

**APPENDIX**

**Table A1. Community Rating System Activities and Credit Scores**

<i>Series</i>	<i>Description</i>	<i>Creditable Activities</i>	<i>Points</i>
<i>Public Information (300)</i>	CRS will credit those local activities that advise people about the flood hazard, flood insurance, and flood protection measures.	1. Elevation Certificates	162
		2. Map Information	140
		3. Outreach Projects	380
		4. Hazard Disclosure	81
		5. Flood Protection Information	102
		6. Flood Protection Assistance	71
<i>Mapping and Regulations (400)</i>	CRS provides credit to communities that enact and enforce regulations that exceed the NFIP’s minimum standards so that more flood protection is provided for new development.	1. Additional Flood Data	1,346
		2. Open Space Preservation	900
		3. Higher Regulatory Standards	2,740
		4. Flood Data Maintenance	239
		7. Stormwater Management	670
<i>Flood Damage Reduction (500)</i>	This series of activities addresses flood damage to existing buildings. It complements the previous series that dealt with preventing damage to new development.	1. Floodplain Management Planning	359
		2. Acquisition and Relocation	3,200
		3. Flood Protection	2,800
		4. Drainage System Maintenance	330
<i>Flood Preparedness (600)</i>	Activities in this series include actions that should be taken to minimize the effects of a flood on people, property, and building contents.	1. Flood Warning Program	225
		2. Levee Safety	900
		3. Dam Safety	175

Source: NFIP, *CRS Coordinator’s Manual* (2007).

**Table A2. CRS Credit Points Earned, Classification Awarded, and Premium Reductions**

Score	Credits	Discount in SFHA*	Discount in non-SFHA**
1	4,500+	45%	10%
2	4,000 – 4,499	40%	10%
3	3,500 – 3,999	35%	10%
4	3,000 – 3,499	30%	10%
5	2,500 – 2,999	25%	10%
6	2,000 – 2,499	20%	10%
7	1,500 – 1,999	15%	5%
8	1,000 – 1,499	10%	5%
9	500 – 999	5%	5%
10	0 – 499	—	—

\*Special Flood Hazard Area  
 \*\*Preferred Risk Policies are available only in B, C, and X zones for properties that are shown to have a minimal risk of flood damage. The Preferred Risk Policy does not receive premium rate credits under the CRS because it already has a lower premium than other policies. The CRS credit for AR and A99 zones is based on non-SFHAs (B, C, and X). Credits: scores 1–6 = 10 percent; scores 7–9 = 5 percent. Premium reductions are subject to change.

Source: NFIP, *CRS Coordinator’s Manual* (2007).

**Table A3. Estimation Results for Linear One-Step GMM (1999–2010)**

Variable	Coef.	(S.E.)	Elasticity
$CRSi_{i,t-1}$	0.448**	(0.042)	0.435
Flood <sub>t-1</sub>	12.290**	(5.931)	0.017
Risk-Index <sub>t-1</sub>	0.013	(0.019)	0.044
Tax <sub>t-1</sub>	0.591**	(0.149)	1.429
Staff	3.541**	(1.442)	0.276
Crime <sub>t-1</sub>	-0.150	(0.115)	-0.252
Unemployment <sub>t-1</sub>	-1.975	(3.259)	-0.059
Student-Teacher <sub>t-1</sub>	-0.786	(0.115)	-0.052
Population-Density	1.748**	(0.222)	1.538
Income	8.939**	(3.582)	1.843
Migration	15.675	(19.732)	0.062
Senior	1467.562**	(396.630)	1.007
Constant	-559.977**	(27.105)	NA
Year Dummies	Included		
Wald joint significance (df=11,12)	205.76**		
Wald time dummies (df=11)	439.95**		
R <sup>2</sup>	0.43		
First-order serial correlation	-1.852*		
Second-order serial correlation	0.742		
Sargan test	65.426		
Number of observations	976		

\* Indicates that the estimation is significant at 10%.

\*\* Indicates that the estimation is significant at 5%.

**Table A4. Estimation Results for Linear One-Step GMM Using CRS Series-Level Data (2002–2008)**

Variable	C300	C400	C500	C600	Total points
$CRS_{i,t-1}$	0.039 (0.245)	0.443** (0.029)	0.104** (0.007)	-0.131 (0.356)	0.261** (0.024)
$Flood_{t-1}$	0.151 (0.145)	3.286** (1.258)	2.891** (0.977)	-0.024 (0.061)	21.350* (11.863)
$Risk-Index_{t-1}$	-0.0009 (0.002)	-0.062** (0.005)	-0.007** (0.003)	-0.0003 (0.0002)	-0.017 (0.012)
$Tax_{t-1}$	0.056* (0.033)	0.139** (0.057)	0.275** (0.039)	0.015** (0.004)	0.754** (0.243)
Staff	0.040 (0.051)	0.567 (0.641)	0.701** (0.226)	-0.002 (0.017)	4.294** (1.703)
$Crime_{t-1}$	-0.019* (0.0105)	-0.041 (0.027)	-0.057** (0.014)	-0.003 (0.007)	-0.102** (0.041)
$Unemployment_{t-1}$	-0.038 (0.293)	1.203 (1.173)	0.431 (0.878)	-0.081 (0.066)	-1.663 (0.176)
$Student-Teacher_{t-1}$	0.040 (0.067)	0.225 (0.263)	-0.562** (0.167)	0.001 (0.027)	-0.072 (0.057)
Population-Density	0.129** (0.029)	0.588** (0.137)	0.462** (0.094)	0.111** (0.017)	1.312** (0.296)
Income	0.201 (0.167)	0.427 (0.638)	6.133* (3.654)	0.272 (0.330)	6.832** (1.764)
Migration	0.853 (1.108)	2.440 (7.429)	4.286 (4.202)	0.287 (0.374)	25.214 (18.240)
Senior	66.494 (45.652)	270.007** (53.105)	134.706 (274.145)	38.050 (26.682)	376.523 (604.051)
Constant	-4.755 (15.891)	-682.566** (65.721)	-658.945** (393.837)	-47.107** (17.512)	-1504.252** (578.227)
Year Dummies	Included	Included	Included	Included	included
Wald joint significance (df=11)	66.51**	446.60**	147.75**	251.31**	174.63**
Wald time dummies (df=6)	74.48**	271.25**	234.24**	205.20**	157.12**
R <sup>2</sup>	0.20	0.64	0.29	0.09	0.39
First-order serial correlation	-3.44**	-2.41**	-1.38	-0.96	-1.98
Second-order serial correlation	0.73	0.21	0.93	0.22	1.24
Sargan test	55.04**	17.53	15.27	21.34**	19.86
Number of observations	487	487	487	487	487

Note: Standard errors in parentheses.

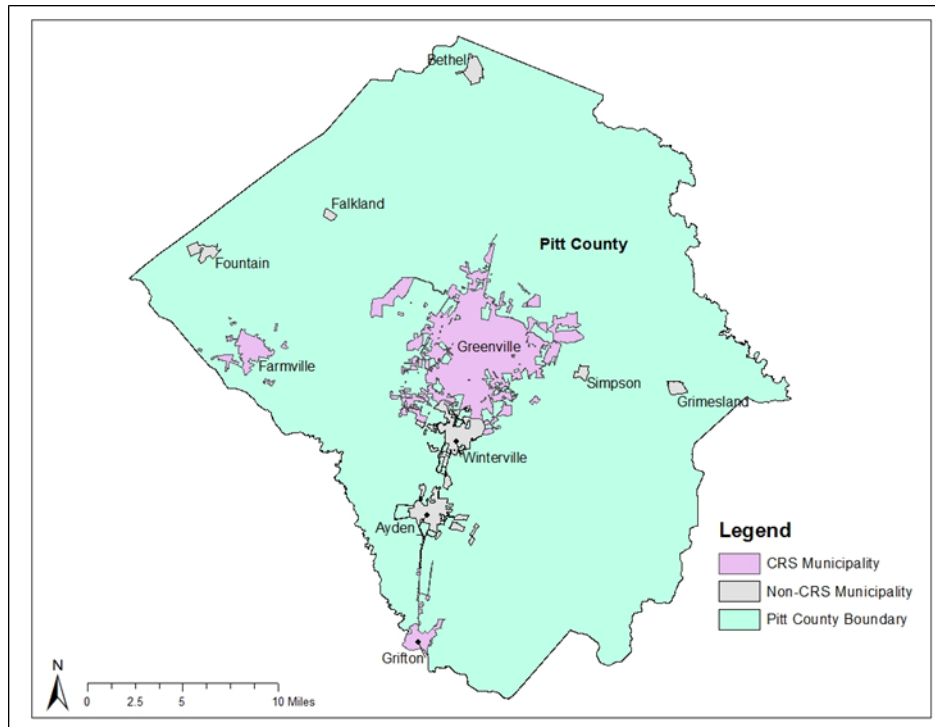
\* Indicates that the estimation is significant at 10%.

\*\* Indicates that the estimation is significant at 5%.

**Table A5. Elasticity of Linear One-Step GMM Using CRS Series-Level Data (2002–2008)**

	<b>C300</b>	<b>C400</b>	<b>C500</b>	<b>C600</b>	<b>Total Points</b>
CRS <sub>i,t-1</sub>	0.039	0.426	0.235	-0.130	0.251
Flood <sub>t-1</sub>	0.001	0.013	0.051	0.000	0.032
Risk-Index <sub>t-1</sub>	-0.010	-0.549	-0.278	-0.012	-0.057
Tax <sub>t-1</sub>	0.458	0.868	7.713	0.421	1.795
Staff	0.010	0.113	0.629	-0.002	0.327
Crime <sub>t-1</sub>	-0.107	-0.176	-1.098	-0.058	-0.167
Unemployment <sub>t-1</sub>	-0.004	0.091	0.146	-0.027	-0.048
Student-Teacher <sub>t-1</sub>	0.009	0.037	-0.418	0.001	-0.005
Population-Density	0.380	1.322	4.666	1.121	1.125
Income	0.139	0.225	14.490	0.643	1.370
Migration	0.011	0.024	0.190	0.013	0.095
Senior	0.152	0.471	1.056	0.298	0.251

**Figure A1. Measurement of Population-Weighted CRS Points for a County  
(An Example for Pitt County, North Carolina, in 2005)**



**Figure A2. Mean of Population-Weighted CRS Points of for North Carolina Counties over the Study Period  
(1999–2010)**

