

Appendix: Additional Data Summary and Results on the Attenuation of Flood Risk Discount

Table A1. Percentage of Single-Family Homes in Special Flood Hazard Area (SFHA), with and without Flood Insurance, in 2004

Inside SFHA		Outside SFHA	
3%		97%	
With Insurance	Without Insurance	With Insurance	Without Insurance
49%*	51%	1%	99%

*: It has been estimated that 75-90% of single-family homes required to have flood insurance do have flood insurance. Homes without federally-backed mortgages are not required to have flood insurance.

Source: Dixon et al. (2006)

Table A2. Summary Statistics of Housing Transaction Data by Flood Zone Status

# of Transactions	Never in Flood Zone			Always in Flood Zone			Mapped Out			Mapped In		
	14,229			491			103			103		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Flood Zones ^a	0.00	0	0	1.00	1	1	0.00	0	0	1.00	1	1
Transaction Price	173,990	4,150	875,000	112,009	7,000	558,000	184,178	10,000	475,000	121,111	11,000	404,500
Adj. Transaction Price	235,215	5,627	100,7951	158,935	7,862	626,431	214559	12,357	560,195	139,539	12,229	502,469
Numerical Grade ^b	109.09	12	216	87.27	30	216	102.76	42	216	82.10	36	156
Parcel Acreage	0.48	0.00	9.79	0.84	0	9.06	0.52	0	5.75	0.65	0	4.39
Living Footage	1,751	360	7,033	1,614	576	3,880	1654	864	3,079	1,646	624	3,471
Age of House	27.42	0	212	56.75	0	206	38.01	1	204	68.76	0	204
# of Rooms	6.68	1	18	6.55	3	13	6.73	5	10	6.89	4	13
# of Bedrooms	3.07	0	8	2.94	1	6	3.24	2	5	3.13	1	6
# of Full Bath	1.71	0	6	1.38	0	4	1.57	1	3	1.29	1	4
# of Half Bath	0.53	0	5	0.35	0	3	0.51	0	3	0.26	0	2
Garage Footage	286.02	0	1,728	164.83	0	1,392	239.52	0	1,104	79.02	0	1,024
# of Cars	0.81	0	5	0.98	0	3	1.19	0	3	1.04	0	3
Basement ^c	0.76	0	1	0.79	0	1	0.88	0	1	0.89	0	1
Finished Basement ^c	0.22	0	1	0.11	0	1	0.24	0	1	0.09	0	1
Fireplace ^c	0.51	0	6	0.30	0	3	0.55	0	3	0.19	0	2
Pool ^c	0.03	0	1	0.04	0	1	0.05	0	1	0.02	0	1
Minutes to Penn State	9.35	0	51.66	18.01	2	41.12	10.93	2	31.73	17.58	1	44.64

^a: Inside flood zones when transaction happens; yes = 1 and no = 0.

^b: A grade assigned by assessors representing the overall quality of the building.

^c: Dummy Variables; yes = 1 and no = 0.

Table A3. Tested Model Specifications for the Time-effect on Flood Risk Discount

Model ID	Covariates
1	MapOut MapIn MapInTime HouseAge
2	MapOut MapIn MapInTime MapInTime ² HouseAge
3	MapOut MapIn MapInTime MapInTime ² HouseAge
4	MapOut MapIn LnMapInTime HouseAge
5	MapOut MapIn RaMapInTime HouseAge
6	MapOut MapIn BCMapInTime1 HouseAge
7	MapOut MapIn BCMapInTime1.5 HouseAge
8	MapOut MapIn BCMapInTime2 HouseAge

Note: MapOut: Mapped out of floodplain in 2004 (Impact starts in 2004)

MapIn: Mapped in floodplain in 2004 (Impact starts in 2004)

MapInTime: Years being mapped in since 2004

MapInTime²: Squared term of MapInTime

Ln MapInTime: Ln(MapInTime)

RaMapInTime: MapInTime / (MapInTime +1)

BCMapInTime 1 (1.5, and 2): $\frac{(T^{-\lambda}-1)}{-\lambda}$ (Box Cox with lambda = -1, -1.5, and -2)

Table A4. Parcel Fixed-Effects Model Results on the Attenuation of Flood Risk Discount

	Model A1	Model A2	Model A3	Model A4
	Coeff.	Coeff.	Coeff.	Coeff.
	(S.E.)	(S.E.)	(S.E.)	(S.E.)
MapOut	-0.0109 (0.0350)	-0.0109 (0.0350)	-0.0107 (0.0350)	-0.0109 (0.0350)
MapIn	-0.1421** (0.0653)	-0.0867 (0.0668)	-0.0627** (0.0304)	-0.1316** (0.0631)
MapInTime	0.0064 (0.0093)	-0.0285 (0.0361)	0.0073** (0.0037)	0.0121 (0.0312)
MapInTime ²		0.0040 (0.0041)		
House Age	-0.0345*** (0.0085)	-0.0345*** (0.0085)	-0.0345*** (0.0085)	-0.0345*** (0.0085)
Adj-R ²	0.8865	0.8865	0.8865	0.8865
AIC	-14477.52	-14476.83	-14477.11	-14477.03
BIC	-14302.47	-14294.17	-14302.06	-14301.98

	Model A5	Model A6	Model A7	Model A8
	Coeff.	Coeff.	Coeff.	Coeff.
	(S.E.)	(S.E.)	(S.E.)	(S.E.)
MapOut	-0.0109 (0.0350)	-0.0109 (0.0350)	-0.0109 (0.0350)	-0.0109 (0.0350)
MapIn	-0.1098* (0.0580)	-0.1120* (0.0582)	-0.1031* (0.0558)	-0.0967* (0.0544)
MapInTime	-0.0093 (0.0760)	-0.0069 (0.0624)	-0.0266 (0.0791)	-0.0488 (0.0970)
MapInTime ²				
House Age	-0.0345*** (0.0085)	-0.0345*** (0.0085)	-0.0345*** (0.0085)	-0.0345*** (0.0085)
Adj-R ²	0.8865	0.8865	0.8865	0.8865
AIC	-14476.86	-14476.86	-14476.94	-14477.03
BIC	-14301.81	-14301.81	-14301.89	-14301.98

*, **, ***: Significant at 10%, 5%, and 1%, respectively.