Appendix C
Correlation Tables
Prospective Analysis

Table C.1. Correlation Matrix (and Significance Levels) for the Meteorological Variables

	1	2	3	4	5
			Athens		
1. Average wind speed		-.034	.099	-.390	-.141
		(.406)	(.015)	(.000)	(.001)
2. Average relative humidity			.320	-.334	-.010
			(.000)	(.000)	(.807)
3. Precipitation				-.278	.056
				(.000)	(.171)
4. Barometric Pressure					-.222
					(.000)
5. Average Daily Temperature					
			Koebel		
1. Average wind speed		-.047	.073	-.626	-.208
		(.246)	(.074)	(.000)	(.000)
2. Average relative humidity			.396	-.023	-.199
			(.000)	(.569)	(.000)
3. Precipitation				-.076	.013
				(.063)	(.755)
4. Barometric Pressure					-.117
					(.004)
5. Average Daily Temperature					
			New Albany		
1. Average wind speed		-.008	.099	-.532	-.130
		(.840)	(.015)	(.000)	(.001)
2. Average relative humidity			.393	-.032	-.121
			(.000)	(.437)	(.003)
3. Precipitation				-.119	.006
				(.003)	(.885)
4. Barometric Pressure					-.314
					(.000)
5. Average Daily Temperature					

Table C.2. Correlation Matrix (and Significance Levels) for the Air Quality Variables

	1	2	3	4	5
		Athens			
1. $PM_{2.5}$ Personal		.682	-.069	.024	.123
		(.000)	(.424)	(.764)	(.141)
2. $PM_{2.5}$ Indoor			-.075	-.150	.126
			(.269)	(.030)	(.058)
3. SO_4 - Indoor				.614	.350
				(.000)	(.000)
4. SO_4 - Ambient					.203
					(.005)
5. $PM_{2.5}$ Ambient					
		Koebel			
1. $PM_{2.5}$ Personal		.556	.114	.118	.440
		(.000)	(.211)	(.225)	(.000)
2. $PM_{2.5}$ Indoor			-.098	.082	.289
			(.196)	(.314)	(.000)
3. SO_4 - Indoor				.247	.179
				(.005)	(.026)
4. SO_4 - Ambient					.340
					(.000)
5. $PM_{2.5}$ Ambient					
		New Albany			
1. $PM_{2.5}$ Personal		.303	.043	.107	.171
		(.000)	(.633)	(.239)	(.023)
2. $PM_{2.5}$ Indoor			.094	-.002	.217
			(.179)	(.981)	(.001)
3. SO_4 - Indoor				.304	.478
				(.000)	(.000)
4. SO_4 - Ambient					.492
					(.000)
5. $PM_{2.5}$ Ambient					

Table C.3. Correlation Matrix (and Significance Levels) for the Air Quality Variables with the Meteorological Variables

	Average Wind Speed	Average Relative Humidity	Precipitation	Barometric Pressure	Average Daily Temperature
			Athens		
$PM_{2.5}$ Personal	.156	-.200	.073	-.063	.313
	(.025)	(.004)	(.294)	(.368)	(.000)
$PM_{2.5}$ Indoor	.049	-.111	.108	-.109	.234
	(.397)	(.055)	(.062)	(.060)	(.000)
SO_4 –	-.130	.081	.046	-.088	.390
Indoor	(.056)	(.233)	(.500)	(.195)	(.000)
SO_4 –	-.016	-.030	-.002	-.066	.294
Ambient	(.802)	(.644)	(.980)	(.307)	(.000)
$PM_{2.5}$ Ambient	-.201	.086	-.015	.014	.504
	(.000)	(.073)	(.755)	(.767)	(.000)
			Koebel		
$PM_{2.5}$ Personal	-.076	-.126	-.024	.125	.304
	(.289)	(.081)	(.736)	(.083)	(.000)
$PM_{2.5}$ Indoor	-.213	-.159	.039	.247	.338
	(.001)	(.012)	(.537)	(.000)	(.000)
SO_4 –	-.130	-.092	.088	-.300	.228
Indoor	(.074)	(.206)	(.226)	(.000)	(.001)
SO_4 –	-.108	.025	-.013	-.028	.358
Ambient	(.130)	(.722)	(.859)	(.694)	(.000)
$PM_{2.5}$ Ambient	-.245	-.087	.028	-.039	.536
	(.000)	(.053)	(.542)	(.391)	(.000)
			New Albany		
$PM_{2.5}$ Personal	-.155	-.068	.071	.222	.262
	(.026)	(.335)	(.309)	(.001)	(.000)
$PM_{2.5}$ Indoor	.021	-.122	-.033	.120	.124
	(.731)	(.045)	(.594)	(.050)	(.042)
SO_4 –	.029	.047	-.029	-.252	.308
Indoor	(.682)	(.503)	(.682)	(.000)	(.000)
SO_4 –	-.123	.230	-.085	.065	.407
Ambient	(.068)	(.001)	(.205)	(.334)	(.000)
$PM_{2.5}$ Ambient	-.174	-.027	-.010	-.112	.528
	(.000)	(.525)	(.811)	(.009)	(.000)

Table C.4.a Correlation Matrix (and Significance Levels) for Daily Respiratory Measures at Athens

	1	2	3	4	5	6	7	8
1. Mean Peak Flow – 1999		.656 (.000)	-.027 (.803)			-.251 (.019)	-.054 (.621)	-.084 (.440)
2. Mean Peak Flow – 1999 (Ill)			.018 (.872)			.049 (.662)	-.041 (.713)	-.030 (.787)
3. Number Attending – 1999 (Ill)						.019 (.861)	.090 (.407)	-.118 (.275)
4. Mean Peak Flow – 2000					.047 (.608)	.046 (.613)	-.081 (.376)	.031 (.736)
5. Proportion Absent – 2000						-.070 (.368)	-.140 (.072	.093 (.231)
6. Total - Respiratory Illness							.368 (.000)	.189 (.000)
7. Children – Asthma								.002 (.966)
8. Elderly – COPD								

Table C.4.b. Correlation Matrix (and Significance Levels) for Daily Respiratory Measures at Koebel

	1	2	3	4	5	6	7	8
1. Mean Peak Flow – 1999						-.336 (.001)	-.154 (.147)	.060 (.577)
2. Mean Peak Flow – 2000			.759 (.000)	-.223 (.007)	-.199 (.032)	-.155 (.062)	-.157 (.059)	-.003 (.967)
3. Mean Peak Flow – 2000 (I11)				-.149 (.075)	-.201 (.031)	-.192 (.021)	-.049 (.558)	-.187 (.024)
4. Number Attending – 2000 (I11)					-.347 (.000)	.223 (.006)	.089 (.282)	-.059 (.474)
5. Proportion Absent – 2000						.113 (.188)	-.152 (.075)	.154 (.072)
6. Total - Respiratory Illness							.238 (.000)	.284 (.000)
7. Children – Asthma								-.087 (.042)
8. Elderly – COPD								

Table C.4.c. Correlation Matrix (and Significance Levels) for Daily Respiratory Measures at New Albany

	1	2	3	4	5	6	7	8	9	10
1. Mean Peak Flow – 1999		.231 (.025)	.145 (.162)					-.143 (.166)	.110 (.287)	-.001 (.992)
2. Mean Peak Flow – 1999(Ill)			-.235 (.022)					.273 (.007)	.102 (.327)	.042 (.688)
3. Number Attending - 1999(Ill)								-.218 (.034)	-.170 (.100)	.031 (.768)
4. Mean Peak Flow – 2000					.597 (.000)	.250 (.001)	.062 (.425)	-.017 (.831)	.006 (.935)	.132 (.088)
5. Mean Peak Flow – 2000 (Ill)						.038 (.622)	-.061 (.436)	-.100 (.197)	.078 (.315)	-.008 (.920)
6. Number Attending – 2000(Ill)							.150 (.052)	.116 (.136)	-.065 (.404)	.146 (.059)
7. Proportion Absent – 2000								.347 (.000)	-.066 (.384)	.175 (.021)

Table C.5.a. Regression Coefficients (and Significance Levels) for the Relationships between Daily Respiratory Measures with the Air Quality Variables after Adjusting for Seasonality and Meteorological Variables at Athens

	$PM_{2.5}$ Personal	$PM_{2.5}$ Indoor	SO_4 – Indoor	SO_4 – Ambient	$PM_{2.5}$ Ambient
Mean Peak Flow – 1999					Lag 1 .001 (.086)
Mean Peak Flow – 1999 (Ill)			Lag 0 .005 (.029)	Lag 0 .004 (.094)	
Number Attending – 1999 (Ill)					
Mean Peak Flow – 2000					
Proportion Absent – 2000					
Total - Respiratory Illness				Lag 0 .108 (.017)	
Children – Asthma					Lag 1 .050 (.005)
Elderly – COPD					Lag 1 -.046 (.020)

Table C.5.b. Regression Coefficients (and Significance Levels) for the Relationships between Daily Respiratory Measures with the Air Quality Variables after Adjusting for Seasonality and Meteorological Variables at Koebel

	$PM_{2.5}$ Personal	$PM_{2.5}$ Indoor	SO_4 – Indoor	SO_4 – Ambient	$PM_{2.5}$ Ambient
Mean Peak Flow – 1999					
Mean Peak Flow – 2000					
Mean Peak Flow – 2000 (Ill)					Lag 0 -.001 (.062)
Number Attending – 2000 (Ill)		Lag 1 -.056 (.030)			
Proportion Absent – 2000					
Total - Respiratory Illness					
Children – Asthma					Lag 0 -.018 (.021)
Elderly – COPD					

Table C.5.c. Regression Coefficients (and Significance Levels) for the Relationships between Daily Respiratory Measures with the Air Quality Variables after Adjusting for Seasonality and Meteorological Variables at New Albany

	$PM_{2.5}$ Personal	$PM_{2.5}$ Indoor	SO_4 – Indoor	SO_4 – Ambient	$PM_{2.5}$ Ambient
Mean Peak Flow – 1999					Lag 0 -.001 (.059)
Mean Peak Flow – 1999 (Ill)					Lag 0 -.002 (.057)
Number Attending – 1999 (Ill)		Lag 1 -.026 (.006)	Lag 0 -.140 (.009) Lag 1 -.108 (.080)		Lag 0 -.047 (.017)
Mean Peak Flow – 2000					
Mean Peak Flow – 2000 (Ill)				Lag 0 -.004 (.062)	
Number Attending – 2000 (Ill)					
Proportion Absent – 2000	Lag 0 -.000 (.070)				
Total - Respiratory Illness					
Children – Asthma					
Elderly – COPD					