Supplementary Tables

Table A.1: Full regression results

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts	(4) Supreme Court	(5) Courts of Appeals	(6) District Courts
Ideological Decision	0.083*	0.862***	0.876***	0.095***	0.031	0.374***
	(0.033)	(0.133)	(0.153)	(0.013)	(0.052)	(0.066)
Disagreement	0.009	0.108***	0.127**	0.006	0.077**	0.099**
	(0.008)	(0.032)	(0.039)	(0.007)	(0.028)	(0.035)
Change in Court	-0.114***	-0.210***	0.074***	0.020*	-0.060***	0.134***
	(0.009)	(0.016)	(0.017)	(0.009)	(0.017)	(0.018)
Opinion Writer Extremeness	-0.013***	-0.042***	-0.046***	-0.005**	-0.006	-0.012
	(0.002)	(0.009)	(0.011)	(0.002)	(0.007)	(0.009)
Majority Votes	-0.018***	-0.042***	-0.034**	0.009***	0.014	0.022
	(0.003)	(0.010)	(0.012)	(0.003)	(0.010)	(0.013)
Precedent previously overruled				-0.099*	-0.042	-0.207
				(0.041)	(0.106)	(0.116)
Breadth				0.007	-0.040*	-0.051*
				(0.005)	(0.019)	(0.024)
Precedent amicus briefs				0.024***	0.036*	0.052**
				(0.004)	(0.015)	(0.019)
Majority opinion length				0.000***	0.000***	0.000***
				(0.000)	(0.000)	(0.000)
Separate opinion length				0.000***	0.000	0.000**
				(0.000)	(0.000)	(0.000)
Footnote ratio				-0.057*	-0.310**	-0.490***
				(0.026)	(0.109)	(0.135)
Total number of precedents				-0.000***	0.000***	0.000***
				(0.000)	(0.000)	(0.000)
Inward case relevance				0.297***	0.332***	0.211***
				(0.015)	(0.030)	(0.031)
Outward case relevance				0.186***	0.869***	1.130***
				(0.021)	(0.101)	(0.127)
Original				-0.026	-0.665***	-0.849***
				(0.028)	(0.107)	(0.148)
Observations	78211	78211	78211	78211	78211	78211
Issue Area Effects	No	No	No	Yes	Yes	Yes
Age	No	No	No	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (4), (2) and (5), and (3) and (6) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. The first three models contain no controls, whereas the later three contain all controls, including those reported, dummies for each issue area, and age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.2: Baseline results: Linear Regression

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts
Ideological Decision	0.113***	0.174**	0.537***
	(0.017)	(0.057)	(0.079)
Disagreement	0.005	0.072*	0.088*
	(0.007)	(0.029)	(0.035)
Change in Court	0.027**	-0.061	0.123***
	(0.010)	(0.032)	(0.037)
Opinion Writer Extremeness	-0.004**	-0.004	-0.004
	(0.002)	(0.007)	(0.009)
Majority Votes	0.008**	0.011	0.013
	(0.002)	(0.011)	(0.013)
Observations	78286	78286	78286
Controls	Yes	Yes	Yes
Age	Yes	Yes	Yes

Estimates are from a linear regression with standard errors clustered by precedent, reported in parenthesis. The dependent variables in columns (1), (2) and (3) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.3: Baseline results: Logged Dependent Variable with Lag

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts
Ideological Decision	0.046***	0.021**	0.035***
	(0.007)	(0.006)	(0.005)
Disagreement	0.003	0.008*	0.008**
	(0.004)	(0.004)	(0.003)
Change in Court	0.016**	-0.036***	0.036***
	(0.006)	(0.006)	(0.005)
Opinion Writer Extremeness	-0.003**	-0.000	0.000
	(0.001)	(0.001)	(0.001)
Majority Votes	0.005***	0.002	0.002
	(0.001)	(0.001)	(0.001)
Lagged Cites (SC)	0.452***		
	(0.007)		
Lagged Cites (CA)		0.900***	
		(0.003)	
Lagged Cites (DC)			0.951***
			(0.002)
Constant	1.333***	0.425***	-0.522***
	(0.070)	(0.060)	(0.053)
Observations	78211	78211	78211
Controls	Yes	Yes	Yes
Age	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1), (2) and (3) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. These regressions include all controls listed in the text as well as age fixed effects. Each model also includes a one year lag of the dependent variable.

Table A.4: Dependent Variable: Citation Counts

	(1) Supreme Court (Dummy)	(2) Supreme Court (Count)	(3) Courts of Appeals	(4) District Courts
Ideological Decision	0.655***	0.282***	0.591***	1.440***
	(0.058)	(0.064)	(0.122)	(0.254)
Disagreement	-0.007	0.036	0.134	0.283*
	(0.031)	(0.031)	(0.081)	(0.116)
Change in Court	0.015	0.019	-0.033	0.249***
	(0.048)	(0.047)	(0.023)	(0.057)
Opinion Writer Extremeness	-0.027**	-0.028***	-0.044*	-0.021
	(0.008)	(0.008)	(0.018)	(0.030)
Majority Votes	0.041***	0.026*	0.038	-0.019
	(0.011)	(0.012)	(0.029)	(0.058)
Observations	78211	78211	78211	78211
Controls	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variable in the first column is a dummy for whether or not the Supreme Court cited the precedent was cited in the given year, so column (1) is estimated with a logistic regression. The dependent variables in columns (2), (3) and (4) are counts of citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. These data are over dispersed, and are estimated using a negative binomial regression. Each model contains all controls listed in the text as well as age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.5: Age Functional Form

	(1) Supreme Court	(2) Courts of Appeals
Ideological Decision	0.096***	0.025
	(0.013)	(0.052)
Disagreement	0.006	0.077**
	(0.007)	(0.028)
Change in Court	0.023**	-0.062***
	(0.009)	(0.017)
Opinion Writer Extremeness	-0.005**	-0.006
	(0.002)	(0.007)
Majority Votes	0.009***	0.014
	(0.003)	(0.010)
Observations	78211	78211
Controls	Yes	Yes
Age	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (2) are log transformed citations per year to each precedent, for the Supreme Court and courts of appeals. Each model contains the controls listed in the texts, but estimates the effect of age by the same procedure employed by **?** instead of the age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.6: Baseline Regression With Alternate Opinion Writer Ideology

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts
Ideological Decision	0.099***	0.030	0.384***
	(0.013)	(0.055)	(0.069)
Disagreement	0.006	0.078**	0.100**
	(0.007)	(0.028)	(0.035)
Change in Court	0.021*	-0.060***	0.134***
	(0.009)	(0.017)	(0.018)
Opinion Writer Extremeness (Rank)	-0.005*	-0.004	-0.012
	(0.002)	(0.010)	(0.013)
Majority Votes	0.009***	0.014	0.023
	(0.003)	(0.010)	(0.013)
Observations	78211	78211	78211
Controls	Yes	Yes	Yes
Age	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1), (2) and (3) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.7: Ideological Match between Court and Precedent

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts	(4) Supreme Court	(5) Courts of Appeals	(6) District Courts
Liberal Decision	0.100***	-0.011	0.348***	0.100***	-0.008	0.353***
	(0.013)	(0.055)	(0.069)	(0.013)	(0.055)	(0.069)
Conservative Decision	0.091***	0.055	0.401***	0.082***	0.117	0.527***
	(0.013)	(0.053)	(0.068)	(0.019)	(0.081)	(0.104)
Precedent Median	-0.016	0.027	0.130	-0.023	0.079	0.235*
	(0.013)	(0.055)	(0.068)	(0.018)	(0.074)	(0.092)
Conservative Decision × Precedent Median				0.014	-0.098	-0.200
				(0.023)	(0.102)	(0.127)
Disagreement	0.006	0.075**	0.099**	0.006	0.074**	0.097**
	(0.007)	(0.028)	(0.035)	(0.007)	(0.029)	(0.035)
Change in Court	0.016	-0.059***	0.134***	0.016	-0.059***	0.134***
	(0.009)	(0.017)	(0.018)	(0.009)	(0.017)	(0.018)
Opinion Writer Extremeness	-0.005**	-0.004	-0.011	-0.005**	-0.005	-0.012
	(0.002)	(0.007)	(0.009)	(0.002)	(0.007)	(0.009)
Majority Votes	0.008**	0.017	0.025	0.008**	0.016	0.025
	(0.002)	(0.010)	(0.013)	(0.002)	(0.010)	(0.013)
Observations	78211	78211	78211	78211	78211	78211
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (4), (2) and (5), and (3) and (6) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.8: Baseline Regression With Total Citations

	(1) Supreme Court	(2) Courts of Appeals	(3) District
Ideological Decision	0.105***	0.046	0.394***
	(0.013)	(0.052)	(0.066)
Disagreement	0.005	0.076**	0.101**
	(0.007)	(0.029)	(0.035)
Change in Court	0.021*	-0.059***	0.135***
	(0.010)	(0.018)	(0.018)
Opinion Writer Extremeness	-0.005**	-0.005	-0.011
	(0.002)	(0.007)	(0.009)
Majority Votes	0.009**	0.013	0.021
	(0.003)	(0.011)	(0.013)
Observations	78211	78211	78211
Controls	Yes	Yes	Yes
Age	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1), (2) and (3) are log transformed total citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.9: Liberal v. Conservative Precedents with Total Citations

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts	(4) Supreme Court	(5) Courts of Appeals	(6) District Courts
Liberal Decision	0.113***	0.009	0.365***	0.117***	0.066	0.499***
	(0.013)	(0.055)	(0.069)	(0.017)	(0.072)	(0.088)
Conservative Decision	0.101***	0.066	0.409***	0.102***	0.079	0.439***
	(0.013)	(0.054)	(0.068)	(0.014)	(0.055)	(0.069)
Disagreement	0.005	0.074**	0.099**	0.008	0.107**	0.179***
	(0.007)	(0.029)	(0.035)	(0.010)	(0.041)	(0.050)
Liberal Decision × Disagreement				-0.005	-0.071	-0.168*
				(0.014)	(0.057)	(0.070)
Change in Court	0.021*	-0.059***	0.135***	0.021*	-0.059***	0.135***
	(0.010)	(0.018)	(0.018)	(0.010)	(0.018)	(0.018)
Opinion Writer Extremeness	-0.005**	-0.004	-0.010	-0.005**	-0.004	-0.010
	(0.002)	(0.007)	(0.009)	(0.002)	(0.007)	(0.009)
Majority Votes	0.008**	0.015	0.022	0.008**	0.015	0.022
	(0.003)	(0.011)	(0.013)	(0.003)	(0.011)	(0.013)
Observations	78211	78211	78211	78211	78211	78211
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (4), (2) and (5), and (3) and (6) are log transformed total citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.10: Citing Court Ideology with Total Citations

	(1) Courts of Appeals	(2) District Courts
Ideological Decision	0.043	0.442***
	(0.058)	(0.071)
Alignment (CA)	0.098*	
	(0.049)	
Alignment (DC)		0.049
		(0.047)
Disagreement	0.077**	0.107**
	(0.029)	(0.035)
Change in Court	-0.059***	0.121***
	(0.018)	(0.018)
Opinion Writer Extremeness	-0.005	-0.010
	(0.007)	(0.010)
Majority Votes	0.013	0.021
	(0.011)	(0.013)
Observations	76454	76454
Controls	Yes	Yes
Age	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (2), are log transformed total citations per year to each precedent, for the courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.11: Reviewing Court Ideology with Total Citations

	(1) District Court
Ideological Decision	0.412***
	(0.072)
Alignment (CA)	0.107*
	(0.048)
Disagreement	0.107**
	(0.035)
Change in Court	0.121***
	(0.018)
Opinion Writer Extremeness	-0.010
	(0.010)
Majority Votes	0.021
	(0.013)
Observations	76454
Controls	Yes
Age	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variable is log transformed total citations per year to each precedent from district courts. The model contains all controls listed in the text as well as age fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.12: Liberal v. Conservative Precedents with Lower Court Alignment

	(1) Supreme Court	(2) Courts of Appeals	(3) District Courts	(4) Supreme Court	(5) Courts of Appeals	(6) District Courts
Liberal Decision	0.101***	0.014	0.436***	0.105***	0.066	0.572***
	(0.013)	(0.059)	(0.073)	(0.013)	(0.057)	(0.070)
Conservative Decision	0.092***	0.075	0.487***	0.093***	0.086	0.517***
	(0.013)	(0.058)	(0.073)	(0.013)	(0.059)	(0.074)
Disagreement	0.006	0.076**	0.103**	0.008	0.106**	0.185***
	(0.007)	(0.029)	(0.035)	(0.009)	(0.041)	(0.050)
Liberal Decision × Disagreement				-0.005	-0.065	-0.172*
				(0.013)	(0.057)	(0.070)
Change in Court	0.020*	-0.059***	0.121***	0.020*	-0.059***	0.121***
	(0.009)	(0.017)	(0.018)	(0.009)	(0.017)	(0.018)
Opinion Writer Extremeness	-0.005**	-0.004	-0.010	-0.005**	-0.004	-0.010
	(0.002)	(0.007)	(0.010)	(0.002)	(0.007)	(0.010)
Majority Votes	0.008**	0.016	0.025	0.008**	0.016	0.024
	(0.002)	(0.011)	(0.013)	(0.002)	(0.011)	(0.013)
Alignment (CA)		0.052			0.052	
		(0.044)			(0.044)	
Alignment (DC)			0.012			0.012
			(0.042)			(0.042)
Observations	78211	76454	76454	78211	76454	76454
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes

Estimates are from a population averaged GEE model with an AR(1) correlation structure. Standard errors are reported in parenthesis and are clustered by precedent. The dependent variables in columns (1) and (4), (2) and (5), and (3) and (6) are log transformed citations per year to each precedent, for the Supreme Court, courts of appeals and district courts, respectively. Each model contains all controls listed in the text as well as age fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Precedent Depreciation

As mentioned, a few scholars have analyzed the value of precedent over time. Notably, Black & Spriggs (2013), in their analysis of the Supreme Court and appellate courts, show that precedents depreciate in the long term, and that the effects of many determinants of citation decay with age. Although the time horizon is somewhat shorter, I nonetheless account for the effect of age. As the estimated models included a fixed effect for precedent age in the citing year, I have an estimate for the effect of age on citation counts, that does not rely on particular assumptions about the functional form of depreciation. The data that I collected on district court citations provides novel insight on how precedent ages at the trial court level, offering a more full account of precedent depreciation in the federal courts I present the coefficients for these effects in Figure A.1.[1]

Effect of Age on Citation to Precedent

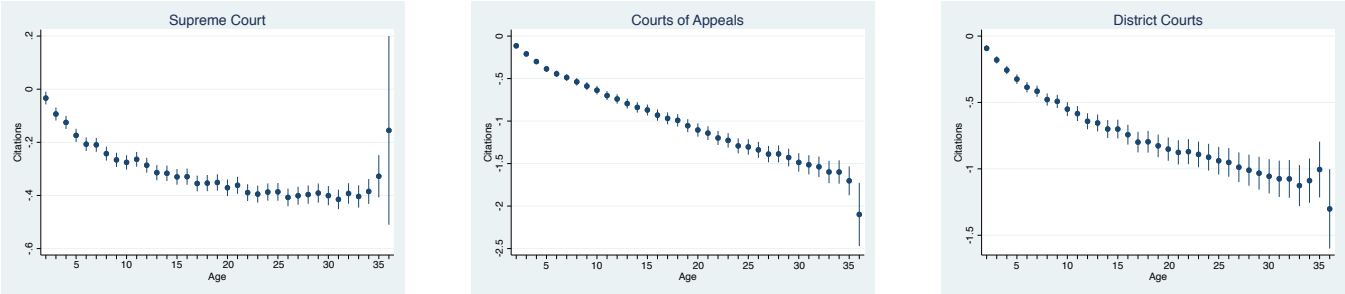

Figure A.1: The baseline regression (presented in Table 4) includes fixed effects for precedent age. This allows for an estimate of the depreciation that does not assume a particular functional form. Above are the coefficient estimates and confidence intervals of these effects, showing different effects of age on the Supreme Court, courts of appeals, and district courts.

At all three levels of the hierarchy, there appears to be a marked decay, with younger precedents most likely to be cited and older opinions cited fewer times. The Supreme Court displays the most pronounced decline, with an extremely steep decline in the first few years. The district courts and courts of appeals exhibit similar trends to one another, which are more gradual than the Supreme Court. However, the effect of age appears to somewhat taper off on the district courts after an initial decline, whereas it continues to decrease on the courts of appeals. This suggests that Supreme Court precedents retain value for longer periods at lower levels of the judicial hierarchy.

[1]The high levels of variance reported for precedents 36 years old is because there are only ten cases that were decided under Chief Justice Rehnquist in 1986.