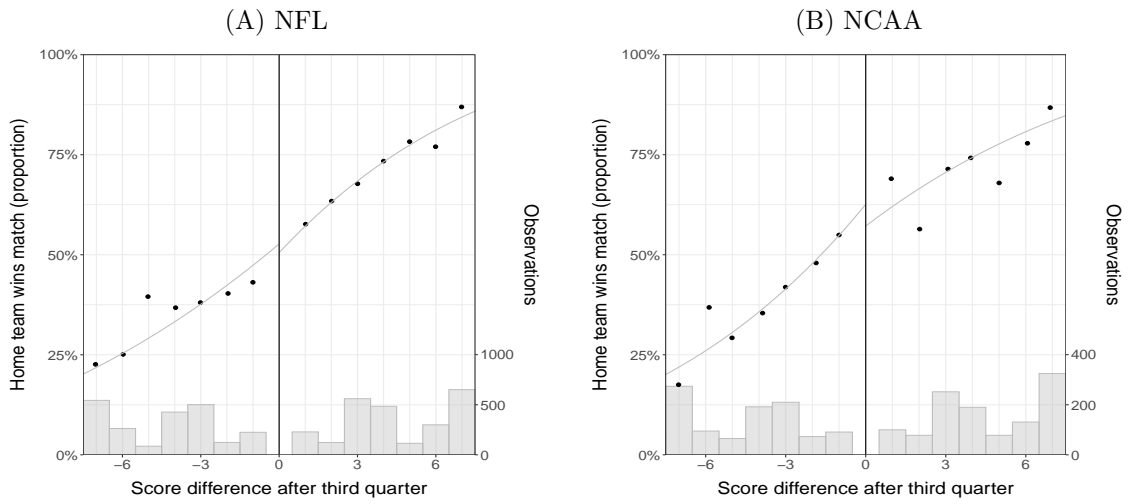
Notes: The figure shows the regression discontinuity plots for NFL (Panel A) and NCAA (Panel B) that accompany Table 4, Panel B, where the outcome variable is *Home team wins third quarter* and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S9: RD plots for American football accompanying Table 4, Panel C



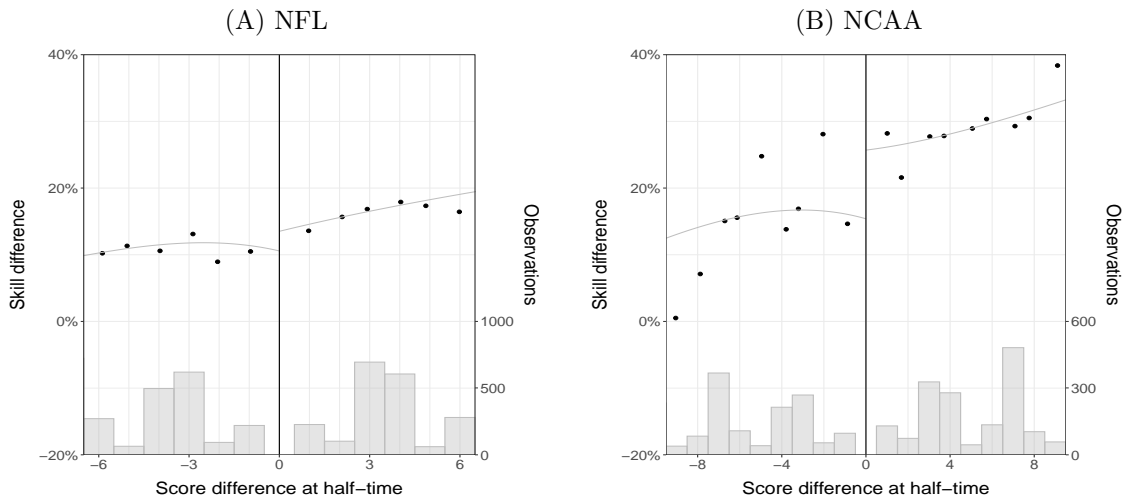
Notes: The figure shows the regression discontinuity plots for NFL (Panel A) and NCAA (Panel B) that accompany Table 4, Panel C, where the outcome variable is *Home team wins fourth quarter* and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S10: RD plots for American football accompanying Table 4, Panel D



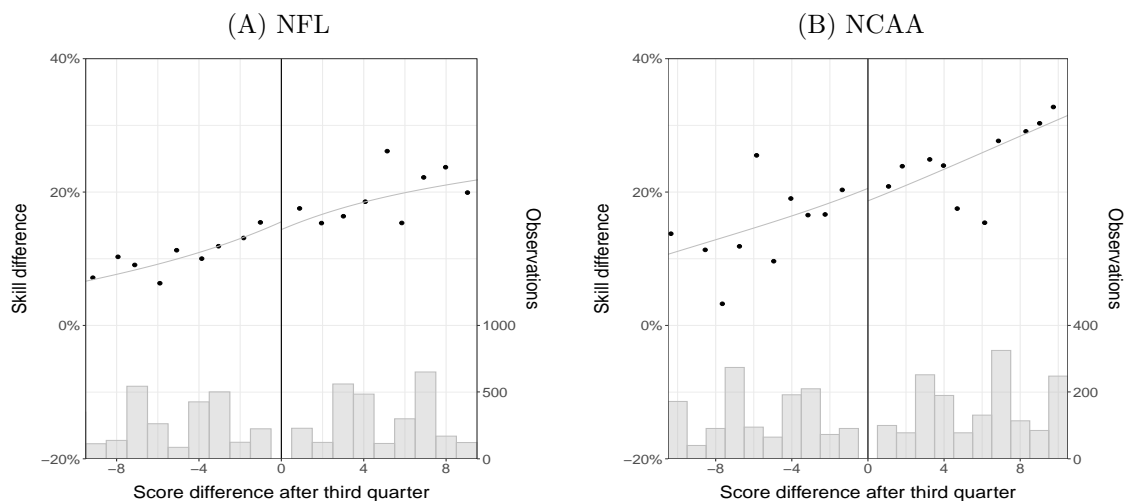
Notes: The figure shows the regression discontinuity plots for NFL (Panel A) and NCAA (Panel B) that accompany Table 4, Panel D, where the outcome variable is *Home team wins match* and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S11: RD plots for American football accompanying Table S2, Panel A



Notes: The figure shows the regression discontinuity plots for NFL (Panel A) and NCAA (Panel B) that accompany Table S2, Panel A, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

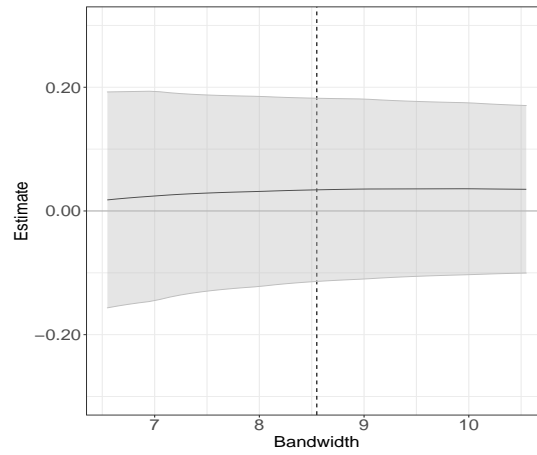
Figure S12: RD plots for American football accompanying Table S2, Panel B



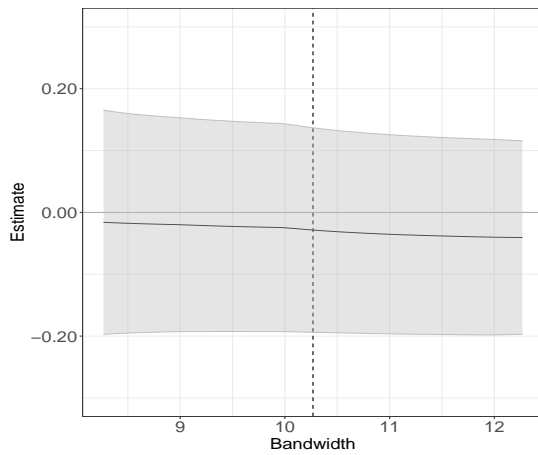
Notes: The figure shows the regression discontinuity plots for NFL (Panel A) and NCAA (Panel B) that accompany Table S2, Panel B, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S13: Bandwidth sensitivity rugby

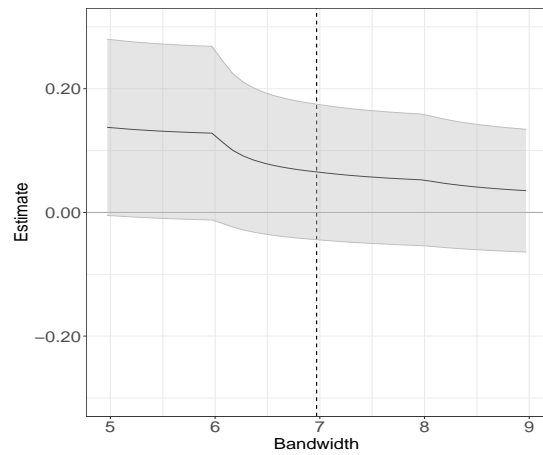
(A) Rugby union



(B) Rugby league, international

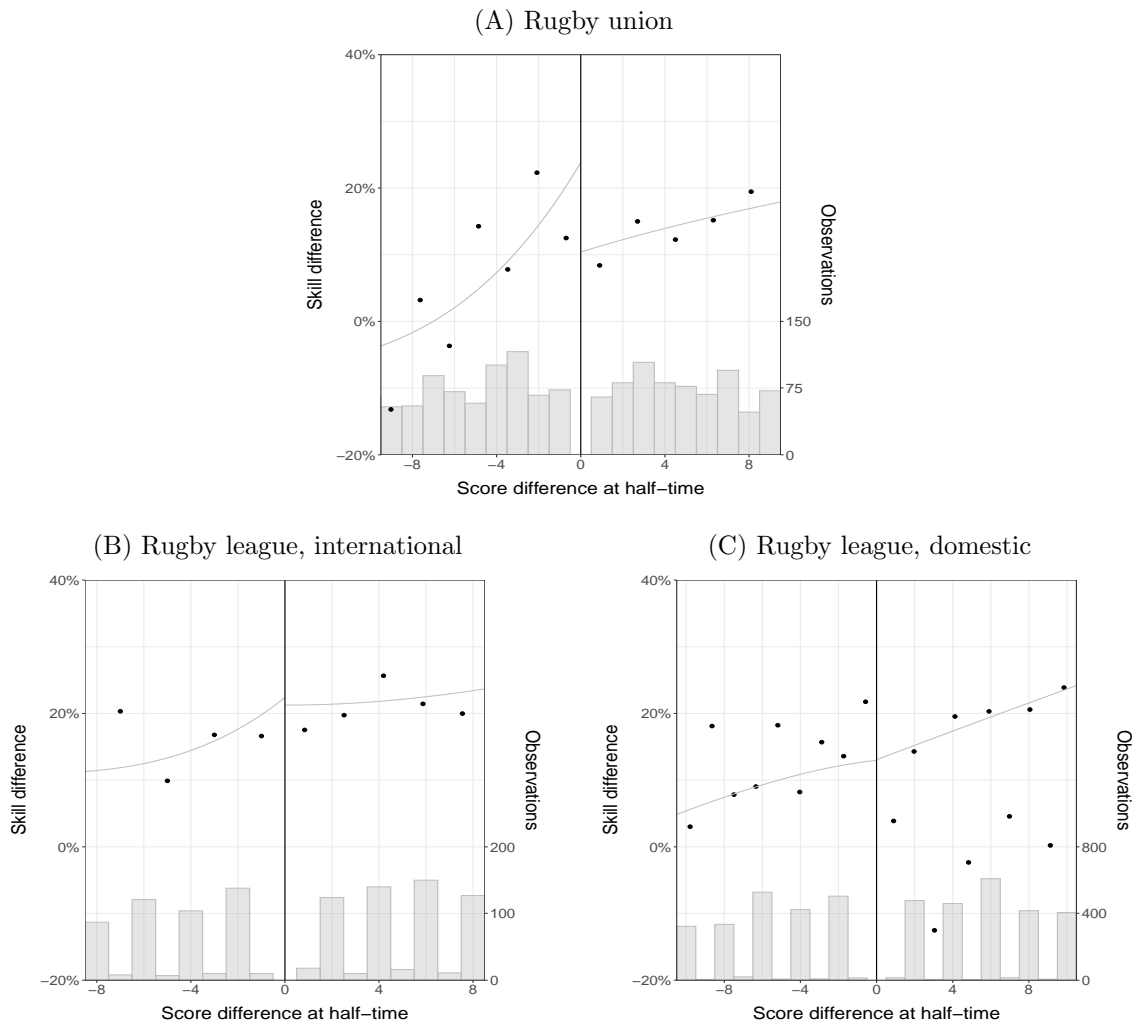


(C) Rugby league, domestic



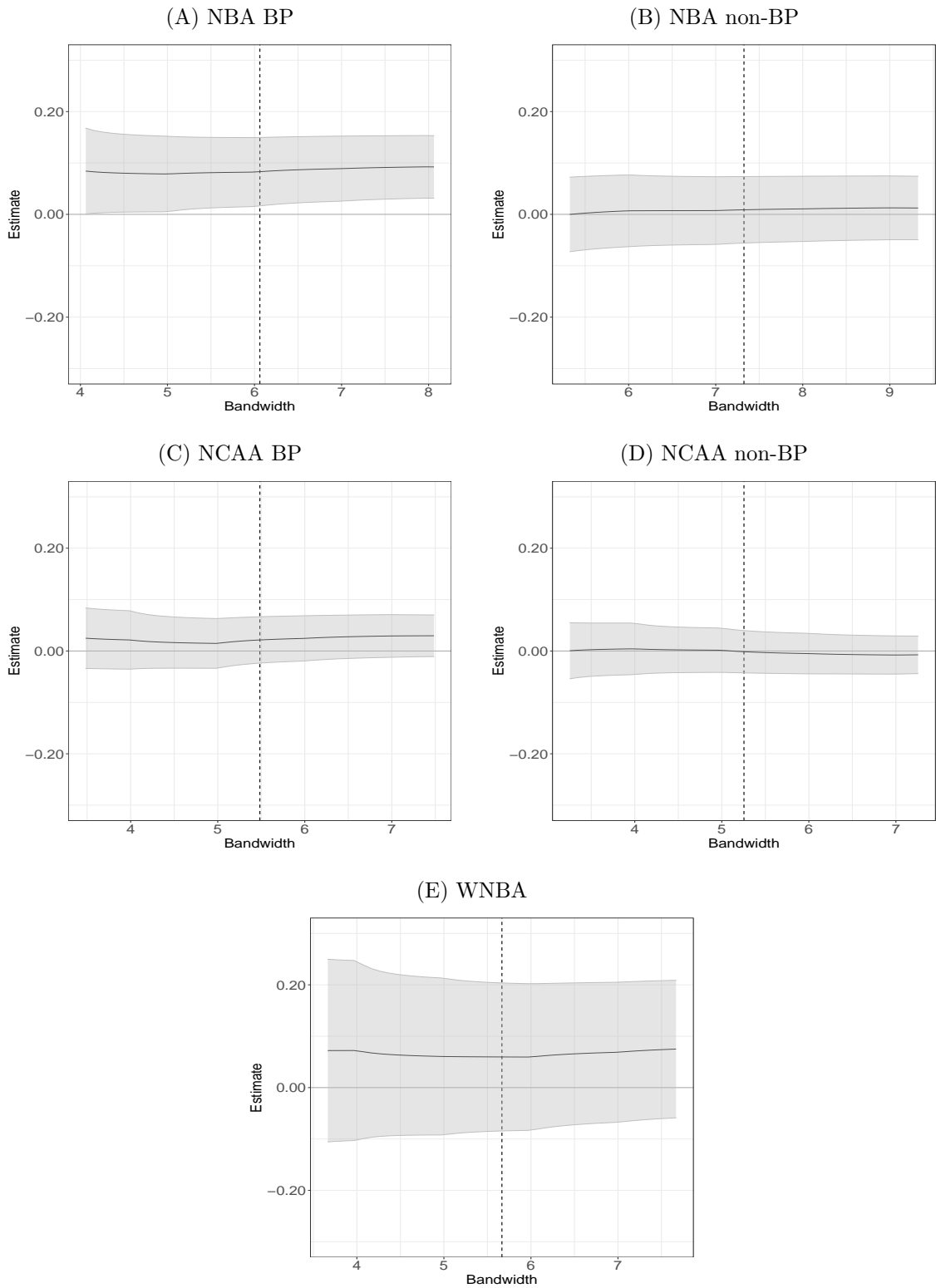
Notes: The figure shows the sensitivity of the results of the main analyses for rugby to a range of imposed alternative bandwidths. Definitions are as in Figure S1.

Figure S14: RD plots for rugby accompanying Table S3



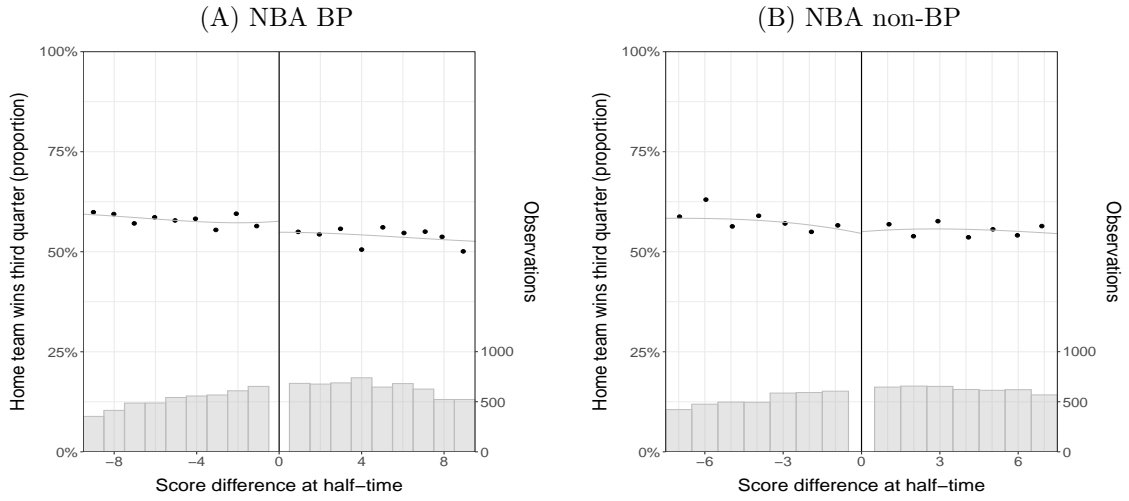
Notes: The figure shows the regression discontinuity plots for rugby union (Panel A), international rugby league (Panel B), and domestic rugby league (Panel C) that accompany Table S3, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S15: Bandwidth sensitivity basketball



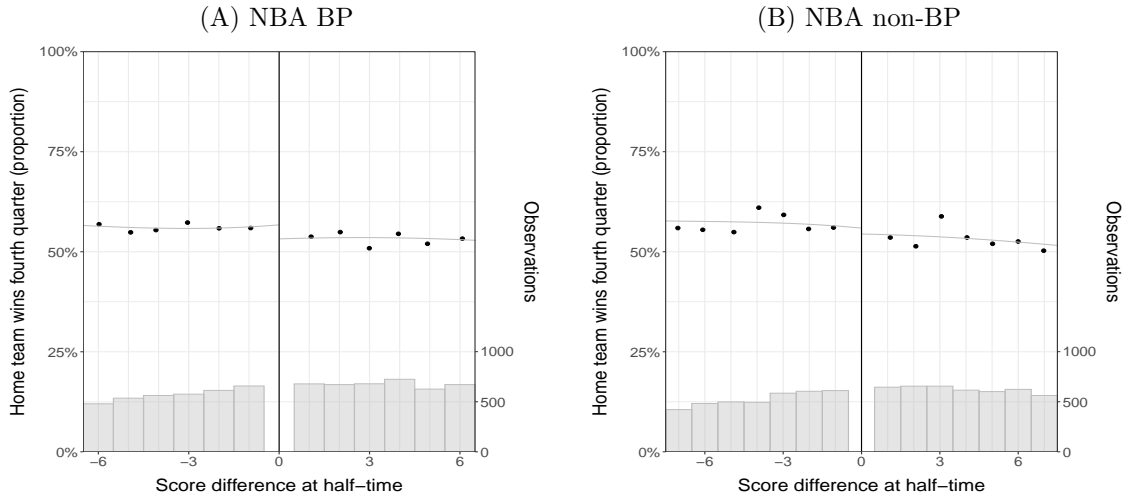
Notes: The figure shows the sensitivity of the results of the main analyses for basketball to a range of imposed alternative bandwidths. Definitions are as in Figure S1.

Figure S16: RD plots for basketball accompanying Table 8, Panel B



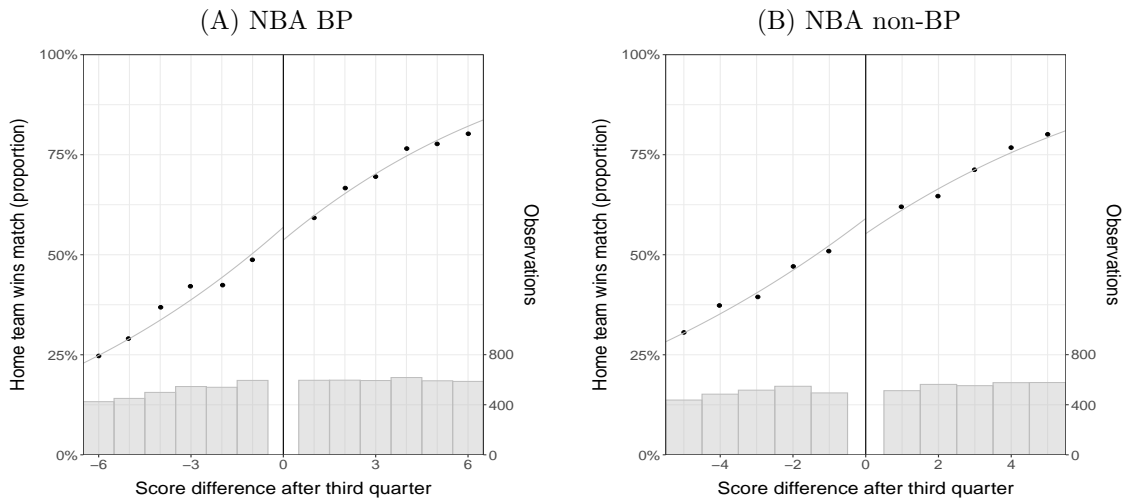
Notes: The figure shows the regression discontinuity plots for NBA BP (Panel A) and NBA non-BP (Panel B) that accompany Table 8, Panel B, where the outcome variable is *Home team wins third quarter* and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S17: RD plots for basketball accompanying Table 8, Panel C



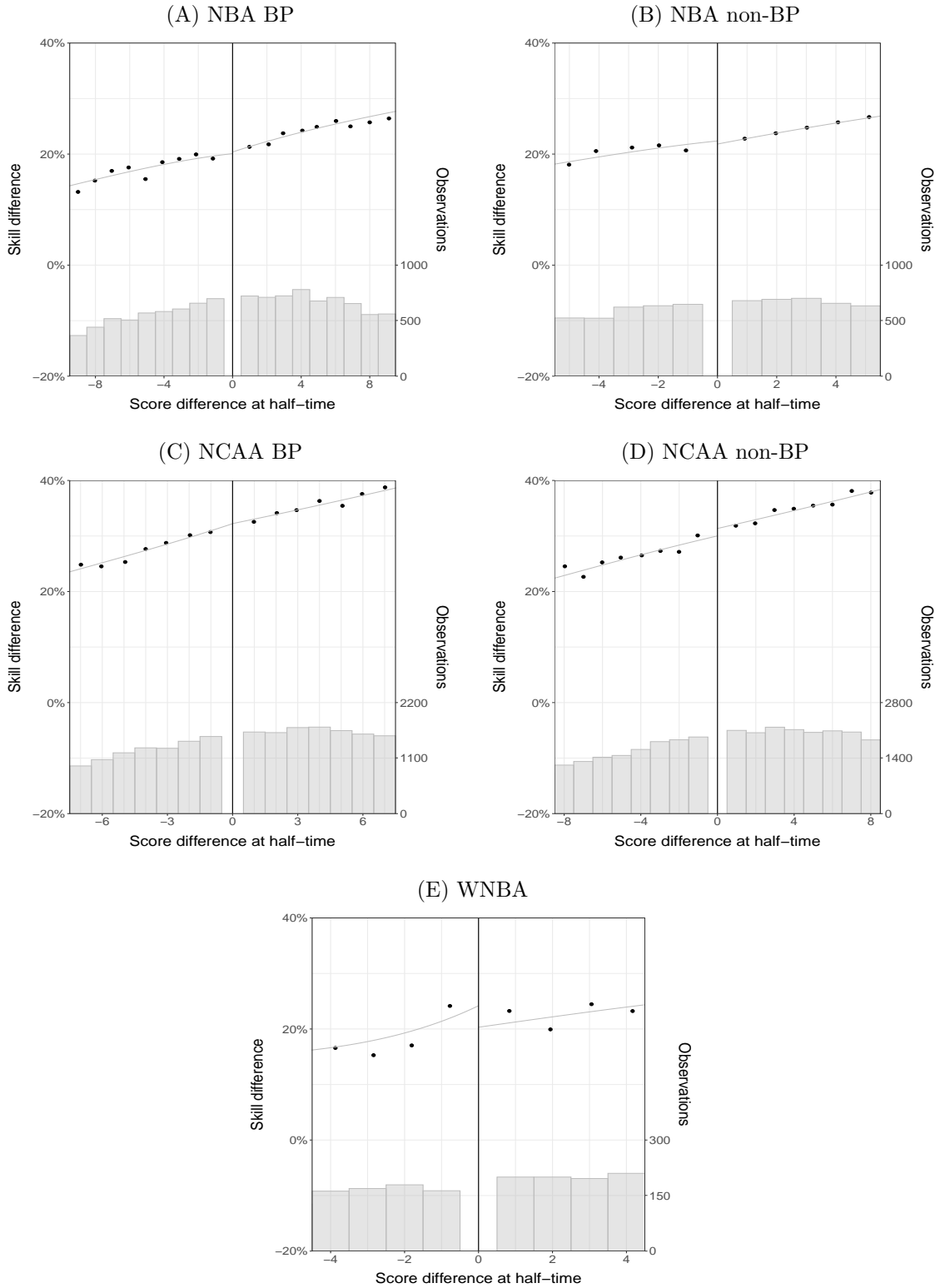
Notes: The figure shows the regression discontinuity plots for NBA BP (Panel A) and NBA non-BP (Panel B) that accompany Table 8, Panel C, where the outcome variable is *Home team wins fourth quarter* and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S18: RD plots for basketball accompanying Table 8, Panel D



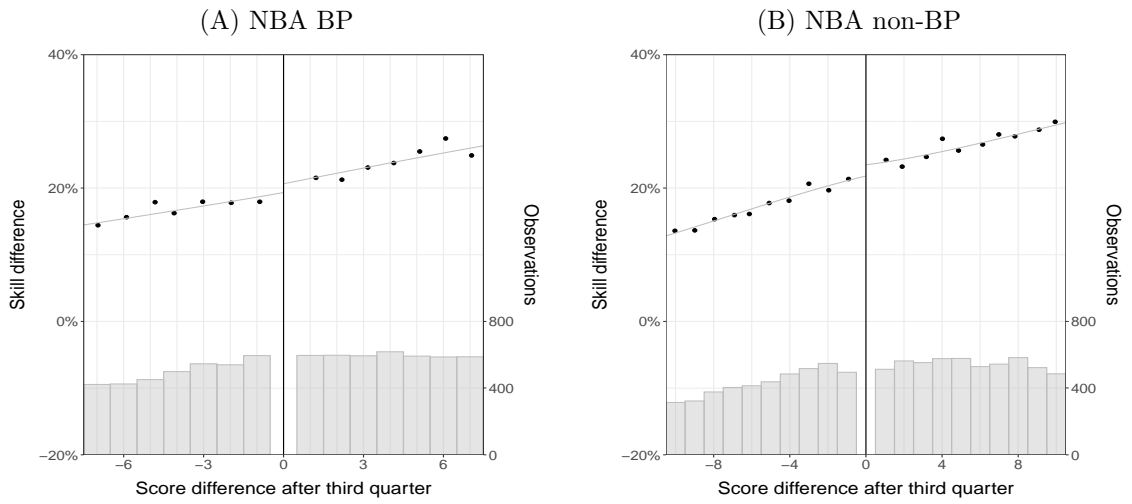
Notes: The figure shows the regression discontinuity plots for NBA BP (Panel A) and NBA non-BP (Panel B) that accompany Table 8, Panel D, where the outcome variable is *Home team wins match* and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S19: RD plots for basketball accompanying Table S4, Panel A



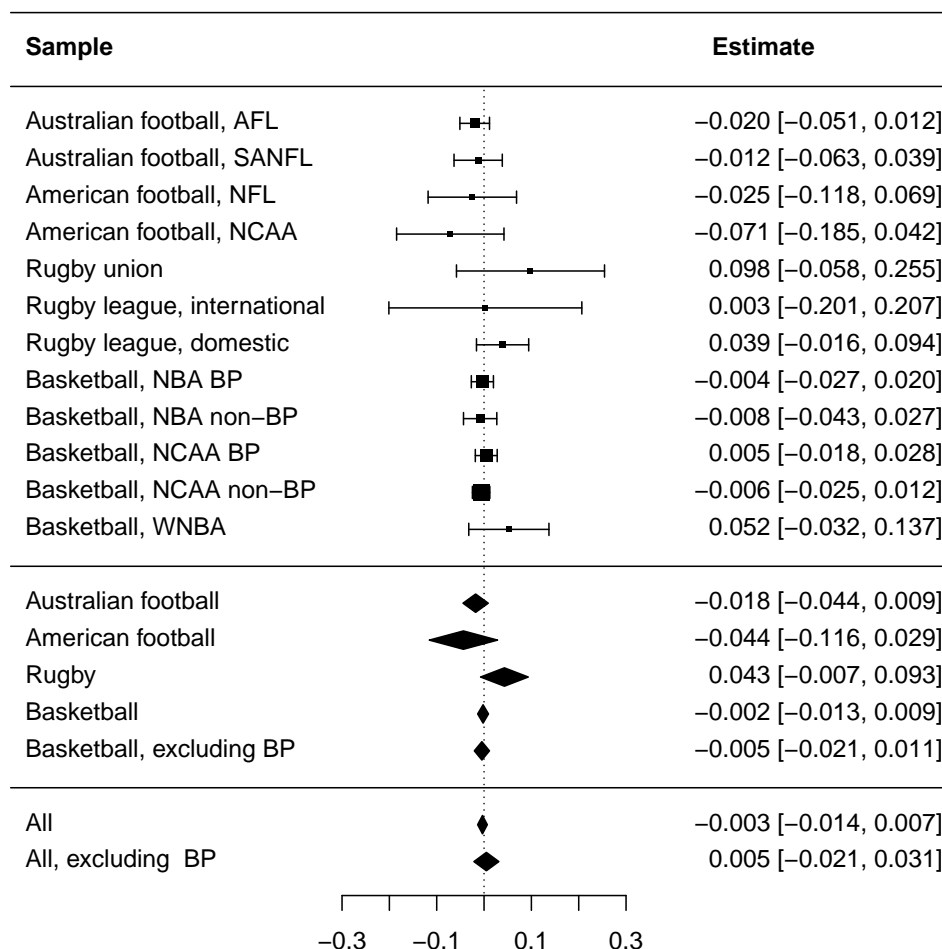
Notes: The figure shows the regression discontinuity plots for NBA BP (Panel A), NBA non-BP (Panel B), NCAA BP (Panel C), NCAA non-BP (Panel D), and WNBA (Panel E) that accompany Table S4, Panel A, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference at half-time*. Other definitions are as in Figure S2.

Figure S20: RD plots for basketball accompanying Table S4, Panel B



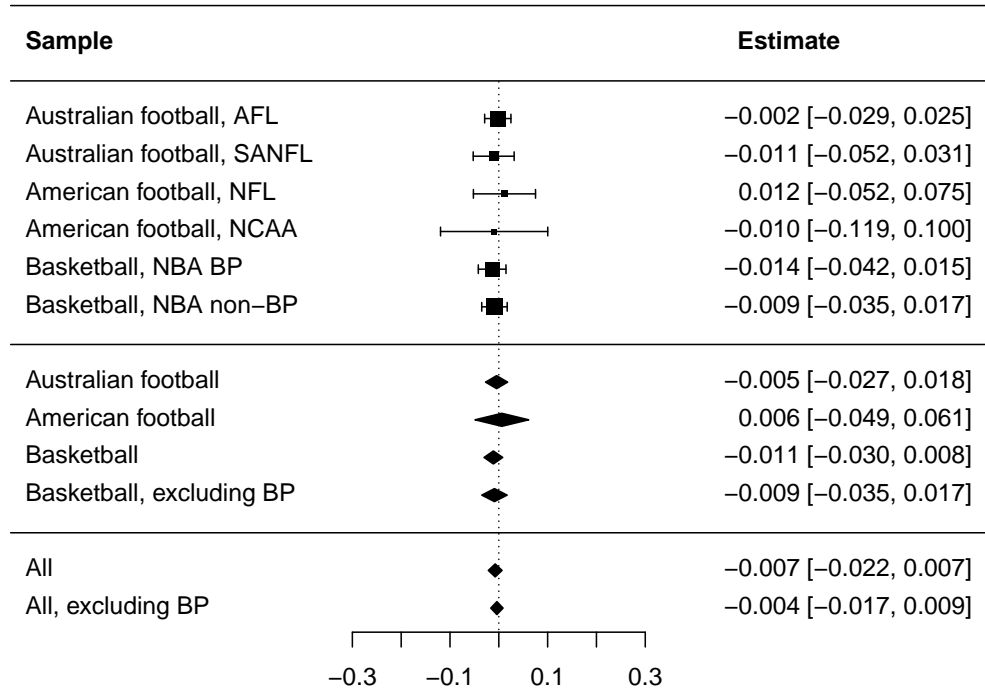
Notes: The figure shows the regression discontinuity plots for NBA BP (Panel A) and NBA non-BP (Panel B) that accompany Table S4, Panel B, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference after third quarter*. Other definitions are as in Figure S2.

Figure S21: Meta-analysis skill-difference continuity trailing at half-time



Notes: The top panel of the figure summarizes the results of skill-difference continuity tests for the individual samples. The lower panels show meta-analytic results per sport and for all sports combined. *Estimate* is the estimated discontinuity in *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) at a score difference of zero at half-time; numbers in brackets represent 95 percent confidence intervals. Meta-analytic effects are estimated with the Paule-Mandel estimator (Paule and Mandel, 1989). The sizes of the squares represent the weights of individual samples in the meta-analysis that covers all samples. The lines (diamonds) represent the 95 percent confidence intervals for the individual (meta-analytic) estimates.

Figure S22: Meta-analysis skill-difference continuity trailing after the third quarter



Notes: The top panel of the figure summarizes the results of skill-difference continuity tests for the individual samples. The lower panels show meta-analytic results per sport and for all sports combined. *Estimate* is the estimated discontinuity in *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) at a score difference of zero after the third quarter. Other definitions are as in Figure S21.

Table S1: Skill-difference continuity Australian football

	AFL	SANFL
Panel A: Score difference at half-time, skill difference		
Behind at half-time	-0.020 (-0.051, 0.012)	-0.012 (-0.063, 0.039)
Bandwidth	20.17	19.86
Total observations	14,945	6,622
Included observations	9,122	3,503
Panel B: Score difference after third quarter, skill difference		
Behind after third quarter	-0.002 (-0.029, 0.025)	-0.011 (-0.052, 0.031)
Bandwidth	32.92	35.76
Total observations	15,040	6,655
Included observations	10,248	4,327

Notes: The table reports the results of regression discontinuity analyses for AFL and SANFL matches, where the outcome variable is *Skill difference* (the difference between the proportion of home matches won by the home team and the proportion of away matches won by the away team during the calendar year of the given match) and the running variable is *Score difference at half-time* (Panel A) or *Score difference after third quarter* (Panel B). The coefficients are estimated with the local-linear non-parametric estimator proposed by Calonico et al. (2014). *Bandwidth* is the largest absolute score difference for matches included in the RDD. *Total observations* is the number of observations in the sample. *Included observations* is the number of observations within the bandwidth. Numbers in parentheses represent 95 percent confidence intervals. Asterisks denote significance at the 0.01 (***) , 0.05 (**), and 0.1 (*) level.

Table S2: Skill-difference continuity American football

	NFL	NCAA
Panel A: Score difference at half-time, skill difference		
Behind at half-time	-0.025 (-0.118, 0.069)	-0.071 (-0.185, 0.042)
Bandwidth	6.03	9.40
Total observations	10,590	7,024
Included observations	3,736	2,909
Panel B: Score difference after third quarter, skill difference		
Behind after third quarter	0.012 (-0.052, 0.075)	-0.010 (-0.119, 0.100)
Bandwidth	9.15	10.64
Total observations	10,986	7,219
Included observations	5,178	2,904

Notes: The table reports the results of regression discontinuity analyses for NFL and NCAA matches, where the outcome variable is *Skill difference* and the running variable is *Score difference at half-time* (Panel A) or *Score difference after third quarter* (Panel B). Definitions are as in Table S1.

Table S3: Skill-difference continuity rugby

	Rugby union	Rugby league, international	Rugby league, domestic
Behind at half-time	0.098 (-0.058, 0.255)	0.003 (-0.201, 0.207)	0.039 (-0.016, 0.094)
Bandwidth	9.03	8.41	10.06
Total observations	2,338	2,057	8,690
Included observations	1,375	1,081	4,583

Notes: The table reports the results of regression discontinuity analyses for rugby union, international rugby league, and domestic rugby league matches, where the outcome variable is *Skill difference* and the running variable is *Score difference at half-time*. Definitions are as in Table S1.

Table S4: Skill-difference continuity basketball

	NBA BP	NBA non-BP	NBA all	NCAA BP	NCAA non-BP	NCAA all	WNBA
Panel A: Score difference at half-time, skill difference							
Behind at half-time	-0.004 (-0.027, 0.020)	-0.008 (-0.043, 0.027)	-0.003 (-0.025, 0.020)	0.005 (-0.018, 0.028)	-0.006 (-0.025, 0.012)	-0.001 (-0.015, 0.014)	0.052 (-0.032, 0.137)
Bandwidth	9.47	5.85	6.30	7.51	8.31	7.47	4.81
Total observations	17,535	17,001	34,536	40,216	53,751	93,967	4,499
Included observations	11,032	6,311	15,408	20,183	29,143	46,243	1,479
Panel B: Score difference after third quarter, skill difference							
Behind after third quarter	-0.014 (-0.042, 0.015)	-0.009 (-0.035, 0.017)	-0.012 (-0.029, 0.005)				
Bandwidth	7.87	10.03	10.08				
Total observations	17,630	17,126	34,756				
Included observations	7,650	9,764	20,074				

Notes: The table reports the results of regression discontinuity analyses for NBA (BP, non-BP, all), NCAA (BP, non-BP, all), and WNBA matches, where the outcome variable is *Skill difference* and the running variable is *Score difference at half-time* (Panel A) or *Score difference after third quarter* (Panel B). Definitions are as in Table S1.