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## OPTIMAL SUPPLEMENTAL COVERAGE OPTION CROP INSURANCE DECISION FOR KENTUCKY COMMODITY CROP PRODUCERS

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OPTIMAL SUPPLEMENTAL COVERAGE OPTION CROP INSURANCE  
DECISION FOR KENTUCKY COMMODITY CROP PRODUCERS

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THESIS

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A thesis submitted in partial  
fulfillment of the requirements for  
the degree of Masters of Science in  
the College of Agriculture, Food and  
Environment at the University of  
Kentucky

By  
Jerzy Z. Jaromczyk  
Lexington, Kentucky

Director: Dr. Tyler Mark, Associate Professor of Agricultural Economics  
Lexington, Kentucky 2020

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## ABSTRACT OF THESIS

### OPTIMAL SUPPLEMENTAL COVERAGE OPTION CROP INSURANCE DECISION FOR KENTUCKY COMMODITY CROP PRODUCERS

The 2018 Farm Bill has reopened commodity program enrollment for producers, and thus renewed interest in the Supplemental Coverage Option (SCO) of the Federal Crop Insurance Program (FCIP). This thesis examines the potential risk management benefits afforded to Kentucky corn, soybean and wheat producers by the SCO.

A simulation model is used to rank downside-risk minimization of the common Multi-peril Crop Insurance Policies (MPCI) policies both with and without the SCO for various farm-level yield risk and farm- to SCO area-level yield correlations.

The study found that the SCO endorsement was a component of every optimal insurance choice for all possible combinations examined in this study. Soybeans had the greatest homogeneity, while wheat had the greatest variability in optimal insurance choice.

The results show that the SCO should enter into a producer's crop insurance decision and also commodity program enrollment decision – when applicable. The yearly commodity program enrollment deadlines occurring throughout the life of the current Farm Bill make this study especially timely.

**KEYWORDS:** risk management, agricultural risk, Kentucky commodity crop production, Federal Crop Insurance Program, Supplemental Coverage Option

Author's signature: Jerzy Z. Jaromczyk

Date: May 13, 2020

OPTIMAL SUPPLEMENTAL COVERAGE OPTION CROP INSURANCE  
DECISION FOR KENTUCKY COMMODITY CROP PRODUCERS

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## TABLE OF CONTENTS

Acknowledgments . . . . .	iii
Table of Contents . . . . .	iv
List of Tables . . . . .	vi
List of Figures . . . . .	viii
Chapter 1 Introduction . . . . .	1
Chapter 2 Background, History and Review of Literature . . . . .	4
2.1 Background and General History of Crop Insurance . . . . .	4
2.2 Shallow Loss Programs . . . . .	7
2.3 Group Insurance Plans . . . . .	8
2.4 Historical Crop Insurance Participation in Kentucky . . . . .	9
2.5 Literature Review . . . . .	11
2.6 Data . . . . .	11
2.7 Yield Trends . . . . .	11
2.8 Yield Heteroscedasticity . . . . .	12
2.9 Crop Yield Distributions . . . . .	13
2.10 Imposing Dependence Structures on Simulated Random Variables . . . . .	14
Chapter 3 The Supplemental Coverage Option (SCO) . . . . .	15
3.1 SCO Availability in Kentucky . . . . .	15
3.2 How It Works . . . . .	17
Chapter 4 Data . . . . .	21
4.1 Crop Yields . . . . .	21
4.2 Prices . . . . .	23
4.3 Crop Insurance Premiums . . . . .	24
4.4 Crop Insurance Indemnities . . . . .	25
Chapter 5 Methodology . . . . .	26
5.1 Overview . . . . .	26
5.2 Yield Data Preparatory Treatment . . . . .	27
5.3 Price Data Preparatory Treatment . . . . .	30
5.4 Distribution Fitting . . . . .	30
5.5 Imposing Dependence Structures on Simulated Random Variables . . . . .	33
5.6 Calculation of Simulated Revenues . . . . .	34
5.7 Total Revenue . . . . .	34
5.8 Downside-Risk Mitigation Ranking Framework . . . . .	34

Chapter 6	Results . . . . .	37
6.1	Corn . . . . .	37
6.2	Soybeans . . . . .	40
6.3	Wheat . . . . .	42
Chapter 7	Summary and Concluding Remarks . . . . .	45
7.1	Limitations . . . . .	45
7.2	Further Research . . . . .	46
Appendix A	Data . . . . .	48
Appendix B	Accounting for Trend in Yields . . . . .	64
B.1	RMA Trend: Linear-Spline Knots . . . . .	64
B.2	RMA Trend: Plots . . . . .	68
Appendix C	Crop Yield and Price Distribution Modeling . . . . .	173
Appendix D	Results . . . . .	181
D.1	Corn . . . . .	181
D.2	Soybeans . . . . .	204
D.3	Wheat . . . . .	224
Bibliography	. . . . .	243
Vita	. . . . .	250



## LIST OF TABLES

4.1	Simulation Data Sources . . . . .	21
6.1	Top 10 Corn Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage) . .	37
6.2	Top 10 Soybean Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage)	40
6.3	Top 10 Wheat Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage)	42
A.1	NASS Corn Yield Data Completeness . . . . .	48
A.2	NASS Soybeans Yield Data Completeness . . . . .	51
A.3	NASS Wheat Yield Data Completeness . . . . .	52
A.4	Corn - NASS and RMA SCO Yield Distribution Comparison . . . . .	55
A.5	Soybeans - NASS and RMA SCO Yield Distribution Comparison (bu/acre where relevant) . . . . .	60
A.6	Wheat - NASS and RMA SCO Yield Distribution Comparison (bu/acre where relevant) . . . . .	61
B.1	RMA Trend - Approximate trend for each section RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ). . . . .	64
D.1	Corn - Optimal Insurance Scheme Count by County . . . . .	181
D.2	Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25 . . .	187
D.3	Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5 . . .	189
D.4	Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75 . . .	190
D.5	Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25 . . .	192
D.6	Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5 . . .	194
D.7	Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75 . . .	196
D.8	Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25 . . .	198
D.9	Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5 . . .	200
D.10	Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75 . . .	202
D.11	Soybeans - Optimal Insurance Scheme Count by County . . . . .	204
D.12	Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25 .	209
D.13	Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5 .	211
D.14	Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75 .	212
D.15	Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25 .	214
D.16	Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5 .	215
D.17	Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75 .	217
D.18	Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25 .	219

D.19 Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5 . . . . .	220
D.20 Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75 . . . . .	222
D.21 Wheat - Optimal Insurance Scheme Count by County . . . . .	224
D.22 Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25 . . . . .	231
D.23 Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5 . . . . .	232
D.24 Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75 . . . . .	233
D.25 Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25 . . . . .	235
D.26 Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5 . . . . .	236
D.27 Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75 . . . . .	237
D.28 Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25 . . . . .	238
D.29 Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5 . . . . .	240
D.30 Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75 . . . . .	241

## LIST OF FIGURES

2.1	Historical Crop Insurance Participation in Kentucky . . . . .	10
2.2	Historical Crop Insurance Coverage Levels in Kentucky . . . . .	10
3.1	Corn - SCO Availability Map . . . . .	16
3.2	Soybeans - SCO Availability Map . . . . .	16
3.3	Wheat - SCO Availability Map . . . . .	16
5.1	RMA estimated trends for Jessamine County . . . . .	28
5.2	Cullen and Frey plot of treated RMA SCO area-level corn yields. . . . .	31
5.3	Cullen and Frey plot of treated RMA SCO area-level soybean yields. . . . .	31
5.4	Cullen and Frey plot of treated RMA SCO area-level wheat yields. . . . .	31
5.5	Cullen and Frey plot of detrended MYA, projected and harvest corn prices. . . . .	32
5.6	Cullen and Frey plot of detrended MYA, projected and harvest soybean prices. . . . .	32
5.7	Cullen and Frey plot of detrended MYA, projected and harvest wheat prices. . . . .	33
6.1	Corn - Optimal Insurance Scheme Count . . . . .	38
6.2	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75. . . . .	39
6.3	Soybeans - Optimal Insurance Scheme Count . . . . .	41
6.4	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75. . . . .	42
6.5	Wheat - Optimal Insurance Scheme Count . . . . .	43
6.6	Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75. . . . .	44
B.1	RMA estimated trends for Adair County . . . . .	69
B.2	RMA estimated trends for Allen County . . . . .	70
B.3	RMA estimated trends for Anderson County . . . . .	71
B.4	RMA estimated trends for Ballard County . . . . .	72
B.5	RMA estimated trends for Barren County . . . . .	73
B.6	RMA estimated trends for Bath County . . . . .	74
B.7	RMA estimated trends for Boone County . . . . .	75
B.8	RMA estimated trends for Bourbon County . . . . .	76
B.9	RMA estimated trends for Boyd County . . . . .	77
B.10	RMA estimated trends for Boyle County . . . . .	78
B.11	RMA estimated trends for Bracken County . . . . .	79
B.12	RMA estimated trends for Breathitt County . . . . .	80
B.13	RMA estimated trends for Breckinridge County . . . . .	81
B.14	RMA estimated trends for Bullitt County . . . . .	82
B.15	RMA estimated trends for Butler County . . . . .	83
B.16	RMA estimated trends for Caldwell County . . . . .	84

B.17 RMA estimated trends for Calloway County . . . . .	85
B.18 RMA estimated trends for Campbell County . . . . .	86
B.19 RMA estimated trends for Carlisle County . . . . .	87
B.20 RMA estimated trends for Carroll County . . . . .	88
B.21 RMA estimated trends for Carter County . . . . .	89
B.22 RMA estimated trends for Casey County . . . . .	90
B.23 RMA estimated trends for Christian County . . . . .	91
B.24 RMA estimated trends for Clark County . . . . .	92
B.25 RMA estimated trends for Clay County . . . . .	93
B.26 RMA estimated trends for Clinton County . . . . .	94
B.27 RMA estimated trends for Crittenden County . . . . .	95
B.28 RMA estimated trends for Cumberland County . . . . .	96
B.29 RMA estimated trends for Daviess County . . . . .	97
B.30 RMA estimated trends for Edmonson County . . . . .	98
B.31 RMA estimated trends for Estill County . . . . .	99
B.32 RMA estimated trends for Fayette County . . . . .	100
B.33 RMA estimated trends for Fleming County . . . . .	101
B.34 RMA estimated trends for Franklin County . . . . .	102
B.35 RMA estimated trends for Fulton County . . . . .	103
B.36 RMA estimated trends for Gallatin County . . . . .	104
B.37 RMA estimated trends for Garrard County . . . . .	105
B.38 RMA estimated trends for Grant County . . . . .	106
B.39 RMA estimated trends for Graves County . . . . .	107
B.40 RMA estimated trends for Grayson County . . . . .	108
B.41 RMA estimated trends for Green County . . . . .	109
B.42 RMA estimated trends for Greenup County . . . . .	110
B.43 RMA estimated trends for Hancock County . . . . .	111
B.44 RMA estimated trends for Hardin County . . . . .	112
B.45 RMA estimated trends for Harrison County . . . . .	113
B.46 RMA estimated trends for Hart County . . . . .	114
B.47 RMA estimated trends for Henderson County . . . . .	115
B.48 RMA estimated trends for Henry County . . . . .	116
B.49 RMA estimated trends for Hickman County . . . . .	117
B.50 RMA estimated trends for Hopkins County . . . . .	118
B.51 RMA estimated trends for Jefferson County . . . . .	119
B.52 RMA estimated trends for Jessamine County . . . . .	120
B.53 RMA estimated trends for Kenton County . . . . .	121
B.54 RMA estimated trends for Knox County . . . . .	122
B.55 RMA estimated trends for Larue County . . . . .	123
B.56 RMA estimated trends for Laurel County . . . . .	124
B.57 RMA estimated trends for Lawrence County . . . . .	125
B.58 RMA estimated trends for Lewis County . . . . .	126
B.59 RMA estimated trends for Lincoln County . . . . .	127
B.60 RMA estimated trends for Livingston County . . . . .	128
B.61 RMA estimated trends for Logan County . . . . .	129

B.62 RMA estimated trends for Lyon County . . . . .	130
B.63 RMA estimated trends for Madison County . . . . .	131
B.64 RMA estimated trends for Marion County . . . . .	132
B.65 RMA estimated trends for Marshall County . . . . .	133
B.66 RMA estimated trends for Mason County . . . . .	134
B.67 RMA estimated trends for Mccracken County . . . . .	135
B.68 RMA estimated trends for Mclean County . . . . .	136
B.69 RMA estimated trends for Meade County . . . . .	137
B.70 RMA estimated trends for Menifee County . . . . .	138
B.71 RMA estimated trends for Mercer County . . . . .	139
B.72 RMA estimated trends for Metcalfe County . . . . .	140
B.73 RMA estimated trends for Monroe County . . . . .	141
B.74 RMA estimated trends for Montgomery County . . . . .	142
B.75 RMA estimated trends for Morgan County . . . . .	143
B.76 RMA estimated trends for Muhlenberg County . . . . .	144
B.77 RMA estimated trends for Nelson County . . . . .	145
B.78 RMA estimated trends for Nicholas County . . . . .	146
B.79 RMA estimated trends for Ohio County . . . . .	147
B.80 RMA estimated trends for Oldham County . . . . .	148
B.81 RMA estimated trends for Owen County . . . . .	149
B.82 RMA estimated trends for Pendleton County . . . . .	150
B.83 RMA estimated trends for Powell County . . . . .	151
B.84 RMA estimated trends for Pulaski County . . . . .	152
B.85 RMA estimated trends for Robertson County . . . . .	153
B.86 RMA estimated trends for Rockcastle County . . . . .	154
B.87 RMA estimated trends for Rowan County . . . . .	155
B.88 RMA estimated trends for Russell County . . . . .	156
B.89 RMA estimated trends for Scott County . . . . .	157
B.90 RMA estimated trends for Shelby County . . . . .	158
B.91 RMA estimated trends for Simpson County . . . . .	159
B.92 RMA estimated trends for Spencer County . . . . .	160
B.93 RMA estimated trends for Taylor County . . . . .	161
B.94 RMA estimated trends for Todd County . . . . .	162
B.95 RMA estimated trends for Trigg County . . . . .	163
B.96 RMA estimated trends for Trimble County . . . . .	164
B.97 RMA estimated trends for Union County . . . . .	165
B.98 RMA estimated trends for Warren County . . . . .	166
B.99 RMA estimated trends for Washington County . . . . .	167
B.100 RMA estimated trends for Wayne County . . . . .	168
B.101 RMA estimated trends for Webster County . . . . .	169
B.102 RMA estimated trends for Whitley County . . . . .	170
B.103 RMA estimated trends for Wolfe County . . . . .	171
B.104 RMA estimated trends for Woodford County . . . . .	172

C.1	Cullen and Frey plot of treated RMA SCO area-level corn yields for all Kentucky counties. . . . .	174
C.2	Cullen and Frey plot of treated RMA SCO area-level soybean yields for all Kentucky counties. . . . .	175
C.3	Cullen and Frey plot of treated RMA SCO area-level wheat yields for all Kentucky counties. . . . .	176
C.4	Cullen and Frey plot of detrended marketing year average, projected and harvest corn prices. . . . .	178
C.5	Cullen and Frey plot of detrended marketing year average, projected and harvest soybean prices. . . . .	179
C.6	Cullen and Frey plot of detrended marketing year average, projected and harvest wheat prices. . . . .	180
D.1	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25. . . . .	182
D.2	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5. . . . .	183
D.3	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75. . . . .	183
D.4	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25. . . . .	184
D.5	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5. . . . .	184
D.6	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75. . . . .	185
D.7	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25. . . . .	185
D.8	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5. . . . .	186
D.9	Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75. . . . .	186
D.10	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25. . . . .	205
D.11	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5. . . . .	205
D.12	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75. . . . .	206
D.13	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25. . . . .	206
D.14	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5. . . . .	207
D.15	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75. . . . .	207
D.16	Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25. . . . .	208

D.17 Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5. . . . .	208
D.18 Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75. . . . .	209
D.19 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25. . . . .	226
D.20 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5. . . . .	227
D.21 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75. . . . .	227
D.22 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25. . . . .	228
D.23 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5. . . . .	228
D.24 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75. . . . .	229
D.25 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25. . . . .	229
D.26 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5. . . . .	230
D.27 Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75. . . . .	230

## Chapter 1 Introduction

Since its inception, the Federal Crop Insurance Program (FCIP) has been leveraged to manage the downside-risk inherent to agricultural production. It is currently the largest safety-net program for U.S. agricultural producers, with 2019 national total liabilities and subsidies exceeding \$109.6 billion and \$6.3 billion, respectively, and 2019 Kentucky total liabilities and subsidies exceeding \$1.5 billion and \$99.9 million, respectively (USDA-RMA, i). Single-crop, multi-peril crop insurance (MPCI) yield protection (YP), revenue protection (RP) and revenue protection with harvest price exclusion (RP-HPE) policies make up a majority of FCIP participation, for corn, soybeans and wheat, with over 195 million acres insured nationally in 2019 (USDA-RMA, i). For various reasons – presented throughout the crop insurance literature – it is not surprising that MPCI policies cover the bulk of FCIP insured acreage. The simple fact that MPCI policies were the extent of the FCIP’s offerings until relatively recently further explains these policies’ popularity. However, the 1993 introduction of Group Risk Plan (GRP) (Skees et al., 1997) added area-based insurance to the menu of FCIP policy choices and precipitated the gradual expansion of FCIP products to include various additional area-based products.

One such area-based product is the Supplemental Coverage Option (SCO, also referred to as “shallow-loss coverage”), which came about as a result of the Agricultural Act of 2014 (2014 Farm Bill), and was first available in the 2015 crop year (Shields, 2015b). The SCO is not actually a stand-alone crop insurance policy, but rather – as the name implies – an optional endorsement that provides supplemental coverage for an underlying MPCI policy at levels of coverage spanning the difference between 86% of the underlying policy’s total guarantee and the underlying policy’s coverage level.

SCO coverage is based upon an area yield or revenue index, and not the policyholder’s farm-level performance. The fact that the SCO is triggered and rated on an area-level basis makes for an interesting trade-off for producers considering an SCO endorsement. On the one hand, farmers face the risk that the index used for the area-based insurance does not match their on-farm performance – i.e., basis-risk. On the other, the aggregated nature of area-level yields generally makes them less volatile than the individual farm-level yields comprising the aggregate, leading to lower premium ratings. Additionally, the SCO is subsidized at a flat 65% rate across all coverage levels. In combination, the lower premium cost and high subsidy rate might make the adoption of a lower coverage-level underlying policy along with an SCO endorsement a viable option for producers looking to reduce their total crop insurance premium cost while maintaining a level of risk protection similar to those afforded by higher coverage level stand-alone MPCI policies.

Though available for some time, SCO has not seen a high rate of adoption. It is important to note that base acreage enrolled in the Agriculture Risk Coverage (ARC) program, at both the individual and county coverage levels, is disqualified from SCO endorsement. This is a likely explanation for the lack of historic SCO popularity, as



a large majority of base acres (approximately 93%, 97% and 58% of total national base acreage for corn, soybeans and wheat, respectively) were locked into the ARC program election for the life of the 2014 Farm Bill (USDA-FSA). At the time that producers had to submit their commodity program (ARC and PLC) participation decision, expected payouts for ARC made its election the preferred choice for many producers (Motamed et al., 2018).

The passing of the 2018 Farm Bill brought about a major change for the policies governing agricultural producers' program participation decisions. Farmers were no longer locked into their 2014 Farm Bill Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) enrollment decisions, and had until March 20<sup>th</sup>, 2020 to choose program enrollment for both the 2019 and 2020 crop years simultaneously. Furthermore, producers will again be able to revisit this decision on an annual basis for crop years 2021 and 2022 (FB2, 2018). This change has brought about renewed interest in SCO as producers weigh their ARC vs. PLC election decisions. Additionally, heightened interest in both risk management and reduction of expenses borne from the currently depressed farm economy (an approximately 41% decrease in average farm income from 2014 to 2018 (ERS, 2019)), has potentially renewed interest in SCO performance.

There have been two previous studies on SCO – both published soon after the passage of the 2014 Farm Bill – (Adhikari, 2015; Paulson et al., 2016). In general, both studies concluded that a SCO endorsement can increase expected net returns on an underlying crop insurance policy. The Adhikari (2015) simulation for corn and cotton found that the SCO may lead to a shift in a producer's underlying policy coverage level election, though the heterogeneity in crop yield distributions means that this shift is not uniform across counties. The Paulson et al. (2016) simulation of a representative Illinois corn operation found that the SCO endorsement is part of the expected-utility maximizing insurance strategy for risk averse producers in some counties, with higher levels of risk-aversion leading to a preference for higher coverage level underlying policies along with a SCO endorsement.

The SCO is currently available for corn, soybeans and wheat in 104, 84 and 67 Kentucky counties, respectively. In order to rank the different combinations of underlying policy, coverage level and SCO-election that a Kentucky producer could elect for their corn, soybean and wheat acreage, individual crop yield and prices were stochastically simulated to calculate a distribution of simulated revenues net crop insurance in a downside-risk minimization framework. Specifically, this study is interested in the minimization of semivariance below the target value of mean revenues without crop insurance. This methodology was applied to various representative farms with different farm-level crop yield distributions and levels of farm- to area-level yield correlations to examine how these factors may affect the relevant insurance decision.

When rated actuarially fairly, premiums should equal indemnities over time. The subsidization of the actuarially fair premiums tips the scales in the producer's favor and makes it so that the indemnities a producer receives should exceed the amount of premium they had paid. Assuming crop insurance premiums are rated actuarially fairly – as mandated – and are also subsidized by the government, the 85% coverage

level RP policy with the SCO endorsement is the theoretically expected optimal insurance choice for all scenarios simulated in this study. This is due to the simple fact that such a policy provides the greatest amount of both crop yield and price risk protection when compared to the other policies. Though such an insurance policy choice is theoretically optimal, it will later be shown that Kentucky producers have not adopted such a strategy historically (Figure 2.2). Furthermore, as this study's methodology deviates from that employed by RMA for rate-making purposes, it is possible that simulated optimal strategies will not align with theoretical expectations, which was indeed the case.

The analysis estimated that the SCO endorsement is a component of the downside-risk minimizing insurance scheme for all crop, county, farm-level yield volatility, farm-area correlation combinations that were simulated. For both corn and soybeans an 85% coverage level RP policy along with a SCO endorsement was optimal in most cases. The simulation estimated a greater diversity in optimal insurance strategies for Kentucky wheat producers, including several cases in which a 50% coverage level RP-HPE policy with a SCO endorsement was the downside-risk minimizing choice. There was evidence of geographic clustering of the optimal insurance schemes estimated by the simulation.

## Chapter 2 Background, History and Review of Literature

### 2.1 Background and General History of Crop Insurance

Since the creation of the Federal Crop Insurance Corporation (FCIC) in 1938, the Federal Crop Insurance Program (FCIP) has undergone several iterations to become the primary safety-net for US agricultural producers at present (USDA-RMA, h). In its current form it is a public-private-partnership between the US government and private insurers in which insurance rates are set by the USDA - Risk Management Agency (RMA), and policies are sold and maintained exclusively by private insurance agents.

By law, crop insurance ratings must be actuarially fair – meaning that total premiums must equal total indemnities and ratings do not include any loading in addition to the expected claims. The program is subsidized both through government cost-sharing of producer premium rates and administrative and operating (A&O) subsidies. For most policies, premiums are subsidized at a decreasing rate, with lower coverage level premiums receiving a higher subsidy rate than higher coverage levels. In the 2019 insurance year, subsidies averaged just under 63% of total premiums collected (USDA-RMA, i). A&O subsidies are paid to insurance companies to cover any expenses incurred from administering the program, which may include agent reimbursement, loss-adjustment costs, record keeping expense, etc... and are equal to a proportion of total premiums collected – as set by the Standard Reinsurance Agreement (SRA) (USDA-RMA, e).

#### Beginnings of the Program Through 1980

With the Nation still reeling from the Dust Bowl, Congress passed the Federal Crop Insurance Act of 1938 mandating the creation of the FCIC the following year and entering the government into the business of crop insurance (USDA-RMA, h). In its very early years the program was plagued with high loss ratios, few contract renewals, and it became clear that demand was sensitive to premium rates as exemplified by low participation in high-risk, high-rate areas (Clendenin, 1942). After a brief cancellation of the program in 1943, the program was quickly reenacted and expanded to new areas and crops other than wheat (Kramer, 1983).

Between 1974 and 1980, the Government paid an average of \$436 million per year in direct disaster payments to farmers for prevented planting or yield loss due to natural disasters (Chite, 1988). This spurred debate on the use of direct disaster assistance versus crop insurance in the late-1970s, which was judged to be both excessively costly and inefficient, due to its encouragement of crop production on marginal land (Barnaby and Skees, 1990).

## **Federal Crop Insurance Act of 1980**

Through the passing of the Federal Crop Insurance Act of 1980, policymakers hoped to permanently replace direct disaster payments with crop insurance (Glauber, 2013). As noted by Chite (1988), the 1980 Act strove to increase participation – with a goal of increasing the FCIP participation rate to approximately 50% of eligible acres by the end of the decade – by enacting several changes to the FCIP, including:

- the authorization of the FCIC to expand its coverage from only 26 total crops in half of the Nation’s counties before 1980 to include all commercial crops in all agricultural counties,
- the subsidization of producer premium payments,
- the granting of permission to private insurance companies, licensed agents and brokers to sell Federal crop insurance policies,
- and the authorization of the FCIC to reimburse participating companies for their administrative expenses and most of their operating losses.

The combined effects of moral hazard and adverse selection greatly contributed to the FCIC’s large losses – averaging \$200 million per year – from 1981 to 1988 (Barnaby and Skees, 1990). These losses occurred despite the fact that although coverage expanded from 26 to more than 50 crops during the same period, only an estimated 26% of eligible acreage was enrolled in the FCIP in 1988 (Chite, 1988).

## **Crop Insurance Reform Act of 1994**

The Crop Insurance Reform Act of 1994 brought about further change motivated by a desire to increase program participation. As described by Glauber (2013), these changes included:

- The introduction of catastrophic risk protection (CAT) level coverage, which initially guaranteed 50% of a producer’s approved yield at 60% of expected market prices. CAT level premiums were fully subsidized and producers only had to pay a flat administrative fee equal to \$50 per crop per county.
- Crop insurance coverage on insurable crops – at least at the CAT level – was required for producers who participated in several farm programs (e.g., commodity price support, production adjustment, farm credit, etc.).
- Increased subsidies for coverage levels over 50% (buy-up).

As a result there was a significant increase in insured acreage. By 1995, over 80% of eligible acres were insured (excluding hay), with over half of these covered by CAT level policies. In 1996, Congress eliminated compulsory CAT level crop insurance coverage, which caused a drop in CAT level coverage while buy-up level policy enrollment continued to increase.

In 1996 the first revenue crop insurance policies were introduced for corn and soybean producers in Nebraska and Iowa, with enrollment of almost 12 million acres under such policies (Glauber, 2013). Enrollment in revenue policies has steadily grown since 1996, and they currently cover a majority of FCIP enrolled acreage (USDA-RMA, i).

### **Agricultural Risk Protection Act of 2000**

The Agricultural Risk Protection Act of 2000 made significant changes to the FCIP (Author Redacted, 2000). These changes included:

- increases in premium subsidies,
- changes to the Actual Production History (APH) rules meant to reduce the impact of multiple years of poor yields on a producer's crop insurance guarantee,
- an expansion of USDA authority to conduct pilot insurance programs,
- the allowance of reimbursement for the research and development costs for privately developed insurance products,
- and increased industry representation on the FCIC Board.

Nearly \$6.7 billion for the period 2001 to 2005 was designated for increasing existing subsidies on crop insurance premiums and to allow for revenue insurance products to be subsidized at the same rate as regular (yield-based) crop insurance policies.

### **Subsequent Farm Bill Changes to the FCIP**

Further modifications were made to the Federal Crop Insurance Act through the Farm Bills that followed the Agricultural Risk Protection Act of 2000.

The 2008 Farm Bill made changes intended to reduce the outlays of the FCIP (Chite, 2008).

According to Shields (2014) the 2014 Farm Bill authorized policies designed to reimburse “shallow losses”, which included the Supplemental Coverage Option (SCO) (further discussed in Section 2.2), and implemented provisions to help expand existing crop insurance products or to examine the potential for designing new products – including those targeting specialty crops and animal agriculture.

McMinimy (2019) summarizes the 2018 Farm Bill, including its modifications to the Federal Crop Insurance Act. These changes to the FCIP included: expanding coverage for forage, grazing crops and grasses, modifying the definition of *beginning farmer or rancher* to cover individuals who have actively operated and managed a farm or ranching operation for less than 10 years and loosening the viability and marketability requirements for any hemp insurance policy proposals submitted by private entities.

## **2.2 Shallow Loss Programs**

As explained by Glauber (2013), once the FCIP had successfully replaced direct disaster assistance programs and participation rates were no longer an issue, proponents of disaster assistance began to speak of it as a means to “fill the hole in the safety net”. They argued it was needed for two reasons. First, despite increased premium subsidies, coverage levels continued to be low in high-risk areas. Second, in areas that had experienced frequent losses, producers received low yield guarantees on their crop insurance policies.

### **2008 Farm Bill**

Disaster assistance as a supplement to crop insurance was debated and included as part of the 2008 Farm Bill as the Supplemental Revenue Assistance Payments (SURE) program. This program was intended to compensate eligible producers for a portion of losses that were not eligible for an indemnity payment under a crop insurance policy by calculating and reimbursing revenue losses for the entire farm (Shields, 2011a).

The 2008 Farm Bill also included the Average Crop Revenue (ACRE) program, as a “shallow loss” protection program. The ACRE program was designed to pay farmers when the following two conditions were met: state-level revenue for a crop fell below a guaranteed level, and the farmer experienced an individual crop revenue loss (Shields, 2011b).

### **2014 Farm Bill**

Both the ACRE and SURE programs were not reauthorized by the 2014 Farm Bill (Shields, 2015a). Instead the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) programs were introduced and farmers could enroll on a crop-by-crop basis when choosing between PLC and ARC county-level, or enroll all eligible crops on the farm when choosing ARC individual-level coverage. ARC was designed to make payments when annual crop revenue fell below 86% of its historical level, while PLC paid out in cases when the annual national average farm price fell below the reference price set in statute. Both of these programs were “partially decoupled”, meaning the payments they provided were made on base acres – not current plantings – and current market prices. Producers were able to make one commodity program election choice that remained binding for the life of the farm bill.

For the life of the 2014 Farm Bill, 93%, 97% and 58% of national corn, soybean and wheat base acreage, respectively, was enrolled in one of the ARC programs (USDA-FSA). As presented by Motamed et al. (2018), these enrollment results closely reflected the expected payments of the commodity programs at the time of the enrollment decision.

In addition to the ARC and PLC programs, the 2014 Farm Bill introduced the RMA administered Supplemental Coverage Option (SCO) crop insurance endorsement, which is covered in depth in chapter 3 and is the subject of this study. Produc-

ers who enrolled in the ARC program – at either county- or individual-level coverage – were ineligible for the SCO.

## **2018 Farm Bill**

As explained in McMinimy (2019) the 2018 Farm Bill reauthorized the FSA ARC and PLC commodity programs. Though these two commodity programs were left largely unchanged, there was one important change worth noting, which dealt with program enrollment. While producers were only allowed one election choice that was binding for the life of the 2014 Farm Bill, the 2018 Farm Bill affords producers greater flexibility in their enrollment. Producers had until March 20<sup>th</sup>, 2020 to make a one-time decision for commodity program election for crop years 2019 and 2020. Starting in crop year 2021, producers will be able to make their commodity program enrollment decision on a yearly basis throughout the life of the farm bill. Other changes to the PLC program included the option for producers to update their PLC program yields and the introduction of an escalator provision, which could potentially increase a covered commodity's effective reference price. All the changes to the ARC programs pertain to the calculation of both benchmark and actual revenues. These included:

- a shift to using RMA instead of NASS-reported yield data,
- adoption of the yield trend-adjustment – as already in use by the RMA for crop insurance,
- an increase of the yield floor (from 70% to 80% of the transitional county yield) used in the calculation of the Olympic average county yield portion of the ARC benchmark county revenue guarantee.

## **2.3 Group Insurance Plans**

Halcrow (1949) was the first to mention group crop insurance plans in the literature and cited that such plans might help mitigate the moral hazard and adverse selection problems that plagued individual plans. However, he also pointed out that such insurance plans are most feasible in areas facing mostly systemic risks.

Barnaby and Skees (1990) recalled Halcrow's idea of an area-based crop insurance product and suggested it as an alternative to the individual policies that were available until then, which set the stage for the introduction of area-based insurance products that were presumably already in development. The authors noted such a plan would rely on NASS county-level historical data, reduce administrative and underwriting cost, and would circumvent the issues of moral hazard and adverse selection.

Miranda (1991) used western-Kentucky soybean yield data to further examine the viability of area-yield crop insurance policies and outlined when producers could use such policies to reduce their on-farm yield risk. He also echoed the earlier sentiment of area-yield insurance solving the moral hazard and adverse selection problems inherent in crop insurance.

Skees et al. (1997) documented the development of the Group Risk Plan (GRP), which was first offered for soybeans on a pilot test basis in 1993 and was later expanded in 1994 to cover seven major crops in twenty-seven states. The authors also discussed the design of the policy, examined the policy's experience and suggested potential improvements that could be made to the policy.

As explained by Glauber (2013), the introduction of GRP was followed by the introduction of various other area-based insurance plans. An area-based revenue insurance plan – called the Group Revenue Insurance Plan (GRIP) – was first offered in 1999. Area-based rainfall and vegetative index insurance plans were introduced in 2007, which increased area-based policy enrolled acreage. Of the over 60 million acres insured by area-based policies in 2007, around 27 million were covered by a rainfall or vegetative index contract.

RMA currently offers Area Risk Protection Insurance (ARPI), which replaces the GRP and GRIP policies, as well as rainfall index insurance policies for Pasture, Rangeland and Forage (PRF) and Apiculturists (API) (USDA-RMA, g). RMA also currently provides various insurance policies for livestock producers, which are indexed area-level production and/or futures market prices (USDA-RMA, f).

## 2.4 Historical Crop Insurance Participation in Kentucky

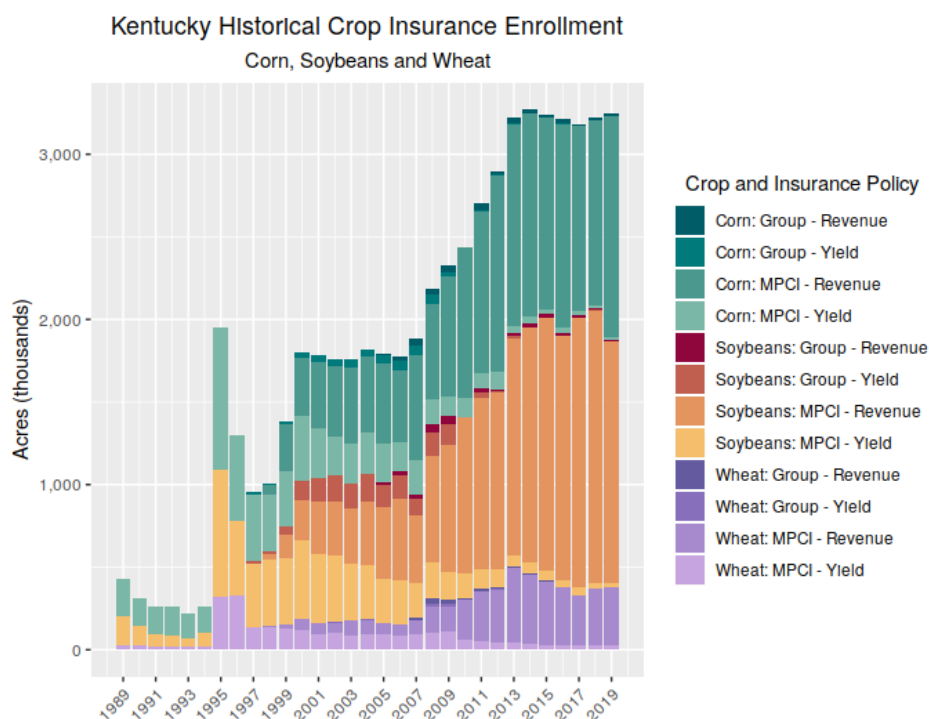
The following plot shows historical crop insurance enrollment by acres for Kentucky corn, soybeans and wheat (USDA-RMA, i). Similar crop insurance policies were grouped in the following manner to simplify the presentation:

- **Group - Revenue:** Area Revenue Protection, Area Revenue Protection - Harvest Price Exclusion, Group Risk Income Protection, Group Risk Income Protection - Harvest Revenue Option
- **Group - Yield:** Area Yield Protection, Group Risk Protection
- **MPCI - Revenue:** Crop Revenue Coverage, Revenue Assurance, Revenue Protection, Revenue Protection - Harvest Price Exclusion
- **MPCI - Yield:** Actual Production History, Yield Protection

Note the general trend towards revenue based policy enrollment.

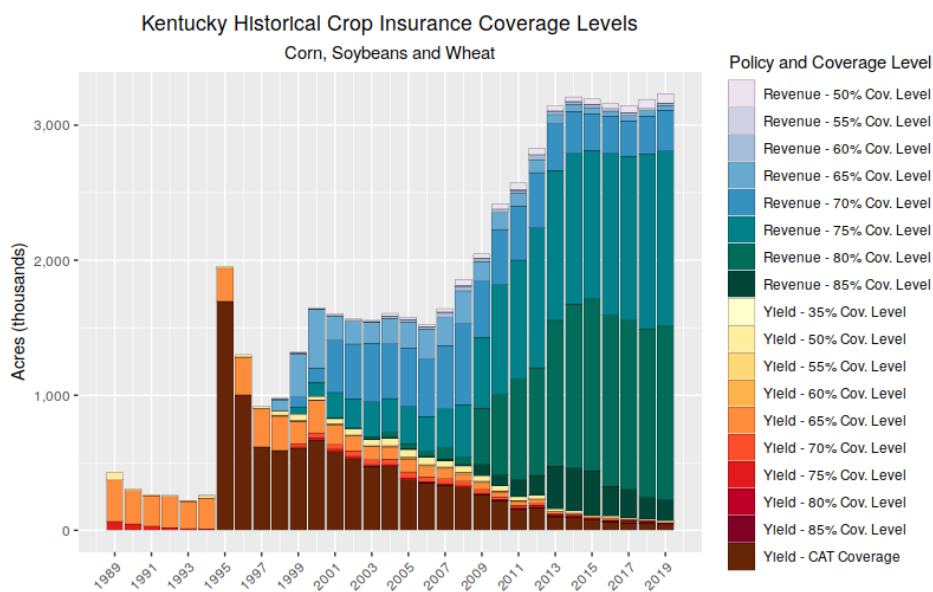


Figure 2.1: Historical Crop Insurance Participation in Kentucky



The plot below shows the historical aggregate acres insured for corn, soybeans and wheat in Kentucky by MPCI policy type and coverage level (USDA-RMA, i). The general trend of CAT coverage acreage reduction and increased acreage insured at higher coverage levels is apparent. It is also worth noting that the 75% and 80% coverage level Revenue policies have been most popular in recent years.

Figure 2.2: Historical Crop Insurance Coverage Levels in Kentucky



## 2.5 Literature Review

There is a significant body of agricultural risk, crop insurance and agricultural safety-net program literature. An excellent literature review covering several agricultural risk-related topics – including those relevant to this study – can be found in OECD (2009). A similarly comprehensive history of the FCIP can be found in Glauber (2013).

## 2.6 Data

### Aggregation Bias

Throughout the literature there are several mentions of the effects of using aggregated crop yield data for estimating farm-level variability, as well as the consequences of using such data for any farm-level analysis.

Freund (1956) noted that state average crop yield data underestimate variance when modeling optimal crop choice for an eastern North Carolina farm. Eisgruber and Schuman (1963) analyzed the differences between the estimated variances of farm-level and aggregate crop yield data and concluded that aggregate crop yield data are not useful for estimating farm-level volatility, and that research on farm-level performance – using aggregate crop yield data – can produce spurious results. Debrah and Hall (1989) ran separate farm portfolio models using both farm-level and aggregate data to examine the differences in the modeled results and found that the model using county-level data estimated significantly lower income variance than the model using the farm-level data for all levels of income. Furthermore, the county-level model estimated optimal farm plans that were infeasible when using farm-level data. A meta-analysis of farm- and county-level wheat yield variability showed that the volatilities of crop yields estimated from aggregate data depend on the acreages of the farms contributing to the aggregate (Marra and Schurle, 1994). Rudstrom et al. (2002) found that on average the use of aggregate data was more likely to lead to an underestimation of yield risk, based on their examination of Manitoba red wheat.

### Data Used by Government Programs

Skees et al. (1997) noted that NASS crop yield data were used to design and rate the Group Risk Plan crop insurance policies.

Li et al. (2020) found that any differences in ARC-CO payments calculated using NASS or RMA yield data for the period 1991-2015 were statistically insignificant and – at most – relatively small. The authors also did not find that the use of NASS or RMA data resulted in a significant difference in spatial disparities in ARC-CO payments across neighboring counties.

## 2.7 Yield Trends

There is an ample literature on the subject of trends in crop yields focusing on both stochastic and deterministic trends.

Moss and Shonkwiler (1993) examined modeling the central tendency of crop yield distributions through a stochastic trend along with an inverse hyperbolic sine transformation to correct for non-normality in the residuals. Several studies model the upward technological trend as a deterministic trend instead.

In their examination of crop yield normality, Just and Weninger (1999) examined the effects of imposing various specifications of deterministic components of crop yields and described an iterative methodology for finding the appropriate polynomial degree for the trend specification.

To control for any deterministic trend in crop yields, RMA currently employs a robust two-knot linear spline as was suggested by Skees et al. (1997), and used in the design of the GRP and GRIP programs. Harri et al. (2011) outlined the methodology that RMA has adopted as a two-knot linear spline model with M-estimation iterated using Huber weights until convergence and then using bisquare weights for two iterations. The methodology also imposes temporal and spatial priors – specifically, a temporal restriction that the knot cannot be more than three years in either direction from the previous year and a spatial restriction that the knot cannot be more than three years in either direction from the average of the knots for all counties within the crop reporting district (Harri et al., 2011). As explained by Ker and Tolhurst (2019), this spline has functional form:

$$y_t = a + bt + b_1d_1(t - k_1) + b_2d_2(t - k_2) + \varepsilon_t \quad (2.1)$$

where  $y_t$  is the yield at time  $t$ , and  $a$ ,  $b$ ,  $b_1$ ,  $b_2$ ,  $d_1$ ,  $d_2$ ,  $k_1$  and  $k_2$  are parameters to be estimated. Furthermore, Ker and Tolhurst (2019) explained that  $k_1$  and  $k_2$  are bounded *a priori* to prevent the knots from being located either too close to one another, or too close to either endpoint.

## 2.8 Yield Heteroscedasticity

As noted by Harri et al. (2011), when it comes to the issue of the distribution of crop yield residuals, the area-yield insurance literature can be broken into two camps:

- A constant coefficient of variation is assumed. In other words, it is assumed that any changes observed in the crop yield volatility are proportional to changes in the crop yield mean. (E.g., Miranda and Glauber (1997), Skees et al. (1997), Ker and Coble (2003), Deng et al. (2007))
- Crop yields are assumed to be homoscedastic, which means that it is assumed that the volatility of crop yields remains constant regardless of the crop yield mean. (E.g., Miranda (1991), Mahul (1999), Coble et al. (2000))

Harri et al. (2011) showed that making proportional heteroscedasticity or homoscedasticity assumptions for crop yields can have an economically significant effect on crop insurance ratings for area-based crop insurance policies. Specifically, they used an out-of-sample simulation to show that an empirically estimated crop yield heteroscedasticity insurance rating model outperforms models that employ  $a$

*priori* determined proportional heteroscedasticity or assumed homoscedasticity for crop yields. Based on these findings, they developed an empirical methodology for adjusting the fitted crop yield residuals.

Ker and Tolhurst (2019) point out that although the Harri et al. (2011) – which they call the "HKCG" – empirical heteroscedasticity crop yield adjustment was adopted (and continues to be used) by RMA for area-yield insurance rating purposes, the methodology's assumption of symmetrical crop yield volatility changes in the tails does not agree with the empirical evidence of time-varying skewness that has been presented in the literature – e.g., Zhu et al. (2011), Tack et al. (2012), Tolhurst and Ker (2015), and Ker et al. (2016). In response Ker and Tolhurst (2019) developed an "adjusted-HCKG" ("AHCKG") approach that allows for asymmetric heteroscedasticity in the tails of a crop yield distribution, and then showed the economic consequences of various crop yield heteroscedasticity assumptions.

## 2.9 Crop Yield Distributions

### Skewness

Nelson and Preckel (1989) and Nelson (1990) found evidence of negatively skewed farm-level corn yield distributions from five Iowa counties. Taylor (1990) examined yields for Macoupin County, Illinois and found evidence of the same negative skew for the county's corn and soybean yield distributions, and evidence of positively skewed wheat yield distributions.

Several studies also found evidence indicating negative skew of yield distributions at the aggregate level. Gallagher (1987) found evidence of such negative skewness for national-level soybean yields. Evidence of negative skew for national-level corn yields was found by Moss and Shonkwiler (1993). Wang et al. (1998)'s analysis of an area yield insurance product's performance for an Adair County, Iowa corn farm found evidence of negative skewness for the county's corn yields. Using non-parametric methods to estimate state- and county-level yields for several commodities, Goodwin and Ker (1998) found evidence of negative skewness in many cases of county and state crop yields, aside from a few cases of state-level aggregation where there was evidence of slight positive skewness.

Though Just and Weninger (1999) argued that earlier findings of negative skewness in crop yields might be attributed to shortcomings in the analyses' methodologies, later studies specifically addressing the potential methodological shortcomings confirmed the earlier findings of negative crop yield distribution skewness (Ramirez et al., 2003; Atwood et al., 2003; Sherrick et al., 2004).

### Distributional Form

(Sherrick et al., 2004) found that significant differences in expected crop insurance payouts can result from the distributional form assumed for crop yields.

Goodwin and Ker (1998) analyzed the use of a nonparametric density estimation for modeling distributions of detrended crop yield data. Taylor (1990) presents two methods for empirically estimating multivariate nonnormal distributions.

The parametric distributional forms for corn, soybeans and wheat yields touched upon in the literature are wide-ranging. Gallagher (1986) models national average corn yields using a gamma distribution. Sherrick et al. (2014) identify the Weibull distribution as an appropriate candidate for modeling farm-level yields, based on a study using the Illinois Farm Bureau Farm Management data from 1972 to 2008. Several studies use the beta distribution to model crop yield distributions (e.g., Nelson (1990), Hennessy et al. (1997)).

## **2.10 Imposing Dependence Structures on Simulated Random Variables**

The primary methodology in the literature – and actuarial practice – is the Iman-Conover (IC) method (Iman and Conover, 1982). It is lauded for being both simple and allowing for the use of mixed-marginal distributions (Mildenhall, 2005). The Phoon, Quek and Huang (PQH) (Phoon et al., 2002) method had been examined in the context of a whole-farm revenue simulation, but the differences in simulated revenues were not economically significant (Anderson et al., 2009).

The use of copulas in multivariate simulation has been touched on – minimally – by the agricultural economics literature. Though there were differences in the simulation results using copulas and the IC, there is still much work to be done to determine if any of these methods is superior to others. Past studies have indicated that the differences arising from using a copula methodology versus the IC for imposing dependence among variables are not economically in the context of crop insurance (Woodard et al., 2011; Goodwin and Hungerford, 2015; Ramsey et al., 2019).

## Chapter 3 The Supplemental Coverage Option (SCO)

The Supplemental Coverage Option (SCO) for crop insurance policies was introduced with the passing of the Agricultural Act of 2014 to protect against “shallow losses” by providing additional area-based loss protection for specific crops above the guarantee provided by an underlying MPCCI policy. It was first offered in the 2015 crop year for barley, corn, soybeans, cotton, cottonseed, rice, sorghum and wheat in select counties, and has since been expanded to additional crops and geographic areas (Shields, 2015b).

SCO is not a standalone crop insurance policy, but rather an additional option that a producer can elect to supplement an underlying policy. In addition to being an available endorsement for the three policies considered in this study – Revenue Protection (RP), Revenue Protection - Harvest Price Exclusion (RP-HPE) and Yield Protection (YP) – the SCO is also available for Actual Production History (APH) policies covering some – but not all – crops for which these policies are written within the Commonwealth. Acreage enrolled in the Agriculture Risk Coverage (ARC) program – at either the individual- or county-level – is not eligible for a SCO endorsement.

If a policy is eligible, the SCO decision is rather straightforward. All policies (i.e., APH, RP, etc...) covering the crop within the county will be included in the SCO endorsement regardless of whether the policies cover different insured-units. Furthermore, the SCO coverage amount is based on the coverage level of the underlying policies which they supplement. In short, the producer’s decision is binary. If SCO is available for a crop, the producer can either choose to elect SCO for all insured acreage within a county, or not.

### 3.1 SCO Availability in Kentucky

The SCO is currently available for corn, soybeans and wheat in 104, 84 and 67 Kentucky counties, respectively. Depending on yield data availability, SCO areas can either consist of one, or a few counties. In cases where a county lacks sufficient rating data, it is bundled with other “similar” – usually neighboring – counties to form a sufficient database for SCO rating purposes, otherwise the policy is indexed to a county-level performance index (Schnitzler, 2018).

The following maps show the amount of counties in each SCO area where the endorsement is available for each respective crop (USDA-RMA, a), along with the proportion of state-level acres in production. The production acre proportions are based on the most recently reported county-level planted acres and 2019 total state-level production acres (USDA-NASS).

Figure 3.1: Corn - SCO Availability Map

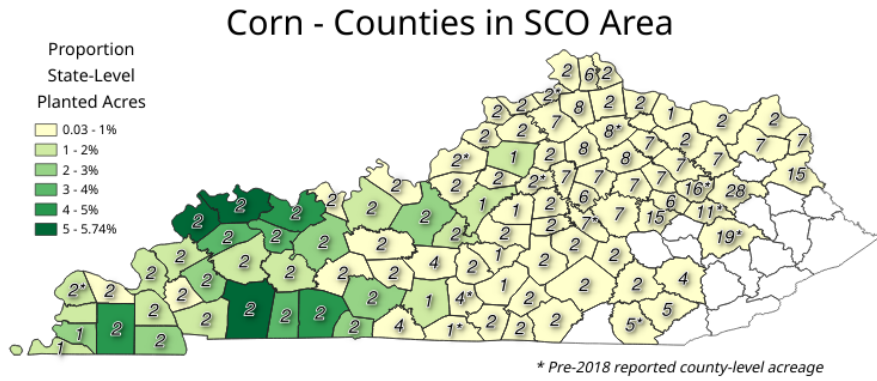


Figure 3.2: Soybeans - SCO Availability Map

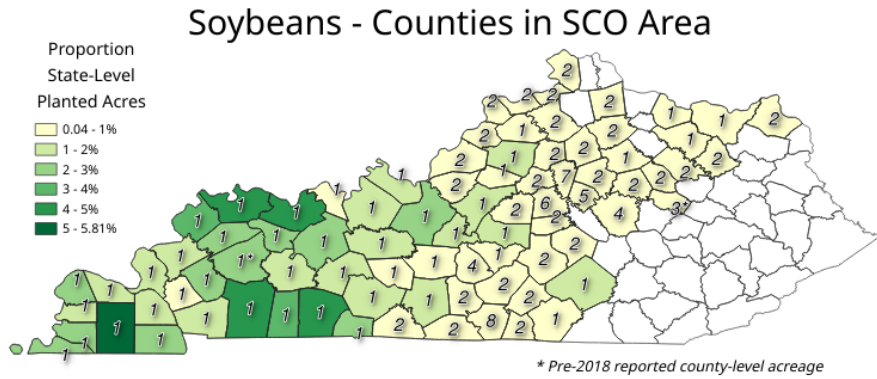
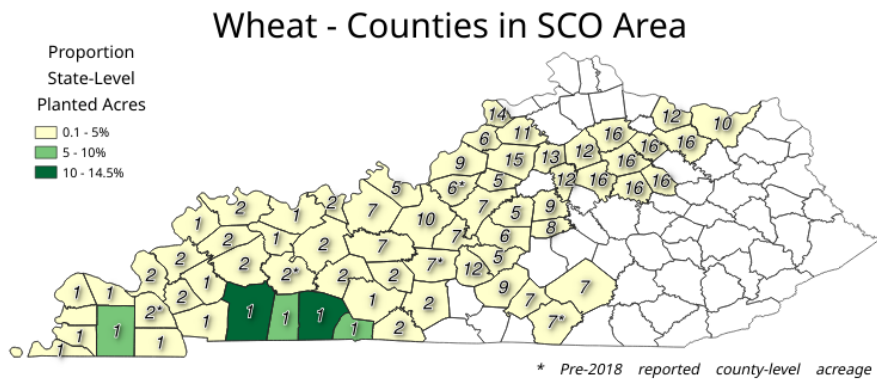


Figure 3.3: Wheat - SCO Availability Map



### 3.2 How It Works

SCO serves to reduce the deductible – the difference between the liability and guarantee – by an amount equal to 86% minus the underlying policy’s coverage level (e.g., for an underlying policy with a 75% coverage level, SCO would provide additional coverage up to 11% of the guaranteed amount). With coverage levels for relevant crop insurance policies in Kentucky ranging from 55-85%, SCO allows for additional coverage of 1-31% of the underlying policy’s guaranteed amount. This guarantee supplement is based on SCO area-level yields or revenues – not the on-farm performance.

#### Guarantee Calculation

For all policies the SCO is set to begin payment when the area-level performance index drops to 86% of the insurance guarantee. This is set by law. The SCO guarantee is calculated by the underlying policy’s liability multiplied by the difference between the 86% SCO loss trigger and the underlying policy’s coverage level. This calculation can be summarized by the following formula:

$$G_{SCO} = (0.86 - x_U) * \frac{G_U}{x_U} \quad (3.1)$$

where  $G_{SCO}$  is the SCO guarantee,  $x_U$  is the coverage level of the underlying policy and  $G_U$  is the underlying policy guarantee.

As a reminder, the underlying policy’s guarantee is calculated using one of the following formulas, depending on the type of policy:

$$G_{YP} = APH_i * x * (P_{proj.} * PE) \quad (3.2)$$

$$G_{RP} = APH_i * x * \max(P_{proj.}, P_{harv.}) \quad (3.3)$$

$$G_{RP-HPE} = APH_i * x * P_{proj.} \quad (3.4)$$

where subscripts  $YP$ ,  $RP$  and  $RP - HPE$  signify the Yield Protection, Revenue Protection and Revenue Protection with Harvest Price Exclusion policy types, respectively;  $APH_i$  signifies the individual policyholder’s Approved Yield (the policyholder’s modified Actual Production History),  $x$  is the policy’s coverage level,  $PE$  is the policy’s price election amount, and  $P_{proj.}$  and  $P_{harv.}$  respectively equal the projected and harvest prices, as defined by the CEPP (USDA-RMA, c).

#### Indemnity Calculation

In cases when the actual area index amount (yield or price) falls below the guaranteed 86% of the expected amount, indemnities are calculated by applying the percent shortfall to the SCO guarantee. When a payment is triggered in an SCO area, all producers covered by a SCO endorsement in that area will receive a SCO payout.



The formula for the SCO indemnity on a YP underlying policy is as follows:

$$I_{S-YP} = \min \left( \frac{\max \left( 0.86 - \frac{Y_c}{\bar{Y}_c}, 0 \right)}{0.86 - x_U}, 1 \right) * G_{SCO} \quad (3.5)$$

where  $Y_c$  and  $\bar{Y}_c$  equal the actual and expected area yield amounts, respectively.

When the SCO endorsement is for a RP underlying policy, the indemnity is calculated as follows:

$$I_{S-RP} = \min \left( \frac{\max \left( 0.86 - \frac{Y_c * P_{harv.}}{\bar{Y}_c * \max(P_{proj.}, P_{harv.})}, 0 \right)}{0.86 - x_U}, 1 \right) * G_{SCO} \quad (3.6)$$

where  $P_{proj.}$  and  $P_{harv.}$  are equal to the same RMA projected and harvest prices, respectively, as those used for the underlying policy.

Finally the indemnity on the SCO endorsement for a RP-HPE underlying policy, calculated as:

$$I_{S-RP-HPE} = \min \left( \frac{\max \left( 0.86 - \frac{Y_c * P_{harv.}}{\bar{Y}_c * P_{proj.}}, 0 \right)}{0.86 - x_U}, 1 \right) * G_{SCO} \quad (3.7)$$

Again, since SCO is not a standalone policy but a coverage supplementing election to an underlying policy, it is important to remember any SCO indemnity will be paid out in conjunction with the underlying policy's indemnity. The total indemnity is calculated as:

$$I_{tot.} = I_{und.} + I_{SCO} \quad (3.8)$$

where  $I_{SCO}$  is the SCO indemnity, and  $I_{und.}$  is equal to one of the following relevant underlying policy indemnity formulas:

$$I_{YP} = (G_{YP} - Y_i) * P_{proj.} * PE \quad (3.9)$$

$$I_{RP} = G_{RP} - (Y_i * P_{harv.}) \quad (3.10)$$

$$I_{RP-HPE} = G_{RP-HPE} - (Y_i * P_{harv.}) \quad (3.11)$$

## Premium Subsidy

As with any policy administered by RMA, those electing a SCO on an underlying policy will receive a premium subsidy. However, unlike the premium subsidies on most RMA administered policies – including all policies for which a SCO is available in Kentucky – which decrease as the elected coverage level increases, the premium subsidy for SCO is set by law to be constant at 65% for all SCO coverage levels.

Assuming that SCO, as well as any other RMA administered crop insurance, meets the federal mandate of being actuarially fair, producers seeking to maximize the percent subsidy they receive would maximize SCO coverage. This certainly may incentivize those considering a lower coverage level underlying policy with a SCO endorsement.

## Net Indemnity

If a producer incurs a payment triggering loss, crop insurance serves to “make them whole” by paying out a net indemnity. This amount is equal to the indemnity payment on the policy minus the subsidized producer paid premium. The net indemnity payment for any crop insurance policy is summarized as:

$$I_{net} = I - r(1 - d) \quad (3.12)$$

where  $r$  is the policy premium in dollars and  $d$  is the respective percent of premium subsidy.

For an underlying policy with a SCO the net indemnity is simply the total of the net indemnity of the underlying policy and the SCO, or:

$$I_{tot.net} = I_{und.net} + I_{SCO.net} \quad (3.13)$$

## Performance

There are four possible outcomes for a crop insurance policy supplemented by SCO:

1. No indemnity is paid on either the underlying policy or the SCO endorsement.
2. An indemnity is paid on the underlying policy, but not the SCO endorsement.
3. An indemnity is paid on the SCO endorsement, but not the underlying policy.
4. Indemnities are paid on both the underlying policy and the SCO endorsement.

The last two possibilities listed correspond to the tails of the distribution of area performance index. A crop year experiencing a large number of highly-correlated weather events – either favorable or detrimental – is likely to result in highly-correlated indemnity payments and situations where indemnification for both the underlying policy and SCO match. Furthermore, one would likely see positively correlated underlying policy and SCO indemnity payments in highly homogeneous production regions.

More interesting is an examination of how SCO performs in production areas experiencing heterogeneity in weather events and the various other factors affecting crop production (e.g, soil type, production practice, etc...) Farms within SCO areas of relatively greater heterogeneity of production influencing factors are more likely to experience scenarios two or three. For such farms, the issue of “basis risk” – i.e., the risk that the index does not accurately match the farm-level risk it is meant to track – is more relevant. This increased basis risk leads to a higher likelihood that both an underlying policy and its SCO endorsement would not be indemnified in the same insurance period. If the SCO indemnification does not match the underlying policies’, one can interpret that the SCO no longer serves to provide risk protection supplemental to the underlying policy, but instead provides random payments to the producer, which may or may not be correlated with actual on-farm losses. The

correlation between farm- and area-level yields are the most important consideration for determining how a SCO would perform for a risk-averse farmer.

A significant contributor to the performance heterogeneity of a SCO area is the geographic expanse the area covers. As previously mentioned, data availability is the primary determinant of how many counties make up an SCO area. In theory, it is expected that counties with greater relative production will have a sufficient crop yield database to serve as their own SCO area. Conversely, counties with lower amounts of production will have to be bundled with other “similar” counties to form an SCO area. Generally speaking this idea is reflected in the previous presented SCO availability maps on page 16, which show that the counties with higher production tend to have SCO areas spanning fewer counties. Following expectation, the geographic distribution of SCO area county counts closely matches the geographic distribution of crop production within the Commonwealth – that is, Western Kentucky counties, with higher relative crop production, tend to belong to SCO areas with fewer counties.

The effects of indexing to an aggregated yield or revenue should also be taken into account when considering a SCO election. It is well known that due to the effects of diversification, yields that are aggregated – at any level – tend to be less volatile than the individual yields making up the aggregate (e.g., Coble et al. (2007)). With this in mind, it is reasonable to expect SCO indemnity payments to occur less frequently than individual farm policy indemnity payments. If an individual farm is able to recognize their operation is less risky than the aggregate SCO area, they may be able to receive indemnity payments more frequently than if they held only a standalone policy.

## Chapter 4 Data

The following table summarises the data used for this studies simulation. Some data were used in raw format from the source, while others – specifically, the farm-level crop yields, RMA prices, and SCO premiums – were calculated using procedures outlined in this document.

Table 4.1: Simulation Data Sources

Data	Source	Years
SCO Area Crop Yields	USDA-RMA (j)	1991-2018
Farm-level Crop Yields	Calculation: Farm-level Yield	1991-2018
Futures Prices for RMA Harvest Price	Barchart (2020)	1996-2019
RMA Prices	Calculation: RMA Prices	1996-2019
KY MYA Prices	USDA-NASS	1996-2019
Underlying Policy CI Premiums	USDA-RMA (d)	2019
SCO Premiums	Calculation: SCO Premiums	2019

### 4.1 Crop Yields

#### RMA vs. NASS Crop Yield Data

Throughout the agricultural economics literature - and, more specifically, the crop insurance literature - there are several studies that use NASS county-level crop yield data. However, these data are sparse for some counties. Outside the nation's main commodity producing areas, crop yield time-series for the respective commodity are often short, discontinuous or completely absent. This poses a problem in the context of crop yield simulations, where sufficient observations are needed to accurately model distributions.

In the past RMA has used NASS data for administering and rating its area products, as was established as standard practice through the creation of GRP (Skees et al., 1997). Citing the spottiness of observations in the NASS yield data, RMA has shifted to using their own data. For most area-based crop insurance offerings, RMA uses yield-data collected from their own policy-holders for setting expected area-yields, determining actual area-yields, and rating. This is the case for Kentucky corn, soybean and wheat SCO policies (USDA-RMA, b).

With the difficulties posed by using small-sized historical yield samples in mind, it is worthwhile to first examine the differences between the NASS and RMA crop yield data. The RMA crop yield data are at the SCO area-level, which means that equivalent SCO area-level yields must first be calculated using the NASS county-level yield data. These were calculated as the average yield of all the counties contained in the respective SCO area, weighted by the production acres of the respective commodity within the respective county during the respective year - as reported by NASS.

## Data Completeness

As cited by RMA as a reason for shifting away from using NASS yield data for area plan rating and administration, NASS county-level yield data for corn, soybeans and wheat are fraught with missing observations and short time-series. In contrast, at the time of this study, RMA has published continuous SCO area-level yields for all Kentucky SCO areas – where the SCO is offered for underlying policies covering the three crops of interest – from 1991-2017.

Of the three crops of interest, the NASS county-level corn yield data are most complete. Many counties have time-series ranging from 1965 to 2018 – with very few missing observations ( $n = 54$ ). As a measure of what percent of Kentucky production is represented by the NASS county-level data, the proportion of the last reported county-level production acreage to the NASS reported 2018 state-level production is calculated. For Kentucky corn, NASS provides county-level records for approximately 87% of the 1,550,000 2018 production acres. Approximately 69% of the 1,700,000 2018 Kentucky state-level production acres are represented in the NASS county-level soybean data. Of the 460,000 acres of 2018 Kentucky wheat production, approximately 103% are represented by the NASS county-level data. As a reminder, these proportions were calculated using the *most recently* reported NASS county-level crop production acreage. In some cases, these reported production acreage figures date back to 1976.

## Yield Distribution Differences

Though the completeness issues found in the NASS county-level data are enough to disqualify their use in this study it is worth considering how different the SCO area-level crop yield data generated from NASS county-level data are from the RMA published SCO area-level crop yields. In the context of this study, this is of particular importance to the estimated yield distribution used for simulation. Specifically, we are interested in any differences in both functional form, as well as the moments of the yield distributions arising from the two data sources. In an analysis of any such differences, summary statistics are generated for, and statistical tests are run on the two analogous distributions generated through the yield data treatment that is applied in this study.

In summary, the treatment applied to the crop yield data is:

1. A simple linear trend is fit to control for the effect that technological advances have on crop yields.
2. The AHCKG heteroscedasticity adjustment (Ker and Tolhurst, 2019) is applied to account for the heteroscedasticity inherent in crop yield data (i.e., control for time dependent changes to variance in crop yields.)

One commonly used tool for determining whether or not two samples are drawn from the same distribution is the two-sample Kolmogorov-Smirnov test (KS). The KS tests against the null of the two samples having the same underlying distribution (Frey, 2018). The tables found in Appendix A show the test statistics and p-values of

the KS test run on the two treated SCO area-level crop yield datasets. Additionally, the tables present the mean, standard deviation, skewness and kurtosis that were calculated for these distributions.

### **Area-level**

SCO indemnity calculations are based on area-level yields as calculated by RMA from yield data submitted to the agency by crop insurance policy holders. These historic SCO area-level yield data were downloaded from the RMA website (USDA-RMA, j).

### **Farm-level**

Due to a lack of farm-level yield data availability, distributions of representative farm-level yield data were constructed from RMA’s published SCO area-level data (USDA-RMA, j).

Various methods of constructing farm-level yield densities from aggregate data have appeared throughout the literature (Cooper et al., 2009; Gerlt et al., 2014). Some studies advocate applying random shocks to area-level yield data to generate representative farm-level yields (e.g., Goodwin (2009)). However, since the effect of the relationship between farm- and SCO area-level yield risk on the optimal insurance scheme is of interest in this study, it is important to create synthetic farm-level yield records with varying levels of volatility in a controlled manner.

To create representative farm-level crop yield data with “riskier” distributions than RMA’s SCO area-level yields, the SCO area-level yield distributions were “spread out” by multiplying the respective SCO area-level yield OLS residuals by expansion factors of 1.1, 1.2 and 1.5, and applying them to the SCO area-level yield trend to model farm-level yields of three levels of riskiness per crop for each county where the SCO is available. The magnitude of the factors applied to create the synthetic farm-level yields were chosen based on the relationships between farm- and area-level yields observed for these crops by Cooper et al. (2009).

## **4.2 Prices**

### **RMA Projected and Harvest Prices**

The published projected and harvest prices used for Revenue-Protection policies are determined using RMA’s Commodity Exchange Pricing Provisions (CEPP) for the respective crop. Projected and harvest prices are defined as the harvest year’s average daily settlement price for the crop’s Chicago Board of Trade (CBOT) futures contract for a defined month during the defined respective discovery period rounded to the nearest whole cent (USDA-RMA, c). For corn and soybeans the contract months of interest are December and November, respectively, and for both crops the projected price discovery period is February 1<sup>st</sup> to 28<sup>th</sup>– or 29<sup>th</sup> in leap years – and the harvest price discovery period is October 1<sup>st</sup> to 31<sup>st</sup> (USDA-RMA, 2013, 2016). For Kentucky wheat, the CEPP stipulates that the July SRW Wheat contract for the projected price

discovery period August 15<sup>th</sup> to September 14<sup>th</sup> and harvest price discovery period of June 1<sup>st</sup> to June 30<sup>th</sup> be used (USDA-RMA, 2017).

RMA defined projected and harvest prices were calculated using the relevant CBOT futures contract price data.

### **Kentucky Marketing Year Average Prices**

Kentucky marketing year average prices were collected from USDA - National Agricultural Statistics Survey (NASS) via web-API (USDA-NASS). The NASS data for “all classes” were used for both corn and soybeans, while only the “winter wheat” class was used for wheat.

### **4.3 Crop Insurance Premiums**

For the purposes of this study, RMA’s published 2019 crop insurance premium estimates for corn and soybeans and wheat were used.

#### **Underlying Policies**

Premium rates were collected for Yield-Protection, Revenue-Protection and Revenue-Protection with Harvest Price Exclusion from RMA’s premium estimator (USDA-RMA, d). It can be observed that premium ratings differ depending on the size – not just type – of the unit for which the premium is being estimated. Policies covering larger insured units enjoy a lower premium rate per acre, ceteris paribus, more than likely resulting from an assumption that greater aggregation of yields, even at the unit-level, lead to a reduction in yield volatility for the policy. However, to reduce the total amount of possible underlying policy insurance scheme combinations (already equaling 432 farm-level risk, farm-to-area yield correlation, insurance policy combinations per county where the SCO is available), premiums are estimated for only 100 acre optional units.

#### **SCO**

The SCO premiums were calculated according to the exhibits in the P11\_11 - Plan 31 32 and 33 Premium Calculation section in the PASS Calculations of RMA’s 2019 Approved Appendix III/M-13 Handbook (USDA-RMA, k). According to this documentation, the SCO premium is calculated by applying ratings that are determined by RMA and published in the Actuarial Data Master (ADM) files (USDA-RMA, a) to the underlying policy’s liability amount. For this study this exact procedure was followed in order to ensure accurate SCO premium estimation.

## **4.4 Crop Insurance Indemnities**

### **Underlying Policies**

Underlying policy indemnities were calculated as described in the P21\_1 - Plan 01 Indemnity Calculation and P21\_2 - Plan 02 and 03 Indemnity Calculation sections of RMA's 2019 Approved Appendix III/M-13 Handbook (USDA-RMA, k) using the simulated yield and price values as inputs. For a more detailed exposition of the underlying policy indemnity calculations used, please refer to Section 3.2.

### **SCO**

The SCO indemnities were calculated as described in the P21\_11 - Plan 31 32 and 33 Indemnity Calculation sections of RMA's 2019 Approved Appendix III/M-13 Handbook (USDA-RMA, k), again using the appropriate simulated values as inputs. For a more detailed exposition of the SCO endorsement indemnity calculations used, please refer to Section 3.2.



## Chapter 5 Methodology

### 5.1 Overview

A stochastic simulation was developed to calculate revenues based on simulated yields and prices to rank underlying policy and SCO crop insurance choices for Kentucky row crop producers. The simulation was repeated for each combination of crop, county, farm-level yield risk (expansion factor) and farm-to-area yield correlation. In total, revenues were simulated for 112,455 scenarios, which consisted of:

- **49 crop insurance combinations** ((3 types of policies \* 8 coverage levels \* 2 SCO endorsement options) + 1 no crop insurance)
- calculated using crop prices and yields simulated for **9 farm-level risk and farm-to-area yield correlation combinations** (3 levels of farm-level yield “riskiness” \* 3 levels of farm-to-area yield correlation)
- for each of **441 crop/county combinations** (104 counties corn, 84 counties soybeans, 67 counties wheat)
- resulting in **45,864 scenarios for corn, 37,044 for soybeans and 29,547 for wheat.**

The simulation methodology used is summarized as the following:

1. RMA SCO area-level yields are treated to remove the deterministic technological trend and adjust for heteroscedasticity in the resulting residuals. Price data are treated to remove trend.
2. Percent deviates of detrended and adjusted SCO area-level yields are calculated and synthetic farm-level yields are constructed by multiplying the treated SCO area-level percent deviates by expansion factors of 1.1, 1.2 and 1.5 to reflect the reality that yields are more volatile at the farm- versus area-level.
3. The Pearson correlation matrix is calculated for the following variables of interest: farm-level crop yield, SCO area-level crop yield, MYA price and RMA harvest price.
4. The correlation of farm- to area-level crop yields are adjusted to reflect the desired values of 0.25, 0.5 and 0.75, in order to reflect different levels of basis-risk.
5. 10,000 pseudo-random draws are made from a normal distribution for each of the variables of interest.

6. The upper-triangular matrix of the Cholesky decomposition of the correlation matrix calculated in step 3 is multiplied by the matrix of 10,000 random draws of the variables of interest to create a matrix of simulated values with the desired correlation.
7. Deviates for the specific variable of interest is recovered from the originally observed distribution via the inverse transform method.
8. The deviate is applied to the central tendency predicted from the original model used to detrend the data in step 1.
9. Revenues are calculated for the crop and the various possible crop insurance schemes.
10. The crop insurance schemes are ranked according to downside-risk minimization.

## 5.2 Yield Data Preparatory Treatment

In preparation for simulation, each SCO area-level crop yield time-series must be treated in order to account for both increases in yields resulting from technological advancement, and heteroscedasticity, which is the common approach found in the literature, as noted by Zhu et al. (2011). The procedure currently employed by RMA is outlined by Harri et al. (2011) and Ker and Tolhurst (2019) as the following:

1. A deterministic trend is modeled using a robust two-knot linear spline function with robust M-estimation, specifically iterating using Huber weights until convergence and then using bisquare weights for two iterations. Additional restrictions are imposed to prevent the knots from being fit too close to both one another and the endpoints, and temporal and spatial priors on the spline knots are used to prevent them from moving more than three years in either direction from the previous year or being located more than three years in either direction from the average of the knots for all counties within the crop reporting district.
2. The resulting residuals are treated to adjust for possible heteroscedasticity via the HCKG heteroscedasticity correction described by Harri et al. (2011).

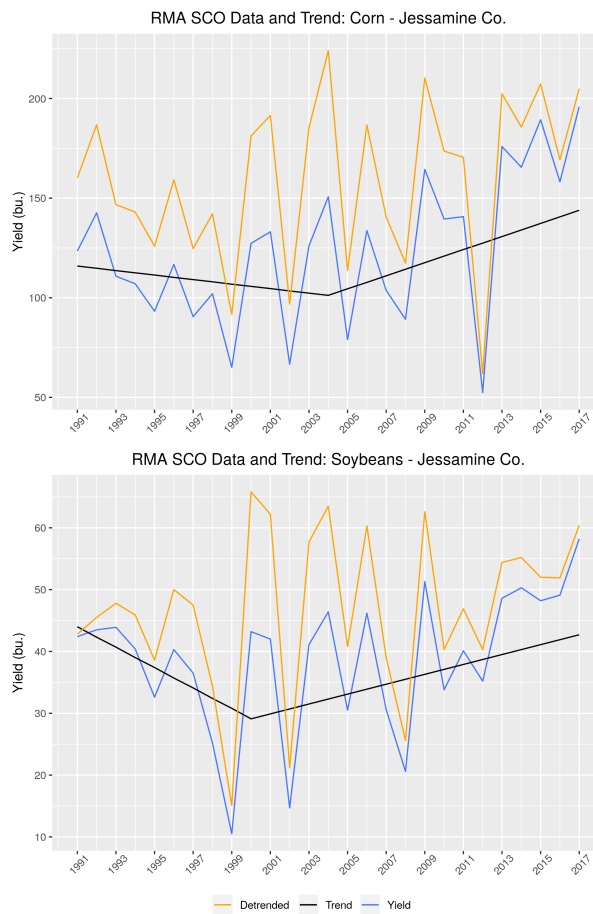
For this study a modified version of this two-step procedure was used instead:

1. A simple linear trend was fit as the deterministic trend to control for yield increases resulting from technological improvements.
2. The resulting residuals were adjusted using the Adjusted-HCKG (AHCKG) heteroscedasticity correction method presented by Ker and Tolhurst (2019).

## Yield Trends

Though simple, using the OLS to model and control for the deterministic technological trend avoids the risk of over-fitting, which is inherent in any sort of robust methodology. Furthermore, evidence of RMA’s methodology over-fitting the deterministic technological trend in yields – and therefore under-estimating risk in published Kentucky SCO area yields can be seen. There are several instances of negative slopes for the interval  $[t_1 = 1991, t_{t_n-k_1}]$  (i.e., the first “piece”) of RMA’s fit spline-function, as seen in the plots in Appendix B.2. One example is found in following plots for Jessamine County, where RMA fit negative trends for both corn from 1991 to 2004, and soybeans from 1991 to 2000.

Figure 5.1: RMA estimated trends for Jessamine County



The Chow test was used to approximately identify all knots in RMA’s published SCO area-level estimated trends for corn, soybeans and wheat in all applicable Kentucky counties. Though some of these knots may be difficult to identify visually – due to only a slight difference in slope between the spline sections – they do indeed exist. After the knots – i.e., break points – were identified, the slope of each section of the linear spline was calculated. The results of these calculations is presented in the table in Appendix B.1.

Though it was not the case for any of the top ten corn producing counties in the Commonwealth, RMA fit negative slopes for corn in fifteen counties. The largest negative slope was fit for Fayette County 1991-2002  $-1.73 (\frac{bu.}{acre}/year)$  – which then drastically changed to a positive slope of  $3.06 (\frac{bu.}{acre}/year)$  for the period 2002-2017. The largest positive slopes that RMA fit were  $6.45 (\frac{bu.}{acre}/year)$  for Taylor County 1991-2005 and  $6.08$  for Green County 1991-2004.

For soybeans RMA fit a negative slope for some section of the spline model for the period 1991-2017 for 34 counties. The largest negative slopes appeared for: Fayette County 1991-2000  $-1.76 (\frac{bu.}{acre}/year)$ , Woodford County 1991-2001 with  $-1.46 (\frac{bu.}{acre}/year)$  and Trimble County 1991-2001 with  $-1.44 (\frac{bu.}{acre}/year)$ . The largest positively sloped trends fit by RMA for soybeans appeared for Clinton County 2008-2017 with  $0.88 (\frac{bu.}{acre}/year)$ . Interestingly, negative slopes were also fit for the Henderson County and Union County, the first and sixth largest soybean producing counties by 2018 acreage, respectively. For Henderson County soybeans, RMA had fit a negative trend of  $-0.19 (\frac{bu.}{acre}/year)$  and then a positive trend of  $0.74 (\frac{bu.}{acre}/year)$  for the periods 1991-2000 and 2000-2017, respectively. For the period 1991-2001 RMA estimated a trend of  $-0.35 (\frac{bu.}{acre}/year)$  for Union County SCO area soybeans, followed by a trend of  $0.72 (\frac{bu.}{acre}/year)$  for the remaining years 2001-2017.

None of the top ten wheat producing counties had negative slopes fit by RMA for the period 1991-2017. In fact, RMA fit negative slopes for wheat in only three counties. The largest negative slope was  $-0.38 (\frac{bu.}{acre}/year)$  for Hopkins County during time period 1991-2006. Both Russell County and Wayne County had the largest positive slopes with  $1.34 (\frac{bu.}{acre}/year)$  for the entire period 1991-2017.

Since, there is a lack of theoretical justification for a negative yield trend starting in 1991 for any row crop-county yield time-series (aside from the possible effects caused by moral hazard and/or adverse selection, which is an examination outside the scope of this study), a more parsimonious trend fitting was chosen.<sup>1</sup>

## Yield Heteroscedasticity Adjustment

The AHCKG method was chosen to correct for any time-dependent changes in yield variance due to its flexibility in accounting for asymmetric heteroscedasticity. This controls for changes in volatility occurring at different rates in the upper and lower tails of the crop yield distribution. It has been shown that this adjustment in RMA’s

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<sup>1</sup>It is worth noting that if RMA’s robust trend fitting methodology indeed leads to an underestimation of yield risk, the resulting crop insurance premiums should be under-rated, which would provide producers with an additional rent to exploit beyond those already afforded by premium subsidies.

heteroscedasticity correction methodology provides statistically significant improvements in the accuracy of rates, especially in the lower tail of the crop yield distribution (Ker and Tolhurst, 2019). The yield forecast for 2020 was used for the AHCKG heteroscedasticity adjustment for all three crops. Though this is a deviation from RMA’s methodology of using a two-year ahead forecast for heteroscedasticity adjustment purposes, this study is interested in the 2020 year decision for Kentucky producers and at the time of this study RMA had only published SCO area yields up to 2017.

### **5.3 Price Data Preparatory Treatment**

The data for RMA harvest prices, and Kentucky marketing year average prices for corn, soybeans and wheat were treated prior to simulation. The time-series were detrended to the the most recent year using a linear regression. Both Breusch-Pagan and White testing failed to reject the null hypothesis of the absence of heteroscedasticity for all treated crop-price data. As a result, no adjustment was necessary.

### **5.4 Distribution Fitting**

After appropriate treatment of the raw data – including detrending and heteroscedasticity adjustment – probability distribution candidacy was considered for modeling the distributions of yields and prices. Cullen and Frey plots were generated for each crop’s SCO area yields and prices. By plotting the kurtosis and square of skewness of the dataset of interest as points, along with points and areas representing kurtosis and square of skewness accommodated by the various candidate distributions, the practitioner is able to select distributional families for modeling the sampled data (Cullen and Frey, 1999). While some distributions are rigid in their third and fourth moment accommodation (e.g., the normal distribution), others – such as the Weibull and Beta distributions – contain additional shape parameters in their functions, which afford additional flexibility.

### **Crop Yields**

The treated crop yields for all Kentucky SCO areas are presented in the Cullen and Frey plots below on a per crop basis. We see that for all three crops the yield distributions for almost all counties falls within the kurtosis and square of skewness area that can be appropriately modeled by the flexible beta distribution. Ideally all SCO area yield distributions would fall within the area, but as there do not appear to be any more appropriate parametric candidates, the beta was chosen to individually model all farm- and SCO area-levels yield distributions in this study.

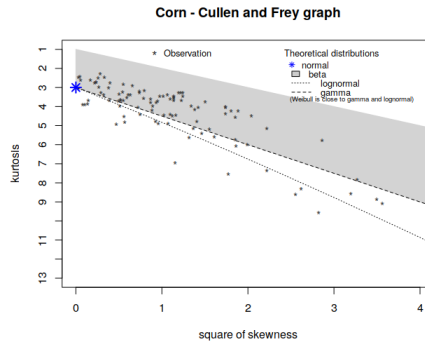


Figure 5.2: Cullen and Frey plot of treated RMA SCO area-level corn yields.

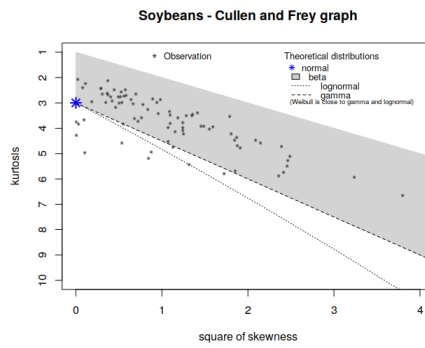


Figure 5.3: Cullen and Frey plot of treated RMA SCO area-level soybean yields.

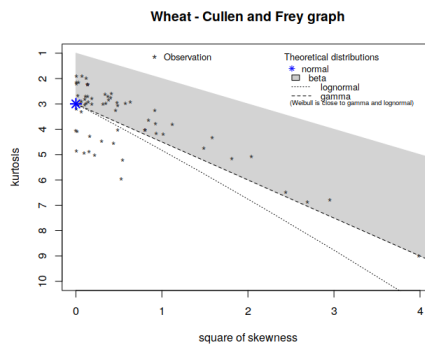


Figure 5.4: Cullen and Frey plot of treated RMA SCO area-level wheat yields.

## Prices

Ideally forward-looking crop price distributions would be modeled using information available from the options market. Unfortunately options price data were not available for this study so such options market derived “implied” distributions could not be used. Goodwin (2009) assumes crop prices follow a log-normal distribution along with historical price volatilities from the market.

The detrended crop prices of interest (Kentucky marketing year average, RMA projected price and RMA harvest price) were also plotted on Cullen and Frey plots per crop basis. Again you can see that most of our observed distributions fall within the kurtosis and square of skewness area representing the beta distribution on the plot. Based on this evidence, the beta distribution is used to model the prices in this study’s simulation.

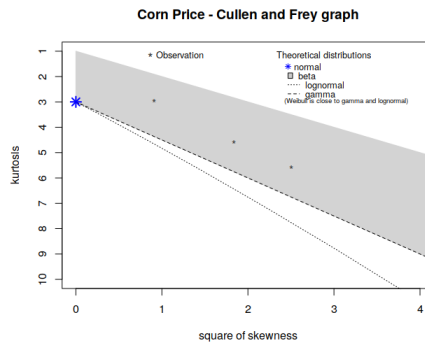


Figure 5.5: Cullen and Frey plot of detrended MYA, projected and harvest corn prices.

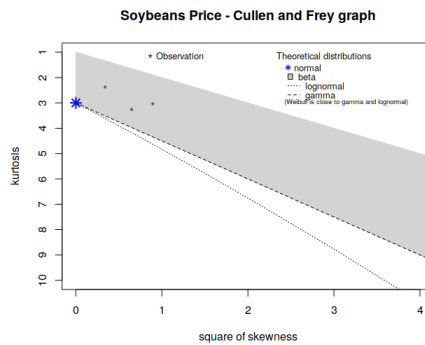


Figure 5.6: Cullen and Frey plot of detrended MYA, projected and harvest soybean prices.

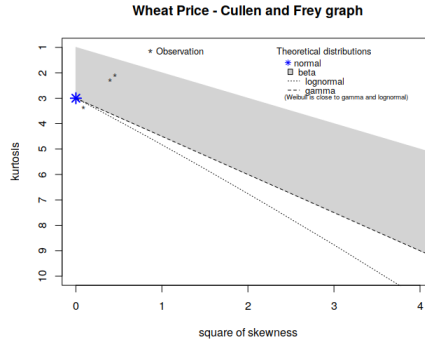


Figure 5.7: Cullen and Frey plot of detrended MYA, projected and harvest wheat prices.

## 5.5 Imposing Dependence Structures on Simulated Random Variables

Any analysis of area insurance products without a deeper discussion of dependency among the variables of interest would be remiss. There are multiple, dependent sources of risk to a farm’s revenue and appropriately modeling their covariance structures is necessary for simulating a realistic estimation of a farm revenue distribution.

In the present context, there are two primary reasons why this is of importance. The first is the concept of the “natural hedge” – or the risk reduction effect of yields and prices being inversely correlated. Correctly imposing an appropriate yield to price dependence is paramount to accurately modeling revenue distributions. Additionally, it is important to remember that in this context there are yields – at both farm- and area-level – as well as the different prices we are interested in modeling for the sake of calculating expected net revenues.

Secondly, it is important to correctly correlate farm- and area-level yields. Since area products inherently exhibit basis risk – the risk that the index used for insurance purposes does not accurately match farm-level performance – dependence between farm- and SCO area-level yields should be modeled as accurately as possible.

As seen throughout the agricultural, and wider risk management literature, this study uses the Iman-Conover method to impose dependence among simulated variables (Iman and Conover, 1982). Specifically, the Cholesky decomposition is applied to the matrix of the observed and imposed (in the case of farm-to-area yield) Pearson correlations. The upper triangular matrix resulting from the Cholesky decomposition is then multiplied by the matrix of 10,000 random draws of the simulated variables. This results in 10,000 randomly drawn sets of the variables of interest, with each iteration approximately reflecting the originally observed and imposed Pearson correlations.

Observed correlations were used to impose all dependence relationships other than those between farm- and area-level yields, which were imposed Pearson correlation values of 0.25, 0.5 and 0.75.



## 5.6 Calculation of Simulated Revenues

A distribution of revenues, net of crop insurance payouts, is constructed by calculating individual crop and insurance revenues for each iteration of simulated yields and prices for use in the mean-variance utility function.

### Crop Revenue

Revenues gained solely from crop production are calculated using the following function:

$$R_{crop} = Y_{crop}^* * P_{mya}^* * l_{crop} \quad (5.1)$$

where  $Y_{crop}^*$  is the simulated crop yield,  $P_{mya}^*$  is the simulated marketing year average price for the crop, and  $l_{crop}$  is the the planted acreage of the crop.

### Crop Insurance Revenues

The crop insurance revenue is equal to the total indemnities, net subsidized premiums, for the underlying policy and the accompanying SCO as seen in 3.13:

$$R_{ins.} = I_{tot.net.} = I_{und.net} + I_{SCO.net} \quad (5.2)$$

## 5.7 Total Revenue

Finally, the total revenue is calculated as the sum of the crop and insurance revenues:

$$R_{tot.} = R_{crop} + R_{ins.} \quad (5.3)$$

## 5.8 Downside-Risk Mitigation Ranking Framework

Past studies have examined choice under uncertainty in various ways. One classical – and ubiquitous throughout the literature – method employs an expected utility maximization assuming various different levels of constant absolute risk aversion (CARA) (e.g., Hennessy (1998); Goodwin (2009); Paulson et al. (2016)). Wang et al. (1998) employed an expected utility maximization under constant relative risk aversion (CRRA). In these expected utility maximization under risk-aversion models, expected utility is a function of expected value penalized at various levels – depending on the risk aversion factor – by the observed variance (Pratt, 1964). Coyle (1999) used a mean-variance maximization, which specified a farmer’s risk preference in terms of a utility function that is linear in both expected profits and profit variance.

Though utility-maximization under CARA – both Hennessy (1998)’s form or the linear expected profit and variance form presented by Coyle (1999) – was considered for this study, it was passed over due to features that were deemed disqualifying. First, there is a body of literature on the subject of farmer risk-aversion factors (e.g., Anderson and Dillon (1992)), but applying these studies’ findings in this context

would require assumptions on the part of the researcher. Chiefly, the substantial assumption that risk-preferences of Kentucky grain producers operating throughout the state are accurately reflected by the risk-aversion factors estimated in the previous studies. Secondly, the use of the mean-variance model has been criticized for the fact that it penalizes both upside- and downside-risk (Markowitz, 1959). Although a rational agent would not seek to minimize upside-risk, variance penalizing frameworks are good estimators of downside-risk minimizing strategies in cases of symmetrically distributed revenues or profits. However, because distributions of agricultural revenues are often skewed and the downside-risk mitigation effects of the various insurance schemes is our primary concern, a downside-risk focused framework is most appropriate for this study. Though the wealth-transfer effects of any government program is undoubtedly of interest, the FCIP’s original intention of providing risk mitigation tools for the nation’s agricultural producers – as well as it’s current place as U.S. agriculture’s primary safety-net program – make an analysis of revenue maximization secondary to an investigation of the downside-risk protection these insurance schemes offer.

Considering this study’s focus, a downside-risk minimization framework is employed to rank the various available underlying crop insurance policy and SCO endorsement schemes for each crop. Examples of using downside-risk measures for determining optimal risk management strategies in the agricultural domain exist in the literature. Turvey and Nayak (2003) developed a semivariance-minimization hedge ratio model for agricultural hedge ratio optimization, and applied it to hedging Kansas City wheat and Texas steers. Walters and Preston (2018) used a different downside-risk measure, the expected shortfall – also referred to as the conditional value at risk – to plot the efficient frontier of various crop revenue risk management strategies consisting of crop insurance in combination with futures market hedging.

To rank the downside-risk reduction of the various crop insurance schemes of interest, this study ranks the various schemes’ semivariance, which is calculated as:

$$\frac{\sum_{i=1}^n \min(K_i - T, 0)^2}{n - 1} \quad (5.4)$$

where  $K_i$  is the individual simulated revenue under the respective insurance scheme,  $T$  is the target value – which in this case is equal to the mean revenue with no insurance – and  $n$  is the total count of simulated revenues. It is important to keep in mind that  $n$  is equal to the total count of observations – not just those below the target value (Washer and Johnson, 2013). As long as the target value used in the downside-risk measure calculation is consistent among all the possible strategies under consideration, a determination of optimal strategy through a ranking of the strategies based on downside-risk minimization adheres to utility theory (Hogan and Warren, 1972). For this reason, the target value used to calculate the semivariance for all insurance schemes considered for each farm-level scenario is equal to the mean simulated revenue without insurance.

Though the optimal insurance strategy for each farm-level scenario is identified as that which minimizes semivariance below the given target revenue, each optimal strategy’s downside-risk will be presented as the semideviation in the results. As is the

case with the relationship between variance and standard deviation, the semideviation is simply the square root of the semivariance. The semideviation is used for exhibition purposes in this study due to the fact that the unit for semideviation is dollars, which makes its interpretation more straightforward than the semivariance units of dollars squared. Since semideviation is a monotonic transformation of semivariance, the ranking of optimal insurance scheme is invariant to the use of these two downside-risk measures.

## Chapter 6 Results

The RP is the optimal underlying policy for most combinations of crop, county, farm-level risk and farm-to-area yield correlation in this study, which is expected considering the popularity of the RP policy nationwide (USDA-RMA, i). Additionally, the SCO endorsement was a component of the optimal insurance scheme for all crop, county, farm-level risk and farm-to-area yield correlation combinations considered in this study. In many cases a RP policy with an 85% coverage level and a SCO endorsement was optimal. However, there were several instances where a lower coverage level policy, along with the SCO, was optimal. In such cases, producers may be able to adjust their insurance choice in order to reduce their crop insurance premium expense without sacrificing much of the risk protection provided by the highest coverage level underlying policies. Complete results for all simulated scenarios in this study can be found in Appendix D.

### 6.1 Corn

The table below shows that for the top ten corn producing counties in the Kentucky, a RP policy with an 85% coverage level and a SCO endorsement is usually the downside-risk minimizing insurance scheme. The only deviation is seen when simulating revenues for Union County using the least volatile estimated farm-level yields (expansion factor = 1.1), or the slightly more volatile (expansion factor = 1.2) along with the highest farm-area yield correlation of 0.75. In this case the semideviation below the target was minimized using an insurance scheme comprising of RP with an 80% coverage level along with a SCO endorsement. In most cases, the mean simulated revenue (net of insurance payouts) was greater than the target value of mean revenue under no insurance.

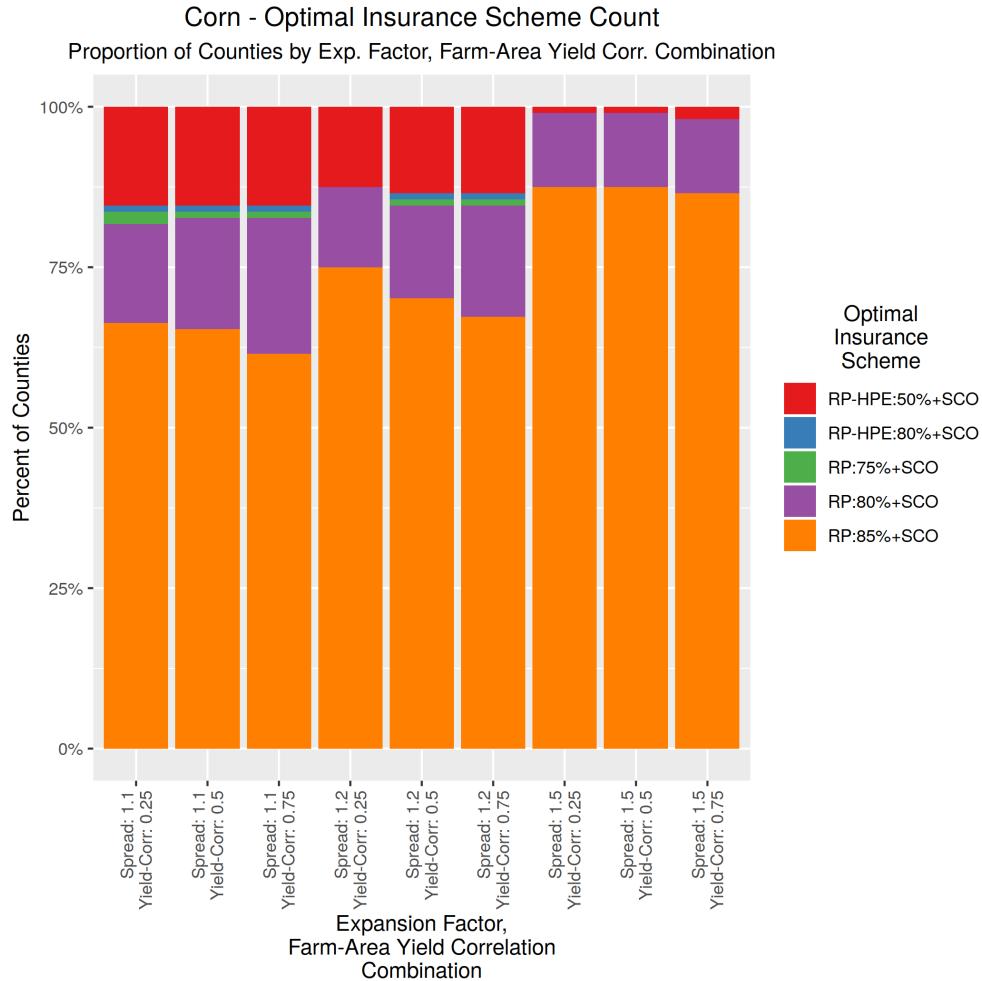
Table 6.1: Top 10 Corn Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage)

County	Exp. Factor = 1.1			Exp. Factor = 1.2			Exp. Factor = 1.5		
	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75
Christian	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Union	RP:80%	RP:80%	RP:80%	RP:85%	RP:85%	RP:80%	RP:85%	RP:85%	RP:85%
Graves	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Henderson	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Logan	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Daviess	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Todd	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Hickman	RP:85%	RP:85%	RP:80%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Simpson	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Webster	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%

Looking beyond the top corn producing counties, the 85% coverage level RP policy with the supplemental coverage option was the downside-risk minimizing strategy in most counties for all crop yield expansion factor, farm-to-area yield correlation

combinations. The amount of counties for which this strategy was optimal increased as the farm-level yield distribution “riskiness” increased (i.e., higher expansion factors used for modeling farm- from SCO area-level yields), but decreased as the farm-area yield correlation increased. There were no cases of insurance schemes without the SCO election being optimal across all farm-level yield risk, farm-area correlation combinations.

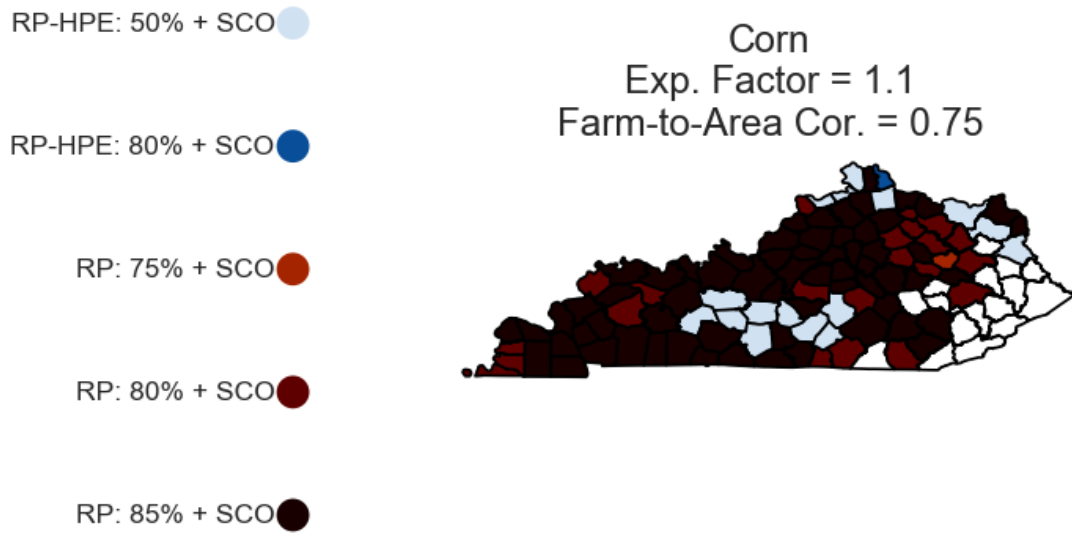
Figure 6.1: Corn - Optimal Insurance Scheme Count



The following map of results from a simulation using a 1.1 expansion factor and farm-area correlation of 0.75 is representative of the geographic distribution of downside-risk minimizing insurance schemes for Kentucky corn. There are three clusters of counties where the RP-HPE policy with a 50% coverage level and SCO endorsement is optimal. The largest of these clusters lies in the South Central portion of the Commonwealth and stretches approximately from Muhlenberg to Casey County. Many of these counties experience a shift in optimal strategy to a RP policy with an 80% coverage level and SCO endorsement as the farm-level yield volatility increases. The other two both consist of three counties and are in the north-central and north-eastern parts of the Commonwealth. One can also see clustering of RP policies

with less than the maximum 85% coverage level, along with the SCO endorsement, with the major cluster lying in stretching approximately from Bourbon to Morgan Counties in the eastern region, and several smaller clusters scattered throughout the Commonwealth. Comparing to the SCO area county count map (Figure 3.1), one can quickly see that the eastern portion of the Commonwealth – where there is lower corn production – is the area with the greatest diversity in terms of optimal insurance strategy.

Figure 6.2: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75.



## 6.2 Soybeans

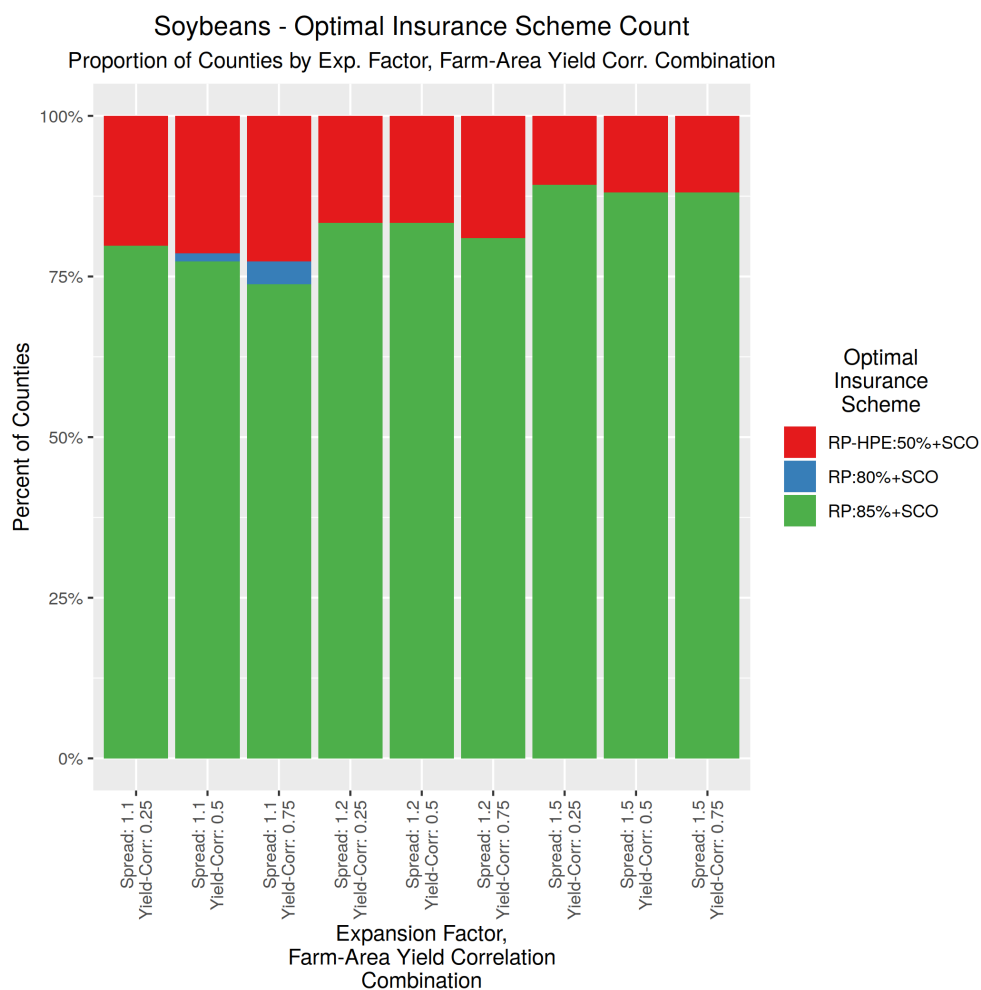
The downside-risk minimizing insurance schemes for soybean producers in the top ten producing counties is found below. They show that the RP policy with an 85% coverage level and a SCO election is optimal for almost all farm-level yield risk, farm-area correlation combinations in these counties. Union County again deviated from the other top production counties. There the RP-HPE policy with a 50% coverage level and SCO endorsement was the optimal insurance scheme for the two less volatile farm-level yields (expansion factors = 1.1, 1.2) along with all three levels of farm-area yield correlation.

Table 6.2: Top 10 Soybean Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage)

County	Exp. Factor = 1.1			Exp. Factor = 1.2			Exp. Factor = 1.5		
	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75
Henderson	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Graves	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Christian	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Daviess	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Logan	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Union	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	RP:85%	RP:85%	RP:85%
Webster	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Hickman	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Todd	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Calloway	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%

Outside of the top soybean producing counties, the RP policy with an 85% coverage level and a SCO election is the downside-risk minimizing insurance scheme for almost all farm-level yield risk, farm-to-area crop yield correlation combinations. The amount of counties for which this scheme was optimal increased as the farm-level yield distributions were more “risky”. We also see that the RP policy with an 80% coverage level and a SCO election is the optimal insurance scheme for a county with the 1.1 expansion factor and two higher (0.5 and 0.75) farm-to-area crop yield correlation combinations. The proportion of counties possessing each optimal insurance scheme on a expansion factor, farm-to-area crop yield correlation combination basis is presented below.

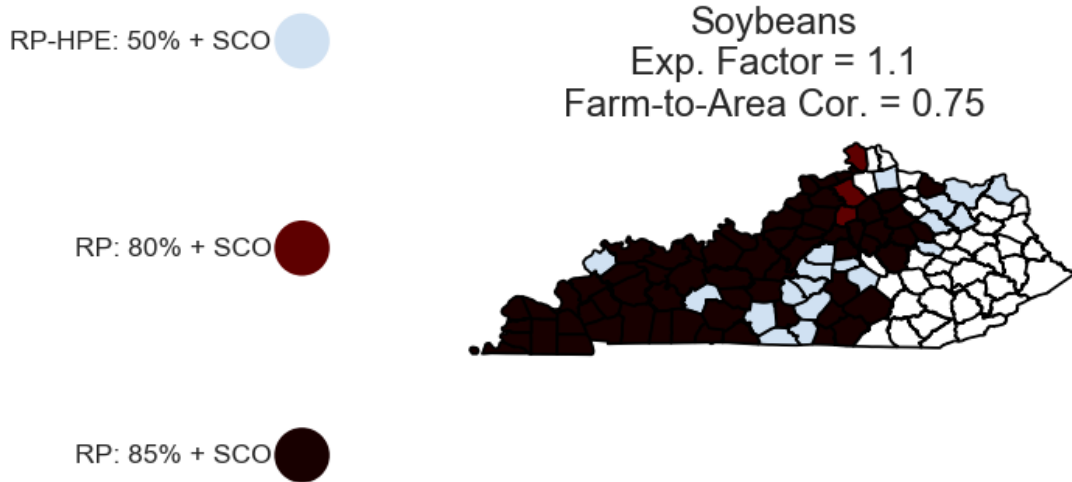
Figure 6.3: Soybeans - Optimal Insurance Scheme Count



Interestingly, in many cases an insurance scheme of a RP-HPE policy with a 50% coverage level and a SCO endorsement was optimal. The counties for which this scheme was optimal were concentrated in two major geographic groupings. The two clusters were in the northeast and south-central areas of the Commonwealth. The following map of optimal insurance schemes for the simulation using the 1.1 crop yield expansion factor and 0.75 farm-to-area crop yield correlation shows these clusters. The map also shows the three counties where the RP policy with an 80% coverage level and SCO endorsement – Boone, Owen and Franklin Counties – all lie in the north-central portion of the state. These counties shift to an optimal insurance scheme of an 85% coverage level RP policy with the SCO endorsement when the farm-level crop yields are simulated with greater volatility. Comparing to the SCO area county count map for soybeans (Figure 3.2), one can see that several of the counties where the RP-HPE policy with a 50% coverage level and SCO endorsement is optimal belong to SCO areas consisting of only one county – i.e., they are their own SCO area.



Figure 6.4: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75.



### 6.3 Wheat

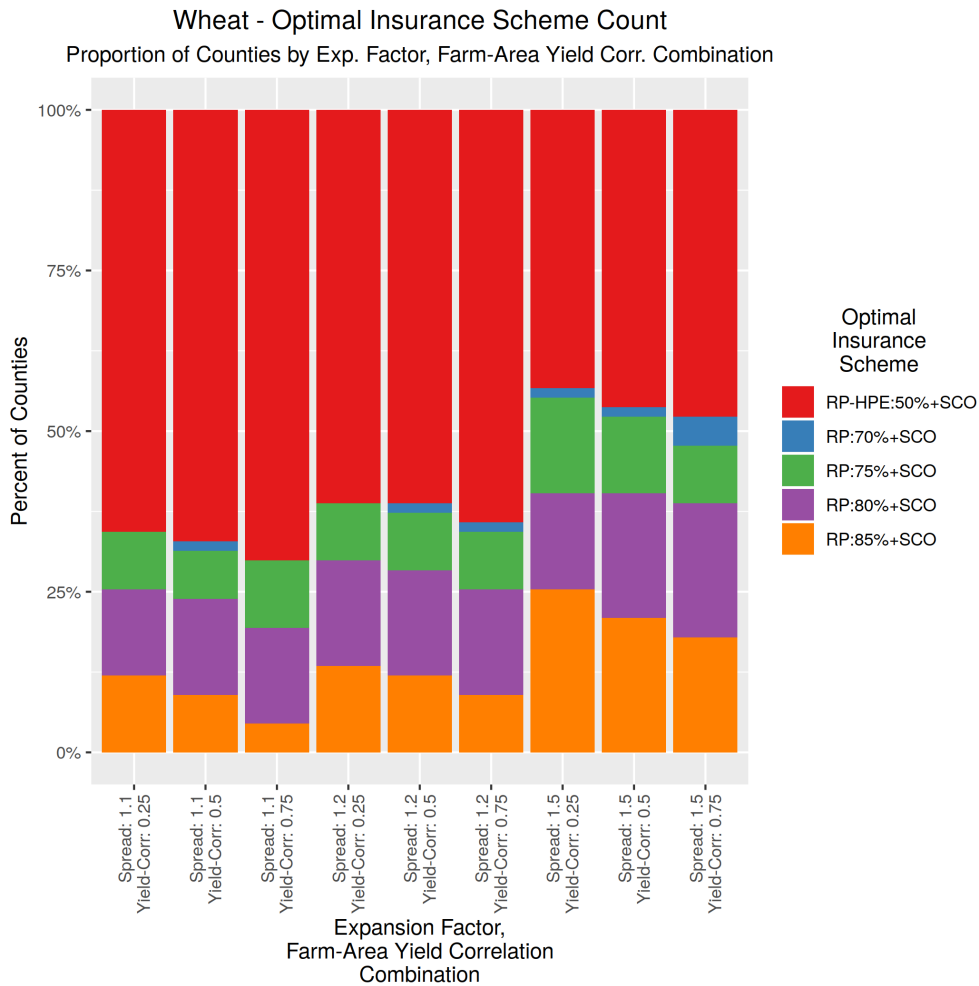
Downside-risk minimizing insurance schemes for wheat producers in the top ten producing counties are presented in the table below. The table shows a much greater diversity of optimal insurance schemes for these counties. In most cases a RP policy with a 70% or higher coverage level along with the SCO endorsement is downside-risk minimizing. However, there are cases where a RP-HPE policy with a 50% coverage level and a SCO election is optimal. This is the case for all farm-level risk and farm-to-area crop yield correlation combinations in Graves and Hickman Counties, and also for all but the most volatile (expansion factor = 1.5) farm-level yields in Caldwell County. The RP-HPE policy with a 50% coverage level and SCO election is also the optimal insurance choice for Christian County when the farm-level risk is relatively low (expansion factor = 1.1) and the farm-to-area crop yield correlations are 0.5 or 0.75.

Table 6.3: Top 10 Wheat Acreage Counties - Optimal Insurance Choice for Each Expansion Factor and Farm-Area Yield Correlation Combinations (Each Optimal Choice Includes SCO Election, Ordered by Production Acreage)

County	Exp. Factor = 1.1			Exp. Factor = 1.2			Exp. Factor = 1.5		
	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75
Christian	HPE:50%	HPE:50%	HPE:50%	RP:75%	RP:70%	RP:70%	RP:85%	RP:80%	RP:75%
Logan	RP:80%	RP:80%	RP:75%	RP:80%	RP:80%	RP:80%	RP:85%	RP:80%	RP:80%
Todd	RP:75%	RP:75%	RP:75%	RP:80%	RP:80%	RP:75%	RP:85%	RP:85%	RP:85%
Simpson	RP:85%	RP:85%	RP:80%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%	RP:85%
Graves	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%
Caldwell	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	RP:80%	RP:80%	RP:80%
Warren	RP:85%	RP:80%	RP:80%	RP:85%	RP:85%	RP:80%	RP:85%	RP:85%	RP:85%
Ballard	RP:75%	RP:75%	HPE:50%	RP:75%	RP:75%	RP:75%	RP:80%	RP:80%	RP:80%
Hickman	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%	HPE:50%

When examining the optimal insurance scheme for Kentucky counties where SCO is offered on wheat policies, one sees a stark difference from both corn and soybeans. For wheat, the most common optimal insurance strategy is the RP-HPE policy with a 50% coverage level along with the SCO endorsement. Other optimal policies are various coverage level RP policies with the SCO endorsement. Generally speaking, there is much greater diversity of optimal insurance strategies for Kentucky wheat, than for Kentucky corn and soybeans.

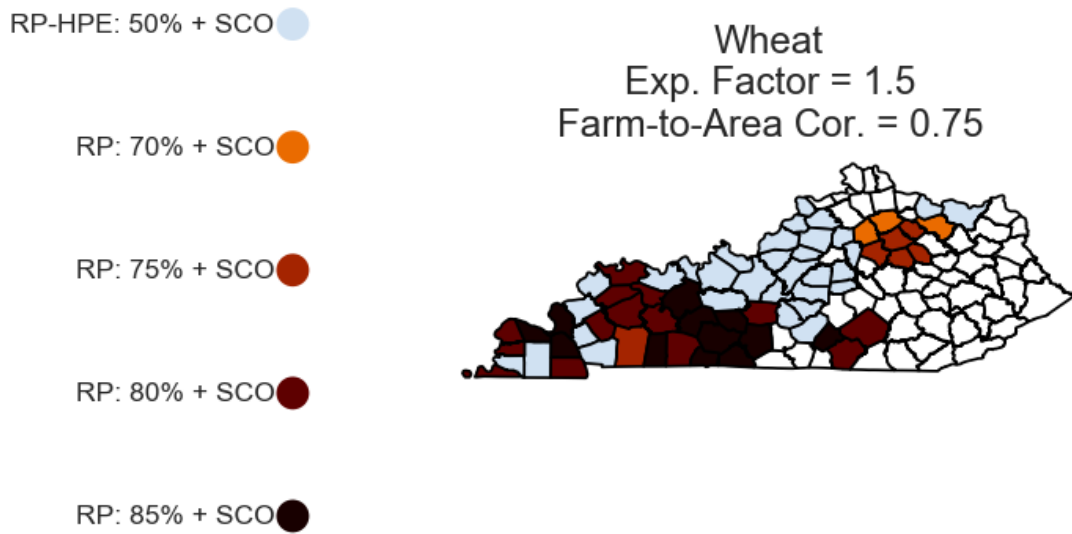
Figure 6.5: Wheat - Optimal Insurance Scheme Count



The greatest diversity in optimal insurance strategy for wheat was seen when simulating with a farm-level yield expansion factor of 1.5 and farm-to-area crop yield correlation of 0.75. The following map shows the geographic distribution of the various optimal crop insurance schemes for this expansion factor and farm-to-area crop yield correlation combination, which mostly hold across simulation parameter combinations – other than a few differences that will be noted later. One can see that

counties where the optimal insurance strategy is not the RP-HPE policy with a 50% coverage level and the SCO endorsement appear in four significant clusters. When referring back to the wheat SCO area county count map (Figure 3.3), one quickly sees a possible explanation for two of these clusters. In both the north-eastern and south-central clusters of counties, most of the counties' SCO areas are fairly large and may actually consist mostly – or in some cases entirely – of the same counties. In such cases, the simulated yields for these counties would be highly correlated, since the farm-level crop yield distributions would have been constructed from essentially the same area-level yields.

Figure 6.6: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75.



## Chapter 7 Summary and Concluding Remarks

Through a stylized simulation it is revealed that the SCO is a valuable risk management tool for Kentucky row crop producers. In the 104, 84 and 67 Kentucky counties where the SCO endorsement is offered for corn, soybeans and wheat, respectively, the SCO election is a component of every single downside-risk minimizing insurance strategy. Though in many cases the highest – 85% – coverage level RP policy is the optimal underlying policy, which is the subsidy amount maximizing insurance choice, there were cases in which lower coverage levels of the RP policy or a RP-HPE underlying policy were optimal. Optimal strategies including either underlying policies other than RP, or coverage levels below 85% are particularly interesting. Such cases may present producers with opportunities to reduce their crop insurance premium costs, while maintaining downside-risk protection.

Generally speaking, there is less diversity in downside-risk minimizing insurance schemes for both corn and soybeans, than for wheat. A few possible explanations for this difference exist. The first is that RMA might be misrating premiums for Kentucky wheat producers. This misrating may lie in estimating a higher-than-actual yield volatility. The fact that many counties' optimal strategy consists of an RP-HPE underlying policy may be explained by the possibility that RMA has overestimated the likelihood of harvest prices exceeding projected prices for wheat. If this is indeed the case, then the additional price risk mitigation afforded by the wheat RP policies is not worth the higher premium rate the policy commands relative to the RP-HPE wheat policies.

The results of this study are of particular interest to those seeking to minimize downside-risk on their Kentucky row crop operation, especially those who hold base acreage and have the opportunity to make an ARC or PLC enrollment decisions throughout the life of the current Farm Bill. This is due to the fact that acreage enrolled in ARC is disqualified from the SCO endorsement. SCO election should be considered when producers approach their commodity program enrollment decision.

### 7.1 Limitations

As is the case with any model, this study's simulation includes limitations that must be considered when interpreting its results.

One limitation of this study is that the projected price distribution was fully backward looking, depending on historical performance to estimate a distribution of potential prices. Such an approach is limiting in that it excludes the information available in the market from the simulation study. Ideally implied distributions would be made using the most current options prices available at the time that producers' program enrollment decisions would have to be made for the appropriate expiration date.

Though it can be argued that the use of parametric distributional forms reduces the likelihood of over-fitting the data – and therefore underestimating risk, the use of

the nonparametric distribution modeling methodologies may provide a more accurate simulation of expected revenues and crop insurance performance. The study might potentially be improved by carefully considering the various nonparametric methods for modeling crop yield distributions and applying them where appropriate.

The downside-risk minimization framework used has several advantages, such as not penalizing for upside risk – as is the case with the mean-variance framework, and being more intuitive than a utility maximizing optimization, which may make the findings easier to explain to real-world practitioners. However, it also presents some limitations in the context of this study. Chiefly, it does not factor in the maximization of expected revenues. This fact limits its usefulness for those managers prioritizing revenue maximization – and potentially wealth transfers – above risk mitigation.

## 7.2 Further Research

Several avenues for future research spring from this study. As this is a simulation study, an obvious extension would be to augment the model by either increasing the input variables used to calibrate the model, the amount of variables the model stochastically simulates, or both. In the former case, this would allow the model to more accurately reflect the information available to the agent at the time the decision needs to be made. An example of such an extension would include the incorporation of information from the options market within the simulation through the use of implied price distributions. The latter case of simulating additional variables could provide the decision maker with a greater amount of information relevant to the decision in question. Since insurance choice is only one of several decisions a producer has to make when preparing for a crop year, incorporating any additional factors, or variables, a producer must consider would undoubtedly enrich the simulation model and increase its predictive power.

A specific example of a useful augmentation of the model would be the incorporation of the commodity program enrollment decision. Due to the rules determining SCO eligibility, the SCO endorsement is tied to the ARC and PLC election decision and it is appropriate to examine expected payouts for these three programs simultaneously. A study consolidating the SCO endorsement and commodity program enrollment decision would undoubtedly be useful for producers who will have to make such decisions for their farm.

Yet another possibility for further research would be an examination of the differences in optimal insurance strategies resulting from altering the methodologies used in this simulation study. One of these alternate methodologies is the incorporation of a nonparametric estimation of crop yield distributions, which was mentioned in the limitations section above. Another potential change could be the incorporation of a multivariate copula for imposing the dependence structure among simulated variables. Since any simulation requires a significant amount of methodological assumptions, an examination of these assumptions' effects on the simulation results would be valuable for informing the development of crop yield and price simulations in the future.

Finally, it may be valuable to compile the optimal choices of this model into a classification tree or model. Doing so may provide further value in a few different

ways. First, a classification tree or model could provide a simpler and clearer exposition of the numerous results simulated by this study. Secondly, it could shed light on what characteristics are important for determining a producer's optimal crop insurance scheme. This information would be of tremendous value to not only producers seeking guidance on their crop insurance coverage decision, but also to researchers and policy makers interested in understanding what characteristics are most important for determining a producer's optimal insurance strategy.

## Appendix A Data

The following tables summarise the completeness of the NASS reported county-level yields, where ‘Min Yr.’ and ‘Max. Yr.’ are the minimum and maximum years, respectively, and ‘Count(n)’ is the number of observations in the time-series, ‘Acres’ is the latest production acreage figure reported by NASS (i.e., production acreage for ‘Max. Yr.’), and ‘Prop. 2018 Acres’ is the proportion of 2018 crop production acreage represented by ‘Acres’.

Table A.1: NASS Corn Yield Data Completeness

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Adair	1965	2018	53	9,000	0.58%
Allen	1965	2018	50	7,800	0.50%
Anderson	1965	2016	38	1,000	0.06%
Ballard	1965	2017	52	28,700	1.85%
Barren	1965	2018	54	25,000	1.61%
Bath	1965	2018	54	1,200	0.08%
Bell	1965	1981	14	500	0.03%
Boone	1965	2018	53	1,700	0.11%
Bourbon	1965	2018	54	3,400	0.22%
Boyd	1965	1986	21	700	0.05%
Boyle	1965	2018	53	5,100	0.33%
Bracken	1965	2018	46	1,100	0.07%
Breathitt	1965	1993	29	1,000	0.06%
Breckinridge	1965	2018	54	17,500	1.13%
Bullitt	1965	2018	54	2,000	0.13%
Butler	1965	2018	54	15,500	1.00%
Caldwell	1965	2018	54	28,000	1.81%
Calloway	1965	2018	52	32,500	2.10%
Campbell	1965	2015	43	600	0.04%
Carlisle	1965	2018	54	27,000	1.74%
Carroll	1965	2017	47	900	0.06%
Carter	1965	2018	47	500	0.03%
Casey	1965	2018	53	8,000	0.52%
Christian	1965	2018	54	76,500	4.94%
Clark	1965	2018	54	2,700	0.17%
Clay	1965	2013	42	600	0.04%
Clinton	1965	2018	52	1,600	0.10%
Crittenden	1965	2018	53	20,000	1.29%
Cumberland	1965	2018	47	2,500	0.16%

Continued on next page

Table A.1: NASS Corn Yield Data Completeness (cont.)

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Daviess	1965	2018	54	61,500	3.97%
Edmonson	1965	2018	52	3,200	0.21%
Elliott	1965	1995	29	700	0.05%
Estill	1965	2016	51	600	0.04%
Fayette	1965	2018	54	3,100	0.20%
Fleming	1965	2018	53	3,100	0.20%
Floyd	1965	1995	28	600	0.04%
Franklin	1965	2014	46	1,600	0.10%
Fulton	1965	2018	53	22,500	1.45%
Gallatin	1965	2017	47	800	0.05%
Garrard	1965	2016	51	1,600	0.10%
Grant	1965	2018	45	500	0.03%
Graves	1965	2018	53	67,000	4.32%
Grayson	1965	2018	53	10,700	0.69%
Green	1965	2018	54	7,500	0.48%
Greenup	1965	2017	49	800	0.05%
Hancock	1965	2018	53	7,000	0.45%
Hardin	1965	2018	54	29,500	1.90%
Harlan	1965	1976	12	200	0.01%
Harrison	1965	2016	51	5,000	0.32%
Hart	1965	2018	54	6,200	0.40%
Henderson	1965	2018	53	66,000	4.26%
Henry	1965	2018	54	5,300	0.34%
Hickman	1965	2018	54	41,500	2.68%
Hopkins	1965	2018	50	30,500	1.97%
Jackson	1965	2012	38	500	0.03%
Jefferson	1965	2017	46	500	0.03%
Jessamine	1965	2018	51	900	0.06%
Johnson	1965	1986	20	500	0.03%
Kenton	1965	2013	35	500	0.03%
Knott	1965	1989	21	500	0.03%
Knox	1965	2016	52	600	0.04%
Larue	1965	2014	49	23,400	1.51%
Laurel	1965	2018	47	500	0.03%
Lawrence	1965	1996	32	700	0.05%
Lee	1965	1996	30	650	0.04%
Leslie	1965	1976	12	400	0.03%
Letcher	1965	1976	12	200	0.01%
Lewis	1965	2018	54	900	0.06%
Lincoln	1965	2018	53	9,500	0.61%

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Table A.1: NASS Corn Yield Data Completeness (cont.)

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Livingston	1965	2017	51	11,600	0.75%
Logan	1965	2018	54	61,500	3.97%
Lyon	1965	2012	48	9,100	0.59%
Madison	1965	2018	53	1,900	0.12%
Magoffin	1965	1998	34	600	0.04%
Marion	1965	2018	54	15,800	1.02%
Marshall	1965	2018	51	11,300	0.73%
Martin	1965	1976	12	200	0.01%
Mason	1965	2018	54	8,000	0.52%
Mccracken	1965	2017	52	9,200	0.59%
Mccreary	1965	1986	20	600	0.04%
Mclean	1965	2018	53	43,000	2.77%
Meade	1965	2018	54	15,000	0.97%
Menifee	1965	2004	29	550	0.04%
Mercer	1965	2018	53	6,200	0.40%
Metcalfe	1965	2017	49	4,300	0.28%
Monroe	1965	2017	52	7,500	0.48%
Montgomery	1965	2017	51	1,600	0.10%
Morgan	1965	2013	38	600	0.04%
Muhlenberg	1965	2018	50	11,500	0.74%
Nelson	1965	2016	50	21,600	1.39%
Nicholas	1965	2018	47	1,100	0.07%
Ohio	1965	2018	54	31,500	2.03%
Oldham	1965	2018	54	2,400	0.15%
Owen	1965	2017	47	700	0.05%
Owsley	1965	1989	25	500	0.03%
Pendleton	1965	2016	51	900	0.06%
Perry	1965	1976	12	500	0.03%
Pike	1965	1976	12	300	0.02%
Powell	1965	2017	37	1,200	0.08%
Pulaski	1965	2018	54	9,900	0.64%
Robertson	1965	2012	35	500	0.03%
Rockcastle	1965	2017	50	1,800	0.12%
Rowan	1965	2018	50	700	0.05%
Russell	1965	2018	54	4,500	0.29%
Scott	1965	2018	53	2,000	0.13%
Shelby	1965	2018	54	19,100	1.23%
Simpson	1965	2018	54	41,500	2.68%
Spencer	1965	2018	52	3,700	0.24%
Taylor	1965	2018	53	10,500	0.68%

Continued on next page

Table A.1: NASS Corn Yield Data Completeness (cont.)

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Todd	1965	2018	54	52,500	3.39%
Trigg	1965	2018	54	24,000	1.55%
Trimble	1965	2018	50	1,700	0.11%
Union	1965	2018	54	70,500	4.55%
Warren	1965	2018	54	32,000	2.06%
Washington	1965	2018	52	6,500	0.42%
Wayne	1965	2018	54	6,000	0.39%
Webster	1965	2018	54	37,500	2.42%
Whitley	1965	2017	49	500	0.03%
Wolfe	1965	2004	37	550	0.04%
Woodford	1965	2018	54	1,900	0.12%

Table A.2: NASS Soybeans Yield Data Completeness

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Ballard	1972	2017	45	46,900	2.76%
Caldwell	1972	2018	47	44,500	2.62%
Calloway	1972	2018	47	50,700	2.98%
Carlisle	1972	2018	46	35,500	2.09%
Christian	1972	2018	46	87,200	5.13%
Crittenden	1972	2018	45	24,100	1.42%
Daviess	1972	2018	47	86,200	5.07%
Fulton	1972	2017	46	53,200	3.13%
Graves	1972	2018	47	102,000	6.00%
Hancock	1972	2017	42	17,100	1.01%
Henderson	1972	2018	46	103,000	6.06%
Hickman	1972	2018	47	52,900	3.11%
Hopkins	1972	2013	41	40,000	2.35%
Livingston	1972	2017	42	29,200	1.72%
Logan	1972	2018	47	81,800	4.81%
Lyon	1972	2018	42	12,400	0.73%
Marshall	1972	2018	44	22,700	1.34%
Mccracken	1972	2014	42	21,800	1.28%
Mclean	1972	2018	46	57,100	3.36%
Muhlenberg	1972	2018	43	29,600	1.74%
Ohio	1972	2018	45	42,400	2.49%
Simpson	1972	2018	46	45,900	2.70%
Todd	1999	2018	20	52,800	3.11%
Trigg	1972	2018	47	25,900	1.52%

Table A.3: NASS Wheat Yield Data Completeness

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Adair	1972	2015	35	2,800	0.61%
Allen	1972	2009	34	1,400	0.30%
Anderson	1974	1980	4	1,500	0.33%
Ballard	1972	2018	46	15,100	3.28%
Barren	1972	2018	46	4,300	0.93%
Bath	1972	2016	10	500	0.11%
Boone	1972	2009	8	900	0.20%
Bourbon	1972	2018	45	1,400	0.30%
Boyle	1972	2012	30	1,300	0.28%
Bracken	1972	2008	19	800	0.17%
Breckinridge	1972	2017	45	1,900	0.41%
Bullitt	1972	2013	33	800	0.17%
Butler	1972	2008	36	1,200	0.26%
Caldwell	1972	2018	47	17,500	3.80%
Calloway	1972	2018	47	12,700	2.76%
Carlisle	1972	2018	46	7,300	1.59%
Carroll	1972	1976	5	800	0.17%
Casey	1972	2014	25	1,600	0.35%
Christian	1972	2018	47	59,000	12.83%
Clark	1972	2016	35	800	0.17%
Clinton	1974	2011	7	1,100	0.24%
Crittenden	1972	2016	44	4,400	0.96%
Cumberland	1974	1976	3	200	0.04%
Daviess	1972	2017	46	6,200	1.35%
Edmonson	1972	2013	26	1,400	0.30%
Fayette	1972	2017	43	1,100	0.24%
Fleming	1972	2018	39	1,200	0.26%
Franklin	1972	1996	6	3,000	0.65%
Fulton	1972	2018	47	9,700	2.11%
Gallatin	1972	2016	11	700	0.15%
Garrard	1972	2012	16	1,200	0.26%
Graves	1972	2018	46	26,400	5.74%
Grayson	1972	2017	41	2,000	0.43%
Green	1972	2015	33	1,900	0.41%
Greenup	1975	1976	2	200	0.04%
Hancock	1972	2010	37	600	0.13%
Hardin	1972	2018	47	3,300	0.72%
Harrison	1972	2015	38	700	0.15%
Hart	1972	2013	32	1,400	0.30%

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Table A.3: NASS Wheat Yield Data Completeness  
(cont.)

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Henderson	1972	2018	44	3,000	0.65%
Henry	1972	2018	43	1,200	0.26%
Hickman	1972	2018	47	14,200	3.09%
Hopkins	1972	2012	41	4,300	0.93%
Jefferson	1972	1996	25	1,200	0.26%
Jessamine	1972	2009	9	800	0.17%
Larue	1972	2017	42	3,800	0.83%
Lewis	1972	2000	10	3,100	0.67%
Lincoln	1972	2017	44	3,800	0.83%
Livingston	1972	2014	37	3,900	0.85%
Logan	1972	2018	47	53,500	11.63%
Lyon	1972	2012	37	3,600	0.78%
Madison	1972	1986	11	1,500	0.33%
Marion	1972	2014	41	6,700	1.46%
Marshall	1972	2015	40	6,800	1.48%
Mason	1972	2017	39	2,300	0.50%
Mccracken	1972	2018	42	5,500	1.20%
Mclean	1972	2018	46	4,500	0.98%
Meade	1972	2018	46	3,500	0.76%
Mercer	1972	2016	34	1,800	0.39%
Metcalfe	1972	2008	28	1,700	0.37%
Monroe	1972	2015	30	3,400	0.74%
Montgomery	1972	2011	11	700	0.15%
Muhlenberg	1972	2017	41	2,100	0.46%
Nelson	1972	2018	46	6,200	1.35%
Nicholas	1972	2013	12	800	0.17%
Ohio	1972	2016	41	1,800	0.39%
Oldham	1972	2016	44	600	0.13%
Owen	2000	2005	3	1,800	0.39%
Pendleton	2013	2013	1	600	0.13%
Pulaski	1972	2018	46	4,900	1.07%
Robertson	1974	1976	3	200	0.04%
Rockcastle	1975	1976	2	300	0.07%
Russell	1972	2014	35	1,300	0.28%
Scott	1972	2018	33	1,000	0.22%
Shelby	1972	2018	47	2,500	0.54%
Simpson	1972	2018	47	29,800	6.48%
Spencer	1972	2018	36	1,100	0.24%
Taylor	1972	2013	39	6,700	1.46%

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Table A.3: NASS Wheat Yield Data Completeness  
(cont.)

County	Min. Yr.	Max. Yr.	Count(n)	Acres	Prop. 2018 Acres
Todd	1972	2018	47	33,500	7.28%
Trigg	1972	2018	47	9,200	2.00%
Trimble	1972	2017	37	500	0.11%
Union	1972	2018	47	9,900	2.15%
Warren	1972	2018	46	17,500	3.80%
Washington	1972	2016	39	2,700	0.59%
Wayne	1972	2017	46	1,800	0.39%
Webster	1972	2015	38	2,400	0.52%
Woodford	1972	2016	33	500	0.11%

### Yield Distribution Differences

The following tables show the test statistics and p-values of the KS test run on the two treated SCO area-level yield datasets. Additionally, the tables present the mean, standard deviation, skewness and kurtosis that were calculated for these distributions.

Table A.4: Corn - NASS and RMA SCO Yield Distribution Comparison

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Adair	0.69	0.00	209.08	119.31	182.86	16.56	-2.29	11.41	226.66	78.47	154.35	32.26	0.23	3.97
Allen	0.30	0.24	172.90	132.83	149.34	11.07	0.50	2.38	223.46	104.65	155.28	29.96	0.26	2.72
Anderson	0.25	0.85	217.38	0.00	104.37	72.26	-0.07	1.77	254.88	0.00	116.29	76.95	0.11	2.18
Ballard	0.27	0.31	243.21	4.44	161.91	58.55	-1.49	5.02	197.45	51.87	163.00	31.33	-2.03	8.40
Barren	0.22	0.53	192.96	82.79	167.59	21.52	-2.32	11.71	190.92	94.46	169.04	18.55	-2.51	12.70
Bath	0.19	0.75	167.89	60.99	136.50	27.45	-1.36	4.55	182.08	62.59	141.11	29.17	-1.19	4.11
Boone	0.38	0.04	174.10	61.70	139.55	25.26	-1.36	5.25	184.38	74.50	154.55	25.79	-1.12	5.10
Bourbon	0.11	1.00	196.40	55.95	150.02	35.77	-1.37	4.24	199.99	63.01	150.57	33.33	-1.18	4.02
Boyle	0.27	0.31	239.40	96.12	174.85	37.61	-0.42	2.65	199.88	138.44	173.47	19.40	-0.46	2.03
Bracken	0.68	0.00	241.74	70.88	178.29	41.48	-1.25	4.47	175.80	145.70	160.91	6.96	0.34	4.23
Breathitt	1.00	0.10	139.69	138.20	138.70	0.86	1.73	-Inf	128.50	115.96	120.14	7.24	1.73	-Inf
Breckinridge	0.19	0.75	220.03	45.23	149.07	38.69	-0.70	3.72	206.71	60.76	150.04	27.73	-1.01	6.26
Bullitt	0.26	0.33	205.44	71.38	162.17	31.76	-1.17	4.15	246.94	57.36	155.78	43.27	-0.42	3.66
Butler	0.26	0.33	214.07	119.46	179.63	23.72	-0.89	3.14	205.12	117.52	168.21	24.36	-0.40	2.06
Caldwell	0.26	0.33	225.68	23.44	148.93	43.29	-1.27	5.57	184.35	71.76	157.14	22.43	-2.08	10.41
Calloway	0.20	0.71	190.50	7.41	129.05	49.83	-1.09	3.73	175.61	15.82	121.61	44.61	-0.87	3.20
Campbell	0.35	0.24	207.35	110.91	168.42	28.07	-0.33	2.15	224.52	86.91	151.51	33.23	-0.01	3.62
Carlisle	0.15	0.94	203.63	79.86	168.47	24.08	-1.89	9.07	203.90	72.08	166.92	27.60	-1.60	7.09
Carroll	0.52	0.01	175.02	129.76	156.32	12.95	-0.62	2.38	197.81	143.79	173.87	17.63	-0.25	1.73
Carter	0.50	0.01	188.03	138.65	172.05	11.82	-1.09	5.07	192.60	117.81	158.37	17.19	-0.26	3.68
Casey	0.69	0.00	198.45	115.45	178.31	15.34	-2.78	14.33	180.52	103.17	155.33	17.19	-0.94	5.04
Christian	0.26	0.33	311.67	20.84	165.26	77.68	-0.24	2.60	218.49	54.16	163.38	40.16	-0.89	3.71
Clark	0.15	0.94	197.65	67.33	148.60	35.20	-1.23	3.74	199.29	69.09	149.31	32.51	-1.01	3.81
Clay	0.31	0.43	199.58	60.80	138.15	43.11	-0.34	2.24	159.34	90.52	132.16	20.81	-0.69	2.75

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Table A.4: Corn - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Clinton	0.24	0.48	210.76	79.46	168.14	31.27	-1.10	4.43	228.79	88.09	171.78	36.50	-0.57	2.73
Crittenden	0.35	0.09	200.69	33.91	137.31	39.70	-0.89	3.86	181.90	55.89	152.29	27.72	-1.81	7.71
Cumberland	0.40	0.08	247.90	0.00	133.27	74.97	-0.87	2.85	194.01	136.11	167.11	16.94	-0.16	1.98
Davess	0.22	0.53	242.77	108.33	186.10	28.97	-0.71	3.98	224.05	103.22	178.37	25.06	-0.99	4.91
Edmonson	0.28	0.29	174.44	89.96	144.35	17.11	-1.16	6.29	170.81	87.74	139.82	19.59	-0.58	3.67
Estill	0.12	1.00	188.45	63.32	143.41	34.91	-1.18	3.56	195.54	69.62	143.93	33.51	-0.88	3.29
Fayette	0.22	0.53	221.98	56.04	155.53	42.71	-1.07	3.46	201.17	61.68	151.35	34.77	-1.19	3.96
Fleming	0.42	0.02	225.86	61.70	163.16	43.41	-1.05	3.35	231.56	59.54	149.14	41.62	-0.54	3.43
Franklin	0.35	0.17	706.20	0.00	185.10	167.46	1.79	7.33	225.58	44.99	145.99	49.03	-0.59	2.69
Fulton	0.31	0.17	195.90	84.05	160.03	24.27	-1.20	5.39	194.91	86.52	169.34	23.91	-1.75	7.46
Gallatin	0.29	0.36	193.98	129.66	164.70	17.51	-0.39	2.17	240.04	86.15	163.52	45.94	0.19	2.06
Garrard	0.24	0.48	199.49	68.23	159.51	30.40	-1.36	5.35	210.40	81.98	152.64	28.73	-0.75	4.00
Grant	0.22	0.78	233.96	43.78	155.51	44.47	-1.05	4.86	227.89	67.91	152.14	39.99	-0.59	3.63
Graves	0.19	0.73	190.86	49.68	153.61	29.35	-1.74	8.22	181.33	54.68	149.59	25.31	-2.13	10.16
Grayson	0.19	0.73	162.57	93.68	140.38	12.50	-2.01	10.32	161.17	90.77	139.12	15.30	-1.20	5.63
Green	0.56	0.00	201.13	97.25	177.16	19.87	-2.52	12.68	206.06	72.26	151.29	30.44	-0.31	3.60
Greenup	0.57	0.00	209.88	120.19	175.54	22.27	-0.78	3.42	197.39	39.64	144.83	33.80	-1.22	6.03
Hancock	0.23	0.50	260.16	99.87	185.10	34.61	-0.34	3.47	288.02	67.27	172.50	45.80	0.05	3.94
Hardin	0.15	0.94	249.67	40.24	158.21	41.94	-0.75	4.80	197.89	58.25	158.71	30.82	-1.39	5.97
Harrison	0.20	0.71	228.51	33.60	141.98	50.01	-0.89	3.34	311.64	0.00	146.84	65.77	-0.17	4.17
Hart	0.52	0.00	199.10	80.37	172.61	23.80	-2.26	10.93	300.18	36.97	152.07	56.50	0.63	4.44
Henderson	0.15	0.93	214.55	86.26	171.39	25.45	-1.39	6.97	222.33	76.57	168.05	28.52	-1.24	6.19
Henry	0.15	0.94	335.45	20.07	168.60	69.56	-0.28	3.90	308.83	28.16	163.90	61.49	-0.23	3.72
Hickman	0.22	0.53	212.61	75.80	169.49	29.37	-1.15	5.64	195.94	90.55	169.19	21.78	-1.87	8.41
Hopkins	0.26	0.42	209.49	51.44	133.48	41.13	-0.26	2.70	179.25	84.07	144.97	26.57	-0.79	2.57

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Table A.4: Corn - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Jefferson	0.35	0.17	179.66	95.91	144.58	17.44	-0.85	5.43	384.65	0.00	154.67	91.76	0.68	3.91
Jessamine	0.38	0.07	200.62	128.99	170.73	20.35	-0.64	2.97	182.40	121.89	158.48	17.75	-0.87	2.98
Kenton	0.33	0.73	215.74	0.00	114.39	73.04	-0.05	1.87	177.64	47.01	123.99	45.23	-0.45	1.89
Knox	0.19	0.73	195.33	76.71	149.26	33.10	-0.61	2.88	198.50	93.99	154.59	25.19	-0.72	3.06
Larue	0.26	0.42	224.87	61.86	149.15	46.52	-0.25	2.33	209.69	55.54	140.02	41.81	-0.20	2.56
Laurel	0.25	0.57	188.94	86.33	142.35	31.32	-0.27	2.15	173.17	88.49	135.66	24.19	-0.74	2.86
Lawrence	0.83	0.03	129.00	76.46	95.37	18.53	1.42	5.19	128.28	122.23	125.76	2.10	-0.76	3.95
Lewis	0.52	0.00	205.03	135.03	177.75	16.76	-0.54	3.28	208.83	44.80	152.14	31.26	-1.40	7.41
Lincoln	0.15	0.93	202.60	94.73	162.04	25.76	-0.81	3.94	218.39	91.40	158.85	30.03	-0.44	3.44
Livingston	0.32	0.16	183.82	1.81	121.69	49.33	-0.89	2.86	175.85	50.23	141.67	25.29	-2.08	9.30
Logan	0.22	0.53	228.07	65.26	165.05	45.28	-0.53	2.27	207.77	75.00	159.56	33.26	-0.49	2.87
Lyon	0.18	0.87	203.09	0.00	128.71	51.22	-0.98	3.84	176.18	16.57	119.43	45.72	-1.00	3.23
Mccracken	0.19	0.73	241.05	28.04	153.48	39.58	-0.99	6.38	191.05	48.85	152.24	28.92	-1.79	8.62
Mclean	0.15	0.93	213.65	110.76	176.34	28.65	-1.12	3.58	215.88	121.88	175.87	23.55	-0.71	3.17
Madison	0.23	0.50	204.37	67.78	148.69	36.85	-1.05	3.54	193.51	80.67	146.11	28.84	-0.87	3.41
Marion	0.37	0.05	210.01	94.49	169.79	26.57	-0.96	3.78	188.58	78.72	156.50	25.14	-1.01	4.95
Marshall	0.17	0.90	174.19	4.51	112.85	41.46	-0.68	3.92	207.65	0.00	116.66	54.84	-0.46	2.80
Mason	0.52	0.00	217.17	84.14	171.31	39.11	-1.12	3.28	188.00	88.12	155.09	22.83	-1.22	4.79
Meade	0.15	0.94	226.05	47.80	163.01	41.06	-1.06	4.49	223.83	63.03	163.59	36.31	-0.82	4.18
Menifee	1.00	0.03	124.96	124.28	124.67	0.31	-0.62	1.27	131.59	131.31	131.46	0.13	-0.35	-0.54
Mercer	0.12	1.00	203.06	58.04	156.40	36.37	-0.90	3.50	234.04	56.60	151.27	43.88	-0.42	2.67
Metcalfe	0.30	0.24	191.73	14.00	134.08	43.10	-1.29	4.35	207.70	115.00	159.43	24.34	0.01	2.31
Monroe	0.23	0.50	206.09	4.84	130.00	51.10	-0.91	2.93	194.99	51.64	150.10	30.98	-1.14	5.77
Montgomery	0.20	0.71	175.58	36.98	132.41	39.73	-1.29	3.87	202.85	41.27	137.72	41.60	-0.85	3.40
Morgan	0.50	0.10	135.47	60.17	113.00	19.03	-2.08	8.74	273.32	27.32	134.35	76.76	0.35	2.67

Continued on next page



Table A.4: Corn - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Muhlenberg	0.39	0.06	236.34	11.40	137.60	57.54	-0.72	2.97	176.45	53.40	123.43	34.51	-0.53	2.47
Nelson	0.12	0.99	216.34	59.65	151.18	41.44	-0.71	2.93	232.08	61.14	153.50	43.35	-0.40	3.04
Nicholas	0.10	1.00	288.81	0.00	126.37	72.88	-0.02	3.03	318.40	5.19	130.14	72.45	0.47	4.21
Ohio	0.37	0.05	234.34	121.70	188.68	29.10	-0.50	2.48	211.26	122.68	179.93	18.96	-0.84	4.73
Oldham	0.37	0.05	198.51	88.47	160.32	26.24	-0.89	3.58	173.73	108.74	154.04	14.25	-1.37	5.59
Owen	0.43	0.04	266.63	57.85	166.89	45.18	-0.72	4.86	230.83	64.16	149.86	41.41	-0.66	3.58
Pendleton	0.56	0.00	197.58	138.09	171.48	14.46	-0.43	2.83	206.72	68.41	148.77	37.66	-0.45	2.88
Powell	0.36	0.48	242.98	0.00	143.95	70.16	-0.72	3.90	180.38	41.08	130.69	40.76	-1.29	4.34
Pulaski	0.19	0.75	223.76	90.36	161.37	36.39	-0.22	2.41	226.50	92.90	162.29	29.74	-0.64	3.61
Robertson	0.56	0.13	80.66	38.55	60.33	13.48	-0.13	2.21	65.57	62.08	64.41	1.30	-0.81	2.19
Rockcastle	0.33	0.14	207.74	97.48	162.84	29.79	-0.37	2.51	191.15	95.39	148.46	24.82	-0.70	2.86
Rowan	0.39	0.06	151.73	74.45	117.85	20.51	-0.38	2.58	168.05	80.69	133.23	22.63	-0.67	3.39
Russell	0.48	0.00	199.75	99.31	170.63	20.66	-1.81	7.84	194.26	80.07	152.70	22.92	-1.01	5.64
Scott	0.23	0.50	218.02	56.76	159.59	40.42	-1.21	3.83	230.99	54.61	153.25	43.37	-1.06	3.72
Shelby	0.15	0.94	336.31	14.61	170.74	70.14	-0.32	3.90	275.17	42.52	166.60	53.86	-0.49	3.34
Simpson	0.19	0.75	298.27	0.00	154.77	73.35	-0.17	2.45	259.62	39.98	154.82	55.33	-0.18	2.38
Spencer	0.16	0.91	261.86	63.31	165.97	52.20	-0.26	2.60	289.42	69.15	168.14	48.80	-0.07	3.73
Taylor	0.46	0.01	226.64	57.33	181.65	36.03	-1.90	7.70	206.07	53.61	163.71	29.64	-1.94	9.90
Todd	0.19	0.75	230.07	75.19	168.47	39.92	-0.58	2.44	213.49	73.28	160.90	38.07	-0.48	2.31
Trigg	0.22	0.53	201.57	42.71	150.12	40.64	-0.80	3.40	231.07	24.55	150.19	54.34	-0.66	3.17
Trimble	0.30	0.24	179.99	89.27	136.39	23.48	-0.31	2.91	186.29	73.96	145.82	29.00	-0.95	3.41
Union	0.15	0.94	233.78	79.94	175.75	32.34	-0.96	4.79	235.13	75.08	172.68	31.03	-1.13	5.98
Warren	0.22	0.53	208.88	63.57	159.27	41.12	-0.74	2.84	237.43	67.26	167.34	38.42	-0.66	3.67
Washington	0.16	0.91	199.81	58.66	147.60	37.51	-0.75	2.90	216.86	67.21	151.94	40.51	-0.53	2.27
Wayne	0.30	0.19	214.27	86.60	179.23	28.76	-1.36	5.72	245.62	87.16	184.20	40.15	-0.64	2.88

Continued on next page

Table A.4: Corn - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Webster	0.22	0.53	216.99	50.06	156.43	37.12	-1.01	4.44	184.63	77.78	159.17	21.09	-2.39	10.96
Whitley	0.22	0.66	186.98	99.45	155.82	20.34	-0.89	4.38	209.42	90.67	152.67	30.20	-0.51	2.61
Wolfe	0.45	0.21	120.22	24.08	97.83	26.93	-2.30	9.38	139.37	71.45	112.77	18.04	-0.92	5.13
Woodford	0.19	0.75	231.28	65.09	159.00	38.54	-0.78	3.37	228.51	58.54	150.62	41.47	-0.81	3.18

Table A.5: Soybeans - NASS and RMA SCO Yield Distribution Comparison (bu/acre where relevant)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Ballard	0.19	0.73	55.18	29.36	46.71	7.41	-0.90	2.85	62.48	18.98	46.77	10.41	-0.92	3.81
Caldwell	0.56	0.00	50.06	22.88	43.65	7.23	-1.55	4.71	56.89	21.57	46.75	9.90	-1.15	3.33
Calloway	0.33	0.10	50.77	14.81	40.63	9.86	-1.44	4.48	48.31	16.71	39.03	8.19	-1.39	4.63
Carlisle	0.19	0.73	57.50	22.33	45.37	9.30	-1.07	3.32	73.27	4.10	45.48	14.10	-0.81	4.99
Christian	0.15	0.93	58.49	4.99	44.03	14.17	-1.78	5.86	58.65	9.28	44.95	12.37	-1.67	5.47
Crittenden	0.56	0.00	54.37	13.85	39.86	9.74	-1.22	4.02	56.66	23.27	45.82	8.63	-1.32	4.34
Daviess	0.30	0.19	76.68	22.80	56.79	11.10	-1.15	5.43	71.31	28.08	53.87	9.07	-0.78	4.22
Fulton	0.37	0.05	54.58	35.28	46.70	5.39	-0.75	2.74	70.39	25.92	48.68	10.92	-0.37	2.75
Graves	0.26	0.33	56.07	21.12	44.54	9.10	-1.11	3.79	70.75	0.00	45.00	15.19	-1.27	5.10
Hancock	0.17	0.89	62.31	27.34	52.21	8.10	-1.44	5.74	71.87	2.02	50.60	13.82	-1.89	9.40
Henderson	0.23	0.50	86.89	29.69	55.13	11.79	0.06	4.40	79.87	31.34	53.51	10.60	-0.11	3.73
Hickman	0.15	0.94	66.10	11.71	47.53	12.89	-1.12	4.22	63.79	13.62	46.22	11.50	-1.08	4.34
Hopkins	0.18	0.87	56.48	20.88	45.14	10.49	-1.01	3.06	73.00	26.41	45.34	11.82	0.23	2.83
Livingston	0.22	0.66	52.22	0.71	38.21	13.96	-1.45	4.39	63.09	8.80	41.67	13.84	-0.68	2.89
Logan	0.33	0.10	56.10	15.56	46.06	10.71	-1.57	5.48	55.37	15.35	44.20	10.10	-1.73	6.23
Lyon	0.32	0.22	52.51	19.99	42.00	8.70	-0.93	3.25	48.77	16.43	38.75	8.63	-1.08	3.70
McCracken	0.13	0.99	62.74	0.00	37.33	14.09	-0.66	3.90	56.59	6.96	36.57	11.66	-0.71	3.41
McLean	0.42	0.02	69.49	30.21	53.34	9.83	-1.01	3.98	57.39	38.15	50.85	4.75	-1.12	3.85
Marshall	0.21	0.69	49.71	10.10	36.34	10.49	-1.10	3.77	54.23	2.59	36.94	13.19	-1.17	4.21
Muhlenberg	0.22	0.66	61.57	10.14	43.99	12.82	-0.95	3.76	95.20	0.00	43.08	21.41	0.05	3.49
Ohio	0.48	0.01	68.39	35.37	57.65	7.56	-1.12	4.72	62.98	44.37	53.11	5.45	-0.17	1.84
Simpson	0.12	1.00	55.92	4.22	41.87	14.15	-1.37	4.70	58.48	6.02	42.83	13.66	-1.19	4.34
Todd	0.16	0.98	56.03	40.85	51.51	4.19	-1.49	4.69	55.01	45.36	52.11	2.69	-1.51	4.86
Trigg	0.11	1.00	57.19	8.84	43.05	12.13	-1.36	4.48	57.19	12.73	43.77	11.50	-1.40	4.45

Table A.6: Wheat - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Adair	0.44	0.09	92.93	59.57	75.55	8.93	0.04	2.81	75.28	58.29	69.05	5.06	-0.90	2.80
Allen	0.33	0.39	82.87	34.58	66.07	12.34	-1.16	4.83	97.66	0.00	70.06	25.24	-1.51	6.38
Ballard	0.35	0.09	85.86	48.23	70.52	7.81	-0.88	4.81	83.79	54.64	68.47	6.68	0.10	3.36
Barren	0.15	0.93	108.67	53.44	81.50	10.95	-0.12	4.34	106.82	50.87	82.13	12.68	-0.38	3.38
Bourbon	0.44	0.01	77.40	54.50	67.92	7.38	-0.39	1.90	69.29	60.61	65.57	2.32	-0.21	2.85
Boyle	0.91	0.00	94.57	56.34	78.31	10.69	-0.41	3.51	69.67	56.79	65.49	3.77	-1.22	4.75
Breckinridge	0.46	0.01	81.24	57.26	68.29	5.59	0.38	3.46	78.11	64.90	72.00	3.30	-0.26	2.31
Bullitt	0.43	0.15	81.98	54.19	71.00	8.82	-0.52	2.38	73.97	54.59	65.56	5.27	-0.48	2.96
Butler	0.35	0.24	93.39	71.03	82.48	4.60	-0.15	5.94	91.32	71.11	83.74	6.10	-0.82	2.63
Caldwell	0.48	0.00	93.34	54.82	80.58	9.43	-1.43	5.08	97.77	79.57	87.61	3.83	0.47	4.06
Calloway	0.15	0.94	87.46	45.11	68.40	10.72	-0.69	2.94	85.55	37.77	67.08	11.53	-0.87	3.86
Carlisle	0.23	0.50	98.58	31.84	69.70	15.85	-0.45	3.09	87.87	49.13	71.86	8.31	-0.38	4.54
Christian	0.15	0.94	92.91	50.50	82.86	9.68	-1.56	6.48	92.99	68.16	84.44	6.25	-0.77	3.38
Clark	0.38	0.21	72.71	52.90	63.18	6.05	-0.01	2.01	68.08	59.12	63.60	2.40	-0.07	3.26
Crittenden	0.20	0.71	88.54	57.28	75.66	8.86	-0.79	2.83	87.06	67.06	77.47	5.44	-0.43	2.45
Davess	0.81	0.00	85.73	54.73	72.78	5.76	-0.72	5.97	88.59	76.62	82.60	3.37	-0.35	1.99
Edmonson	0.27	0.83	98.68	67.50	82.07	9.57	0.24	2.21	91.56	60.30	81.59	10.24	-1.26	3.83
Fayette	0.42	0.03	78.10	54.79	68.29	7.03	-0.32	2.06	69.37	58.74	64.51	3.05	-0.04	2.47
Fleming	0.37	0.15	79.68	49.90	65.92	8.99	-0.20	2.03	71.07	54.70	64.05	4.42	-0.35	3.11
Fulton	0.22	0.53	91.85	46.75	71.18	10.39	-0.24	2.89	90.16	54.68	73.87	8.04	-0.22	3.27
Graves	0.12	1.00	84.46	52.01	73.49	8.72	-0.96	3.53	88.47	46.44	73.99	9.91	-1.22	4.61
Grayson	0.50	0.01	75.59	55.11	65.18	4.20	0.17	4.78	72.54	63.24	68.16	2.99	-0.25	1.83
Green	0.43	0.15	83.53	61.88	73.44	6.31	0.07	2.63	74.86	60.63	69.55	4.02	-0.78	3.30
Hancock	0.50	0.02	74.82	64.91	69.87	2.91	-0.11	1.92	80.71	66.45	73.28	4.05	-0.24	2.18

Continued on next page

Table A.6: Wheat - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Hardin	0.22	0.53	81.10	59.09	72.15	6.11	-0.61	2.71	77.12	66.92	72.76	3.04	-0.37	1.84
Harrison	0.47	0.03	72.86	48.51	62.36	6.86	-0.19	2.31	67.46	59.14	63.55	2.20	0.20	2.78
Hart	0.31	0.59	85.46	56.92	71.78	7.61	0.07	3.24	75.10	62.52	69.13	3.68	-0.17	2.35
Henderson	0.25	0.45	89.55	52.46	71.20	8.79	-0.35	2.95	81.00	65.81	74.48	4.03	-0.45	2.53
Henry	0.39	0.06	85.05	54.46	69.74	8.57	0.09	2.17	72.07	60.67	66.42	3.00	0.20	2.55
Hickman	0.48	0.00	91.12	66.24	78.89	5.99	-0.22	2.99	87.23	61.52	74.88	6.18	-0.63	3.71
Hopkins	0.68	0.00	71.79	22.69	51.70	11.47	-0.65	3.80	75.73	58.12	66.03	4.52	0.27	2.79
Jefferson	0.33	0.93	68.44	53.48	60.97	6.54	0.18	0.63	63.90	53.22	59.14	3.63	-0.64	3.89
Larue	0.26	0.42	83.48	62.67	74.86	5.60	-0.54	2.92	78.70	68.16	74.25	2.91	-0.42	2.39
Lewis	0.75	0.23	64.49	41.66	58.09	10.99	-1.97	6.89	53.76	50.45	52.34	1.59	-0.43	-0.40
Livingston	0.56	0.01	75.87	27.14	52.98	14.48	-0.12	2.29	71.26	51.89	63.97	5.51	-0.97	3.54
Logan	0.15	0.94	97.43	29.10	77.00	14.22	-1.64	6.87	91.36	59.72	79.10	8.73	-0.74	2.91
Lyon	0.22	0.78	90.59	65.61	81.29	7.68	-0.53	2.30	95.82	61.84	79.75	8.25	-0.12	3.27
Mccracken	0.36	0.11	122.67	27.73	72.32	19.72	0.18	4.63	85.18	69.10	75.53	4.08	0.48	3.19
Mclean	0.54	0.00	87.45	24.92	65.00	15.99	-0.69	3.01	79.83	69.00	73.57	2.87	0.21	2.32
Marion	0.73	0.00	89.06	65.00	79.10	6.41	-0.38	2.84	77.52	64.08	71.73	3.50	-0.39	2.57
Marshall	0.29	0.36	74.12	51.95	66.56	5.25	-1.13	4.99	74.76	58.56	67.58	4.21	-0.59	2.85
Mason	0.20	0.83	75.40	51.53	67.02	6.76	-1.16	3.74	78.88	48.52	66.83	7.78	-0.69	3.29
Meade	0.42	0.02	79.80	55.04	70.35	7.41	-0.69	2.58	79.53	68.76	73.94	2.81	0.08	2.28
Mercer	0.93	0.00	84.48	74.95	81.12	2.26	-1.27	6.21	78.49	62.53	73.15	5.15	-1.05	2.83
Montgomery	0.50	0.47	69.81	49.95	59.57	7.09	0.23	2.51	77.28	36.11	54.66	15.80	0.30	1.88
Muhlenberg	0.36	0.11	75.04	47.90	63.86	7.71	-0.59	2.75	84.34	53.58	70.07	7.30	-0.27	2.84
Nelson	0.54	0.00	83.93	68.46	77.78	3.61	-1.01	4.27	78.03	69.15	74.38	2.72	-0.53	2.30
Nicholas	0.50	0.47	72.30	46.91	61.38	10.91	-0.24	0.55	85.62	44.67	56.79	15.51	1.65	5.62
Ohio	0.41	0.05	86.15	21.60	66.69	15.43	-1.27	5.13	83.22	59.51	71.33	6.01	-0.27	2.62

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Table A.6: Wheat - NASS and RMA SCO Yield Distribution  
Comparison (bu/acre where relevant) (cont.)

County	KS Test		RMA Published SCO Area-level Yields					NASS Generated SCO Area-level Yields						
	Stat.	P-Val.	Max.	Min.	Mean	SD	Skew.	Kurt.	Max.	Min.	Mean	SD	Skew.	Kurt.
Oldham	0.36	0.08	83.00	51.76	68.61	7.98	-0.17	2.47	74.27	62.94	68.96	3.31	-0.03	2.05
Pulaski	0.62	0.00	111.28	26.76	80.45	18.62	-0.91	4.50	80.48	51.33	68.00	6.39	-0.47	3.71
Russell	0.75	0.00	105.19	32.98	78.47	17.37	-1.10	5.15	72.09	68.11	69.94	1.09	-0.28	3.03
Scott	0.54	0.04	80.64	48.31	60.37	9.33	0.79	3.18	69.08	61.23	64.62	2.50	0.54	2.10
Shelby	0.33	0.10	81.76	56.11	71.12	6.80	-0.56	3.02	76.69	67.02	72.22	2.65	-0.29	2.23
Simpson	0.15	0.94	90.21	33.14	74.48	14.20	-1.26	4.33	94.84	48.78	77.73	11.96	-0.76	2.98
Spencer	0.44	0.06	88.24	56.79	73.22	8.87	-0.06	2.05	76.72	57.28	67.73	6.09	-0.07	2.31
Taylor	1.00	0.00	94.78	73.42	83.60	6.10	0.20	2.27	73.12	66.51	70.17	1.97	-0.24	2.38
Todd	0.26	0.33	94.26	32.13	78.83	12.71	-2.00	9.00	87.26	61.78	78.67	6.00	-0.91	3.82
Trigg	0.30	0.19	87.27	63.77	79.22	6.65	-0.79	2.92	99.02	53.09	81.66	9.79	-0.75	4.45
Trimble	0.33	0.28	79.73	53.16	68.08	7.84	-0.37	2.26	83.19	36.51	65.64	10.44	-0.87	5.71
Union	0.37	0.05	96.85	64.89	82.79	8.39	-0.76	2.99	90.95	65.82	79.34	6.80	-0.59	2.49
Warren	0.23	0.50	124.24	29.70	78.41	18.31	-0.31	4.79	97.36	58.94	82.90	9.70	-0.73	3.25
Washington	0.80	0.00	89.82	69.58	81.42	5.08	-0.27	2.96	77.50	62.32	71.04	4.47	-0.37	2.33
Wayne	0.63	0.00	103.64	37.62	80.58	15.52	-0.90	4.03	83.40	42.11	68.13	8.45	-0.91	5.42
Webster	0.95	0.00	68.86	46.11	60.37	5.84	-0.88	3.76	83.33	68.44	75.30	4.00	-0.04	2.43
Woodford	0.35	0.24	79.13	55.25	67.53	7.01	-0.16	2.15	71.37	60.32	66.78	3.32	-0.15	2.15

## Appendix B Accounting for Trend in Yields

### B.1 RMA Trend: Linear-Spline Knots

Table B.1: RMA Trend - Approximate trend for each section  
RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ).

County	Corn	Wheat	Soybean
Adair	1991-2017: 3.68	1991-2017: 0.75	1991-2017: 1.3
Allen	1991-2017: 1.53	1991-2003: -0.4 2003-2017: 0.44	1991-2017: 0.55
Anderson	1991-2017: 2.23	1991-2001: -1.39 2001-2017: 0.53	No SCO
Ballard	1991-2017: 2.22	1991-2017: 0.57	1991-2017: 0.92
Barren	1991-2017: 2.67	1991-2017: 0.58	1991-2017: 0.68
Bath	1991-2017: 1.75	1991-2017: 0.32	No SCO
Boone	1991-2017: 0.9	1991-2007: -0.38 2007-2017: 0.57	No SCO
Bourbon	1991-2006: 0.21 2006-2017: 3.05	1991-2005: -1 2005-2017: 0.77	1991-2017: 0.82
Boyd	1991-2003: -1.12 2003-2017: 3.54	No SCO	No SCO
Boyle	1991-2017: 2.33	1991-2017: 0.4	1991-2017: 1.1
Bracken	1991-2017: 3.2	No SCO	No SCO
Breathitt	1991-2001: 0.07 2001-2017: 2.67	No SCO	No SCO
Breckinridge	1991-2017: 1.95	1991-2017: 0.38	1991-2017: 0.79
Bullitt	1991-2017: 2.1	1991-2001: -1.35 2001-2017: 0.57	1991-2017: 0.87
Butler	1991-2006: 4.69 2006-2017: 0.61	1991-2017: 0.57	1991-2017: 0.58
Caldwell	1991-2017: 1.73	1991-2017: 0.2	1991-2017: 1.03
Calloway	1991-2017: 1.45	1991-2017: 0.22	1991-2017: 0.94
Campbell	1991-2005: -0.07 2005-2017: 2.91	No SCO	No SCO
Carlisle	1991-2017: 2.28	1991-2017: 0.48	1991-2017: 1.06
Carroll	1991-2017: 1.38	1991-2017: 0	No SCO
Carter	1991-2002: -0.9 2002-2017: 3.48	No SCO	No SCO
Casey	1991-2017: 3.27	1991-2007: -0.17 2007-2017: 0.12	No SCO
Christian	1991-2017: 1.03	1991-2017: 0.33	1991-2017: 0.95

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Table B.1: RMA Trend - Approximate trend for each section  
RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ).

<b>County</b>	<b>Corn</b>	<b>Wheat</b>	<b>Soybean</b>
Clark	1991-2017: 2.03	1991-2006: -0.78 2006-2017: 0.93	1991-2017: 0.82
Clay	1991-2017: 2.14	No SCO	No SCO
Clinton	1991-2017: 2.34	1991-2008: 0.07 2008-2017: 0.88	No SCO
Crittenden	1991-2017: 1.68	1991-2007: -0.14 2007-2017: 0.19	1991-2017: 0.92
Cumberland	1991-2017: 2.01	1991-2017: 0.6	No SCO
Daviess	1991-2017: 2.57	1991-2017: 0.65	1991-2017: 0.52
Edmonson	1991-2017: 1.87	1991-2000: -0.33 2000-2017: 0.36	1991-2017: 0.5
Estill	1991-2005: -0.09 2005-2017: 3.05	No SCO	No SCO
Fayette	1991-2002: -1.73 2002-2017: 3.06	1991-2000: -1.76 2000-2017: 0.66	1991-2017: 0.82
Fleming	1991-2017: 2.78	1991-2017: 0.55	1991-2017: 0.82
Franklin	1991-2017: 2.43	1991-2000: -1.39 2000-2017: 0.63	1991-2017: 0.74
Fulton	1991-2017: 1.73	1991-2017: 0.32	1991-2017: 0.86
Gallatin	1991-2017: 1.26	1991-2017: 0	No SCO
Garrard	1991-2001: -0.91 2001-2017: 2.74	No SCO	No SCO
Grant	1991-2017: 2.22	No SCO	No SCO
Graves	1991-2017: 1.78	1991-2017: 0.33	1991-2017: 1.17
Grayson	1991-2017: 1.98	1991-2017: 0.19	1991-2017: 0.8
Green	1991-2004: 6.08 2004-2017: 2.41	1991-2017: 0.55	1991-2017: 1
Greenup	1991-2002: -1.23 2002-2017: 3.43	1991-2017: 0.62	No SCO
Hancock	1991-2017: 2.78	1991-2017: 0.68	1991-2017: 0.63
Hardin	1991-2017: 2.09	1991-2017: 0.35	1991-2017: 0.95
Harrison	1991-2005: 0.94 2005-2017: 2.74	1991-2002: -1.1 2002-2017: 0.59	1991-2017: 0.82
Hart	1991-2017: 3.21	1991-2017: 0.37	1991-2017: 0.95
Henderson	1991-2017: 2.26	1991-2000: -0.19 2000-2017: 0.74	1991-2017: 0.9
Henry	1991-2017: 2.36	1991-2002: -1.07 2002-2017: 0.66	1991-2017: 0.79
Hickman	1991-2017: 2.02	1991-2017: 0.5	1991-2017: 1.22

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Table B.1: RMA Trend - Approximate trend for each section  
RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ).

<b>County</b>	<b>Corn</b>	<b>Wheat</b>	<b>Soybean</b>
Hopkins	1991-2000: -1.29 2000-2017: 2.36	1991-2017: 0.64	1991-2006: -0.38 2006-2017: 0.53
Jefferson	1991-2017: 1.77	1991-2003: -1.05 2003-2017: 0.71	1991-2017: 0.78
Jessamine	1991-2004: -1.14 2004-2017: 2.7	1991-2000: -1.66 2000-2017: 0.54	No SCO
Kenton	1991-2017: 0.91	No SCO	No SCO
Knox	1991-2017: 2.15	No SCO	No SCO
Larue	1991-2017: 2.23	1991-2017: 0.63	1991-2017: 0.97
Laurel	1991-2000: -0.71 2000-2017: 2.71	No SCO	No SCO
Lawrence	1991-2003: -0.4 2003-2017: 3.27	No SCO	No SCO
Lewis	1991-2005: 1.53 2005-2017: 3.41	1991-2017: 0.7	1991-2017: 0.67
Lincoln	1991-2017: 2.26	1991-2005: -0.48 2005-2017: 0.78	No SCO
Livingston	1991-2017: 1.71	1991-2017: 0.42	1991-2006: -0.12 2006-2017: 0.83
Logan	1991-2017: 0	1991-2017: 0.31	1991-2017: 0.64
Lyon	1991-2017: 1.75	1991-2017: 0.59	1991-2017: 1.12
Mccracken	1991-2006: 4.25 2006-2017: 1.74	1991-2017: 0.3	1991-2007: -0.15 2007-2017: 0.9
Mclean	1991-2017: 1.97	1991-2007: 0.29 2007-2017: 0.77	1991-2017: 0
Madison	1991-2006: -0.11 2006-2017: 3.31	1991-2000: -1.44 2000-2017: 0.55	No SCO
Marion	1991-2017: 2.27	1991-2017: 0.38	1991-2017: 1.14
Marshall	1991-2017: 1.09	1991-2017: 0.4	1991-2017: 0.7
Mason	1991-2017: 3.07	1991-2005: -0.58 2005-2017: 0.69	1991-2017: 0.6
Meade	1991-2017: 2.4	1991-2007: -0.26 2007-2017: 0.57	1991-2017: 0.85
Menifee	1991-2008: 0.73 2008-2017: 2.22	No SCO	No SCO
Mercer	1991-2017: 2.18	1991-2017: 0.32	1991-2017: 1
Metcalfe	1991-2017: 2.3	1991-2000: -0.84 2000-2017: 0.61	No SCO
Monroe	1991-2017: 2.05	1991-2017: 0.74	No SCO

Continued on next page

Table B.1: RMA Trend - Approximate trend for each section  
RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ).

<b>County</b>	<b>Corn</b>	<b>Wheat</b>	<b>Soybean</b>
Montgomery	1991-2003: -1.1 2003-2017: 2.41	1991-2006: -0.88 2006-2017: 0.78	1991-2017: 0.82
Morgan	1991-2017: 1.17	No SCO	No SCO
Muhlenberg	1991-2017: 1.89	1991-2017: 0.5	1991-2017: 0
Nelson	1991-2017: 2.2	1991-2000: -0.8 2000-2017: 0.52	1991-2017: 1.01
Nicholas	1991-2006: 0.38 2006-2017: 2.47	No SCO	1991-2017: 0.82
Ohio	1991-2017: 2.59	1991-2017: 0.77	1991-2017: 0
Oldham	1991-2017: 1.68	1991-2003: -0.47 2003-2017: 0.36	1991-2017: 0.85
Owen	1991-2017: 2.6	1991-2001: -1.06 2001-2017: 0.56	No SCO
Pendleton	1991-2007: 0.46 2007-2017: 2.87	1991-2007: -0.32 2007-2017: 0.75	No SCO
Powell	1991-2006: -0.02 2006-2017: 2.07	1991-2004: -0.67 2004-2017: 0.75	No SCO
Pulaski	1991-2017: 2.25	1991-2007: -0.25 2007-2017: 0.51	1991-2017: 1.34
Robertson	1991-2017: 3.08	No SCO	No SCO
Rockcastle	1991-2017: 2.42	No SCO	No SCO
Rowan	1991-2017: 1.24	1991-2017: 0.4	No SCO
Russell	1991-2017: 2.99	1991-2017: 0.55	1991-2017: 1.34
Scott	1991-2005: 0.46 2005-2017: 2.97	1991-2006: -0.67 2006-2017: 0.75	1991-1995: 0.35 1995-2017: 0.4
Shelby	1991-2017: 2.43	1991-2000: -1.17 2000-2017: 0.85	1991-2017: 0.8
Simpson	1991-2017: 0	1991-2017: 0	1991-2017: 0.62
Spencer	1991-2017: 2.07	1991-2004: -1.08 2004-2017: 0.74	1991-2017: 1.03
Taylor	1991-2005: 6.45 2005-2017: 1.61	1991-2017: 0.51	1991-2017: 1.12
Todd	1991-2017: 1.26	1991-2017: 0.52	1991-2017: 0.7
Trigg	1991-2017: 0.97	1991-2017: 0.34	1991-2017: 0.74
Trimble	1991-2008: 0.17 2008-2017: 1.64	1991-2001: -1.44 2001-2017: 0.65	1991-2017: 0.78
Union	1991-2017: 2.02	1991-2001: -0.35 2001-2017: 0.72	1991-2006: 0.18 2006-2017: 1.13
Warren	1991-2017: 0	1991-2017: 0.4	1991-2017: 0.53

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Table B.1: RMA Trend - Approximate trend for each section  
RMA fit spline calculated in units of ( $\frac{bu.}{acre}/year$ ).

County	Corn	Wheat	Soybean
Washington	1991-2017: 2.2	1991-1999: 0.4 1999-2017: 0.38	1991-2017: 1.15
Wayne	1991-2017: 2.33	1991-2017: 0.58	1991-2017: 1.34
Webster	1991-2017: 1.55	1991-2017: 0.5	1991-2017: 0
Whitley	1991-2017: 2.01	No SCO	No SCO
Wolfe	1991-2007: 0.37 2007-2017: 1.95	No SCO	No SCO
Woodford	1991-2003: -1.02 2003-2017: 2.82	1991-2001: -1.46 2001-2017: 0.69	1991-2017: 0.86

## B.2 RMA Trend: Plots

The following plots show the trends estimated – and published – by RMA. The blue line labelled “Yield” is RMA’s actual observed data, the black “Trend” line is RMA’s fit trend and the orange “Detrended” line is the observed yield data with RMA’s fitted trend removed. All counties included in this study have plots, however, not all counties represented have SCO availability for all three crops.

Figure B.1: RMA estimated trends for Adair County

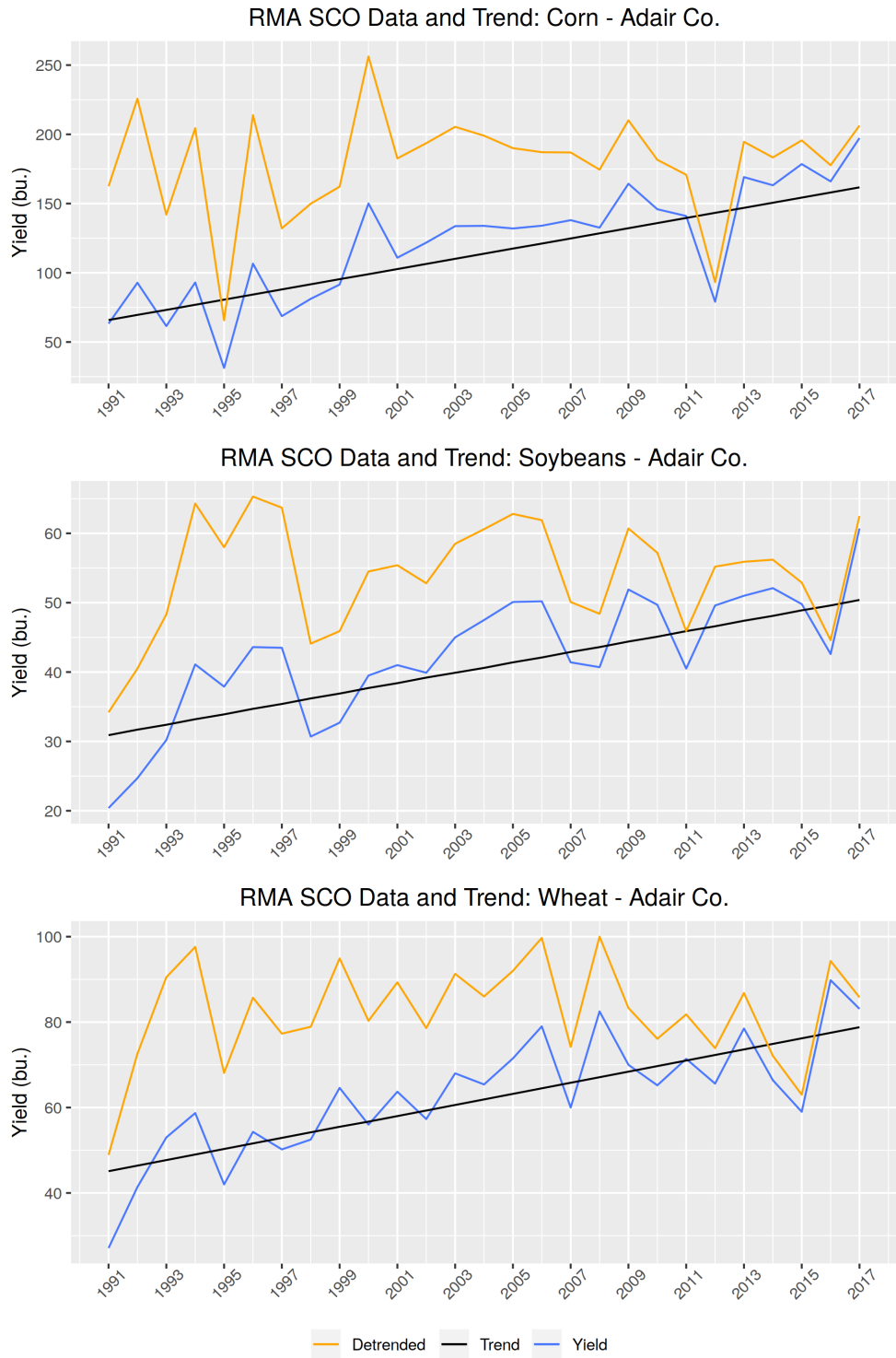


Figure B.2: RMA estimated trends for Allen County

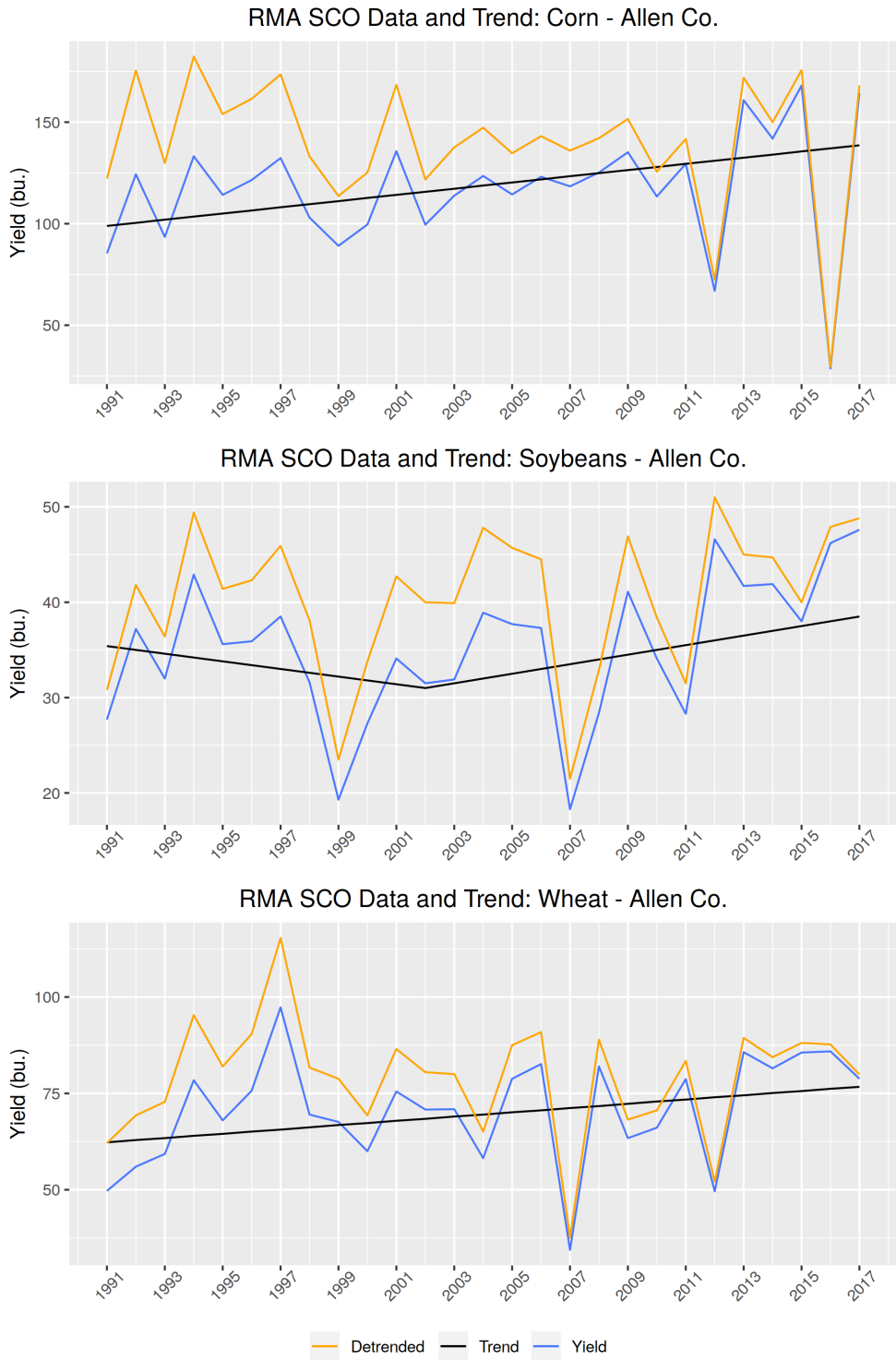


Figure B.3: RMA estimated trends for Anderson County

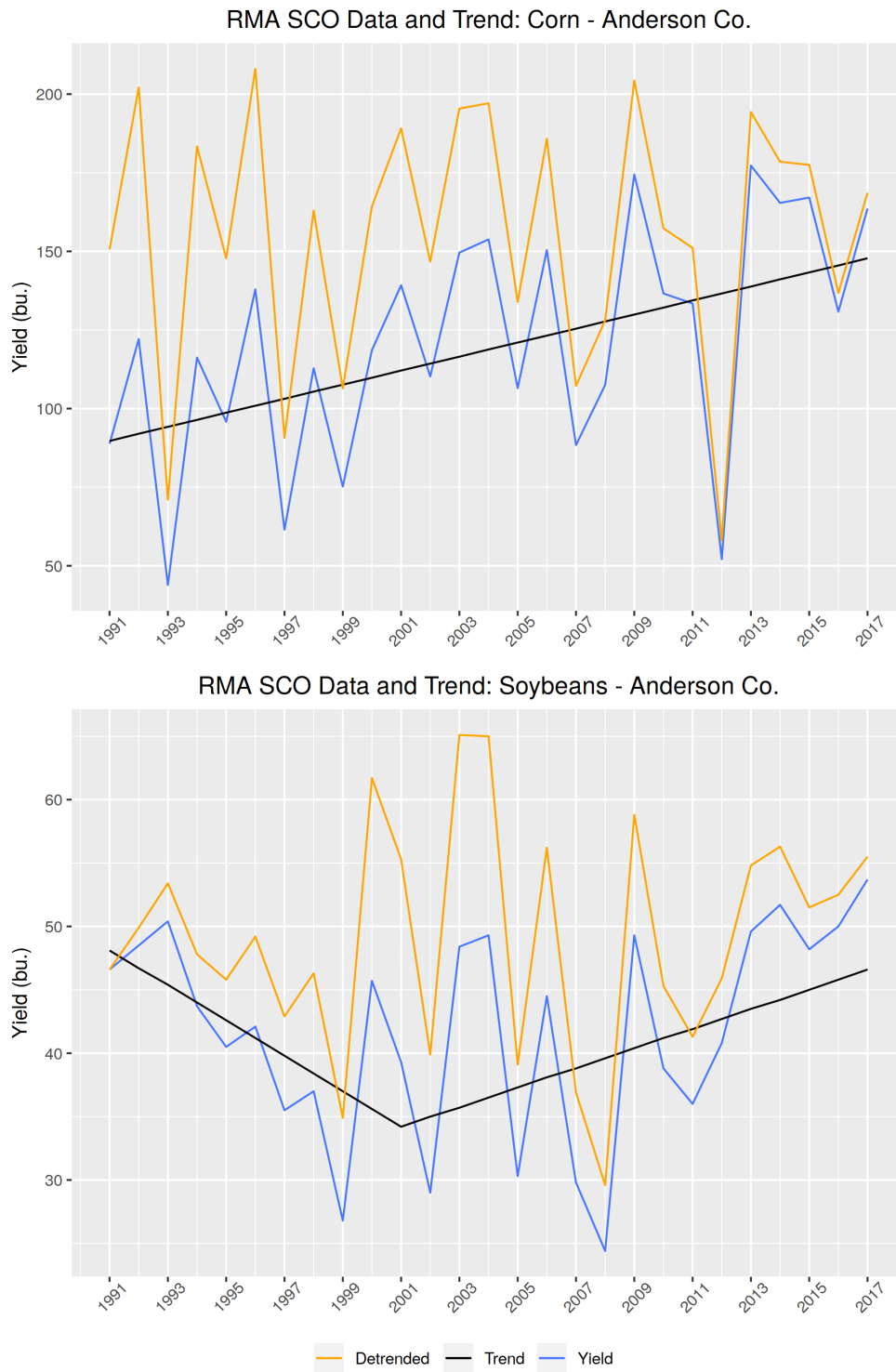


Figure B.4: RMA estimated trends for Ballard County

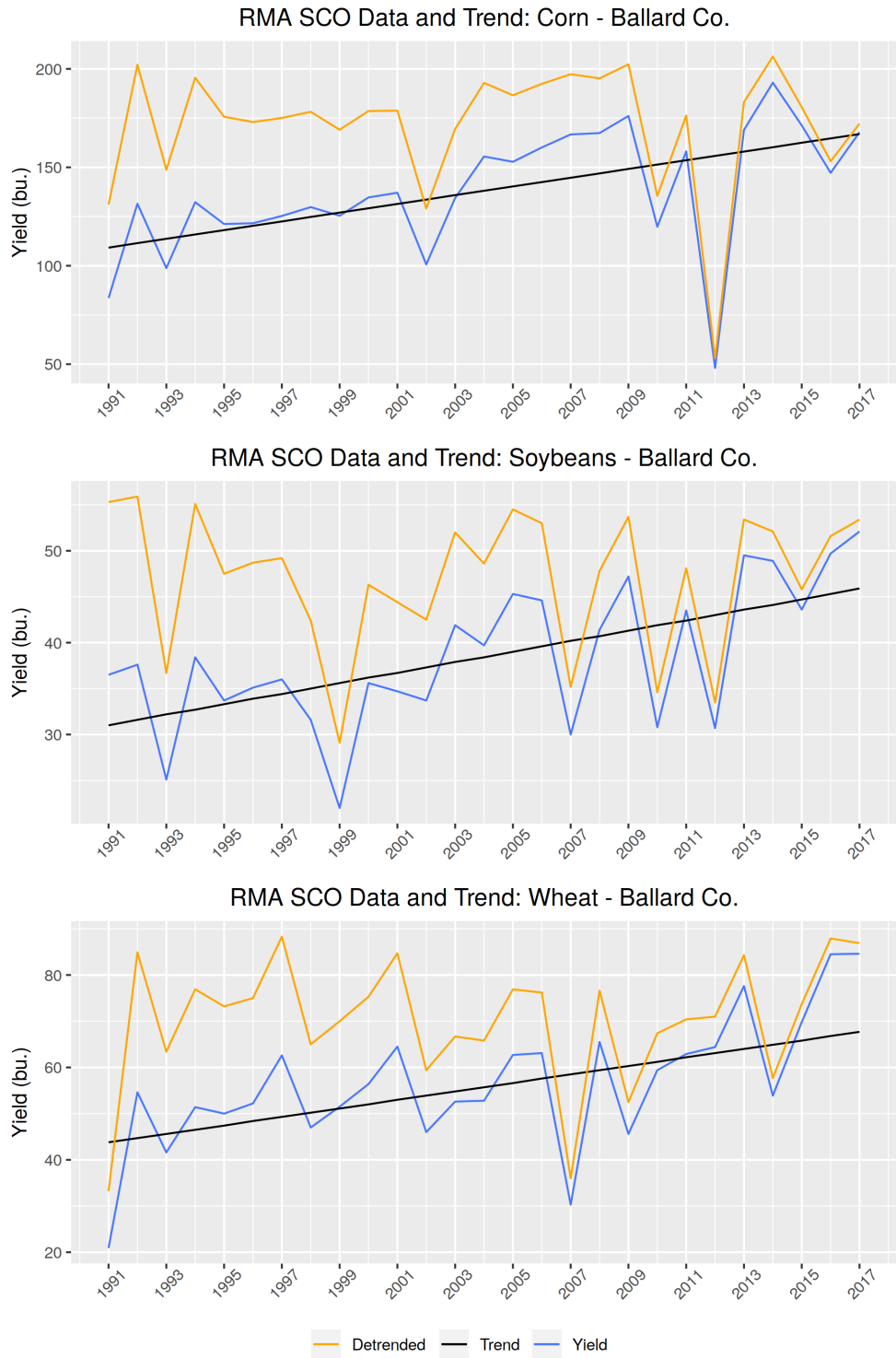


Figure B.5: RMA estimated trends for Barren County





Figure B.6: RMA estimated trends for Bath County

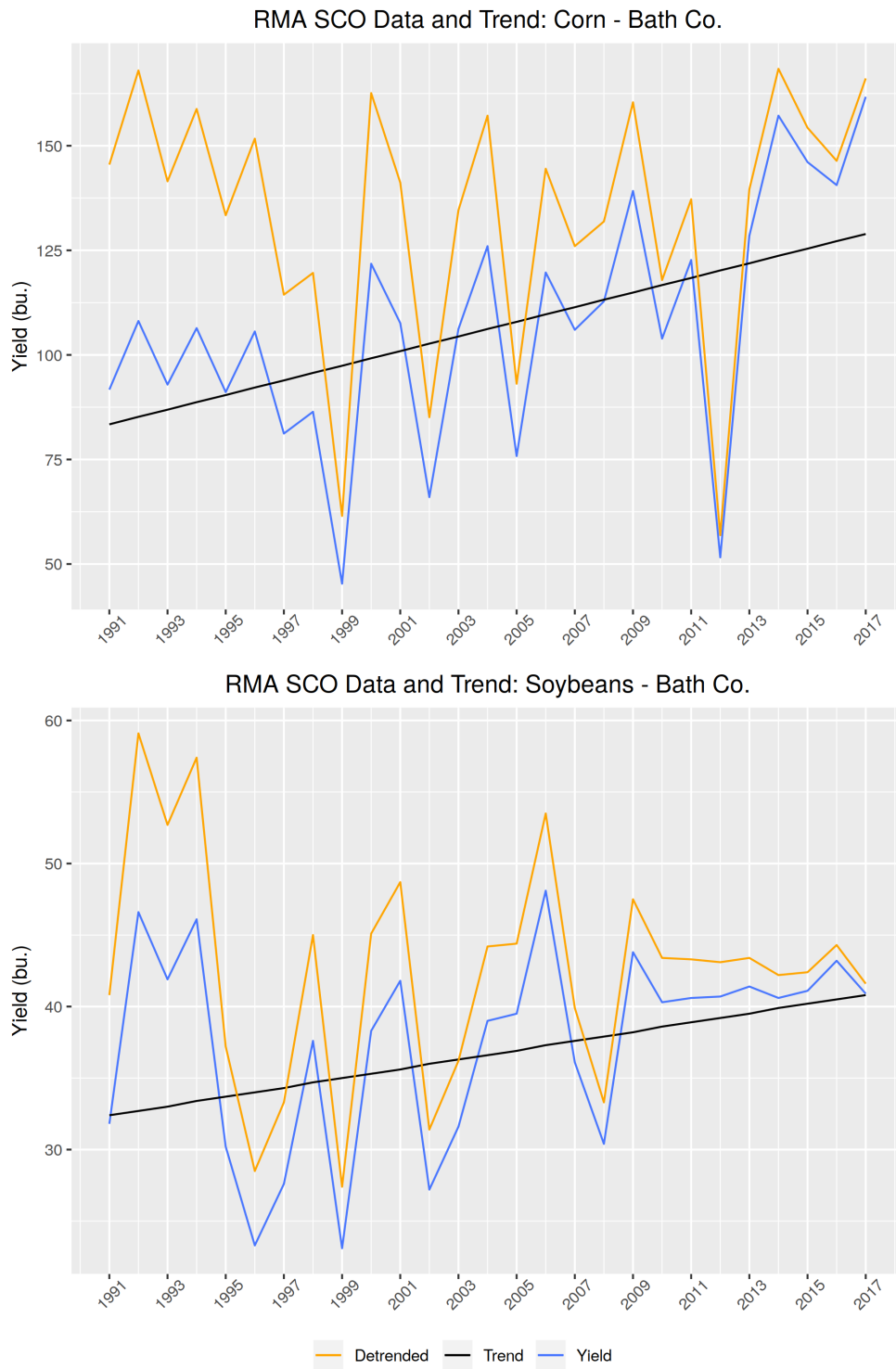


Figure B.7: RMA estimated trends for Boone County

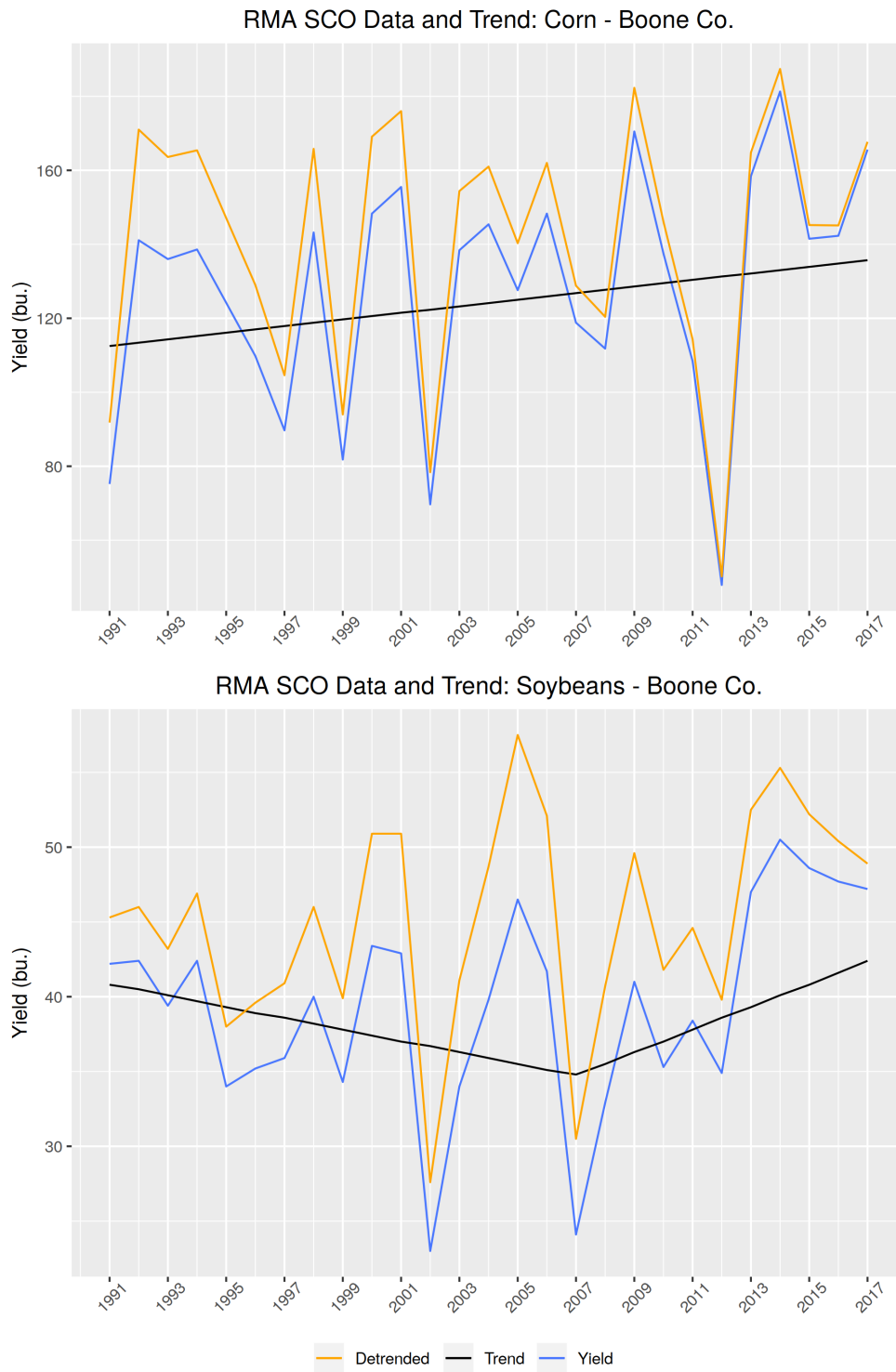


Figure B.8: RMA estimated trends for Bourbon County

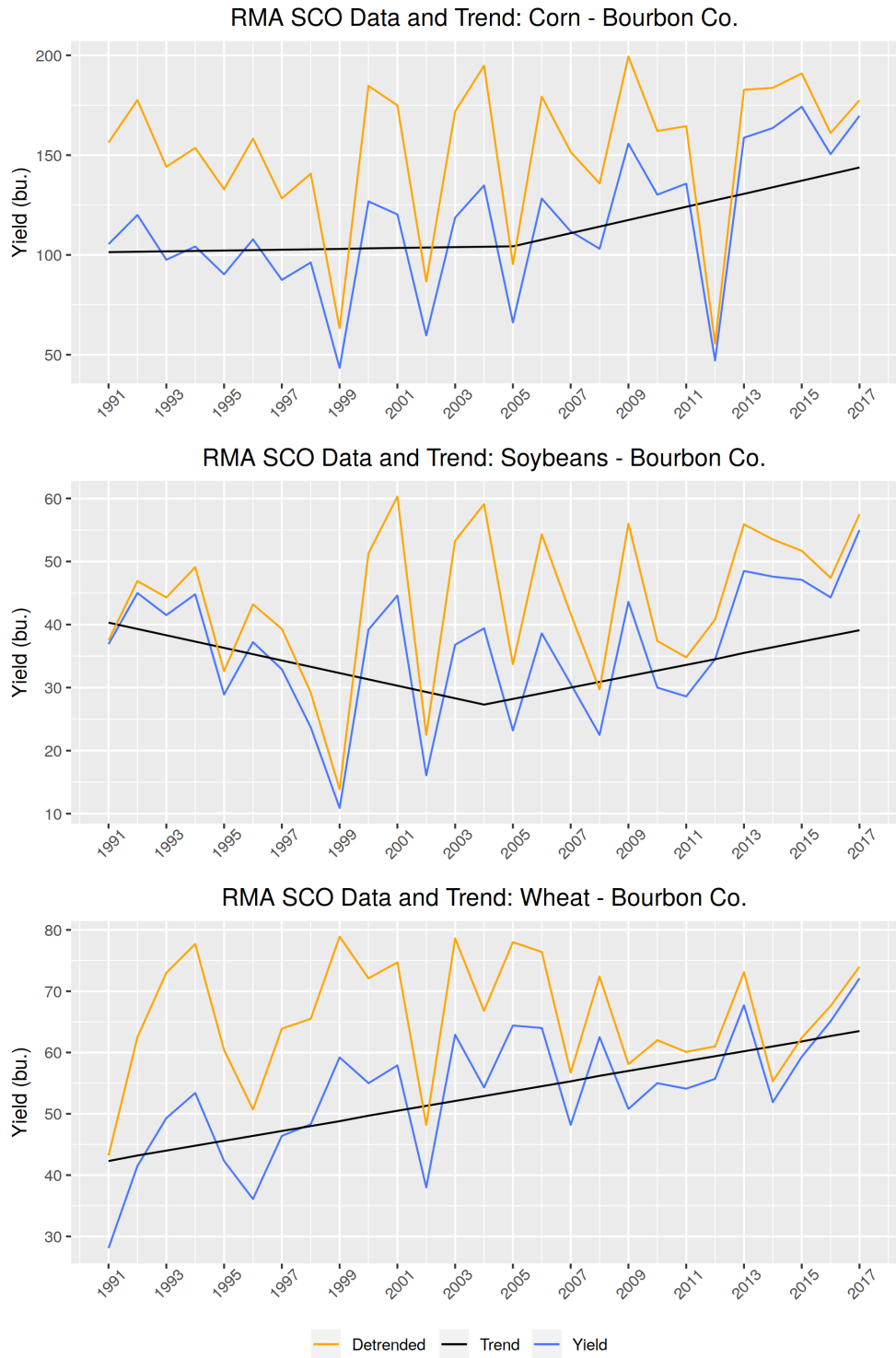


Figure B.9: RMA estimated trends for Boyd County

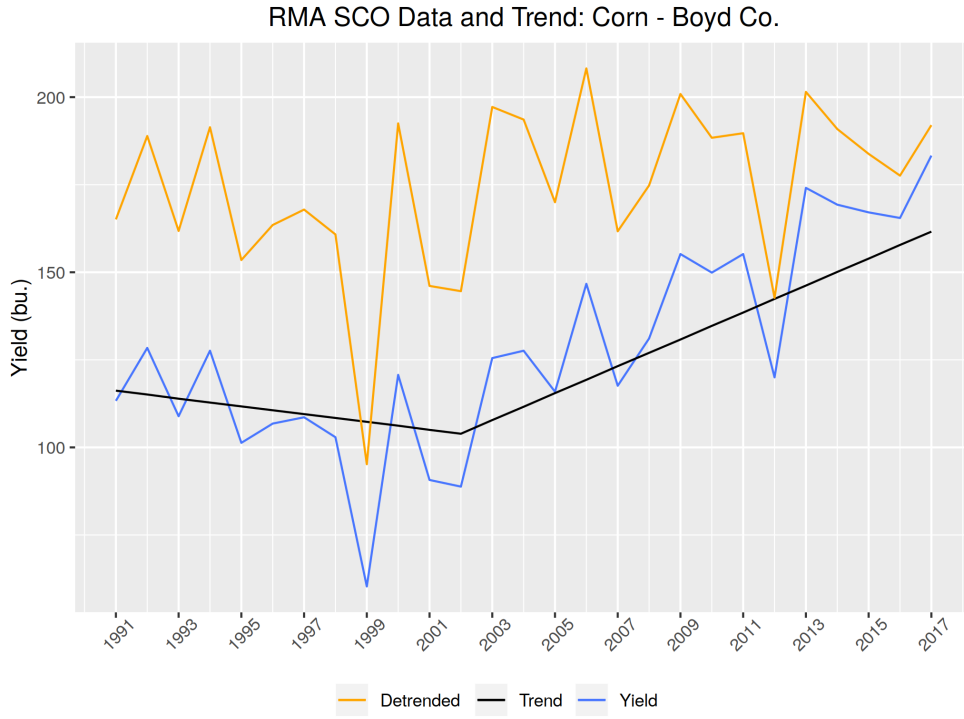


Figure B.10: RMA estimated trends for Boyle County

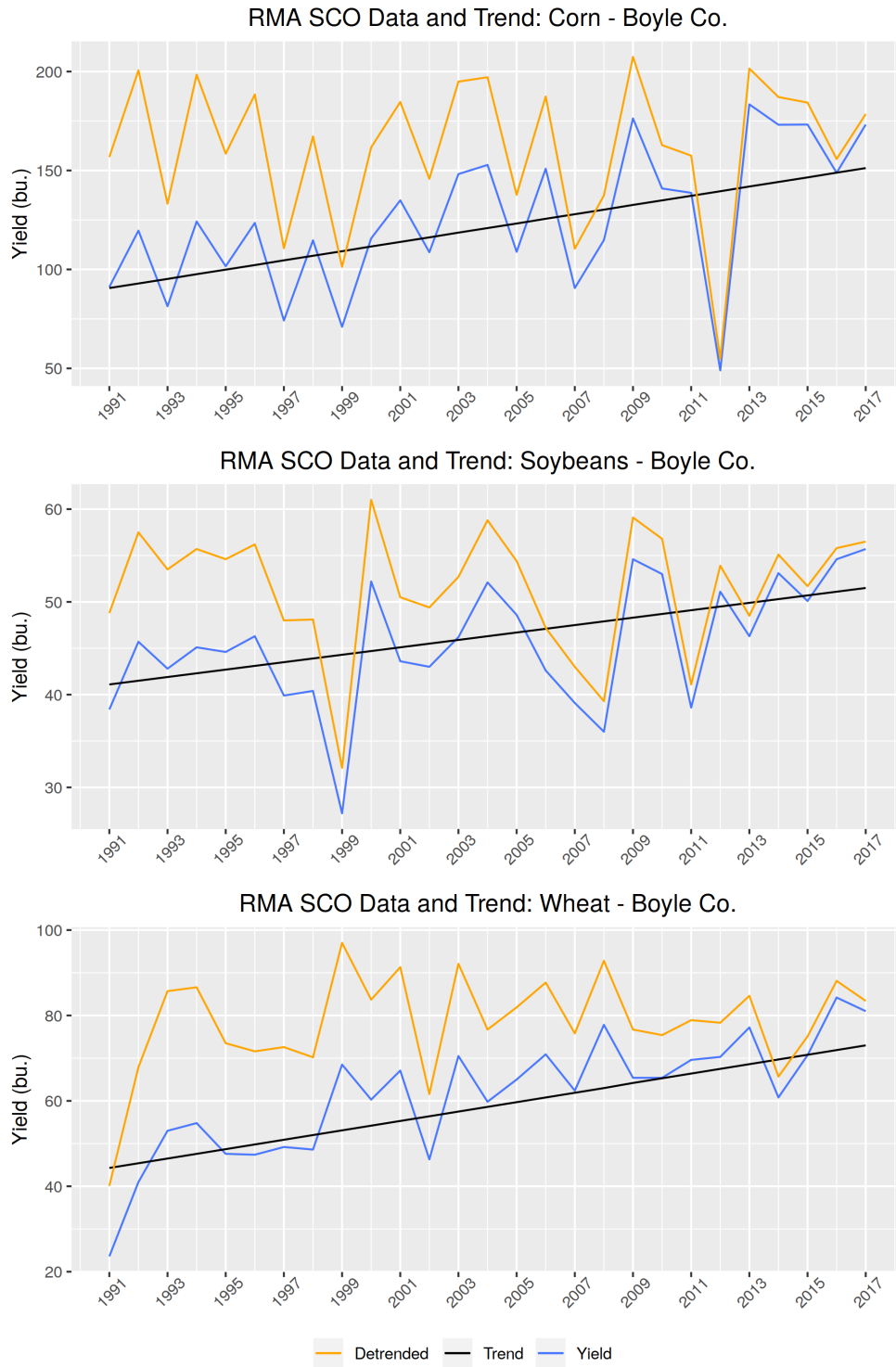


Figure B.11: RMA estimated trends for Bracken County

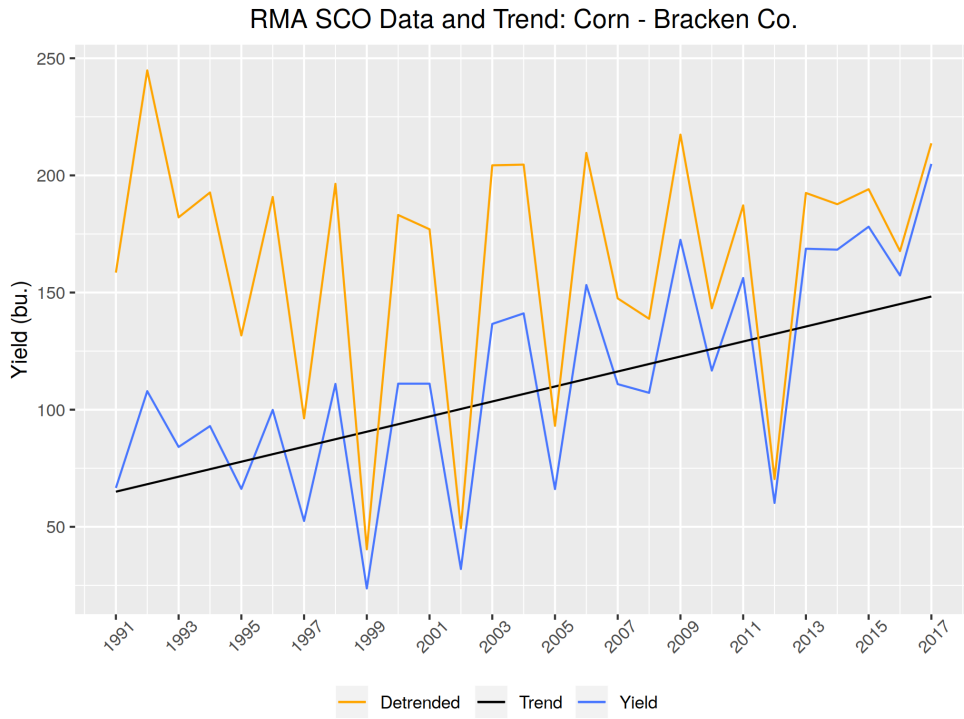


Figure B.12: RMA estimated trends for Breathitt County

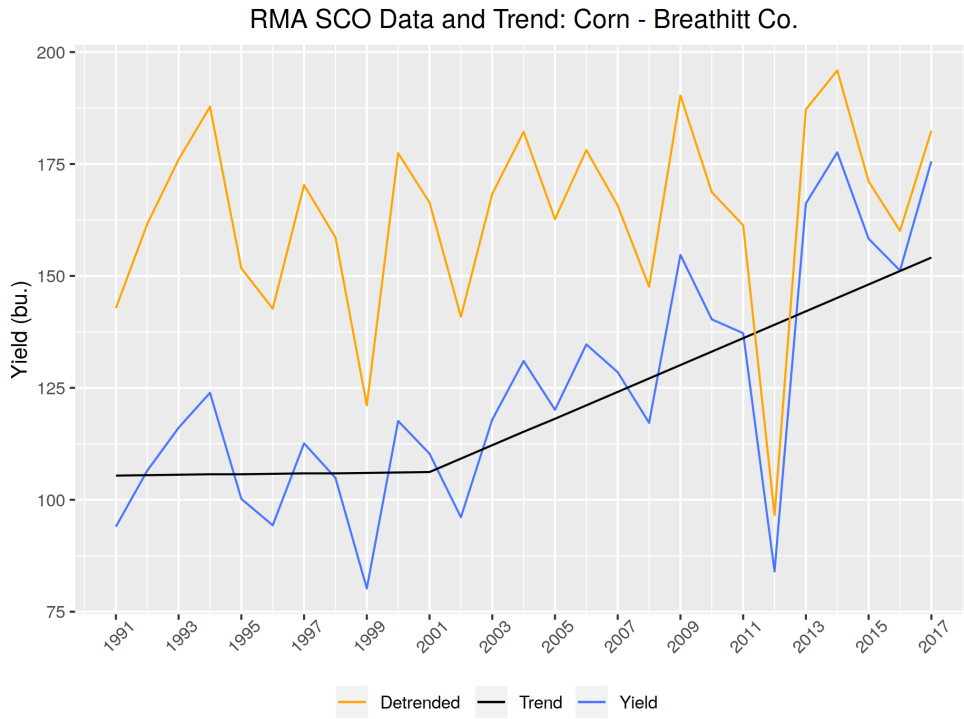


Figure B.13: RMA estimated trends for Breckinridge County

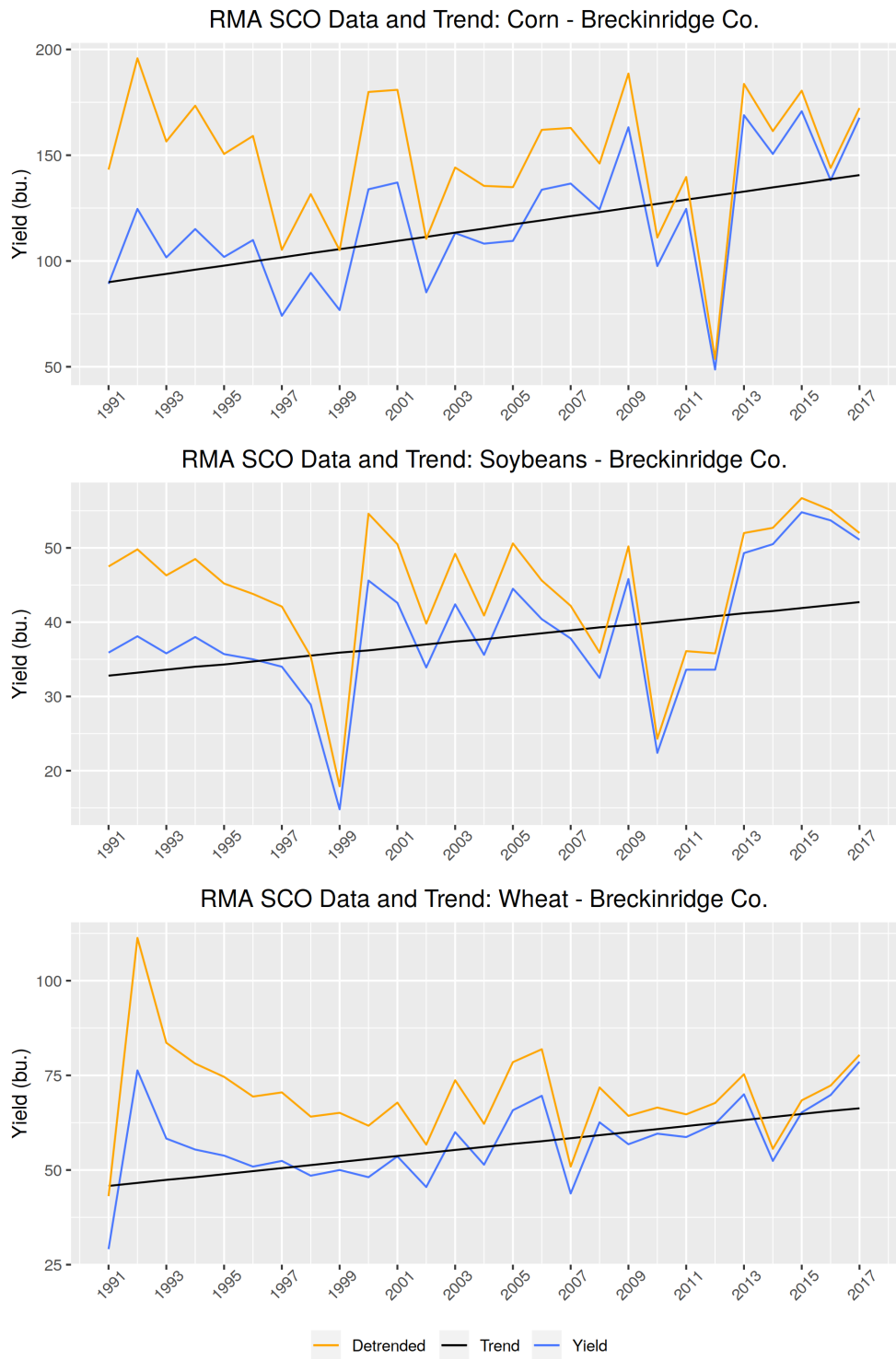




Figure B.14: RMA estimated trends for Bullitt County

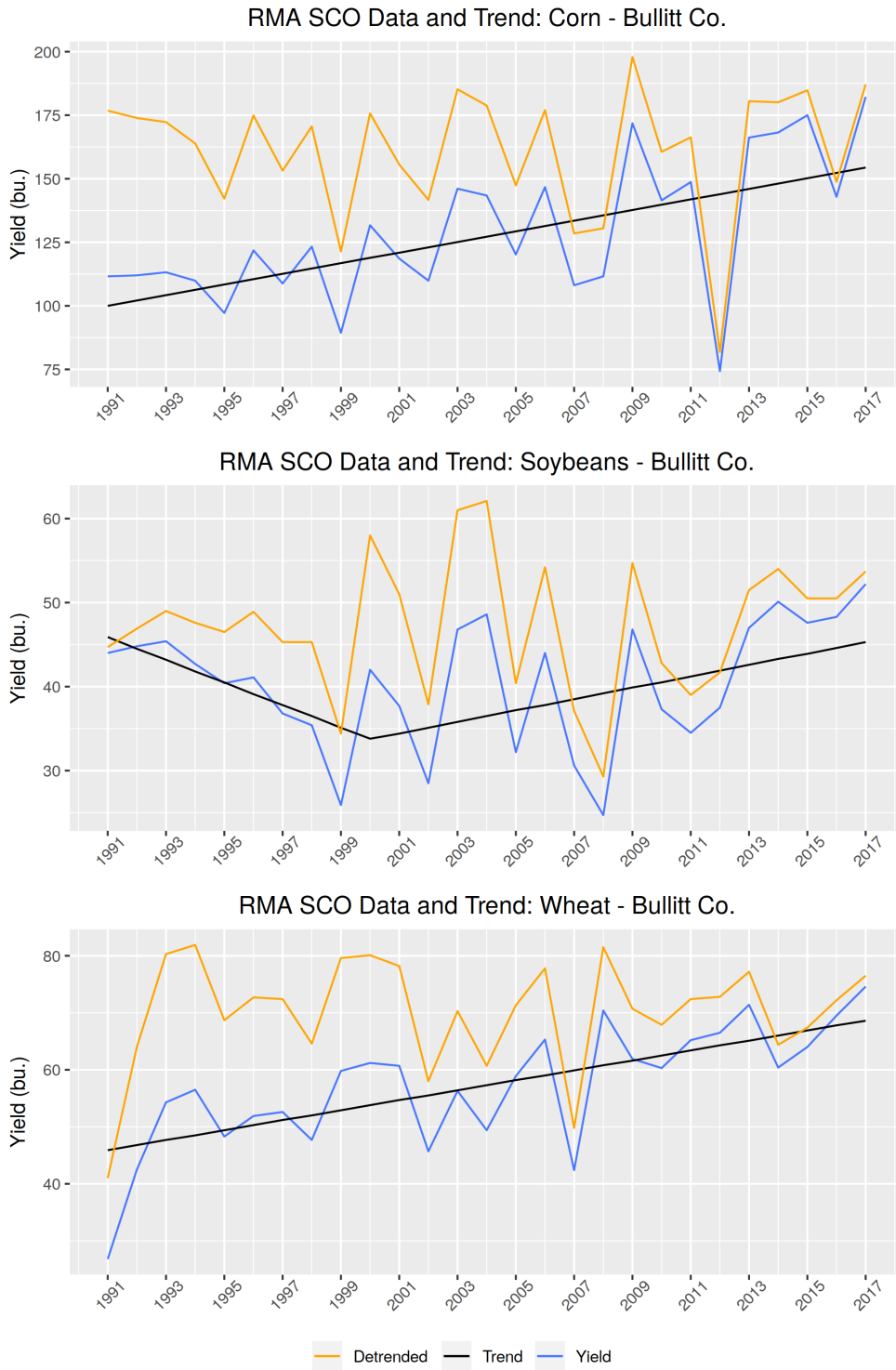


Figure B.15: RMA estimated trends for Butler County

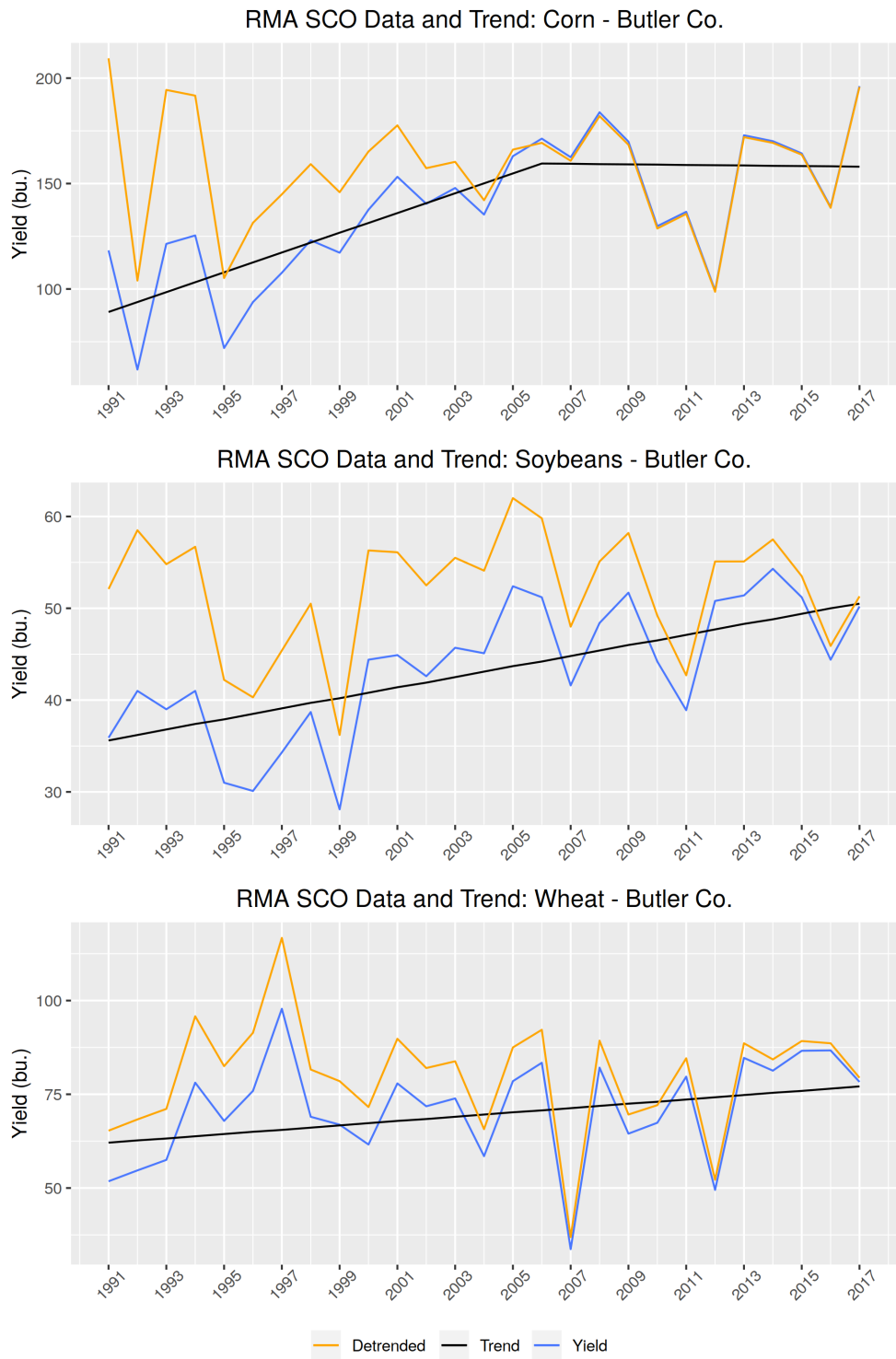


Figure B.16: RMA estimated trends for Caldwell County

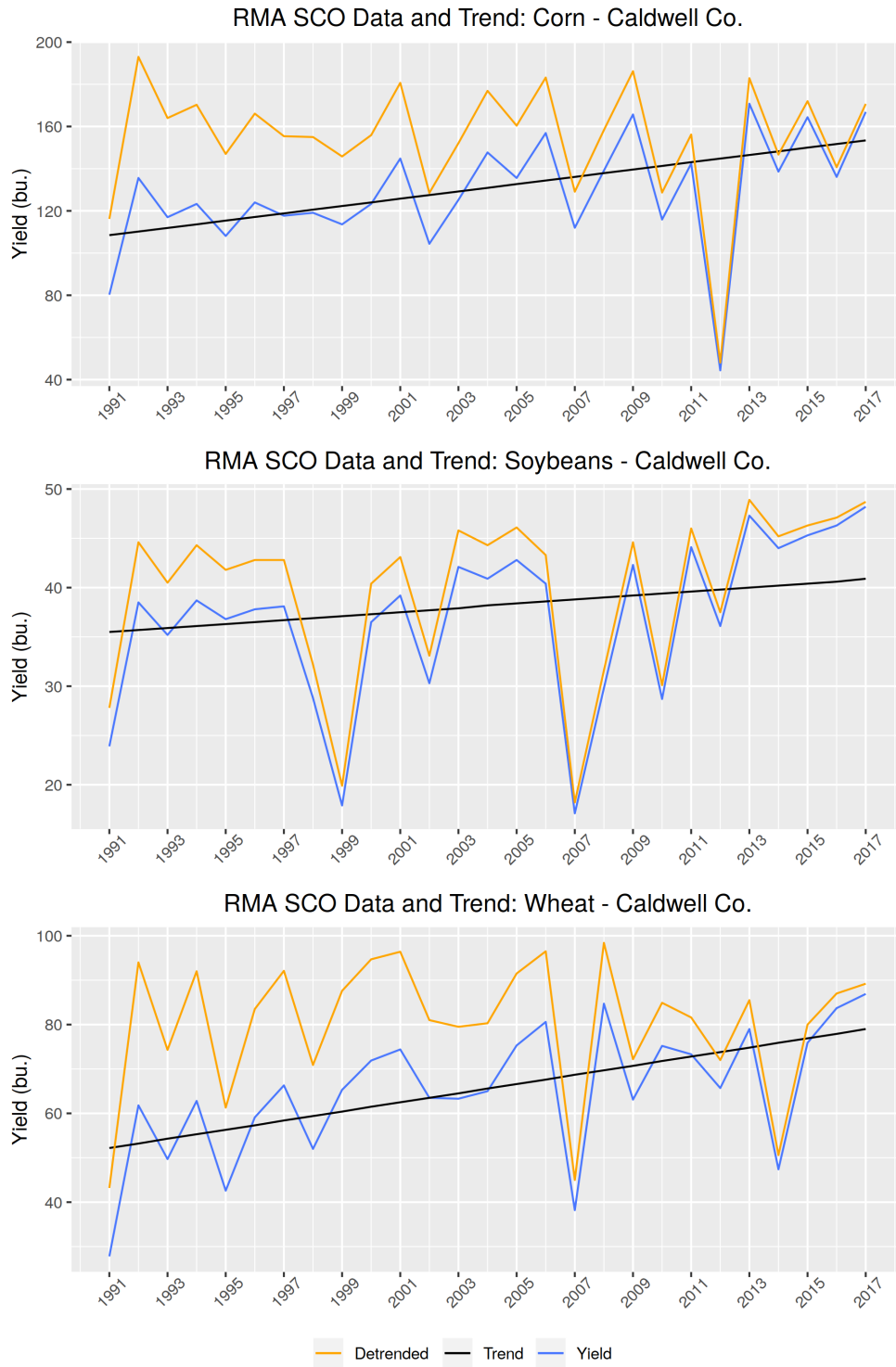


Figure B.17: RMA estimated trends for Calloway County

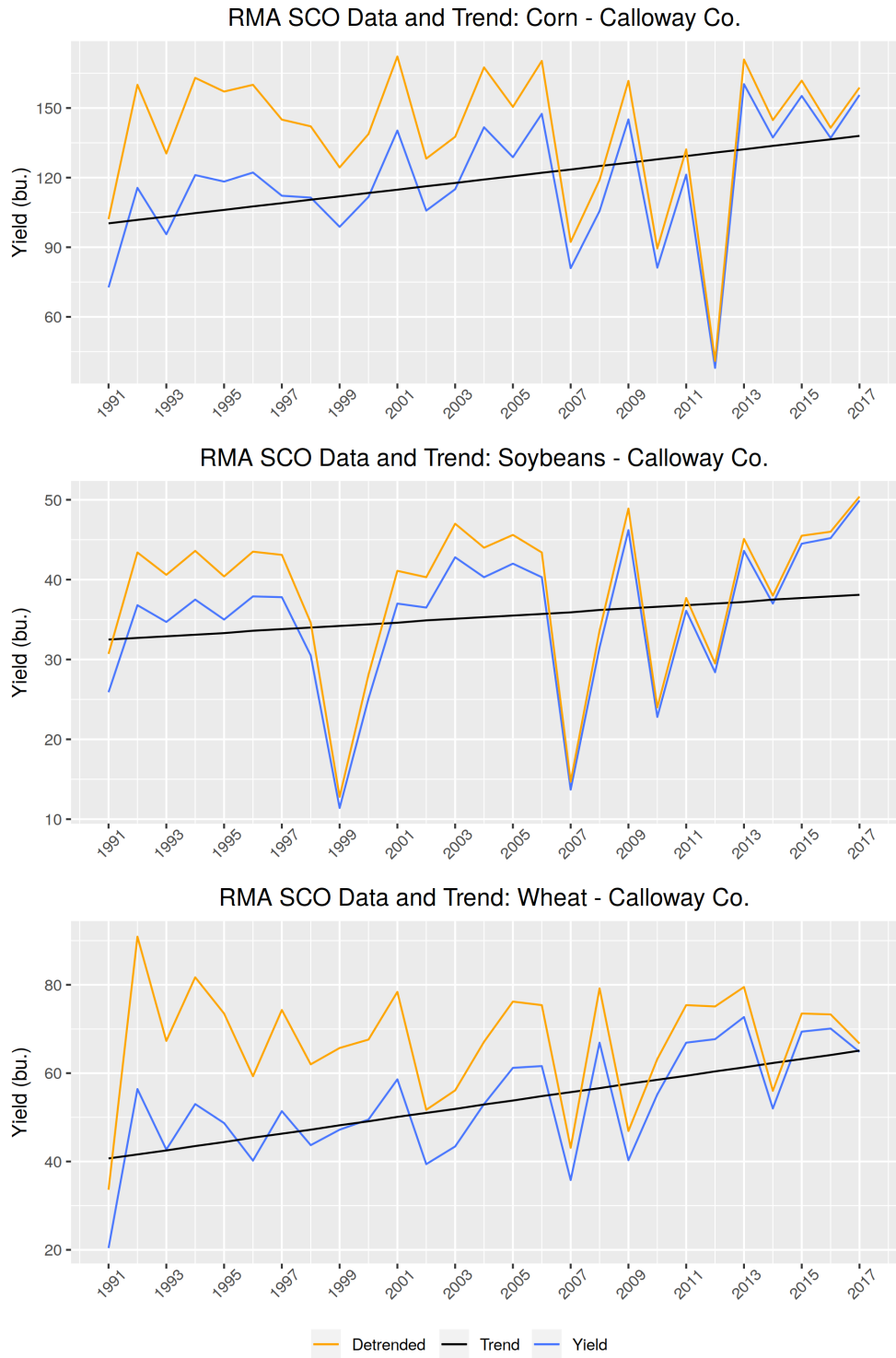


Figure B.18: RMA estimated trends for Campbell County

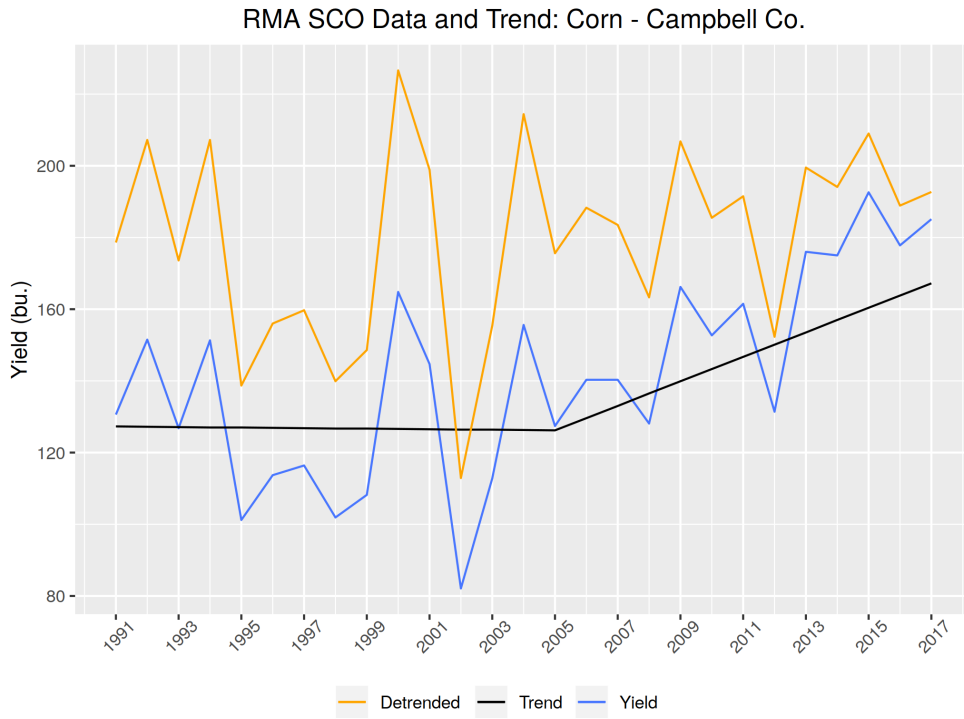
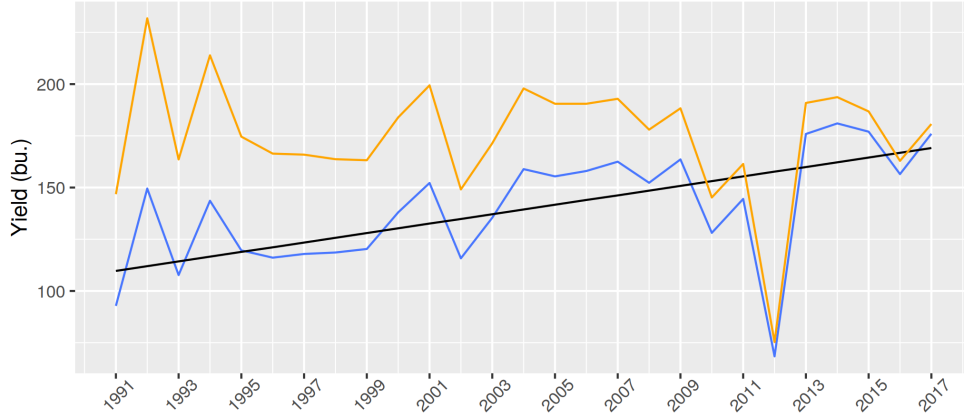
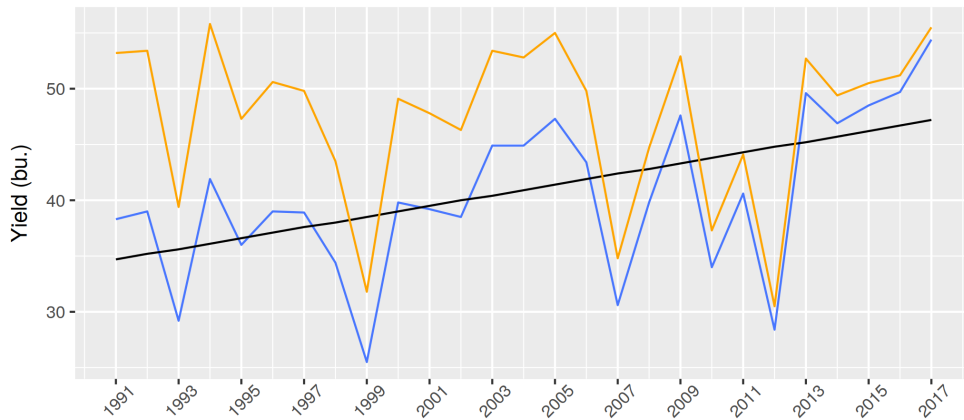


Figure B.19: RMA estimated trends for Carlisle County

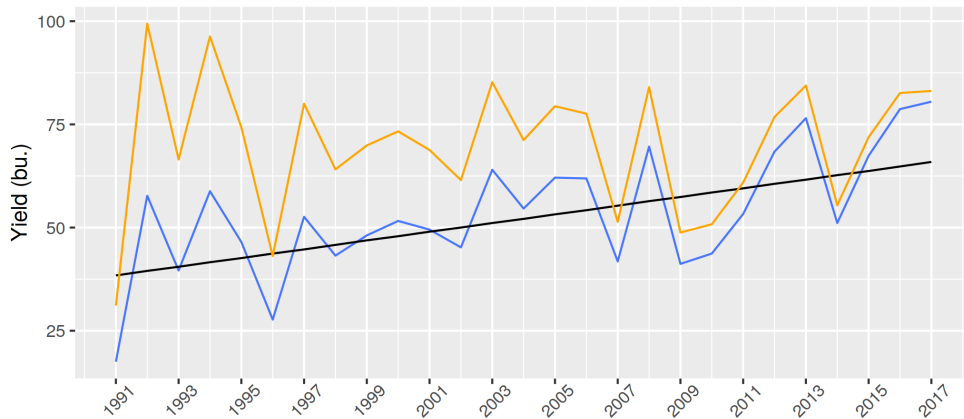
RMA SCO Data and Trend: Corn - Carlisle Co.



RMA SCO Data and Trend: Soybeans - Carlisle Co.



RMA SCO Data and Trend: Wheat - Carlisle Co.



— Detrended — Trend — Yield

Figure B.20: RMA estimated trends for Carroll County

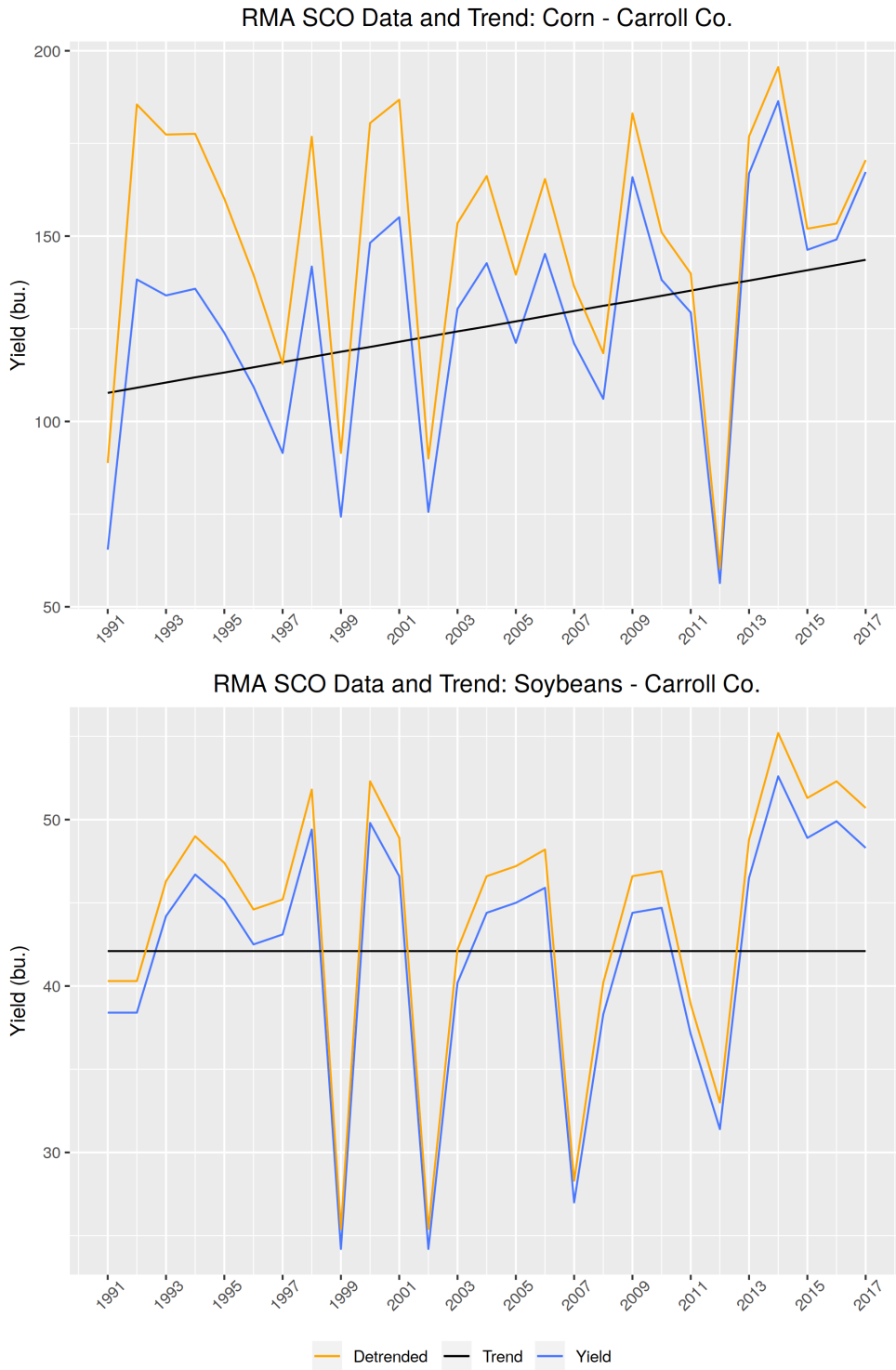


Figure B.21: RMA estimated trends for Carter County

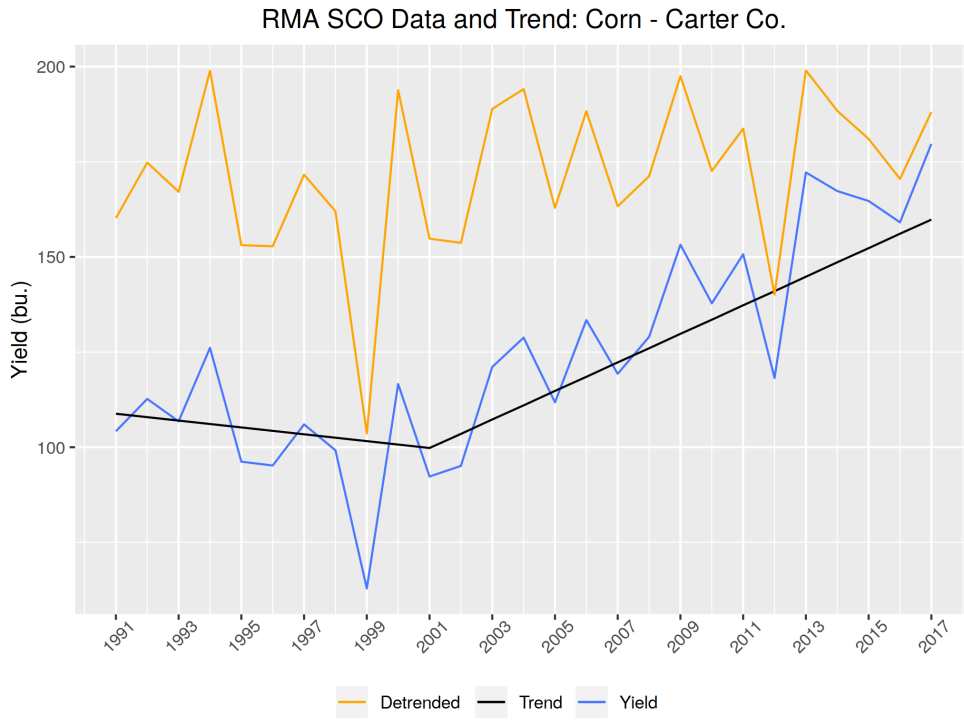




Figure B.22: RMA estimated trends for Casey County

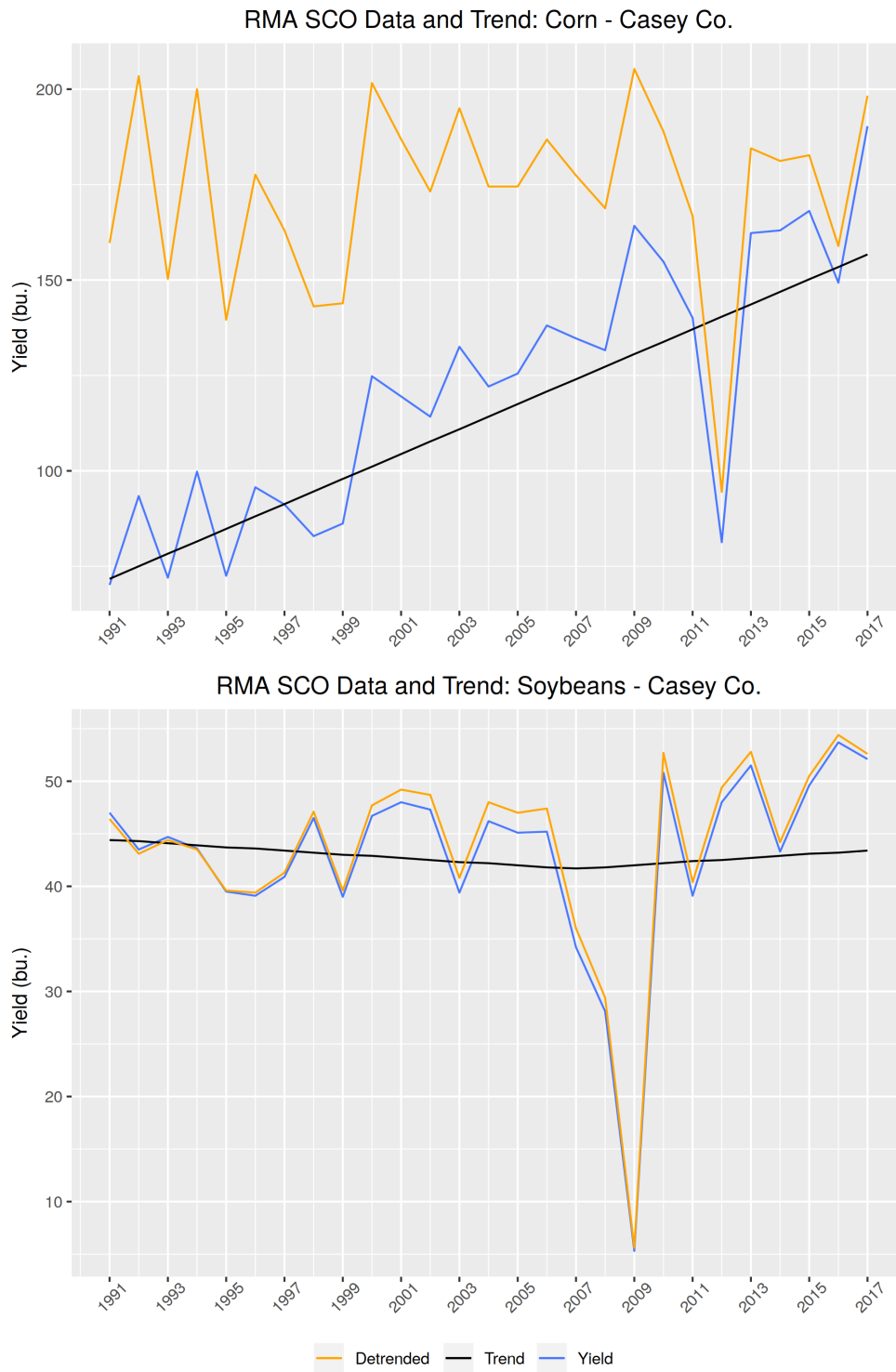


Figure B.23: RMA estimated trends for Christian County

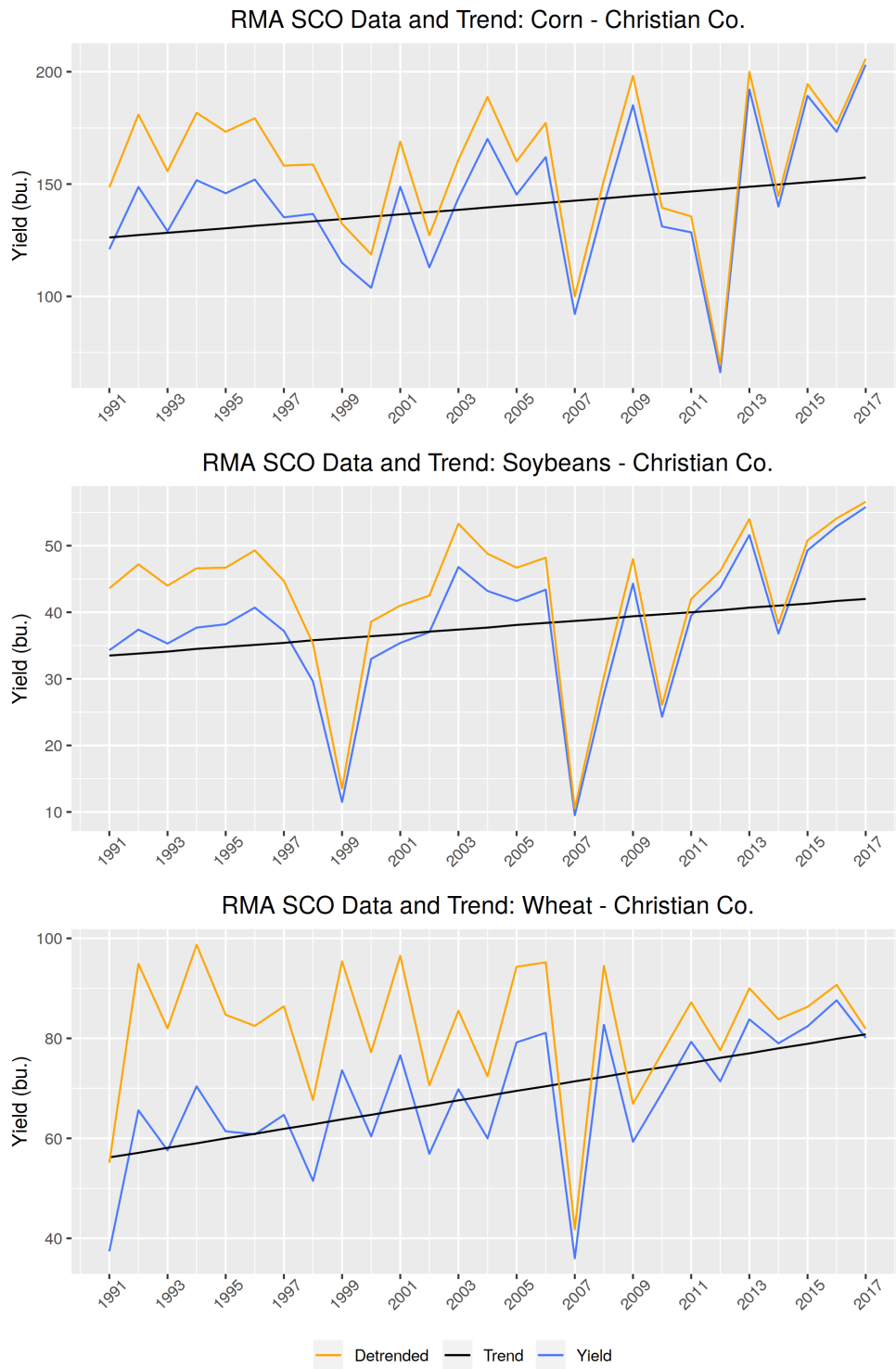


Figure B.24: RMA estimated trends for Clark County

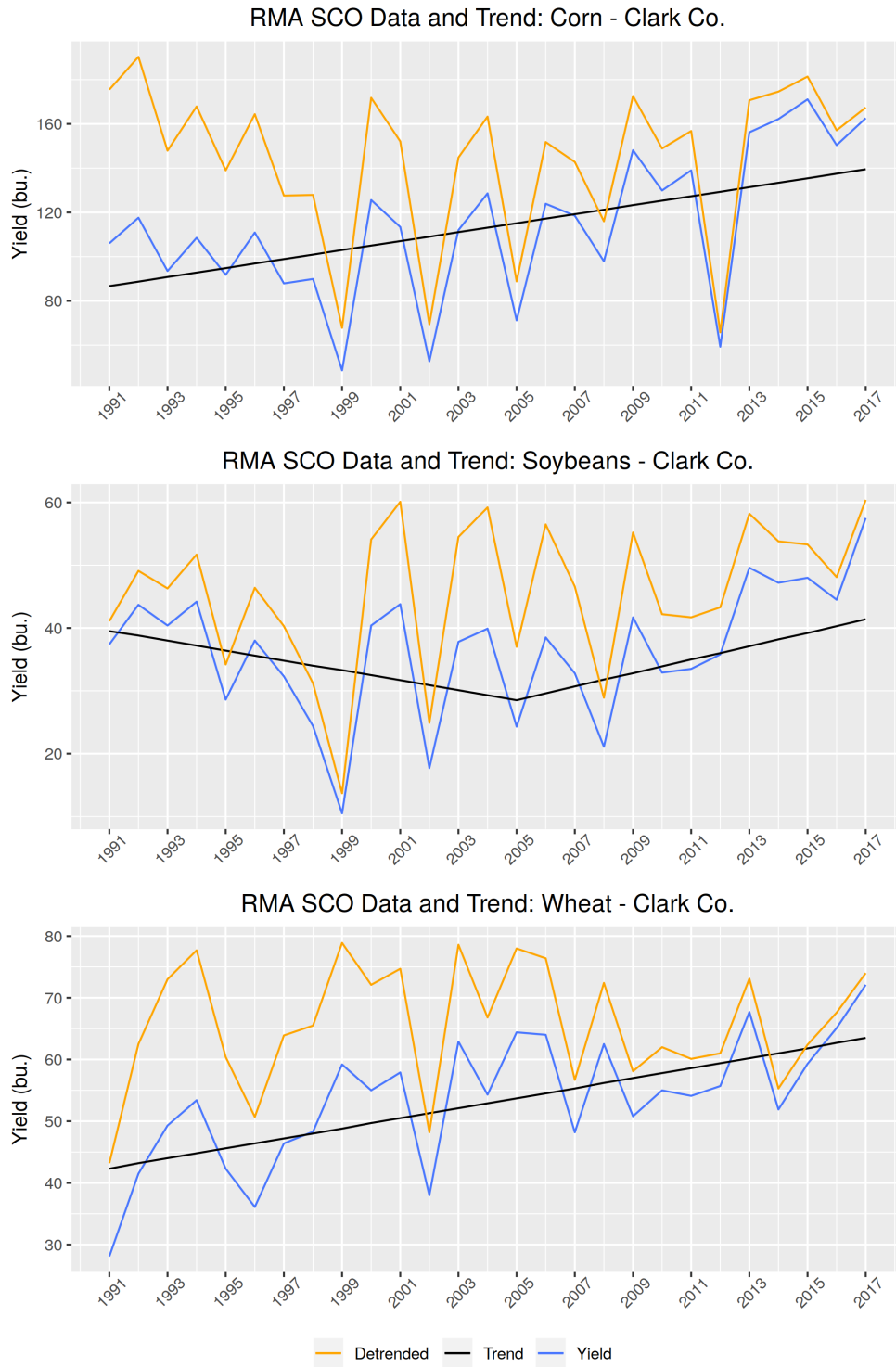


Figure B.25: RMA estimated trends for Clay County

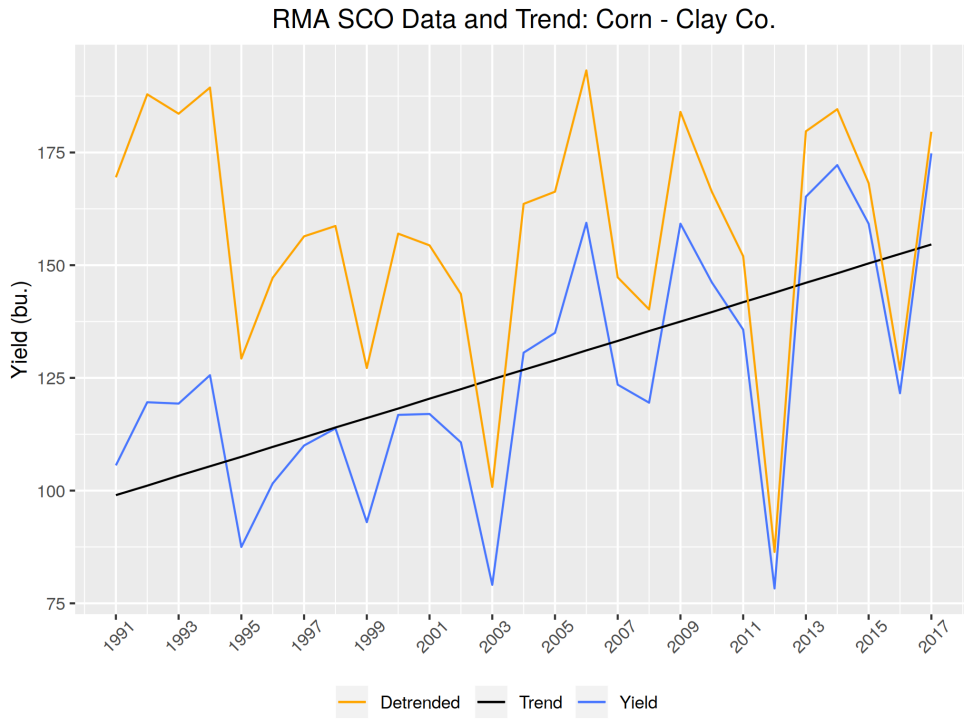


Figure B.26: RMA estimated trends for Clinton County

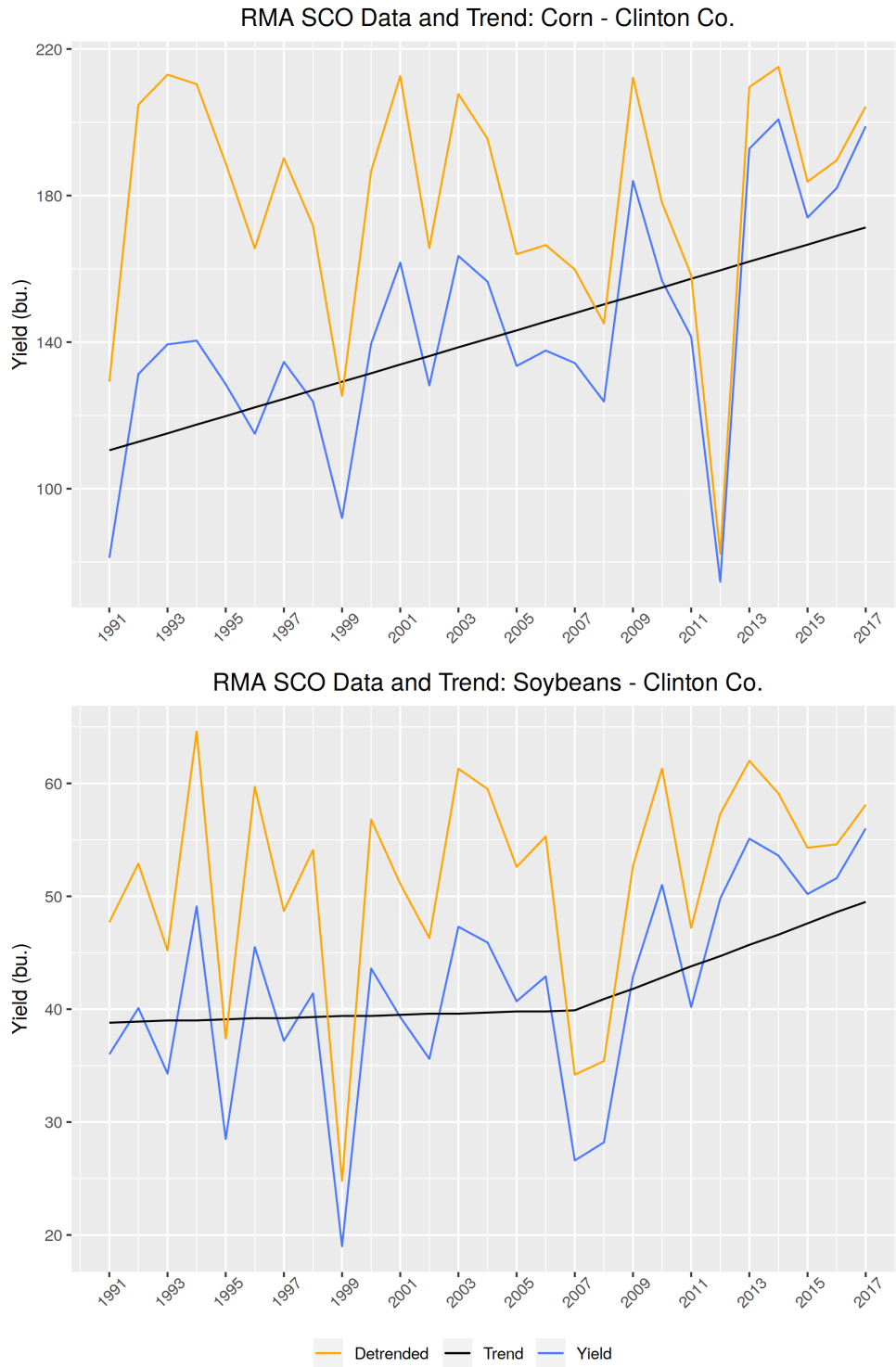


Figure B.27: RMA estimated trends for Crittenden County

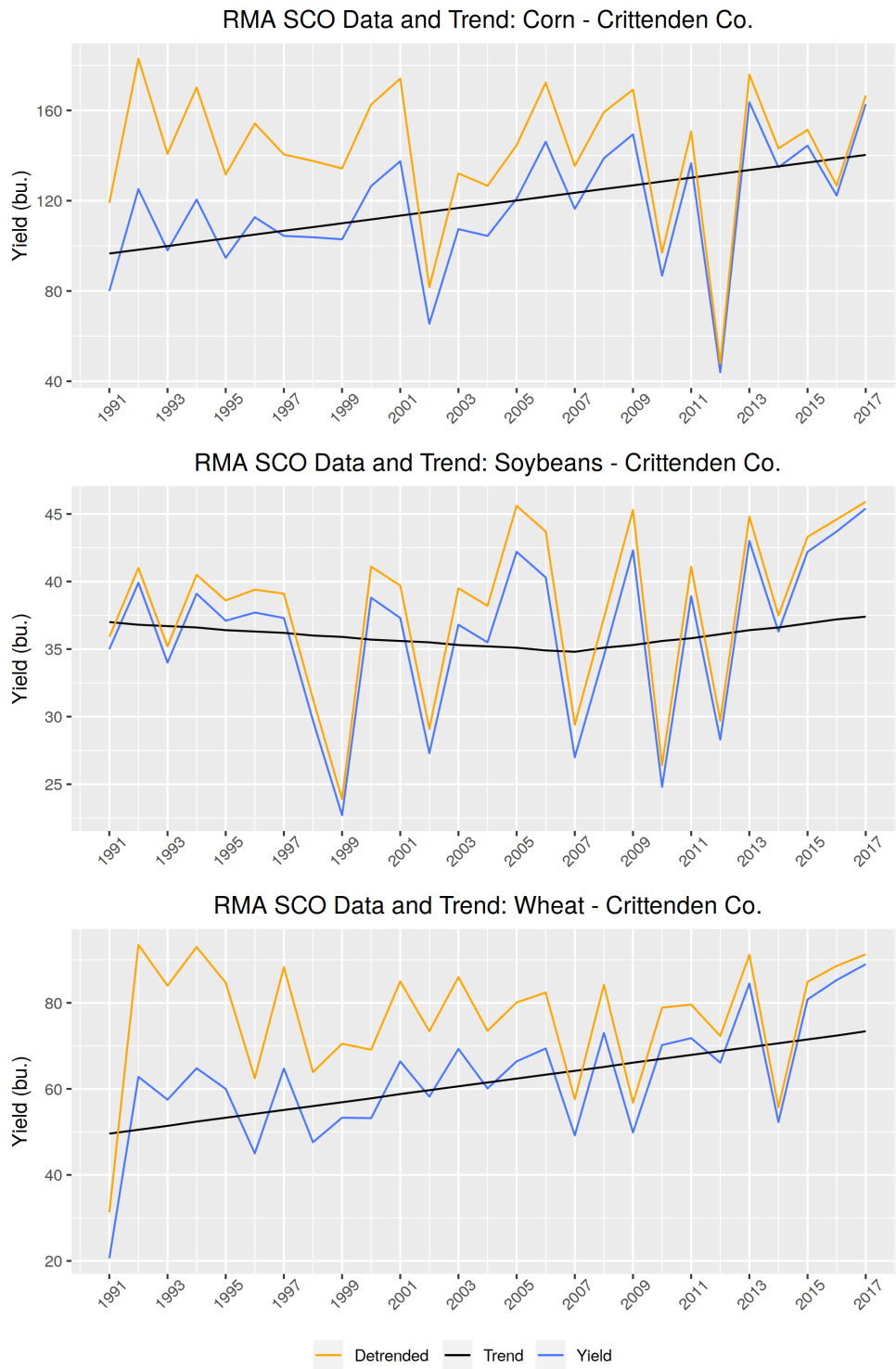


Figure B.28: RMA estimated trends for Cumberland County

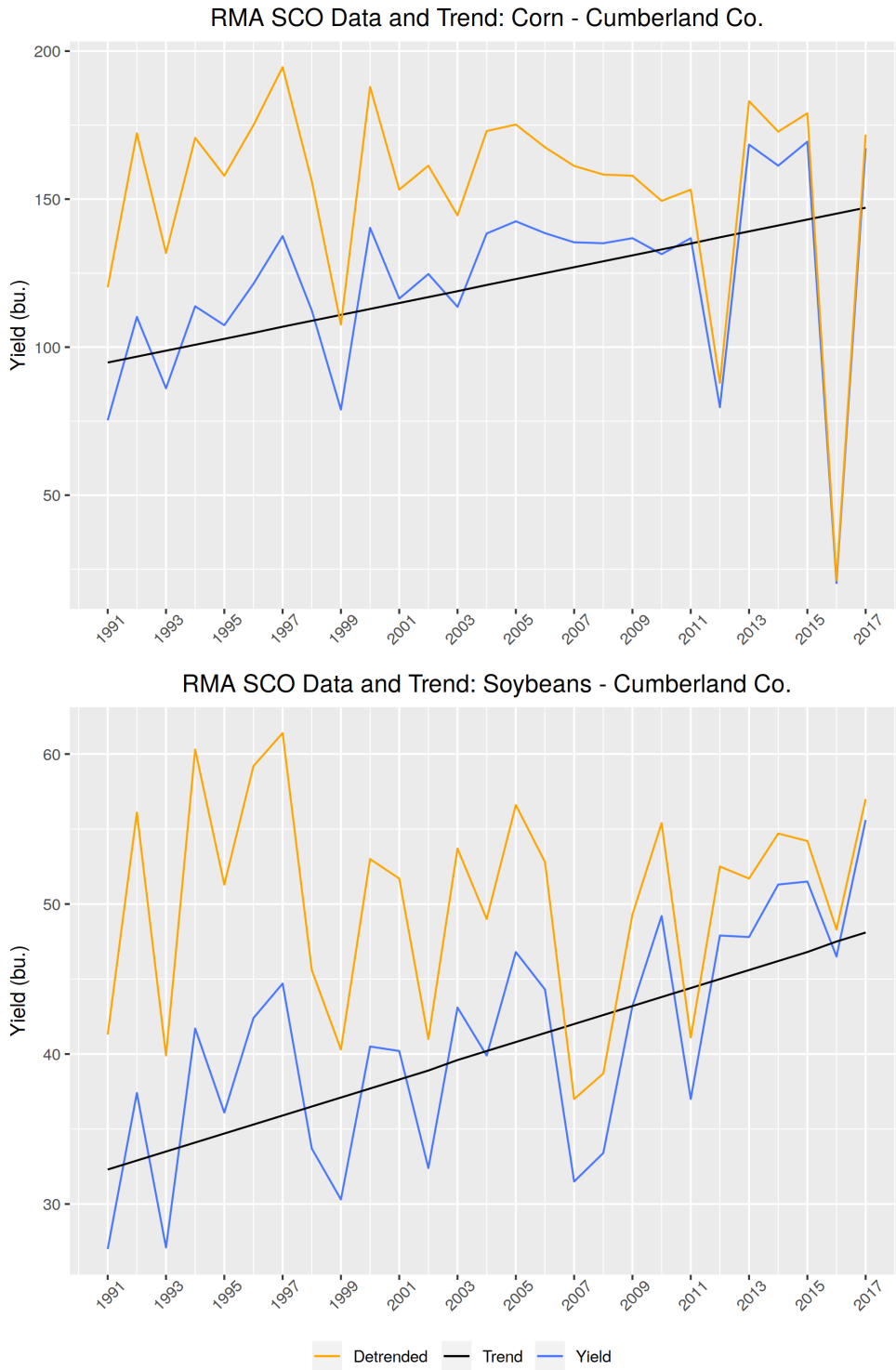
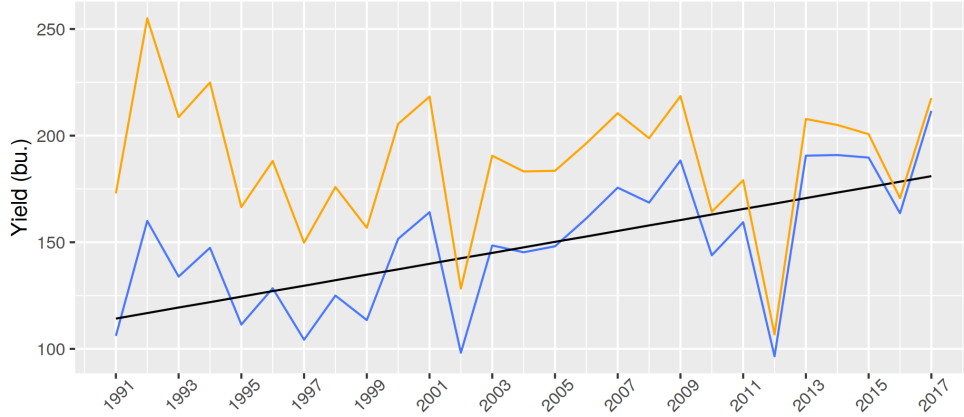
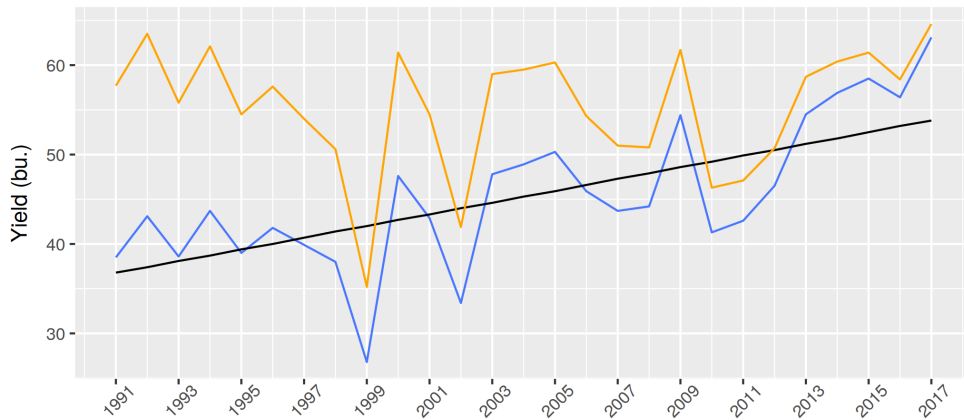


Figure B.29: RMA estimated trends for Daviess County

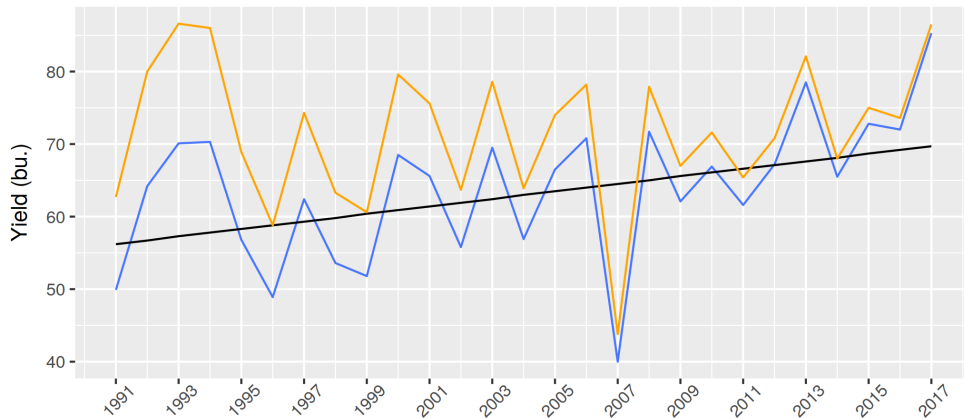
RMA SCO Data and Trend: Corn - Daviess Co.



RMA SCO Data and Trend: Soybeans - Daviess Co.



RMA SCO Data and Trend: Wheat - Daviess Co.



— Detrended — Trend — Yield



Figure B.30: RMA estimated trends for Edmonson County

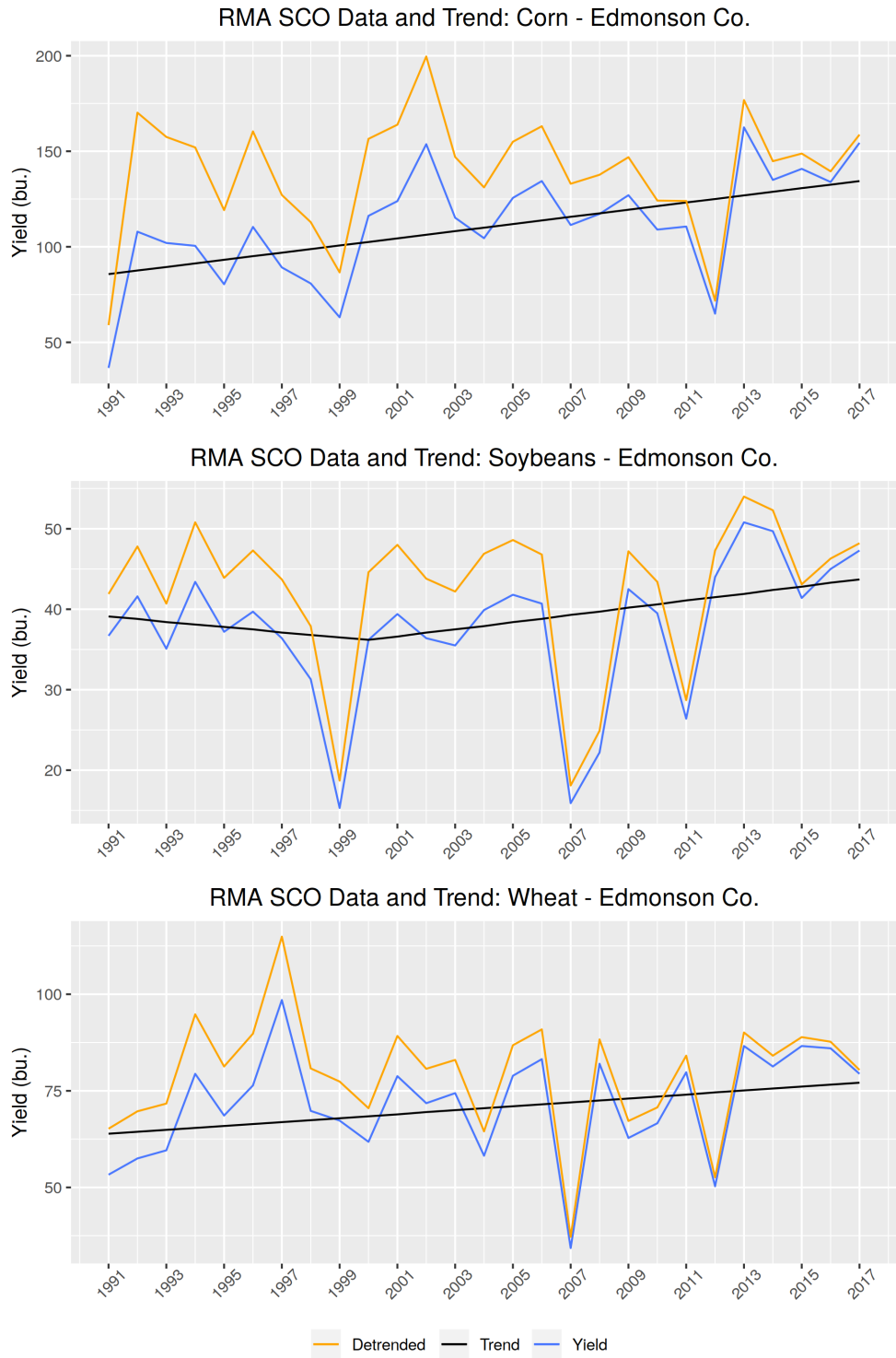


Figure B.31: RMA estimated trends for Estill County

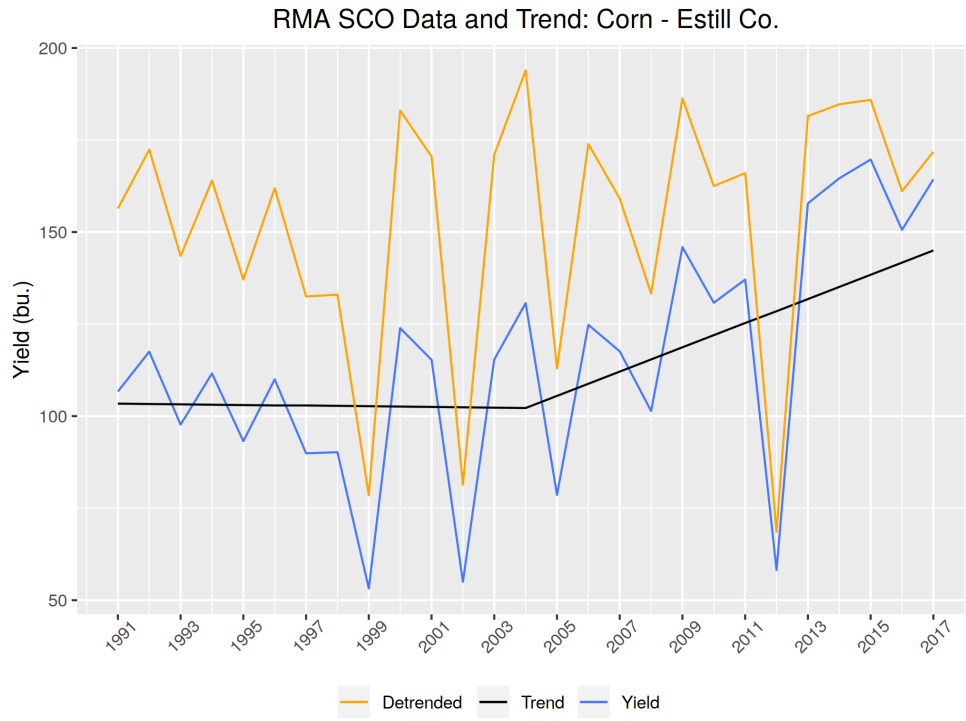


Figure B.32: RMA estimated trends for Fayette County

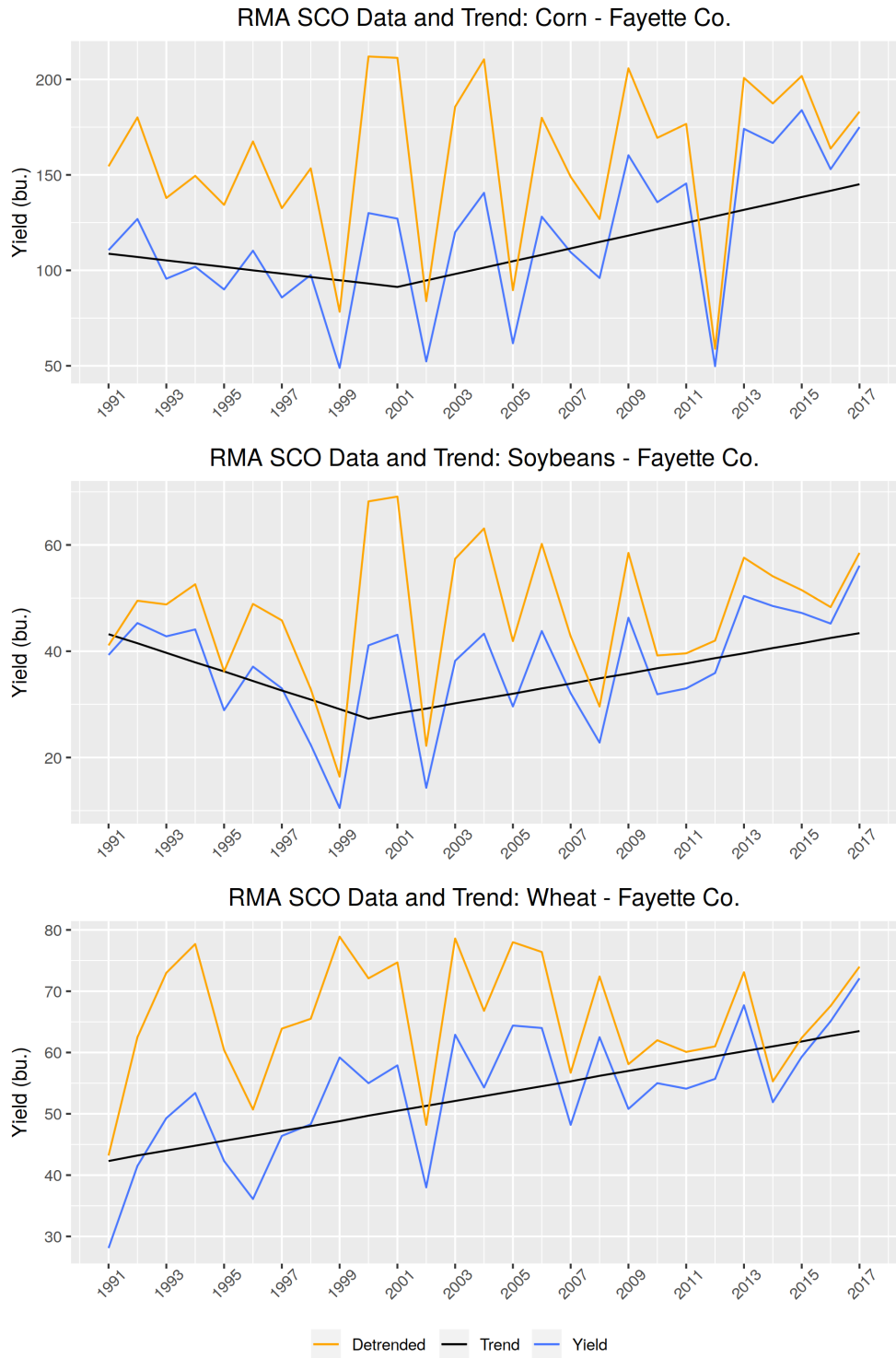


Figure B.33: RMA estimated trends for Fleming County

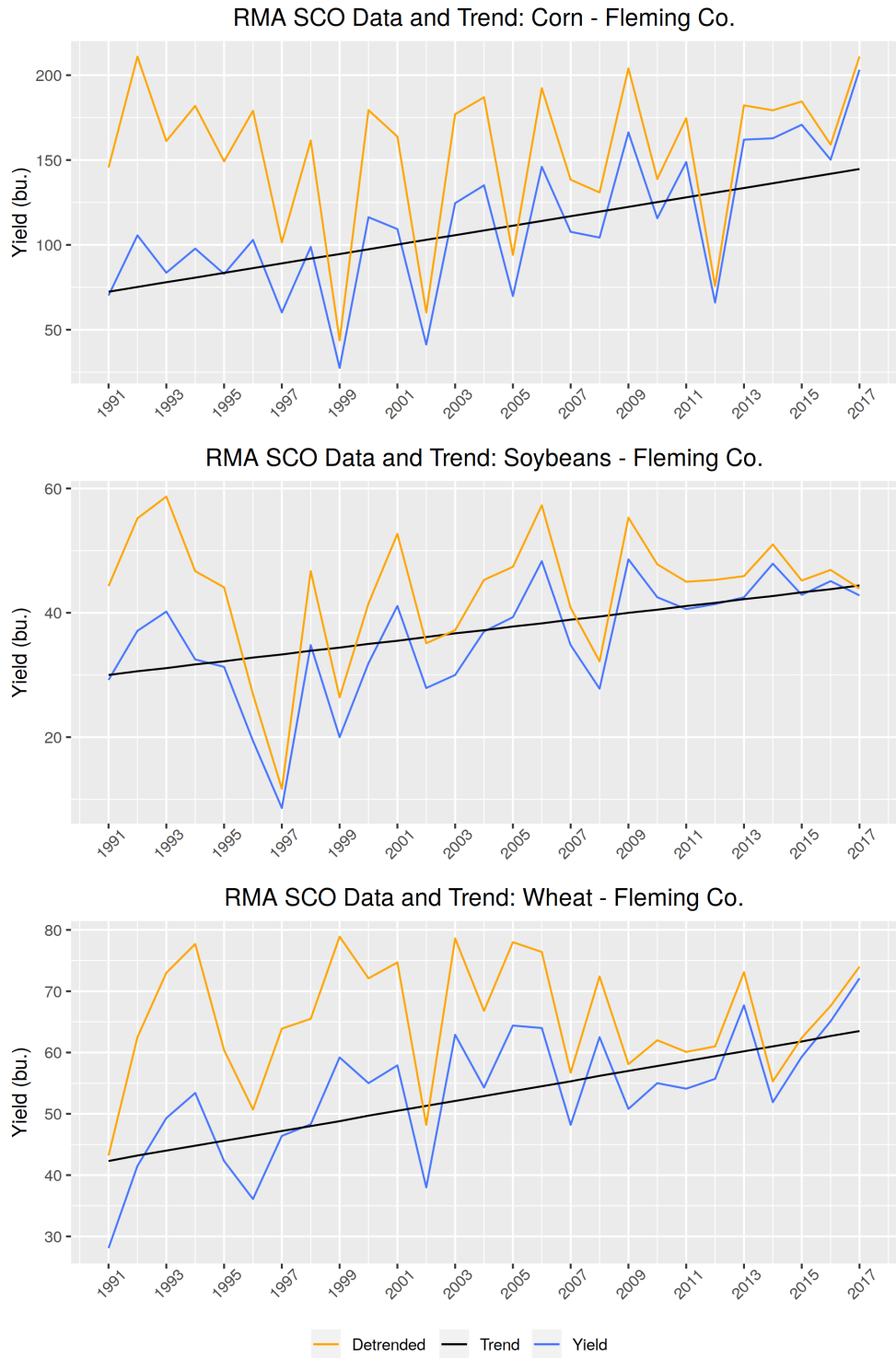
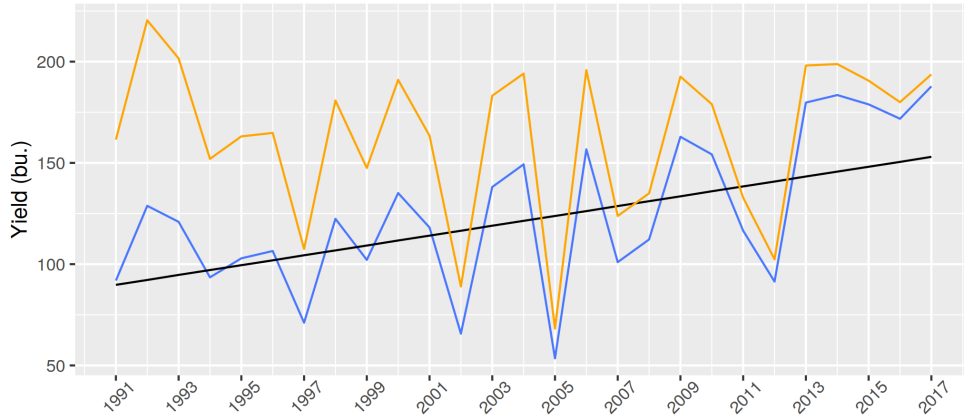
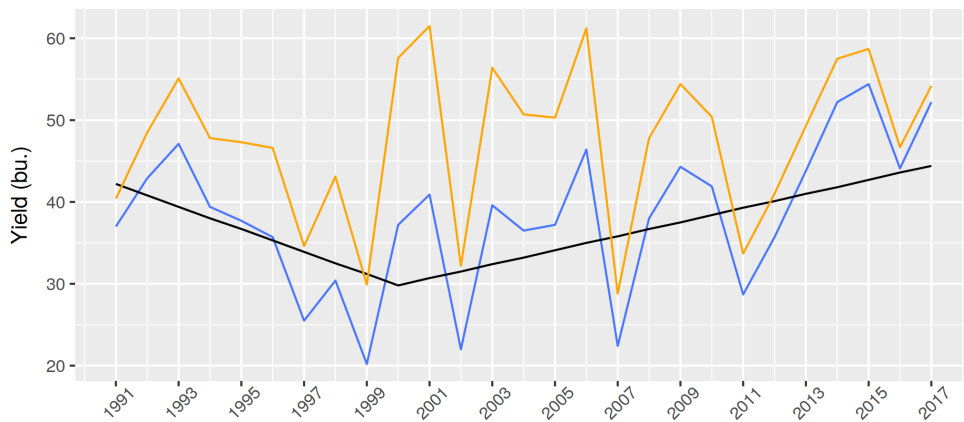


Figure B.34: RMA estimated trends for Franklin County

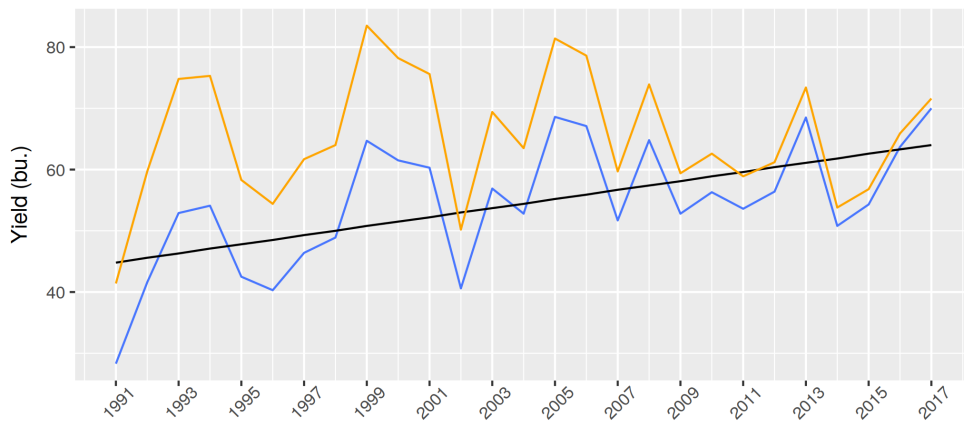
RMA SCO Data and Trend: Corn - Franklin Co.



RMA SCO Data and Trend: Soybeans - Franklin Co.



RMA SCO Data and Trend: Wheat - Franklin Co.



— Detrended — Trend — Yield

Figure B.35: RMA estimated trends for Fulton County

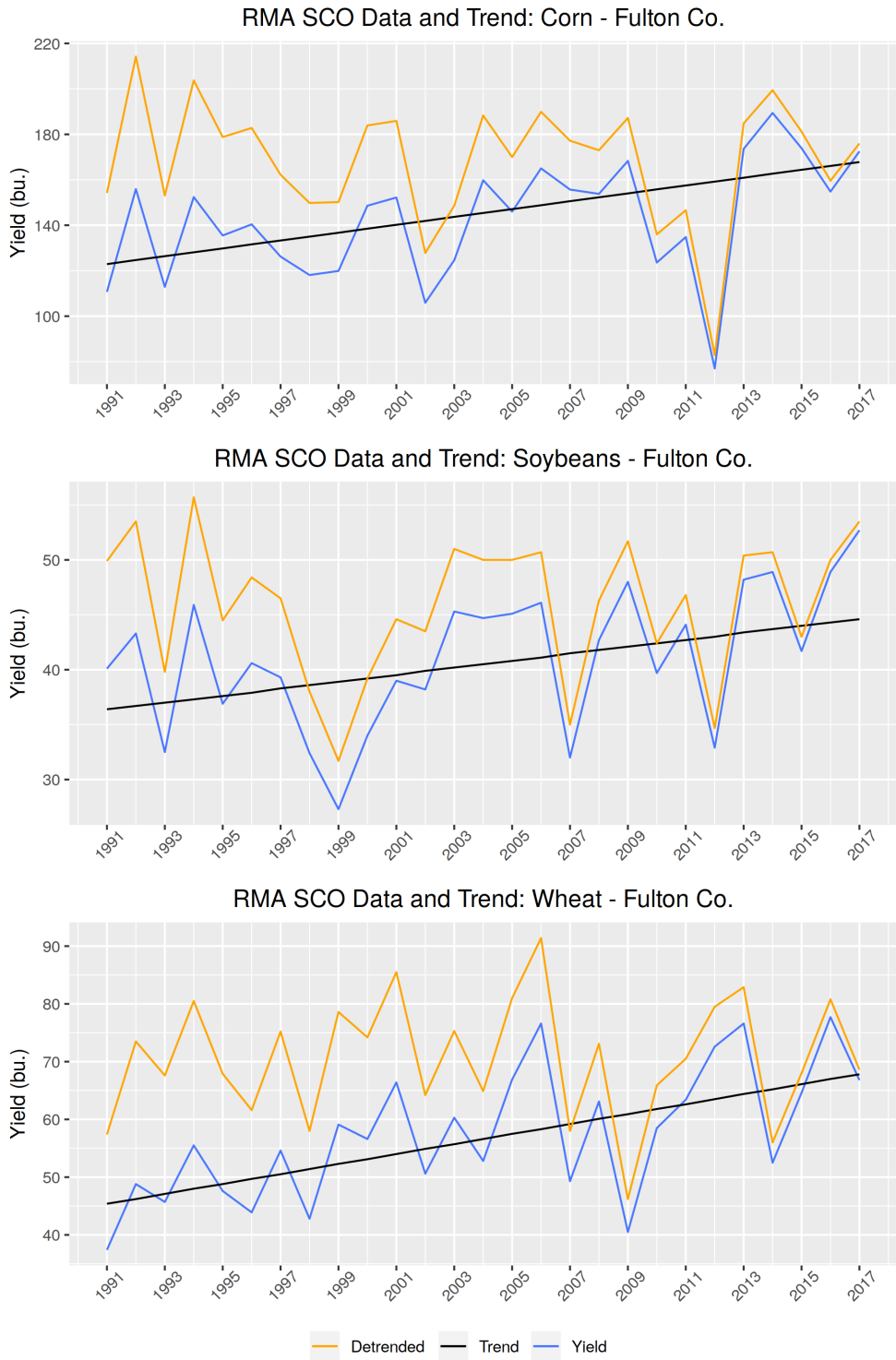


Figure B.36: RMA estimated trends for Gallatin County

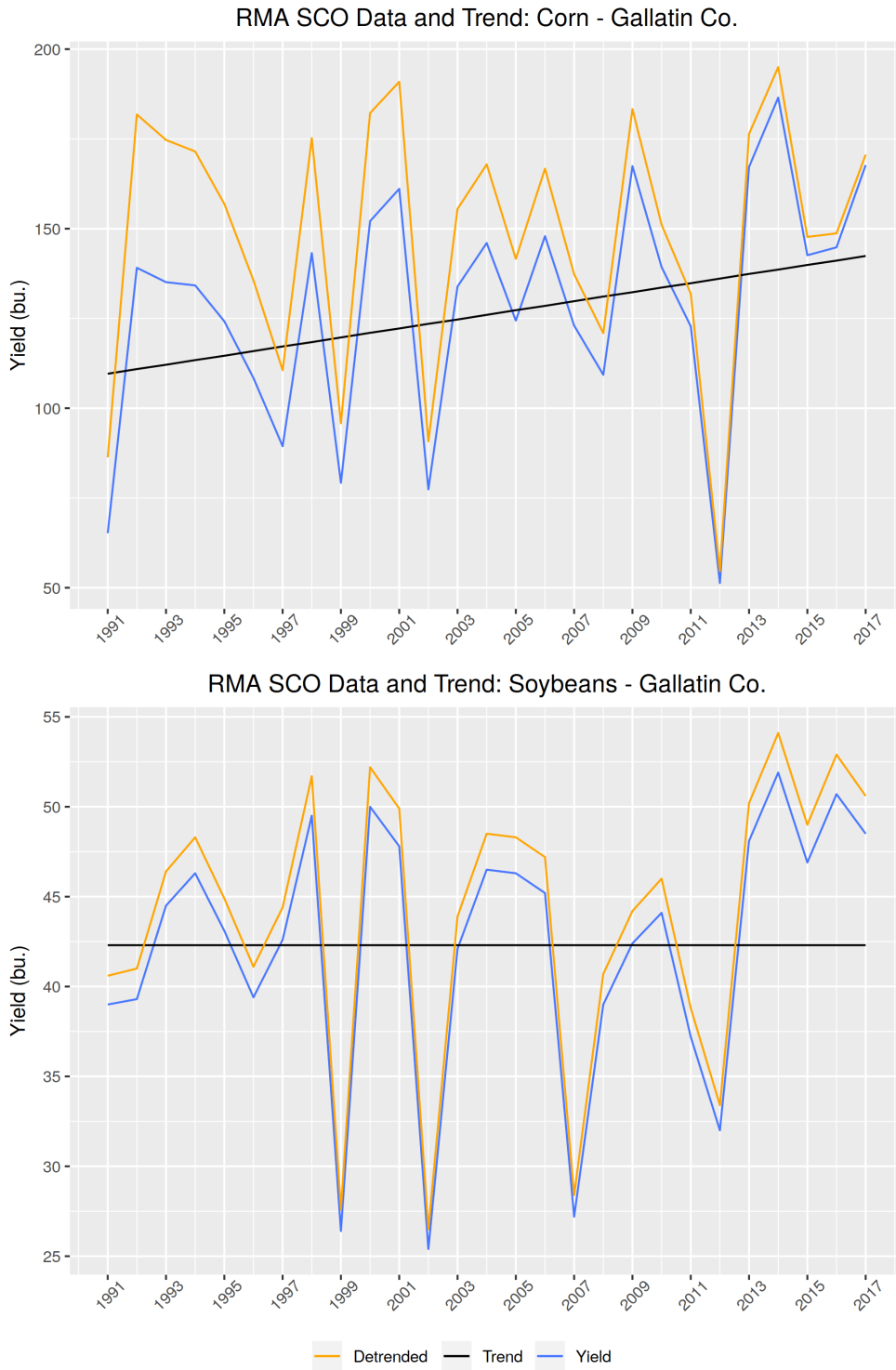


Figure B.37: RMA estimated trends for Garrard County

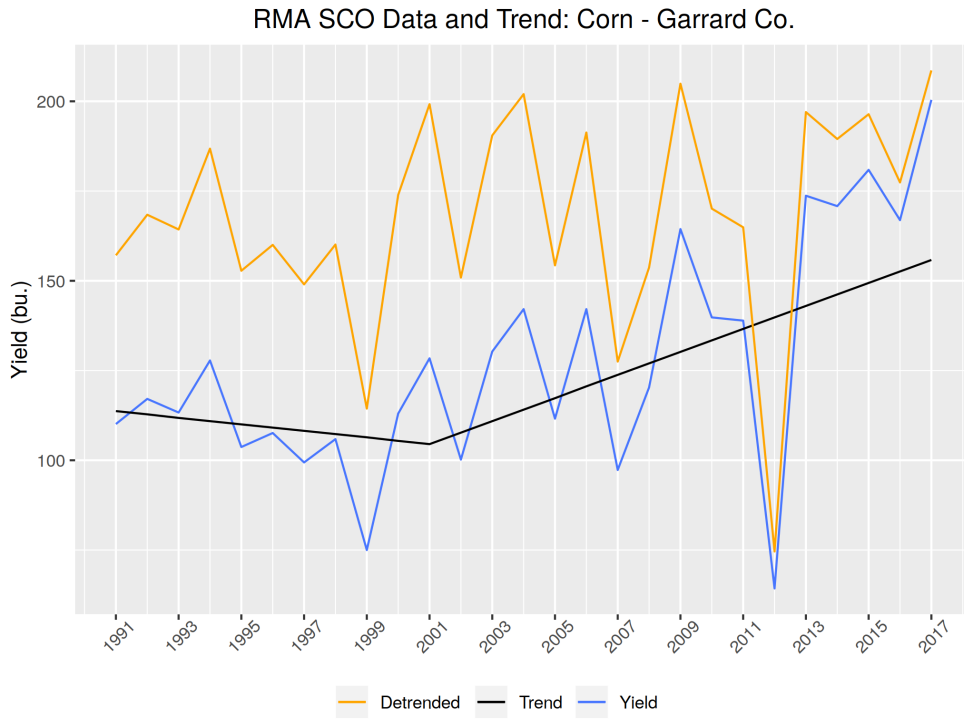




Figure B.38: RMA estimated trends for Grant County

RMA SCO Data and Trend: Corn - Grant Co.

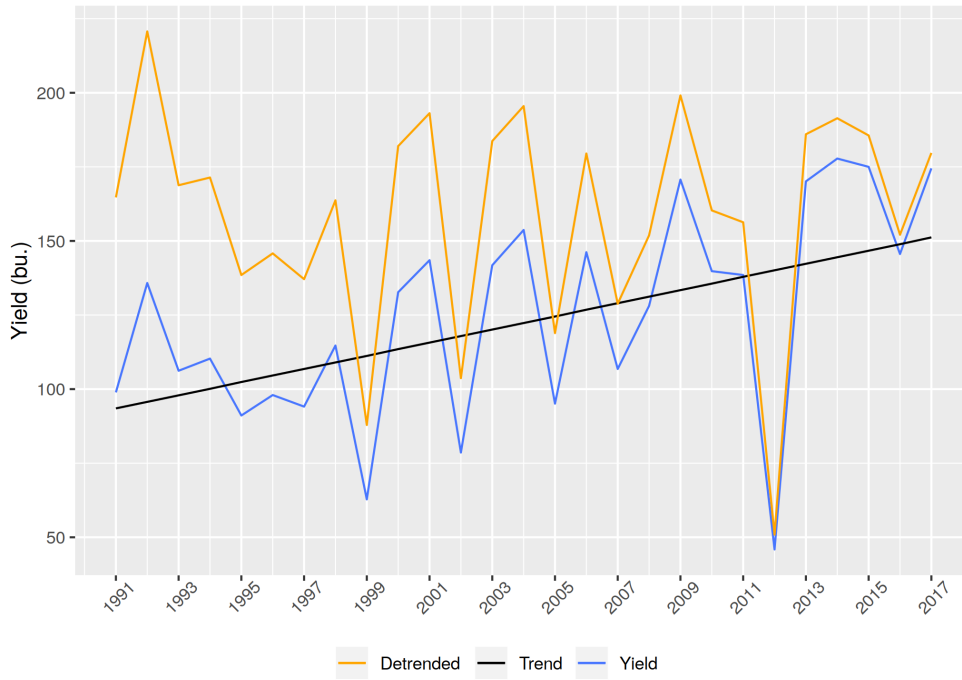


Figure B.39: RMA estimated trends for Graves County

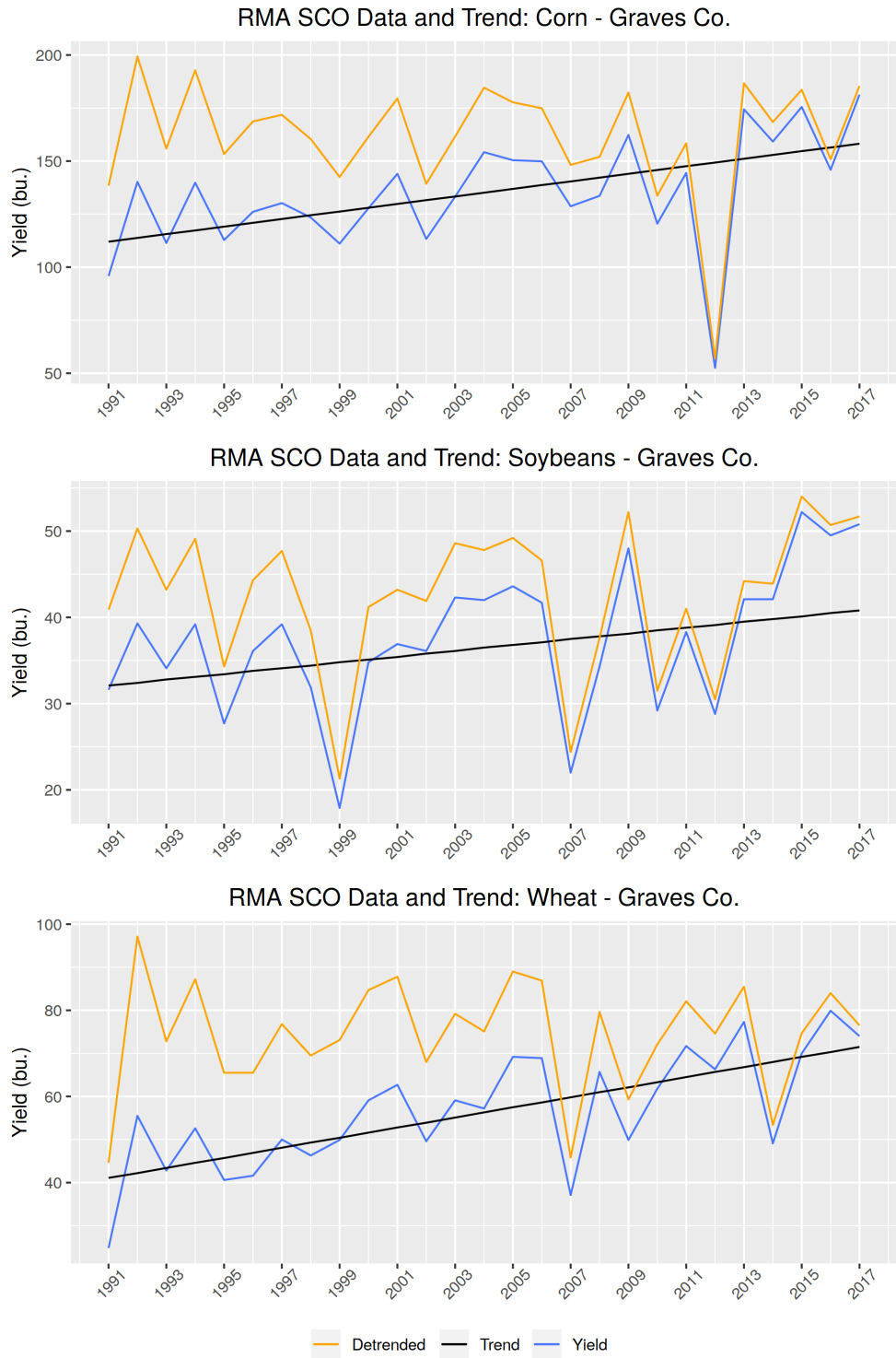


Figure B.40: RMA estimated trends for Grayson County

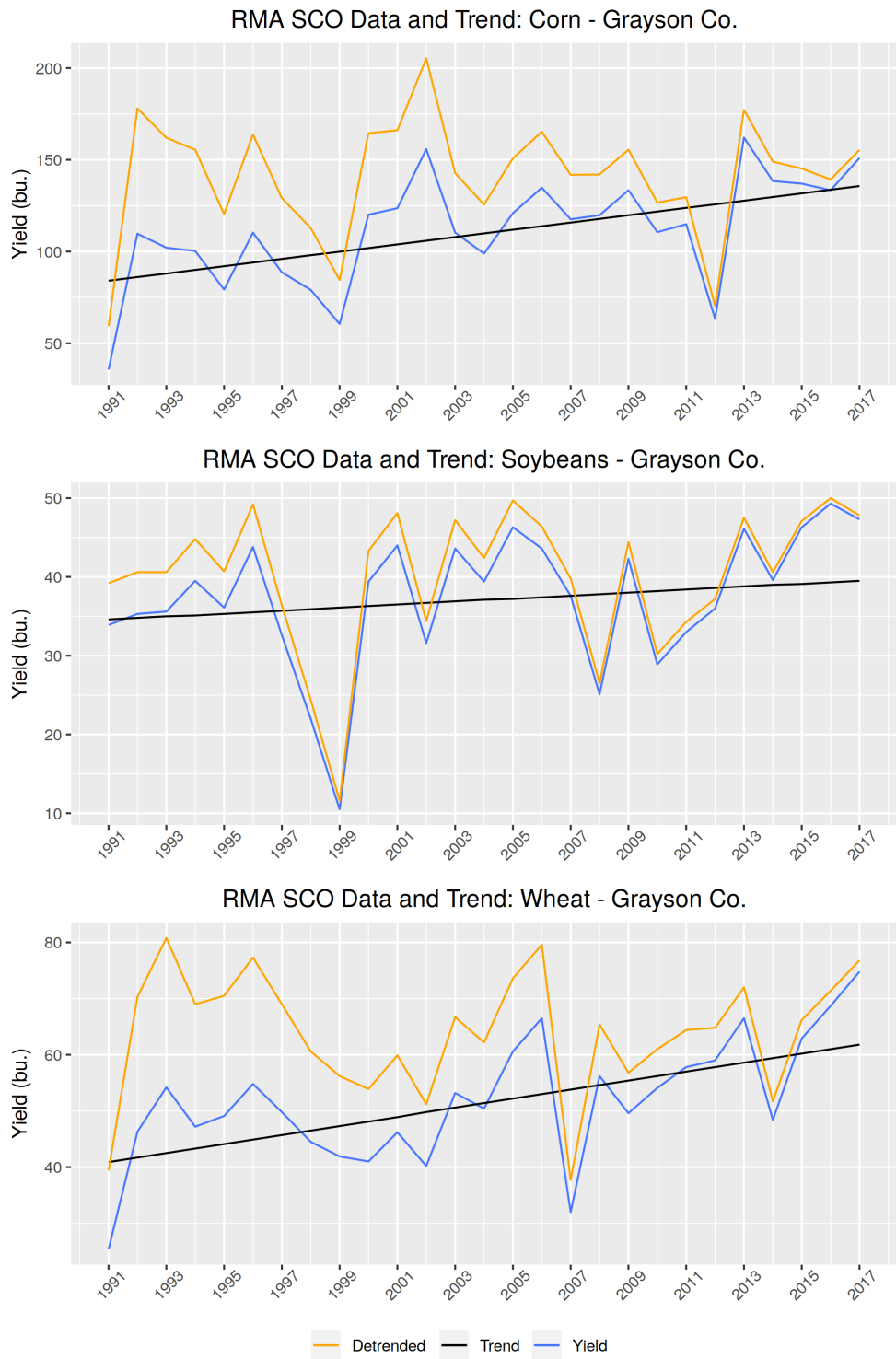
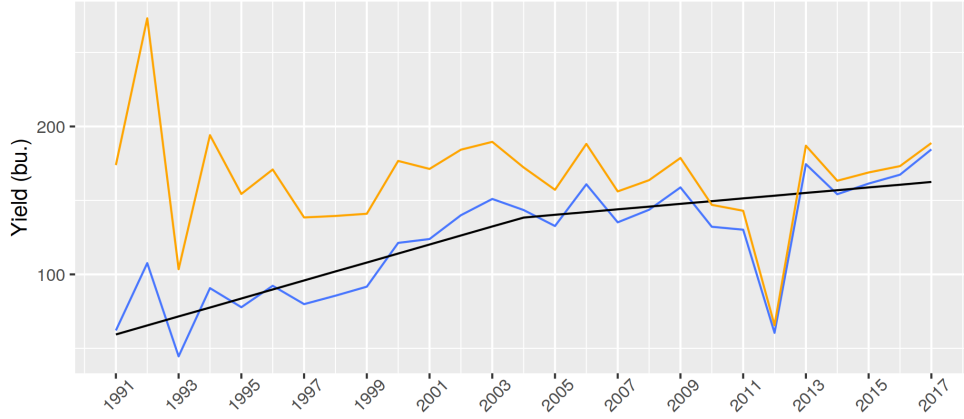
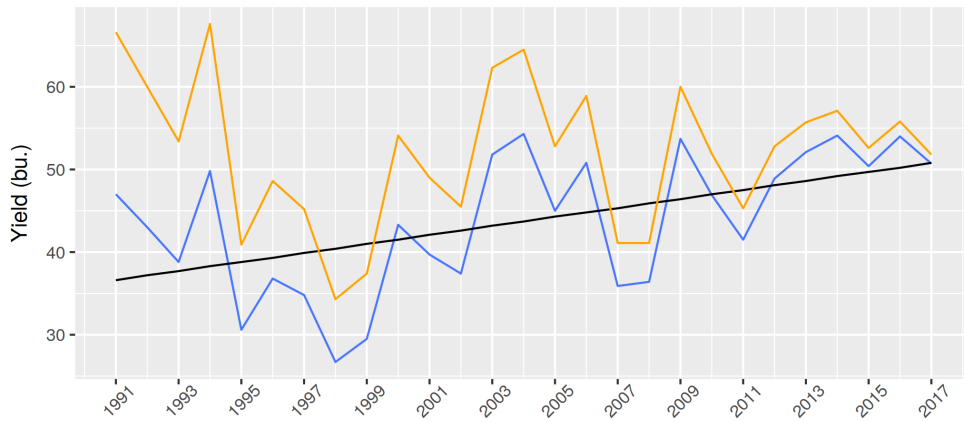


Figure B.41: RMA estimated trends for Green County

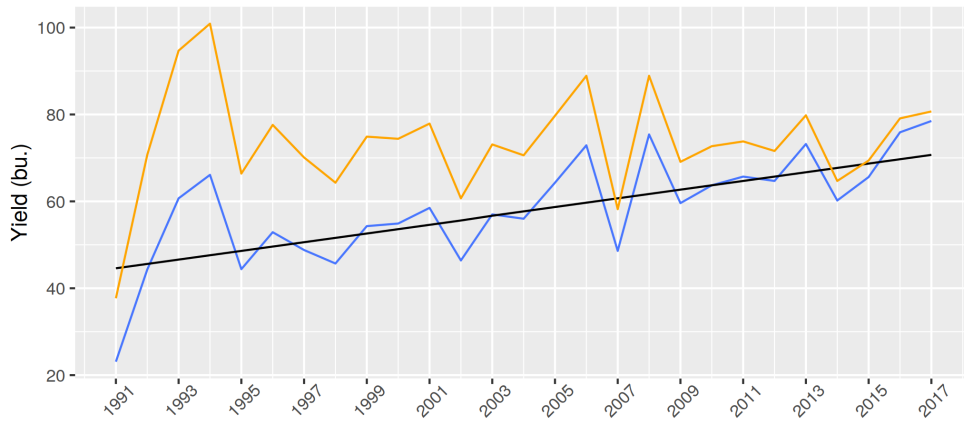
RMA SCO Data and Trend: Corn - Green Co.



RMA SCO Data and Trend: Soybeans - Green Co.



RMA SCO Data and Trend: Wheat - Green Co.



— Detrended — Trend — Yield

Figure B.42: RMA estimated trends for Greenup County

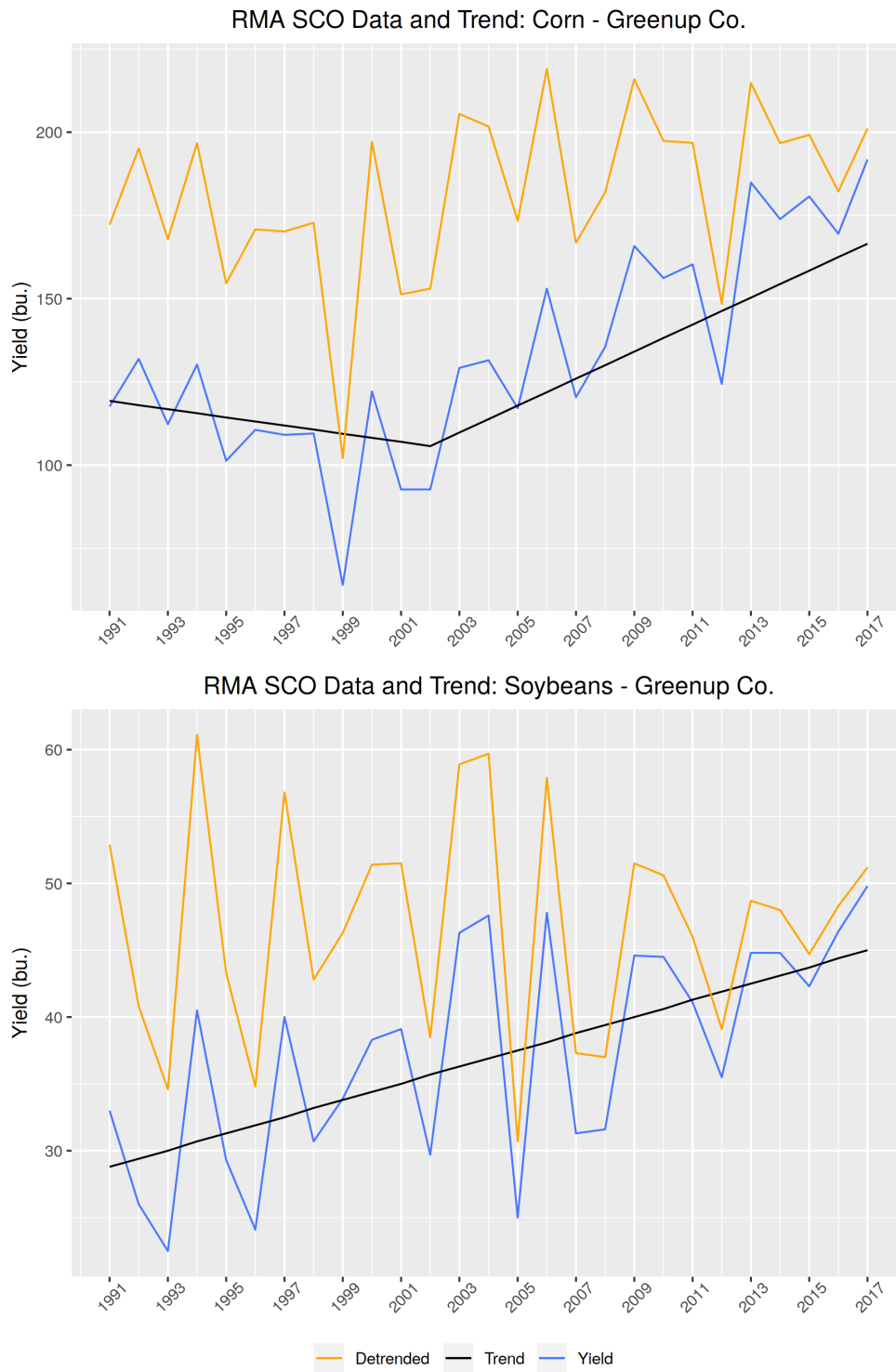
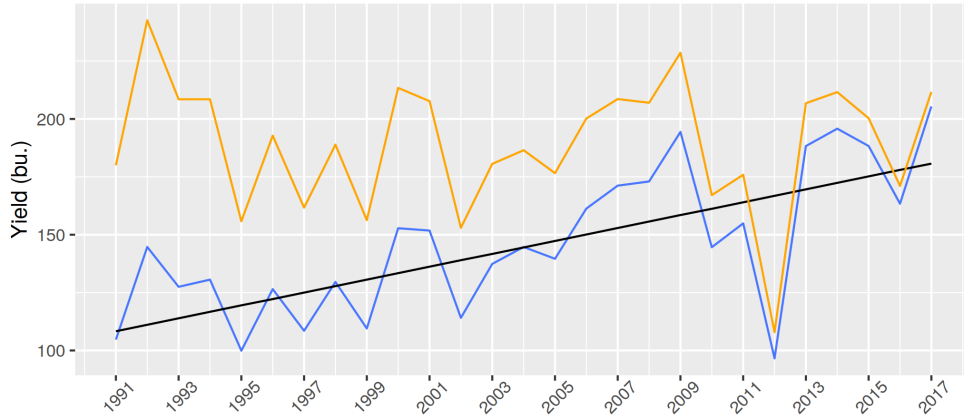
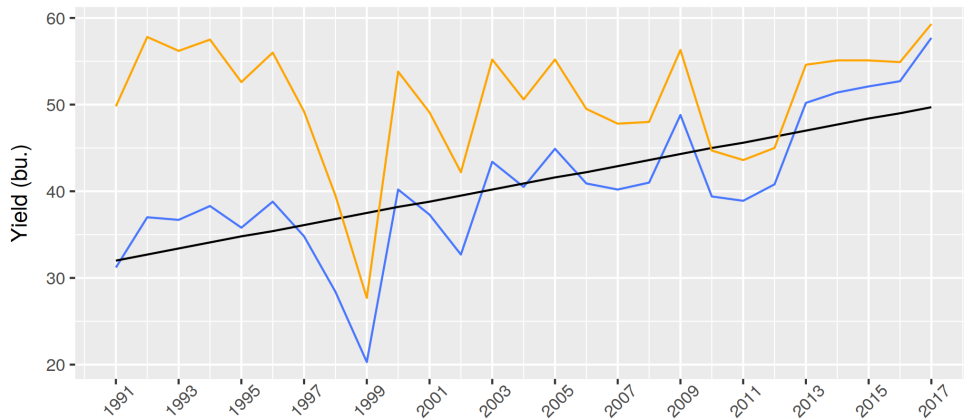


Figure B.43: RMA estimated trends for Hancock County

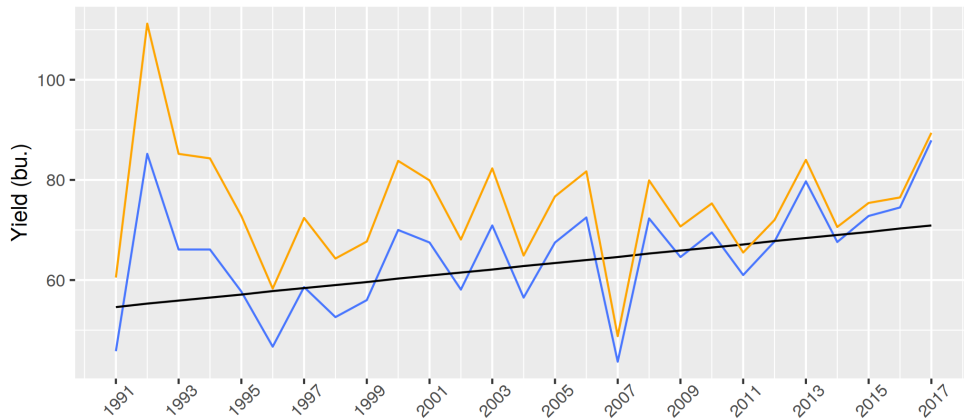
RMA SCO Data and Trend: Corn - Hancock Co.



RMA SCO Data and Trend: Soybeans - Hancock Co.



RMA SCO Data and Trend: Wheat - Hancock Co.



— Detrended — Trend — Yield

Figure B.44: RMA estimated trends for Hardin County

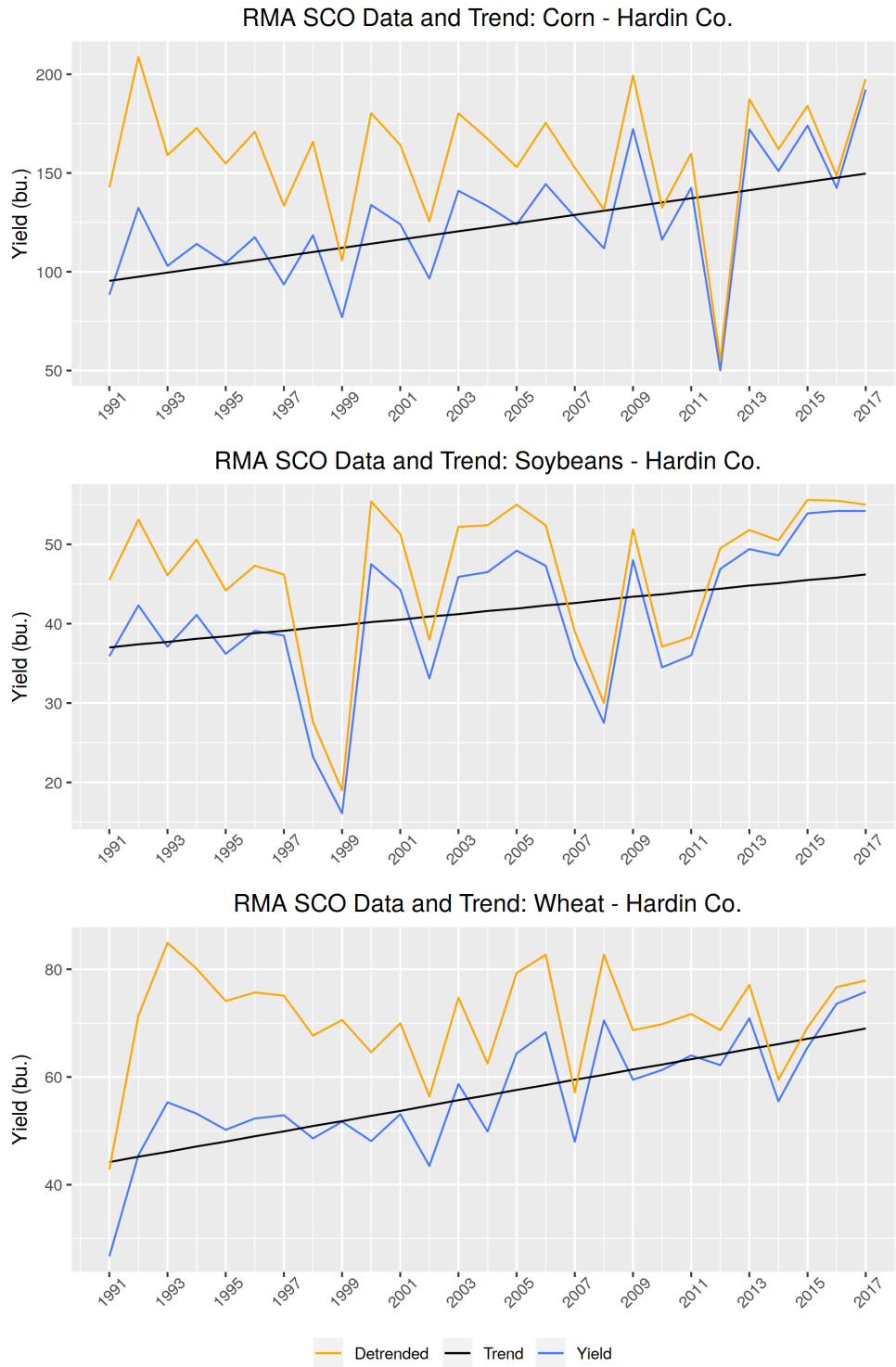


Figure B.45: RMA estimated trends for Harrison County

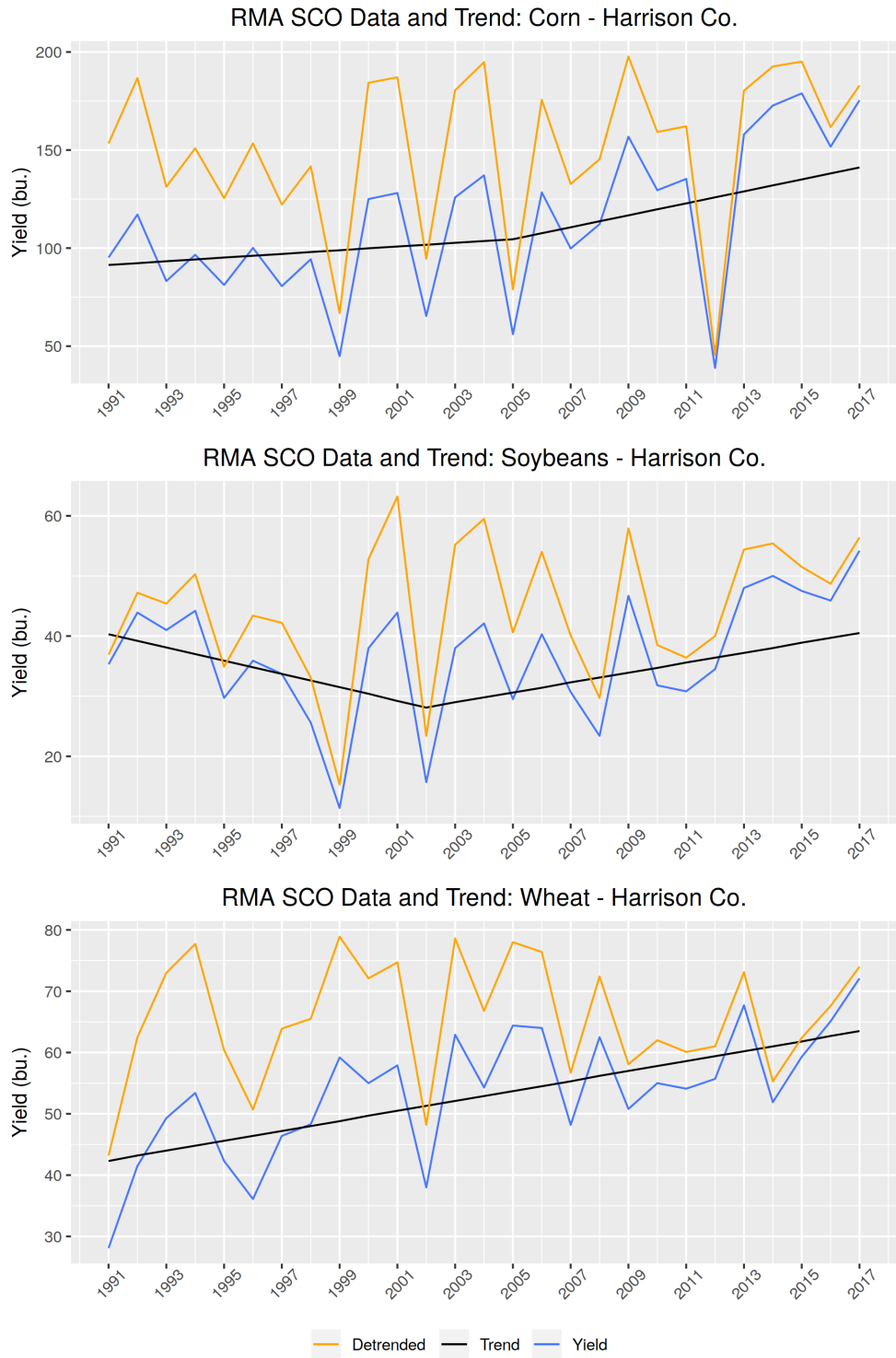




Figure B.46: RMA estimated trends for Hart County

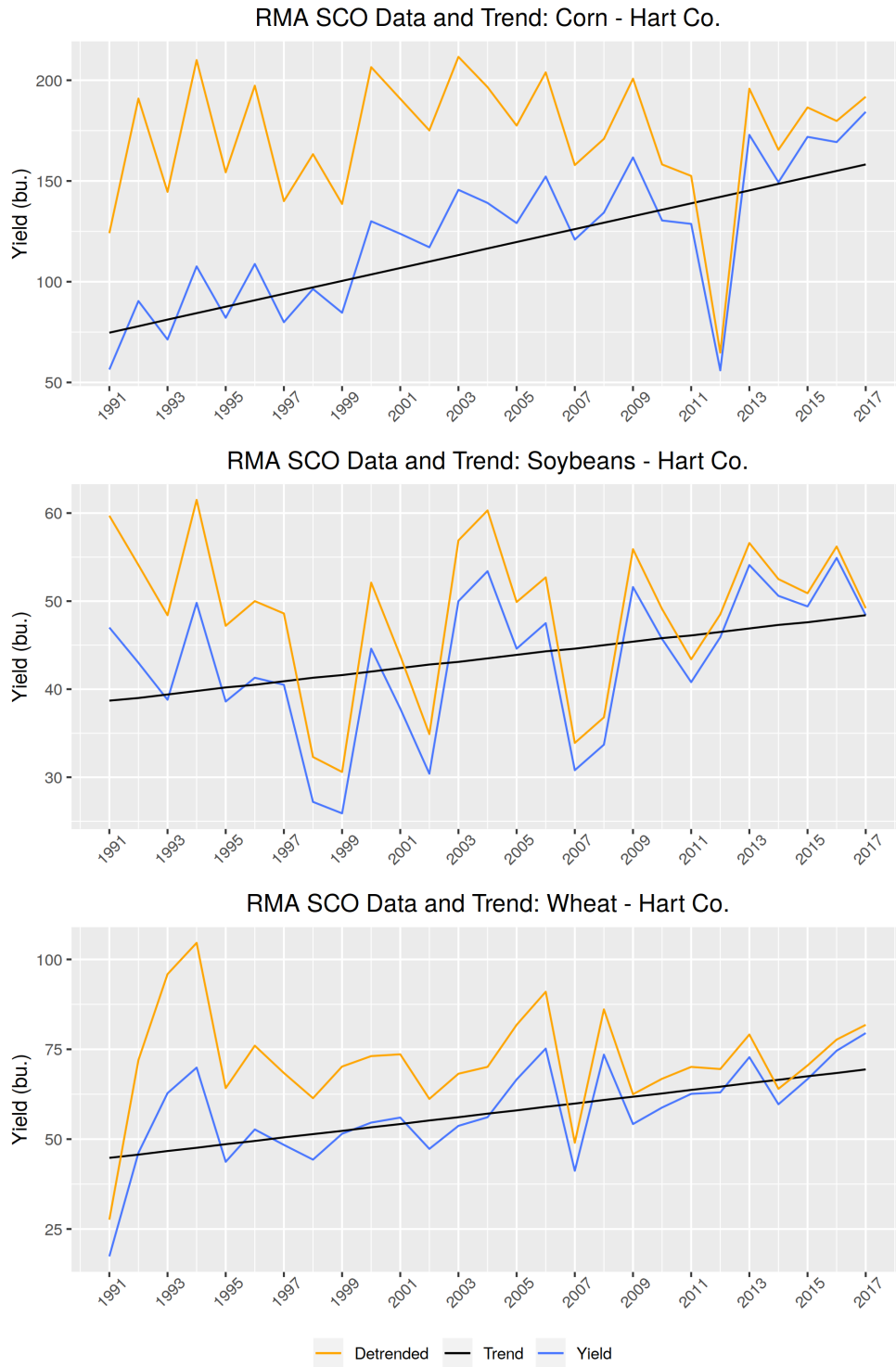
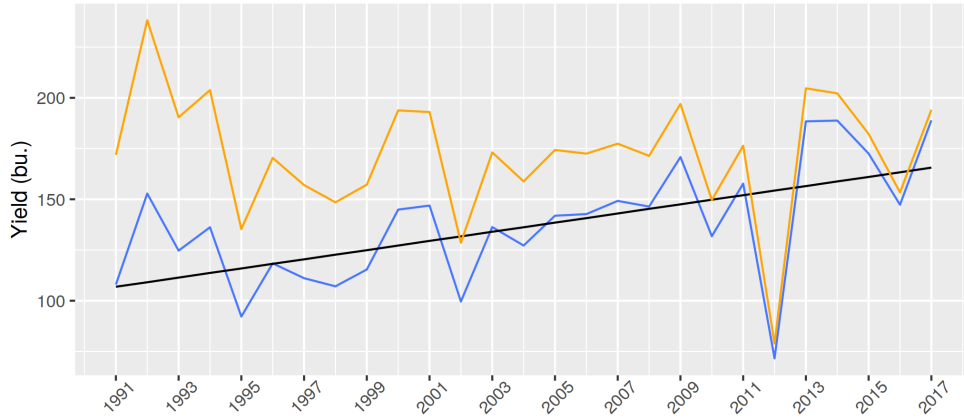
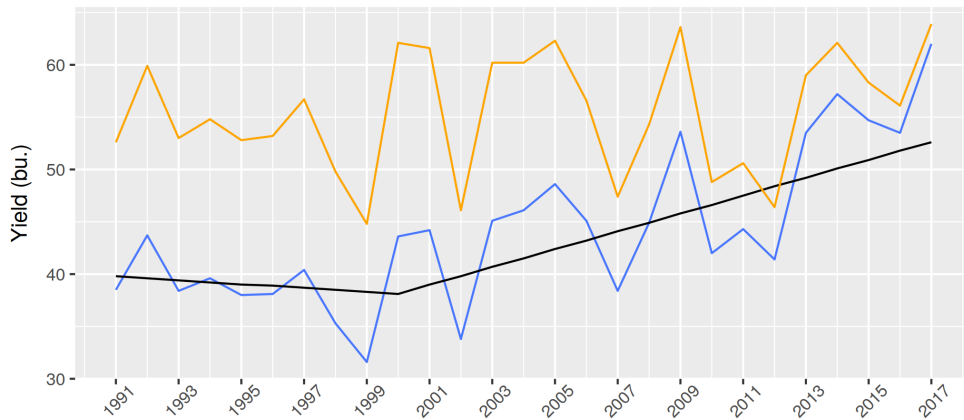


Figure B.47: RMA estimated trends for Henderson County

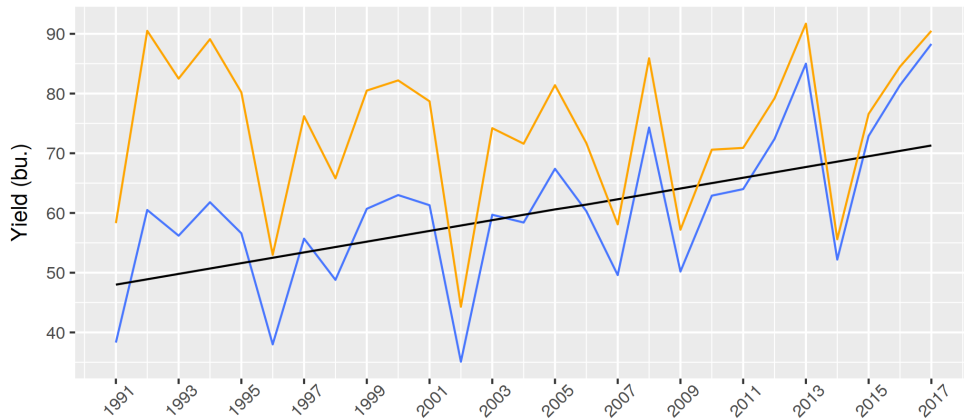
RMA SCO Data and Trend: Corn - Henderson Co.



RMA SCO Data and Trend: Soybeans - Henderson Co.



RMA SCO Data and Trend: Wheat - Henderson Co.



— Detrended — Trend — Yield

Figure B.48: RMA estimated trends for Henry County

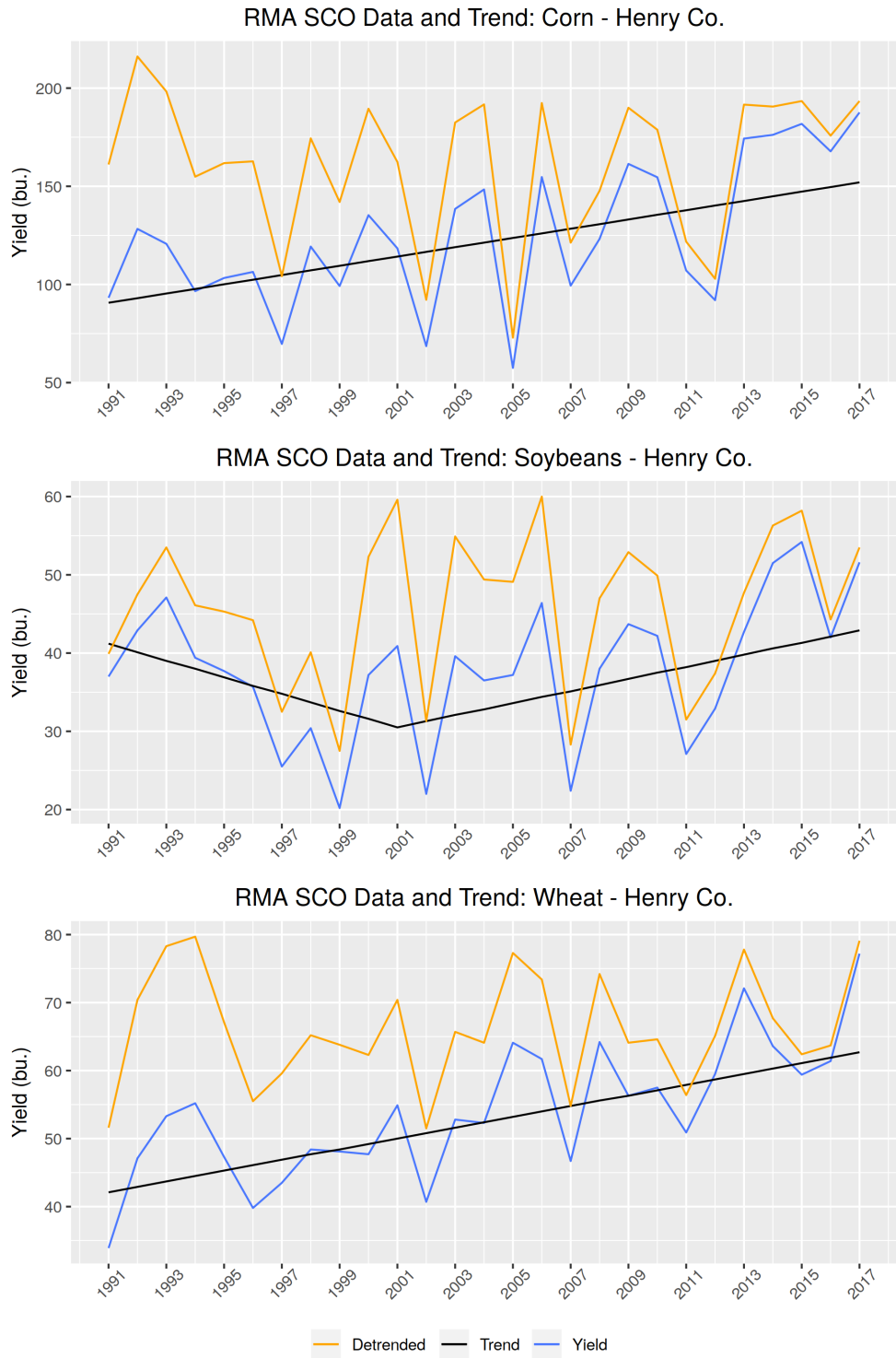


Figure B.49: RMA estimated trends for Hickman County

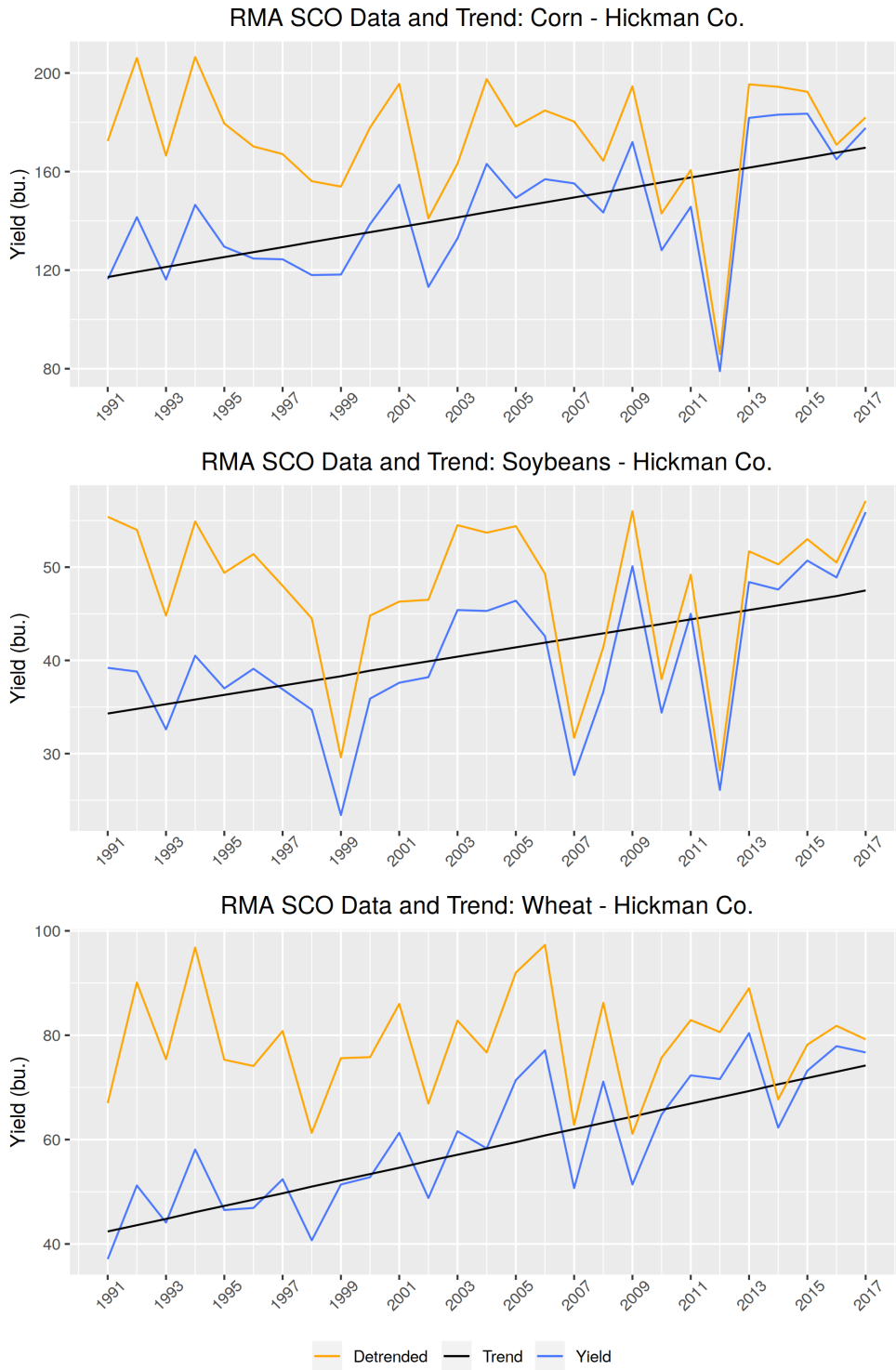
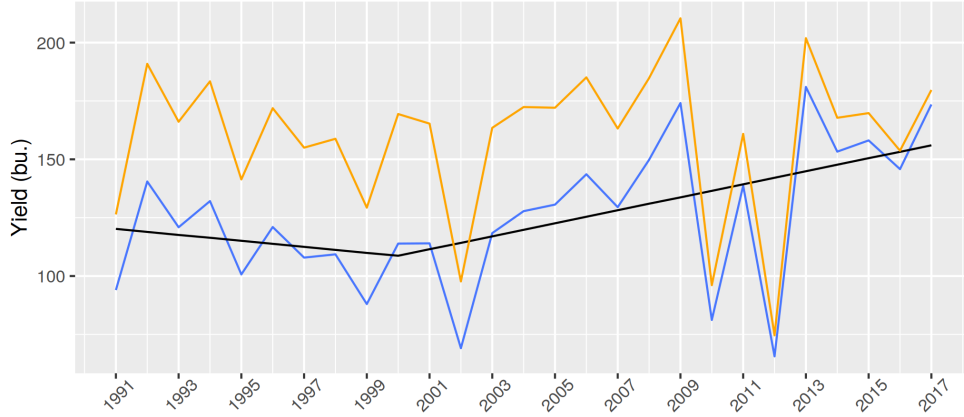
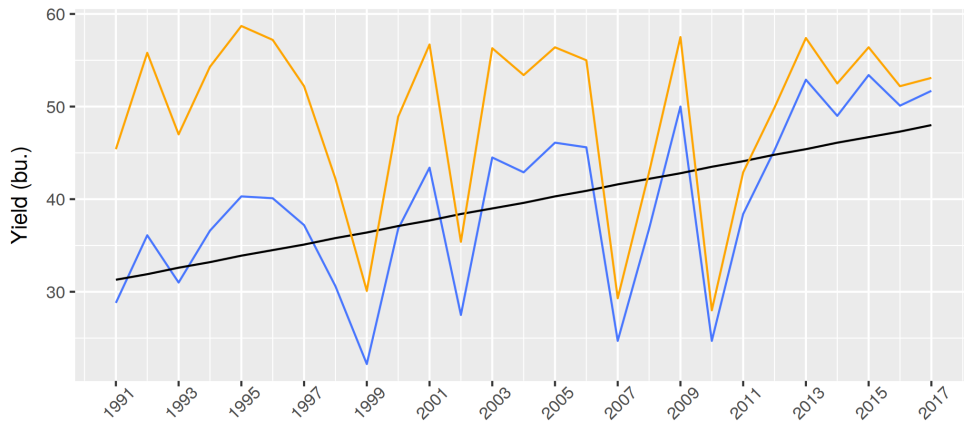


Figure B.50: RMA estimated trends for Hopkins County

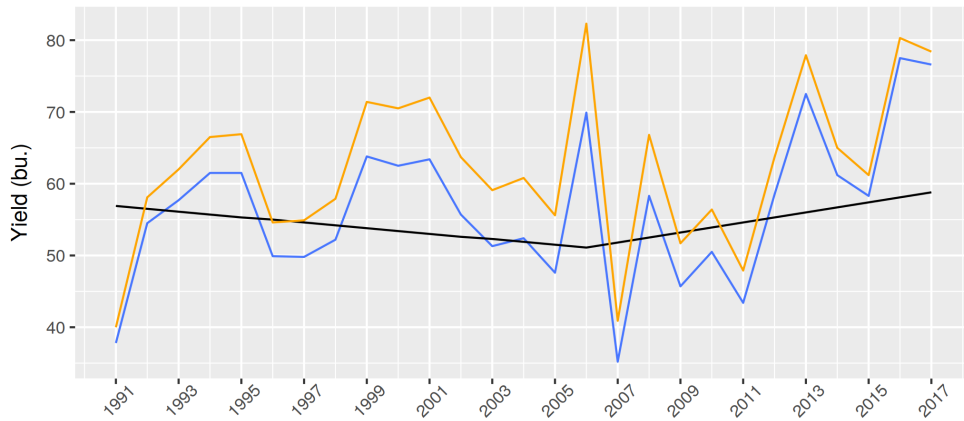
RMA SCO Data and Trend: Corn - Hopkins Co.



RMA SCO Data and Trend: Soybeans - Hopkins Co.



RMA SCO Data and Trend: Wheat - Hopkins Co.



— Detrended — Trend — Yield

Figure B.51: RMA estimated trends for Jefferson County

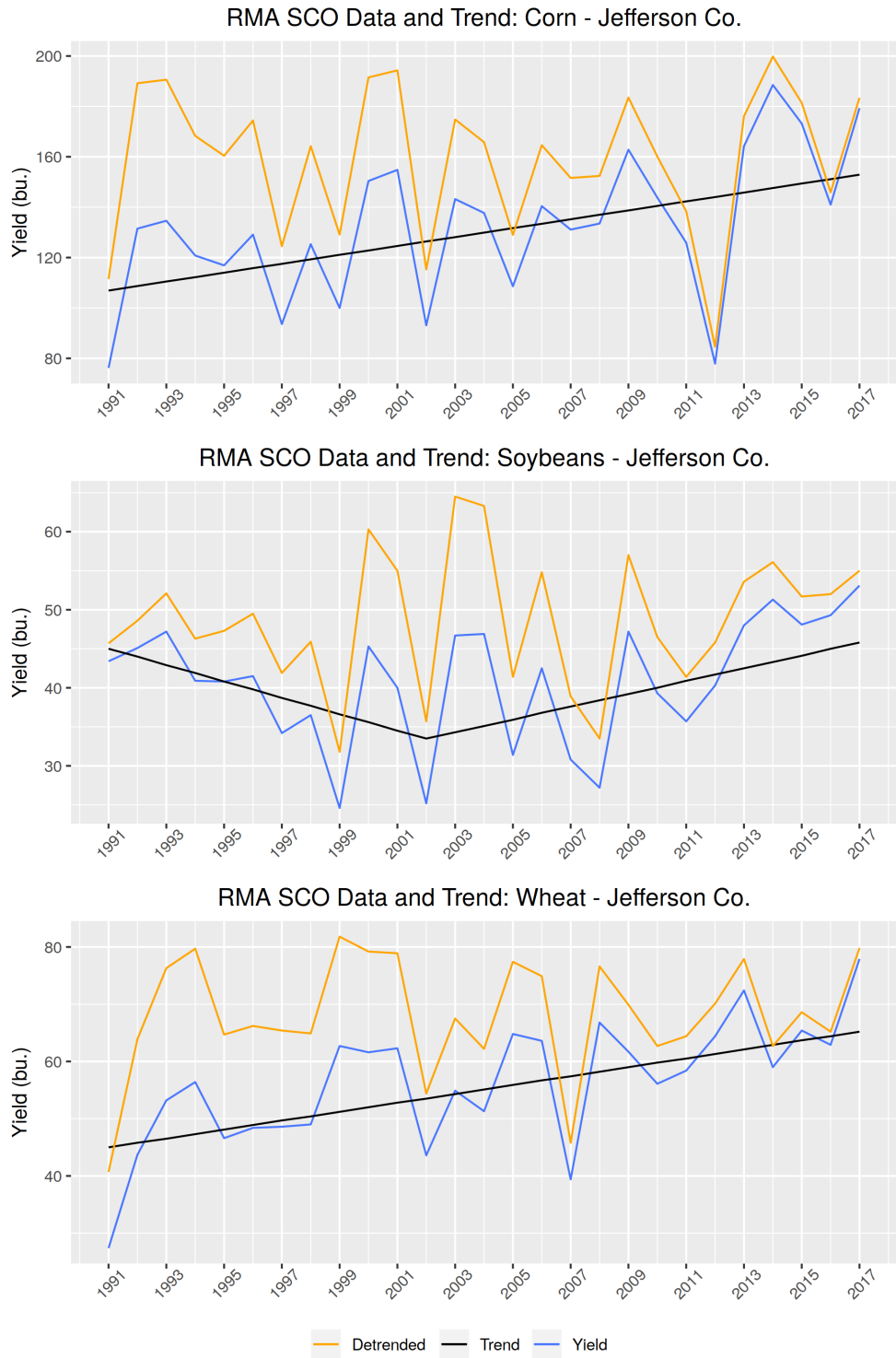
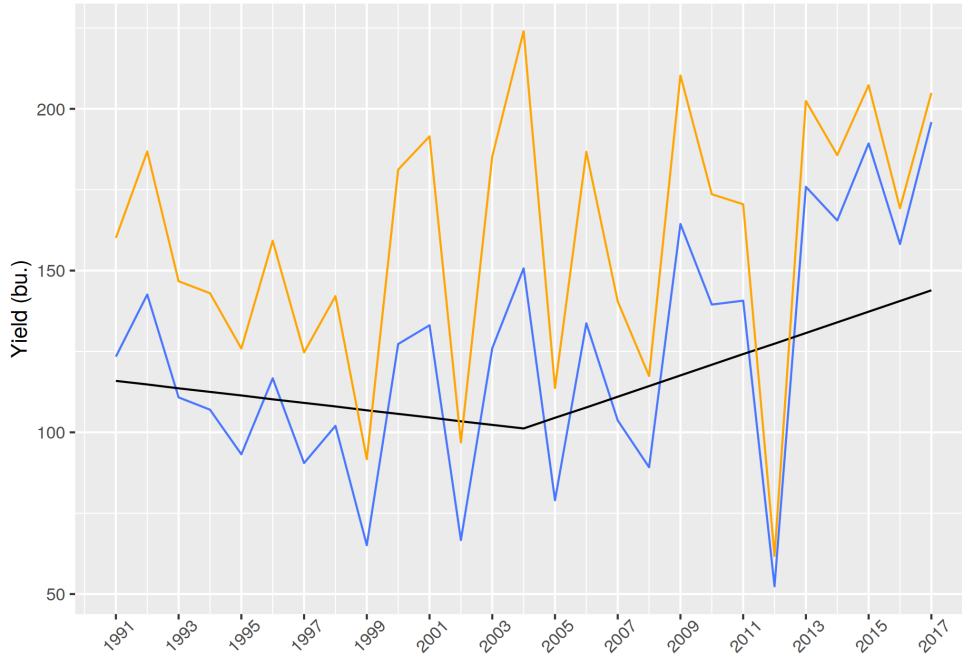
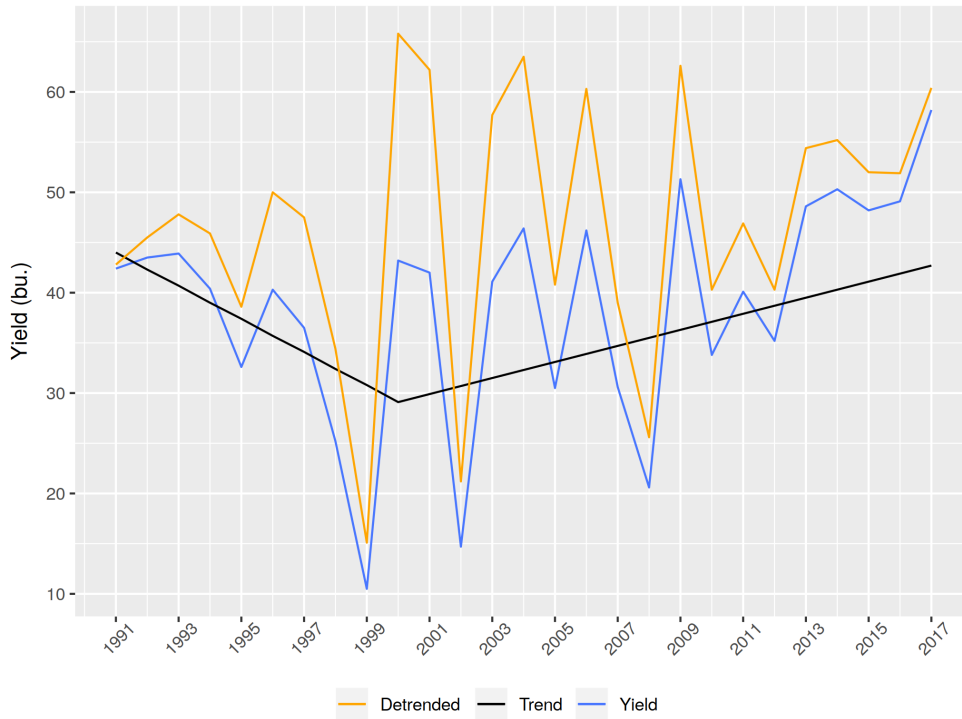


Figure B.52: RMA estimated trends for Jessamine County

RMA SCO Data and Trend: Corn - Jessamine Co.



RMA SCO Data and Trend: Soybeans - Jessamine Co.



— Detrended — Trend — Yield

Figure B.53: RMA estimated trends for Kenton County

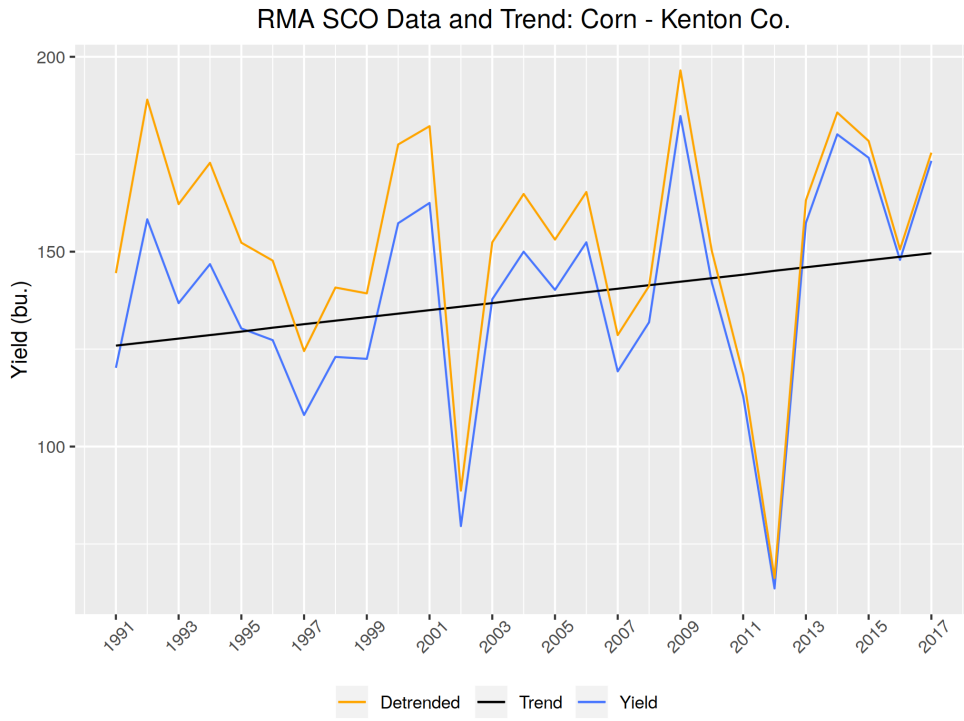




Figure B.54: RMA estimated trends for Knox County

RMA SCO Data and Trend: Corn - Knox Co.

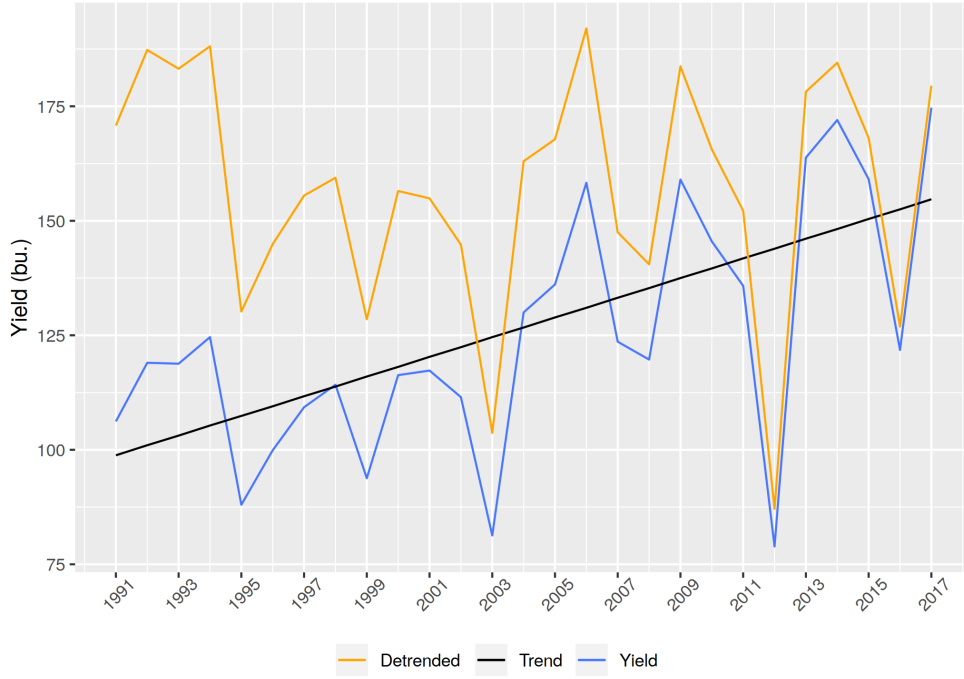


Figure B.55: RMA estimated trends for Larue County

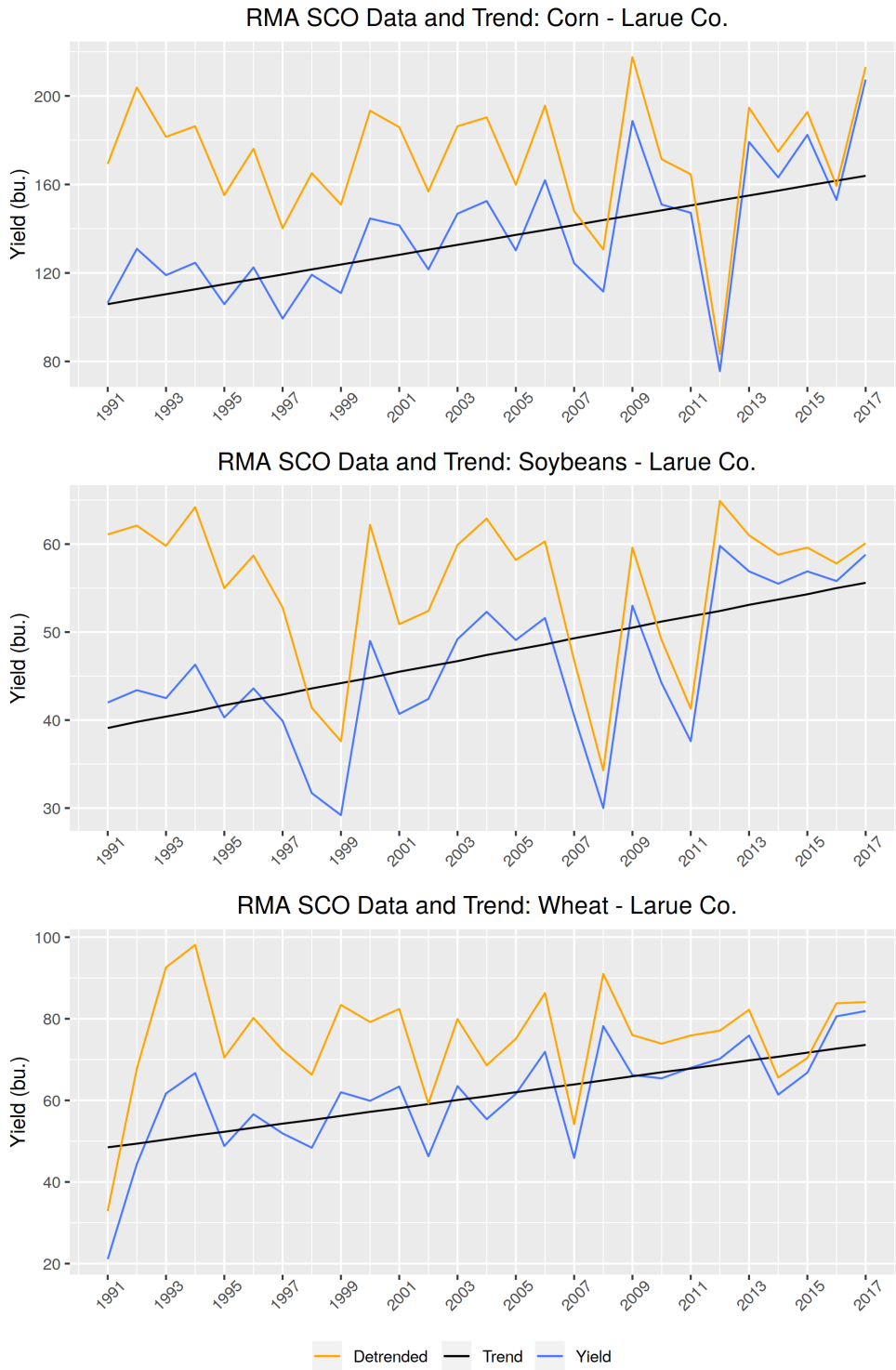


Figure B.56: RMA estimated trends for Laurel County

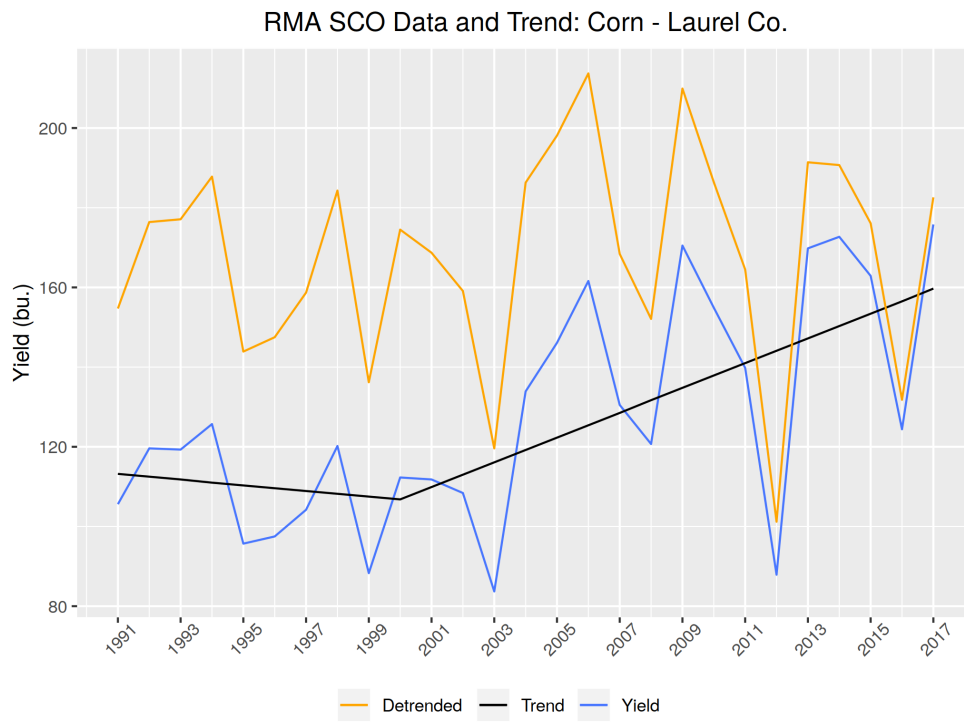


Figure B.57: RMA estimated trends for Lawrence County

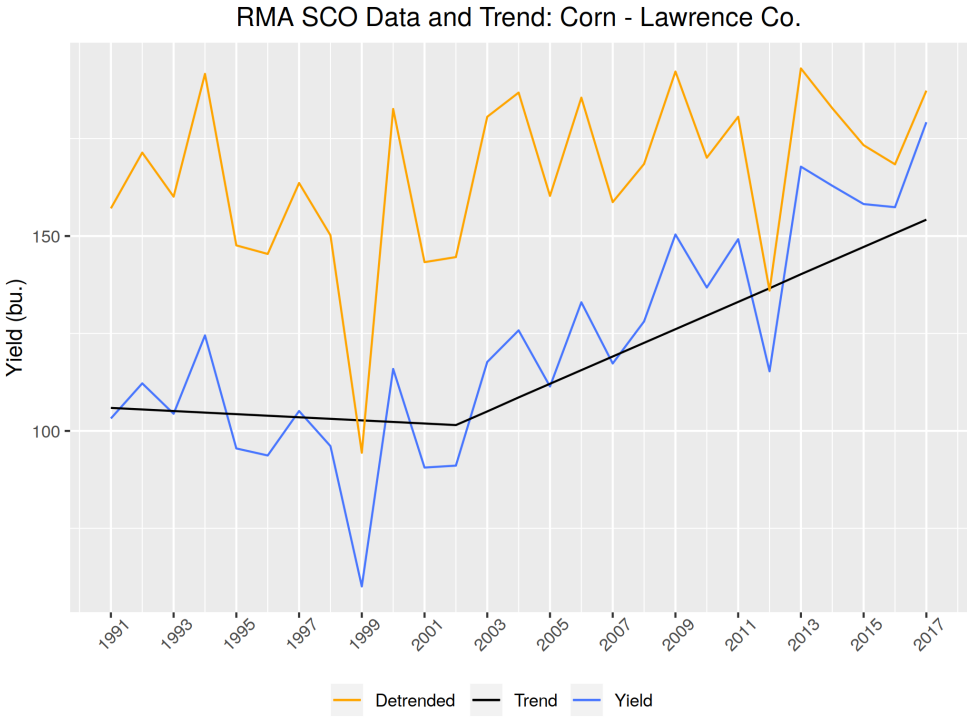


Figure B.58: RMA estimated trends for Lewis County

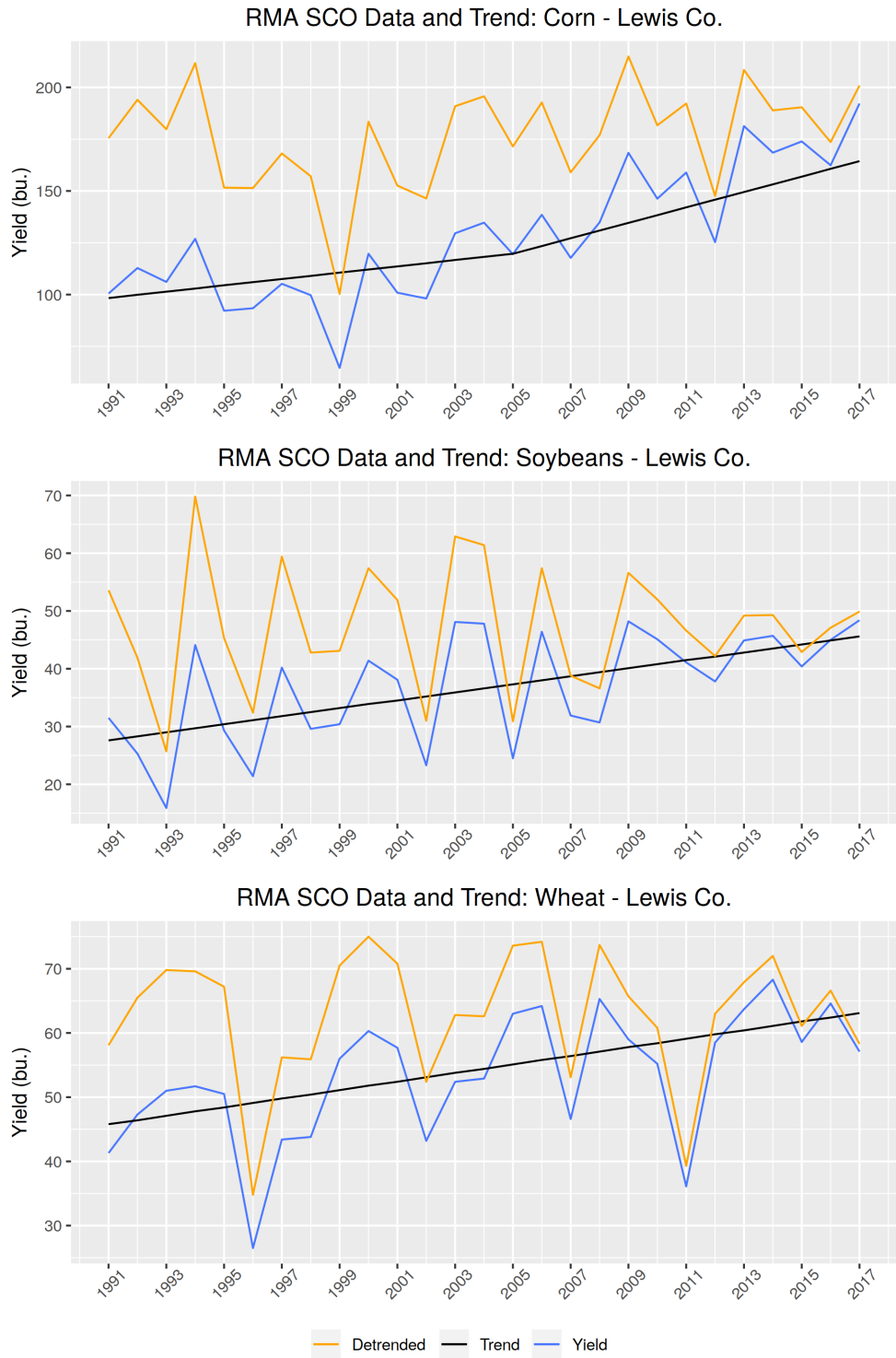


Figure B.59: RMA estimated trends for Lincoln County

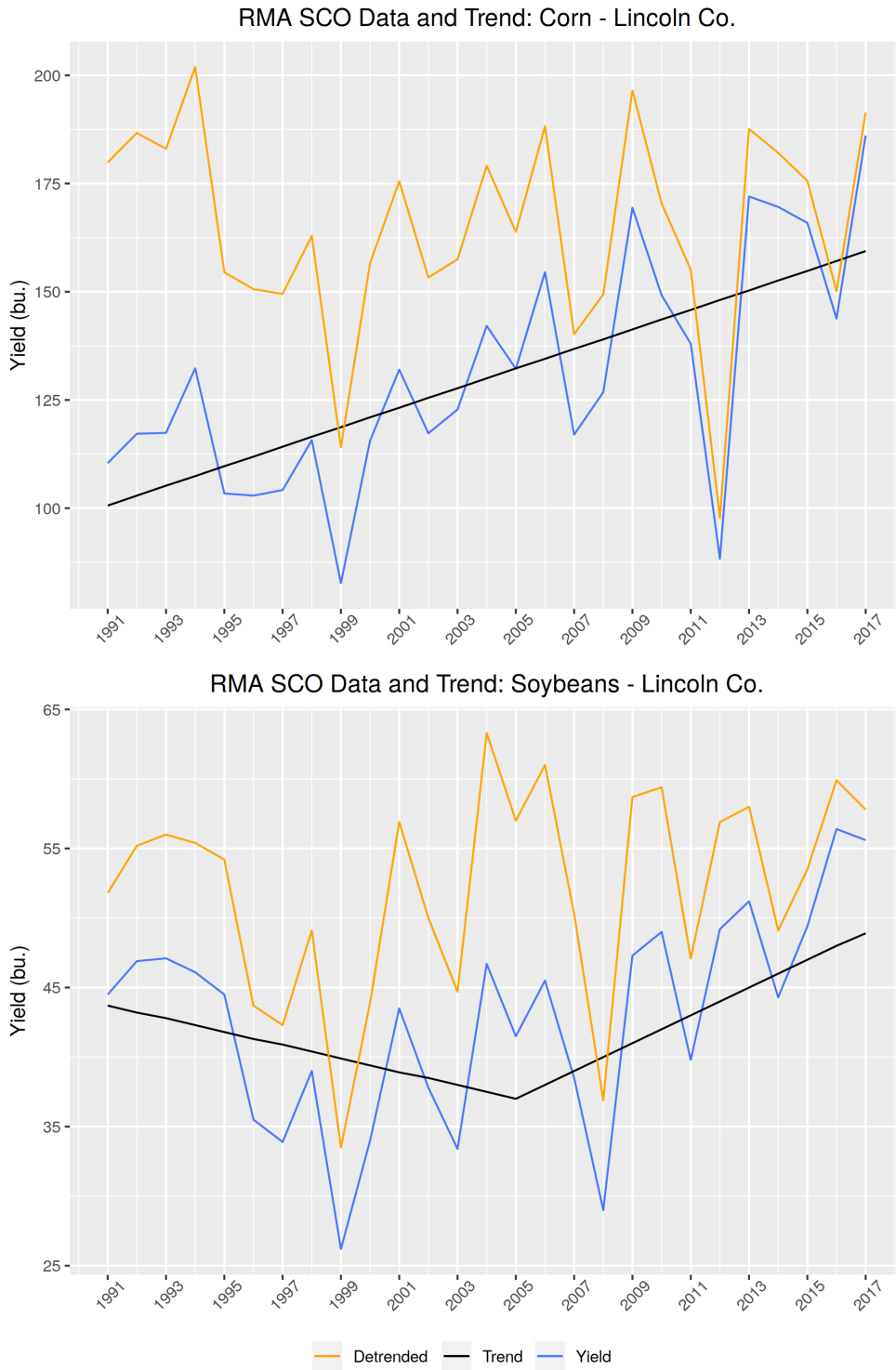


Figure B.60: RMA estimated trends for Livingston County

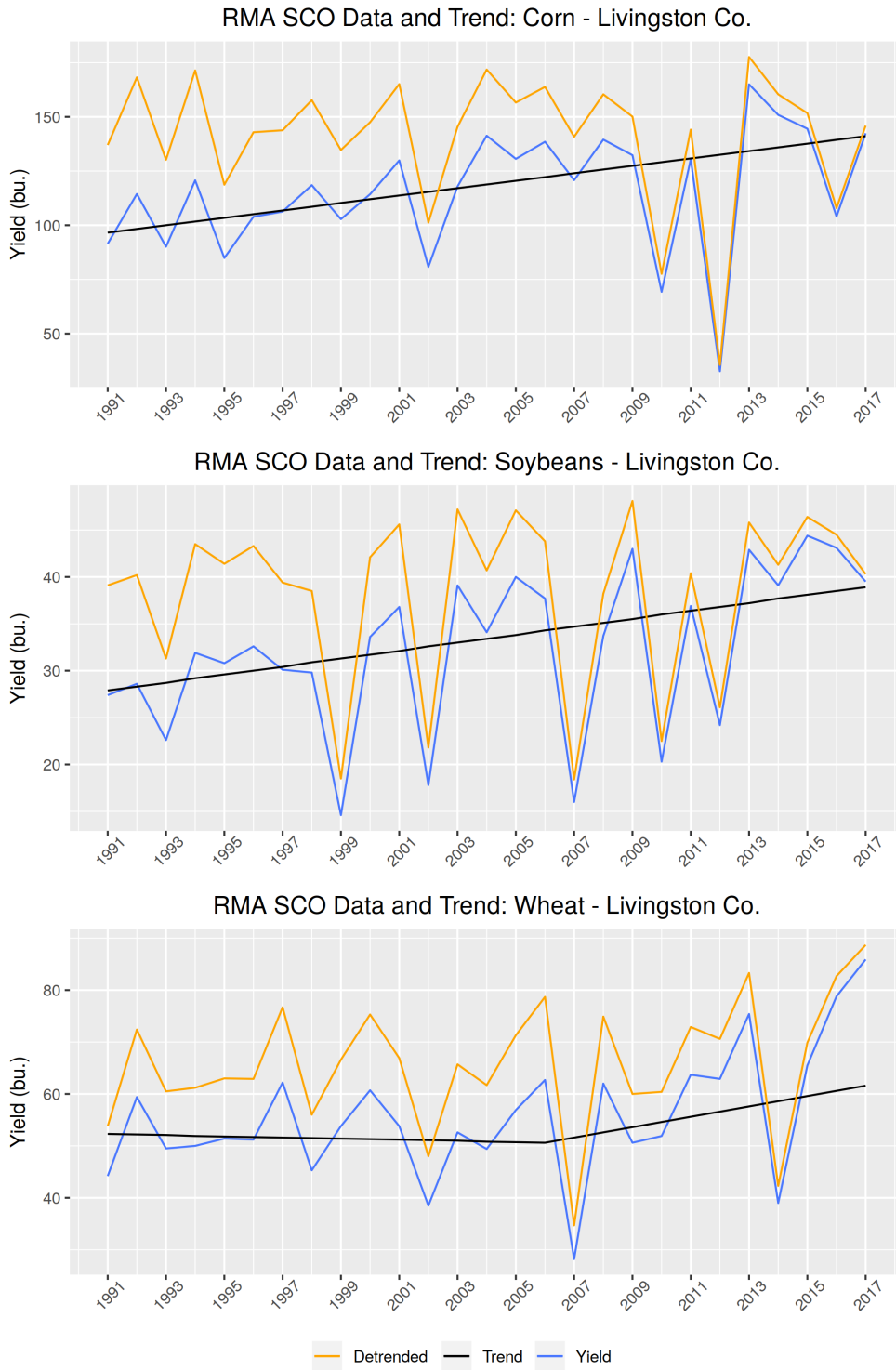


Figure B.61: RMA estimated trends for Logan County

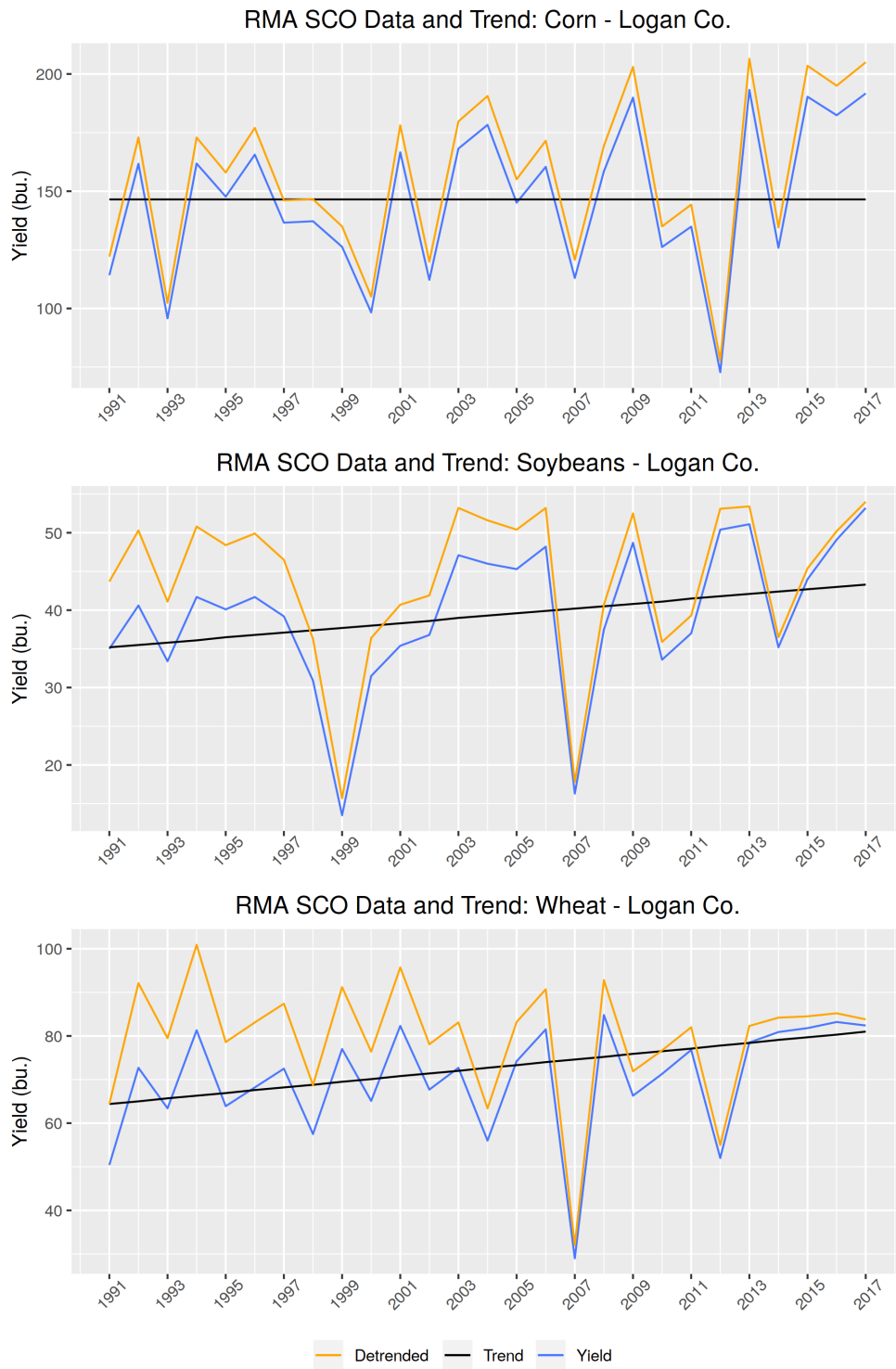




Figure B.62: RMA estimated trends for Lyon County

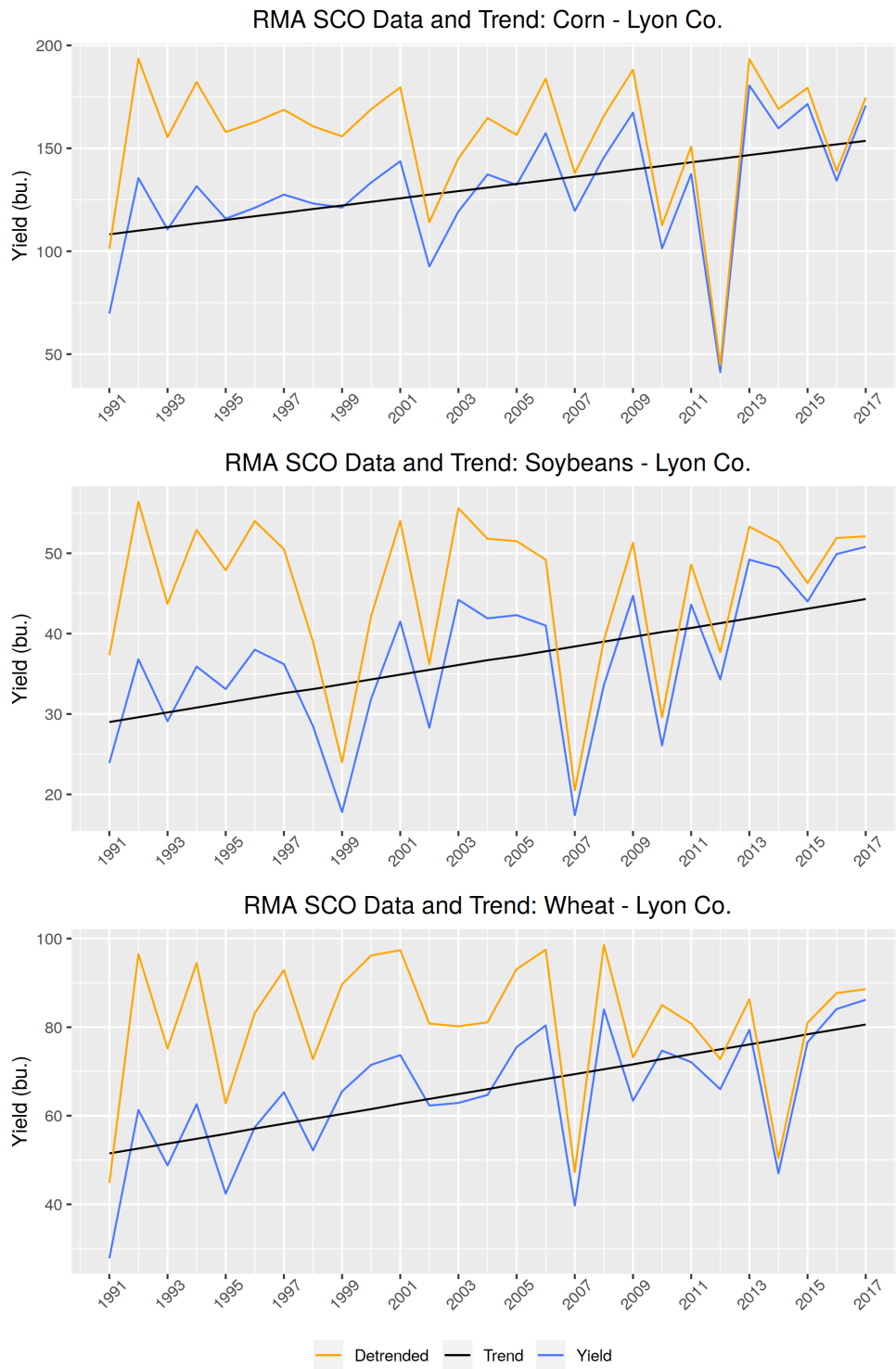


Figure B.63: RMA estimated trends for Madison County

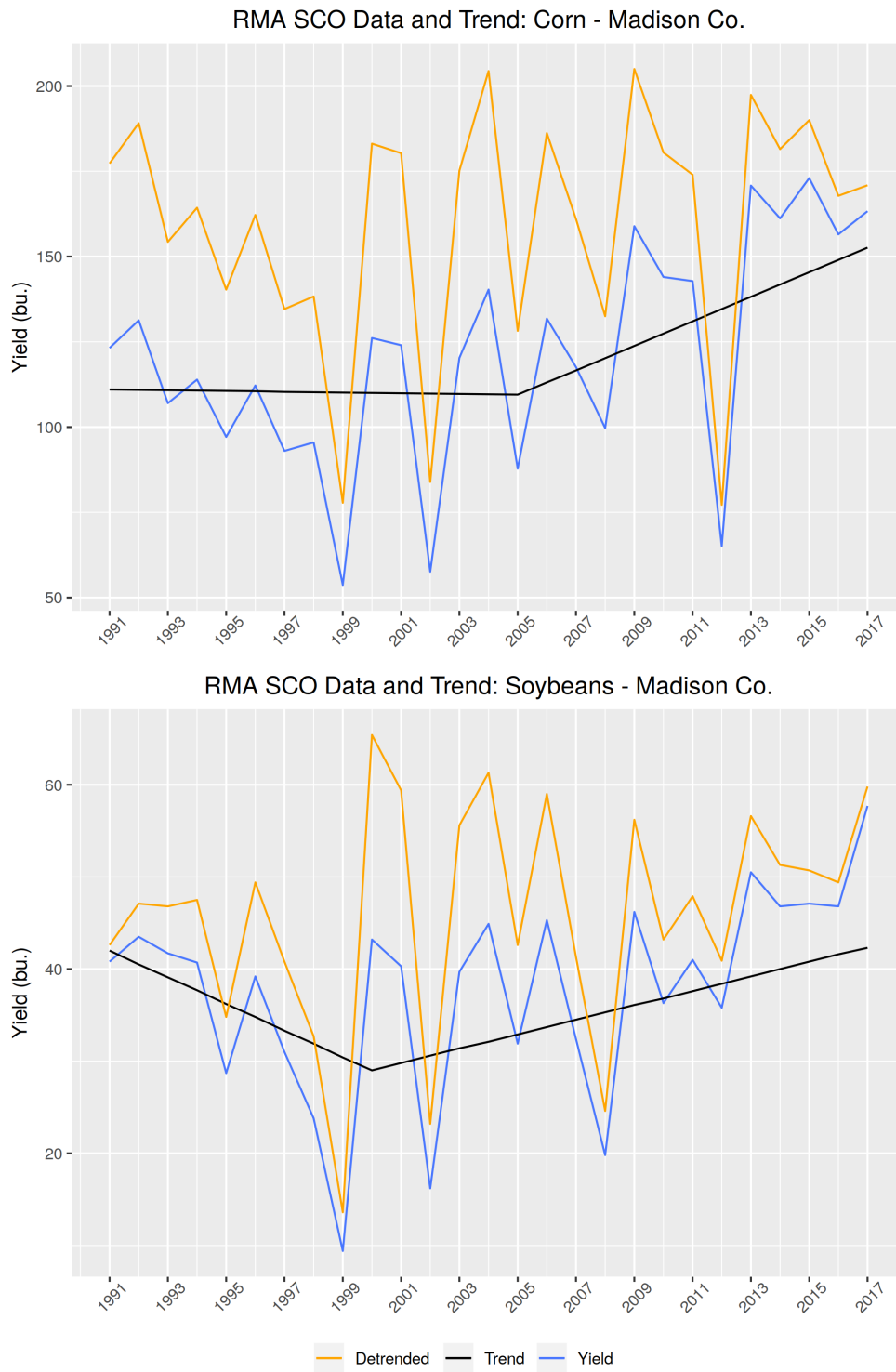


Figure B.64: RMA estimated trends for Marion County

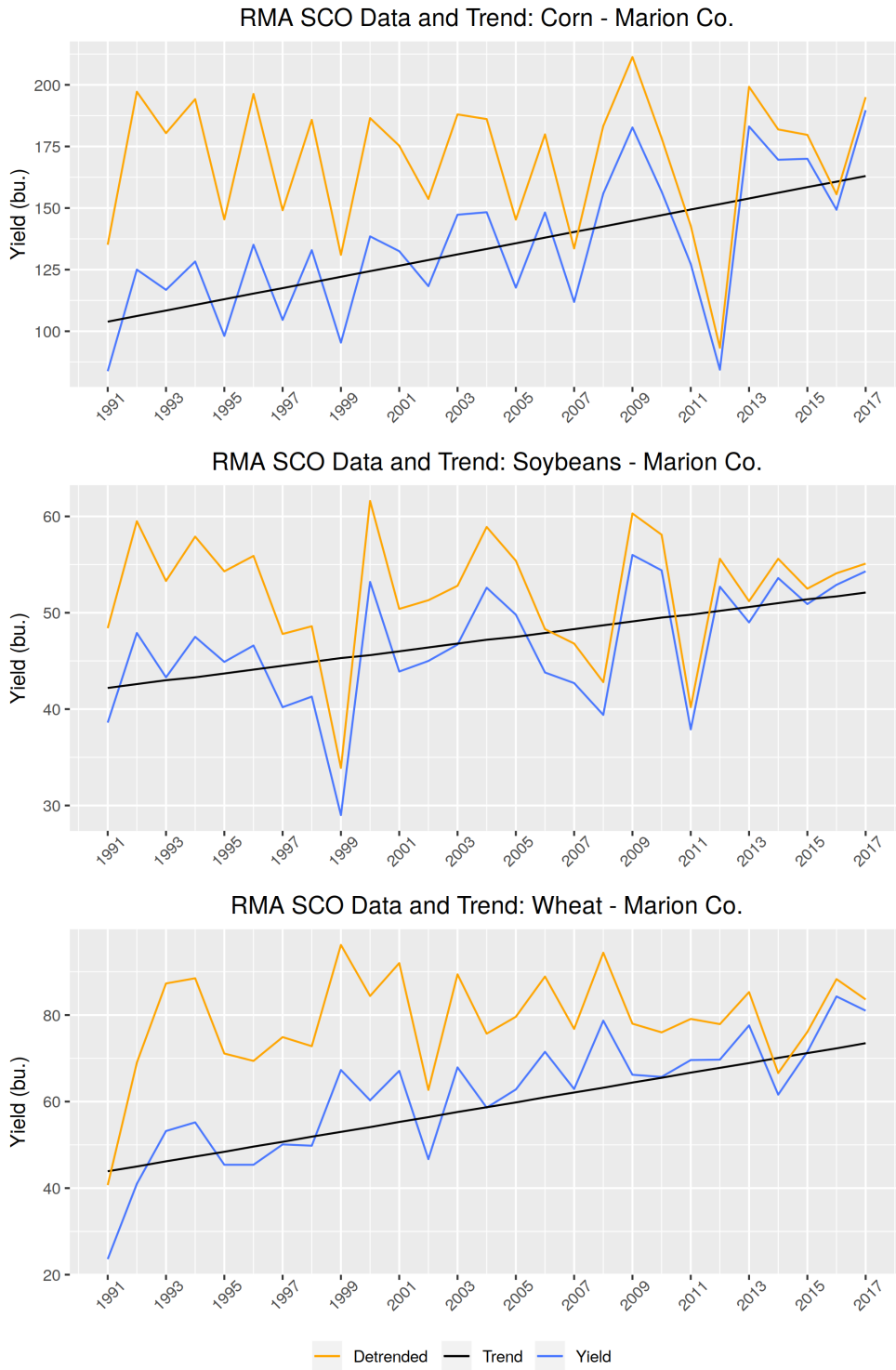


Figure B.65: RMA estimated trends for Marshall County

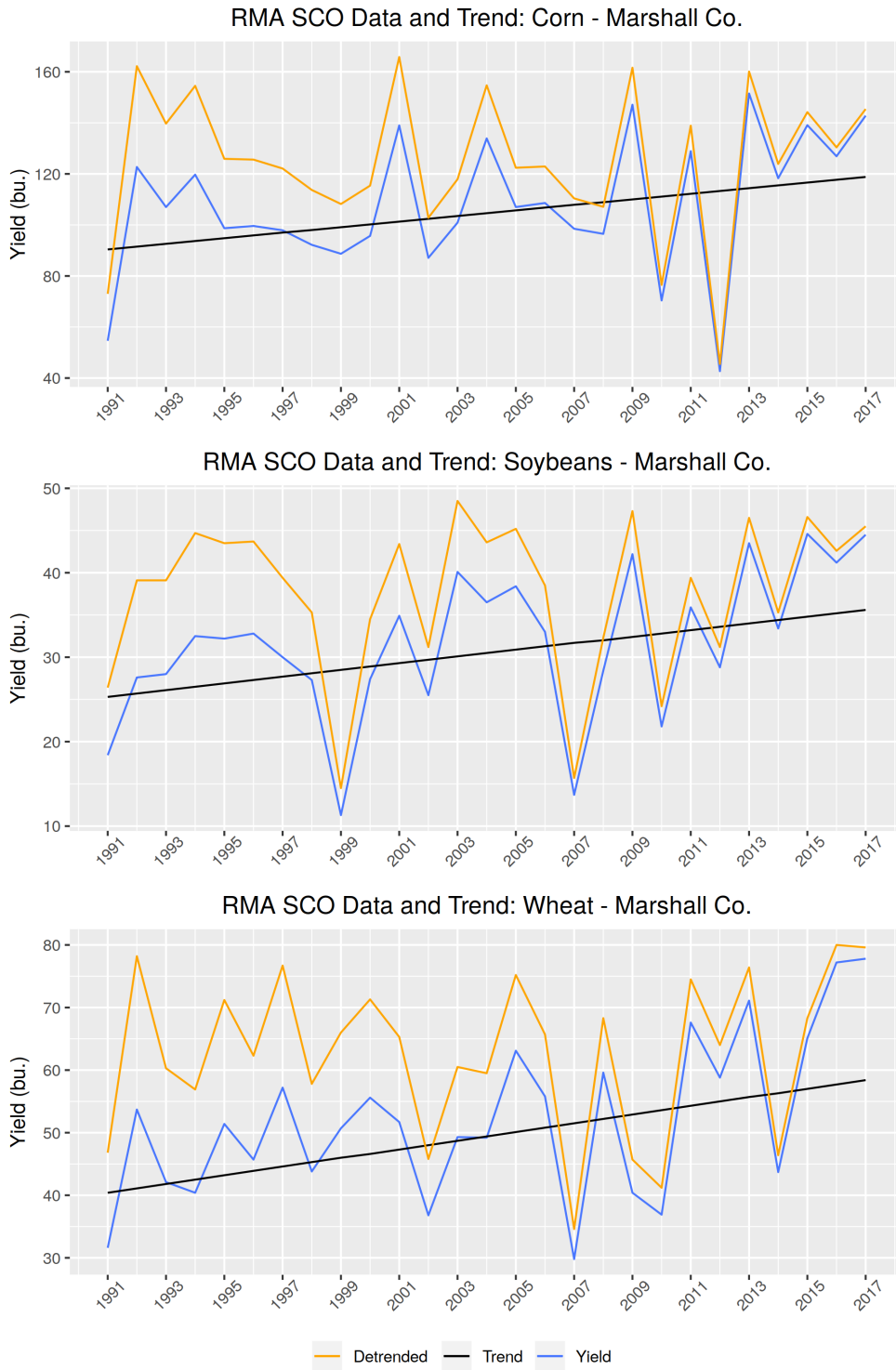


Figure B.66: RMA estimated trends for Mason County

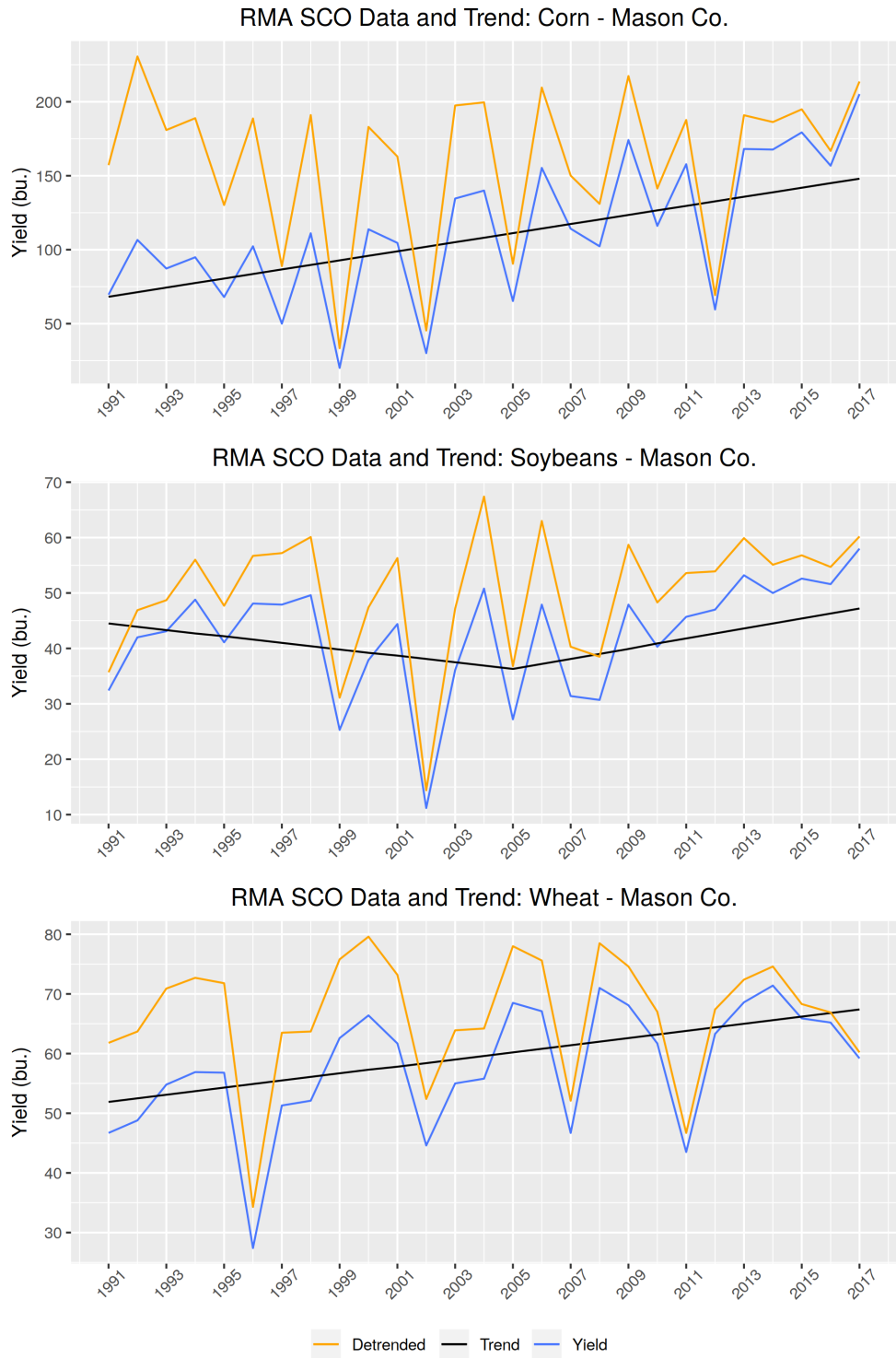
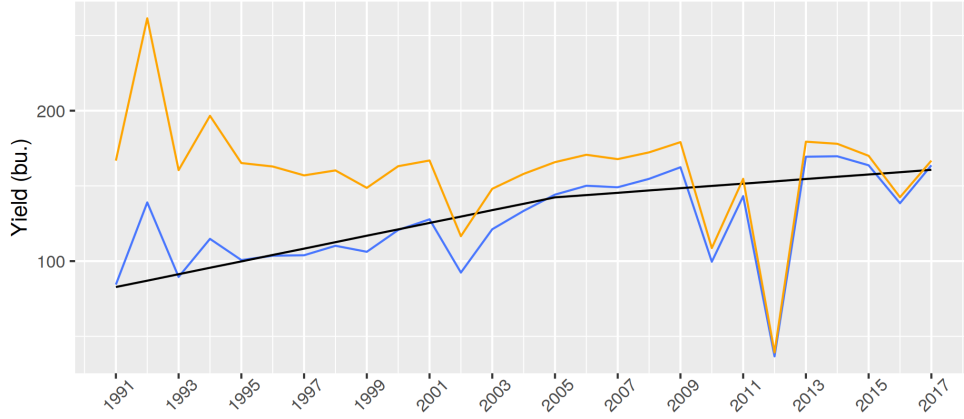
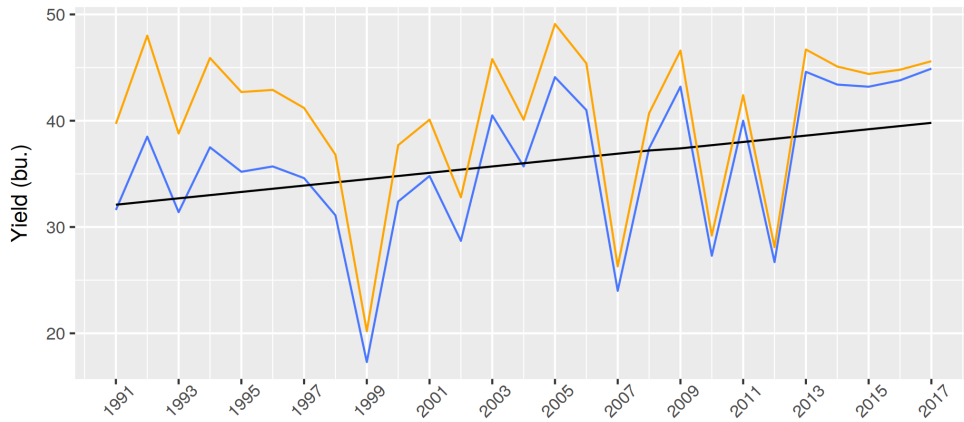


Figure B.67: RMA estimated trends for Mccracken County

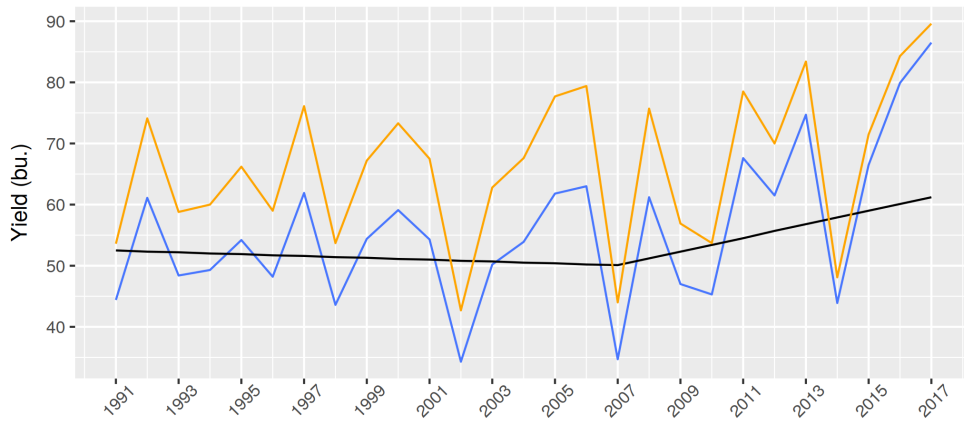
RMA SCO Data and Trend: Corn - Mccracken Co.



RMA SCO Data and Trend: Soybeans - Mccracken Co.



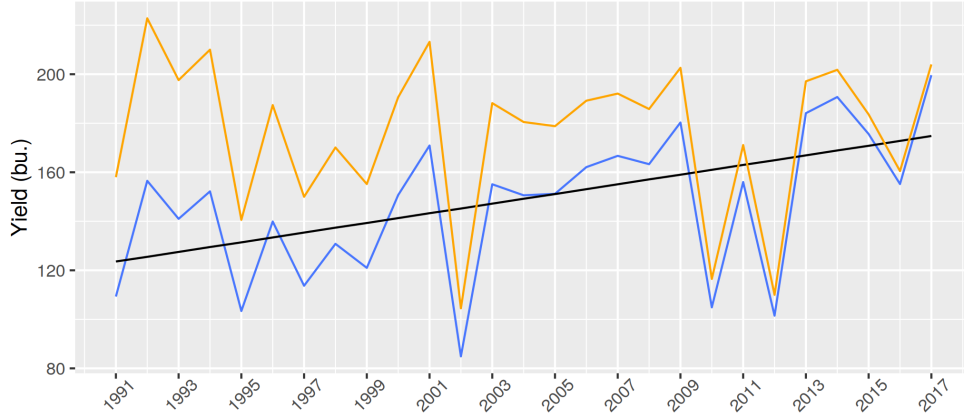
RMA SCO Data and Trend: Wheat - Mccracken Co.



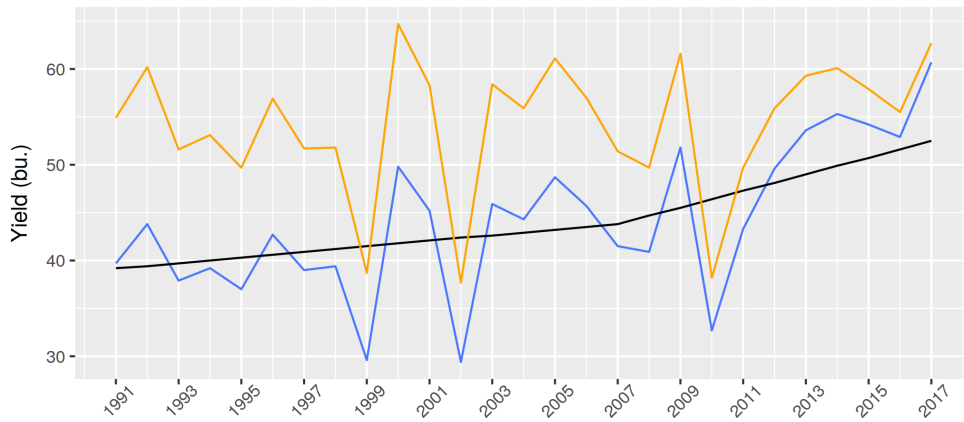
— Detrended — Trend — Yield

Figure B.68: RMA estimated trends for Mclean County

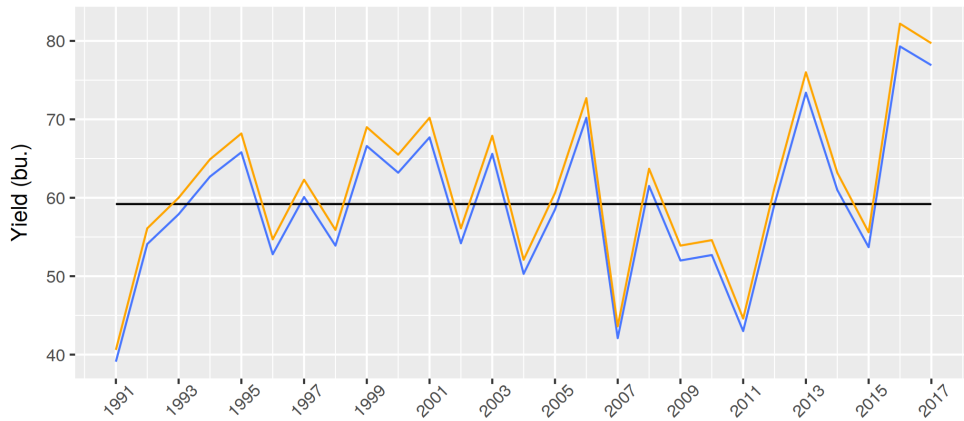
RMA SCO Data and Trend: Corn - Mclean Co.



RMA SCO Data and Trend: Soybeans - Mclean Co.



RMA SCO Data and Trend: Wheat - Mclean Co.



— Detrended — Trend — Yield

Figure B.69: RMA estimated trends for Meade County

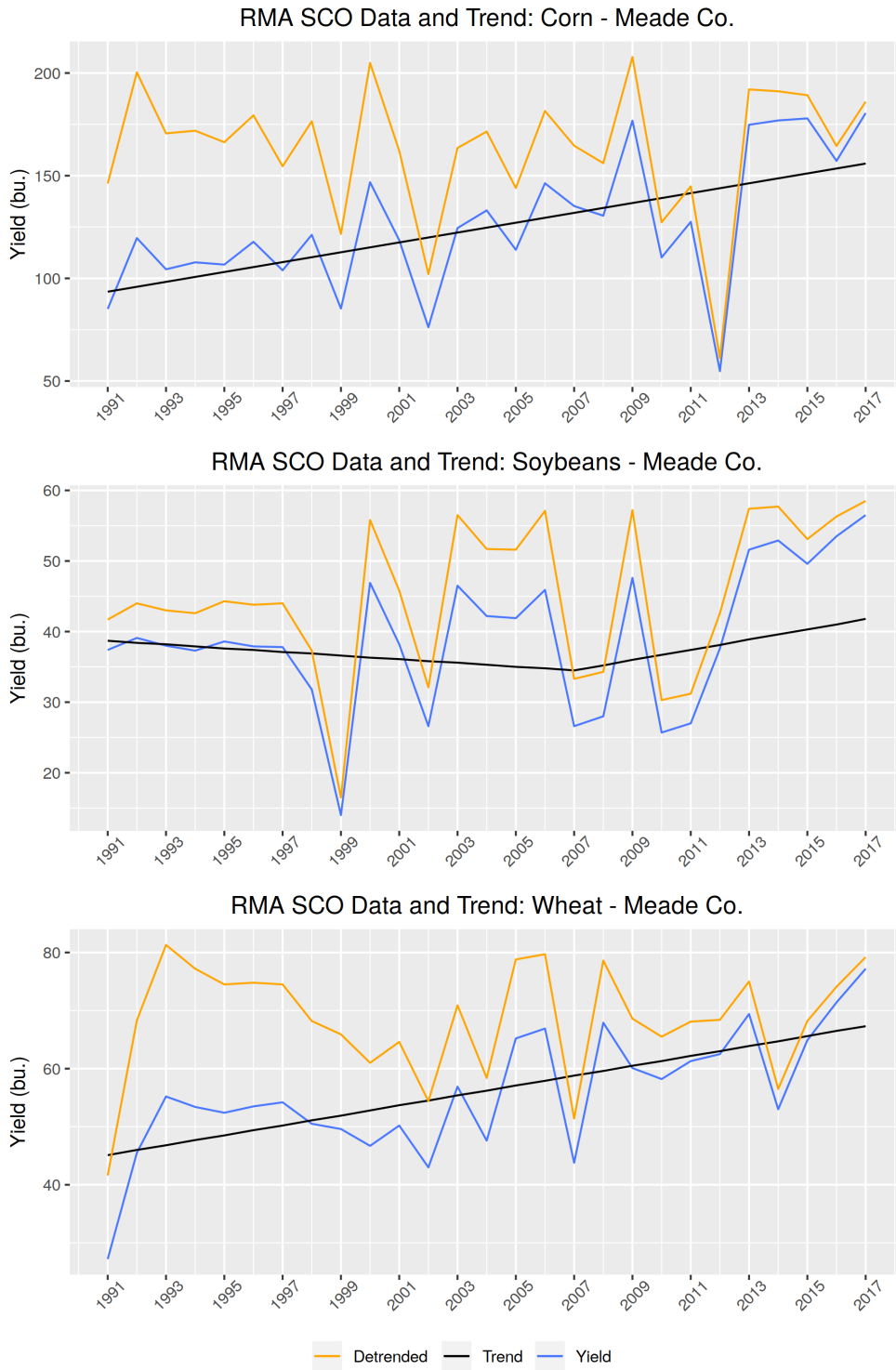




Figure B.70: RMA estimated trends for Menifee County

RMA SCO Data and Trend: Corn - Menifee Co.

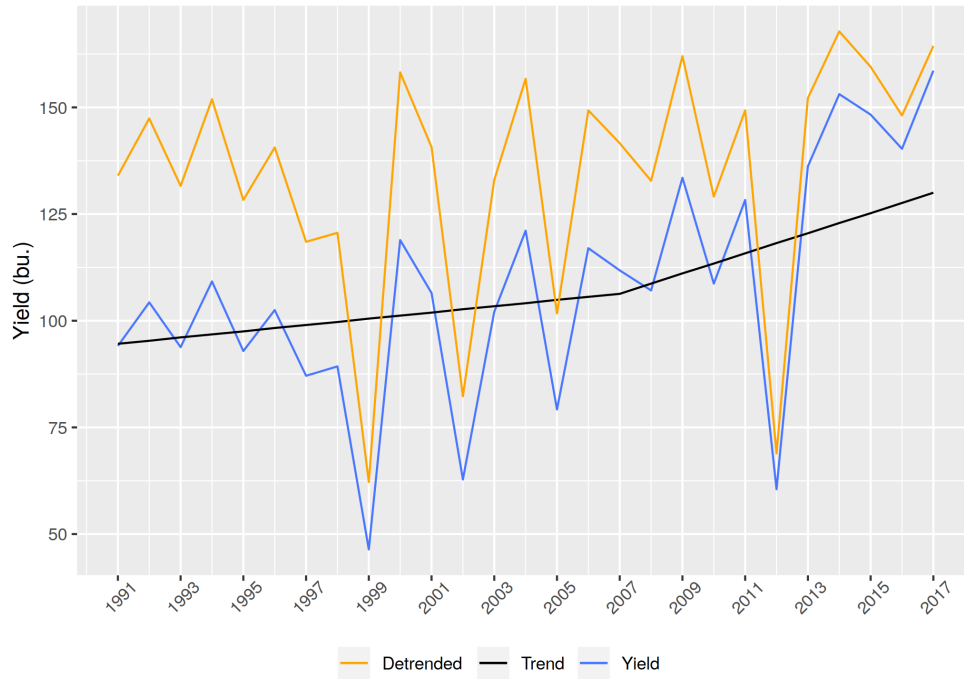


Figure B.71: RMA estimated trends for Mercer County

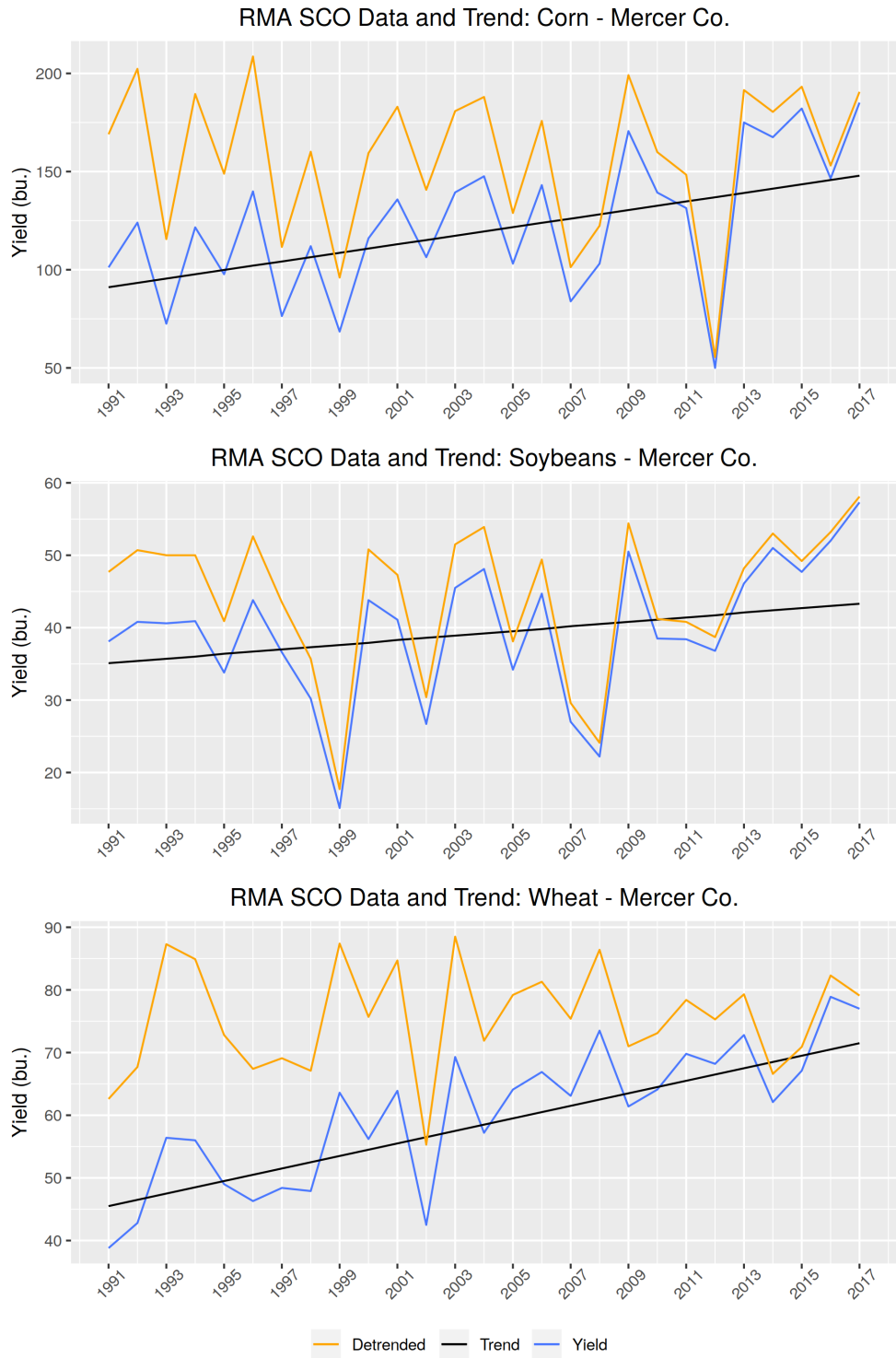


Figure B.72: RMA estimated trends for Metcalfe County

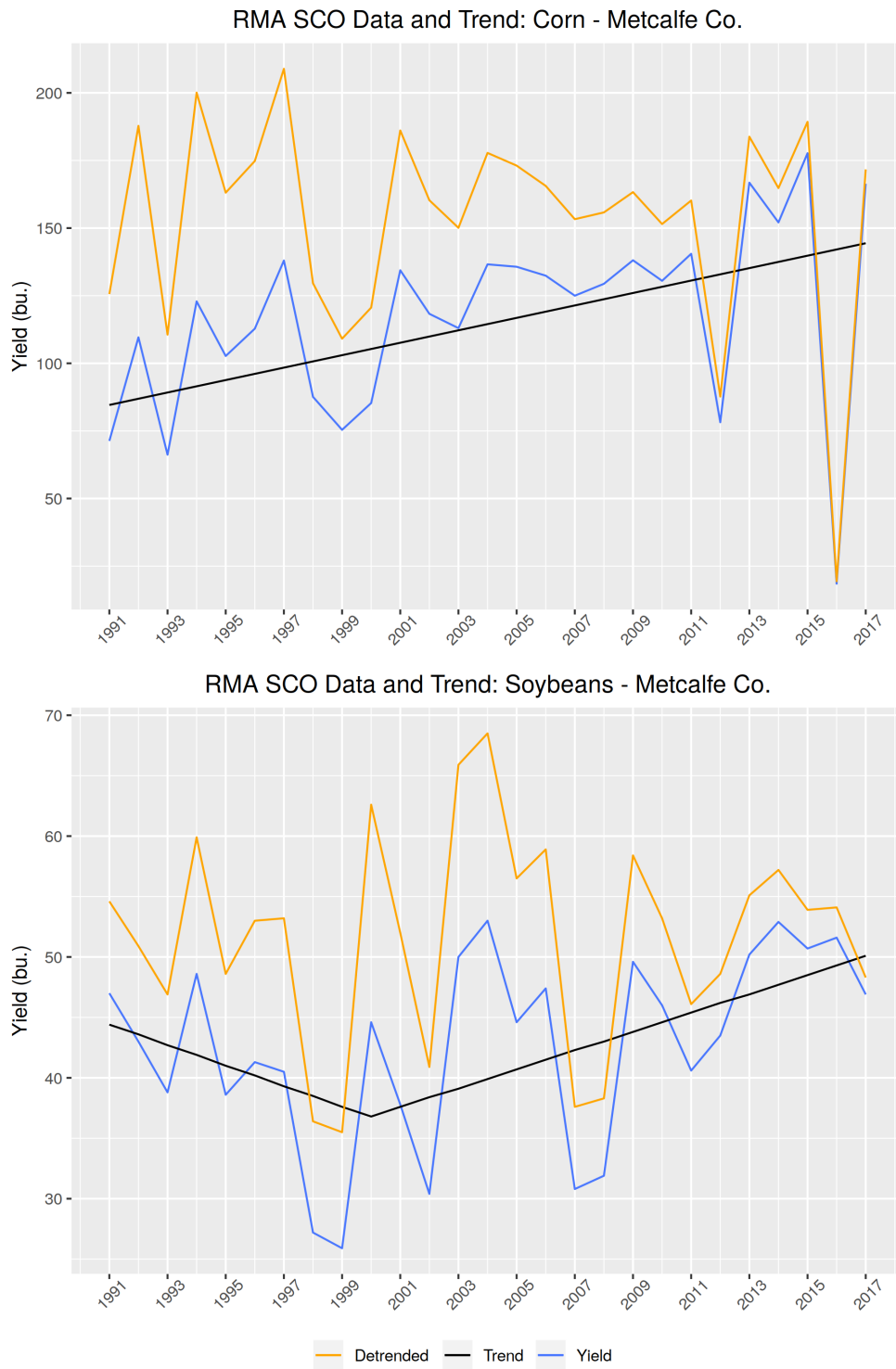


Figure B.73: RMA estimated trends for Monroe County

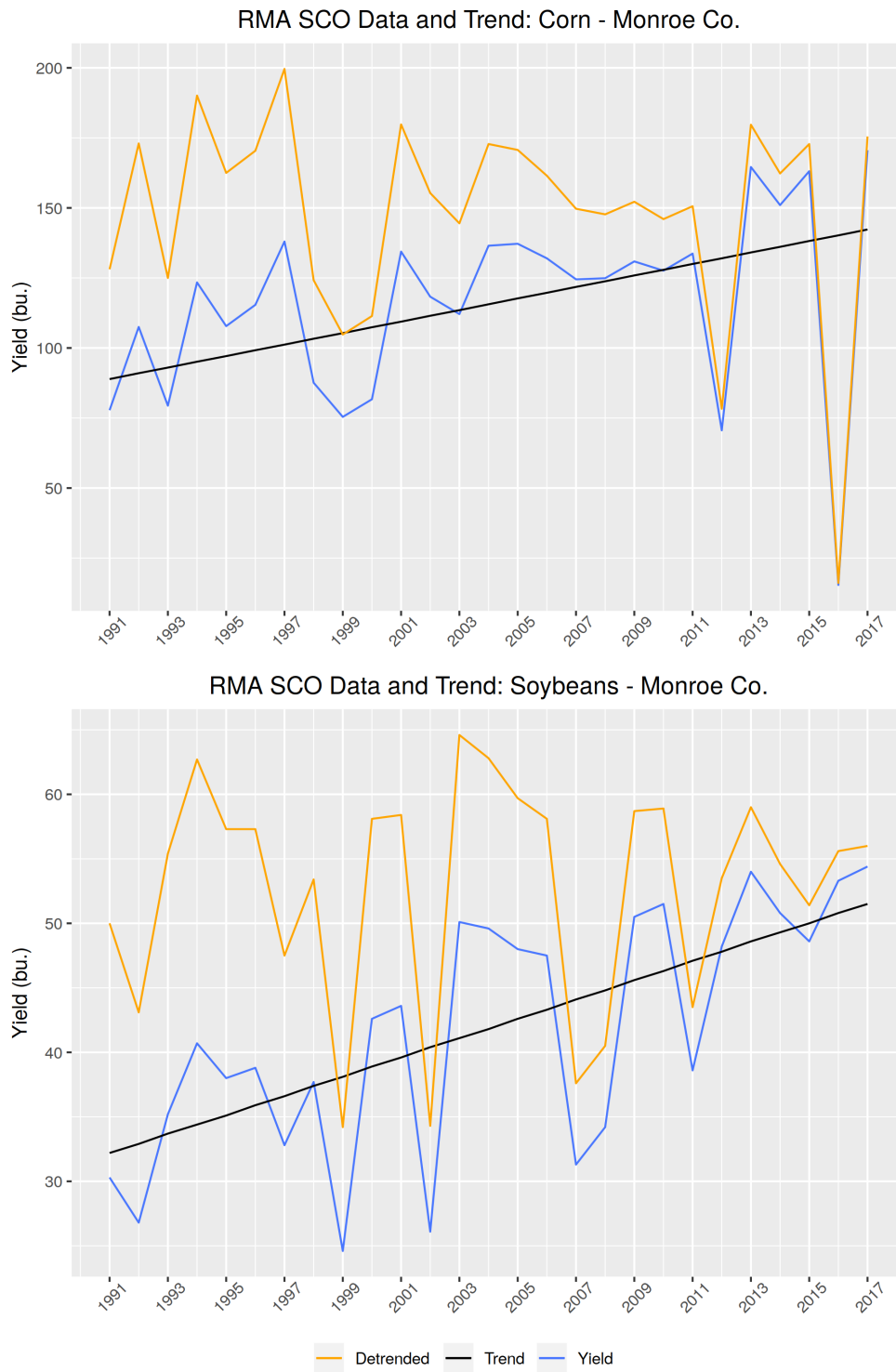


Figure B.74: RMA estimated trends for Montgomery County

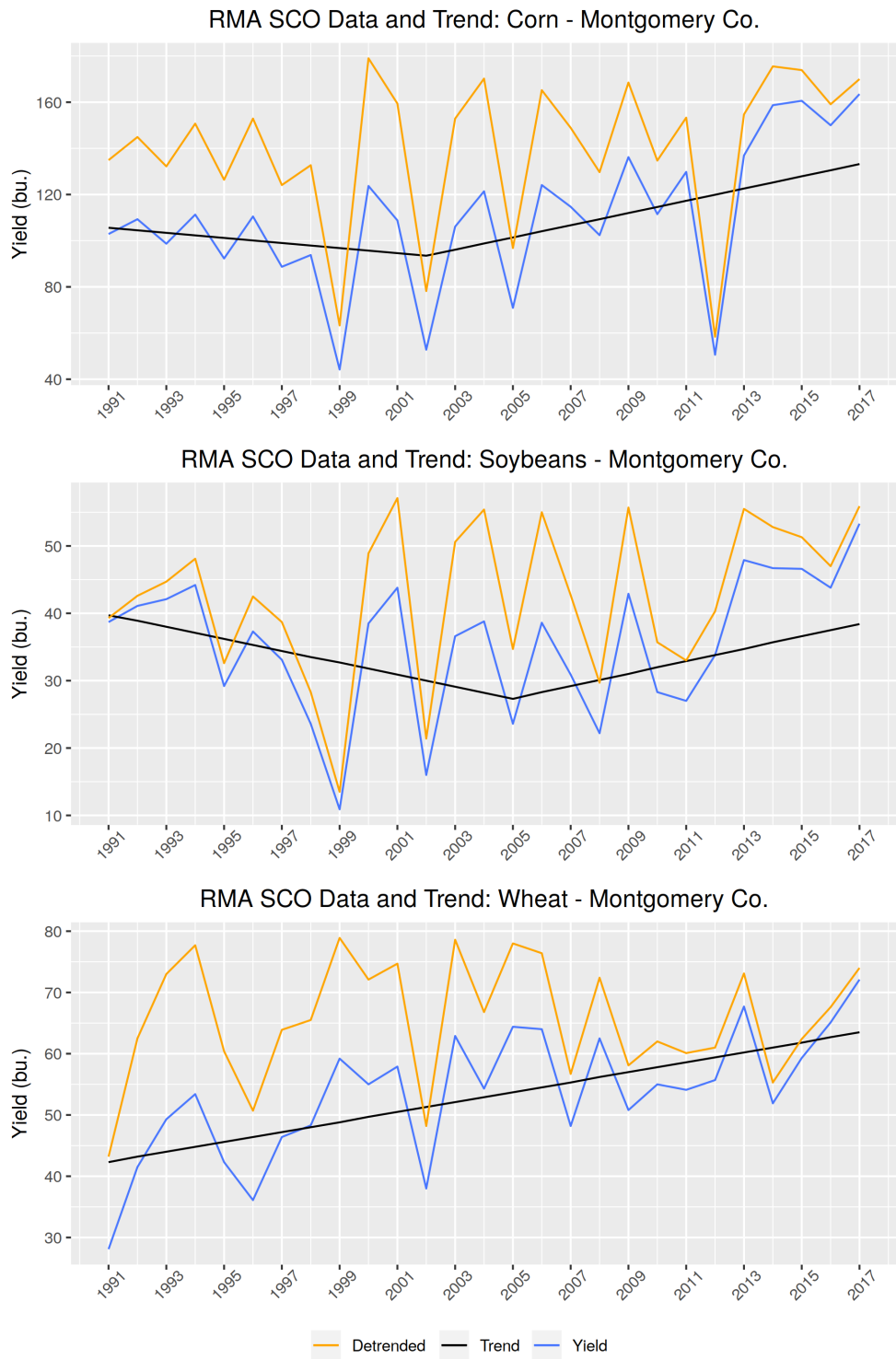


Figure B.75: RMA estimated trends for Morgan County

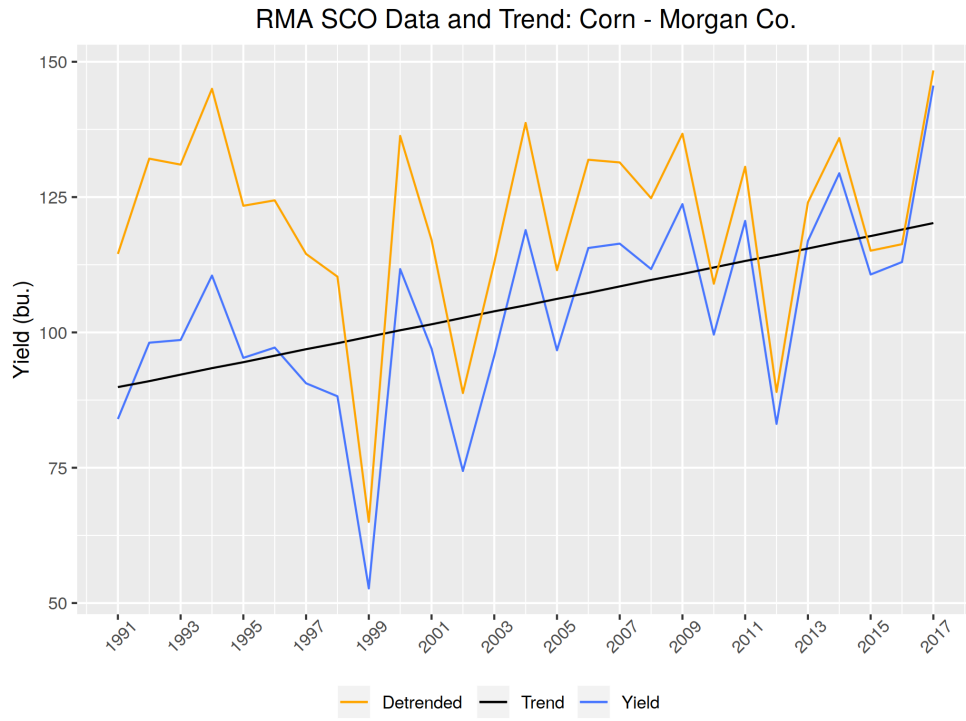


Figure B.76: RMA estimated trends for Muhlenberg County

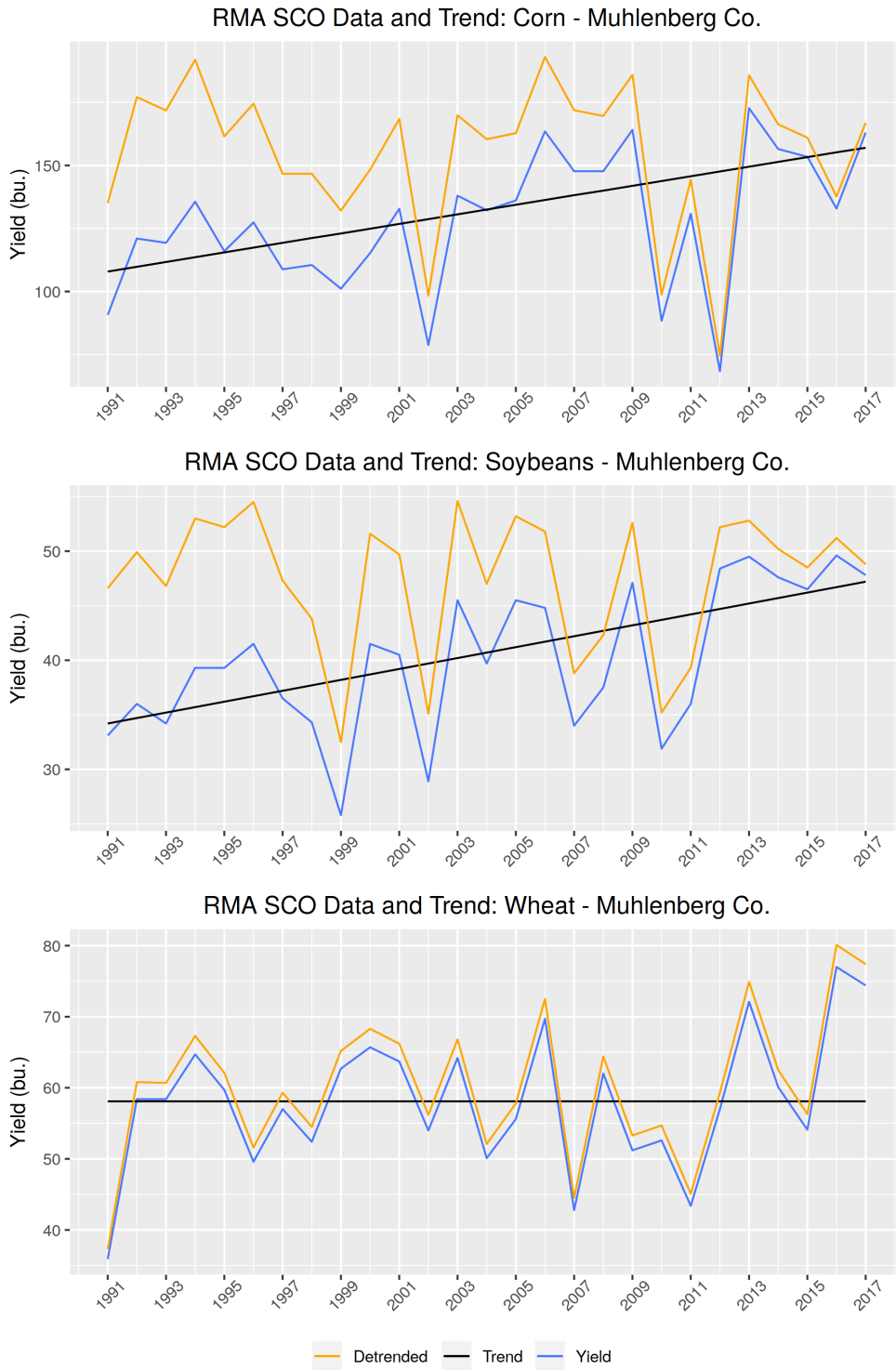


Figure B.77: RMA estimated trends for Nelson County

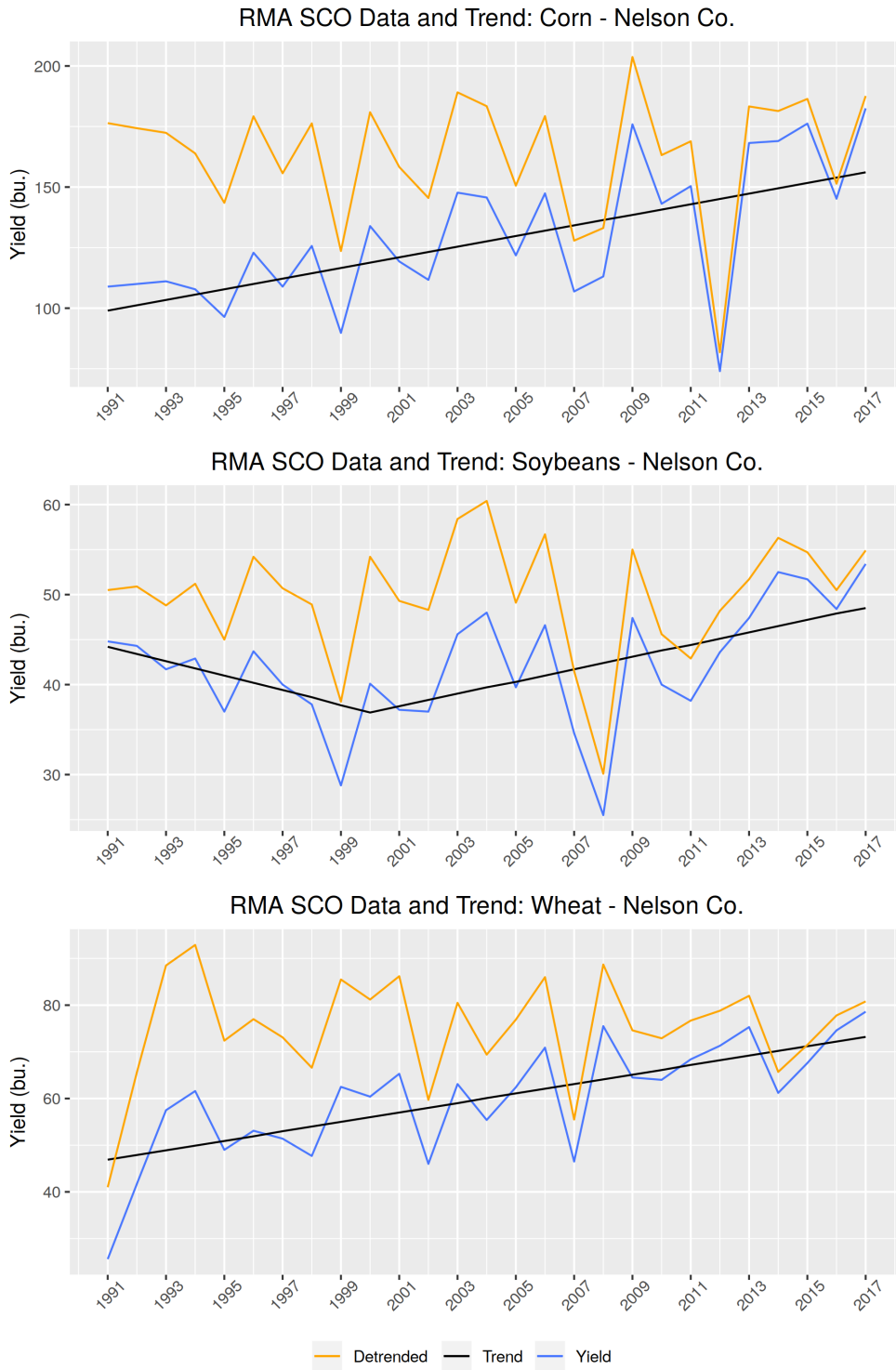
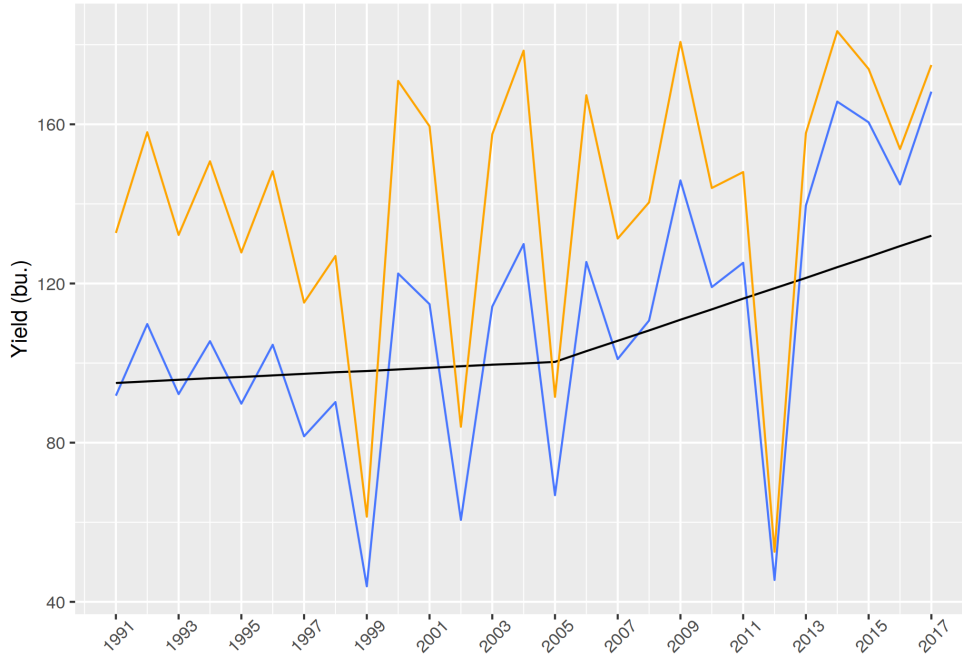


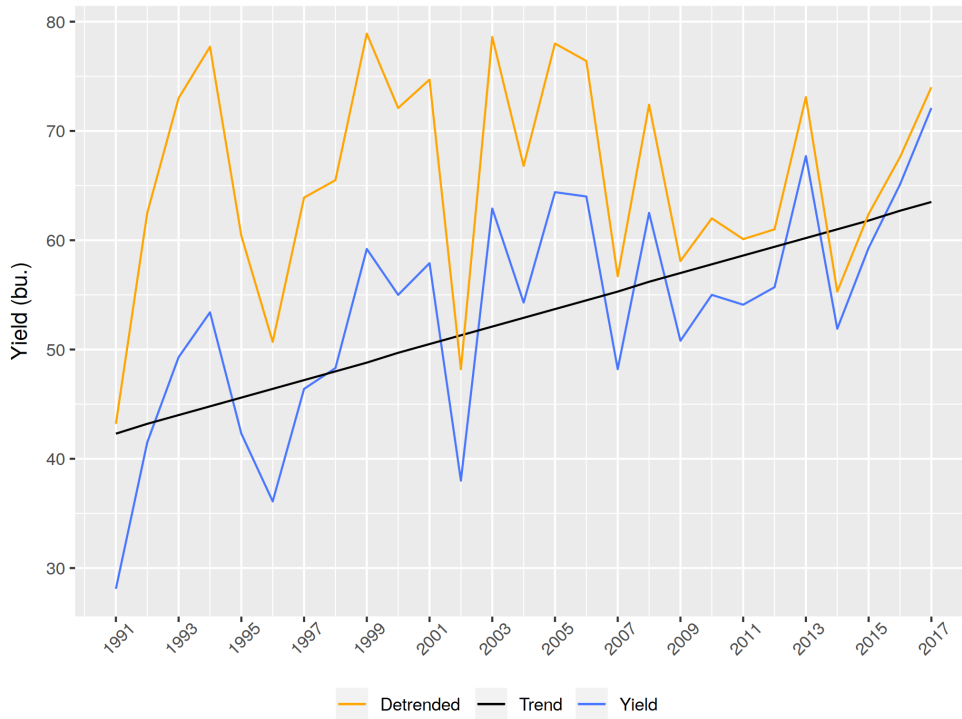


Figure B.78: RMA estimated trends for Nicholas County

RMA SCO Data and Trend: Corn - Nicholas Co.



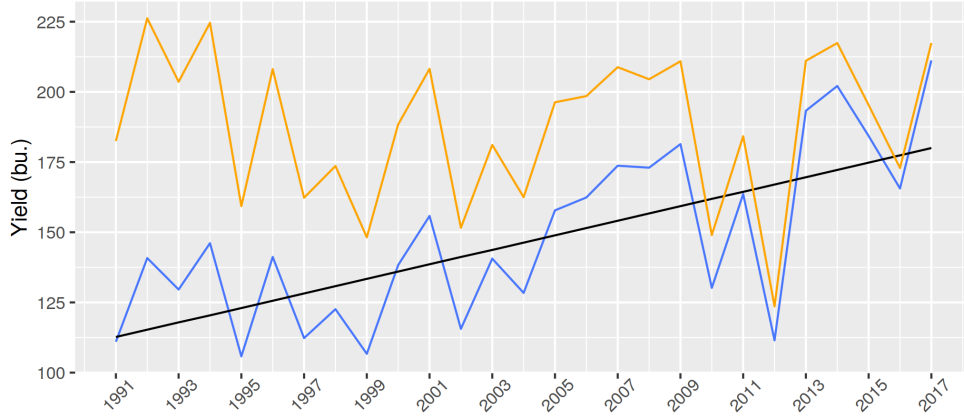
RMA SCO Data and Trend: Wheat - Nicholas Co.



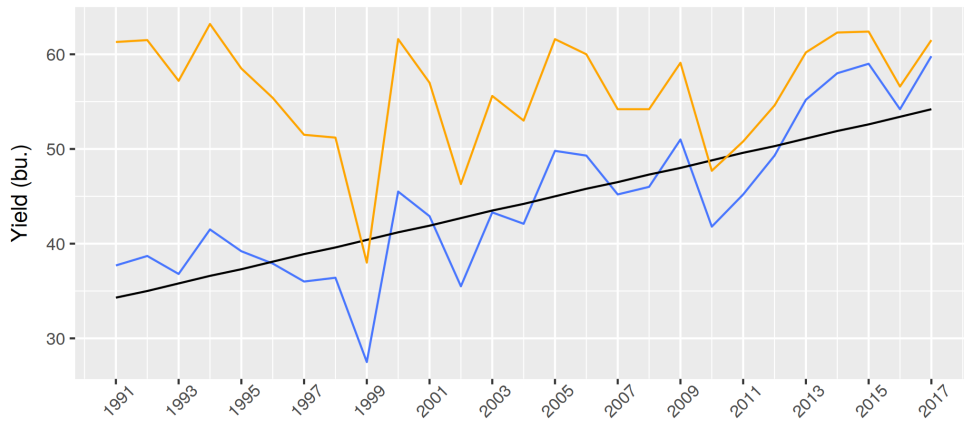
— Detrended — Trend — Yield

Figure B.79: RMA estimated trends for Ohio County

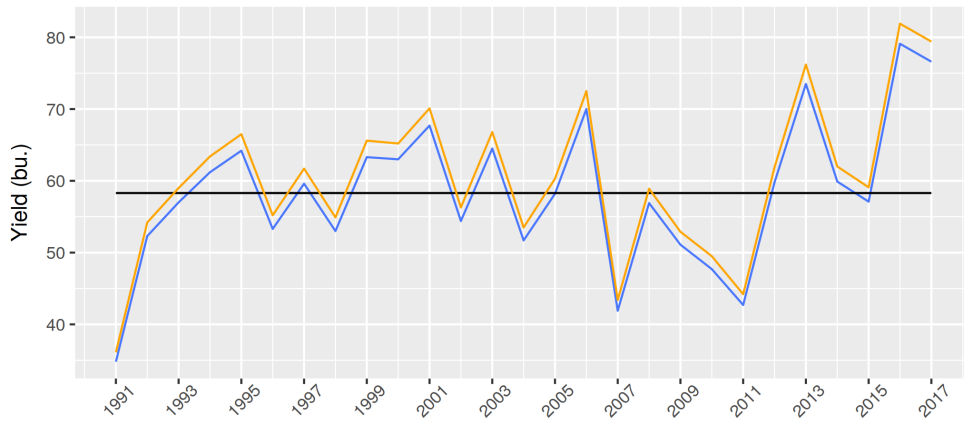
RMA SCO Data and Trend: Corn - Ohio Co.



RMA SCO Data and Trend: Soybeans - Ohio Co.



RMA SCO Data and Trend: Wheat - Ohio Co.



— Detrended — Trend — Yield

Figure B.80: RMA estimated trends for Oldham County

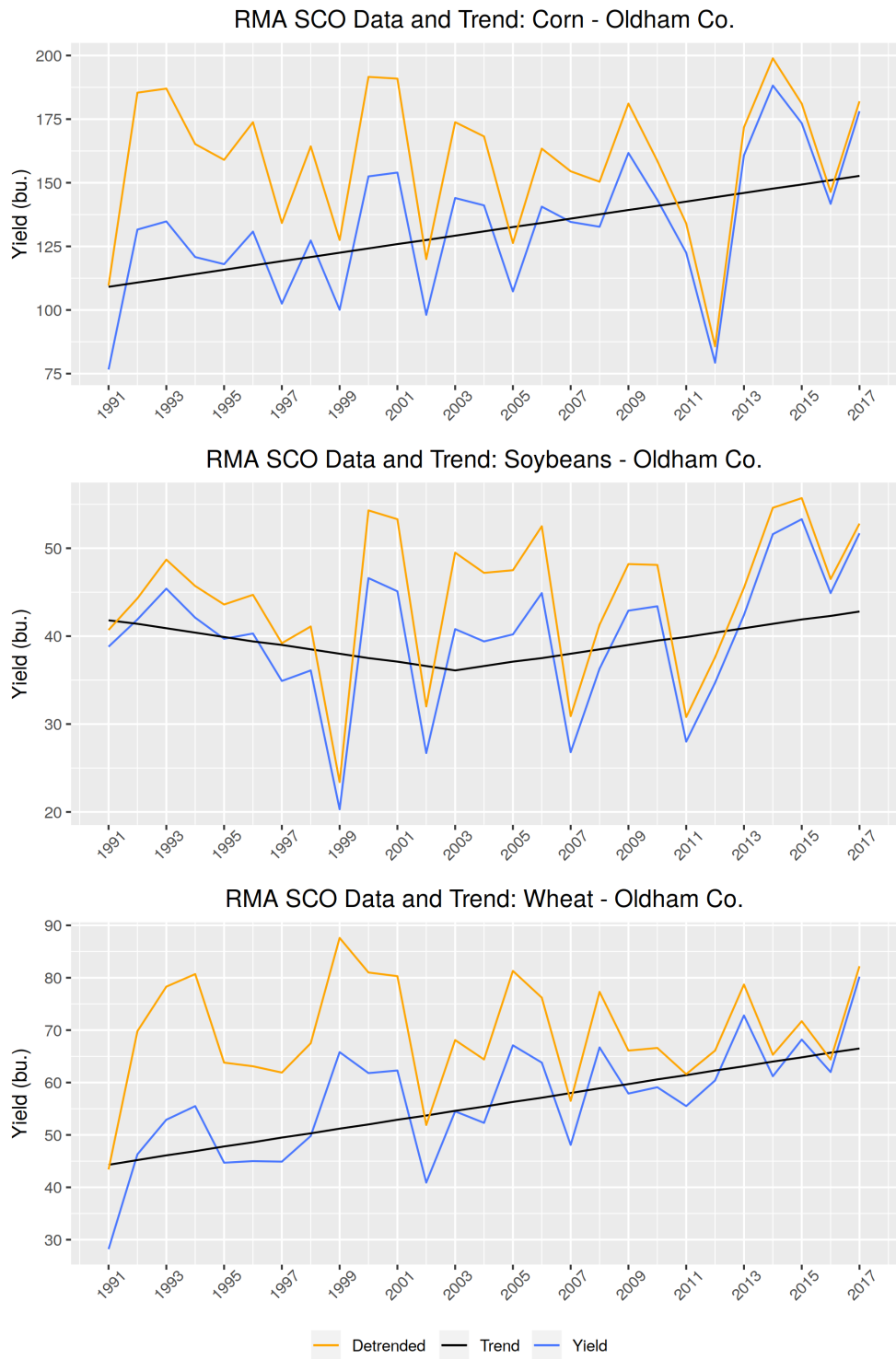
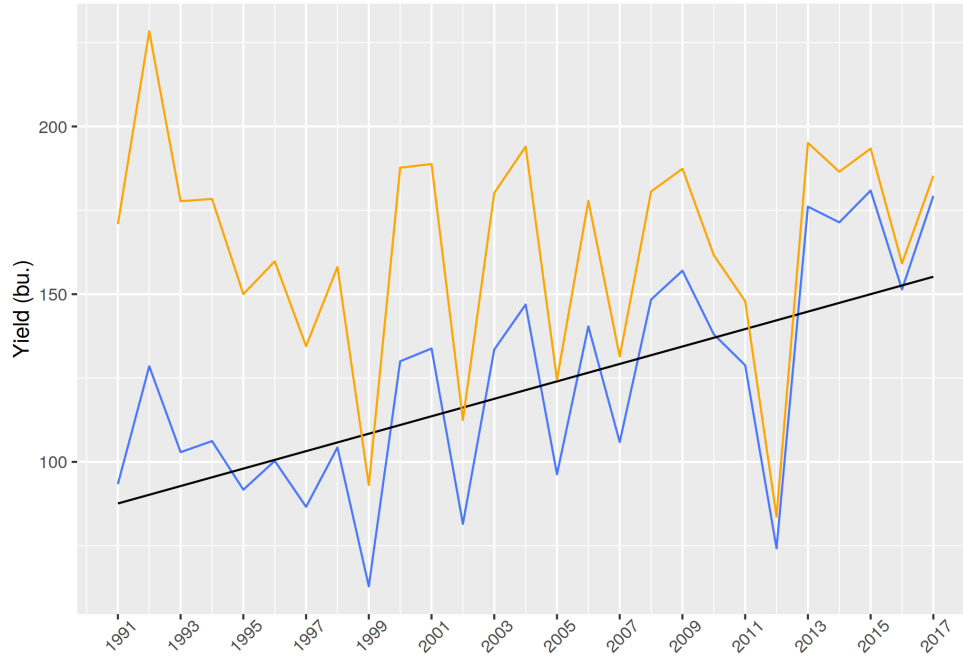
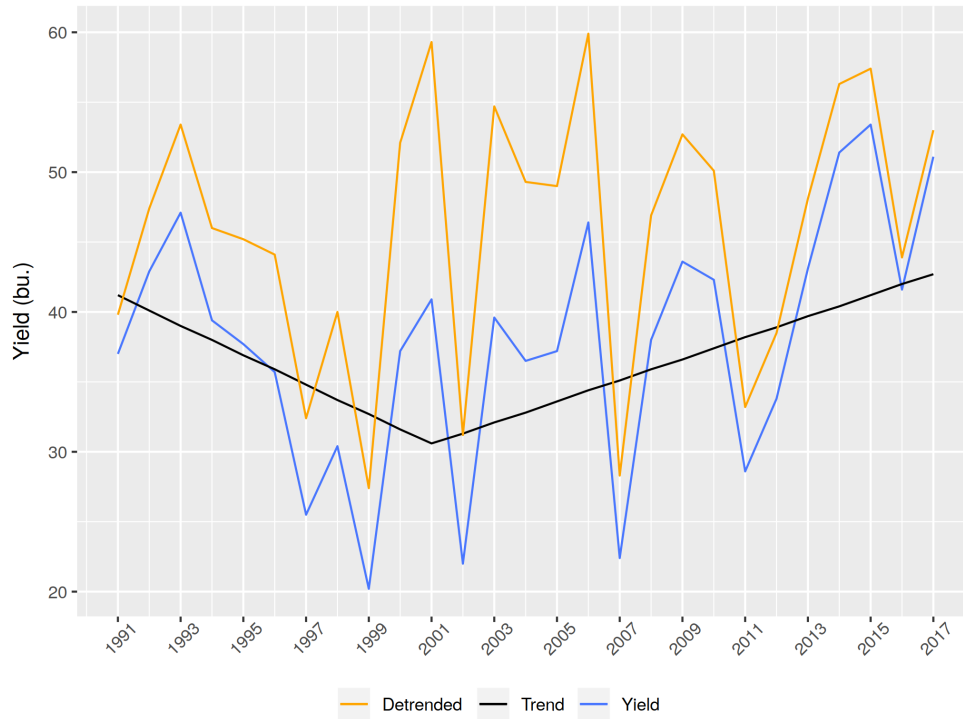


Figure B.81: RMA estimated trends for Owen County

RMA SCO Data and Trend: Corn - Owen Co.



RMA SCO Data and Trend: Soybeans - Owen Co.



— Detrended — Trend — Yield

Figure B.82: RMA estimated trends for Pendleton County

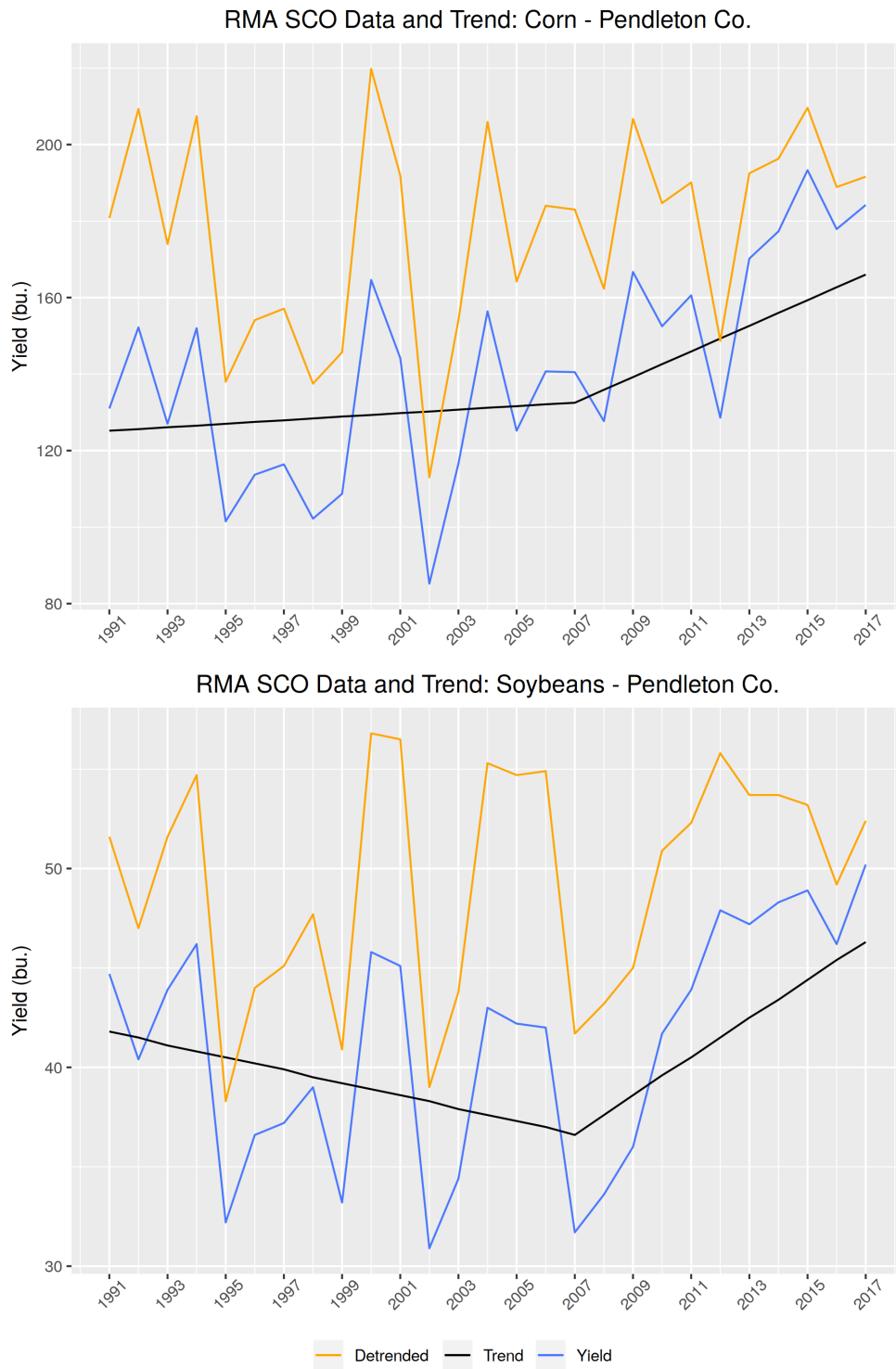
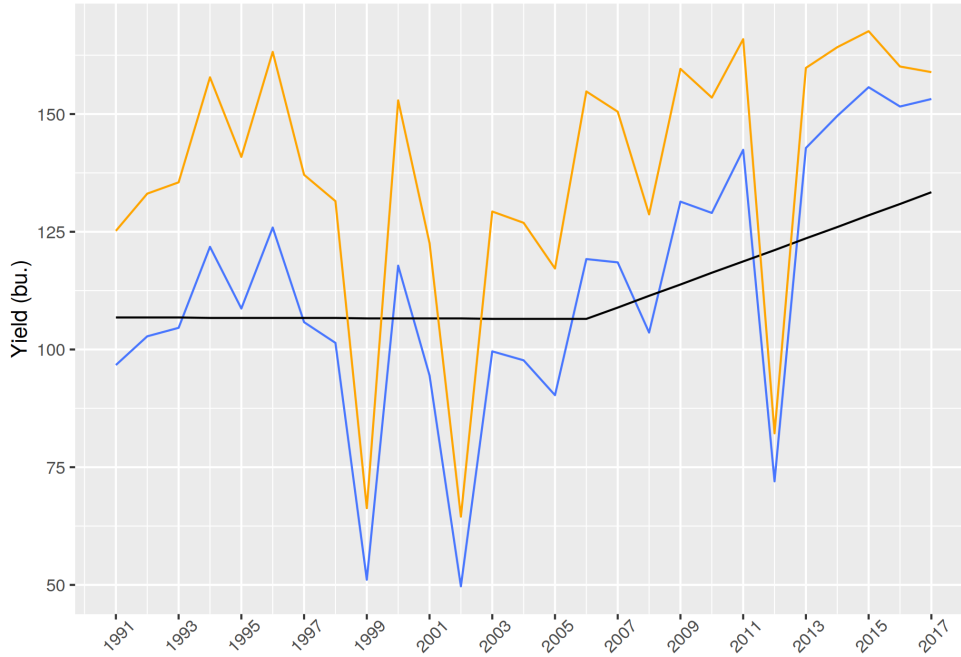
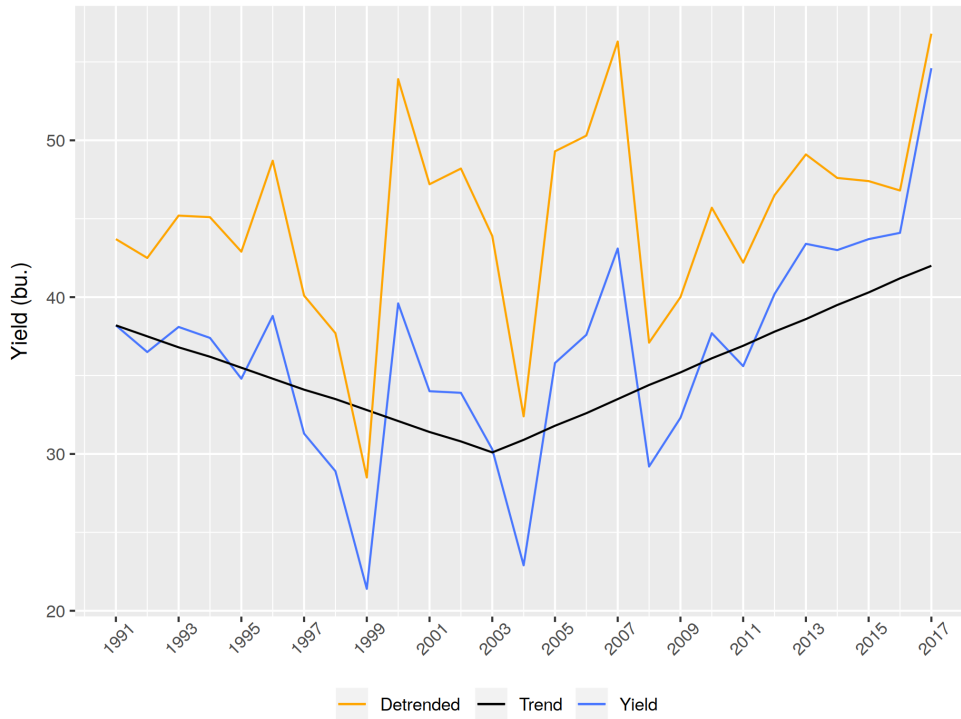


Figure B.83: RMA estimated trends for Powell County

RMA SCO Data and Trend: Corn - Powell Co.



RMA SCO Data and Trend: Soybeans - Powell Co.



— Detrended — Trend — Yield

Figure B.84: RMA estimated trends for Pulaski County

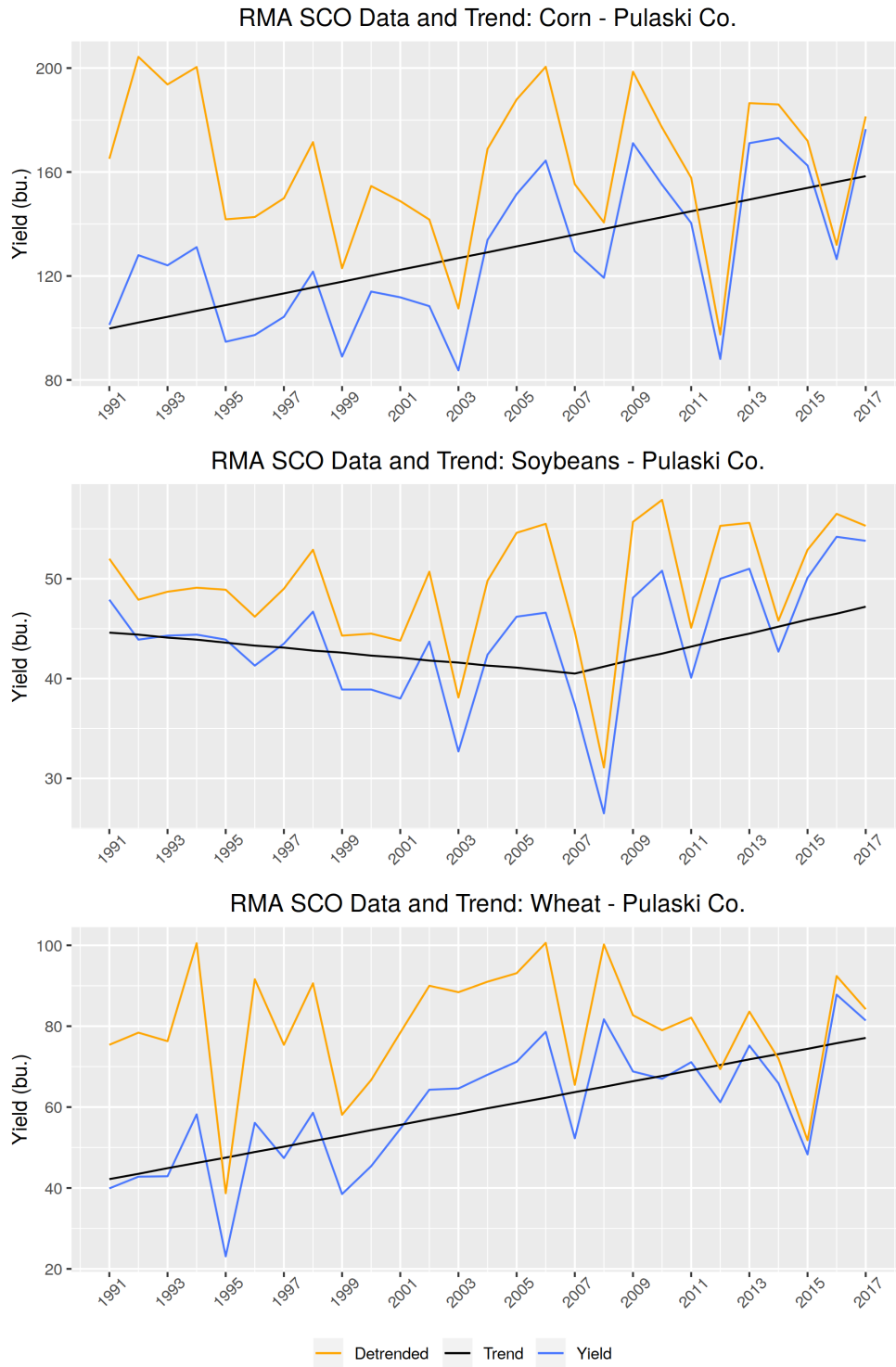


Figure B.85: RMA estimated trends for Robertson County

RMA SCO Data and Trend: Corn - Robertson Co.

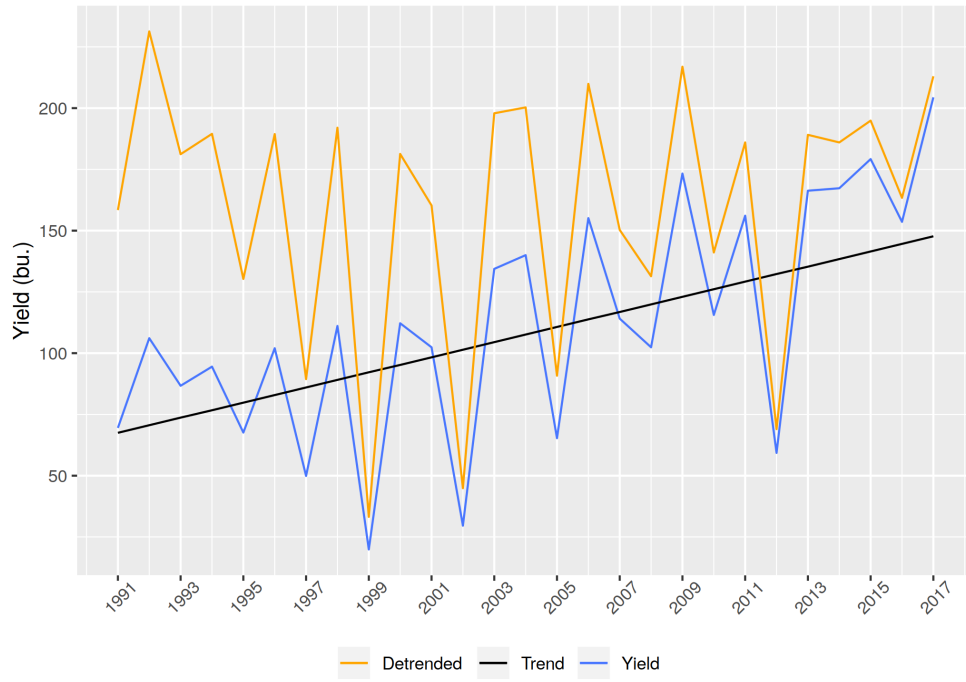




Figure B.86: RMA estimated trends for Rockcastle County

RMA SCO Data and Trend: Corn - Rockcastle Co.

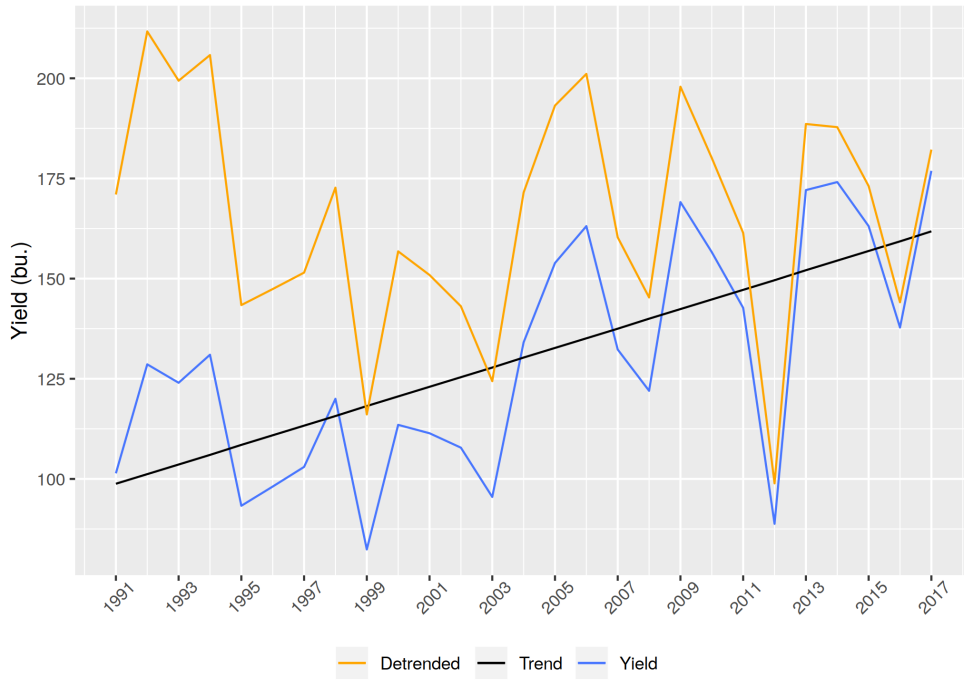


Figure B.87: RMA estimated trends for Rowan County



Figure B.88: RMA estimated trends for Russell County

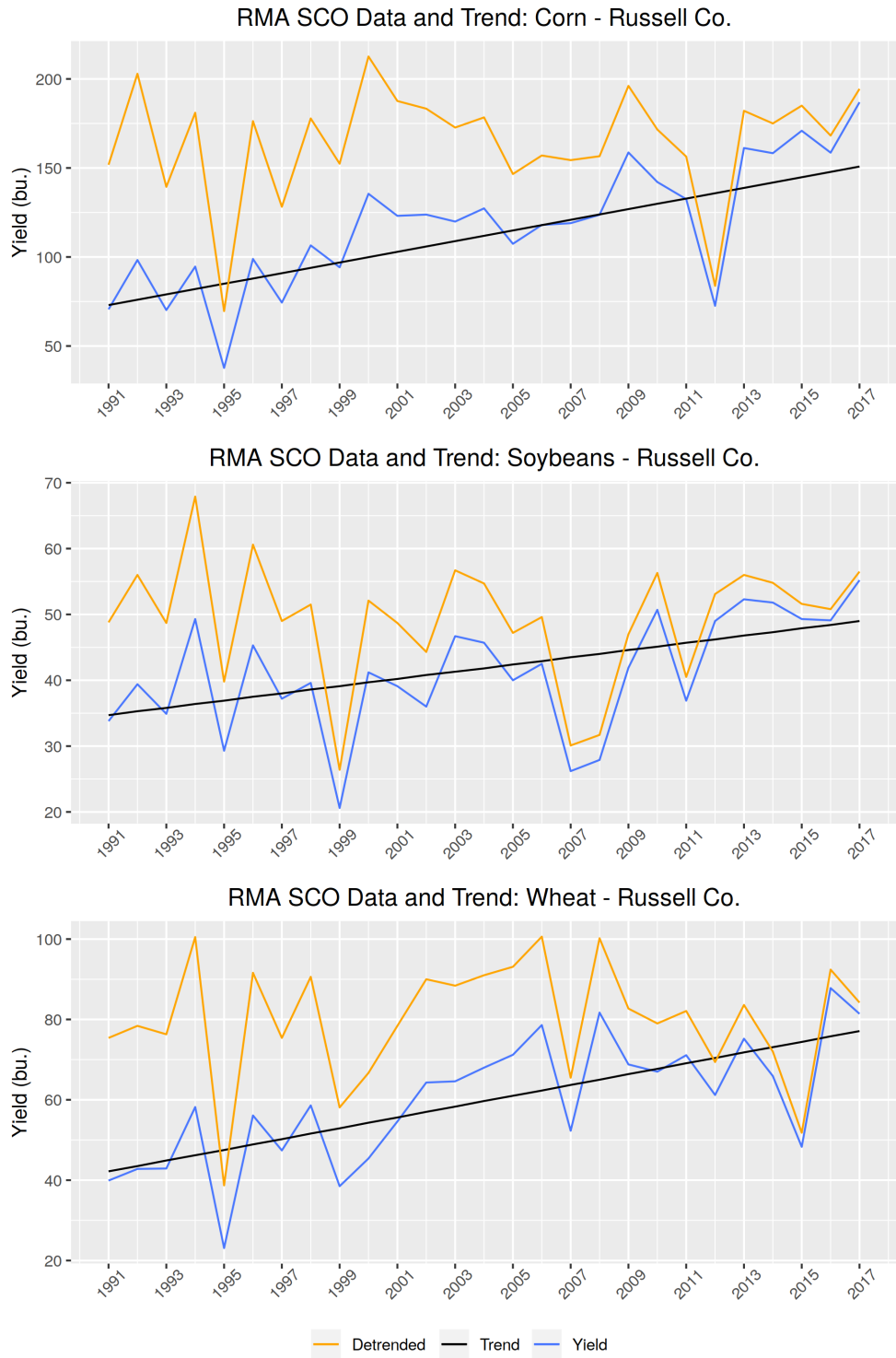


Figure B.89: RMA estimated trends for Scott County

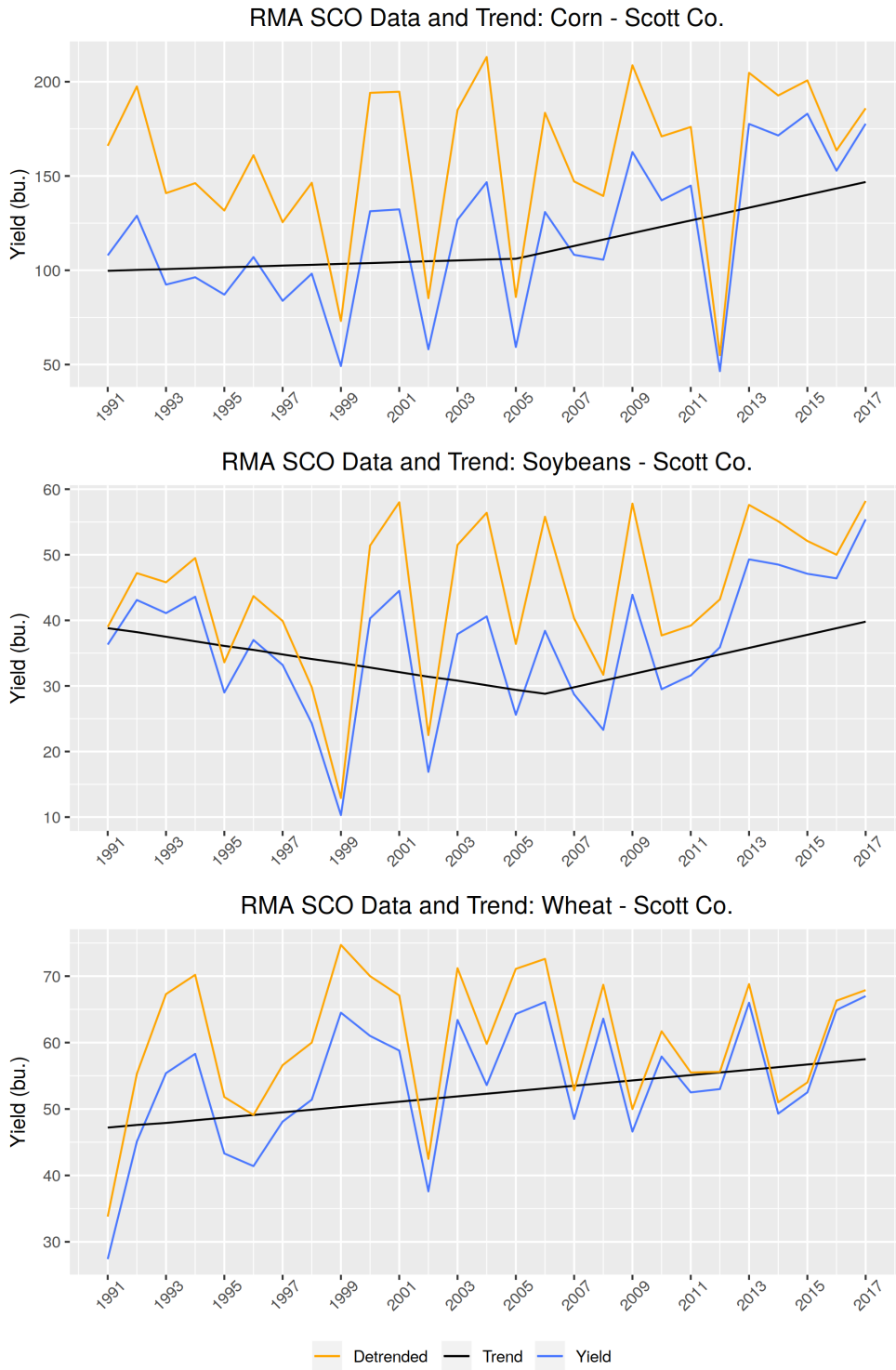
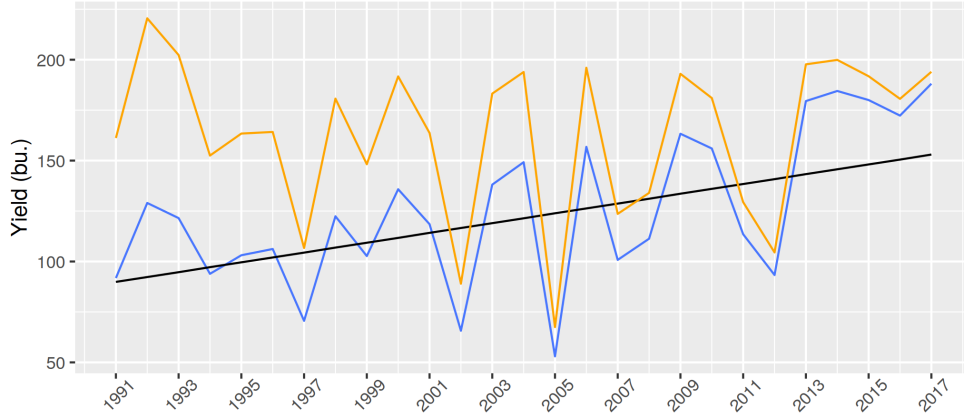
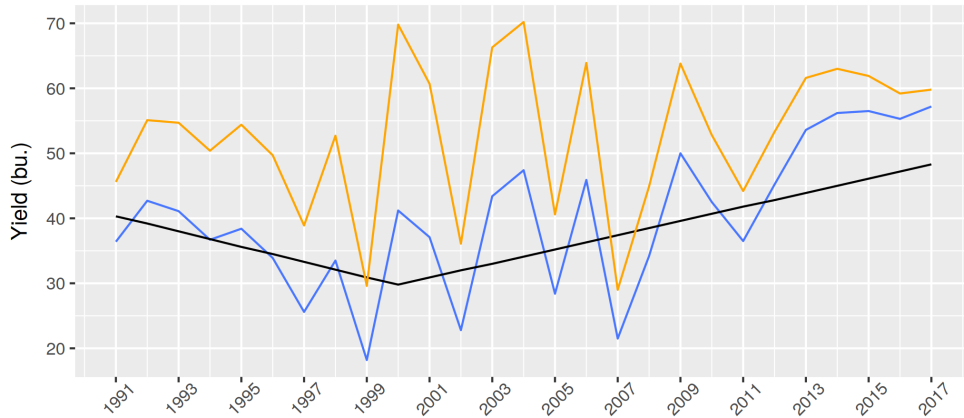


Figure B.90: RMA estimated trends for Shelby County

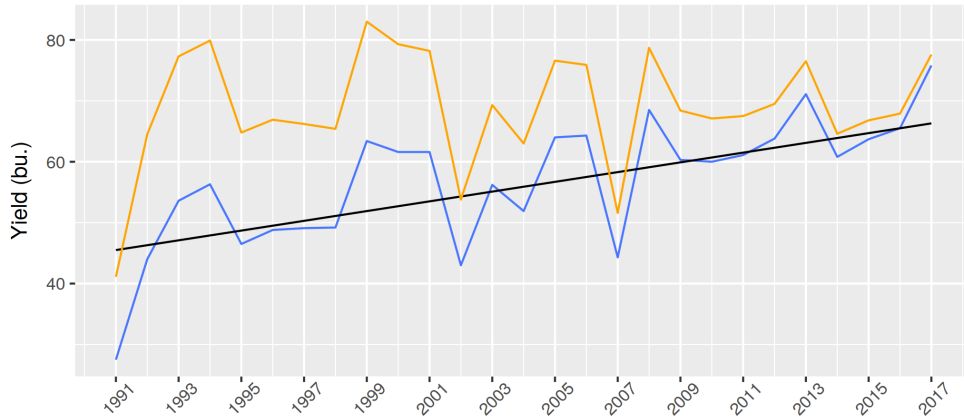
RMA SCO Data and Trend: Corn - Shelby Co.



RMA SCO Data and Trend: Soybeans - Shelby Co.



RMA SCO Data and Trend: Wheat - Shelby Co.



— Detrended — Trend — Yield

Figure B.91: RMA estimated trends for Simpson County

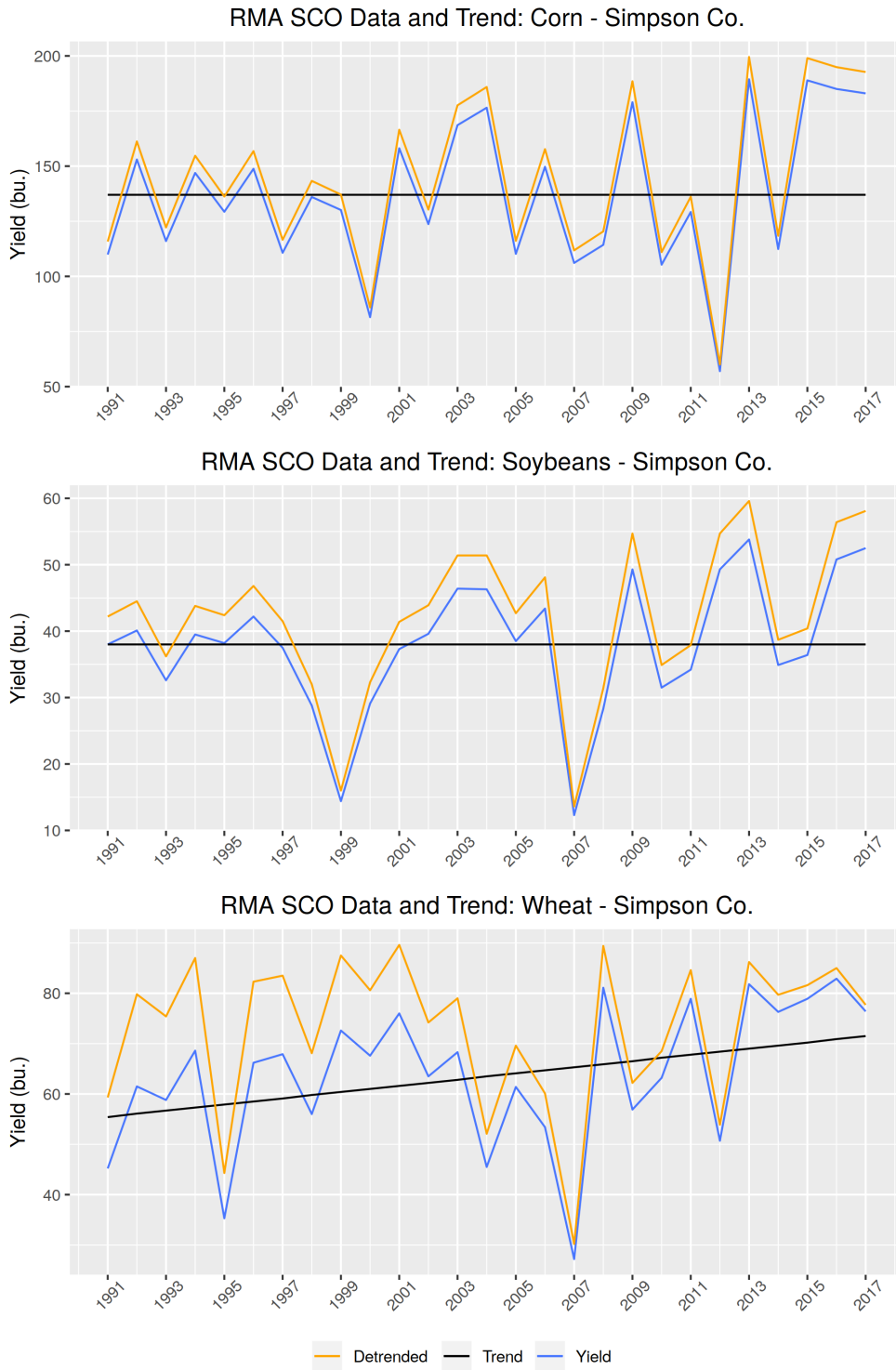


Figure B.92: RMA estimated trends for Spencer County

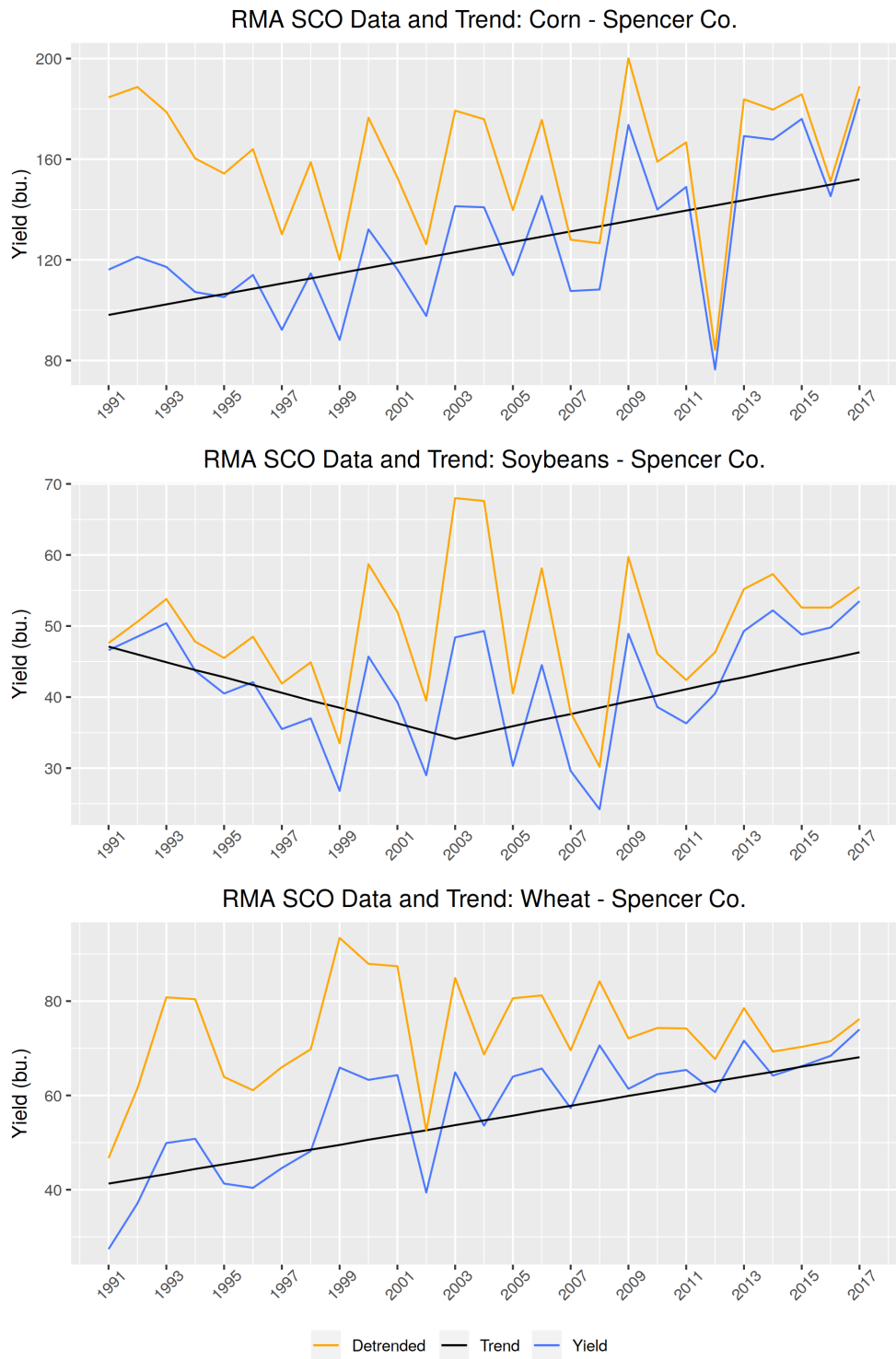


Figure B.93: RMA estimated trends for Taylor County

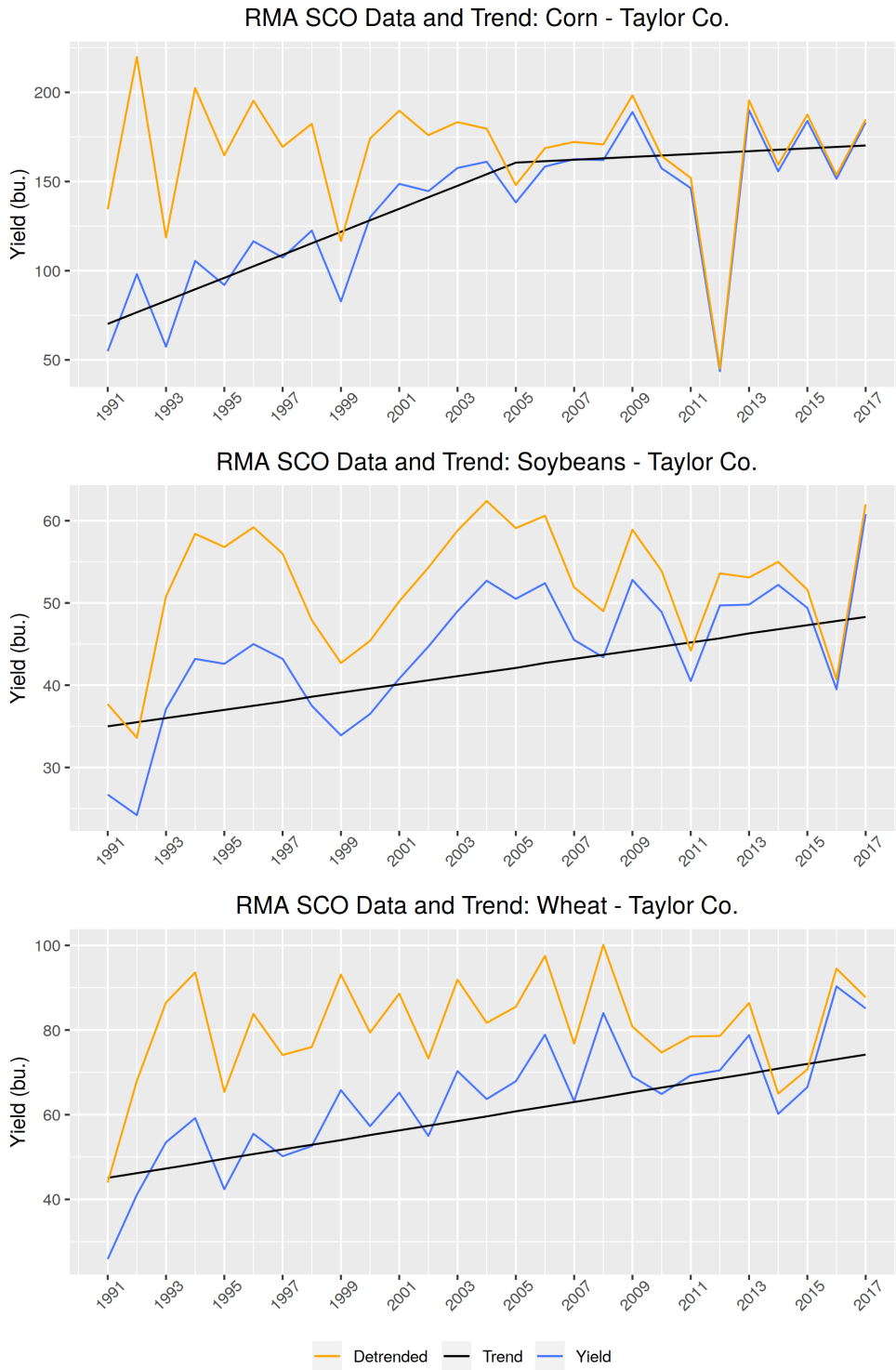




Figure B.94: RMA estimated trends for Todd County

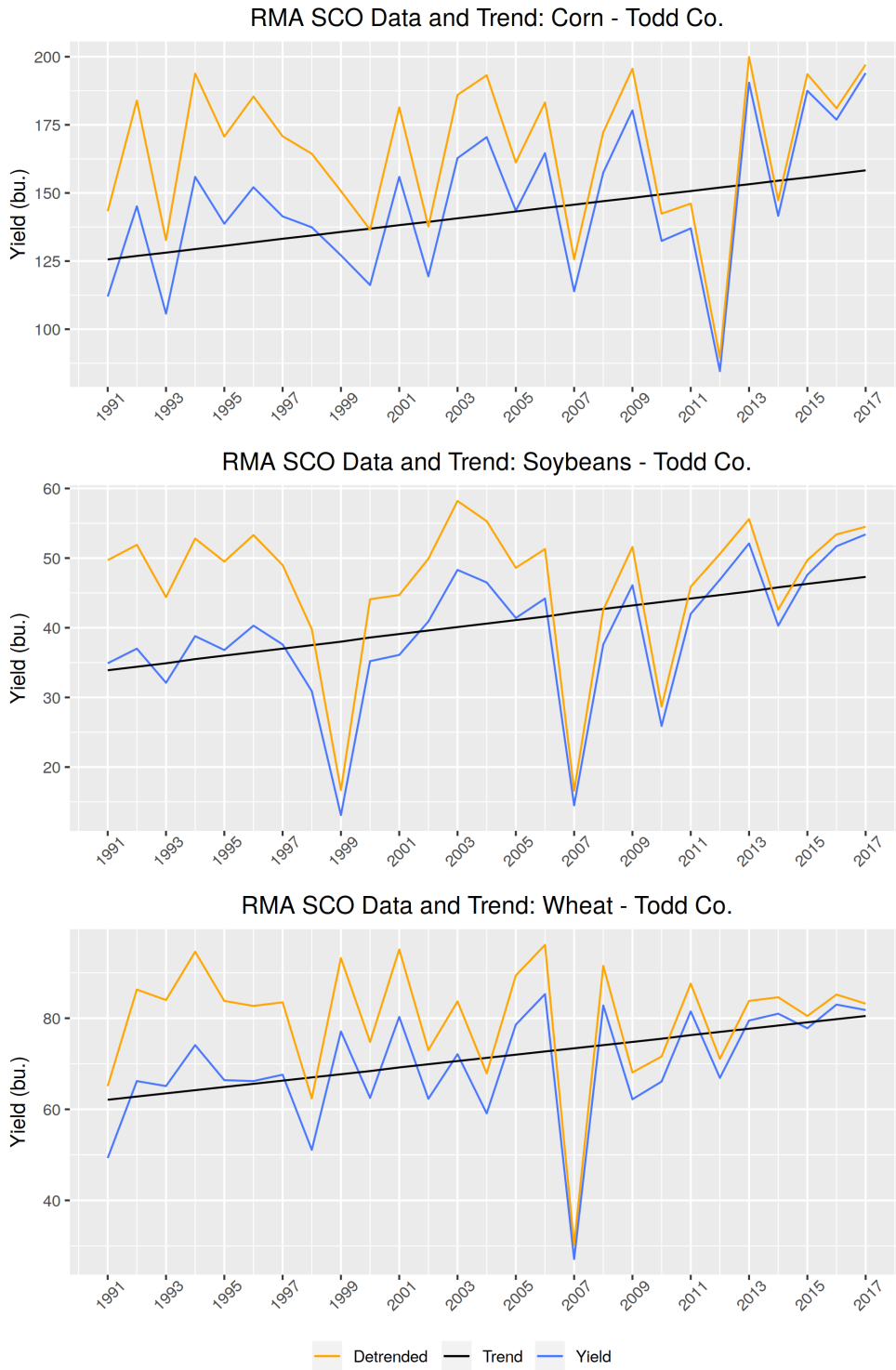


Figure B.95: RMA estimated trends for Trigg County

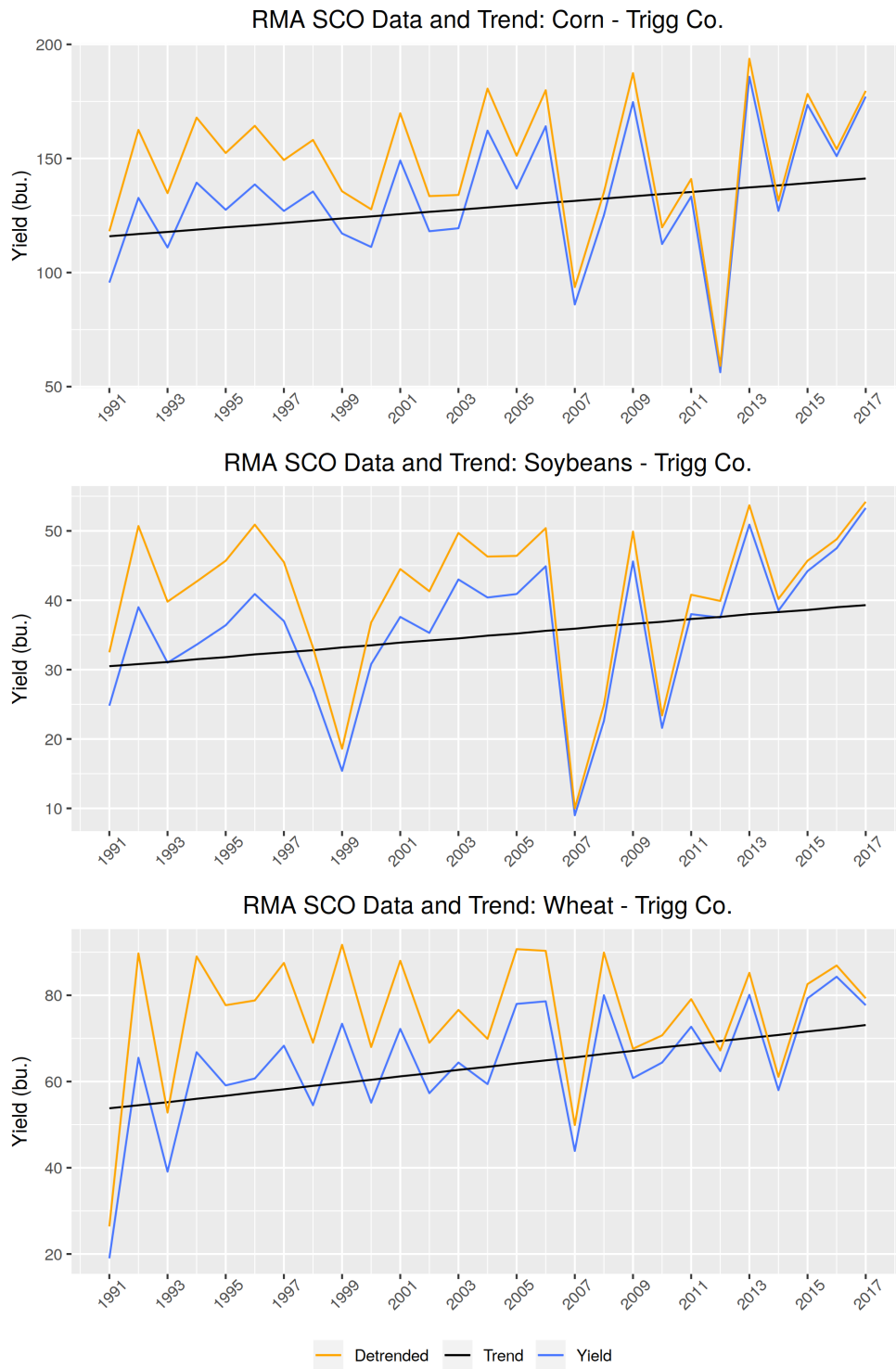


Figure B.96: RMA estimated trends for Trimble County

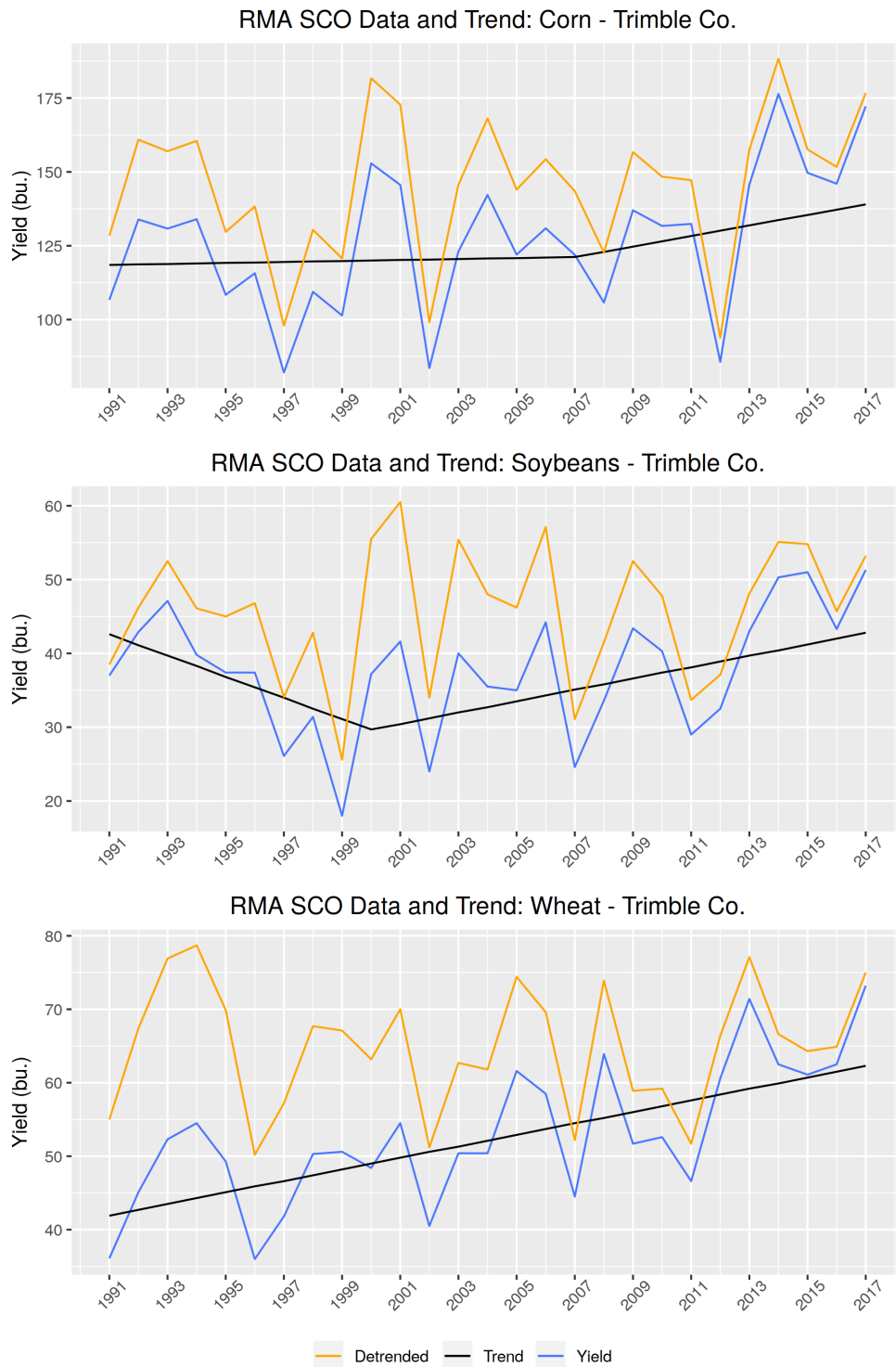


Figure B.97: RMA estimated trends for Union County

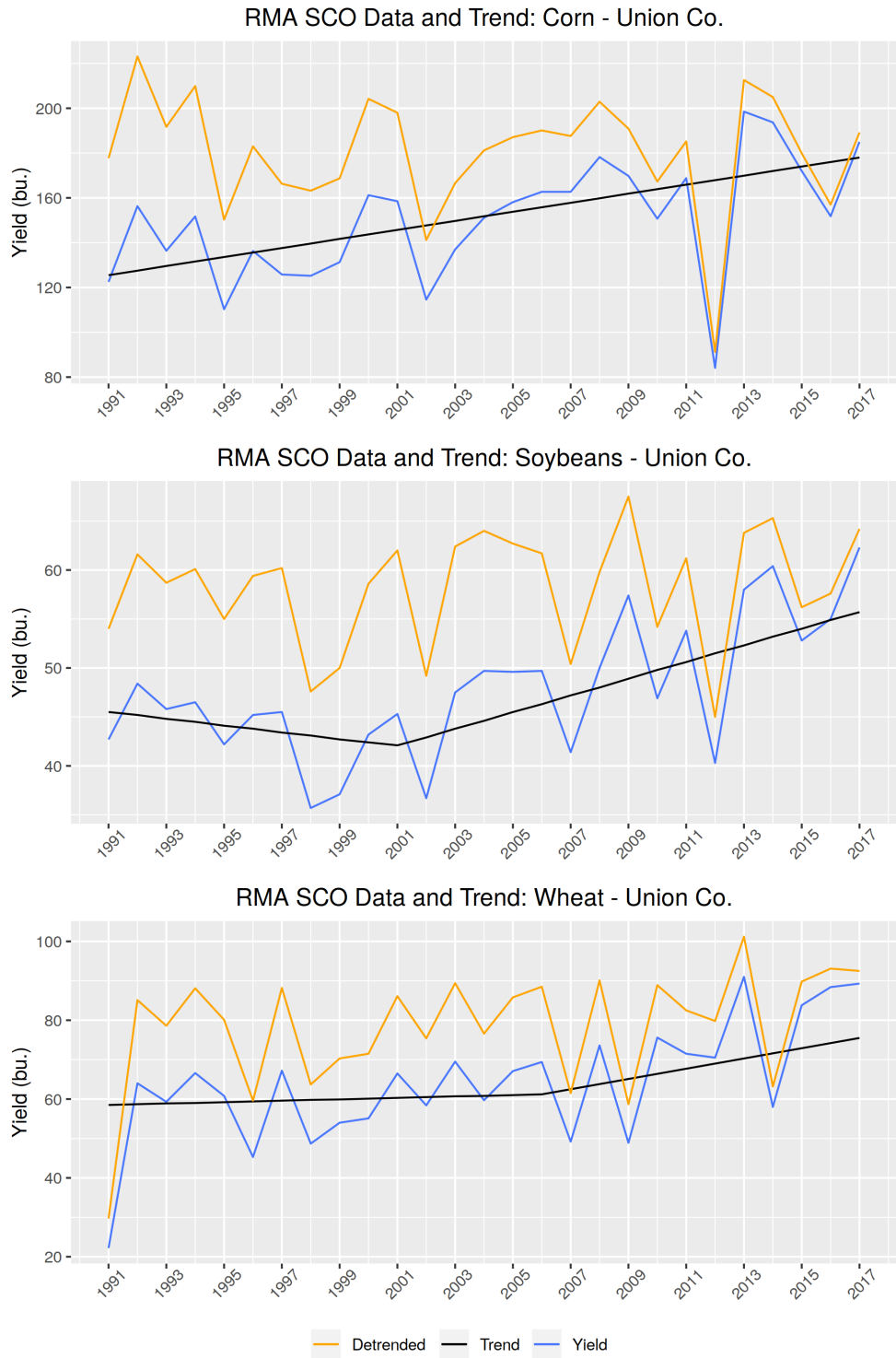


Figure B.98: RMA estimated trends for Warren County

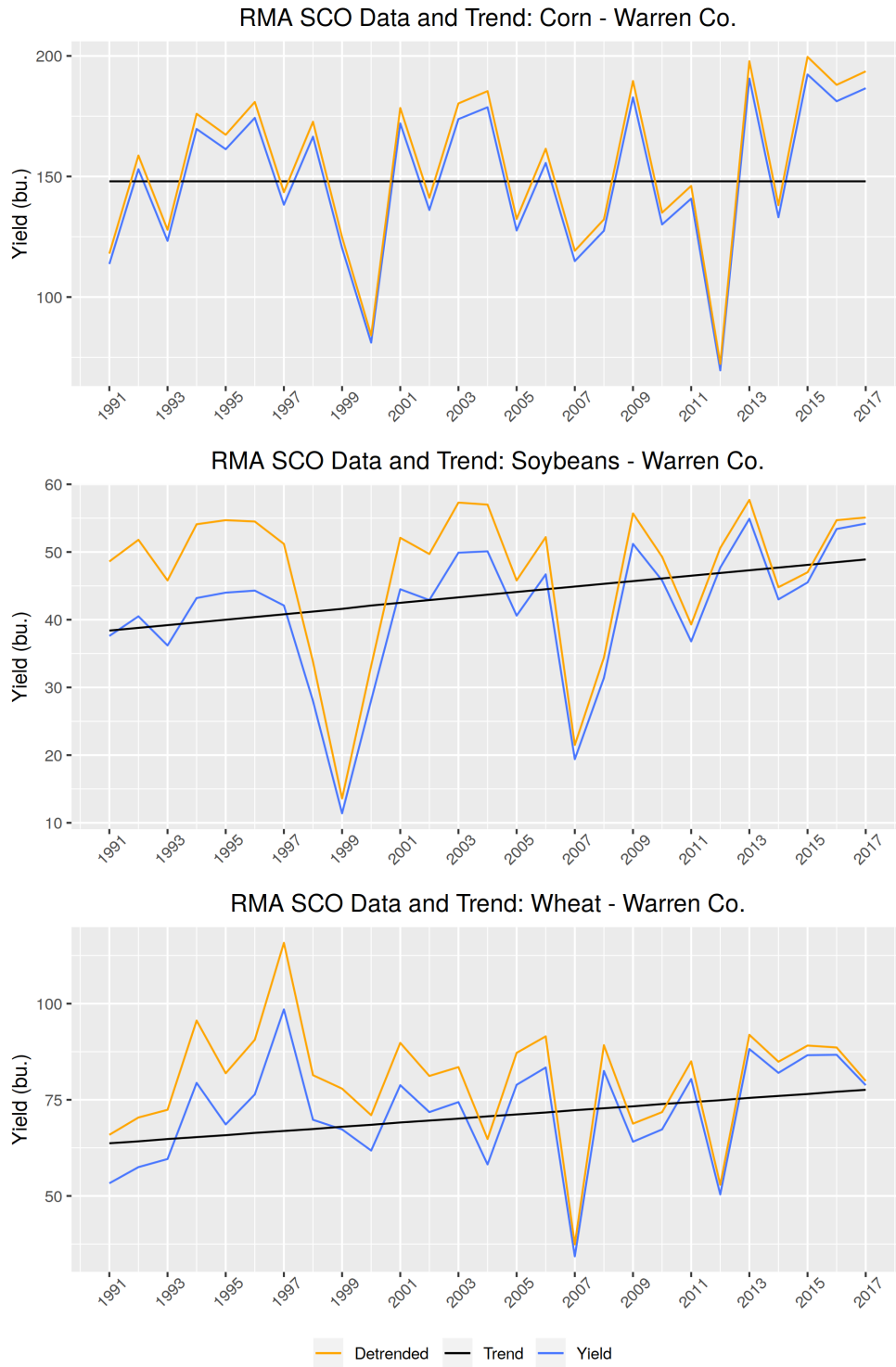


Figure B.99: RMA estimated trends for Washington County

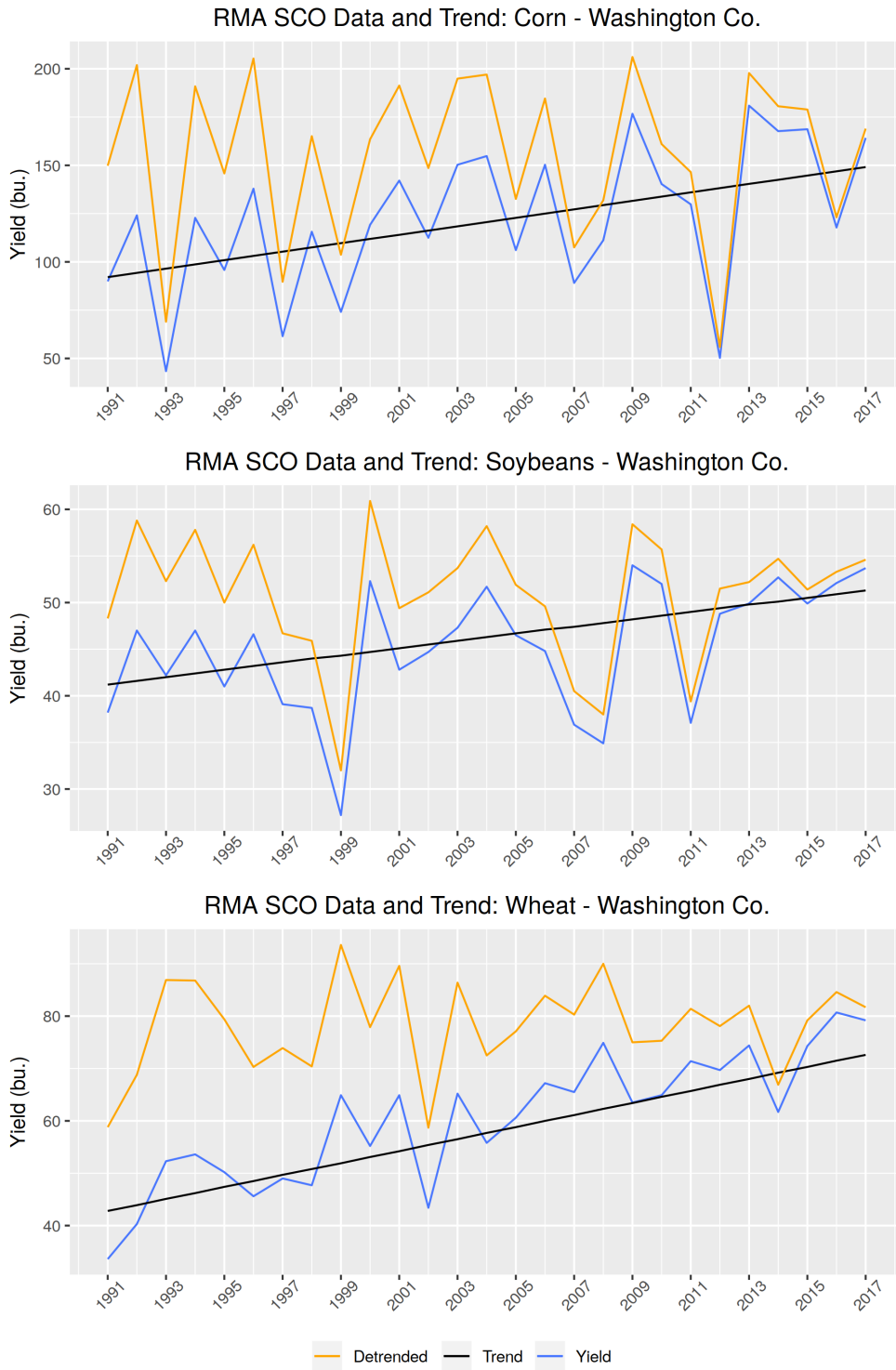


Figure B.100: RMA estimated trends for Wayne County

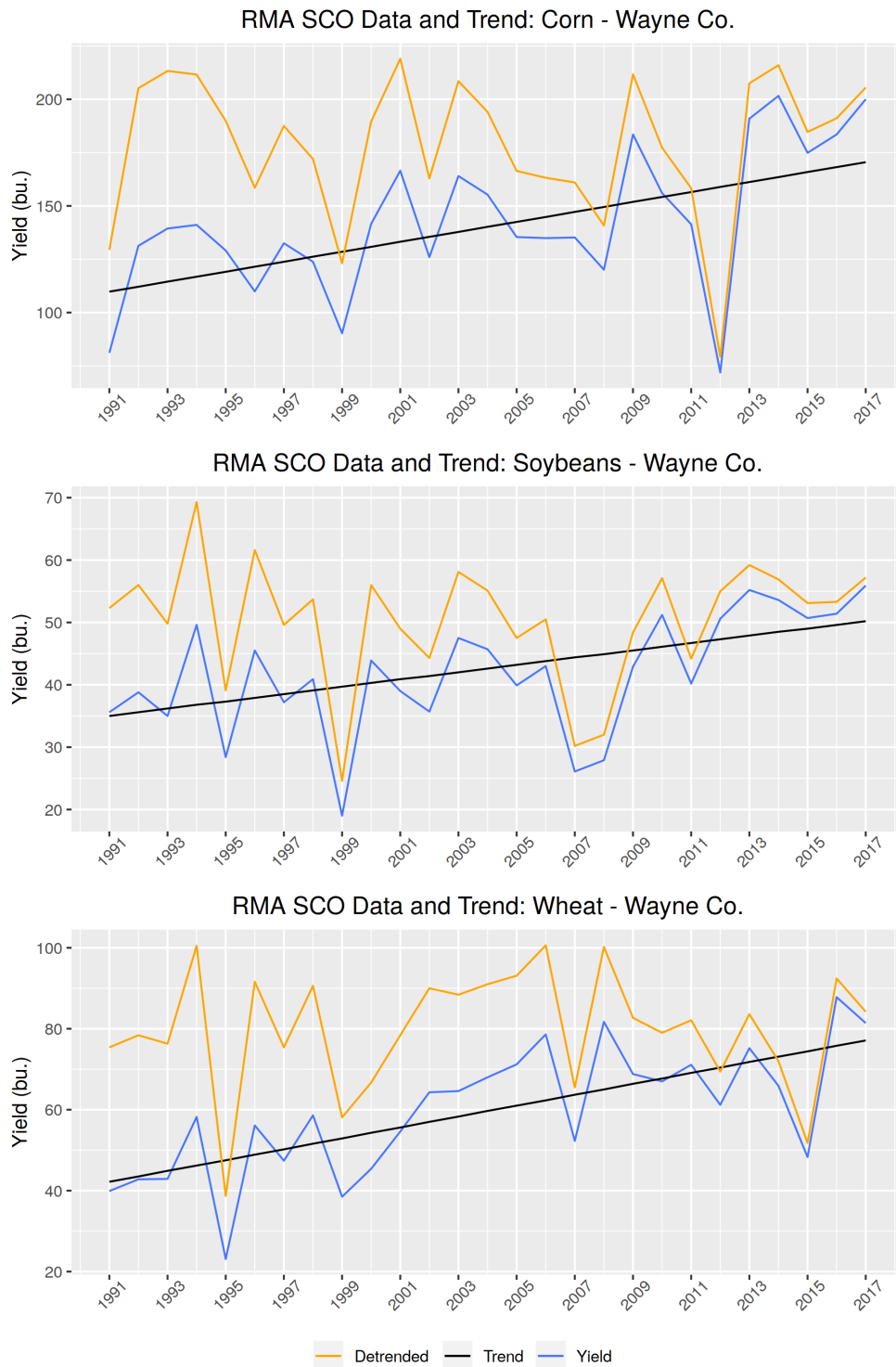
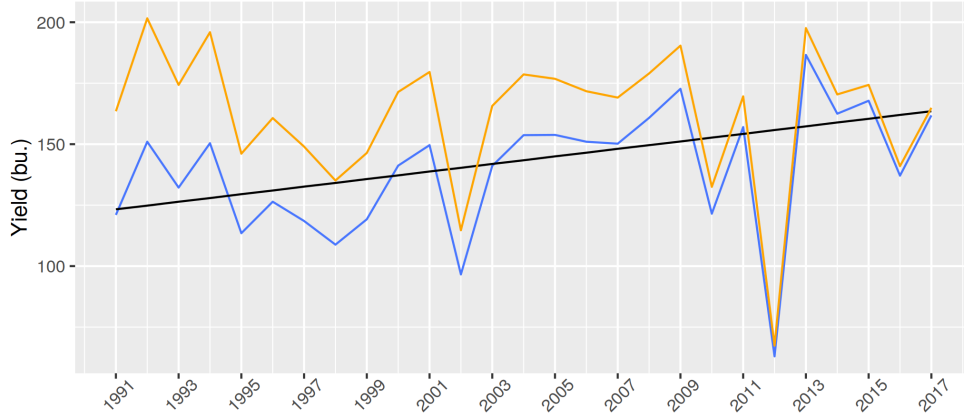
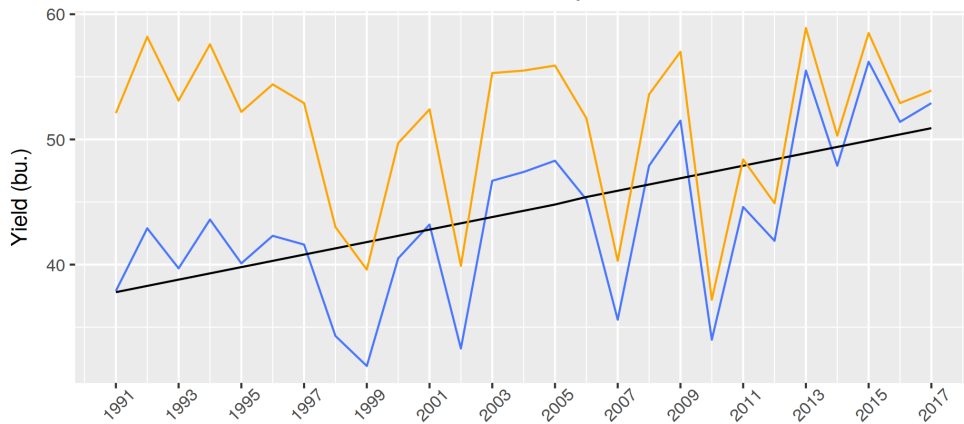


Figure B.101: RMA estimated trends for Webster County

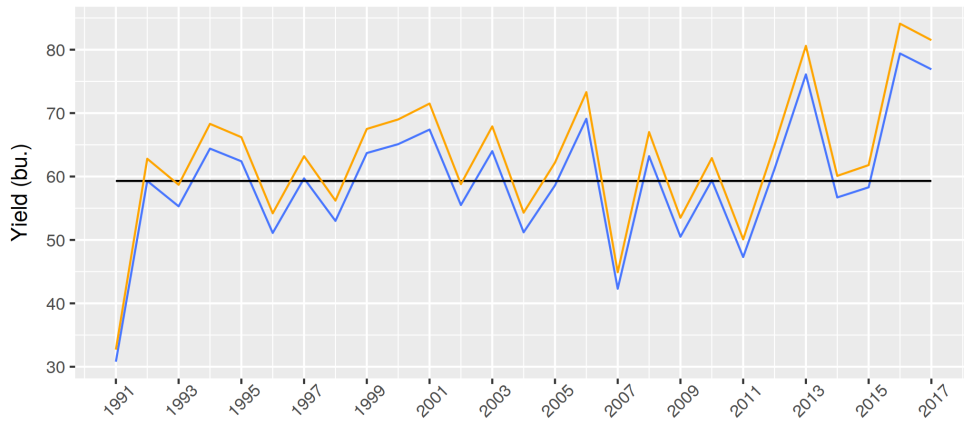
RMA SCO Data and Trend: Corn - Webster Co.



RMA SCO Data and Trend: Soybeans - Webster Co.



RMA SCO Data and Trend: Wheat - Webster Co.



— Detrended — Trend — Yield



Figure B.102: RMA estimated trends for Whitley County

RMA SCO Data and Trend: Corn - Whitley Co.

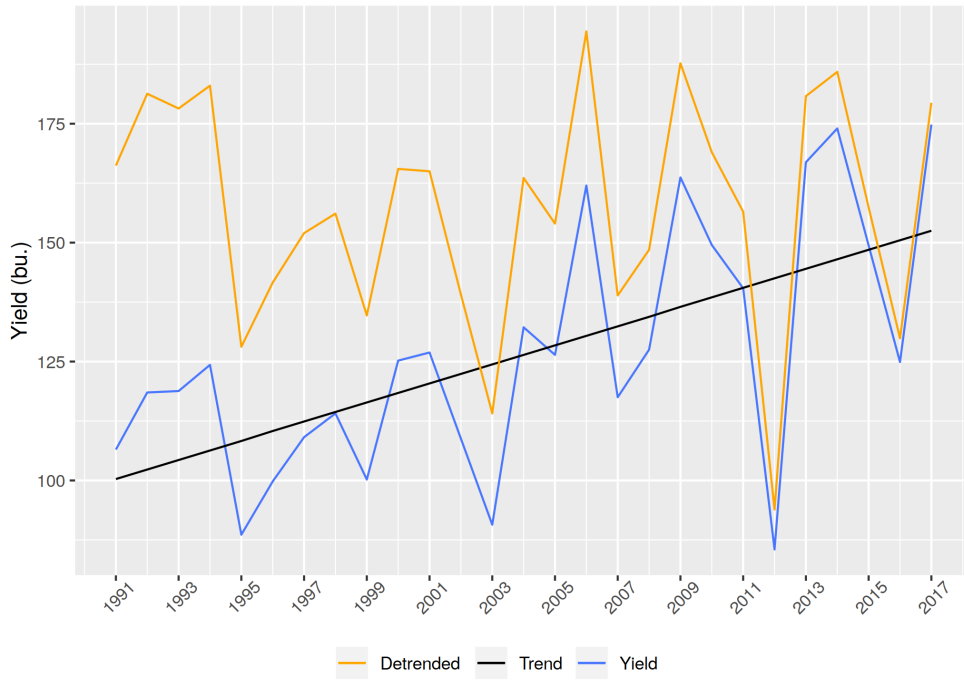


Figure B.103: RMA estimated trends for Wolfe County

RMA SCO Data and Trend: Corn - Wolfe Co.

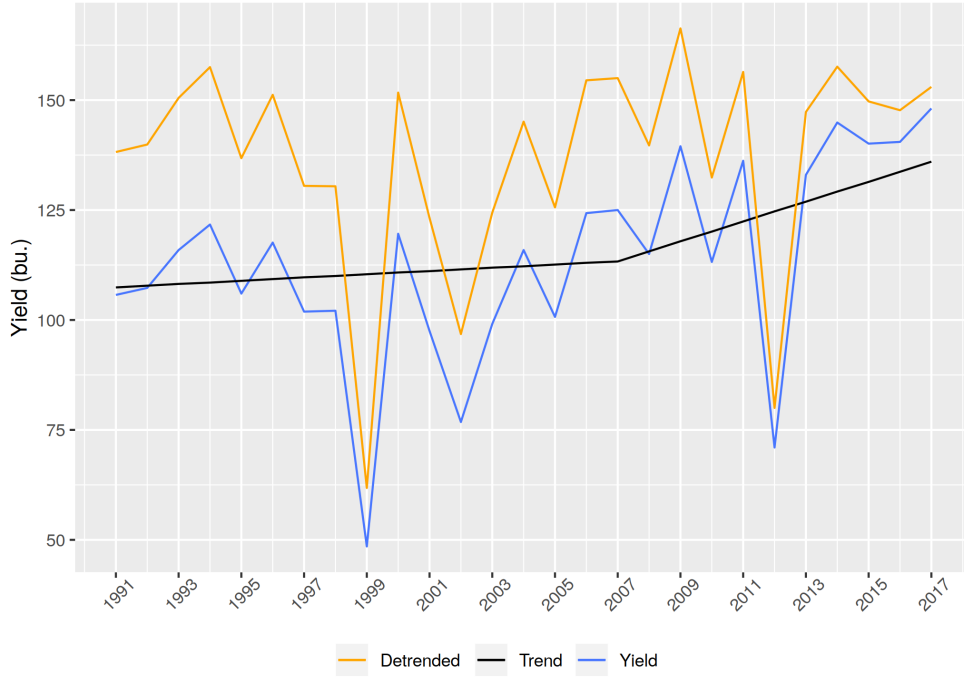
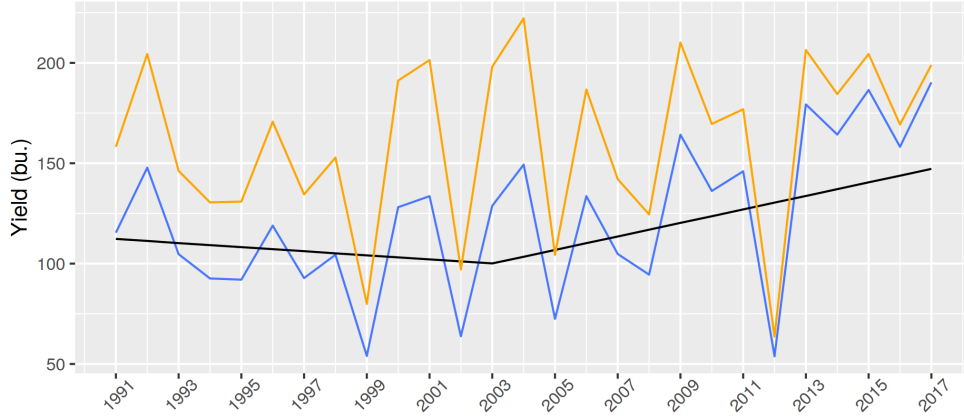
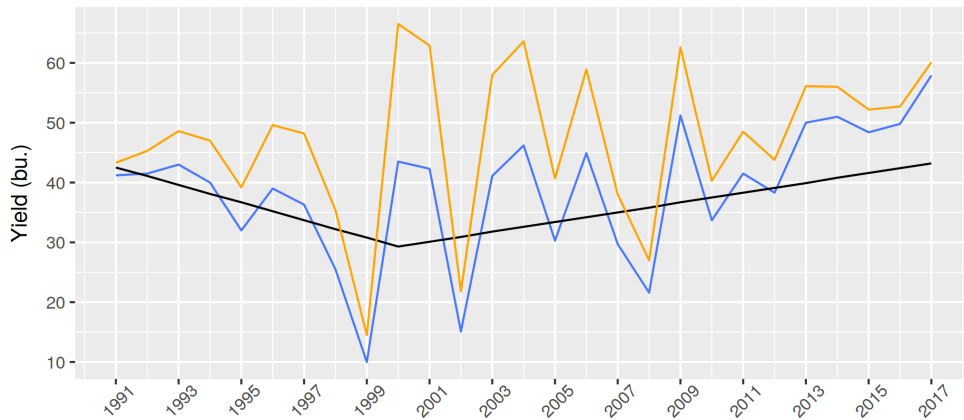


Figure B.104: RMA estimated trends for Woodford County

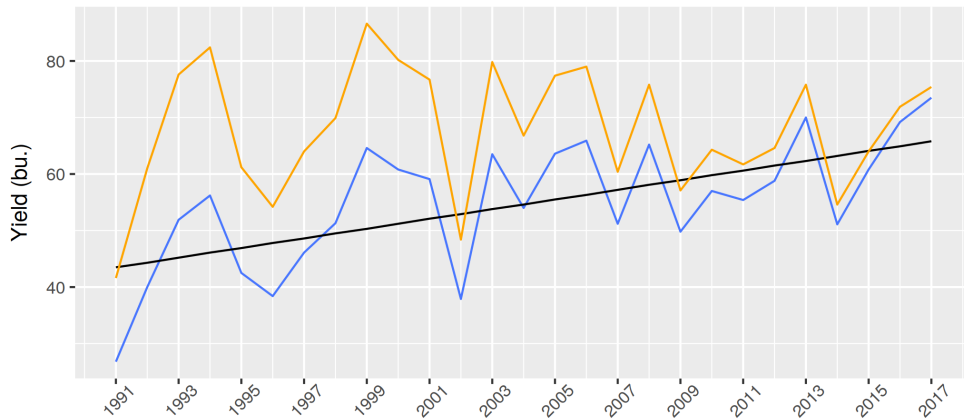
RMA SCO Data and Trend: Corn - Woodford Co.



RMA SCO Data and Trend: Soybeans - Woodford Co.



RMA SCO Data and Trend: Wheat - Woodford Co.



— Detrended — Trend — Yield

## Appendix C Crop Yield and Price Distribution Modeling

Various parametric methods were considered for modeling the yield and price distributions used for this simulation. To examine parametric distribution candidacy, Cullen and Frey plots were generated for each crop's SCO area yields and prices. The Cullen and Frey graph plots the kurtosis and square of skewness of the dataset of interest as points, along with points and areas representing kurtosis and square of skewness accommodated by the various candidate distributions (Cullen and Frey, 1999). On the plots we see some distributions can take on only one shape (e.g., the normal distribution), while others contain additional shape parameters in their functions affording them additional flexibility. The Cullen and Frey plots for both yields and prices appear below.

### Crop Yields

The treated SCO area yields for all SCO areas are presented on the Cullen and Frey plots below on a per crop basis. We see that for all three crops the yield distributions for almost all counties falls within the kurtosis and square of skewness area that can be appropriately modeled by the flexible beta distribution. Ideally all SCO area yield distributions would fall within the area, but as there do not appear to be any more appropriate parametric candidates, the beta was chosen to individually model all farm- and SCO area-levels yield distributions in this study.

### Corn - Cullen and Frey graph

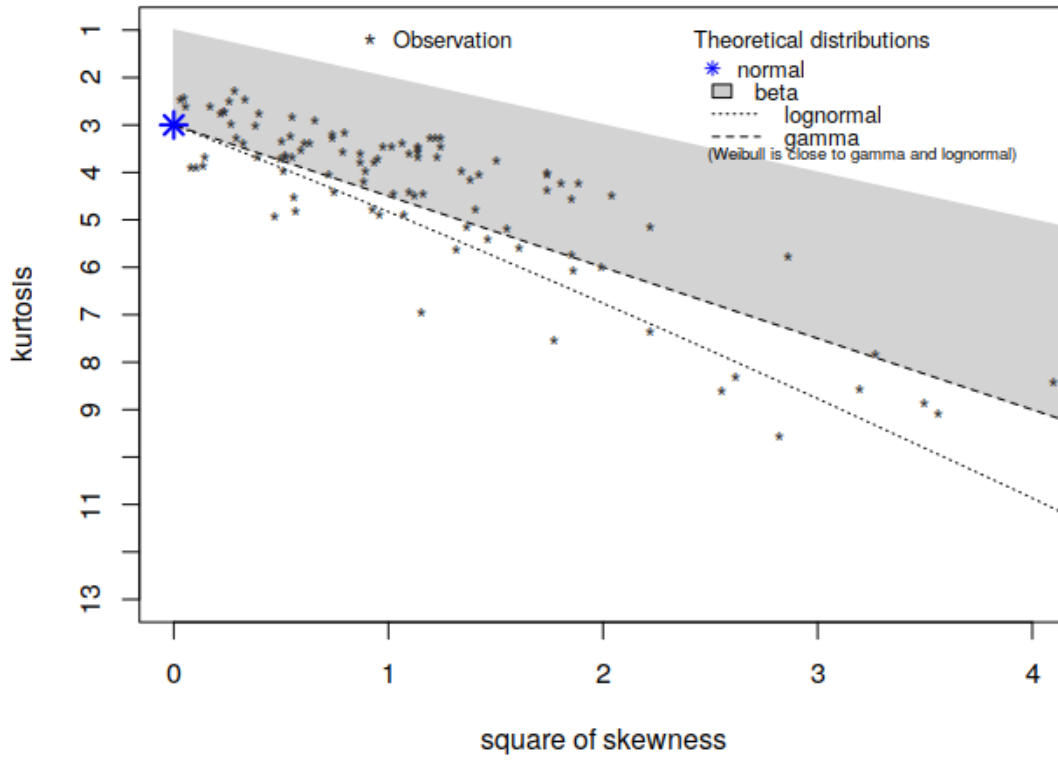


Figure C.1: Cullen and Frey plot of treated RMA SCO area-level corn yields for all Kentucky counties.

### Soybeans - Cullen and Frey graph

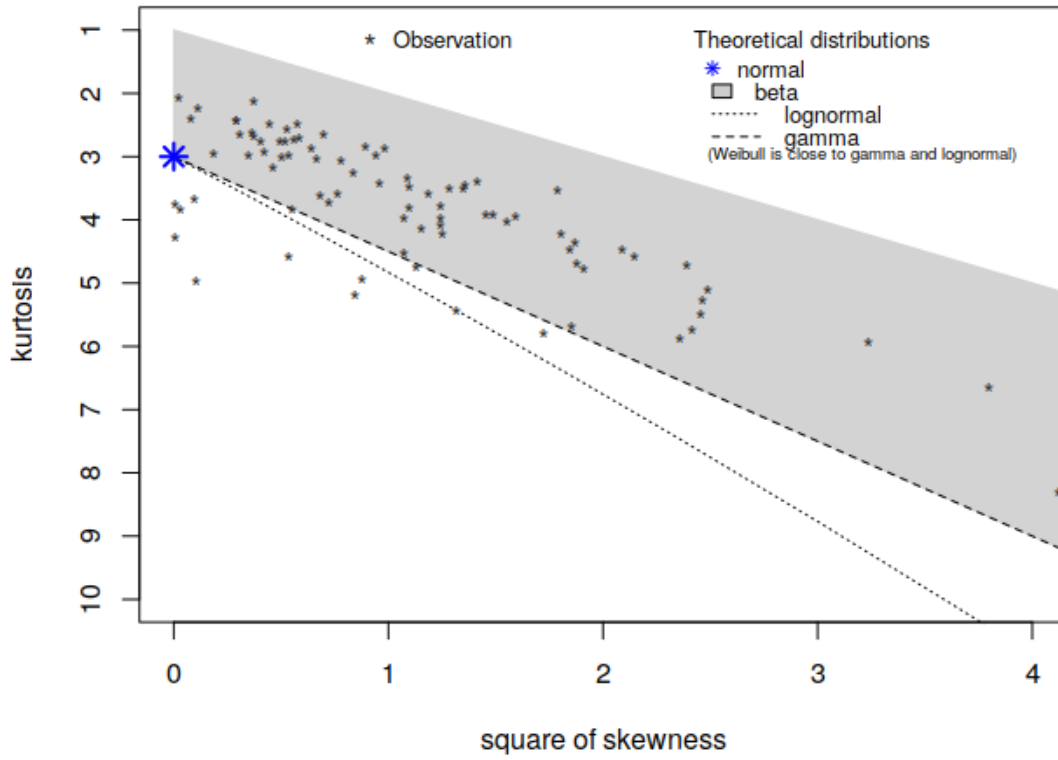


Figure C.2: Cullen and Frey plot of treated RMA SCO area-level soybean yields for all Kentucky counties.

### Wheat - Cullen and Frey graph

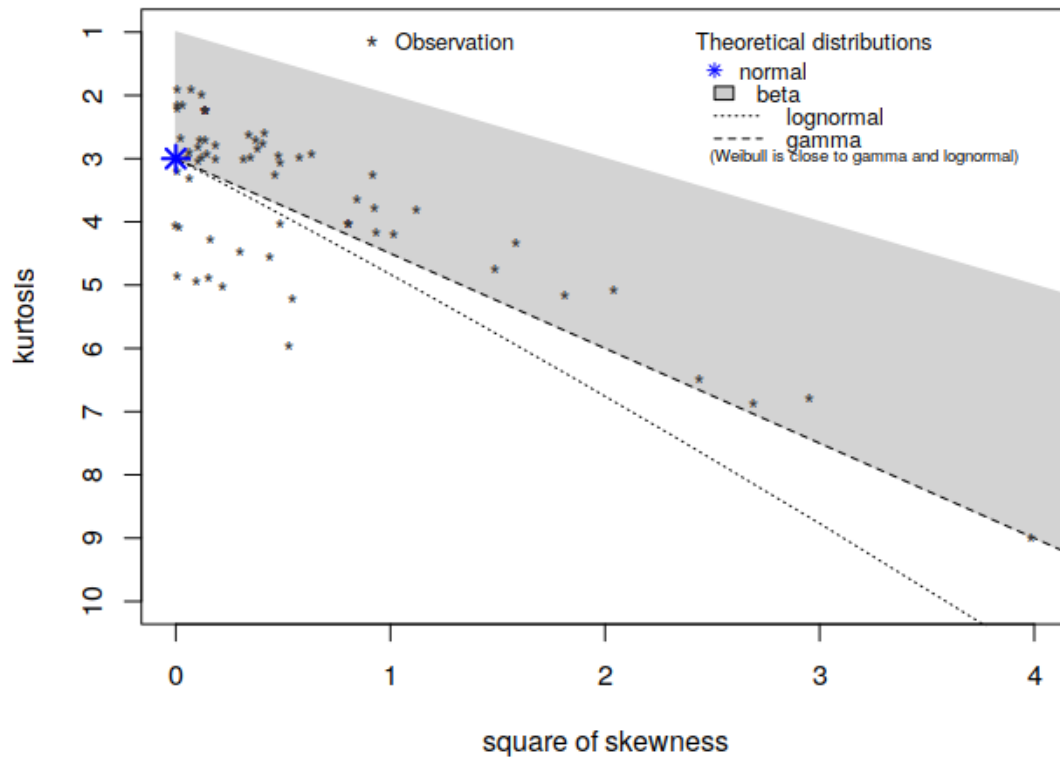


Figure C.3: Cullen and Frey plot of treated RMA SCO area-level wheat yields for all Kentucky counties.

## Prices

Ideally forward-looking crop price distributions would be modeled using information available from the options market. Unfortunately options price data were not available for this study so such options market derived “implied” distributions could not be used. Goodwin (2009) assumes crop prices follow a log-normal distribution along with historical price volatilities from the market.

The detrended crop prices of interest (Kentucky marketing year average, RMA projected price and RMA harvest price) were also plotted on Cullen and Frey plots per crop basis. Again you can see that most of our observed distributions fall within the kurtosis and square of skewness area representing the beta distribution on the plot. Based on this evidence, the beta distribution is used to model the prices in this study’s simulation.



### Corn Price - Cullen and Frey graph

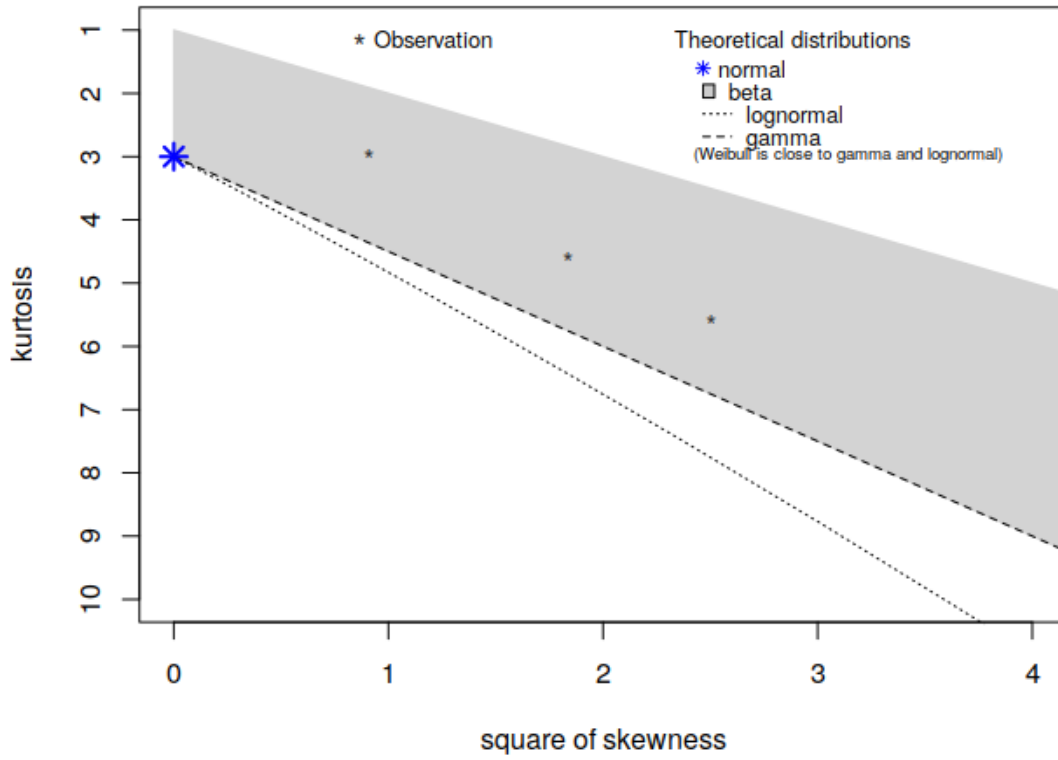


Figure C.4: Cullen and Frey plot of detrended marketing year average, projected and harvest corn prices.

### Soybeans Price - Cullen and Frey graph

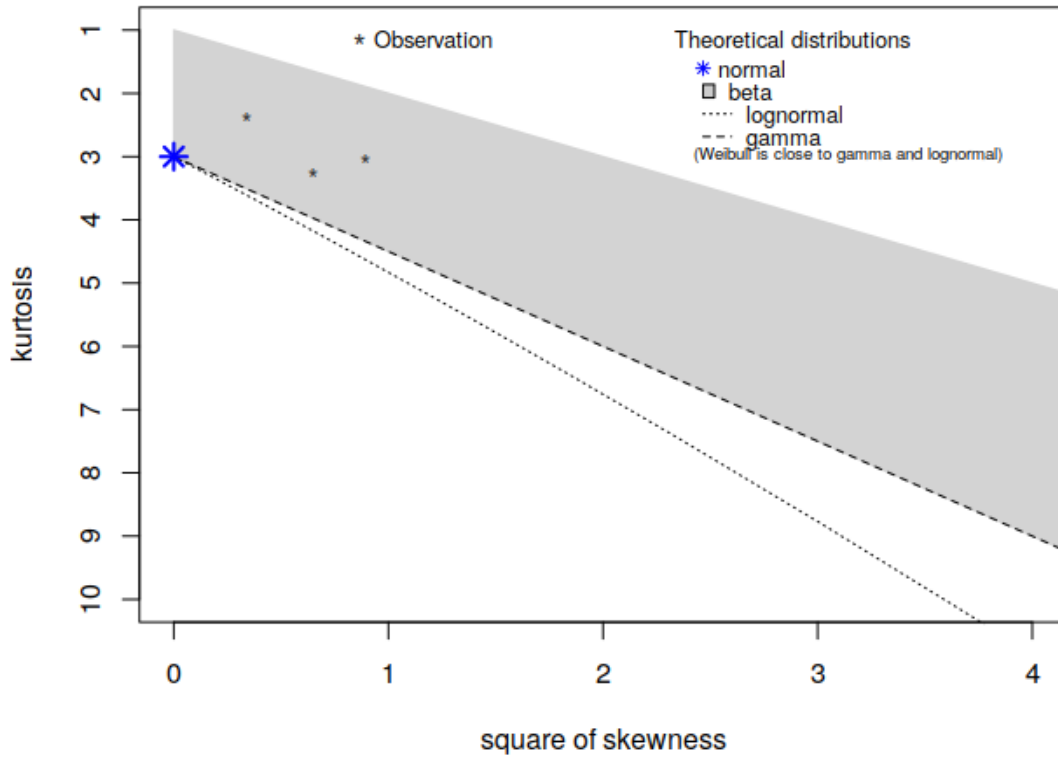


Figure C.5: Cullen and Frey plot of detrended marketing year average, projected and harvest soybean prices.

### Wheat Price - Cullen and Frey graph

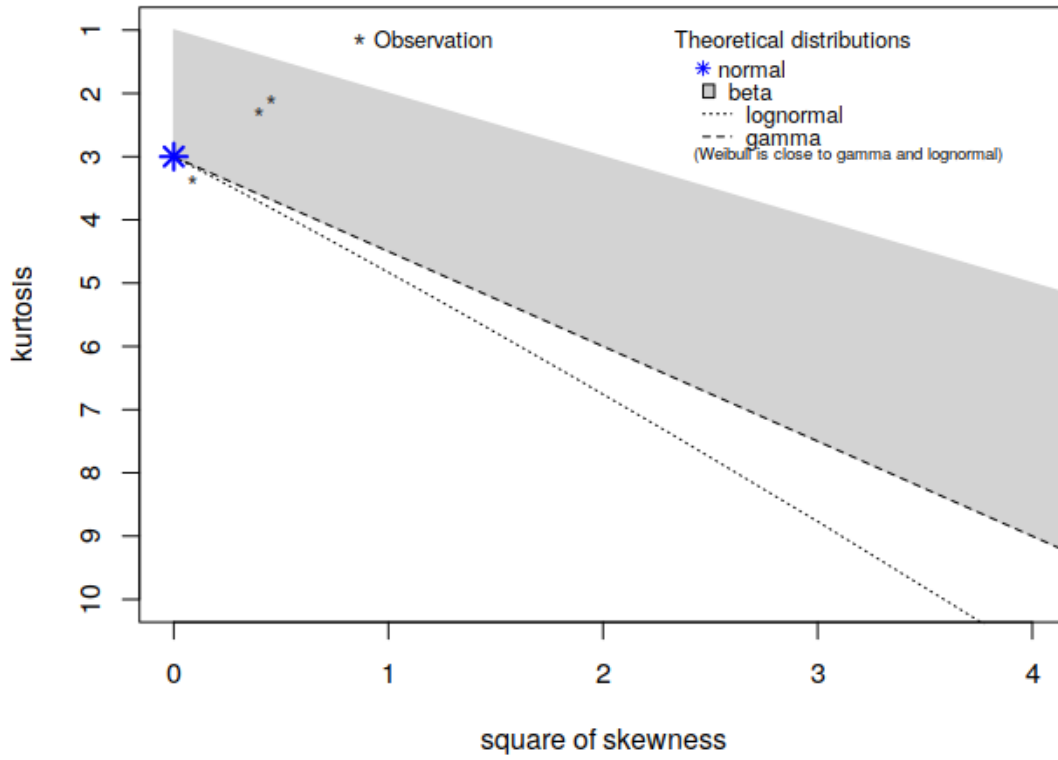


Figure C.6: Cullen and Frey plot of detrended marketing year average, projected and harvest wheat prices.

## Appendix D Results

### D.1 Corn

#### Optimal Insurance Scheme Counts

Table D.1: Corn - Optimal Insurance Scheme Count by County

Spread	Farm-Area Cor.	Opt. Ins.	Count(n)
1.1	0.25	RP: 85% + SCO	69
1.1	0.25	RP-HPE: 50% + SCO	16
1.1	0.25	RP: 80% + SCO	16
1.1	0.25	RP: 75% + SCO	2
1.1	0.25	RP-HPE: 80% + SCO	1
1.1	0.5	RP: 85% + SCO	68
1.1	0.5	RP: 80% + SCO	18
1.1	0.5	RP-HPE: 50% + SCO	16
1.1	0.5	RP-HPE: 80% + SCO	1
1.1	0.5	RP: 75% + SCO	1
1.1	0.75	RP: 85% + SCO	64
1.1	0.75	RP: 80% + SCO	22
1.1	0.75	RP-HPE: 50% + SCO	16
1.1	0.75	RP: 75% + SCO	1
1.1	0.75	RP-HPE: 80% + SCO	1
1.2	0.25	RP: 85% + SCO	78
1.2	0.25	RP-HPE: 50% + SCO	13
1.2	0.25	RP: 80% + SCO	13
1.2	0.5	RP: 85% + SCO	73
1.2	0.5	RP: 80% + SCO	15
1.2	0.5	RP-HPE: 50% + SCO	14
1.2	0.5	RP: 75% + SCO	1
1.2	0.5	RP-HPE: 80% + SCO	1
1.2	0.75	RP: 85% + SCO	70
1.2	0.75	RP: 80% + SCO	18
1.2	0.75	RP-HPE: 50% + SCO	14
1.2	0.75	RP-HPE: 80% + SCO	1
1.2	0.75	RP: 75% + SCO	1
1.5	0.25	RP: 85% + SCO	91
1.5	0.25	RP: 80% + SCO	12
1.5	0.25	RP-HPE: 50% + SCO	1

Continued on next page

Table D.1: Corn - Optimal Insurance Scheme Count by County (cont.)

Spread	Farm-Area Cor.	Opt. Ins.	Count(n)
1.5	0.5	RP: 85% + SCO	91
1.5	0.5	RP: 80% + SCO	12
1.5	0.5	RP-HPE: 50% + SCO	1
1.5	0.75	RP: 85% + SCO	90
1.5	0.75	RP: 80% + SCO	12
1.5	0.75	RP-HPE: 50% + SCO	2

## Maps

Figure D.1: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25.

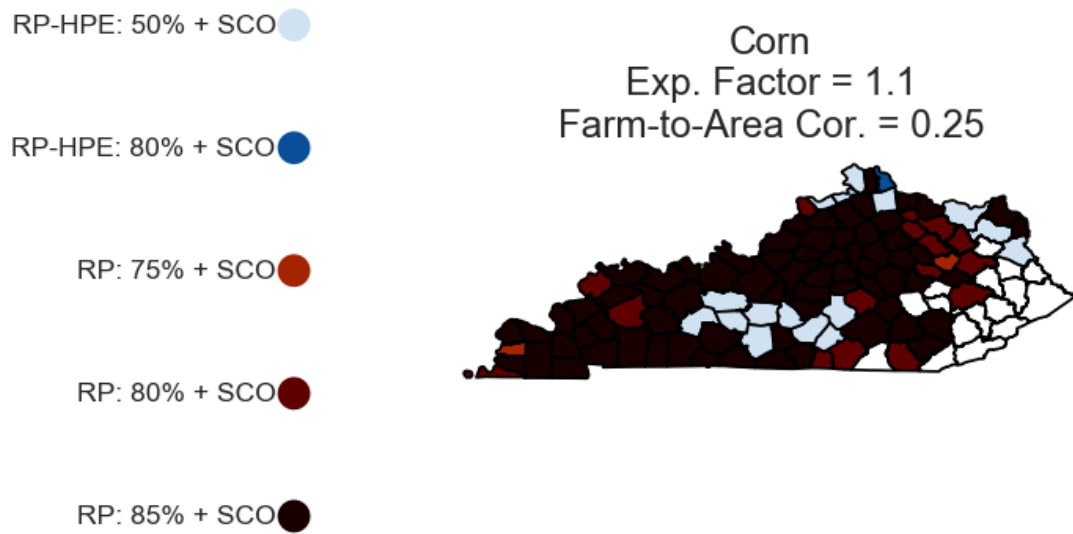


Figure D.2: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5.

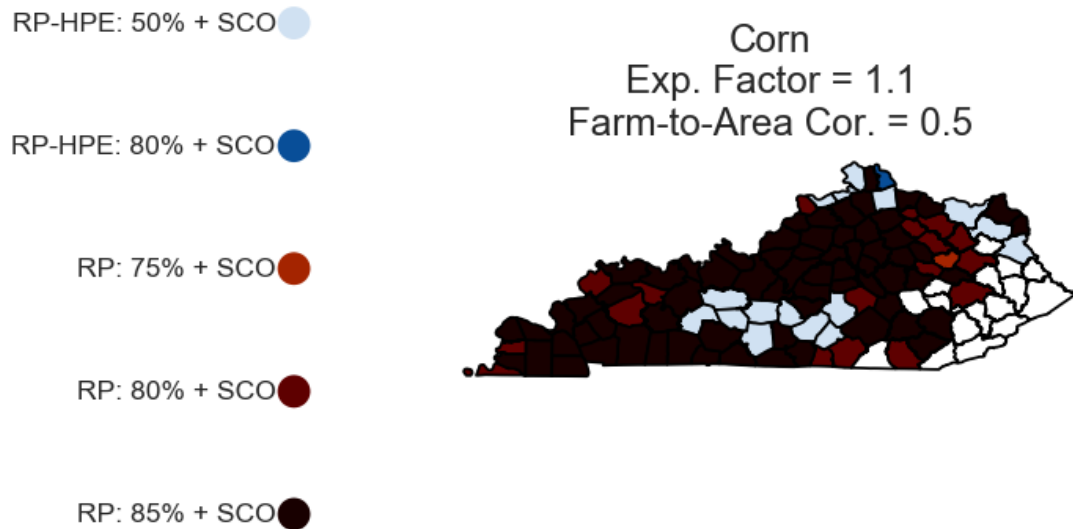


Figure D.3: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75.

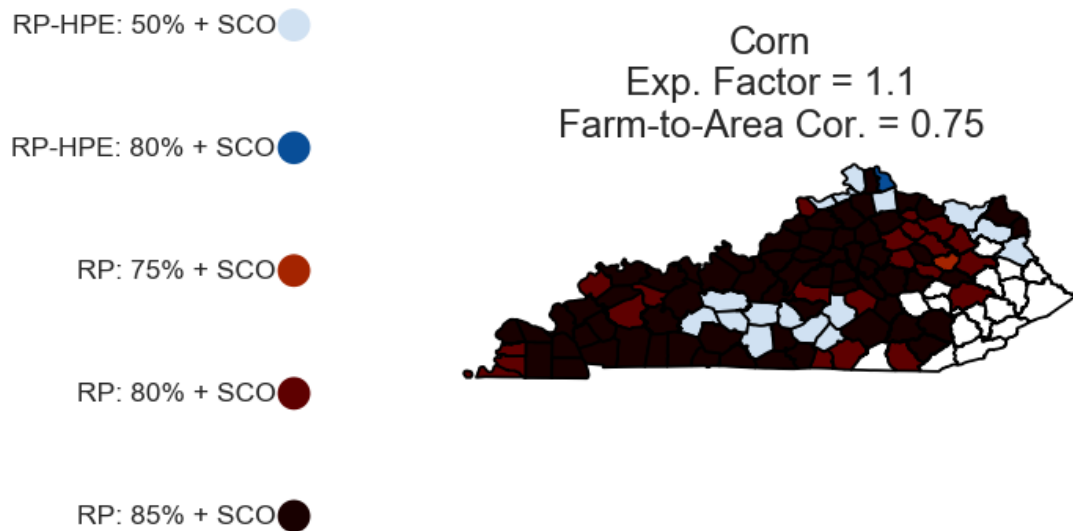


Figure D.4: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25.

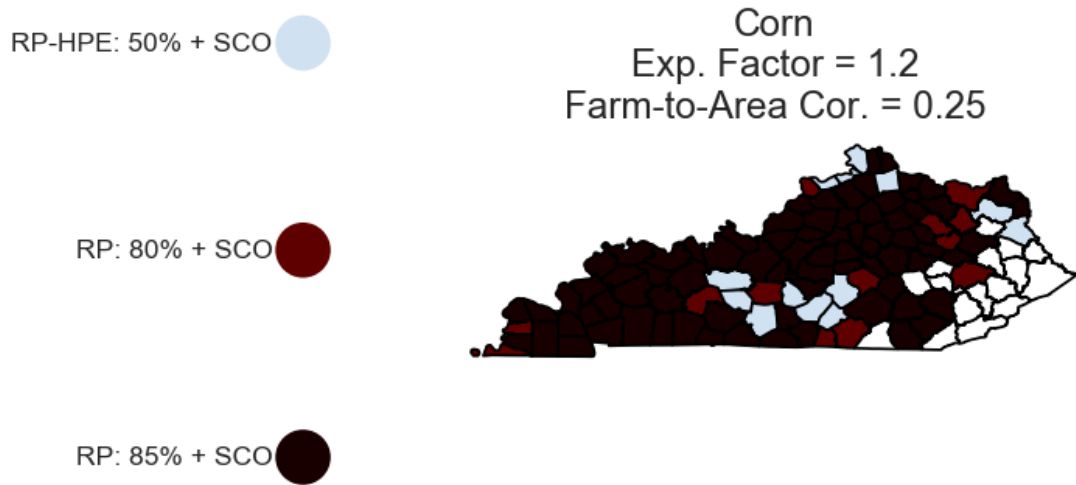


Figure D.5: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5.

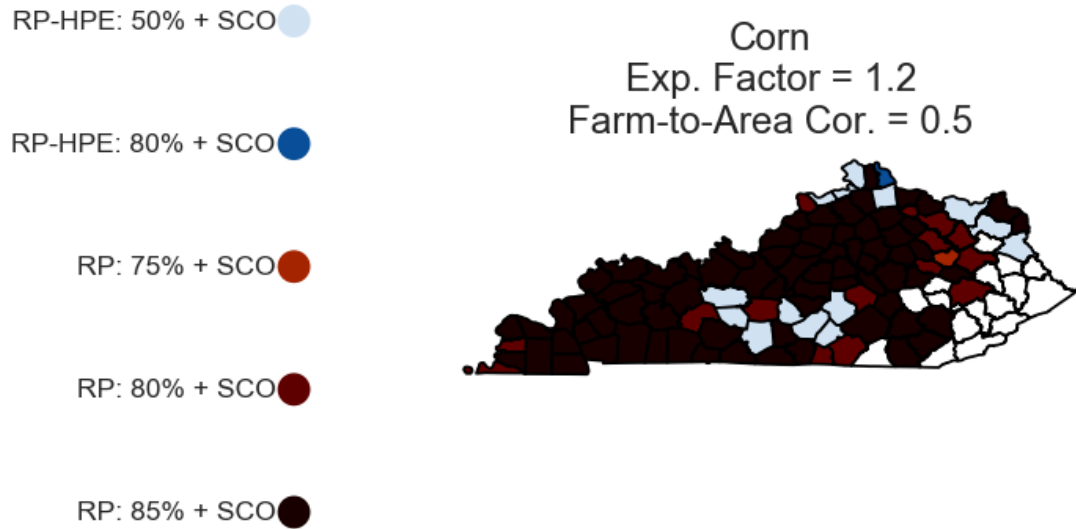


Figure D.6: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75.

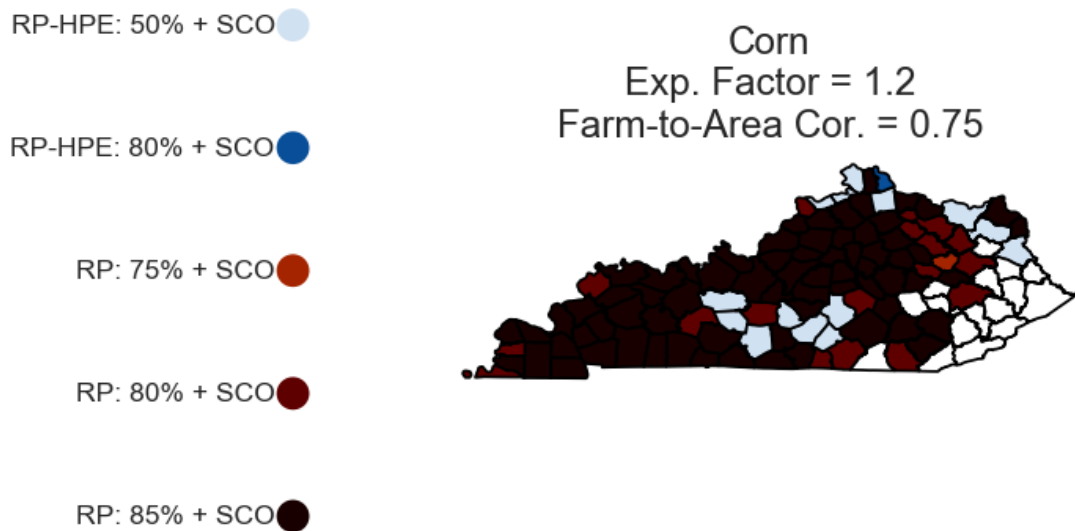


Figure D.7: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25.

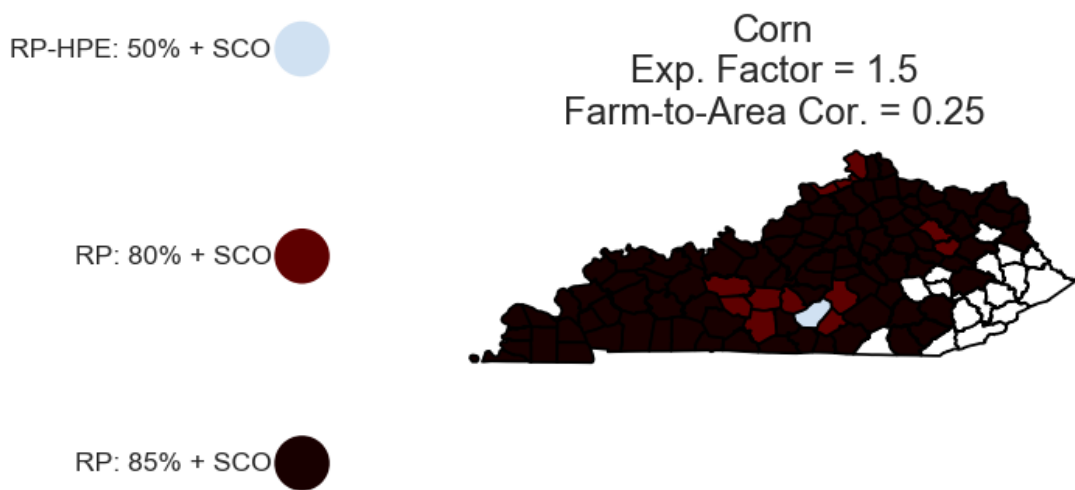




Figure D.8: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5.

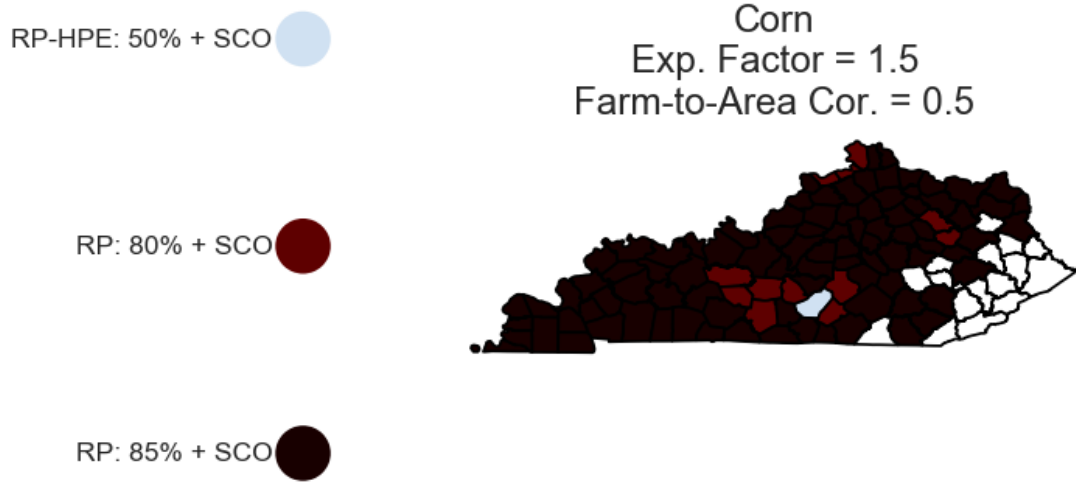
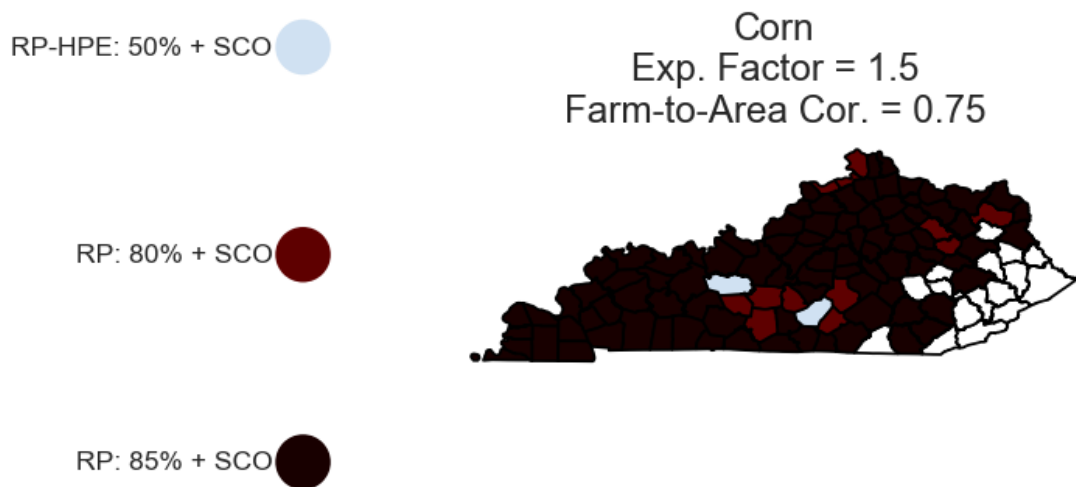


Figure D.9: Map of Optimal Insurance Schemes for Corn: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75.



## Complete Results

The following tables present the complete results of the simulation for corn producers in all Kentucky counties by yield expansion factor and farm-area correlation on a per acre basis. For each county the downside-risk minimizing insurance scheme is listed along with the mean, standard deviation, minimum and maximum of the simulated net revenues under the optimal insurance choice. Finally, the table presents the target value – equal to the mean revenue with no insurance – and the estimated semideviation with no insurance and under the optimal insurance strategy.

Table D.2: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$957	\$162	\$528	\$1,490	\$971	\$1,165	\$124
Allen	RP:85%+SCO	\$694	\$172	\$371	\$1,478	\$642	\$1,691	\$79
Anderson	RP:85%+SCO	\$824	\$177	\$457	\$1,815	\$808	\$1,572	\$106
Ballard	RP:85%+SCO	\$898	\$214	\$494	\$2,021	\$811	\$1,996	\$86
Barren	RP-HPE:50%+SCO	\$850	\$150	\$296	\$1,468	\$860	\$1,122	\$108
Bath	RP:80%+SCO	\$671	\$146	\$368	\$1,305	\$699	\$1,253	\$115
Boone	RP-HPE:50%+SCO	\$723	\$126	\$308	\$1,248	\$736	\$926	\$95
Bourbon	RP:85%+SCO	\$760	\$169	\$420	\$1,471	\$768	\$1,564	\$115
Boyd	RP:85%+SCO	\$899	\$203	\$519	\$1,766	\$892	\$1,888	\$126
Boyle	RP:85%+SCO	\$848	\$191	\$465	\$1,810	\$830	\$1,738	\$113
Bracken	RP:85%+SCO	\$907	\$200	\$506	\$1,752	\$900	\$1,814	\$127
Breathitt	RP:80%+SCO	\$814	\$158	\$453	\$1,419	\$832	\$1,294	\$116
Breckinridge	RP:85%+SCO	\$793	\$180	\$432	\$1,754	\$760	\$1,624	\$97
Bullitt	RP:85%+SCO	\$824	\$165	\$469	\$1,481	\$828	\$1,435	\$111
Butler	RP-HPE:50%+SCO	\$916	\$174	\$359	\$1,472	\$926	\$1,264	\$127
Caldwell	RP:85%+SCO	\$793	\$184	\$416	\$1,774	\$727	\$1,682	\$80
Calloway	RP:85%+SCO	\$693	\$157	\$354	\$1,527	\$649	\$1,368	\$72
Campbell	RP-HPE:80%+SCO	\$898	\$169	\$513	\$1,529	\$907	\$1,354	\$119
Carlisle	RP:75%+SCO	\$847	\$137	\$431	\$1,450	\$854	\$1,075	\$98
Carrroll	RP-HPE:50%+SCO	\$763	\$137	\$352	\$1,274	\$777	\$1,013	\$103
Carter	RP-HPE:50%+SCO	\$875	\$180	\$345	\$1,569	\$875	\$1,383	\$122
Casey	RP-HPE:50%+SCO	\$907	\$171	\$433	\$1,495	\$916	\$1,258	\$123
Christian	RP:85%+SCO	\$987	\$328	\$472	\$2,330	\$823	\$3,263	\$105
Clark	RP:85%+SCO	\$757	\$175	\$386	\$1,533	\$766	\$1,638	\$119
Clay	RP:85%+SCO	\$841	\$201	\$437	\$1,806	\$808	\$1,867	\$110
Clinton	RP:80%+SCO	\$897	\$153	\$518	\$1,573	\$915	\$1,227	\$116
Crittenden	RP:85%+SCO	\$721	\$162	\$401	\$1,418	\$695	\$1,487	\$89
Cumberland	RP:85%+SCO	\$775	\$245	\$405	\$1,867	\$532	\$3,196	\$27
Daviess	RP:85%+SCO	\$955	\$184	\$544	\$1,803	\$957	\$1,559	\$124
Edmonson	RP-HPE:50%+SCO	\$735	\$130	\$353	\$1,191	\$744	\$957	\$96
Estill	RP:85%+SCO	\$772	\$163	\$433	\$1,391	\$765	\$1,502	\$102
Fayette	RP:85%+SCO	\$826	\$198	\$454	\$1,691	\$801	\$1,903	\$112
Fleming	RP:80%+SCO	\$846	\$209	\$421	\$1,678	\$861	\$1,866	\$145
Franklin	RP:85%+SCO	\$1,024	\$328	\$516	\$2,709	\$884	\$3,282	\$116
Fulton	RP:80%+SCO	\$813	\$146	\$438	\$1,423	\$821	\$1,201	\$103
Gallatin	RP-HPE:50%+SCO	\$751	\$140	\$297	\$1,361	\$768	\$1,027	\$107
Garrard	RP:85%+SCO	\$871	\$199	\$472	\$1,668	\$856	\$1,816	\$120
Grant	RP:85%+SCO	\$815	\$173	\$440	\$1,786	\$813	\$1,552	\$112
Graves	RP:85%+SCO	\$793	\$137	\$457	\$1,449	\$788	\$1,140	\$90
Grayson	RP-HPE:50%+SCO	\$739	\$131	\$367	\$1,201	\$747	\$970	\$96
Green	RP-HPE:50%+SCO	\$911	\$150	\$463	\$1,486	\$920	\$1,085	\$112
Greenup	RP:85%+SCO	\$911	\$185	\$524	\$1,607	\$930	\$1,603	\$133
Hancock	RP:85%+SCO	\$989	\$202	\$572	\$1,838	\$974	\$1,779	\$124
Hardin	RP:85%+SCO	\$846	\$200	\$461	\$1,684	\$806	\$1,811	\$104
Harrison	RP:85%+SCO	\$851	\$230	\$438	\$1,866	\$801	\$2,246	\$114
Hart	RP-HPE:50%+SCO	\$882	\$147	\$319	\$1,469	\$891	\$1,076	\$109

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Table D.2: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Henderson	RP:85%+SCO	\$878	\$182	\$502	\$1,691	\$864	\$1,612	\$110
Henry	RP:85%+SCO	\$1,034	\$337	\$501	\$2,538	\$878	\$3,397	\$111
Hickman	RP:85%+SCO	\$859	\$154	\$481	\$1,525	\$859	\$1,289	\$103
Hopkins	RP:80%+SCO	\$765	\$145	\$437	\$1,364	\$775	\$1,222	\$103
Jefferson	RP:85%+SCO	\$807	\$148	\$477	\$1,414	\$825	\$1,232	\$110
Jessamine	RP:85%+SCO	\$810	\$178	\$454	\$1,618	\$806	\$1,636	\$113
Kenton	RP:85%+SCO	\$766	\$153	\$431	\$1,585	\$754	\$1,355	\$92
Knox	RP:85%+SCO	\$819	\$184	\$428	\$1,850	\$803	\$1,672	\$109
Larue	RP:85%+SCO	\$889	\$169	\$486	\$1,807	\$880	\$1,449	\$107
Laurel	RP:85%+SCO	\$834	\$170	\$470	\$1,486	\$833	\$1,519	\$111
Lawrence	RP-HPE:50%+SCO	\$856	\$179	\$344	\$1,488	\$858	\$1,368	\$123
Lewis	RP-HPE:50%+SCO	\$930	\$197	\$346	\$1,604	\$934	\$1,506	\$137
Lincoln	RP:80%+SCO	\$824	\$160	\$457	\$1,433	\$846	\$1,326	\$121
Livingston	RP:85%+SCO	\$690	\$204	\$367	\$1,829	\$475	\$2,476	\$19
Logan	RP:85%+SCO	\$868	\$197	\$479	\$1,871	\$830	\$1,781	\$105
Lyon	RP:85%+SCO	\$973	\$344	\$441	\$2,372	\$495	\$3,762	\$3
Madison	RP:85%+SCO	\$791	\$176	\$425	\$1,529	\$785	\$1,651	\$110
Marion	RP:85%+SCO	\$855	\$161	\$487	\$1,469	\$872	\$1,362	\$119
Marshall	RP:85%+SCO	\$652	\$144	\$341	\$1,495	\$630	\$1,290	\$80
Mason	RP:85%+SCO	\$887	\$198	\$491	\$1,634	\$898	\$1,786	\$137
McCracken	RP:85%+SCO	\$827	\$187	\$447	\$1,874	\$784	\$1,673	\$95
McLean	RP:85%+SCO	\$879	\$166	\$507	\$1,652	\$888	\$1,404	\$117
Meade	RP:85%+SCO	\$864	\$190	\$473	\$1,954	\$831	\$1,710	\$104
Menifee	RP:75%+SCO	\$682	\$155	\$349	\$1,330	\$708	\$1,295	\$119
Mercer	RP:85%+SCO	\$806	\$169	\$447	\$1,735	\$812	\$1,493	\$115
Metcalfe	RP:85%+SCO	\$794	\$230	\$403	\$1,757	\$691	\$2,427	\$84
Monroe	RP:85%+SCO	\$734	\$224	\$393	\$1,632	\$516	\$2,979	\$26
Montgomery	RP:85%+SCO	\$753	\$207	\$380	\$1,745	\$717	\$2,039	\$109
Morgan	RP:80%+SCO	\$623	\$136	\$347	\$1,145	\$635	\$1,148	\$97
Muhlenberg	RP:85%+SCO	\$780	\$175	\$422	\$1,520	\$757	\$1,583	\$100
Nelson	RP:85%+SCO	\$850	\$180	\$471	\$1,606	\$840	\$1,609	\$112
Nicholas	RP:80%+SCO	\$728	\$168	\$381	\$1,467	\$737	\$1,492	\$115
Ohio	RP:85%+SCO	\$977	\$197	\$565	\$1,744	\$977	\$1,688	\$132
Oldham	RP:85%+SCO	\$812	\$150	\$461	\$1,449	\$817	\$1,263	\$104
Owen	RP:85%+SCO	\$889	\$195	\$494	\$1,767	\$861	\$1,782	\$110
Pendleton	RP-HPE:50%+SCO	\$899	\$174	\$385	\$1,515	\$902	\$1,326	\$120
Powell	RP:80%+SCO	\$720	\$180	\$362	\$1,446	\$726	\$1,655	\$119
Pulaski	RP:85%+SCO	\$861	\$195	\$484	\$1,647	\$837	\$1,795	\$111
Robertson	RP:80%+SCO	\$872	\$209	\$454	\$1,794	\$890	\$1,833	\$149
Rockcastle	RP:85%+SCO	\$844	\$172	\$484	\$1,490	\$851	\$1,514	\$117
Rowan	RP:80%+SCO	\$622	\$153	\$331	\$1,185	\$645	\$1,362	\$114
Russell	RP-HPE:50%+SCO	\$877	\$151	\$475	\$1,462	\$887	\$1,095	\$112
Scott	RP:85%+SCO	\$843	\$201	\$450	\$1,835	\$817	\$1,912	\$114
Shelby	RP:85%+SCO	\$1,042	\$340	\$512	\$2,585	\$881	\$3,444	\$111
Simpson	RP:85%+SCO	\$990	\$371	\$414	\$2,709	\$610	\$3,901	\$39
Spencer	RP:85%+SCO	\$873	\$201	\$464	\$1,820	\$840	\$1,840	\$109
Taylor	RP:85%+SCO	\$937	\$178	\$517	\$1,678	\$947	\$1,493	\$126
Todd	RP:85%+SCO	\$874	\$180	\$482	\$1,774	\$850	\$1,608	\$103
Trigg	RP:85%+SCO	\$781	\$172	\$427	\$1,552	\$750	\$1,539	\$93
Trimble	RP:80%+SCO	\$731	\$135	\$410	\$1,260	\$750	\$1,087	\$103
Union	RP:80%+SCO	\$891	\$189	\$480	\$1,715	\$896	\$1,634	\$127
Warren	RP:85%+SCO	\$826	\$183	\$457	\$1,800	\$798	\$1,646	\$103
Washington	RP:85%+SCO	\$837	\$191	\$458	\$1,742	\$801	\$1,724	\$103
Wayne	RP:80%+SCO	\$900	\$156	\$504	\$1,788	\$914	\$1,252	\$114
Webster	RP:85%+SCO	\$817	\$179	\$457	\$1,545	\$787	\$1,640	\$98
Whitley	RP:80%+SCO	\$794	\$159	\$430	\$1,504	\$809	\$1,319	\$115
Wolfe	RP:85%+SCO	\$679	\$142	\$365	\$1,215	\$687	\$1,284	\$98
Woodford	RP:85%+SCO	\$838	\$191	\$441	\$1,690	\$820	\$1,790	\$112

Table D.3: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$957	\$162	\$552	\$1,454	\$971	\$1,165	\$124
Allen	RP:85%+SCO	\$694	\$166	\$371	\$1,372	\$642	\$1,689	\$75
Anderson	RP:85%+SCO	\$824	\$173	\$460	\$1,544	\$808	\$1,572	\$105
Ballard	RP:85%+SCO	\$898	\$204	\$497	\$1,937	\$812	\$1,991	\$83
Barren	RP-HPE:50%+SCO	\$850	\$149	\$343	\$1,357	\$860	\$1,123	\$108
Bath	RP:80%+SCO	\$671	\$144	\$367	\$1,272	\$699	\$1,252	\$113
Boone	RP-HPE:50%+SCO	\$723	\$126	\$333	\$1,166	\$736	\$924	\$95
Bourbon	RP:85%+SCO	\$760	\$166	\$421	\$1,455	\$768	\$1,566	\$113
Boyd	RP:85%+SCO	\$899	\$202	\$528	\$1,757	\$892	\$1,891	\$124
Boyle	RP:85%+SCO	\$849	\$186	\$463	\$1,620	\$830	\$1,741	\$111
Bracken	RP:85%+SCO	\$906	\$198	\$502	\$1,710	\$900	\$1,818	\$126
Breathitt	RP:80%+SCO	\$814	\$156	\$458	\$1,423	\$832	\$1,290	\$115
Breckinridge	RP:85%+SCO	\$792	\$174	\$420	\$1,502	\$760	\$1,615	\$94
Bullitt	RP:85%+SCO	\$824	\$162	\$478	\$1,480	\$828	\$1,433	\$110
Butler	RP-HPE:50%+SCO	\$915	\$173	\$381	\$1,483	\$926	\$1,261	\$126
Caldwell	RP:85%+SCO	\$793	\$175	\$425	\$1,636	\$727	\$1,686	\$76
Calloway	RP:85%+SCO	\$693	\$148	\$353	\$1,533	\$649	\$1,362	\$71
Campbell	RP-HPE:80%+SCO	\$898	\$169	\$511	\$1,536	\$907	\$1,356	\$119
Carlisle	RP:80%+SCO	\$845	\$135	\$465	\$1,386	\$854	\$1,072	\$98
Carrroll	RP-HPE:50%+SCO	\$763	\$137	\$335	\$1,284	\$778	\$1,013	\$103
Carter	RP-HPE:50%+SCO	\$875	\$180	\$350	\$1,557	\$875	\$1,386	\$122
Casey	RP-HPE:50%+SCO	\$907	\$170	\$435	\$1,480	\$916	\$1,252	\$123
Christian	RP:85%+SCO	\$987	\$309	\$463	\$2,263	\$823	\$3,244	\$99
Clark	RP:85%+SCO	\$757	\$172	\$388	\$1,491	\$766	\$1,631	\$117
Clay	RP:85%+SCO	\$841	\$195	\$455	\$1,667	\$808	\$1,869	\$106
Clinton	RP:80%+SCO	\$898	\$153	\$514	\$1,554	\$915	\$1,234	\$116
Crittenden	RP:85%+SCO	\$721	\$158	\$396	\$1,365	\$695	\$1,492	\$87
Cumberland	RP:85%+SCO	\$774	\$233	\$405	\$1,687	\$532	\$3,191	\$25
Daviess	RP:85%+SCO	\$954	\$182	\$557	\$1,630	\$957	\$1,553	\$123
Edmonson	RP-HPE:50%+SCO	\$735	\$130	\$353	\$1,206	\$744	\$964	\$96
Estill	RP:85%+SCO	\$772	\$160	\$435	\$1,401	\$764	\$1,499	\$100
Fayette	RP:85%+SCO	\$826	\$194	\$447	\$1,652	\$801	\$1,906	\$109
Fleming	RP:80%+SCO	\$846	\$206	\$445	\$1,679	\$861	\$1,867	\$143
Franklin	RP:85%+SCO	\$1,024	\$312	\$523	\$2,492	\$885	\$3,270	\$110
Fulton	RP:80%+SCO	\$813	\$145	\$444	\$1,440	\$821	\$1,200	\$102
Gallatin	RP-HPE:50%+SCO	\$751	\$140	\$317	\$1,282	\$768	\$1,029	\$106
Garrard	RP:85%+SCO	\$872	\$194	\$468	\$1,649	\$856	\$1,822	\$117
Grant	RP:85%+SCO	\$816	\$169	\$461	\$1,639	\$813	\$1,549	\$110
Graves	RP:85%+SCO	\$793	\$135	\$449	\$1,336	\$788	\$1,141	\$88
Grayson	RP-HPE:50%+SCO	\$739	\$131	\$366	\$1,194	\$748	\$972	\$96
Green	RP-HPE:50%+SCO	\$911	\$150	\$498	\$1,425	\$920	\$1,082	\$111
Greenup	RP:85%+SCO	\$911	\$185	\$525	\$1,618	\$930	\$1,606	\$133
Hancock	RP:85%+SCO	\$989	\$200	\$570	\$1,841	\$974	\$1,779	\$122
Hardin	RP:85%+SCO	\$846	\$193	\$459	\$1,690	\$807	\$1,815	\$102
Harrison	RP:85%+SCO	\$850	\$221	\$439	\$1,825	\$801	\$2,242	\$111
Hart	RP-HPE:50%+SCO	\$883	\$147	\$323	\$1,391	\$892	\$1,078	\$109
Henderson	RP:85%+SCO	\$878	\$178	\$483	\$1,632	\$864	\$1,610	\$108
Henry	RP:85%+SCO	\$1,035	\$322	\$510	\$2,374	\$878	\$3,396	\$106
Hickman	RP:85%+SCO	\$859	\$152	\$494	\$1,535	\$859	\$1,289	\$102
Hopkins	RP:80%+SCO	\$765	\$144	\$419	\$1,370	\$775	\$1,220	\$101
Jefferson	RP:85%+SCO	\$807	\$147	\$482	\$1,353	\$825	\$1,233	\$110
Jessamine	RP:85%+SCO	\$810	\$175	\$447	\$1,575	\$806	\$1,637	\$111
Kenton	RP:85%+SCO	\$766	\$148	\$416	\$1,381	\$754	\$1,354	\$90
Knox	RP:85%+SCO	\$818	\$178	\$433	\$1,615	\$803	\$1,660	\$106
Larue	RP:85%+SCO	\$889	\$166	\$509	\$1,599	\$881	\$1,453	\$106
Laurel	RP:85%+SCO	\$833	\$168	\$494	\$1,486	\$833	\$1,514	\$110
Lawrence	RP-HPE:50%+SCO	\$856	\$179	\$354	\$1,520	\$858	\$1,366	\$122
Lewis	RP-HPE:50%+SCO	\$930	\$197	\$345	\$1,604	\$934	\$1,506	\$136
Lincoln	RP:80%+SCO	\$824	\$159	\$459	\$1,479	\$846	\$1,327	\$120
Livingston	RP:85%+SCO	\$690	\$192	\$359	\$1,595	\$475	\$2,481	\$18

Continued on next page

Table D.3: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Logan	RP:85%+SCO	\$868	\$192	\$470	\$1,717	\$830	\$1,784	\$103
Lyon	RP:85%+SCO	\$974	\$314	\$457	\$2,349	\$496	\$3,774	\$3
Madison	RP:85%+SCO	\$792	\$173	\$421	\$1,503	\$785	\$1,657	\$108
Marion	RP:85%+SCO	\$855	\$160	\$489	\$1,481	\$872	\$1,359	\$118
Marshall	RP:85%+SCO	\$652	\$139	\$350	\$1,261	\$630	\$1,288	\$78
Mason	RP:85%+SCO	\$887	\$195	\$493	\$1,616	\$898	\$1,784	\$135
McCracken	RP:85%+SCO	\$827	\$178	\$443	\$1,727	\$784	\$1,667	\$91
McLean	RP:80%+SCO	\$882	\$168	\$497	\$1,602	\$889	\$1,398	\$115
Meade	RP:85%+SCO	\$864	\$185	\$465	\$1,615	\$831	\$1,708	\$101
Menifee	RP:75%+SCO	\$682	\$153	\$345	\$1,267	\$708	\$1,296	\$118
Mercer	RP:85%+SCO	\$806	\$166	\$450	\$1,522	\$812	\$1,494	\$113
Metcalfe	RP:85%+SCO	\$794	\$220	\$397	\$1,649	\$690	\$2,425	\$79
Monroe	RP:85%+SCO	\$734	\$215	\$391	\$1,604	\$516	\$2,980	\$23
Montgomery	RP:85%+SCO	\$754	\$200	\$377	\$1,585	\$718	\$2,041	\$106
Morgan	RP:80%+SCO	\$623	\$135	\$347	\$1,131	\$635	\$1,148	\$96
Muhlenberg	RP:85%+SCO	\$781	\$170	\$409	\$1,455	\$757	\$1,591	\$97
Nelson	RP:85%+SCO	\$851	\$177	\$471	\$1,577	\$840	\$1,618	\$110
Nicholas	RP:80%+SCO	\$729	\$165	\$381	\$1,355	\$737	\$1,500	\$113
Ohio	RP:85%+SCO	\$978	\$196	\$565	\$1,764	\$977	\$1,692	\$130
Oldham	RP:85%+SCO	\$813	\$149	\$477	\$1,419	\$817	\$1,263	\$103
Owen	RP:85%+SCO	\$889	\$191	\$497	\$1,620	\$861	\$1,779	\$107
Pendleton	RP-HPE:50%+SCO	\$899	\$174	\$406	\$1,518	\$902	\$1,326	\$120
Powell	RP:80%+SCO	\$721	\$178	\$369	\$1,394	\$726	\$1,659	\$117
Pulaski	RP:85%+SCO	\$861	\$191	\$480	\$1,645	\$837	\$1,796	\$109
Robertson	RP:80%+SCO	\$872	\$206	\$459	\$1,799	\$890	\$1,833	\$147
Rockcastle	RP:85%+SCO	\$844	\$169	\$486	\$1,502	\$851	\$1,506	\$115
Rowan	RP:80%+SCO	\$622	\$151	\$329	\$1,213	\$645	\$1,361	\$112
Russell	RP-HPE:50%+SCO	\$877	\$150	\$483	\$1,448	\$887	\$1,098	\$112
Scott	RP:85%+SCO	\$843	\$196	\$449	\$1,716	\$817	\$1,911	\$111
Shelby	RP:85%+SCO	\$1,042	\$324	\$510	\$2,587	\$881	\$3,440	\$105
Simpson	RP:85%+SCO	\$990	\$337	\$438	\$2,572	\$610	\$3,901	\$35
Spencer	RP:85%+SCO	\$873	\$195	\$479	\$1,684	\$840	\$1,828	\$106
Taylor	RP:85%+SCO	\$937	\$178	\$521	\$1,670	\$947	\$1,498	\$125
Todd	RP:85%+SCO	\$874	\$177	\$491	\$1,612	\$850	\$1,600	\$102
Trigg	RP:85%+SCO	\$781	\$168	\$431	\$1,493	\$750	\$1,549	\$91
Trimble	RP:80%+SCO	\$731	\$135	\$403	\$1,265	\$750	\$1,086	\$103
Union	RP:80%+SCO	\$891	\$187	\$472	\$1,714	\$896	\$1,637	\$125
Warren	RP:85%+SCO	\$826	\$179	\$449	\$1,580	\$798	\$1,651	\$101
Washington	RP:85%+SCO	\$837	\$185	\$455	\$1,625	\$801	\$1,729	\$101
Wayne	RP:80%+SCO	\$900	\$155	\$486	\$1,589	\$914	\$1,255	\$114
Webster	RP:85%+SCO	\$818	\$175	\$465	\$1,544	\$787	\$1,646	\$95
Whitley	RP:80%+SCO	\$794	\$158	\$448	\$1,495	\$809	\$1,323	\$114
Wolfe	RP:85%+SCO	\$679	\$140	\$367	\$1,203	\$687	\$1,281	\$96
Woodford	RP:85%+SCO	\$838	\$187	\$441	\$1,731	\$820	\$1,794	\$110

Table D.4: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$957	\$162	\$530	\$1,496	\$971	\$1,166	\$124
Allen	RP:85%+SCO	\$694	\$160	\$359	\$1,352	\$642	\$1,685	\$70
Anderson	RP:85%+SCO	\$823	\$171	\$465	\$1,564	\$808	\$1,574	\$103
Ballard	RP:85%+SCO	\$898	\$196	\$503	\$1,728	\$812	\$1,981	\$78
Barren	RP-HPE:50%+SCO	\$850	\$149	\$355	\$1,383	\$860	\$1,124	\$108
Bath	RP:80%+SCO	\$671	\$142	\$361	\$1,286	\$699	\$1,250	\$111
Boone	RP-HPE:50%+SCO	\$723	\$125	\$334	\$1,163	\$736	\$920	\$94
Bourbon	RP:80%+SCO	\$765	\$169	\$397	\$1,437	\$768	\$1,567	\$111

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Table D.4: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Boyd	RP:85%+SCO	\$898	\$201	\$527	\$1,723	\$892	\$1,893	\$123
Boyle	RP:85%+SCO	\$849	\$183	\$463	\$1,595	\$829	\$1,744	\$108
Bracken	RP:85%+SCO	\$907	\$197	\$505	\$1,668	\$900	\$1,821	\$125
Breathitt	RP:80%+SCO	\$814	\$155	\$461	\$1,487	\$832	\$1,286	\$115
Breckinridge	RP:85%+SCO	\$792	\$170	\$431	\$1,467	\$760	\$1,614	\$92
Bullitt	RP:85%+SCO	\$824	\$161	\$469	\$1,505	\$827	\$1,429	\$108
Butler	RP-HPE:50%+SCO	\$915	\$172	\$445	\$1,537	\$926	\$1,259	\$126
Caldwell	RP:85%+SCO	\$793	\$168	\$432	\$1,541	\$727	\$1,686	\$72
Calloway	RP:85%+SCO	\$693	\$140	\$358	\$1,246	\$649	\$1,356	\$67
Campbell	RP-HPE:80%+SCO	\$898	\$169	\$512	\$1,531	\$907	\$1,359	\$118
Carlisle	RP:80%+SCO	\$845	\$135	\$467	\$1,356	\$854	\$1,075	\$98
Carroll	RP-HPE:50%+SCO	\$763	\$136	\$341	\$1,291	\$778	\$1,013	\$103
Carter	RP-HPE:50%+SCO	\$875	\$179	\$389	\$1,521	\$875	\$1,386	\$121
Casey	RP-HPE:50%+SCO	\$907	\$169	\$483	\$1,483	\$916	\$1,246	\$122
Christian	RP:85%+SCO	\$986	\$294	\$489	\$2,239	\$823	\$3,227	\$92
Clark	RP:80%+SCO	\$763	\$176	\$391	\$1,450	\$766	\$1,625	\$115
Clay	RP:85%+SCO	\$842	\$190	\$452	\$1,681	\$808	\$1,871	\$103
Clinton	RP:80%+SCO	\$898	\$154	\$527	\$1,580	\$915	\$1,243	\$116
Crittenden	RP:85%+SCO	\$722	\$155	\$397	\$1,391	\$695	\$1,494	\$84
Cumberland	RP:85%+SCO	\$774	\$225	\$396	\$1,696	\$532	\$3,189	\$22
Daviess	RP:85%+SCO	\$954	\$180	\$556	\$1,691	\$957	\$1,552	\$121
Edmonson	RP-HPE:50%+SCO	\$735	\$131	\$372	\$1,232	\$745	\$968	\$96
Estill	RP:85%+SCO	\$772	\$159	\$435	\$1,421	\$764	\$1,494	\$98
Fayette	RP:85%+SCO	\$826	\$190	\$458	\$1,706	\$801	\$1,904	\$107
Fleming	RP:80%+SCO	\$846	\$204	\$442	\$1,677	\$861	\$1,868	\$141
Franklin	RP:85%+SCO	\$1,024	\$300	\$517	\$2,376	\$885	\$3,252	\$103
Fulton	RP:80%+SCO	\$813	\$143	\$462	\$1,421	\$821	\$1,198	\$101
Gallatin	RP-HPE:50%+SCO	\$752	\$139	\$319	\$1,283	\$768	\$1,034	\$106
Garrard	RP:85%+SCO	\$873	\$190	\$478	\$1,714	\$857	\$1,825	\$114
Grant	RP:85%+SCO	\$816	\$166	\$462	\$1,527	\$813	\$1,543	\$108
Graves	RP:85%+SCO	\$794	\$133	\$459	\$1,342	\$788	\$1,144	\$87
Grayson	RP-HPE:50%+SCO	\$739	\$131	\$376	\$1,211	\$748	\$974	\$96
Green	RP-HPE:50%+SCO	\$911	\$149	\$492	\$1,422	\$920	\$1,082	\$111
Greenup	RP:85%+SCO	\$911	\$185	\$526	\$1,622	\$930	\$1,610	\$132
Hancock	RP:85%+SCO	\$989	\$198	\$561	\$1,870	\$974	\$1,784	\$121
Hardin	RP:85%+SCO	\$846	\$189	\$449	\$1,780	\$807	\$1,819	\$98
Harrison	RP:85%+SCO	\$850	\$216	\$439	\$1,808	\$801	\$2,246	\$107
Hart	RP-HPE:50%+SCO	\$883	\$148	\$401	\$1,445	\$892	\$1,081	\$109
Henderson	RP:85%+SCO	\$878	\$176	\$481	\$1,590	\$864	\$1,608	\$106
Henry	RP:85%+SCO	\$1,034	\$311	\$510	\$2,377	\$878	\$3,394	\$99
Hickman	RP:80%+SCO	\$861	\$153	\$462	\$1,478	\$859	\$1,284	\$101
Hopkins	RP:80%+SCO	\$765	\$143	\$410	\$1,344	\$775	\$1,217	\$100
Jefferson	RP:85%+SCO	\$807	\$147	\$464	\$1,410	\$825	\$1,235	\$110
Jessamine	RP:85%+SCO	\$810	\$173	\$439	\$1,502	\$806	\$1,637	\$110
Kenton	RP:85%+SCO	\$766	\$145	\$424	\$1,400	\$754	\$1,351	\$89
Knox	RP:85%+SCO	\$817	\$174	\$444	\$1,551	\$802	\$1,651	\$103
Larue	RP:85%+SCO	\$889	\$164	\$507	\$1,604	\$881	\$1,455	\$105
Laurel	RP:85%+SCO	\$833	\$166	\$486	\$1,514	\$833	\$1,511	\$108
Lawrence	RP-HPE:50%+SCO	\$856	\$178	\$384	\$1,539	\$858	\$1,363	\$122
Lewis	RP-HPE:50%+SCO	\$930	\$196	\$430	\$1,588	\$934	\$1,506	\$135
Lincoln	RP:80%+SCO	\$823	\$158	\$458	\$1,502	\$846	\$1,326	\$119
Livingston	RP:85%+SCO	\$690	\$181	\$371	\$1,431	\$474	\$2,483	\$16
Logan	RP:85%+SCO	\$867	\$188	\$456	\$1,626	\$829	\$1,783	\$100
Lyon	RP:85%+SCO	\$973	\$283	\$450	\$2,150	\$496	\$3,778	\$2
Madison	RP:85%+SCO	\$792	\$171	\$416	\$1,473	\$785	\$1,664	\$105
Marion	RP:80%+SCO	\$859	\$163	\$468	\$1,501	\$873	\$1,358	\$117
Marshall	RP:85%+SCO	\$652	\$136	\$351	\$1,220	\$630	\$1,290	\$76
Mason	RP:85%+SCO	\$888	\$194	\$491	\$1,611	\$898	\$1,788	\$134
McCracken	RP:85%+SCO	\$827	\$172	\$437	\$1,595	\$784	\$1,662	\$87
McLean	RP:80%+SCO	\$882	\$166	\$497	\$1,583	\$888	\$1,394	\$114

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Table D.4: Results - Corn, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Meade	RP:85%+SCO	\$864	\$181	\$481	\$1,649	\$830	\$1,708	\$98
Menifee	RP:75%+SCO	\$682	\$152	\$344	\$1,242	\$708	\$1,297	\$117
Mercer	RP:85%+SCO	\$806	\$164	\$450	\$1,465	\$812	\$1,501	\$112
Metcalfe	RP:85%+SCO	\$795	\$212	\$395	\$1,675	\$690	\$2,421	\$74
Monroe	RP:85%+SCO	\$735	\$209	\$393	\$1,578	\$516	\$2,977	\$21
Montgomery	RP:85%+SCO	\$754	\$195	\$370	\$1,508	\$718	\$2,037	\$102
Morgan	RP:80%+SCO	\$623	\$134	\$345	\$1,138	\$635	\$1,150	\$95
Muhlenberg	RP:85%+SCO	\$781	\$167	\$408	\$1,472	\$758	\$1,594	\$94
Nelson	RP:85%+SCO	\$850	\$175	\$470	\$1,529	\$840	\$1,619	\$108
Nicholas	RP:80%+SCO	\$729	\$163	\$379	\$1,393	\$737	\$1,505	\$111
Ohio	RP:85%+SCO	\$978	\$195	\$560	\$1,789	\$977	\$1,693	\$128
Oldham	RP:85%+SCO	\$812	\$148	\$480	\$1,384	\$817	\$1,259	\$102
Owen	RP:85%+SCO	\$889	\$188	\$493	\$1,663	\$861	\$1,778	\$105
Pendleton	RP-HPE:50%+SCO	\$899	\$173	\$456	\$1,515	\$902	\$1,325	\$119
Powell	RP:80%+SCO	\$721	\$176	\$381	\$1,396	\$726	\$1,662	\$115
Pulaski	RP:85%+SCO	\$861	\$188	\$490	\$1,645	\$838	\$1,798	\$106
Robertson	RP:80%+SCO	\$872	\$204	\$465	\$1,778	\$890	\$1,833	\$145
Rockcastle	RP:85%+SCO	\$844	\$167	\$486	\$1,542	\$851	\$1,498	\$114
Rowan	RP:80%+SCO	\$622	\$149	\$327	\$1,228	\$645	\$1,362	\$111
Russell	RP-HPE:50%+SCO	\$877	\$151	\$487	\$1,390	\$887	\$1,103	\$111
Scott	RP:85%+SCO	\$843	\$193	\$448	\$1,667	\$817	\$1,911	\$108
Shelby	RP:85%+SCO	\$1,043	\$312	\$506	\$2,423	\$882	\$3,448	\$99
Simpson	RP:85%+SCO	\$990	\$303	\$433	\$2,252	\$609	\$3,901	\$29
Spencer	RP:85%+SCO	\$873	\$190	\$486	\$1,670	\$839	\$1,818	\$103
Taylor	RP:85%+SCO	\$938	\$177	\$524	\$1,678	\$947	\$1,501	\$125
Todd	RP:85%+SCO	\$874	\$174	\$492	\$1,609	\$850	\$1,595	\$100
Trigg	RP:85%+SCO	\$781	\$164	\$425	\$1,483	\$750	\$1,553	\$89
Trimble	RP:80%+SCO	\$731	\$134	\$406	\$1,323	\$750	\$1,085	\$103
Union	RP:80%+SCO	\$891	\$185	\$479	\$1,714	\$896	\$1,640	\$123
Warren	RP:85%+SCO	\$826	\$175	\$445	\$1,599	\$798	\$1,649	\$99
Washington	RP:85%+SCO	\$837	\$181	\$452	\$1,511	\$801	\$1,733	\$98
Wayne	RP:80%+SCO	\$900	\$154	\$490	\$1,502	\$914	\$1,254	\$113
Webster	RP:85%+SCO	\$817	\$171	\$462	\$1,542	\$787	\$1,649	\$92
Whitley	RP:80%+SCO	\$794	\$157	\$447	\$1,508	\$809	\$1,325	\$113
Wolfe	RP:85%+SCO	\$679	\$139	\$369	\$1,235	\$687	\$1,280	\$95
Woodford	RP:85%+SCO	\$838	\$185	\$439	\$1,752	\$820	\$1,796	\$108

Table D.5: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$960	\$162	\$524	\$1,535	\$974	\$1,168	\$122
Allen	RP:85%+SCO	\$698	\$178	\$373	\$1,598	\$631	\$1,825	\$74
Anderson	RP:85%+SCO	\$832	\$184	\$467	\$1,746	\$807	\$1,682	\$104
Ballard	RP:85%+SCO	\$877	\$234	\$497	\$2,051	\$595	\$3,185	\$13
Barren	RP-HPE:50%+SCO	\$851	\$154	\$321	\$1,427	\$860	\$1,155	\$111
Bath	RP:80%+SCO	\$676	\$149	\$343	\$1,419	\$699	\$1,307	\$113
Boone	RP-HPE:50%+SCO	\$723	\$127	\$306	\$1,198	\$736	\$932	\$96
Bourbon	RP:85%+SCO	\$769	\$173	\$411	\$1,505	\$767	\$1,650	\$111
Boyd	RP:85%+SCO	\$908	\$211	\$519	\$1,797	\$896	\$1,980	\$127
Boyle	RP:85%+SCO	\$858	\$197	\$473	\$1,742	\$829	\$1,847	\$110
Bracken	RP:85%+SCO	\$916	\$208	\$513	\$1,901	\$902	\$1,916	\$126
Breathitt	RP:80%+SCO	\$820	\$160	\$456	\$1,554	\$834	\$1,331	\$116
Breckinridge	RP:85%+SCO	\$800	\$186	\$428	\$1,743	\$758	\$1,742	\$94
Bullitt	RP:85%+SCO	\$831	\$169	\$473	\$1,527	\$829	\$1,507	\$111
Butler	RP:80%+SCO	\$906	\$165	\$490	\$1,674	\$927	\$1,290	\$126
Caldwell	RP:85%+SCO	\$797	\$194	\$429	\$1,858	\$697	\$1,972	\$66

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Table D.5: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Calloway	RP:85%+SCO	\$694	\$163	\$381	\$1,557	\$620	\$1,596	\$60
Campbell	RP:85%+SCO	\$893	\$166	\$528	\$1,497	\$909	\$1,376	\$121
Carlisle	RP:80%+SCO	\$848	\$139	\$466	\$1,390	\$854	\$1,115	\$98
Carrroll	RP-HPE:50%+SCO	\$763	\$139	\$353	\$1,252	\$777	\$1,036	\$105
Carter	RP-HPE:50%+SCO	\$877	\$183	\$356	\$1,541	\$877	\$1,411	\$124
Casey	RP-HPE:50%+SCO	\$909	\$170	\$415	\$1,598	\$918	\$1,258	\$122
Christian	RP:85%+SCO	\$967	\$367	\$475	\$2,710	\$643	\$4,488	\$37
Clark	RP:85%+SCO	\$766	\$180	\$415	\$1,505	\$765	\$1,724	\$115
Clay	RP:85%+SCO	\$849	\$208	\$450	\$1,714	\$809	\$1,974	\$109
Clinton	RP:80%+SCO	\$901	\$158	\$499	\$1,499	\$916	\$1,290	\$116
Crittenden	RP:85%+SCO	\$727	\$167	\$393	\$1,418	\$691	\$1,576	\$86
Cumberland	RP:85%+SCO	\$777	\$256	\$413	\$1,977	\$473	\$3,610	\$9
Daviess	RP:85%+SCO	\$962	\$188	\$540	\$1,720	\$959	\$1,628	\$123
Edmonson	RP-HPE:50%+SCO	\$737	\$133	\$262	\$1,227	\$746	\$983	\$98
Estill	RP:85%+SCO	\$780	\$167	\$453	\$1,548	\$765	\$1,572	\$100
Fayette	RP:85%+SCO	\$835	\$204	\$469	\$1,738	\$799	\$2,011	\$108
Fleming	RP:85%+SCO	\$847	\$208	\$451	\$1,958	\$862	\$1,965	\$143
Franklin	RP:85%+SCO	\$1,022	\$377	\$494	\$2,710	\$701	\$4,703	\$42
Fulton	RP:80%+SCO	\$816	\$148	\$445	\$1,391	\$820	\$1,237	\$102
Gallatin	RP-HPE:50%+SCO	\$751	\$144	\$271	\$1,313	\$767	\$1,068	\$109
Garrard	RP:85%+SCO	\$882	\$206	\$474	\$1,929	\$857	\$1,927	\$117
Grant	RP:85%+SCO	\$823	\$176	\$463	\$1,555	\$811	\$1,632	\$108
Graves	RP:85%+SCO	\$797	\$139	\$449	\$1,364	\$785	\$1,207	\$86
Grayson	RP-HPE:50%+SCO	\$741	\$133	\$350	\$1,217	\$749	\$990	\$97
Green	RP-HPE:50%+SCO	\$913	\$150	\$455	\$1,397	\$923	\$1,094	\$111
Greenup	RP:85%+SCO	\$917	\$189	\$544	\$1,637	\$933	\$1,657	\$133
Hancock	RP:85%+SCO	\$998	\$211	\$565	\$1,949	\$977	\$1,887	\$125
Hardin	RP:85%+SCO	\$855	\$210	\$422	\$1,894	\$803	\$1,972	\$102
Harrison	RP:85%+SCO	\$864	\$245	\$442	\$1,942	\$799	\$2,466	\$114
Hart	RP:80%+SCO	\$873	\$142	\$508	\$1,476	\$892	\$1,099	\$110
Henderson	RP:85%+SCO	\$888	\$185	\$500	\$1,827	\$864	\$1,684	\$108
Henry	RP:85%+SCO	\$1,030	\$393	\$503	\$2,866	\$701	\$4,806	\$43
Hickman	RP:85%+SCO	\$864	\$155	\$507	\$1,722	\$858	\$1,329	\$100
Hopkins	RP:85%+SCO	\$767	\$145	\$447	\$1,365	\$777	\$1,263	\$102
Jefferson	RP:85%+SCO	\$811	\$152	\$457	\$1,324	\$825	\$1,280	\$110
Jessamine	RP:85%+SCO	\$817	\$184	\$429	\$1,726	\$806	\$1,728	\$112
Kenton	RP:85%+SCO	\$772	\$157	\$427	\$1,494	\$751	\$1,436	\$91
Knox	RP:85%+SCO	\$828	\$187	\$453	\$1,625	\$805	\$1,743	\$108
Larue	RP:85%+SCO	\$895	\$173	\$503	\$1,743	\$881	\$1,523	\$106
Laurel	RP:85%+SCO	\$840	\$174	\$475	\$1,631	\$836	\$1,581	\$112
Lawrence	RP-HPE:50%+SCO	\$859	\$181	\$326	\$1,508	\$861	\$1,389	\$124
Lewis	RP:80%+SCO	\$913	\$188	\$520	\$1,674	\$938	\$1,540	\$140
Lincoln	RP:80%+SCO	\$828	\$163	\$451	\$1,446	\$847	\$1,374	\$120
Livingston	RP:85%+SCO	\$700	\$208	\$368	\$1,687	\$480	\$2,565	\$20
Logan	RP:85%+SCO	\$878	\$202	\$481	\$1,807	\$830	\$1,873	\$103
Lyon	RP:85%+SCO	\$986	\$356	\$426	\$2,474	\$506	\$3,882	\$4
Madison	RP:85%+SCO	\$799	\$180	\$435	\$1,727	\$784	\$1,730	\$107
Marion	RP:85%+SCO	\$862	\$165	\$473	\$1,488	\$874	\$1,423	\$117
Marshall	RP:85%+SCO	\$658	\$150	\$352	\$1,422	\$629	\$1,383	\$79
Mason	RP:85%+SCO	\$897	\$204	\$501	\$1,775	\$899	\$1,877	\$135
McCracken	RP:85%+SCO	\$835	\$196	\$454	\$1,844	\$774	\$1,862	\$89
McLean	RP:85%+SCO	\$883	\$166	\$512	\$1,544	\$887	\$1,435	\$113
Meade	RP:85%+SCO	\$873	\$195	\$481	\$1,919	\$828	\$1,816	\$100
Menifee	RP:80%+SCO	\$681	\$153	\$368	\$1,339	\$708	\$1,346	\$119
Mercer	RP:85%+SCO	\$814	\$174	\$442	\$1,686	\$812	\$1,579	\$112
Metcalfe	RP:85%+SCO	\$789	\$252	\$399	\$1,834	\$556	\$3,309	\$30
Monroe	RP:85%+SCO	\$744	\$232	\$383	\$1,836	\$523	\$3,069	\$28
Montgomery	RP:85%+SCO	\$762	\$219	\$388	\$1,737	\$707	\$2,238	\$104
Morgan	RP:85%+SCO	\$622	\$135	\$340	\$1,162	\$636	\$1,196	\$98
Muhlenberg	RP:85%+SCO	\$786	\$182	\$428	\$1,679	\$756	\$1,687	\$99

Continued on next page



Table D.5: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Nelson	RP:85%+SCO	\$857	\$185	\$476	\$1,848	\$841	\$1,687	\$111
Nicholas	RP:85%+SCO	\$729	\$167	\$412	\$1,517	\$735	\$1,581	\$113
Ohio	RP:85%+SCO	\$983	\$201	\$572	\$1,774	\$980	\$1,743	\$131
Oldham	RP:85%+SCO	\$817	\$151	\$474	\$1,385	\$818	\$1,287	\$103
Owen	RP:85%+SCO	\$900	\$204	\$495	\$1,930	\$863	\$1,907	\$109
Pendleton	RP-HPE:50%+SCO	\$901	\$175	\$396	\$1,515	\$903	\$1,343	\$120
Powell	RP:85%+SCO	\$720	\$177	\$398	\$1,404	\$727	\$1,720	\$118
Pulaski	RP:85%+SCO	\$871	\$202	\$468	\$1,754	\$840	\$1,896	\$111
Robertson	RP:85%+SCO	\$873	\$207	\$471	\$1,666	\$891	\$1,922	\$147
Rockcastle	RP:85%+SCO	\$850	\$176	\$474	\$1,514	\$852	\$1,573	\$117
Rowan	RP:80%+SCO	\$626	\$158	\$305	\$1,265	\$644	\$1,432	\$114
Russell	RP-HPE:50%+SCO	\$879	\$153	\$348	\$1,407	\$889	\$1,120	\$113
Scott	RP:85%+SCO	\$852	\$209	\$451	\$1,866	\$816	\$2,047	\$111
Shelby	RP:85%+SCO	\$1,040	\$395	\$512	\$2,842	\$713	\$4,840	\$46
Simpson	RP:85%+SCO	\$980	\$383	\$422	\$2,618	\$536	\$4,380	\$19
Spencer	RP:85%+SCO	\$883	\$210	\$480	\$1,823	\$843	\$1,958	\$110
Taylor	RP:85%+SCO	\$942	\$184	\$538	\$1,958	\$945	\$1,569	\$126
Todd	RP:85%+SCO	\$882	\$187	\$481	\$1,695	\$851	\$1,701	\$104
Trigg	RP:85%+SCO	\$787	\$177	\$419	\$1,779	\$748	\$1,644	\$91
Trimble	RP:80%+SCO	\$734	\$137	\$419	\$1,347	\$750	\$1,115	\$103
Union	RP:85%+SCO	\$892	\$191	\$501	\$1,660	\$898	\$1,726	\$129
Warren	RP:85%+SCO	\$832	\$187	\$467	\$1,699	\$794	\$1,745	\$99
Washington	RP:85%+SCO	\$845	\$196	\$471	\$1,883	\$800	\$1,828	\$101
Wayne	RP:80%+SCO	\$904	\$158	\$502	\$1,581	\$913	\$1,296	\$112
Webster	RP:85%+SCO	\$822	\$183	\$467	\$1,768	\$784	\$1,715	\$95
Whitley	RP:85%+SCO	\$794	\$157	\$460	\$1,384	\$810	\$1,359	\$114
Wolfe	RP:85%+SCO	\$684	\$143	\$392	\$1,274	\$686	\$1,323	\$95
Woodford	RP:85%+SCO	\$846	\$200	\$454	\$1,821	\$822	\$1,905	\$113

Table D.6: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$960	\$161	\$498	\$1,520	\$974	\$1,169	\$122
Allen	RP:85%+SCO	\$698	\$172	\$371	\$1,483	\$631	\$1,827	\$70
Anderson	RP:85%+SCO	\$832	\$179	\$460	\$1,582	\$807	\$1,677	\$103
Ballard	RP:85%+SCO	\$876	\$223	\$490	\$1,945	\$594	\$3,178	\$12
Barren	RP-HPE:50%+SCO	\$850	\$153	\$300	\$1,401	\$859	\$1,151	\$111
Bath	RP:80%+SCO	\$676	\$147	\$344	\$1,254	\$699	\$1,304	\$112
Boone	RP-HPE:50%+SCO	\$723	\$127	\$307	\$1,166	\$736	\$932	\$95
Bourbon	RP:85%+SCO	\$769	\$170	\$413	\$1,523	\$767	\$1,652	\$109
Boyd	RP:85%+SCO	\$908	\$209	\$516	\$1,809	\$896	\$1,972	\$125
Boyle	RP:85%+SCO	\$857	\$191	\$474	\$1,698	\$829	\$1,838	\$107
Bracken	RP:85%+SCO	\$916	\$205	\$529	\$1,726	\$902	\$1,914	\$124
Breathitt	RP:80%+SCO	\$820	\$160	\$460	\$1,534	\$834	\$1,333	\$115
Breckinridge	RP:85%+SCO	\$801	\$182	\$443	\$1,589	\$758	\$1,749	\$92
Bullitt	RP:85%+SCO	\$832	\$167	\$479	\$1,558	\$829	\$1,504	\$109
Butler	RP:80%+SCO	\$906	\$166	\$497	\$1,513	\$927	\$1,295	\$126
Caldwell	RP:85%+SCO	\$797	\$185	\$432	\$1,822	\$697	\$1,981	\$62
Calloway	RP:85%+SCO	\$695	\$154	\$370	\$1,382	\$621	\$1,599	\$57
Campbell	RP-HPE:80%+SCO	\$900	\$172	\$520	\$1,492	\$909	\$1,375	\$120
Carlisle	RP:80%+SCO	\$848	\$138	\$474	\$1,348	\$854	\$1,117	\$97
Carrroll	RP-HPE:50%+SCO	\$763	\$139	\$363	\$1,246	\$777	\$1,034	\$104
Carter	RP-HPE:50%+SCO	\$877	\$182	\$357	\$1,541	\$877	\$1,409	\$123
Casey	RP-HPE:50%+SCO	\$909	\$170	\$397	\$1,619	\$918	\$1,261	\$122
Christian	RP:85%+SCO	\$968	\$352	\$476	\$2,472	\$643	\$4,491	\$36
Clark	RP:85%+SCO	\$766	\$177	\$415	\$1,467	\$765	\$1,722	\$114

Continued on next page

Table D.6: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Clay	RP:85%+SCO	\$849	\$202	\$456	\$1,704	\$809	\$1,981	\$106
Clinton	RP:80%+SCO	\$901	\$157	\$520	\$1,540	\$916	\$1,290	\$116
Crittenden	RP:85%+SCO	\$727	\$162	\$404	\$1,377	\$691	\$1,576	\$83
Cumberland	RP:85%+SCO	\$777	\$246	\$400	\$1,774	\$474	\$3,601	\$9
Daviess	RP:85%+SCO	\$962	\$187	\$544	\$1,709	\$959	\$1,632	\$121
Edmonson	RP-HPE:50%+SCO	\$737	\$133	\$264	\$1,216	\$746	\$983	\$97
Estill	RP:85%+SCO	\$780	\$165	\$445	\$1,515	\$765	\$1,573	\$98
Fayette	RP:85%+SCO	\$836	\$199	\$469	\$1,669	\$800	\$2,017	\$105
Fleming	RP:80%+SCO	\$854	\$212	\$439	\$1,808	\$862	\$1,962	\$141
Franklin	RP:85%+SCO	\$1,024	\$368	\$480	\$2,572	\$702	\$4,739	\$40
Fulton	RP:80%+SCO	\$816	\$147	\$449	\$1,392	\$820	\$1,240	\$101
Gallatin	RP-HPE:50%+SCO	\$751	\$145	\$266	\$1,306	\$767	\$1,075	\$109
Garrard	RP:85%+SCO	\$881	\$200	\$479	\$1,882	\$857	\$1,916	\$115
Grant	RP:85%+SCO	\$823	\$173	\$461	\$1,583	\$812	\$1,641	\$106
Graves	RP:85%+SCO	\$797	\$137	\$460	\$1,390	\$785	\$1,205	\$85
Grayson	RP-HPE:50%+SCO	\$741	\$133	\$367	\$1,204	\$749	\$990	\$97
Green	RP-HPE:50%+SCO	\$914	\$150	\$448	\$1,492	\$923	\$1,093	\$111
Greenup	RP:85%+SCO	\$917	\$189	\$522	\$1,674	\$933	\$1,658	\$132
Hancock	RP:85%+SCO	\$998	\$208	\$554	\$1,947	\$977	\$1,886	\$123
Hardin	RP:85%+SCO	\$855	\$204	\$451	\$1,733	\$802	\$1,982	\$98
Harrison	RP:85%+SCO	\$864	\$237	\$443	\$1,858	\$800	\$2,470	\$110
Hart	RP:80%+SCO	\$873	\$141	\$488	\$1,368	\$892	\$1,095	\$110
Henderson	RP:85%+SCO	\$888	\$183	\$503	\$1,737	\$864	\$1,693	\$106
Henry	RP:85%+SCO	\$1,029	\$378	\$528	\$2,743	\$702	\$4,784	\$41
Hickman	RP:85%+SCO	\$864	\$153	\$517	\$1,574	\$858	\$1,332	\$99
Hopkins	RP:85%+SCO	\$767	\$144	\$435	\$1,404	\$777	\$1,258	\$101
Jefferson	RP:85%+SCO	\$810	\$151	\$462	\$1,366	\$825	\$1,274	\$110
Jessamine	RP:85%+SCO	\$817	\$181	\$449	\$1,562	\$806	\$1,728	\$111
Kenton	RP:85%+SCO	\$772	\$153	\$429	\$1,491	\$751	\$1,439	\$89
Knox	RP:85%+SCO	\$828	\$183	\$445	\$1,654	\$805	\$1,748	\$105
Larue	RP:85%+SCO	\$895	\$172	\$499	\$1,606	\$881	\$1,531	\$105
Laurel	RP:85%+SCO	\$840	\$173	\$461	\$1,538	\$836	\$1,584	\$110
Lawrence	RP-HPE:50%+SCO	\$859	\$181	\$368	\$1,486	\$861	\$1,390	\$124
Lewis	RP-HPE:50%+SCO	\$933	\$202	\$363	\$1,714	\$938	\$1,542	\$139
Lincoln	RP:80%+SCO	\$828	\$161	\$458	\$1,445	\$847	\$1,365	\$119
Livingston	RP:85%+SCO	\$701	\$195	\$369	\$1,715	\$480	\$2,571	\$18
Logan	RP:85%+SCO	\$878	\$196	\$482	\$1,668	\$830	\$1,873	\$100
Lyon	RP:85%+SCO	\$986	\$323	\$419	\$2,525	\$506	\$3,881	\$4
Madison	RP:85%+SCO	\$798	\$175	\$448	\$1,576	\$784	\$1,720	\$104
Marion	RP:85%+SCO	\$862	\$164	\$476	\$1,517	\$874	\$1,422	\$117
Marshall	RP:85%+SCO	\$657	\$145	\$354	\$1,252	\$629	\$1,382	\$78
Mason	RP:85%+SCO	\$897	\$202	\$502	\$1,685	\$899	\$1,884	\$134
McCracken	RP:85%+SCO	\$835	\$188	\$452	\$1,721	\$774	\$1,862	\$85
McLean	RP:85%+SCO	\$883	\$165	\$516	\$1,506	\$887	\$1,431	\$112
Meade	RP:85%+SCO	\$873	\$189	\$460	\$1,698	\$828	\$1,812	\$98
Menifee	RP:75%+SCO	\$687	\$157	\$355	\$1,255	\$708	\$1,351	\$117
Mercer	RP:85%+SCO	\$814	\$170	\$446	\$1,480	\$811	\$1,572	\$110
Metcalfe	RP:85%+SCO	\$788	\$243	\$409	\$1,739	\$557	\$3,306	\$29
Monroe	RP:85%+SCO	\$745	\$224	\$397	\$1,727	\$524	\$3,072	\$25
Montgomery	RP:85%+SCO	\$761	\$211	\$389	\$1,695	\$707	\$2,235	\$100
Morgan	RP:80%+SCO	\$627	\$139	\$336	\$1,162	\$636	\$1,194	\$97
Muhlenberg	RP:85%+SCO	\$787	\$177	\$419	\$1,577	\$756	\$1,690	\$95
Nelson	RP:85%+SCO	\$857	\$182	\$477	\$1,689	\$841	\$1,689	\$110
Nicholas	RP:85%+SCO	\$729	\$164	\$400	\$1,340	\$735	\$1,576	\$111
Ohio	RP:85%+SCO	\$983	\$199	\$573	\$1,767	\$979	\$1,738	\$129
Oldham	RP:85%+SCO	\$817	\$150	\$464	\$1,411	\$818	\$1,285	\$102
Owen	RP:85%+SCO	\$900	\$199	\$489	\$1,825	\$863	\$1,902	\$107
Pendleton	RP-HPE:50%+SCO	\$901	\$175	\$395	\$1,539	\$903	\$1,341	\$120
Powell	RP:80%+SCO	\$727	\$181	\$386	\$1,430	\$728	\$1,710	\$116
Pulaski	RP:85%+SCO	\$871	\$197	\$476	\$1,715	\$840	\$1,893	\$108

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Table D.6: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Robertson	RP:80%+SCO	\$881	\$212	\$454	\$1,705	\$892	\$1,927	\$145
Rockcastle	RP:85%+SCO	\$850	\$174	\$472	\$1,533	\$852	\$1,571	\$115
Rowan	RP:80%+SCO	\$626	\$156	\$305	\$1,272	\$644	\$1,433	\$112
Russell	RP-HPE:50%+SCO	\$879	\$153	\$420	\$1,430	\$889	\$1,121	\$113
Scott	RP:85%+SCO	\$852	\$204	\$450	\$1,707	\$816	\$2,043	\$107
Shelby	RP:85%+SCO	\$1,040	\$380	\$528	\$2,792	\$713	\$4,830	\$44
Simpson	RP:85%+SCO	\$979	\$350	\$424	\$2,448	\$535	\$4,379	\$17
Spencer	RP:85%+SCO	\$882	\$204	\$486	\$1,764	\$843	\$1,948	\$107
Taylor	RP:85%+SCO	\$942	\$183	\$537	\$1,771	\$945	\$1,571	\$125
Todd	RP:85%+SCO	\$882	\$183	\$494	\$1,686	\$851	\$1,701	\$102
Trigg	RP:85%+SCO	\$787	\$172	\$427	\$1,511	\$748	\$1,639	\$90
Trimble	RP:80%+SCO	\$734	\$137	\$392	\$1,251	\$751	\$1,119	\$103
Union	RP:85%+SCO	\$892	\$188	\$500	\$1,673	\$898	\$1,723	\$127
Warren	RP:85%+SCO	\$832	\$183	\$470	\$1,556	\$794	\$1,741	\$97
Washington	RP:85%+SCO	\$846	\$191	\$466	\$1,747	\$799	\$1,842	\$98
Wayne	RP:80%+SCO	\$904	\$156	\$513	\$1,533	\$913	\$1,289	\$112
Webster	RP:85%+SCO	\$822	\$177	\$460	\$1,600	\$783	\$1,716	\$92
Whitley	RP:85%+SCO	\$794	\$156	\$463	\$1,387	\$810	\$1,361	\$113
Wolfe	RP:85%+SCO	\$684	\$142	\$396	\$1,242	\$686	\$1,321	\$93
Woodford	RP:85%+SCO	\$846	\$196	\$455	\$1,740	\$822	\$1,909	\$111

Table D.7: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$960	\$161	\$523	\$1,575	\$974	\$1,169	\$122
Allen	RP:85%+SCO	\$698	\$167	\$374	\$1,359	\$631	\$1,830	\$66
Anderson	RP:85%+SCO	\$832	\$176	\$456	\$1,548	\$807	\$1,666	\$100
Ballard	RP:85%+SCO	\$877	\$217	\$496	\$1,806	\$593	\$3,187	\$11
Barren	RP-HPE:50%+SCO	\$850	\$152	\$304	\$1,420	\$859	\$1,146	\$110
Bath	RP:80%+SCO	\$676	\$145	\$345	\$1,219	\$699	\$1,303	\$110
Boone	RP-HPE:50%+SCO	\$723	\$127	\$268	\$1,145	\$736	\$934	\$95
Bourbon	RP:85%+SCO	\$769	\$168	\$412	\$1,524	\$767	\$1,653	\$108
Boyd	RP:85%+SCO	\$907	\$207	\$510	\$1,803	\$896	\$1,968	\$123
Boyle	RP:85%+SCO	\$857	\$187	\$473	\$1,631	\$829	\$1,833	\$105
Bracken	RP:85%+SCO	\$916	\$203	\$520	\$1,704	\$901	\$1,912	\$123
Breathitt	RP:80%+SCO	\$820	\$159	\$462	\$1,473	\$834	\$1,334	\$114
Breckinridge	RP:85%+SCO	\$801	\$179	\$442	\$1,582	\$758	\$1,755	\$89
Bullitt	RP:85%+SCO	\$831	\$165	\$481	\$1,566	\$829	\$1,502	\$107
Butler	RP:80%+SCO	\$906	\$166	\$492	\$1,508	\$927	\$1,297	\$126
Caldwell	RP:85%+SCO	\$798	\$179	\$433	\$1,704	\$697	\$1,982	\$59
Calloway	RP:85%+SCO	\$695	\$147	\$373	\$1,302	\$621	\$1,598	\$55
Campbell	RP-HPE:80%+SCO	\$900	\$172	\$521	\$1,508	\$909	\$1,375	\$120
Carlisle	RP:80%+SCO	\$848	\$137	\$484	\$1,371	\$854	\$1,115	\$97
Carroll	RP-HPE:50%+SCO	\$763	\$138	\$367	\$1,285	\$777	\$1,033	\$103
Carter	RP-HPE:50%+SCO	\$877	\$181	\$378	\$1,545	\$877	\$1,406	\$122
Casey	RP-HPE:50%+SCO	\$910	\$170	\$389	\$1,591	\$918	\$1,264	\$122
Christian	RP:85%+SCO	\$968	\$340	\$485	\$2,459	\$643	\$4,476	\$33
Clark	RP:85%+SCO	\$765	\$176	\$414	\$1,466	\$765	\$1,723	\$112
Clay	RP:85%+SCO	\$850	\$199	\$450	\$1,737	\$809	\$1,989	\$102
Clinton	RP:80%+SCO	\$901	\$156	\$527	\$1,539	\$916	\$1,289	\$115
Crittenden	RP:85%+SCO	\$727	\$158	\$403	\$1,372	\$691	\$1,573	\$80
Cumberland	RP:85%+SCO	\$777	\$238	\$404	\$1,778	\$474	\$3,589	\$8
Daviess	RP:85%+SCO	\$962	\$186	\$547	\$1,662	\$959	\$1,633	\$120
Edmonson	RP-HPE:50%+SCO	\$737	\$133	\$310	\$1,189	\$746	\$983	\$97
Estill	RP:85%+SCO	\$780	\$163	\$453	\$1,487	\$765	\$1,571	\$96
Fayette	RP:85%+SCO	\$836	\$196	\$467	\$1,654	\$800	\$2,022	\$103

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Table D.7: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Fleming	RP:80%+SCO	\$854	\$209	\$442	\$1,697	\$862	\$1,957	\$139
Franklin	RP:85%+SCO	\$1,025	\$362	\$520	\$2,626	\$703	\$4,757	\$37
Fulton	RP:80%+SCO	\$816	\$146	\$456	\$1,418	\$820	\$1,244	\$99
Gallatin	RP-HPE:50%+SCO	\$751	\$145	\$267	\$1,278	\$767	\$1,077	\$109
Garrard	RP:85%+SCO	\$881	\$195	\$477	\$1,795	\$857	\$1,912	\$111
Grant	RP:85%+SCO	\$823	\$171	\$452	\$1,586	\$812	\$1,646	\$104
Graves	RP:85%+SCO	\$797	\$136	\$455	\$1,365	\$785	\$1,201	\$84
Grayson	RP-HPE:50%+SCO	\$741	\$133	\$404	\$1,212	\$749	\$990	\$97
Green	RP-HPE:50%+SCO	\$913	\$150	\$474	\$1,453	\$923	\$1,092	\$111
Greenup	RP:85%+SCO	\$918	\$188	\$511	\$1,688	\$933	\$1,657	\$132
Hancock	RP:85%+SCO	\$997	\$206	\$573	\$1,858	\$977	\$1,884	\$121
Hardin	RP:85%+SCO	\$855	\$200	\$459	\$1,698	\$803	\$1,987	\$95
Harrison	RP:85%+SCO	\$865	\$232	\$442	\$1,878	\$800	\$2,475	\$106
Hart	RP:80%+SCO	\$873	\$140	\$511	\$1,377	\$892	\$1,093	\$110
Henderson	RP:85%+SCO	\$888	\$182	\$504	\$1,710	\$864	\$1,701	\$104
Henry	RP:85%+SCO	\$1,029	\$366	\$516	\$2,787	\$702	\$4,757	\$38
Hickman	RP:85%+SCO	\$864	\$152	\$494	\$1,565	\$858	\$1,339	\$99
Hopkins	RP:85%+SCO	\$767	\$142	\$452	\$1,426	\$777	\$1,251	\$100
Jefferson	RP:85%+SCO	\$810	\$150	\$464	\$1,403	\$825	\$1,266	\$109
Jessamine	RP:85%+SCO	\$817	\$178	\$450	\$1,558	\$806	\$1,730	\$109
Kenton	RP:85%+SCO	\$772	\$151	\$430	\$1,494	\$751	\$1,444	\$86
Knox	RP:85%+SCO	\$828	\$180	\$442	\$1,668	\$805	\$1,751	\$102
Larue	RP:85%+SCO	\$895	\$170	\$524	\$1,635	\$881	\$1,535	\$104
Laurel	RP:85%+SCO	\$841	\$172	\$456	\$1,504	\$836	\$1,591	\$109
Lawrence	RP-HPE:50%+SCO	\$859	\$181	\$408	\$1,481	\$861	\$1,393	\$123
Lewis	RP-HPE:50%+SCO	\$933	\$201	\$387	\$1,707	\$938	\$1,543	\$138
Lincoln	RP:80%+SCO	\$828	\$160	\$457	\$1,463	\$847	\$1,360	\$118
Livingston	RP:85%+SCO	\$701	\$186	\$357	\$1,428	\$480	\$2,571	\$16
Logan	RP:85%+SCO	\$878	\$192	\$481	\$1,703	\$830	\$1,873	\$97
Lyon	RP:85%+SCO	\$987	\$290	\$455	\$2,121	\$505	\$3,879	\$3
Madison	RP:85%+SCO	\$798	\$172	\$447	\$1,556	\$784	\$1,711	\$102
Marion	RP:85%+SCO	\$862	\$163	\$479	\$1,552	\$873	\$1,418	\$116
Marshall	RP:85%+SCO	\$658	\$142	\$357	\$1,284	\$629	\$1,386	\$76
Mason	RP:85%+SCO	\$897	\$201	\$502	\$1,692	\$899	\$1,889	\$133
McCracken	RP:85%+SCO	\$835	\$183	\$454	\$1,794	\$774	\$1,863	\$81
McLean	RP:85%+SCO	\$883	\$164	\$507	\$1,513	\$887	\$1,427	\$112
Meade	RP:85%+SCO	\$873	\$186	\$450	\$1,650	\$828	\$1,812	\$95
Menifee	RP:75%+SCO	\$687	\$156	\$356	\$1,284	\$708	\$1,356	\$116
Mercer	RP:85%+SCO	\$814	\$167	\$447	\$1,509	\$811	\$1,568	\$108
Metcalfe	RP:85%+SCO	\$789	\$237	\$396	\$1,766	\$556	\$3,319	\$26
Monroe	RP:85%+SCO	\$745	\$218	\$400	\$1,673	\$524	\$3,078	\$22
Montgomery	RP:85%+SCO	\$761	\$205	\$389	\$1,564	\$707	\$2,235	\$96
Morgan	RP:80%+SCO	\$627	\$138	\$332	\$1,154	\$637	\$1,194	\$96
Muhlenberg	RP:85%+SCO	\$787	\$173	\$414	\$1,453	\$756	\$1,689	\$92
Nelson	RP:85%+SCO	\$856	\$180	\$477	\$1,574	\$841	\$1,693	\$108
Nicholas	RP:80%+SCO	\$735	\$167	\$407	\$1,400	\$735	\$1,575	\$109
Ohio	RP:85%+SCO	\$983	\$198	\$567	\$1,739	\$979	\$1,735	\$128
Oldham	RP:85%+SCO	\$817	\$150	\$455	\$1,427	\$818	\$1,289	\$102
Owen	RP:85%+SCO	\$899	\$196	\$490	\$1,863	\$863	\$1,898	\$104
Pendleton	RP-HPE:50%+SCO	\$901	\$175	\$420	\$1,556	\$903	\$1,339	\$119
Powell	RP:80%+SCO	\$727	\$178	\$383	\$1,449	\$727	\$1,704	\$114
Pulaski	RP:85%+SCO	\$870	\$193	\$482	\$1,698	\$840	\$1,884	\$105
Robertson	RP:80%+SCO	\$881	\$210	\$450	\$1,717	\$892	\$1,930	\$143
Rockcastle	RP:85%+SCO	\$850	\$172	\$464	\$1,559	\$852	\$1,568	\$114
Rowan	RP:80%+SCO	\$627	\$154	\$304	\$1,266	\$644	\$1,435	\$110
Russell	RP-HPE:50%+SCO	\$879	\$153	\$440	\$1,404	\$889	\$1,124	\$112
Scott	RP:85%+SCO	\$852	\$201	\$459	\$1,728	\$815	\$2,038	\$105
Shelby	RP:85%+SCO	\$1,040	\$370	\$526	\$2,719	\$714	\$4,811	\$40
Simpson	RP:85%+SCO	\$979	\$321	\$427	\$2,279	\$535	\$4,395	\$14
Spencer	RP:85%+SCO	\$882	\$199	\$486	\$1,706	\$843	\$1,937	\$104

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Table D.7: Results - Corn, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Taylor	RP:85%+SCO	\$943	\$181	\$537	\$1,788	\$945	\$1,572	\$123
Todd	RP:85%+SCO	\$882	\$181	\$498	\$1,684	\$851	\$1,697	\$100
Trigg	RP:85%+SCO	\$786	\$167	\$432	\$1,466	\$748	\$1,634	\$87
Trimble	RP:80%+SCO	\$734	\$137	\$397	\$1,281	\$751	\$1,122	\$102
Union	RP:80%+SCO	\$897	\$192	\$490	\$1,741	\$898	\$1,719	\$124
Warren	RP:85%+SCO	\$831	\$179	\$452	\$1,484	\$794	\$1,740	\$94
Washington	RP:85%+SCO	\$846	\$188	\$463	\$1,578	\$799	\$1,852	\$95
Wayne	RP:80%+SCO	\$903	\$155	\$503	\$1,533	\$913	\$1,286	\$111
Webster	RP:85%+SCO	\$822	\$174	\$466	\$1,509	\$783	\$1,720	\$89
Whitley	RP:80%+SCO	\$799	\$160	\$457	\$1,401	\$810	\$1,361	\$112
Wolfe	RP:85%+SCO	\$684	\$141	\$402	\$1,253	\$686	\$1,321	\$92
Woodford	RP:85%+SCO	\$846	\$194	\$455	\$1,641	\$822	\$1,911	\$108

Table D.8: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$969	\$164	\$424	\$1,515	\$984	\$1,192	\$124
Allen	RP:85%+SCO	\$703	\$206	\$382	\$1,623	\$495	\$2,820	\$20
Anderson	RP:85%+SCO	\$854	\$201	\$462	\$1,707	\$804	\$1,977	\$100
Ballard	RP:85%+SCO	\$902	\$263	\$516	\$2,147	\$533	\$3,876	\$0
Barren	RP:80%+SCO	\$844	\$148	\$468	\$1,499	\$860	\$1,243	\$110
Bath	RP:80%+SCO	\$691	\$160	\$370	\$1,455	\$695	\$1,504	\$107
Boone	RP:80%+SCO	\$715	\$123	\$393	\$1,218	\$734	\$1,023	\$96
Bourbon	RP:85%+SCO	\$792	\$190	\$439	\$1,574	\$757	\$1,972	\$101
Boyd	RP:85%+SCO	\$936	\$232	\$521	\$1,927	\$905	\$2,271	\$124
Boyle	RP:85%+SCO	\$854	\$229	\$472	\$1,985	\$613	\$3,254	\$24
Bracken	RP:85%+SCO	\$946	\$229	\$528	\$1,913	\$905	\$2,250	\$121
Breathitt	RP:85%+SCO	\$832	\$165	\$483	\$1,537	\$838	\$1,476	\$113
Breckinridge	RP:85%+SCO	\$804	\$230	\$458	\$2,060	\$563	\$3,183	\$19
Bullitt	RP:85%+SCO	\$848	\$180	\$478	\$1,731	\$826	\$1,704	\$104
Butler	RP:85%+SCO	\$915	\$169	\$502	\$1,596	\$931	\$1,390	\$125
Caldwell	RP:85%+SCO	\$798	\$236	\$437	\$2,155	\$470	\$3,473	\$0
Calloway	RP:85%+SCO	\$690	\$186	\$379	\$1,735	\$480	\$2,527	\$15
Campbell	RP:85%+SCO	\$907	\$170	\$555	\$1,643	\$915	\$1,447	\$118
Carlisle	RP:85%+SCO	\$856	\$142	\$496	\$1,459	\$849	\$1,233	\$92
Carrroll	RP:80%+SCO	\$750	\$136	\$407	\$1,344	\$779	\$1,104	\$110
Carter	RP:85%+SCO	\$865	\$172	\$500	\$1,523	\$885	\$1,491	\$126
Casey	RP:80%+SCO	\$901	\$168	\$507	\$1,576	\$924	\$1,352	\$127
Christian	RP:85%+SCO	\$996	\$424	\$498	\$3,116	\$562	\$5,502	\$8
Clark	RP:85%+SCO	\$789	\$197	\$433	\$1,636	\$763	\$2,013	\$110
Clay	RP:85%+SCO	\$880	\$235	\$464	\$1,843	\$813	\$2,360	\$108
Clinton	RP:85%+SCO	\$913	\$163	\$501	\$1,663	\$915	\$1,436	\$110
Crittenden	RP:85%+SCO	\$726	\$194	\$414	\$1,611	\$510	\$2,766	\$16
Cumberland	RP:85%+SCO	\$803	\$282	\$427	\$2,127	\$448	\$4,070	\$1
Daviess	RP:85%+SCO	\$984	\$202	\$565	\$1,844	\$964	\$1,839	\$120
Edmonson	RP:80%+SCO	\$735	\$131	\$399	\$1,289	\$749	\$1,058	\$98
Estill	RP:85%+SCO	\$800	\$180	\$447	\$1,566	\$762	\$1,813	\$93
Fayette	RP:85%+SCO	\$865	\$230	\$437	\$1,828	\$789	\$2,450	\$99
Fleming	RP:85%+SCO	\$874	\$232	\$450	\$1,862	\$861	\$2,336	\$138
Franklin	RP:85%+SCO	\$1,054	\$447	\$518	\$3,325	\$651	\$5,710	\$25
Fulton	RP:85%+SCO	\$826	\$156	\$462	\$1,550	\$818	\$1,411	\$99
Gallatin	RP:80%+SCO	\$743	\$138	\$395	\$1,302	\$766	\$1,163	\$107
Garrard	RP:85%+SCO	\$913	\$236	\$465	\$2,123	\$849	\$2,423	\$111
Grant	RP:85%+SCO	\$843	\$196	\$474	\$1,670	\$789	\$2,041	\$94
Graves	RP:85%+SCO	\$803	\$150	\$447	\$1,665	\$742	\$1,556	\$65
Grayson	RP:80%+SCO	\$736	\$132	\$393	\$1,216	\$753	\$1,043	\$100

Continued on next page

Table D.8: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Green	RP:80%+SCO	\$909	\$147	\$490	\$1,427	\$928	\$1,148	\$113
Greenup	RP:85%+SCO	\$938	\$199	\$541	\$1,639	\$943	\$1,794	\$132
Hancock	RP:85%+SCO	\$1,028	\$234	\$583	\$2,065	\$985	\$2,207	\$124
Hardin	RP:85%+SCO	\$862	\$268	\$455	\$2,286	\$604	\$3,577	\$25
Harrison	RP:85%+SCO	\$875	\$311	\$473	\$2,519	\$547	\$4,371	\$12
Hart	RP:80%+SCO	\$883	\$145	\$476	\$1,488	\$892	\$1,199	\$104
Henderson	RP:85%+SCO	\$911	\$207	\$509	\$1,838	\$865	\$2,008	\$105
Henry	RP:85%+SCO	\$1,055	\$464	\$520	\$3,250	\$598	\$6,031	\$8
Hickman	RP:85%+SCO	\$880	\$168	\$497	\$1,918	\$856	\$1,549	\$97
Hopkins	RP:85%+SCO	\$782	\$152	\$460	\$1,522	\$778	\$1,391	\$98
Jefferson	RP:85%+SCO	\$825	\$158	\$462	\$1,542	\$825	\$1,403	\$106
Jessamine	RP:85%+SCO	\$843	\$202	\$467	\$1,829	\$800	\$2,051	\$103
Kenton	RP:85%+SCO	\$789	\$174	\$443	\$1,646	\$734	\$1,780	\$79
Knox	RP:85%+SCO	\$852	\$207	\$443	\$1,718	\$808	\$2,036	\$107
Larue	RP:85%+SCO	\$916	\$190	\$530	\$1,802	\$880	\$1,795	\$102
Laurel	RP:85%+SCO	\$862	\$190	\$465	\$1,599	\$843	\$1,793	\$112
Lawrence	RP:85%+SCO	\$848	\$170	\$498	\$1,451	\$869	\$1,464	\$125
Lewis	RP:85%+SCO	\$924	\$189	\$545	\$1,582	\$947	\$1,638	\$139
Lincoln	RP:85%+SCO	\$841	\$170	\$467	\$1,572	\$851	\$1,542	\$118
Livingston	RP:85%+SCO	\$728	\$228	\$375	\$1,846	\$495	\$2,829	\$24
Logan	RP:85%+SCO	\$900	\$225	\$460	\$1,915	\$822	\$2,255	\$98
Lyon	RP:85%+SCO	\$1,037	\$390	\$468	\$2,914	\$539	\$4,351	\$8
Madison	RP:85%+SCO	\$826	\$201	\$464	\$1,730	\$784	\$2,061	\$103
Marion	RP:85%+SCO	\$881	\$173	\$511	\$1,732	\$876	\$1,574	\$112
Marshall	RP:85%+SCO	\$672	\$169	\$353	\$1,713	\$605	\$1,765	\$68
Mason	RP:85%+SCO	\$926	\$221	\$517	\$1,752	\$902	\$2,184	\$128
McCracken	RP:85%+SCO	\$847	\$245	\$469	\$2,055	\$586	\$3,338	\$20
McLean	RP:85%+SCO	\$898	\$177	\$508	\$1,655	\$889	\$1,593	\$112
Meade	RP:85%+SCO	\$866	\$229	\$496	\$1,870	\$605	\$3,260	\$18
Menifee	RP:80%+SCO	\$697	\$166	\$365	\$1,387	\$709	\$1,547	\$115
Mercer	RP:85%+SCO	\$836	\$187	\$443	\$1,705	\$802	\$1,864	\$103
Metcalfe	RP:85%+SCO	\$823	\$280	\$434	\$2,016	\$570	\$3,673	\$32
Monroe	RP:85%+SCO	\$780	\$259	\$401	\$1,955	\$543	\$3,377	\$29
Montgomery	RP:85%+SCO	\$765	\$252	\$402	\$1,874	\$541	\$3,450	\$32
Morgan	RP:85%+SCO	\$634	\$146	\$352	\$1,225	\$638	\$1,349	\$97
Muhlenberg	RP:85%+SCO	\$805	\$203	\$423	\$1,629	\$749	\$2,015	\$96
Nelson	RP:85%+SCO	\$878	\$202	\$484	\$1,756	\$836	\$1,992	\$105
Nicholas	RP:85%+SCO	\$749	\$186	\$385	\$1,608	\$724	\$1,916	\$102
Ohio	RP:85%+SCO	\$1,007	\$217	\$575	\$1,877	\$988	\$1,964	\$130
Oldham	RP:85%+SCO	\$832	\$161	\$471	\$1,549	\$819	\$1,451	\$99
Owen	RP:85%+SCO	\$933	\$227	\$509	\$2,030	\$870	\$2,259	\$105
Pendleton	RP:85%+SCO	\$894	\$168	\$535	\$1,519	\$909	\$1,414	\$121
Powell	RP:85%+SCO	\$743	\$198	\$402	\$1,581	\$727	\$2,040	\$115
Pulaski	RP:85%+SCO	\$898	\$224	\$480	\$1,832	\$847	\$2,204	\$110
Robertson	RP:85%+SCO	\$901	\$227	\$449	\$2,008	\$893	\$2,255	\$141
Rockcastle	RP:85%+SCO	\$871	\$187	\$483	\$1,653	\$858	\$1,748	\$114
Rowan	RP:85%+SCO	\$611	\$179	\$334	\$1,427	\$473	\$2,549	\$35
Russell	RP:80%+SCO	\$875	\$150	\$476	\$1,417	\$895	\$1,199	\$115
Scott	RP:85%+SCO	\$882	\$235	\$473	\$2,027	\$802	\$2,511	\$98
Shelby	RP:85%+SCO	\$1,060	\$460	\$510	\$3,180	\$602	\$6,014	\$9
Simpson	RP:85%+SCO	\$1,027	\$430	\$439	\$3,067	\$571	\$4,870	\$26
Spencer	RP:85%+SCO	\$913	\$233	\$488	\$1,990	\$845	\$2,314	\$107
Taylor	RP:85%+SCO	\$952	\$200	\$543	\$1,898	\$916	\$1,924	\$110
Todd	RP:85%+SCO	\$903	\$207	\$499	\$2,312	\$847	\$2,005	\$100
Trigg	RP:85%+SCO	\$775	\$202	\$425	\$1,949	\$554	\$2,847	\$19
Trimble	RP:85%+SCO	\$742	\$140	\$422	\$1,327	\$752	\$1,225	\$100
Union	RP:85%+SCO	\$913	\$210	\$493	\$1,828	\$897	\$2,002	\$125
Warren	RP:85%+SCO	\$849	\$206	\$450	\$1,725	\$782	\$2,083	\$93
Washington	RP:85%+SCO	\$868	\$217	\$468	\$1,829	\$790	\$2,210	\$93
Wayne	RP:85%+SCO	\$918	\$162	\$523	\$1,785	\$911	\$1,443	\$105

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Table D.8: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Webster	RP:85%+SCO	\$838	\$209	\$458	\$1,771	\$723	\$2,355	\$67
Whitley	RP:85%+SCO	\$811	\$167	\$473	\$1,495	\$815	\$1,512	\$112
Wolfe	RP:85%+SCO	\$699	\$154	\$389	\$1,293	\$684	\$1,508	\$90
Woodford	RP:85%+SCO	\$876	\$222	\$462	\$2,061	\$821	\$2,268	\$105

Table D.9: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$969	\$164	\$389	\$1,539	\$984	\$1,191	\$124
Allen	RP:85%+SCO	\$704	\$199	\$383	\$1,488	\$495	\$2,822	\$18
Anderson	RP:85%+SCO	\$854	\$197	\$457	\$1,735	\$805	\$1,973	\$98
Ballard	RP:85%+SCO	\$901	\$253	\$527	\$1,934	\$533	\$3,868	\$0
Barren	RP:80%+SCO	\$844	\$148	\$452	\$1,419	\$860	\$1,244	\$110
Bath	RP:80%+SCO	\$691	\$158	\$373	\$1,305	\$695	\$1,499	\$105
Boone	RP:80%+SCO	\$714	\$123	\$405	\$1,182	\$734	\$1,022	\$96
Bourbon	RP:85%+SCO	\$792	\$187	\$442	\$1,564	\$758	\$1,981	\$99
Boyd	RP:85%+SCO	\$936	\$229	\$522	\$1,982	\$905	\$2,259	\$122
Boyle	RP:85%+SCO	\$853	\$224	\$471	\$2,000	\$612	\$3,239	\$23
Bracken	RP:85%+SCO	\$946	\$225	\$526	\$1,893	\$905	\$2,240	\$118
Breathitt	RP:85%+SCO	\$832	\$165	\$480	\$1,536	\$838	\$1,478	\$112
Breckinridge	RP:85%+SCO	\$804	\$225	\$454	\$1,856	\$563	\$3,174	\$18
Bullitt	RP:85%+SCO	\$848	\$178	\$448	\$1,709	\$826	\$1,705	\$103
Butler	RP:85%+SCO	\$915	\$169	\$507	\$1,582	\$931	\$1,401	\$125
Caldwell	RP:85%+SCO	\$798	\$227	\$425	\$1,883	\$470	\$3,466	\$1
Calloway	RP:85%+SCO	\$690	\$177	\$357	\$1,570	\$481	\$2,516	\$15
Campbell	RP:85%+SCO	\$907	\$170	\$547	\$1,652	\$915	\$1,453	\$118
Carlisle	RP:85%+SCO	\$855	\$141	\$489	\$1,451	\$849	\$1,229	\$92
Carroll	RP:80%+SCO	\$750	\$135	\$415	\$1,286	\$779	\$1,102	\$110
Carter	RP:85%+SCO	\$865	\$172	\$501	\$1,522	\$885	\$1,496	\$125
Casey	RP:80%+SCO	\$901	\$167	\$520	\$1,557	\$924	\$1,356	\$127
Christian	RP:85%+SCO	\$998	\$409	\$477	\$2,804	\$563	\$5,504	\$8
Clark	RP:85%+SCO	\$789	\$195	\$442	\$1,671	\$763	\$2,019	\$108
Clay	RP:85%+SCO	\$881	\$229	\$459	\$1,856	\$813	\$2,365	\$105
Clinton	RP:85%+SCO	\$913	\$162	\$519	\$1,666	\$915	\$1,437	\$110
Crittenden	RP:85%+SCO	\$726	\$189	\$416	\$1,605	\$510	\$2,762	\$15
Cumberland	RP:85%+SCO	\$803	\$274	\$433	\$1,964	\$447	\$4,090	\$1
Daviess	RP:85%+SCO	\$984	\$201	\$569	\$1,812	\$963	\$1,846	\$118
Edmonson	RP:80%+SCO	\$735	\$131	\$400	\$1,265	\$749	\$1,055	\$97
Estill	RP:85%+SCO	\$800	\$177	\$442	\$1,559	\$762	\$1,815	\$91
Fayette	RP:85%+SCO	\$864	\$224	\$435	\$1,825	\$789	\$2,441	\$96
Fleming	RP:85%+SCO	\$874	\$228	\$449	\$1,827	\$860	\$2,337	\$135
Franklin	RP:85%+SCO	\$1,054	\$435	\$500	\$3,076	\$652	\$5,707	\$24
Fulton	RP:85%+SCO	\$825	\$154	\$468	\$1,445	\$818	\$1,402	\$98
Gallatin	RP:80%+SCO	\$743	\$138	\$409	\$1,284	\$766	\$1,164	\$108
Garrard	RP:85%+SCO	\$913	\$230	\$462	\$1,929	\$849	\$2,422	\$108
Grant	RP:85%+SCO	\$843	\$193	\$461	\$1,719	\$788	\$2,045	\$91
Graves	RP:85%+SCO	\$803	\$148	\$447	\$1,463	\$742	\$1,560	\$65
Grayson	RP:80%+SCO	\$736	\$132	\$398	\$1,244	\$753	\$1,041	\$100
Green	RP:80%+SCO	\$909	\$147	\$517	\$1,436	\$928	\$1,148	\$114
Greenup	RP:85%+SCO	\$938	\$199	\$542	\$1,651	\$943	\$1,797	\$132
Hancock	RP:85%+SCO	\$1,028	\$231	\$579	\$2,061	\$984	\$2,206	\$122
Hardin	RP:85%+SCO	\$862	\$263	\$461	\$2,254	\$604	\$3,585	\$24
Harrison	RP:85%+SCO	\$875	\$303	\$466	\$2,331	\$549	\$4,365	\$11
Hart	RP:80%+SCO	\$883	\$145	\$496	\$1,445	\$892	\$1,196	\$104
Henderson	RP:85%+SCO	\$910	\$203	\$503	\$1,870	\$865	\$2,005	\$103
Henry	RP:85%+SCO	\$1,053	\$448	\$501	\$3,287	\$597	\$6,007	\$8

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Table D.9: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Hickman	RP:85%+SCO	\$880	\$166	\$444	\$1,697	\$856	\$1,545	\$96
Hopkins	RP:85%+SCO	\$782	\$151	\$457	\$1,555	\$778	\$1,395	\$96
Jefferson	RP:85%+SCO	\$825	\$157	\$467	\$1,493	\$825	\$1,402	\$105
Jessamine	RP:85%+SCO	\$843	\$197	\$456	\$1,699	\$800	\$2,049	\$101
Kenton	RP:85%+SCO	\$789	\$169	\$447	\$1,494	\$733	\$1,777	\$77
Knox	RP:85%+SCO	\$852	\$203	\$429	\$1,668	\$808	\$2,041	\$104
Larue	RP:85%+SCO	\$916	\$187	\$516	\$1,674	\$879	\$1,799	\$100
Laurel	RP:85%+SCO	\$862	\$188	\$477	\$1,609	\$843	\$1,794	\$110
Lawrence	RP:85%+SCO	\$848	\$170	\$500	\$1,474	\$869	\$1,463	\$125
Lewis	RP:85%+SCO	\$925	\$189	\$546	\$1,587	\$947	\$1,639	\$139
Lincoln	RP:85%+SCO	\$841	\$169	\$464	\$1,527	\$851	\$1,547	\$117
Livingston	RP:85%+SCO	\$728	\$216	\$373	\$1,680	\$496	\$2,839	\$22
Logan	RP:85%+SCO	\$899	\$218	\$455	\$1,868	\$822	\$2,240	\$95
Lyon	RP:85%+SCO	\$1,036	\$353	\$469	\$2,580	\$539	\$4,334	\$8
Madison	RP:85%+SCO	\$826	\$197	\$457	\$1,618	\$784	\$2,060	\$99
Marion	RP:85%+SCO	\$881	\$172	\$526	\$1,673	\$876	\$1,574	\$111
Marshall	RP:85%+SCO	\$671	\$163	\$359	\$1,469	\$605	\$1,761	\$67
Mason	RP:85%+SCO	\$927	\$219	\$508	\$1,797	\$902	\$2,186	\$126
McCracken	RP:85%+SCO	\$848	\$238	\$460	\$1,948	\$587	\$3,351	\$18
McLean	RP:85%+SCO	\$898	\$176	\$505	\$1,574	\$890	\$1,598	\$111
Meade	RP:85%+SCO	\$866	\$224	\$499	\$1,913	\$604	\$3,264	\$16
Menifee	RP:80%+SCO	\$697	\$164	\$363	\$1,355	\$709	\$1,548	\$114
Mercer	RP:85%+SCO	\$836	\$184	\$430	\$1,690	\$802	\$1,868	\$101
Metcalfe	RP:85%+SCO	\$824	\$272	\$432	\$2,013	\$570	\$3,683	\$29
Monroe	RP:85%+SCO	\$781	\$249	\$392	\$1,792	\$545	\$3,379	\$28
Montgomery	RP:85%+SCO	\$766	\$247	\$395	\$1,785	\$542	\$3,459	\$30
Morgan	RP:85%+SCO	\$634	\$146	\$352	\$1,217	\$638	\$1,350	\$96
Muhlenberg	RP:85%+SCO	\$804	\$197	\$418	\$1,634	\$748	\$2,009	\$92
Nelson	RP:85%+SCO	\$878	\$199	\$484	\$1,699	\$836	\$1,991	\$103
Nicholas	RP:85%+SCO	\$749	\$182	\$388	\$1,553	\$724	\$1,909	\$101
Ohio	RP:85%+SCO	\$1,006	\$215	\$577	\$1,866	\$988	\$1,954	\$129
Oldham	RP:85%+SCO	\$832	\$161	\$470	\$1,475	\$819	\$1,458	\$99
Owen	RP:85%+SCO	\$933	\$223	\$505	\$2,046	\$870	\$2,262	\$103
Pendleton	RP:85%+SCO	\$894	\$167	\$532	\$1,552	\$909	\$1,416	\$121
Powell	RP:85%+SCO	\$743	\$197	\$397	\$1,598	\$727	\$2,047	\$113
Pulaski	RP:85%+SCO	\$899	\$220	\$480	\$1,828	\$847	\$2,206	\$107
Robertson	RP:85%+SCO	\$900	\$224	\$454	\$1,797	\$893	\$2,242	\$139
Rockcastle	RP:85%+SCO	\$871	\$185	\$483	\$1,669	\$858	\$1,756	\$112
Rowan	RP:85%+SCO	\$611	\$177	\$333	\$1,419	\$473	\$2,560	\$33
Russell	RP:80%+SCO	\$875	\$150	\$487	\$1,456	\$895	\$1,201	\$115
Scott	RP:85%+SCO	\$882	\$228	\$474	\$1,907	\$802	\$2,499	\$95
Shelby	RP:85%+SCO	\$1,060	\$446	\$521	\$3,010	\$603	\$6,003	\$8
Simpson	RP:85%+SCO	\$1,026	\$396	\$438	\$3,052	\$569	\$4,873	\$23
Spencer	RP:85%+SCO	\$913	\$228	\$500	\$1,938	\$845	\$2,322	\$104
Taylor	RP:85%+SCO	\$951	\$198	\$531	\$1,840	\$916	\$1,916	\$109
Todd	RP:85%+SCO	\$903	\$203	\$506	\$2,280	\$847	\$2,007	\$98
Trigg	RP:85%+SCO	\$775	\$197	\$421	\$1,816	\$554	\$2,845	\$18
Trimble	RP:85%+SCO	\$743	\$139	\$416	\$1,267	\$753	\$1,225	\$99
Union	RP:85%+SCO	\$912	\$206	\$502	\$1,881	\$898	\$1,996	\$123
Warren	RP:85%+SCO	\$849	\$202	\$459	\$1,595	\$782	\$2,085	\$90
Washington	RP:85%+SCO	\$867	\$211	\$466	\$1,838	\$790	\$2,206	\$90
Wayne	RP:85%+SCO	\$918	\$161	\$496	\$1,563	\$911	\$1,444	\$105
Webster	RP:85%+SCO	\$838	\$204	\$455	\$1,742	\$723	\$2,366	\$64
Whitley	RP:85%+SCO	\$811	\$166	\$473	\$1,489	\$815	\$1,508	\$111
Wolfe	RP:85%+SCO	\$700	\$152	\$389	\$1,350	\$684	\$1,508	\$88
Woodford	RP:85%+SCO	\$876	\$217	\$466	\$1,884	\$822	\$2,264	\$103



Table D.10: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$970	\$164	\$428	\$1,531	\$984	\$1,195	\$123
Allen	RP:85%+SCO	\$705	\$196	\$386	\$1,514	\$495	\$2,830	\$16
Anderson	RP:85%+SCO	\$854	\$194	\$464	\$1,672	\$805	\$1,968	\$96
Ballard	RP:85%+SCO	\$901	\$247	\$517	\$1,936	\$533	\$3,863	\$0
Barren	RP:80%+SCO	\$844	\$148	\$468	\$1,451	\$860	\$1,246	\$109
Bath	RP:80%+SCO	\$690	\$156	\$368	\$1,331	\$695	\$1,497	\$103
Boone	RP:80%+SCO	\$715	\$123	\$412	\$1,202	\$734	\$1,024	\$95
Bourbon	RP:85%+SCO	\$792	\$186	\$445	\$1,590	\$758	\$1,988	\$97
Boyd	RP:85%+SCO	\$936	\$226	\$522	\$2,038	\$905	\$2,249	\$120
Boyle	RP:85%+SCO	\$852	\$220	\$458	\$1,804	\$611	\$3,225	\$21
Bracken	RP:85%+SCO	\$945	\$223	\$525	\$1,868	\$905	\$2,236	\$117
Breathitt	RP:85%+SCO	\$833	\$164	\$487	\$1,573	\$838	\$1,479	\$111
Breckinridge	RP:85%+SCO	\$805	\$224	\$447	\$1,893	\$563	\$3,192	\$17
Bullitt	RP:85%+SCO	\$848	\$177	\$439	\$1,633	\$826	\$1,712	\$102
Butler	RP:85%+SCO	\$915	\$170	\$511	\$1,629	\$931	\$1,411	\$125
Caldwell	RP:85%+SCO	\$797	\$221	\$422	\$1,759	\$469	\$3,457	\$1
Calloway	RP:85%+SCO	\$689	\$171	\$365	\$1,380	\$480	\$2,510	\$13
Campbell	RP:85%+SCO	\$907	\$171	\$535	\$1,627	\$915	\$1,457	\$118
Carlisle	RP:85%+SCO	\$855	\$141	\$488	\$1,363	\$849	\$1,228	\$92
Carroll	RP:80%+SCO	\$750	\$135	\$407	\$1,314	\$779	\$1,104	\$109
Carter	RP:80%+SCO	\$870	\$178	\$480	\$1,519	\$885	\$1,500	\$126
Casey	RP:80%+SCO	\$901	\$167	\$500	\$1,570	\$924	\$1,358	\$127
Christian	RP:85%+SCO	\$997	\$401	\$502	\$2,853	\$564	\$5,502	\$8
Clark	RP:85%+SCO	\$789	\$194	\$439	\$1,694	\$763	\$2,024	\$106
Clay	RP:85%+SCO	\$880	\$224	\$453	\$1,867	\$814	\$2,362	\$101
Clinton	RP:85%+SCO	\$913	\$161	\$520	\$1,685	\$915	\$1,433	\$109
Crittenden	RP:85%+SCO	\$725	\$187	\$410	\$1,529	\$510	\$2,760	\$14
Cumberland	RP:85%+SCO	\$803	\$268	\$414	\$1,961	\$446	\$4,088	\$1
Daviess	RP:85%+SCO	\$984	\$200	\$567	\$1,854	\$963	\$1,847	\$117
Edmonson	RP:80%+SCO	\$735	\$130	\$405	\$1,204	\$749	\$1,049	\$97
Estill	RP:85%+SCO	\$801	\$176	\$455	\$1,590	\$762	\$1,819	\$89
Fayette	RP:85%+SCO	\$863	\$220	\$437	\$1,845	\$788	\$2,437	\$92
Fleming	RP:85%+SCO	\$874	\$226	\$445	\$1,830	\$860	\$2,331	\$133
Franklin	RP:85%+SCO	\$1,053	\$427	\$524	\$2,953	\$650	\$5,715	\$22
Fulton	RP:85%+SCO	\$825	\$152	\$461	\$1,486	\$818	\$1,396	\$96
Gallatin	RP:80%+SCO	\$743	\$138	\$416	\$1,316	\$766	\$1,169	\$108
Garrard	RP:85%+SCO	\$912	\$224	\$464	\$1,879	\$849	\$2,405	\$104
Grant	RP:85%+SCO	\$843	\$191	\$478	\$1,757	\$789	\$2,049	\$89
Graves	RP:85%+SCO	\$803	\$148	\$446	\$1,467	\$742	\$1,565	\$64
Grayson	RP-HPE:50%+SCO	\$745	\$139	\$339	\$1,298	\$753	\$1,041	\$100
Green	RP:80%+SCO	\$909	\$147	\$514	\$1,440	\$928	\$1,146	\$113
Greenup	RP:85%+SCO	\$939	\$199	\$542	\$1,689	\$943	\$1,798	\$131
Hancock	RP:85%+SCO	\$1,027	\$229	\$574	\$2,052	\$984	\$2,204	\$119
Hardin	RP:85%+SCO	\$861	\$259	\$466	\$2,001	\$604	\$3,576	\$23
Harrison	RP:85%+SCO	\$876	\$299	\$457	\$2,277	\$548	\$4,366	\$10
Hart	RP:80%+SCO	\$883	\$144	\$481	\$1,436	\$891	\$1,195	\$104
Henderson	RP:85%+SCO	\$910	\$201	\$504	\$1,900	\$864	\$2,004	\$100
Henry	RP:85%+SCO	\$1,054	\$441	\$532	\$3,304	\$596	\$6,008	\$7
Hickman	RP:85%+SCO	\$880	\$164	\$437	\$1,707	\$856	\$1,539	\$95
Hopkins	RP:85%+SCO	\$783	\$150	\$465	\$1,540	\$778	\$1,396	\$95
Jefferson	RP:85%+SCO	\$826	\$156	\$468	\$1,474	\$825	\$1,400	\$104
Jessamine	RP:85%+SCO	\$843	\$195	\$474	\$1,708	\$800	\$2,048	\$98
Kenton	RP:85%+SCO	\$789	\$165	\$449	\$1,533	\$733	\$1,772	\$74
Knox	RP:85%+SCO	\$852	\$200	\$439	\$1,652	\$808	\$2,039	\$101
Larue	RP:85%+SCO	\$916	\$185	\$515	\$1,673	\$879	\$1,795	\$99
Laurel	RP:85%+SCO	\$861	\$185	\$482	\$1,561	\$842	\$1,792	\$107
Lawrence	RP:85%+SCO	\$848	\$170	\$499	\$1,491	\$869	\$1,464	\$125
Lewis	RP:85%+SCO	\$925	\$189	\$546	\$1,603	\$948	\$1,640	\$138
Lincoln	RP:85%+SCO	\$841	\$168	\$461	\$1,519	\$851	\$1,550	\$116

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Table D.10: Results - Corn, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Livingston	RP:85%+SCO	\$728	\$205	\$381	\$1,632	\$496	\$2,838	\$19
Logan	RP:85%+SCO	\$899	\$212	\$476	\$1,794	\$822	\$2,225	\$92
Lyon	RP:85%+SCO	\$1,036	\$317	\$466	\$2,253	\$540	\$4,325	\$6
Madison	RP:85%+SCO	\$826	\$194	\$447	\$1,745	\$784	\$2,057	\$97
Marion	RP:85%+SCO	\$881	\$172	\$507	\$1,544	\$876	\$1,576	\$110
Marshall	RP:85%+SCO	\$671	\$160	\$363	\$1,321	\$606	\$1,760	\$65
Mason	RP:85%+SCO	\$927	\$217	\$518	\$1,844	\$902	\$2,185	\$124
McCracken	RP:85%+SCO	\$849	\$233	\$461	\$1,981	\$587	\$3,350	\$17
McLean	RP:85%+SCO	\$899	\$176	\$502	\$1,602	\$890	\$1,607	\$110
Meade	RP:85%+SCO	\$866	\$222	\$498	\$1,894	\$603	\$3,271	\$15
Menifee	RP:80%+SCO	\$697	\$163	\$373	\$1,370	\$709	\$1,552	\$113
Mercer	RP:85%+SCO	\$836	\$183	\$419	\$1,564	\$802	\$1,873	\$99
Metcalfe	RP:85%+SCO	\$825	\$266	\$424	\$1,970	\$571	\$3,682	\$27
Monroe	RP:85%+SCO	\$781	\$244	\$395	\$1,765	\$545	\$3,390	\$25
Montgomery	RP:85%+SCO	\$767	\$245	\$400	\$1,800	\$543	\$3,481	\$29
Morgan	RP:85%+SCO	\$634	\$145	\$350	\$1,213	\$638	\$1,350	\$95
Muhlenberg	RP:85%+SCO	\$804	\$192	\$429	\$1,664	\$748	\$2,002	\$88
Nelson	RP:85%+SCO	\$878	\$197	\$486	\$1,759	\$836	\$1,989	\$101
Nicholas	RP:85%+SCO	\$749	\$180	\$404	\$1,566	\$724	\$1,912	\$99
Ohio	RP:85%+SCO	\$1,006	\$213	\$577	\$1,825	\$988	\$1,942	\$127
Oldham	RP:85%+SCO	\$833	\$161	\$477	\$1,494	\$819	\$1,464	\$98
Owen	RP:85%+SCO	\$933	\$221	\$493	\$1,983	\$870	\$2,265	\$100
Pendleton	RP:85%+SCO	\$894	\$167	\$534	\$1,546	\$909	\$1,416	\$120
Powell	RP:85%+SCO	\$743	\$195	\$401	\$1,598	\$727	\$2,049	\$111
Pulaski	RP:85%+SCO	\$898	\$217	\$479	\$1,790	\$847	\$2,209	\$104
Robertson	RP:85%+SCO	\$900	\$221	\$457	\$1,749	\$892	\$2,234	\$137
Rockcastle	RP:85%+SCO	\$872	\$184	\$487	\$1,652	\$858	\$1,761	\$110
Rowan	RP:85%+SCO	\$611	\$176	\$320	\$1,317	\$473	\$2,560	\$32
Russell	RP:80%+SCO	\$875	\$150	\$498	\$1,495	\$895	\$1,201	\$115
Scott	RP:85%+SCO	\$882	\$225	\$475	\$1,936	\$801	\$2,500	\$92
Shelby	RP:85%+SCO	\$1,059	\$439	\$525	\$3,006	\$603	\$5,988	\$7
Simpson	RP:85%+SCO	\$1,027	\$361	\$427	\$2,773	\$571	\$4,861	\$20
Spencer	RP:85%+SCO	\$913	\$225	\$492	\$1,949	\$845	\$2,326	\$100
Taylor	RP:85%+SCO	\$951	\$197	\$530	\$1,845	\$916	\$1,917	\$108
Todd	RP:85%+SCO	\$903	\$200	\$494	\$1,823	\$847	\$2,008	\$97
Trigg	RP:85%+SCO	\$775	\$194	\$417	\$1,563	\$554	\$2,855	\$18
Trimble	RP:85%+SCO	\$743	\$139	\$416	\$1,303	\$753	\$1,228	\$99
Union	RP:85%+SCO	\$912	\$204	\$506	\$1,914	\$897	\$1,990	\$120
Warren	RP:85%+SCO	\$850	\$198	\$462	\$1,631	\$781	\$2,084	\$87
Washington	RP:85%+SCO	\$868	\$206	\$463	\$1,770	\$790	\$2,202	\$86
Wayne	RP:85%+SCO	\$918	\$160	\$528	\$1,545	\$911	\$1,441	\$104
Webster	RP:85%+SCO	\$839	\$202	\$453	\$1,756	\$724	\$2,378	\$61
Whitley	RP:85%+SCO	\$811	\$165	\$460	\$1,517	\$815	\$1,505	\$110
Wolfe	RP:85%+SCO	\$700	\$151	\$384	\$1,382	\$684	\$1,507	\$87
Woodford	RP:85%+SCO	\$877	\$215	\$468	\$1,854	\$822	\$2,261	\$101

## D.2 Soybeans

### Optimal Insurance Scheme Counts

Table D.11: Soybeans - Optimal Insurance Scheme Count  
by County

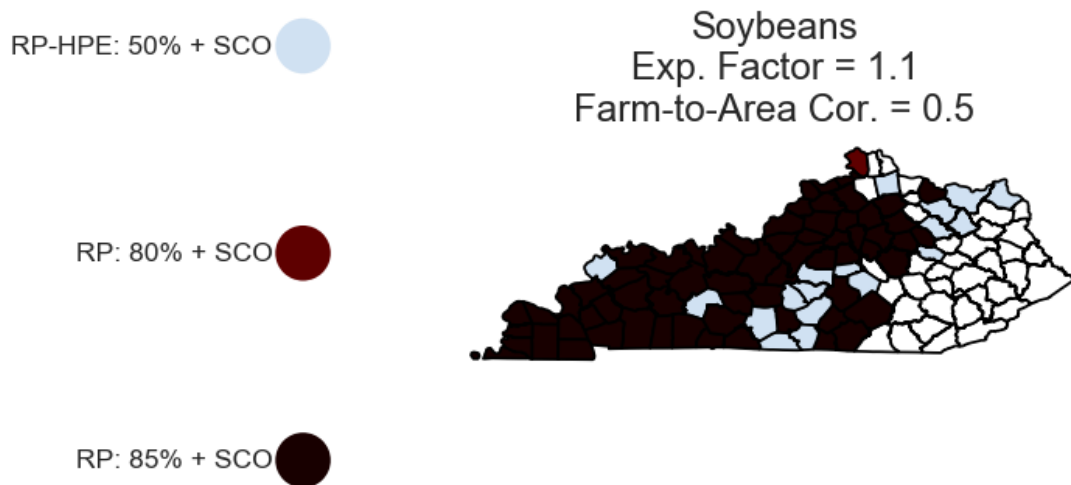
Spread	Farm-Area Cor.	Opt. Ins.	Count(n)
1.1	0.25	RP: 85% + SCO	67
1.1	0.25	RP-HPE: 50% + SCO	17
1.1	0.5	RP: 85% + SCO	65
1.1	0.5	RP-HPE: 50% + SCO	18
1.1	0.5	RP: 80% + SCO	1
1.1	0.75	RP: 85% + SCO	62
1.1	0.75	RP-HPE: 50% + SCO	19
1.1	0.75	RP: 80% + SCO	3
1.2	0.25	RP: 85% + SCO	70
1.2	0.25	RP-HPE: 50% + SCO	14
1.2	0.5	RP: 85% + SCO	70
1.2	0.5	RP-HPE: 50% + SCO	14
1.2	0.75	RP: 85% + SCO	68
1.2	0.75	RP-HPE: 50% + SCO	16
1.5	0.25	RP: 85% + SCO	75
1.5	0.25	RP-HPE: 50% + SCO	9
1.5	0.5	RP: 85% + SCO	74
1.5	0.5	RP-HPE: 50% + SCO	10
1.5	0.75	RP: 85% + SCO	74
1.5	0.75	RP-HPE: 50% + SCO	10

## Maps

Figure D.10: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25.



Figure D.11: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5.



## Complete Results

The following tables present the complete results of the simulation for soybean producers in all Kentucky counties by yield expansion factor and farm-area correlation.

Figure D.12: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75.

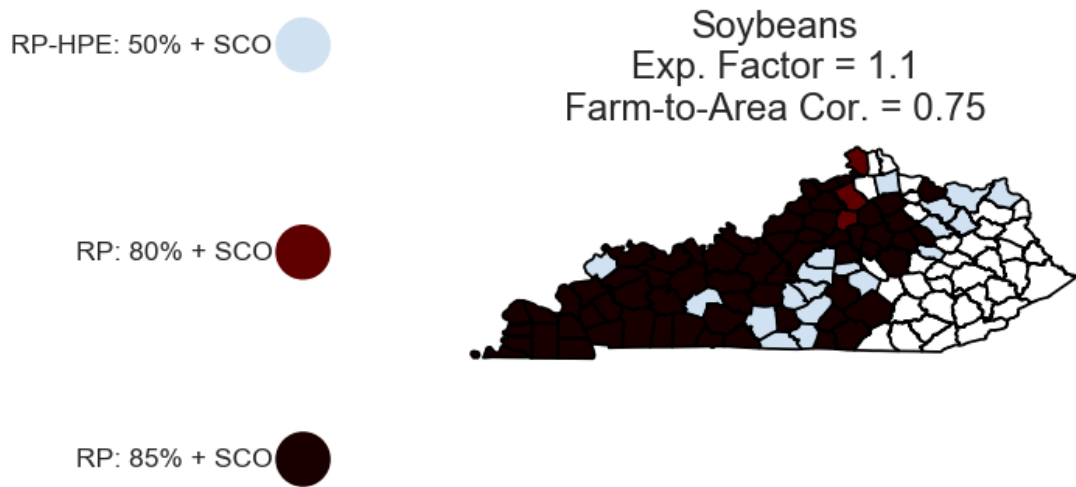


Figure D.13: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25.



Figure D.14: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5.

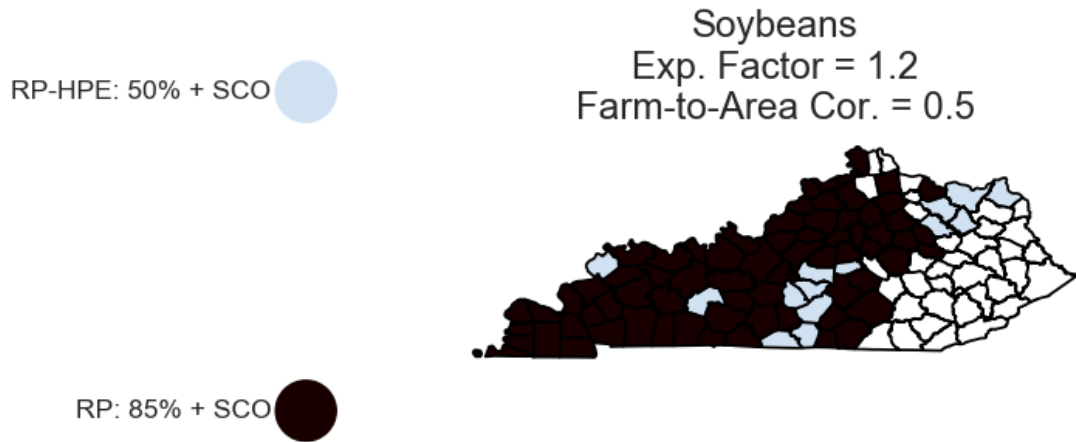


Figure D.15: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75.



Figure D.16: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25.



Figure D.17: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5.



Figure D.18: Map of Optimal Insurance Schemes for Soybeans: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75.



For each county the downside-risk minimizing insurance scheme is listed along with the mean, standard deviation, minimum and maximum of the simulated net revenues under the optimal insurance choice. Finally, the table presents the target value – equal to the mean revenue with no insurance – and the estimated semideviation with no insurance and under the optimal insurance strategy.

Table D.12: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$692	\$120	\$341	\$1,031	\$699	\$845	\$90
Allen	RP:85%+SCO	\$514	\$116	\$285	\$945	\$505	\$1,079	\$69
Anderson	RP:85%+SCO	\$565	\$138	\$289	\$1,116	\$542	\$1,321	\$75
Ballard	RP:85%+SCO	\$584	\$103	\$340	\$916	\$586	\$851	\$72
Barren	RP:85%+SCO	\$618	\$110	\$373	\$990	\$640	\$883	\$89
Bath	RP-HPE:50%+SCO	\$504	\$84	\$290	\$726	\$515	\$600	\$68
Boone	RP:85%+SCO	\$507	\$92	\$289	\$898	\$522	\$783	\$72
Bourbon	RP:85%+SCO	\$509	\$121	\$268	\$954	\$506	\$1,162	\$77
Boyle	RP-HPE:50%+SCO	\$631	\$109	\$304	\$965	\$637	\$792	\$81
Breckinridge	RP:85%+SCO	\$593	\$139	\$315	\$1,207	\$551	\$1,328	\$65
Bullitt	RP:85%+SCO	\$543	\$114	\$303	\$972	\$527	\$1,031	\$67
Butler	RP-HPE:50%+SCO	\$654	\$115	\$310	\$1,012	\$659	\$825	\$84
Caldwell	RP:85%+SCO	\$528	\$96	\$302	\$850	\$536	\$793	\$70
Calloway	RP:85%+SCO	\$504	\$101	\$282	\$892	\$491	\$918	\$60
Carlisle	RP:85%+SCO	\$581	\$109	\$327	\$984	\$576	\$928	\$70
Carrroll	RP:85%+SCO	\$527	\$108	\$295	\$918	\$536	\$983	\$77
Casey	RP:85%+SCO	\$600	\$183	\$279	\$1,331	\$385	\$1,888	\$17
Christian	RP:85%+SCO	\$583	\$132	\$328	\$1,127	\$532	\$1,310	\$57
Clark	RP:85%+SCO	\$510	\$112	\$284	\$915	\$529	\$1,027	\$85
Clinton	RP:85%+SCO	\$631	\$127	\$361	\$1,088	\$637	\$1,095	\$88
Crittenden	RP:85%+SCO	\$478	\$108	\$262	\$844	\$470	\$994	\$66
Cumberland	RP-HPE:50%+SCO	\$624	\$114	\$253	\$953	\$630	\$819	\$85
Daviess	RP:85%+SCO	\$719	\$149	\$403	\$1,266	\$704	\$1,300	\$90

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Table D.12: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Edmonson	RP:85%+SCO	\$536	\$125	\$290	\$1,048	\$501	\$1,225	\$60
Fayette	RP:85%+SCO	\$521	\$114	\$276	\$993	\$534	\$1,043	\$83
Fleming	RP-HPE:50%+SCO	\$570	\$97	\$303	\$868	\$582	\$690	\$77
Franklin	RP:85%+SCO	\$529	\$98	\$306	\$884	\$546	\$853	\$77
Fulton	RP:85%+SCO	\$562	\$99	\$337	\$898	\$574	\$779	\$76
Gallatin	RP:85%+SCO	\$526	\$109	\$268	\$1,076	\$540	\$965	\$82
Graves	RP:85%+SCO	\$548	\$103	\$299	\$955	\$544	\$881	\$67
Grayson	RP:85%+SCO	\$524	\$114	\$280	\$931	\$526	\$980	\$77
Green	RP-HPE:50%+SCO	\$642	\$107	\$340	\$964	\$648	\$762	\$80
Greenup	RP-HPE:50%+SCO	\$580	\$103	\$263	\$923	\$588	\$739	\$78
Hancock	RP:85%+SCO	\$647	\$120	\$356	\$1,041	\$650	\$986	\$84
Hardin	RP:85%+SCO	\$610	\$119	\$341	\$1,027	\$609	\$1,017	\$80
Harrison	RP:85%+SCO	\$552	\$147	\$278	\$1,136	\$526	\$1,466	\$77
Hart	RP:85%+SCO	\$596	\$109	\$345	\$957	\$608	\$881	\$82
Henderson	RP:85%+SCO	\$695	\$140	\$389	\$1,263	\$686	\$1,219	\$86
Henry	RP:85%+SCO	\$517	\$92	\$291	\$905	\$531	\$802	\$71
Hickman	RP:85%+SCO	\$608	\$134	\$339	\$1,142	\$576	\$1,236	\$68
Hopkins	RP:85%+SCO	\$612	\$118	\$360	\$1,034	\$612	\$1,024	\$80
Jefferson	RP:85%+SCO	\$554	\$112	\$318	\$962	\$544	\$1,023	\$69
Jessamine	RP:85%+SCO	\$558	\$121	\$321	\$996	\$555	\$1,114	\$78
Larue	RP:85%+SCO	\$688	\$137	\$396	\$1,145	\$685	\$1,181	\$90
Lewis	RP-HPE:50%+SCO	\$588	\$109	\$235	\$909	\$596	\$791	\$82
Lincoln	RP-HPE:50%+SCO	\$595	\$115	\$243	\$973	\$599	\$855	\$83
Livingston	RP:85%+SCO	\$483	\$97	\$261	\$844	\$481	\$880	\$64
Logan	RP:85%+SCO	\$585	\$122	\$328	\$1,079	\$564	\$1,118	\$69
Lyon	RP:85%+SCO	\$568	\$109	\$336	\$934	\$571	\$937	\$75
Madison	RP:85%+SCO	\$534	\$106	\$304	\$923	\$561	\$891	\$88
Marion	RP-HPE:50%+SCO	\$640	\$112	\$300	\$969	\$645	\$819	\$82
Marshall	RP:85%+SCO	\$489	\$99	\$279	\$837	\$488	\$871	\$66
Mason	RP:85%+SCO	\$591	\$115	\$341	\$976	\$601	\$1,005	\$83
McCracken	RP:85%+SCO	\$539	\$159	\$290	\$1,186	\$380	\$2,123	\$15
McLean	RP:85%+SCO	\$665	\$124	\$398	\$1,081	\$662	\$1,050	\$82
Meade	RP:85%+SCO	\$587	\$141	\$318	\$1,252	\$535	\$1,407	\$60
Mercer	RP:85%+SCO	\$573	\$122	\$320	\$977	\$568	\$1,116	\$79
Metcalfe	RP:85%+SCO	\$608	\$133	\$320	\$1,113	\$593	\$1,213	\$78
Monroe	RP-HPE:50%+SCO	\$665	\$120	\$300	\$1,032	\$673	\$867	\$90
Montgomery	RP:85%+SCO	\$504	\$125	\$261	\$1,048	\$491	\$1,215	\$72
Muhlenberg	RP:85%+SCO	\$592	\$122	\$332	\$982	\$589	\$1,051	\$80
Nelson	RP:85%+SCO	\$581	\$125	\$313	\$1,133	\$576	\$1,109	\$79
Ohio	RP:85%+SCO	\$710	\$128	\$413	\$1,174	\$717	\$1,016	\$92
Oldham	RP:85%+SCO	\$519	\$91	\$301	\$847	\$531	\$769	\$70
Owen	RP:85%+SCO	\$512	\$96	\$293	\$964	\$532	\$847	\$78
Pendleton	RP-HPE:50%+SCO	\$557	\$99	\$252	\$849	\$557	\$735	\$70
Powell	RP-HPE:50%+SCO	\$522	\$110	\$199	\$904	\$527	\$827	\$79
Pulaski	RP:85%+SCO	\$590	\$129	\$331	\$1,076	\$585	\$1,148	\$81
Rowan	RP-HPE:50%+SCO	\$521	\$98	\$198	\$818	\$528	\$717	\$73
Russell	RP:85%+SCO	\$681	\$197	\$357	\$1,453	\$629	\$1,937	\$89
Scott	RP:85%+SCO	\$533	\$123	\$284	\$1,069	\$523	\$1,185	\$74
Shelby	RP:85%+SCO	\$682	\$164	\$372	\$1,276	\$655	\$1,599	\$89
Simpson	RP:85%+SCO	\$584	\$146	\$311	\$1,166	\$500	\$1,568	\$48
Spencer	RP:85%+SCO	\$566	\$137	\$299	\$1,163	\$541	\$1,312	\$73
Taylor	RP-HPE:50%+SCO	\$676	\$123	\$283	\$1,022	\$682	\$868	\$92
Todd	RP:85%+SCO	\$603	\$127	\$343	\$1,047	\$575	\$1,190	\$67
Trigg	RP:85%+SCO	\$543	\$124	\$306	\$1,141	\$521	\$1,165	\$68
Trimble	RP:85%+SCO	\$511	\$95	\$296	\$861	\$518	\$849	\$68
Union	RP-HPE:50%+SCO	\$694	\$121	\$334	\$1,074	\$695	\$880	\$86
Warren	RP:85%+SCO	\$601	\$118	\$353	\$1,058	\$597	\$1,059	\$76
Washington	RP:85%+SCO	\$604	\$108	\$367	\$983	\$623	\$875	\$86
Wayne	RP:85%+SCO	\$679	\$166	\$374	\$1,311	\$647	\$1,557	\$86

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Table D.12: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Webster	RP:85%+SCO	\$623	\$111	\$362	\$993	\$629	\$921	\$80
Woodford	RP:85%+SCO	\$566	\$117	\$321	\$987	\$573	\$1,051	\$82

Table D.13: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$692	\$120	\$335	\$1,034	\$700	\$845	\$90
Allen	RP:85%+SCO	\$514	\$114	\$284	\$950	\$505	\$1,076	\$68
Anderson	RP:85%+SCO	\$565	\$134	\$287	\$1,050	\$542	\$1,321	\$72
Ballard	RP:85%+SCO	\$584	\$103	\$350	\$918	\$586	\$853	\$71
Barren	RP-HPE:50%+SCO	\$633	\$120	\$289	\$1,018	\$640	\$884	\$89
Bath	RP-HPE:50%+SCO	\$504	\$84	\$294	\$730	\$515	\$599	\$67
Boone	RP:80%+SCO	\$511	\$94	\$286	\$847	\$522	\$783	\$71
Bourbon	RP:85%+SCO	\$509	\$119	\$269	\$903	\$506	\$1,163	\$75
Boyle	RP-HPE:50%+SCO	\$631	\$109	\$289	\$961	\$637	\$793	\$80
Breckinridge	RP:85%+SCO	\$593	\$135	\$324	\$1,118	\$551	\$1,330	\$64
Bullitt	RP:85%+SCO	\$542	\$111	\$302	\$930	\$527	\$1,028	\$65
Butler	RP-HPE:50%+SCO	\$654	\$115	\$290	\$1,006	\$659	\$825	\$84
Caldwell	RP:85%+SCO	\$528	\$95	\$309	\$838	\$536	\$794	\$70
Calloway	RP:85%+SCO	\$504	\$100	\$282	\$870	\$491	\$923	\$59
Carlisle	RP:85%+SCO	\$581	\$107	\$329	\$952	\$576	\$927	\$68
Carroll	RP:85%+SCO	\$527	\$106	\$303	\$896	\$536	\$982	\$76
Casey	RP:85%+SCO	\$600	\$166	\$286	\$1,319	\$386	\$1,892	\$15
Christian	RP:85%+SCO	\$582	\$127	\$336	\$1,034	\$532	\$1,305	\$55
Clark	RP:85%+SCO	\$510	\$110	\$283	\$927	\$529	\$1,027	\$84
Clinton	RP:85%+SCO	\$631	\$127	\$359	\$1,067	\$637	\$1,095	\$87
Crittenden	RP:85%+SCO	\$478	\$106	\$260	\$848	\$470	\$997	\$65
Cumberland	RP-HPE:50%+SCO	\$624	\$114	\$257	\$953	\$630	\$817	\$85
Daviess	RP:85%+SCO	\$719	\$147	\$403	\$1,251	\$704	\$1,299	\$88
Edmonson	RP:85%+SCO	\$536	\$121	\$287	\$952	\$501	\$1,226	\$58
Fayette	RP:85%+SCO	\$521	\$112	\$276	\$935	\$534	\$1,044	\$82
Fleming	RP-HPE:50%+SCO	\$570	\$97	\$316	\$872	\$582	\$690	\$77
Franklin	RP:85%+SCO	\$529	\$97	\$306	\$872	\$546	\$854	\$76
Fulton	RP:85%+SCO	\$562	\$99	\$336	\$895	\$574	\$779	\$76
Gallatin	RP:85%+SCO	\$526	\$107	\$269	\$908	\$540	\$964	\$81
Graves	RP:85%+SCO	\$547	\$102	\$310	\$907	\$544	\$877	\$67
Grayson	RP:85%+SCO	\$524	\$113	\$280	\$906	\$526	\$979	\$77
Green	RP-HPE:50%+SCO	\$642	\$107	\$348	\$948	\$648	\$763	\$80
Greenup	RP-HPE:50%+SCO	\$580	\$103	\$284	\$916	\$588	\$739	\$77
Hancock	RP:85%+SCO	\$647	\$120	\$354	\$1,028	\$650	\$985	\$83
Hardin	RP:85%+SCO	\$610	\$118	\$337	\$1,035	\$609	\$1,014	\$79
Harrison	RP:85%+SCO	\$552	\$142	\$278	\$1,112	\$526	\$1,467	\$75
Hart	RP:85%+SCO	\$596	\$109	\$347	\$955	\$608	\$879	\$82
Henderson	RP:85%+SCO	\$695	\$138	\$391	\$1,247	\$685	\$1,216	\$85
Henry	RP:85%+SCO	\$517	\$92	\$295	\$873	\$531	\$801	\$71
Hickman	RP:85%+SCO	\$608	\$130	\$333	\$1,076	\$576	\$1,233	\$66
Hopkins	RP:85%+SCO	\$612	\$117	\$358	\$1,040	\$612	\$1,021	\$79
Jefferson	RP:85%+SCO	\$554	\$111	\$317	\$954	\$544	\$1,028	\$67
Jessamine	RP:85%+SCO	\$558	\$119	\$319	\$992	\$555	\$1,115	\$77
Larue	RP:85%+SCO	\$689	\$136	\$395	\$1,145	\$685	\$1,186	\$88
Lewis	RP-HPE:50%+SCO	\$588	\$109	\$240	\$921	\$596	\$792	\$81
Lincoln	RP-HPE:50%+SCO	\$595	\$114	\$261	\$980	\$599	\$854	\$82
Livingston	RP:85%+SCO	\$483	\$95	\$261	\$843	\$481	\$878	\$62
Logan	RP:85%+SCO	\$585	\$120	\$329	\$961	\$564	\$1,116	\$68

Continued on next page

Table D.13: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Lyon	RP:85%+SCO	\$568	\$108	\$337	\$927	\$571	\$935	\$74
Madison	RP:85%+SCO	\$534	\$106	\$303	\$928	\$561	\$892	\$88
Marion	RP-HPE:50%+SCO	\$640	\$112	\$313	\$976	\$645	\$820	\$81
Marshall	RP:85%+SCO	\$489	\$98	\$278	\$832	\$488	\$871	\$65
Mason	RP:85%+SCO	\$591	\$114	\$338	\$974	\$601	\$1,005	\$82
McCracken	RP:85%+SCO	\$539	\$154	\$302	\$1,111	\$381	\$2,118	\$14
McLean	RP:85%+SCO	\$665	\$124	\$398	\$1,082	\$662	\$1,050	\$82
Meade	RP:85%+SCO	\$587	\$136	\$307	\$1,113	\$535	\$1,411	\$58
Mercer	RP:85%+SCO	\$573	\$120	\$321	\$967	\$568	\$1,117	\$78
Metcalfe	RP:85%+SCO	\$608	\$130	\$319	\$1,071	\$593	\$1,215	\$76
Monroe	RP-HPE:50%+SCO	\$665	\$120	\$306	\$1,041	\$673	\$867	\$90
Montgomery	RP:85%+SCO	\$504	\$121	\$256	\$980	\$491	\$1,214	\$70
Muhlenberg	RP:85%+SCO	\$592	\$121	\$332	\$983	\$589	\$1,051	\$78
Nelson	RP:85%+SCO	\$582	\$123	\$310	\$1,064	\$576	\$1,112	\$77
Ohio	RP:85%+SCO	\$710	\$127	\$410	\$1,178	\$717	\$1,015	\$91
Oldham	RP:85%+SCO	\$519	\$91	\$300	\$825	\$532	\$771	\$69
Owen	RP:85%+SCO	\$512	\$95	\$292	\$908	\$532	\$843	\$77
Pendleton	RP-HPE:50%+SCO	\$557	\$99	\$281	\$860	\$557	\$734	\$69
Powell	RP-HPE:50%+SCO	\$522	\$110	\$208	\$902	\$527	\$829	\$78
Pulaski	RP:85%+SCO	\$590	\$128	\$326	\$1,061	\$585	\$1,150	\$80
Rowan	RP-HPE:50%+SCO	\$521	\$98	\$211	\$805	\$528	\$716	\$72
Russell	RP:85%+SCO	\$682	\$192	\$361	\$1,419	\$629	\$1,939	\$85
Scott	RP:85%+SCO	\$533	\$120	\$296	\$963	\$523	\$1,187	\$73
Shelby	RP:85%+SCO	\$682	\$161	\$370	\$1,283	\$654	\$1,604	\$86
Simpson	RP:85%+SCO	\$584	\$141	\$318	\$1,124	\$500	\$1,566	\$46
Spencer	RP:85%+SCO	\$566	\$133	\$307	\$1,077	\$541	\$1,314	\$70
Taylor	RP-HPE:50%+SCO	\$676	\$123	\$307	\$1,024	\$682	\$868	\$92
Todd	RP:85%+SCO	\$603	\$124	\$343	\$1,054	\$575	\$1,191	\$65
Trigg	RP:85%+SCO	\$543	\$121	\$307	\$1,046	\$521	\$1,165	\$67
Trimble	RP:85%+SCO	\$511	\$94	\$293	\$827	\$518	\$845	\$67
Union	RP-HPE:50%+SCO	\$694	\$121	\$336	\$1,078	\$695	\$881	\$86
Warren	RP:85%+SCO	\$602	\$117	\$353	\$1,011	\$597	\$1,060	\$75
Washington	RP:85%+SCO	\$604	\$108	\$367	\$999	\$623	\$875	\$85
Wayne	RP:85%+SCO	\$679	\$164	\$371	\$1,316	\$647	\$1,556	\$84
Webster	RP:85%+SCO	\$624	\$111	\$361	\$993	\$629	\$921	\$79
Woodford	RP:85%+SCO	\$566	\$116	\$323	\$987	\$573	\$1,050	\$81

Table D.14: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$692	\$120	\$344	\$1,039	\$700	\$845	\$90
Allen	RP:85%+SCO	\$514	\$113	\$281	\$951	\$505	\$1,075	\$67
Anderson	RP:85%+SCO	\$565	\$130	\$284	\$1,024	\$542	\$1,319	\$69
Ballard	RP:85%+SCO	\$584	\$102	\$351	\$920	\$586	\$852	\$71
Barren	RP-HPE:50%+SCO	\$633	\$120	\$304	\$1,014	\$640	\$887	\$88
Bath	RP-HPE:50%+SCO	\$504	\$84	\$301	\$733	\$515	\$598	\$67
Boone	RP:80%+SCO	\$511	\$93	\$286	\$845	\$522	\$783	\$70
Bourbon	RP:85%+SCO	\$509	\$117	\$268	\$935	\$506	\$1,164	\$74
Boyle	RP-HPE:50%+SCO	\$631	\$109	\$301	\$946	\$637	\$794	\$80
Breckinridge	RP:85%+SCO	\$593	\$132	\$326	\$1,063	\$552	\$1,329	\$62
Bullitt	RP:85%+SCO	\$542	\$108	\$302	\$932	\$527	\$1,026	\$63
Butler	RP-HPE:50%+SCO	\$654	\$114	\$306	\$999	\$659	\$824	\$83
Caldwell	RP:85%+SCO	\$528	\$95	\$313	\$839	\$536	\$794	\$69
Calloway	RP:85%+SCO	\$504	\$99	\$282	\$876	\$491	\$927	\$58

Continued on next page

Table D.14: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Carlisle	RP:85%+SCO	\$581	\$106	\$339	\$944	\$576	\$926	\$67
Carrroll	RP:85%+SCO	\$528	\$104	\$302	\$903	\$536	\$982	\$74
Casey	RP:85%+SCO	\$600	\$148	\$286	\$1,148	\$385	\$1,894	\$12
Christian	RP:85%+SCO	\$582	\$124	\$341	\$1,031	\$532	\$1,305	\$53
Clark	RP:85%+SCO	\$510	\$109	\$283	\$938	\$529	\$1,025	\$82
Clinton	RP:85%+SCO	\$631	\$126	\$357	\$1,070	\$637	\$1,097	\$87
Crittenden	RP:85%+SCO	\$478	\$105	\$270	\$871	\$470	\$1,000	\$63
Cumberland	RP-HPE:50%+SCO	\$624	\$113	\$281	\$954	\$630	\$816	\$84
Daviess	RP:85%+SCO	\$719	\$146	\$408	\$1,243	\$704	\$1,297	\$87
Edmonson	RP:85%+SCO	\$536	\$118	\$280	\$940	\$501	\$1,228	\$55
Fayette	RP:85%+SCO	\$521	\$111	\$287	\$911	\$534	\$1,047	\$80
Fleming	RP-HPE:50%+SCO	\$570	\$97	\$330	\$872	\$582	\$689	\$77
Franklin	RP:80%+SCO	\$533	\$100	\$305	\$886	\$546	\$853	\$75
Fulton	RP:85%+SCO	\$561	\$99	\$335	\$877	\$574	\$778	\$76
Gallatin	RP:85%+SCO	\$526	\$105	\$268	\$899	\$540	\$964	\$79
Graves	RP:85%+SCO	\$547	\$101	\$313	\$923	\$544	\$877	\$67
Grayson	RP:85%+SCO	\$523	\$112	\$280	\$897	\$526	\$978	\$76
Green	RP-HPE:50%+SCO	\$642	\$107	\$367	\$955	\$648	\$764	\$80
Greenup	RP-HPE:50%+SCO	\$580	\$103	\$296	\$895	\$588	\$741	\$77
Hancock	RP:85%+SCO	\$647	\$120	\$353	\$1,055	\$650	\$986	\$83
Hardin	RP:85%+SCO	\$610	\$117	\$340	\$1,037	\$609	\$1,013	\$79
Harrison	RP:85%+SCO	\$552	\$139	\$277	\$1,042	\$526	\$1,466	\$72
Hart	RP:85%+SCO	\$596	\$108	\$348	\$960	\$608	\$876	\$81
Henderson	RP:85%+SCO	\$695	\$137	\$394	\$1,217	\$685	\$1,212	\$84
Henry	RP:85%+SCO	\$517	\$91	\$300	\$872	\$531	\$802	\$71
Hickman	RP:85%+SCO	\$608	\$127	\$331	\$1,088	\$575	\$1,232	\$64
Hopkins	RP:85%+SCO	\$612	\$116	\$355	\$1,042	\$612	\$1,019	\$78
Jefferson	RP:85%+SCO	\$554	\$110	\$315	\$956	\$544	\$1,035	\$66
Jessamine	RP:85%+SCO	\$558	\$118	\$317	\$982	\$555	\$1,116	\$76
Larue	RP:85%+SCO	\$689	\$135	\$394	\$1,137	\$685	\$1,189	\$87
Lewis	RP-HPE:50%+SCO	\$588	\$109	\$263	\$930	\$596	\$792	\$81
Lincoln	RP-HPE:50%+SCO	\$595	\$114	\$267	\$982	\$599	\$853	\$81
Livingston	RP:85%+SCO	\$483	\$93	\$260	\$842	\$481	\$877	\$61
Logan	RP:85%+SCO	\$585	\$118	\$330	\$970	\$565	\$1,114	\$66
Lyon	RP:85%+SCO	\$568	\$106	\$337	\$941	\$571	\$932	\$73
Madison	RP:85%+SCO	\$534	\$106	\$303	\$922	\$561	\$893	\$88
Marion	RP-HPE:50%+SCO	\$640	\$112	\$336	\$984	\$645	\$821	\$81
Marshall	RP:85%+SCO	\$489	\$97	\$278	\$832	\$488	\$872	\$65
Mason	RP:85%+SCO	\$590	\$113	\$336	\$965	\$601	\$1,005	\$82
McCracken	RP:85%+SCO	\$539	\$150	\$292	\$1,089	\$381	\$2,115	\$13
McLean	RP:85%+SCO	\$665	\$123	\$388	\$1,075	\$662	\$1,050	\$81
Meade	RP:85%+SCO	\$588	\$133	\$308	\$1,072	\$535	\$1,410	\$56
Mercer	RP:85%+SCO	\$573	\$119	\$323	\$966	\$568	\$1,119	\$77
Metcalfe	RP:85%+SCO	\$608	\$128	\$317	\$1,062	\$593	\$1,217	\$74
Monroe	RP-HPE:50%+SCO	\$665	\$120	\$318	\$1,045	\$673	\$866	\$90
Montgomery	RP:85%+SCO	\$504	\$118	\$265	\$920	\$491	\$1,211	\$68
Muhlenberg	RP:85%+SCO	\$592	\$120	\$329	\$980	\$589	\$1,051	\$77
Nelson	RP:85%+SCO	\$582	\$122	\$306	\$1,069	\$576	\$1,115	\$76
Ohio	RP:85%+SCO	\$710	\$127	\$421	\$1,175	\$717	\$1,013	\$91
Oldham	RP:85%+SCO	\$519	\$90	\$302	\$826	\$532	\$773	\$69
Owen	RP:80%+SCO	\$515	\$98	\$289	\$864	\$532	\$840	\$76
Pendleton	RP-HPE:50%+SCO	\$557	\$98	\$300	\$869	\$557	\$735	\$68
Powell	RP-HPE:50%+SCO	\$522	\$109	\$232	\$893	\$527	\$831	\$78
Pulaski	RP:85%+SCO	\$590	\$127	\$328	\$1,052	\$585	\$1,152	\$78
Rowan	RP-HPE:50%+SCO	\$521	\$97	\$238	\$812	\$528	\$714	\$72
Russell	RP:85%+SCO	\$681	\$188	\$357	\$1,403	\$629	\$1,936	\$81
Scott	RP:85%+SCO	\$533	\$119	\$296	\$963	\$523	\$1,192	\$71
Shelby	RP:85%+SCO	\$682	\$159	\$368	\$1,289	\$654	\$1,602	\$84
Simpson	RP:85%+SCO	\$584	\$137	\$315	\$1,036	\$501	\$1,564	\$44

Continued on next page

Table D.14: Results - Soybeans, Expansion Factor = 1.1, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Spencer	RP:85%+SCO	\$566	\$130	\$304	\$1,049	\$541	\$1,318	\$68
Taylor	RP-HPE:50%+SCO	\$676	\$123	\$339	\$1,023	\$682	\$868	\$92
Todd	RP:85%+SCO	\$603	\$123	\$340	\$1,060	\$574	\$1,192	\$63
Trigg	RP:85%+SCO	\$543	\$119	\$298	\$945	\$521	\$1,167	\$65
Trimble	RP:85%+SCO	\$511	\$93	\$290	\$829	\$518	\$842	\$66
Union	RP-HPE:50%+SCO	\$694	\$121	\$361	\$1,076	\$695	\$882	\$85
Warren	RP:85%+SCO	\$602	\$116	\$352	\$964	\$597	\$1,061	\$74
Washington	RP-HPE:50%+SCO	\$619	\$118	\$289	\$1,034	\$623	\$876	\$85
Wayne	RP:85%+SCO	\$679	\$161	\$366	\$1,325	\$647	\$1,555	\$82
Webster	RP:85%+SCO	\$624	\$110	\$361	\$986	\$629	\$921	\$78
Woodford	RP:85%+SCO	\$567	\$115	\$324	\$978	\$573	\$1,052	\$81

Table D.15: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$694	\$121	\$345	\$1,045	\$701	\$852	\$91
Allen	RP:85%+SCO	\$519	\$121	\$290	\$961	\$506	\$1,149	\$70
Anderson	RP:85%+SCO	\$570	\$146	\$288	\$1,107	\$542	\$1,416	\$75
Ballard	RP:85%+SCO	\$587	\$106	\$349	\$970	\$587	\$878	\$72
Barren	RP:85%+SCO	\$622	\$113	\$369	\$1,003	\$642	\$916	\$90
Bath	RP-HPE:50%+SCO	\$504	\$85	\$290	\$742	\$516	\$602	\$68
Boone	RP:85%+SCO	\$513	\$93	\$294	\$901	\$521	\$820	\$68
Bourbon	RP:85%+SCO	\$514	\$128	\$272	\$986	\$505	\$1,253	\$77
Boyle	RP-HPE:50%+SCO	\$632	\$112	\$267	\$944	\$638	\$810	\$82
Breckinridge	RP:85%+SCO	\$577	\$153	\$301	\$1,217	\$418	\$2,118	\$16
Bullitt	RP:85%+SCO	\$547	\$118	\$300	\$987	\$527	\$1,096	\$66
Butler	RP-HPE:50%+SCO	\$655	\$116	\$269	\$1,002	\$659	\$836	\$85
Caldwell	RP:85%+SCO	\$531	\$99	\$307	\$846	\$536	\$830	\$71
Calloway	RP:85%+SCO	\$508	\$105	\$277	\$911	\$490	\$984	\$59
Carlisle	RP:85%+SCO	\$585	\$112	\$336	\$1,053	\$575	\$981	\$69
Carroll	RP:85%+SCO	\$532	\$112	\$297	\$959	\$535	\$1,054	\$76
Casey	RP:85%+SCO	\$612	\$184	\$272	\$1,293	\$388	\$1,955	\$15
Christian	RP:85%+SCO	\$582	\$140	\$320	\$1,145	\$484	\$1,663	\$38
Clark	RP:85%+SCO	\$515	\$117	\$279	\$979	\$530	\$1,094	\$85
Clinton	RP:85%+SCO	\$636	\$134	\$365	\$1,127	\$638	\$1,175	\$89
Crittenden	RP:85%+SCO	\$482	\$113	\$263	\$901	\$468	\$1,072	\$65
Cumberland	RP-HPE:50%+SCO	\$625	\$117	\$242	\$995	\$632	\$842	\$87
Daviess	RP:85%+SCO	\$725	\$155	\$410	\$1,336	\$706	\$1,386	\$90
Edmonson	RP:85%+SCO	\$540	\$131	\$297	\$984	\$493	\$1,354	\$56
Fayette	RP:85%+SCO	\$528	\$116	\$286	\$935	\$534	\$1,102	\$79
Fleming	RP-HPE:50%+SCO	\$572	\$98	\$282	\$853	\$584	\$695	\$77
Franklin	RP:85%+SCO	\$535	\$99	\$317	\$932	\$547	\$889	\$73
Fulton	RP:85%+SCO	\$564	\$101	\$322	\$895	\$575	\$803	\$76
Gallatin	RP:85%+SCO	\$529	\$112	\$289	\$986	\$538	\$1,028	\$79
Graves	RP:85%+SCO	\$553	\$103	\$314	\$968	\$543	\$918	\$64
Grayson	RP:85%+SCO	\$526	\$117	\$285	\$918	\$524	\$1,029	\$76
Green	RP-HPE:50%+SCO	\$644	\$108	\$310	\$950	\$649	\$773	\$80
Greenup	RP-HPE:50%+SCO	\$582	\$105	\$224	\$910	\$589	\$751	\$79
Hancock	RP:85%+SCO	\$651	\$124	\$378	\$1,076	\$652	\$1,032	\$85
Hardin	RP:85%+SCO	\$614	\$124	\$339	\$1,082	\$609	\$1,079	\$81
Harrison	RP:85%+SCO	\$558	\$157	\$288	\$1,306	\$516	\$1,653	\$73
Hart	RP:85%+SCO	\$598	\$111	\$347	\$969	\$609	\$903	\$82
Henderson	RP:85%+SCO	\$701	\$144	\$400	\$1,375	\$688	\$1,280	\$86
Henry	RP:85%+SCO	\$520	\$95	\$282	\$884	\$531	\$844	\$71

Continued on next page

Table D.15: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Hickman	RP:85%+SCO	\$613	\$139	\$339	\$1,225	\$573	\$1,330	\$67
Hopkins	RP:85%+SCO	\$616	\$122	\$347	\$1,099	\$613	\$1,072	\$80
Jefferson	RP:85%+SCO	\$557	\$118	\$315	\$1,051	\$545	\$1,090	\$69
Jessamine	RP:85%+SCO	\$565	\$124	\$321	\$1,006	\$555	\$1,181	\$75
Larue	RP:85%+SCO	\$693	\$142	\$390	\$1,299	\$686	\$1,240	\$91
Lewis	RP-HPE:50%+SCO	\$590	\$111	\$221	\$940	\$598	\$804	\$83
Lincoln	RP:85%+SCO	\$579	\$105	\$333	\$946	\$600	\$880	\$84
Livingston	RP:85%+SCO	\$487	\$100	\$279	\$884	\$480	\$933	\$63
Logan	RP:85%+SCO	\$589	\$125	\$334	\$1,007	\$563	\$1,186	\$68
Lyon	RP:85%+SCO	\$572	\$111	\$321	\$1,025	\$571	\$974	\$74
Madison	RP:85%+SCO	\$540	\$108	\$303	\$951	\$562	\$926	\$86
Marion	RP-HPE:50%+SCO	\$641	\$115	\$252	\$981	\$645	\$837	\$83
Marshall	RP:85%+SCO	\$492	\$103	\$278	\$882	\$487	\$926	\$66
Mason	RP:85%+SCO	\$594	\$118	\$349	\$981	\$601	\$1,051	\$83
McCracken	RP:85%+SCO	\$551	\$163	\$306	\$1,282	\$385	\$2,187	\$13
McLean	RP:85%+SCO	\$668	\$127	\$395	\$1,115	\$663	\$1,092	\$82
Meade	RP:85%+SCO	\$575	\$155	\$322	\$1,269	\$416	\$2,147	\$17
Mercer	RP:85%+SCO	\$577	\$127	\$326	\$1,093	\$566	\$1,189	\$78
Metcalfe	RP:85%+SCO	\$616	\$136	\$341	\$1,200	\$594	\$1,284	\$75
Monroe	RP-HPE:50%+SCO	\$667	\$124	\$304	\$1,030	\$675	\$894	\$92
Montgomery	RP:85%+SCO	\$509	\$130	\$253	\$1,038	\$489	\$1,304	\$71
Muhlenberg	RP:85%+SCO	\$596	\$126	\$330	\$1,006	\$589	\$1,112	\$79
Nelson	RP:85%+SCO	\$586	\$130	\$321	\$1,043	\$576	\$1,173	\$79
Ohio	RP:85%+SCO	\$714	\$131	\$419	\$1,175	\$719	\$1,056	\$92
Oldham	RP:85%+SCO	\$521	\$94	\$300	\$850	\$532	\$813	\$70
Owen	RP:85%+SCO	\$516	\$99	\$297	\$920	\$533	\$892	\$77
Pendleton	RP:85%+SCO	\$545	\$93	\$324	\$854	\$557	\$760	\$71
Powell	RP:85%+SCO	\$507	\$103	\$287	\$926	\$529	\$863	\$82
Pulaski	RP:85%+SCO	\$599	\$133	\$333	\$1,123	\$586	\$1,228	\$78
Rowan	RP-HPE:50%+SCO	\$522	\$100	\$200	\$818	\$528	\$726	\$75
Russell	RP:85%+SCO	\$691	\$213	\$351	\$1,554	\$628	\$2,136	\$90
Scott	RP:85%+SCO	\$538	\$129	\$291	\$1,168	\$522	\$1,274	\$73
Shelby	RP:85%+SCO	\$689	\$171	\$382	\$1,359	\$656	\$1,688	\$88
Simpson	RP:85%+SCO	\$569	\$157	\$317	\$1,217	\$358	\$2,372	\$3
Spencer	RP:85%+SCO	\$572	\$145	\$309	\$1,196	\$542	\$1,417	\$75
Taylor	RP-HPE:50%+SCO	\$678	\$126	\$288	\$1,060	\$684	\$887	\$94
Todd	RP:85%+SCO	\$608	\$132	\$353	\$1,138	\$571	\$1,287	\$65
Trigg	RP:85%+SCO	\$547	\$129	\$300	\$1,049	\$515	\$1,275	\$65
Trimble	RP:85%+SCO	\$515	\$97	\$303	\$885	\$519	\$885	\$67
Union	RP-HPE:50%+SCO	\$696	\$124	\$315	\$1,091	\$696	\$905	\$87
Warren	RP:85%+SCO	\$605	\$122	\$340	\$1,000	\$597	\$1,113	\$76
Washington	RP:85%+SCO	\$606	\$110	\$343	\$1,010	\$624	\$902	\$86
Wayne	RP:85%+SCO	\$686	\$177	\$359	\$1,358	\$649	\$1,673	\$88
Webster	RP:85%+SCO	\$627	\$115	\$374	\$1,031	\$631	\$964	\$81
Woodford	RP:85%+SCO	\$570	\$120	\$329	\$1,008	\$573	\$1,100	\$81

Table D.16: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$694	\$121	\$365	\$1,040	\$701	\$851	\$91
Allen	RP:85%+SCO	\$519	\$120	\$294	\$975	\$506	\$1,147	\$68
Anderson	RP:85%+SCO	\$570	\$141	\$293	\$1,084	\$542	\$1,414	\$73
Ballard	RP:85%+SCO	\$587	\$105	\$350	\$971	\$587	\$875	\$72
Barren	RP:85%+SCO	\$622	\$113	\$368	\$1,003	\$642	\$915	\$89

Continued on next page

Table D.16: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Bath	RP-HPE:50%+SCO	\$504	\$85	\$290	\$743	\$516	\$602	\$68
Boone	RP:85%+SCO	\$513	\$91	\$299	\$875	\$521	\$819	\$67
Bourbon	RP:85%+SCO	\$514	\$125	\$269	\$982	\$506	\$1,254	\$75
Boyle	RP-HPE:50%+SCO	\$632	\$111	\$295	\$966	\$638	\$809	\$82
Breckinridge	RP:85%+SCO	\$577	\$149	\$321	\$1,123	\$418	\$2,120	\$15
Bullitt	RP:85%+SCO	\$547	\$115	\$298	\$973	\$527	\$1,093	\$64
Butler	RP-HPE:50%+SCO	\$655	\$116	\$281	\$1,009	\$659	\$835	\$84
Caldwell	RP:85%+SCO	\$530	\$98	\$307	\$844	\$536	\$829	\$70
Calloway	RP:85%+SCO	\$507	\$103	\$276	\$892	\$490	\$985	\$58
Carlisle	RP:85%+SCO	\$585	\$111	\$337	\$984	\$575	\$983	\$68
Carroll	RP:85%+SCO	\$532	\$110	\$294	\$921	\$535	\$1,053	\$75
Casey	RP:85%+SCO	\$612	\$167	\$287	\$1,218	\$388	\$1,956	\$13
Christian	RP:85%+SCO	\$582	\$136	\$323	\$1,040	\$484	\$1,658	\$36
Clark	RP:85%+SCO	\$515	\$116	\$287	\$982	\$530	\$1,094	\$84
Clinton	RP:85%+SCO	\$636	\$133	\$363	\$1,128	\$638	\$1,178	\$88
Crittenden	RP:85%+SCO	\$482	\$111	\$262	\$897	\$469	\$1,073	\$63
Cumberland	RP-HPE:50%+SCO	\$625	\$117	\$278	\$996	\$632	\$845	\$87
Daviess	RP:85%+SCO	\$725	\$154	\$409	\$1,322	\$706	\$1,386	\$89
Edmonson	RP:85%+SCO	\$540	\$126	\$295	\$988	\$493	\$1,352	\$54
Fayette	RP:85%+SCO	\$528	\$114	\$286	\$923	\$534	\$1,100	\$78
Fleming	RP-HPE:50%+SCO	\$572	\$98	\$289	\$844	\$584	\$694	\$77
Franklin	RP:85%+SCO	\$535	\$97	\$313	\$916	\$547	\$886	\$73
Fulton	RP:85%+SCO	\$564	\$101	\$321	\$891	\$575	\$803	\$76
Gallatin	RP:85%+SCO	\$529	\$110	\$291	\$936	\$538	\$1,027	\$78
Graves	RP:85%+SCO	\$553	\$102	\$308	\$917	\$543	\$919	\$63
Grayson	RP:85%+SCO	\$526	\$116	\$284	\$915	\$523	\$1,028	\$75
Green	RP-HPE:50%+SCO	\$644	\$108	\$335	\$947	\$649	\$774	\$80
Greenup	RP-HPE:50%+SCO	\$582	\$105	\$228	\$915	\$589	\$754	\$79
Hancock	RP:85%+SCO	\$651	\$124	\$379	\$1,067	\$652	\$1,032	\$84
Hardin	RP:85%+SCO	\$614	\$123	\$335	\$1,085	\$609	\$1,076	\$80
Harrison	RP:85%+SCO	\$558	\$152	\$287	\$1,180	\$516	\$1,648	\$70
Hart	RP:85%+SCO	\$598	\$111	\$350	\$966	\$609	\$904	\$82
Henderson	RP:85%+SCO	\$701	\$143	\$400	\$1,363	\$688	\$1,279	\$85
Henry	RP:85%+SCO	\$520	\$94	\$283	\$895	\$531	\$842	\$70
Hickman	RP:85%+SCO	\$613	\$135	\$340	\$1,123	\$573	\$1,332	\$65
Hopkins	RP:85%+SCO	\$616	\$121	\$347	\$1,072	\$613	\$1,072	\$79
Jefferson	RP:85%+SCO	\$558	\$116	\$315	\$954	\$544	\$1,090	\$68
Jessamine	RP:85%+SCO	\$565	\$122	\$321	\$1,017	\$555	\$1,180	\$74
Larue	RP:85%+SCO	\$693	\$141	\$396	\$1,239	\$686	\$1,238	\$90
Lewis	RP-HPE:50%+SCO	\$590	\$111	\$240	\$935	\$598	\$805	\$83
Lincoln	RP:85%+SCO	\$579	\$105	\$333	\$934	\$600	\$879	\$84
Livingston	RP:85%+SCO	\$487	\$98	\$272	\$822	\$480	\$935	\$61
Logan	RP:85%+SCO	\$589	\$123	\$330	\$978	\$563	\$1,187	\$66
Lyon	RP:85%+SCO	\$572	\$110	\$321	\$950	\$571	\$973	\$73
Madison	RP:85%+SCO	\$540	\$108	\$301	\$953	\$562	\$926	\$86
Marion	RP-HPE:50%+SCO	\$641	\$115	\$253	\$989	\$645	\$836	\$83
Marshall	RP:85%+SCO	\$492	\$102	\$282	\$844	\$487	\$928	\$65
Mason	RP:85%+SCO	\$594	\$117	\$347	\$985	\$601	\$1,050	\$82
McCracken	RP:85%+SCO	\$551	\$157	\$306	\$1,087	\$385	\$2,185	\$13
McLean	RP:85%+SCO	\$668	\$127	\$385	\$1,112	\$663	\$1,094	\$81
Meade	RP:85%+SCO	\$575	\$151	\$325	\$1,164	\$416	\$2,143	\$16
Mercer	RP:85%+SCO	\$577	\$125	\$327	\$1,005	\$566	\$1,191	\$76
Metcalfe	RP:85%+SCO	\$616	\$134	\$342	\$1,123	\$594	\$1,285	\$73
Monroe	RP-HPE:50%+SCO	\$667	\$124	\$310	\$1,036	\$675	\$895	\$92
Montgomery	RP:85%+SCO	\$509	\$127	\$255	\$949	\$489	\$1,302	\$69
Muhlenberg	RP:85%+SCO	\$596	\$125	\$340	\$1,010	\$589	\$1,114	\$78
Nelson	RP:85%+SCO	\$586	\$127	\$326	\$1,051	\$576	\$1,173	\$77
Ohio	RP:85%+SCO	\$715	\$131	\$419	\$1,171	\$719	\$1,058	\$92
Oldham	RP:85%+SCO	\$522	\$94	\$297	\$855	\$532	\$814	\$70

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Table D.16: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Owen	RP:85%+SCO	\$516	\$98	\$297	\$868	\$533	\$894	\$76
Pendleton	RP:85%+SCO	\$545	\$93	\$324	\$850	\$557	\$761	\$71
Powell	RP:85%+SCO	\$507	\$102	\$286	\$928	\$529	\$863	\$81
Pulaski	RP:85%+SCO	\$598	\$132	\$330	\$1,072	\$586	\$1,228	\$76
Rowan	RP-HPE:50%+SCO	\$522	\$100	\$219	\$826	\$528	\$726	\$74
Russell	RP:85%+SCO	\$691	\$208	\$344	\$1,568	\$628	\$2,140	\$87
Scott	RP:85%+SCO	\$538	\$126	\$295	\$983	\$522	\$1,270	\$72
Shelby	RP:85%+SCO	\$689	\$168	\$381	\$1,357	\$656	\$1,697	\$86
Simpson	RP:85%+SCO	\$569	\$153	\$319	\$1,068	\$358	\$2,376	\$3
Spencer	RP:85%+SCO	\$573	\$141	\$307	\$1,087	\$542	\$1,418	\$72
Taylor	RP-HPE:50%+SCO	\$677	\$126	\$272	\$1,051	\$684	\$888	\$94
Todd	RP:85%+SCO	\$608	\$130	\$357	\$1,036	\$571	\$1,290	\$63
Trigg	RP:85%+SCO	\$547	\$126	\$299	\$967	\$515	\$1,274	\$63
Trimble	RP:85%+SCO	\$515	\$97	\$296	\$878	\$519	\$888	\$67
Union	RP-HPE:50%+SCO	\$696	\$123	\$318	\$1,094	\$696	\$904	\$87
Warren	RP:85%+SCO	\$605	\$121	\$338	\$1,010	\$597	\$1,115	\$75
Washington	RP:85%+SCO	\$606	\$110	\$348	\$1,003	\$624	\$906	\$85
Wayne	RP:85%+SCO	\$685	\$173	\$360	\$1,358	\$649	\$1,667	\$85
Webster	RP:85%+SCO	\$627	\$115	\$375	\$1,036	\$631	\$964	\$80
Woodford	RP:85%+SCO	\$570	\$118	\$331	\$1,019	\$573	\$1,098	\$80

Table D.17: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$694	\$121	\$373	\$1,029	\$701	\$851	\$91
Allen	RP:85%+SCO	\$519	\$119	\$294	\$981	\$506	\$1,144	\$67
Anderson	RP:85%+SCO	\$571	\$137	\$294	\$1,093	\$542	\$1,410	\$69
Ballard	RP:85%+SCO	\$587	\$105	\$350	\$975	\$587	\$875	\$71
Barren	RP:85%+SCO	\$622	\$113	\$367	\$1,016	\$642	\$914	\$89
Bath	RP-HPE:50%+SCO	\$504	\$84	\$294	\$743	\$516	\$601	\$67
Boone	RP:85%+SCO	\$513	\$90	\$300	\$885	\$521	\$818	\$66
Bourbon	RP:85%+SCO	\$515	\$123	\$265	\$985	\$506	\$1,252	\$73
Boyle	RP-HPE:50%+SCO	\$632	\$111	\$312	\$983	\$638	\$808	\$82
Breckinridge	RP:85%+SCO	\$577	\$148	\$324	\$1,124	\$418	\$2,123	\$14
Bullitt	RP:85%+SCO	\$547	\$112	\$294	\$969	\$527	\$1,091	\$62
Butler	RP-HPE:50%+SCO	\$655	\$116	\$323	\$1,015	\$659	\$835	\$84
Caldwell	RP:85%+SCO	\$530	\$98	\$307	\$842	\$536	\$826	\$70
Calloway	RP:85%+SCO	\$507	\$102	\$280	\$867	\$490	\$983	\$57
Carlisle	RP:85%+SCO	\$584	\$110	\$336	\$978	\$575	\$981	\$67
Carroll	RP:85%+SCO	\$532	\$109	\$291	\$919	\$535	\$1,052	\$74
Casey	RP:85%+SCO	\$613	\$152	\$279	\$1,154	\$388	\$1,958	\$11
Christian	RP:85%+SCO	\$582	\$134	\$320	\$1,042	\$484	\$1,660	\$35
Clark	RP:85%+SCO	\$515	\$115	\$286	\$979	\$530	\$1,093	\$83
Clinton	RP:85%+SCO	\$636	\$133	\$361	\$1,123	\$638	\$1,179	\$88
Crittenden	RP:85%+SCO	\$482	\$110	\$260	\$908	\$469	\$1,073	\$62
Cumberland	RP-HPE:50%+SCO	\$626	\$117	\$296	\$993	\$632	\$847	\$87
Daviess	RP:85%+SCO	\$725	\$153	\$409	\$1,278	\$706	\$1,387	\$88
Edmonson	RP:85%+SCO	\$540	\$123	\$295	\$992	\$493	\$1,350	\$51
Fayette	RP:85%+SCO	\$529	\$112	\$286	\$933	\$534	\$1,097	\$76
Fleming	RP-HPE:50%+SCO	\$572	\$98	\$310	\$853	\$584	\$694	\$77
Franklin	RP:85%+SCO	\$535	\$96	\$310	\$881	\$547	\$883	\$72
Fulton	RP:85%+SCO	\$564	\$101	\$321	\$887	\$575	\$804	\$76
Gallatin	RP:85%+SCO	\$529	\$109	\$291	\$935	\$538	\$1,027	\$77
Graves	RP:85%+SCO	\$553	\$102	\$302	\$932	\$543	\$922	\$62

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Table D.17: Results - Soybeans, Expansion Factor = 1.2, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Grayson	RP:85%+SCO	\$526	\$115	\$283	\$909	\$524	\$1,028	\$75
Green	RP-HPE:50%+SCO	\$644	\$108	\$362	\$952	\$649	\$775	\$80
Greenup	RP-HPE:50%+SCO	\$582	\$105	\$263	\$912	\$589	\$756	\$79
Hancock	RP:85%+SCO	\$651	\$123	\$379	\$1,069	\$652	\$1,032	\$84
Hardin	RP:85%+SCO	\$614	\$122	\$335	\$1,084	\$609	\$1,075	\$79
Harrison	RP:85%+SCO	\$558	\$148	\$285	\$1,083	\$516	\$1,640	\$68
Hart	RP:85%+SCO	\$598	\$111	\$354	\$966	\$609	\$903	\$82
Henderson	RP:85%+SCO	\$701	\$142	\$405	\$1,281	\$688	\$1,276	\$84
Henry	RP:85%+SCO	\$520	\$94	\$283	\$904	\$531	\$841	\$70
Hickman	RP:85%+SCO	\$614	\$133	\$338	\$1,109	\$573	\$1,336	\$63
Hopkins	RP:85%+SCO	\$616	\$120	\$346	\$1,024	\$613	\$1,073	\$79
Jefferson	RP:85%+SCO	\$558	\$114	\$315	\$961	\$544	\$1,089	\$66
Jessamine	RP:85%+SCO	\$565	\$121	\$321	\$1,026	\$555	\$1,180	\$73
Larue	RP:85%+SCO	\$693	\$139	\$394	\$1,153	\$686	\$1,236	\$88
Lewis	RP-HPE:50%+SCO	\$590	\$111	\$259	\$932	\$598	\$806	\$83
Lincoln	RP-HPE:50%+SCO	\$596	\$117	\$264	\$967	\$599	\$878	\$83
Livingston	RP:85%+SCO	\$486	\$97	\$271	\$829	\$480	\$936	\$60
Logan	RP:85%+SCO	\$589	\$122	\$331	\$980	\$563	\$1,186	\$65
Lyon	RP:85%+SCO	\$572	\$109	\$319	\$951	\$571	\$972	\$73
Madison	RP:85%+SCO	\$540	\$107	\$300	\$945	\$562	\$927	\$86
Marion	RP-HPE:50%+SCO	\$641	\$114	\$256	\$991	\$645	\$835	\$83
Marshall	RP:85%+SCO	\$492	\$101	\$280	\$834	\$487	\$931	\$64
Mason	RP:85%+SCO	\$594	\$117	\$345	\$988	\$602	\$1,051	\$82
McCracken	RP:85%+SCO	\$551	\$155	\$298	\$1,097	\$384	\$2,192	\$11
McLean	RP:85%+SCO	\$668	\$126	\$385	\$1,111	\$663	\$1,096	\$81
Meade	RP:85%+SCO	\$575	\$149	\$312	\$1,079	\$416	\$2,144	\$15
Mercer	RP:85%+SCO	\$577	\$124	\$328	\$998	\$567	\$1,193	\$75
Metcalfe	RP:85%+SCO	\$616	\$132	\$340	\$1,100	\$594	\$1,287	\$71
Monroe	RP-HPE:50%+SCO	\$667	\$123	\$320	\$1,040	\$675	\$894	\$92
Montgomery	RP:85%+SCO	\$508	\$124	\$255	\$948	\$488	\$1,299	\$67
Muhlenberg	RP:85%+SCO	\$596	\$124	\$337	\$1,011	\$589	\$1,114	\$77
Nelson	RP:85%+SCO	\$587	\$126	\$325	\$1,074	\$577	\$1,173	\$75
Ohio	RP:85%+SCO	\$715	\$131	\$417	\$1,179	\$719	\$1,059	\$92
Oldham	RP:85%+SCO	\$521	\$93	\$296	\$857	\$532	\$813	\$69
Owen	RP:85%+SCO	\$515	\$98	\$301	\$866	\$533	\$896	\$76
Pendleton	RP:85%+SCO	\$545	\$93	\$329	\$857	\$558	\$762	\$71
Powell	RP-HPE:50%+SCO	\$523	\$113	\$210	\$947	\$529	\$861	\$80
Pulaski	RP:85%+SCO	\$598	\$130	\$325	\$1,087	\$586	\$1,227	\$75
Rowan	RP-HPE:50%+SCO	\$522	\$99	\$257	\$829	\$528	\$726	\$74
Russell	RP:85%+SCO	\$691	\$205	\$350	\$1,565	\$628	\$2,139	\$83
Scott	RP:85%+SCO	\$538	\$123	\$296	\$977	\$522	\$1,265	\$70
Shelby	RP:85%+SCO	\$689	\$167	\$381	\$1,344	\$656	\$1,707	\$84
Simpson	RP:85%+SCO	\$568	\$149	\$317	\$1,058	\$359	\$2,369	\$3
Spencer	RP:85%+SCO	\$572	\$138	\$304	\$1,077	\$542	\$1,417	\$69
Taylor	RP-HPE:50%+SCO	\$677	\$125	\$286	\$1,060	\$684	\$888	\$93
Todd	RP:85%+SCO	\$608	\$128	\$358	\$1,021	\$572	\$1,291	\$61
Trigg	RP:85%+SCO	\$546	\$124	\$296	\$968	\$515	\$1,272	\$62
Trimble	RP:85%+SCO	\$515	\$96	\$302	\$861	\$519	\$891	\$66
Union	RP-HPE:50%+SCO	\$696	\$123	\$348	\$1,092	\$696	\$903	\$87
Warren	RP:85%+SCO	\$605	\$120	\$344	\$1,014	\$597	\$1,116	\$74
Washington	RP:85%+SCO	\$606	\$110	\$352	\$1,019	\$624	\$910	\$85
Wayne	RP:85%+SCO	\$686	\$170	\$359	\$1,400	\$649	\$1,662	\$83
Webster	RP:85%+SCO	\$626	\$114	\$375	\$1,039	\$631	\$965	\$80
Woodford	RP:85%+SCO	\$570	\$118	\$332	\$1,022	\$573	\$1,099	\$79

Table D.18: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$701	\$127	\$280	\$1,080	\$708	\$898	\$95
Allen	RP:85%+SCO	\$533	\$139	\$292	\$1,101	\$507	\$1,375	\$69
Anderson	RP:85%+SCO	\$592	\$165	\$315	\$1,234	\$539	\$1,723	\$70
Ballard	RP:85%+SCO	\$597	\$112	\$353	\$990	\$589	\$984	\$71
Barren	RP:85%+SCO	\$633	\$119	\$368	\$1,054	\$646	\$1,010	\$89
Bath	RP-HPE:50%+SCO	\$507	\$86	\$282	\$749	\$518	\$612	\$68
Boone	RP:85%+SCO	\$522	\$100	\$283	\$921	\$520	\$954	\$65
Bourbon	RP:85%+SCO	\$533	\$144	\$290	\$1,133	\$497	\$1,543	\$69
Boyle	RP-HPE:50%+SCO	\$634	\$119	\$220	\$988	\$641	\$869	\$87
Breckinridge	RP:85%+SCO	\$594	\$172	\$319	\$1,247	\$433	\$2,317	\$21
Bullitt	RP:85%+SCO	\$559	\$131	\$302	\$1,039	\$526	\$1,282	\$66
Butler	RP:85%+SCO	\$650	\$115	\$375	\$1,047	\$664	\$904	\$88
Caldwell	RP:85%+SCO	\$541	\$105	\$312	\$878	\$535	\$950	\$67
Calloway	RP:85%+SCO	\$516	\$115	\$276	\$953	\$476	\$1,203	\$51
Carlisle	RP:85%+SCO	\$599	\$122	\$333	\$1,088	\$574	\$1,154	\$66
Carroll	RP:85%+SCO	\$542	\$125	\$289	\$982	\$526	\$1,282	\$71
Casey	RP:85%+SCO	\$625	\$197	\$290	\$1,330	\$401	\$2,086	\$19
Christian	RP:85%+SCO	\$580	\$160	\$332	\$1,157	\$365	\$2,469	\$2
Clark	RP:85%+SCO	\$532	\$129	\$293	\$1,020	\$531	\$1,282	\$81
Clinton	RP:85%+SCO	\$652	\$146	\$375	\$1,177	\$642	\$1,340	\$88
Crittenden	RP:85%+SCO	\$492	\$133	\$264	\$1,011	\$450	\$1,405	\$57
Cumberland	RP-HPE:50%+SCO	\$630	\$126	\$235	\$1,033	\$636	\$912	\$93
Daviess	RP:85%+SCO	\$742	\$175	\$405	\$1,420	\$706	\$1,653	\$90
Edmonson	RP:85%+SCO	\$541	\$158	\$303	\$1,149	\$337	\$2,430	\$2
Fayette	RP:85%+SCO	\$543	\$131	\$286	\$1,010	\$533	\$1,317	\$78
Fleming	RP-HPE:50%+SCO	\$577	\$101	\$315	\$883	\$589	\$718	\$79
Franklin	RP:85%+SCO	\$546	\$108	\$318	\$928	\$549	\$1,018	\$73
Fulton	RP:85%+SCO	\$573	\$105	\$342	\$955	\$576	\$883	\$73
Gallatin	RP:85%+SCO	\$543	\$122	\$287	\$1,025	\$531	\$1,230	\$72
Graves	RP:85%+SCO	\$565	\$113	\$328	\$989	\$541	\$1,086	\$61
Grayson	RP:85%+SCO	\$516	\$143	\$290	\$1,018	\$388	\$1,990	\$20
Green	RP-HPE:50%+SCO	\$648	\$113	\$326	\$980	\$653	\$810	\$83
Greenup	RP:85%+SCO	\$571	\$103	\$310	\$902	\$593	\$820	\$85
Hancock	RP:85%+SCO	\$665	\$134	\$385	\$1,124	\$656	\$1,169	\$84
Hardin	RP:85%+SCO	\$624	\$136	\$338	\$1,099	\$604	\$1,269	\$78
Harrison	RP:85%+SCO	\$563	\$193	\$295	\$1,325	\$414	\$2,556	\$29
Hart	RP:85%+SCO	\$609	\$116	\$360	\$984	\$612	\$991	\$81
Henderson	RP:85%+SCO	\$720	\$164	\$401	\$1,350	\$696	\$1,510	\$90
Henry	RP:85%+SCO	\$534	\$102	\$305	\$990	\$534	\$972	\$67
Hickman	RP:85%+SCO	\$612	\$174	\$349	\$1,297	\$436	\$2,394	\$16
Hopkins	RP:85%+SCO	\$628	\$134	\$353	\$1,116	\$613	\$1,244	\$80
Jefferson	RP:85%+SCO	\$573	\$128	\$326	\$1,034	\$544	\$1,271	\$65
Jessamine	RP:85%+SCO	\$579	\$140	\$317	\$1,058	\$550	\$1,431	\$72
Larue	RP:85%+SCO	\$706	\$156	\$380	\$1,258	\$687	\$1,430	\$92
Lewis	RP:85%+SCO	\$581	\$110	\$326	\$965	\$603	\$874	\$89
Lincoln	RP:85%+SCO	\$587	\$112	\$344	\$985	\$602	\$972	\$85
Livingston	RP:85%+SCO	\$497	\$111	\$265	\$932	\$475	\$1,122	\$60
Logan	RP:85%+SCO	\$603	\$138	\$344	\$1,060	\$545	\$1,482	\$56
Lyon	RP:85%+SCO	\$583	\$121	\$318	\$971	\$571	\$1,118	\$74
Madison	RP:85%+SCO	\$551	\$118	\$315	\$1,044	\$565	\$1,065	\$86
Marion	RP-HPE:50%+SCO	\$644	\$121	\$261	\$1,044	\$648	\$887	\$88
Marshall	RP:85%+SCO	\$502	\$114	\$267	\$897	\$485	\$1,106	\$64
Mason	RP:85%+SCO	\$608	\$127	\$355	\$1,063	\$602	\$1,202	\$79
McCracken	RP:85%+SCO	\$568	\$183	\$309	\$1,297	\$398	\$2,401	\$17
McLean	RP:85%+SCO	\$681	\$141	\$391	\$1,143	\$667	\$1,262	\$84
Meade	RP:85%+SCO	\$592	\$172	\$324	\$1,455	\$430	\$2,317	\$21
Mercer	RP:85%+SCO	\$587	\$144	\$325	\$1,080	\$545	\$1,524	\$68
Metcalfe	RP:85%+SCO	\$633	\$155	\$347	\$1,186	\$596	\$1,526	\$77
Monroe	RP:85%+SCO	\$656	\$120	\$391	\$1,069	\$680	\$958	\$98

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Table D.18: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Montgomery	RP:85%+SCO	\$510	\$159	\$277	\$1,151	\$380	\$2,176	\$24
Muhlenberg	RP:85%+SCO	\$608	\$141	\$319	\$1,109	\$591	\$1,287	\$82
Nelson	RP:85%+SCO	\$599	\$147	\$323	\$1,172	\$576	\$1,393	\$80
Ohio	RP:85%+SCO	\$728	\$139	\$419	\$1,188	\$725	\$1,175	\$91
Oldham	RP:85%+SCO	\$533	\$100	\$313	\$949	\$531	\$924	\$65
Owen	RP:85%+SCO	\$531	\$106	\$301	\$956	\$535	\$1,022	\$73
Pendleton	RP:85%+SCO	\$552	\$96	\$333	\$910	\$559	\$820	\$69
Powell	RP:85%+SCO	\$519	\$110	\$285	\$931	\$532	\$973	\$80
Pulaski	RP:85%+SCO	\$611	\$150	\$335	\$1,172	\$585	\$1,453	\$78
Rowan	RP-HPE:50%+SCO	\$525	\$109	\$174	\$856	\$532	\$794	\$81
Russell	RP:85%+SCO	\$710	\$293	\$360	\$1,816	\$520	\$3,524	\$44
Scott	RP:85%+SCO	\$539	\$157	\$303	\$1,167	\$402	\$2,203	\$22
Shelby	RP:85%+SCO	\$720	\$204	\$387	\$1,493	\$661	\$2,120	\$89
Simpson	RP:85%+SCO	\$592	\$174	\$333	\$1,265	\$375	\$2,552	\$5
Spencer	RP:85%+SCO	\$593	\$165	\$312	\$1,260	\$538	\$1,726	\$69
Taylor	RP-HPE:50%+SCO	\$683	\$133	\$287	\$1,083	\$689	\$947	\$99
Todd	RP:85%+SCO	\$609	\$156	\$361	\$1,187	\$421	\$2,342	\$8
Trigg	RP:85%+SCO	\$544	\$153	\$299	\$1,145	\$398	\$2,133	\$19
Trimble	RP:85%+SCO	\$526	\$108	\$277	\$954	\$519	\$1,037	\$66
Union	RP:85%+SCO	\$688	\$120	\$411	\$1,075	\$700	\$968	\$90
Warren	RP:85%+SCO	\$620	\$130	\$356	\$1,054	\$593	\$1,290	\$70
Washington	RP:85%+SCO	\$614	\$117	\$348	\$1,039	\$625	\$992	\$86
Wayne	RP:85%+SCO	\$711	\$205	\$389	\$1,592	\$650	\$2,053	\$86
Webster	RP:85%+SCO	\$637	\$122	\$370	\$1,054	\$633	\$1,073	\$80
Woodford	RP:85%+SCO	\$587	\$133	\$325	\$1,072	\$573	\$1,302	\$78

Table D.19: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$701	\$127	\$290	\$1,073	\$708	\$899	\$95
Allen	RP:85%+SCO	\$533	\$137	\$293	\$1,083	\$507	\$1,377	\$68
Anderson	RP:85%+SCO	\$591	\$160	\$311	\$1,210	\$539	\$1,719	\$67
Ballard	RP:85%+SCO	\$597	\$112	\$351	\$985	\$589	\$987	\$71
Barren	RP:85%+SCO	\$632	\$119	\$367	\$1,054	\$646	\$1,006	\$88
Bath	RP-HPE:50%+SCO	\$507	\$86	\$282	\$755	\$518	\$612	\$68
Boone	RP:85%+SCO	\$523	\$99	\$283	\$925	\$519	\$957	\$64
Bourbon	RP:85%+SCO	\$533	\$141	\$290	\$1,053	\$497	\$1,538	\$67
Boyle	RP-HPE:50%+SCO	\$634	\$119	\$224	\$990	\$641	\$867	\$87
Breckinridge	RP:85%+SCO	\$594	\$168	\$324	\$1,164	\$433	\$2,313	\$20
Bullitt	RP:85%+SCO	\$559	\$128	\$302	\$993	\$526	\$1,279	\$64
Butler	RP:85%+SCO	\$650	\$115	\$383	\$1,049	\$664	\$903	\$88
Caldwell	RP:85%+SCO	\$541	\$104	\$310	\$873	\$535	\$947	\$67
Calloway	RP:85%+SCO	\$516	\$113	\$282	\$914	\$476	\$1,203	\$50
Carlisle	RP:85%+SCO	\$599	\$121	\$344	\$1,043	\$574	\$1,158	\$65
Carroll	RP:85%+SCO	\$542	\$123	\$297	\$974	\$526	\$1,283	\$69
Casey	RP:85%+SCO	\$625	\$178	\$290	\$1,317	\$401	\$2,083	\$17
Christian	RP:85%+SCO	\$579	\$155	\$324	\$1,108	\$364	\$2,462	\$2
Clark	RP:85%+SCO	\$532	\$127	\$292	\$1,013	\$531	\$1,282	\$80
Clinton	RP:85%+SCO	\$652	\$146	\$377	\$1,175	\$643	\$1,344	\$88
Crittenden	RP:85%+SCO	\$492	\$131	\$263	\$1,013	\$450	\$1,408	\$56
Cumberland	RP-HPE:50%+SCO	\$630	\$126	\$239	\$1,018	\$636	\$914	\$93
Daviess	RP:85%+SCO	\$741	\$173	\$412	\$1,406	\$706	\$1,646	\$89
Edmonson	RP:85%+SCO	\$541	\$155	\$302	\$1,105	\$336	\$2,438	\$2
Fayette	RP:85%+SCO	\$543	\$129	\$285	\$1,014	\$533	\$1,318	\$76

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Table D.19: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Fleming	RP-HPE:50%+SCO	\$577	\$100	\$309	\$876	\$589	\$718	\$79
Franklin	RP:85%+SCO	\$546	\$107	\$314	\$933	\$549	\$1,017	\$72
Fulton	RP:85%+SCO	\$573	\$105	\$341	\$960	\$576	\$883	\$73
Gallatin	RP:85%+SCO	\$543	\$121	\$284	\$971	\$531	\$1,236	\$71
Graves	RP:85%+SCO	\$564	\$112	\$324	\$996	\$541	\$1,088	\$60
Grayson	RP:85%+SCO	\$517	\$143	\$287	\$1,013	\$388	\$1,991	\$19
Green	RP-HPE:50%+SCO	\$648	\$112	\$338	\$962	\$653	\$809	\$83
Greenup	RP:85%+SCO	\$572	\$103	\$313	\$920	\$593	\$822	\$84
Hancock	RP:85%+SCO	\$665	\$133	\$386	\$1,129	\$656	\$1,167	\$83
Hardin	RP:85%+SCO	\$623	\$135	\$339	\$1,090	\$604	\$1,268	\$78
Harrison	RP:85%+SCO	\$564	\$189	\$295	\$1,277	\$414	\$2,564	\$27
Hart	RP:85%+SCO	\$609	\$116	\$361	\$986	\$612	\$993	\$80
Henderson	RP:85%+SCO	\$720	\$162	\$401	\$1,373	\$696	\$1,506	\$88
Henry	RP:85%+SCO	\$534	\$101	\$306	\$921	\$533	\$968	\$67
Hickman	RP:85%+SCO	\$612	\$169	\$338	\$1,215	\$436	\$2,389	\$15
Hopkins	RP:85%+SCO	\$628	\$134	\$352	\$1,091	\$614	\$1,249	\$79
Jefferson	RP:85%+SCO	\$574	\$126	\$325	\$1,010	\$544	\$1,271	\$64
Jessamine	RP:85%+SCO	\$579	\$138	\$314	\$1,074	\$550	\$1,431	\$71
Larue	RP:85%+SCO	\$706	\$154	\$380	\$1,266	\$687	\$1,426	\$90
Lewis	RP:85%+SCO	\$581	\$110	\$325	\$967	\$603	\$876	\$89
Lincoln	RP:85%+SCO	\$587	\$112	\$349	\$981	\$602	\$975	\$84
Livingston	RP:85%+SCO	\$497	\$109	\$268	\$868	\$475	\$1,122	\$59
Logan	RP:85%+SCO	\$603	\$136	\$336	\$1,043	\$545	\$1,480	\$54
Lyon	RP:85%+SCO	\$583	\$119	\$317	\$980	\$571	\$1,115	\$73
Madison	RP:85%+SCO	\$551	\$118	\$315	\$1,049	\$564	\$1,064	\$85
Marion	RP-HPE:50%+SCO	\$644	\$121	\$270	\$1,042	\$648	\$885	\$87
Marshall	RP:85%+SCO	\$502	\$113	\$267	\$903	\$485	\$1,104	\$63
Mason	RP:85%+SCO	\$608	\$126	\$354	\$1,063	\$602	\$1,202	\$79
McCracken	RP:85%+SCO	\$569	\$179	\$306	\$1,249	\$399	\$2,412	\$17
McLean	RP:85%+SCO	\$681	\$140	\$396	\$1,158	\$667	\$1,260	\$83
Meade	RP:85%+SCO	\$591	\$168	\$322	\$1,164	\$430	\$2,314	\$21
Mercer	RP:85%+SCO	\$587	\$142	\$327	\$1,067	\$545	\$1,525	\$66
Metcalfe	RP:85%+SCO	\$632	\$152	\$345	\$1,198	\$596	\$1,526	\$74
Monroe	RP-HPE:50%+SCO	\$672	\$132	\$237	\$1,098	\$680	\$958	\$97
Montgomery	RP:85%+SCO	\$510	\$155	\$272	\$1,064	\$380	\$2,166	\$23
Muhlenberg	RP:85%+SCO	\$608	\$139	\$324	\$1,086	\$591	\$1,283	\$80
Nelson	RP:85%+SCO	\$598	\$144	\$323	\$1,169	\$576	\$1,389	\$78
Ohio	RP:85%+SCO	\$729	\$139	\$401	\$1,215	\$725	\$1,179	\$91
Oldham	RP:85%+SCO	\$533	\$99	\$315	\$943	\$531	\$922	\$65
Owen	RP:85%+SCO	\$531	\$105	\$301	\$946	\$535	\$1,025	\$72
Pendleton	RP:85%+SCO	\$552	\$96	\$332	\$888	\$559	\$821	\$69
Powell	RP:85%+SCO	\$519	\$110	\$281	\$927	\$532	\$974	\$80
Pulaski	RP:85%+SCO	\$611	\$148	\$332	\$1,187	\$585	\$1,448	\$76
Rowan	RP-HPE:50%+SCO	\$525	\$109	\$173	\$855	\$532	\$795	\$80
Russell	RP:85%+SCO	\$710	\$288	\$358	\$1,803	\$520	\$3,523	\$42
Scott	RP:85%+SCO	\$539	\$154	\$303	\$1,131	\$402	\$2,195	\$21
Shelby	RP:85%+SCO	\$720	\$201	\$385	\$1,510	\$661	\$2,124	\$87
Simpson	RP:85%+SCO	\$592	\$168	\$334	\$1,131	\$374	\$2,555	\$5
Spencer	RP:85%+SCO	\$593	\$160	\$309	\$1,260	\$538	\$1,725	\$66
Taylor	RP-HPE:50%+SCO	\$683	\$133	\$287	\$1,084	\$689	\$947	\$99
Todd	RP:85%+SCO	\$609	\$154	\$357	\$1,156	\$421	\$2,342	\$7
Trigg	RP:85%+SCO	\$544	\$151	\$306	\$1,070	\$398	\$2,136	\$18
Trimble	RP:85%+SCO	\$526	\$107	\$271	\$932	\$519	\$1,034	\$66
Union	RP:85%+SCO	\$688	\$121	\$413	\$1,084	\$700	\$971	\$90
Warren	RP:85%+SCO	\$620	\$129	\$361	\$1,052	\$593	\$1,291	\$69
Washington	RP:85%+SCO	\$614	\$116	\$346	\$1,040	\$625	\$989	\$85
Wayne	RP:85%+SCO	\$711	\$202	\$383	\$1,496	\$650	\$2,049	\$84
Webster	RP:85%+SCO	\$637	\$122	\$370	\$1,039	\$633	\$1,078	\$79
Woodford	RP:85%+SCO	\$587	\$132	\$333	\$1,061	\$573	\$1,302	\$77

Table D.20: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$700	\$127	\$320	\$1,085	\$708	\$900	\$94
Allen	RP:85%+SCO	\$533	\$137	\$289	\$1,079	\$507	\$1,381	\$68
Anderson	RP:85%+SCO	\$591	\$157	\$310	\$1,206	\$539	\$1,716	\$64
Ballard	RP:85%+SCO	\$597	\$112	\$345	\$981	\$589	\$987	\$70
Barren	RP:85%+SCO	\$632	\$118	\$367	\$1,068	\$646	\$1,000	\$87
Bath	RP-HPE:50%+SCO	\$507	\$86	\$286	\$762	\$518	\$612	\$68
Boone	RP:85%+SCO	\$523	\$98	\$283	\$908	\$519	\$960	\$63
Bourbon	RP:85%+SCO	\$533	\$138	\$284	\$1,051	\$497	\$1,534	\$65
Boyle	RP-HPE:50%+SCO	\$634	\$118	\$275	\$996	\$641	\$865	\$87
Breckinridge	RP:85%+SCO	\$594	\$166	\$320	\$1,178	\$433	\$2,298	\$19
Bullitt	RP:85%+SCO	\$559	\$125	\$303	\$984	\$526	\$1,276	\$61
Butler	RP:85%+SCO	\$650	\$115	\$389	\$1,054	\$663	\$902	\$87
Caldwell	RP:85%+SCO	\$541	\$104	\$313	\$873	\$535	\$942	\$66
Calloway	RP:85%+SCO	\$517	\$112	\$287	\$924	\$476	\$1,206	\$49
Carlisle	RP:85%+SCO	\$599	\$121	\$344	\$1,038	\$574	\$1,163	\$64
Carroll	RP:85%+SCO	\$542	\$122	\$298	\$977	\$526	\$1,283	\$68
Casey	RP:85%+SCO	\$625	\$159	\$287	\$1,180	\$400	\$2,084	\$14
Christian	RP:85%+SCO	\$579	\$153	\$328	\$1,109	\$364	\$2,461	\$1
Clark	RP:85%+SCO	\$532	\$126	\$289	\$995	\$531	\$1,282	\$79
Clinton	RP:85%+SCO	\$652	\$145	\$374	\$1,168	\$643	\$1,348	\$87
Crittenden	RP:85%+SCO	\$492	\$130	\$261	\$1,016	\$450	\$1,409	\$55
Cumberland	RP-HPE:50%+SCO	\$630	\$126	\$249	\$1,016	\$636	\$915	\$92
Daviess	RP:85%+SCO	\$742	\$173	\$411	\$1,392	\$706	\$1,649	\$88
Edmonson	RP:85%+SCO	\$541	\$153	\$300	\$1,072	\$336	\$2,439	\$1
Fayette	RP:85%+SCO	\$543	\$127	\$289	\$1,023	\$533	\$1,315	\$74
Fleming	RP-HPE:50%+SCO	\$577	\$101	\$312	\$881	\$589	\$718	\$79
Franklin	RP:85%+SCO	\$546	\$106	\$315	\$967	\$549	\$1,018	\$71
Fulton	RP:85%+SCO	\$573	\$104	\$335	\$965	\$576	\$882	\$73
Gallatin	RP:85%+SCO	\$543	\$120	\$279	\$984	\$532	\$1,239	\$70
Graves	RP:85%+SCO	\$564	\$112	\$326	\$984	\$541	\$1,089	\$60
Grayson	RP:85%+SCO	\$516	\$141	\$285	\$994	\$388	\$1,983	\$19
Green	RP-HPE:50%+SCO	\$648	\$112	\$326	\$961	\$653	\$809	\$83
Greenup	RP:85%+SCO	\$572	\$103	\$317	\$931	\$593	\$823	\$84
Hancock	RP:85%+SCO	\$665	\$132	\$387	\$1,131	\$656	\$1,164	\$82
Hardin	RP:85%+SCO	\$623	\$134	\$340	\$1,090	\$604	\$1,266	\$77
Harrison	RP:85%+SCO	\$564	\$187	\$296	\$1,276	\$413	\$2,575	\$26
Hart	RP:85%+SCO	\$609	\$117	\$362	\$1,011	\$612	\$997	\$80
Henderson	RP:85%+SCO	\$720	\$161	\$382	\$1,374	\$696	\$1,505	\$87
Henry	RP:85%+SCO	\$534	\$100	\$305	\$924	\$533	\$965	\$66
Hickman	RP:85%+SCO	\$612	\$168	\$345	\$1,236	\$436	\$2,396	\$14
Hopkins	RP:85%+SCO	\$629	\$133	\$348	\$1,072	\$614	\$1,252	\$78
Jefferson	RP:85%+SCO	\$574	\$125	\$329	\$1,031	\$544	\$1,275	\$62
Jessamine	RP:85%+SCO	\$578	\$137	\$321	\$1,085	\$549	\$1,430	\$69
Larue	RP:85%+SCO	\$706	\$153	\$379	\$1,263	\$687	\$1,423	\$88
Lewis	RP:85%+SCO	\$581	\$110	\$323	\$964	\$603	\$878	\$89
Lincoln	RP:85%+SCO	\$587	\$112	\$352	\$973	\$602	\$977	\$84
Livingston	RP:85%+SCO	\$497	\$108	\$271	\$864	\$475	\$1,119	\$58
Logan	RP:85%+SCO	\$603	\$134	\$334	\$1,043	\$545	\$1,474	\$53
Lyon	RP:85%+SCO	\$582	\$119	\$318	\$987	\$571	\$1,116	\$72
Madison	RP:85%+SCO	\$551	\$117	\$315	\$1,045	\$564	\$1,062	\$85
Marion	RP-HPE:50%+SCO	\$644	\$121	\$275	\$1,032	\$648	\$884	\$87
Marshall	RP:85%+SCO	\$502	\$112	\$266	\$904	\$485	\$1,101	\$62
Mason	RP:85%+SCO	\$608	\$126	\$351	\$1,059	\$602	\$1,206	\$78
McCracken	RP:85%+SCO	\$570	\$177	\$301	\$1,247	\$400	\$2,423	\$16
McLean	RP:85%+SCO	\$681	\$139	\$395	\$1,187	\$666	\$1,258	\$82
Meade	RP:85%+SCO	\$591	\$165	\$317	\$1,137	\$430	\$2,309	\$20
Mercer	RP:85%+SCO	\$587	\$140	\$324	\$1,056	\$545	\$1,528	\$64
Metcalfe	RP:85%+SCO	\$632	\$150	\$352	\$1,204	\$596	\$1,522	\$72
Monroe	RP-HPE:50%+SCO	\$672	\$132	\$238	\$1,093	\$680	\$958	\$97

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Table D.20: Results - Soybeans, Expansion Factor = 1.5, Farm-to-Area Cor.  
= 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Montgomery	RP:85%+SCO	\$510	\$152	\$257	\$1,062	\$380	\$2,159	\$22
Muhlenberg	RP:85%+SCO	\$608	\$138	\$329	\$1,069	\$591	\$1,280	\$79
Nelson	RP:85%+SCO	\$598	\$142	\$312	\$1,148	\$576	\$1,387	\$76
Ohio	RP:85%+SCO	\$729	\$140	\$406	\$1,231	\$725	\$1,182	\$91
Oldham	RP:85%+SCO	\$533	\$98	\$301	\$907	\$531	\$921	\$64
Owen	RP:85%+SCO	\$531	\$105	\$301	\$926	\$535	\$1,033	\$71
Pendleton	RP:85%+SCO	\$552	\$96	\$335	\$883	\$559	\$823	\$69
Powell	RP:85%+SCO	\$519	\$110	\$282	\$933	\$532	\$974	\$79
Pulaski	RP:85%+SCO	\$611	\$146	\$335	\$1,191	\$585	\$1,444	\$74
Rowan	RP-HPE:50%+SCO	\$525	\$109	\$196	\$856	\$532	\$796	\$80
Russell	RP:85%+SCO	\$711	\$284	\$357	\$1,795	\$520	\$3,524	\$40
Scott	RP:85%+SCO	\$539	\$151	\$303	\$1,075	\$401	\$2,193	\$20
Shelby	RP:85%+SCO	\$721	\$198	\$388	\$1,546	\$661	\$2,121	\$83
Simpson	RP:85%+SCO	\$591	\$165	\$311	\$1,117	\$373	\$2,554	\$4
Spencer	RP:85%+SCO	\$593	\$157	\$302	\$1,244	\$538	\$1,724	\$63
Taylor	RP-HPE:50%+SCO	\$683	\$133	\$299	\$1,080	\$689	\$948	\$98
Todd	RP:85%+SCO	\$608	\$152	\$353	\$1,157	\$421	\$2,332	\$7
Trigg	RP:85%+SCO	\$544	\$150	\$303	\$1,075	\$398	\$2,142	\$17
Trimble	RP:85%+SCO	\$526	\$106	\$266	\$930	\$519	\$1,033	\$65
Union	RP:85%+SCO	\$688	\$121	\$414	\$1,090	\$700	\$973	\$90
Warren	RP:85%+SCO	\$620	\$128	\$354	\$1,049	\$594	\$1,289	\$68
Washington	RP:85%+SCO	\$614	\$116	\$341	\$1,037	\$625	\$987	\$85
Wayne	RP:85%+SCO	\$710	\$200	\$388	\$1,549	\$650	\$2,048	\$81
Webster	RP:85%+SCO	\$637	\$122	\$370	\$1,050	\$633	\$1,082	\$79
Woodford	RP:85%+SCO	\$586	\$131	\$331	\$1,069	\$572	\$1,303	\$76

### D.3 Wheat

#### Tables

Table D.21: Wheat - Optimal Insurance Scheme Count by County

Spread	Farm-Area Cor.	Opt. Ins.	Count(n)
1.1	0.25	RP-HPE: 50% + SCO	44
1.1	0.25	RP: 80% + SCO	9
1.1	0.25	RP: 85% + SCO	8
1.1	0.25	RP: 75% + SCO	6
1.1	0.5	RP-HPE: 50% + SCO	45
1.1	0.5	RP: 80% + SCO	10
1.1	0.5	RP: 85% + SCO	6
1.1	0.5	RP: 75% + SCO	5
1.1	0.5	RP: 70% + SCO	1
1.1	0.75	RP-HPE: 50% + SCO	47
1.1	0.75	RP: 80% + SCO	10
1.1	0.75	RP: 75% + SCO	7
1.1	0.75	RP: 85% + SCO	3
1.2	0.25	RP-HPE: 50% + SCO	41
1.2	0.25	RP: 80% + SCO	11
1.2	0.25	RP: 85% + SCO	9
1.2	0.25	RP: 75% + SCO	6
1.2	0.5	RP-HPE: 50% + SCO	41
1.2	0.5	RP: 80% + SCO	11
1.2	0.5	RP: 85% + SCO	8
1.2	0.5	RP: 75% + SCO	6
1.2	0.5	RP: 70% + SCO	1
1.2	0.75	RP-HPE: 50% + SCO	43
1.2	0.75	RP: 80% + SCO	11
1.2	0.75	RP: 85% + SCO	6
1.2	0.75	RP: 75% + SCO	6
1.2	0.75	RP: 70% + SCO	1
1.5	0.25	RP-HPE: 50% + SCO	29
1.5	0.25	RP: 85% + SCO	17
1.5	0.25	RP: 80% + SCO	10
1.5	0.25	RP: 75% + SCO	10
1.5	0.25	RP: 70% + SCO	1
1.5	0.5	RP-HPE: 50% + SCO	31
1.5	0.5	RP: 85% + SCO	14
1.5	0.5	RP: 80% + SCO	13

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Table D.21: Wheat - Optimal Insurance Scheme Count  
by County (cont.)

Spread	Farm-Area Cor.	Opt. Ins.	Count(n)
1.5	0.5	RP: 75% + SCO	8
1.5	0.5	RP: 70% + SCO	1
1.5	0.75	RP-HPE: 50% + SCO	32
1.5	0.75	RP: 80% + SCO	14
1.5	0.75	RP: 85% + SCO	12
1.5	0.75	RP: 75% + SCO	6
1.5	0.75	RP: 70% + SCO	3



## Maps

Figure D.19: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25.

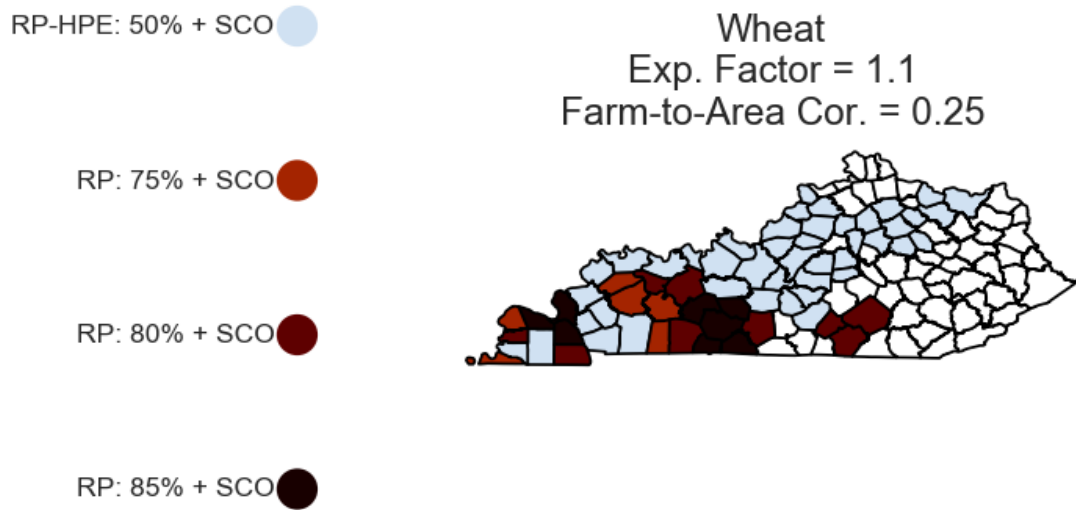


Figure D.20: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5.

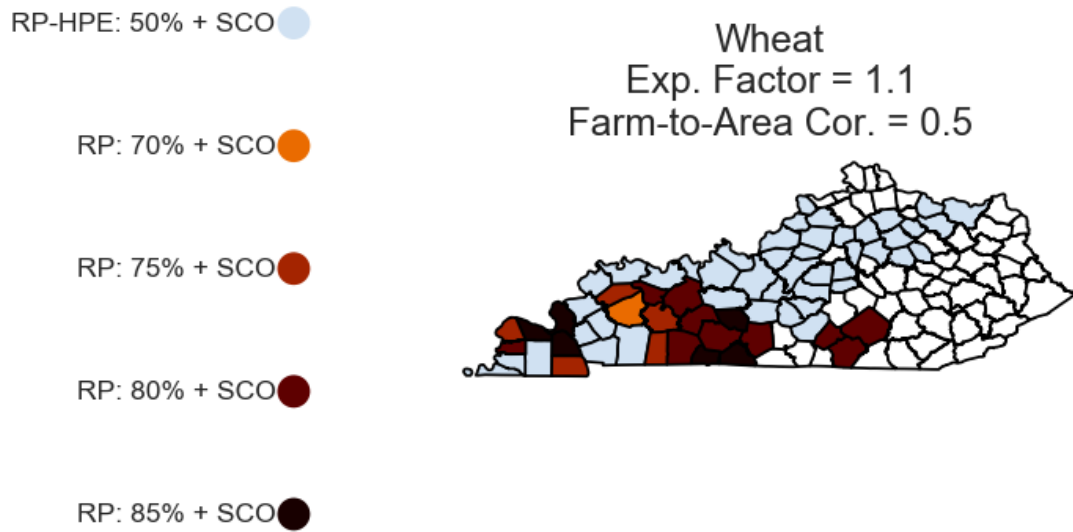


Figure D.21: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75.

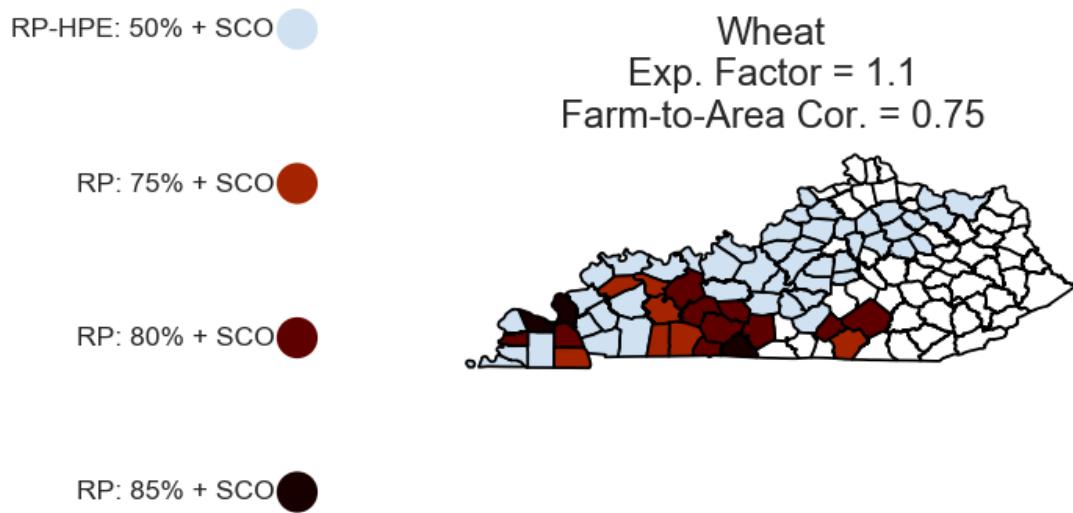


Figure D.22: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25.

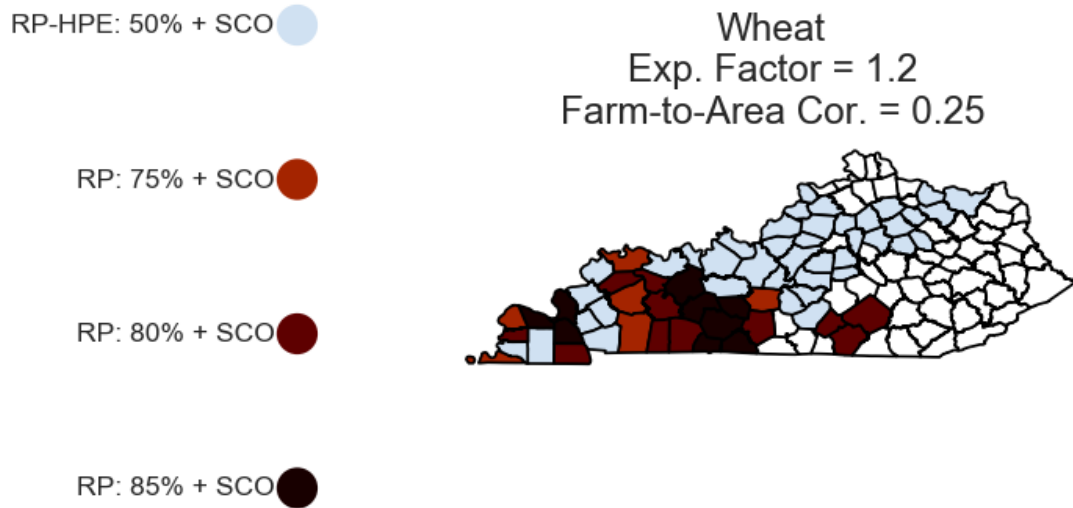


Figure D.23: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5.

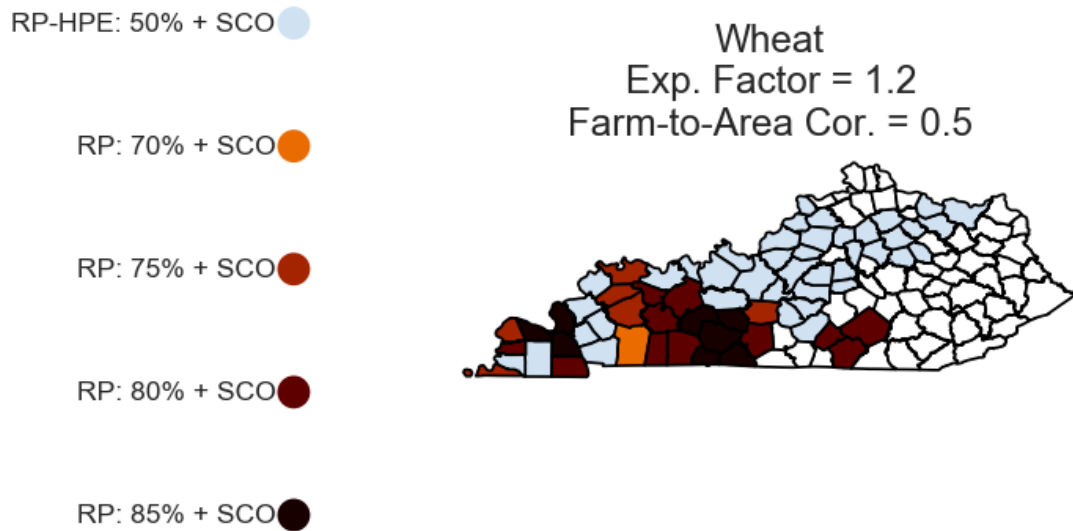


Figure D.24: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75.



Figure D.25: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25.

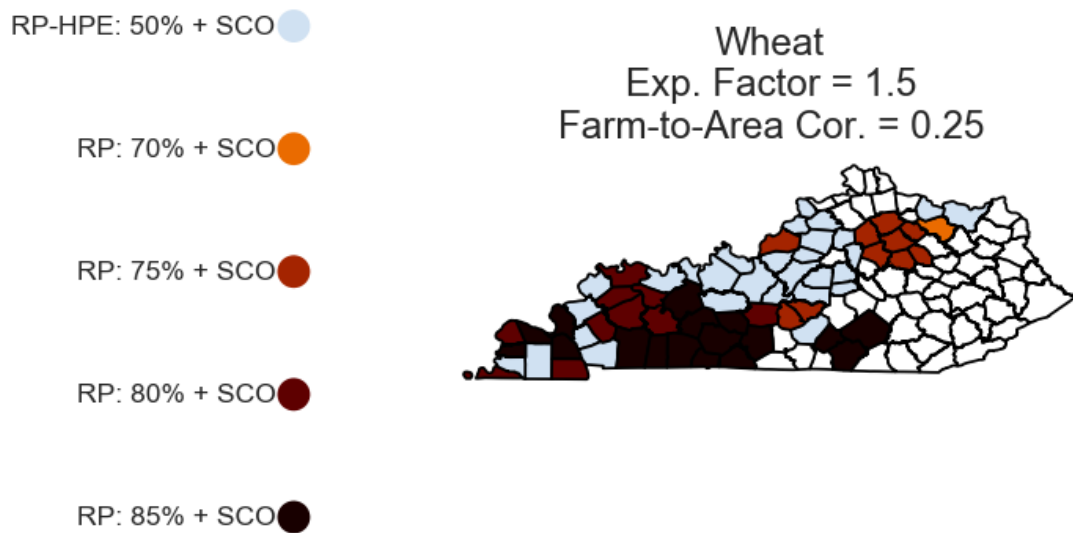


Figure D.26: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5.

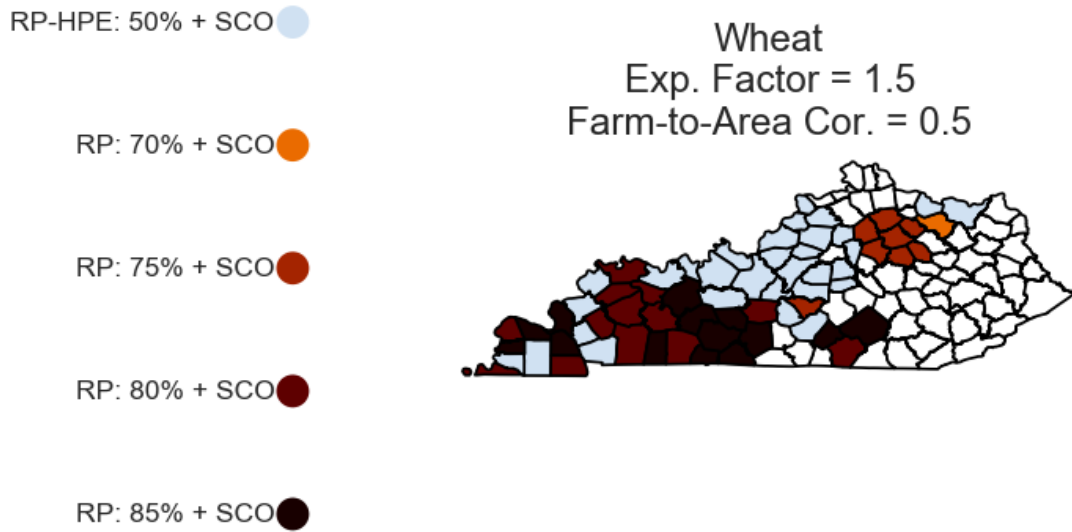
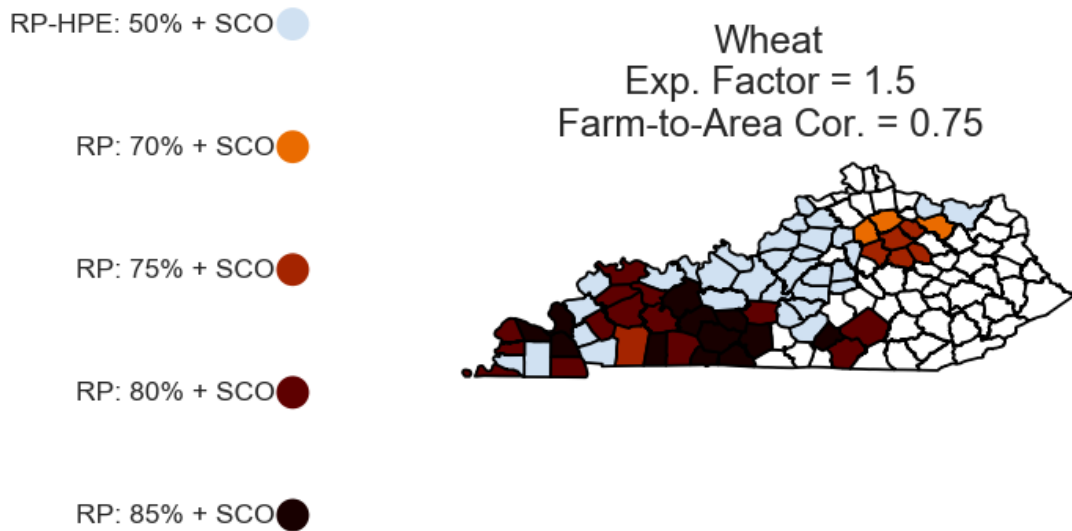


Figure D.27: Map of Optimal Insurance Schemes for Wheat: Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75.



## Complete Results

The following tables present the complete results of the simulation for wheat producers in all Kentucky counties – where SCO is available for MPCCI wheat policies – by yield expansion factor and farm-area correlation. For each county the downside-risk minimizing insurance scheme is listed along with the mean, standard deviation, minimum and maximum of the simulated net revenues under the optimal insurance choice. Finally, the table presents the target value – equal to the mean revenue with no insurance – and the estimated semideviation with no insurance and under the optimal insurance strategy.

Table D.22: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$546	\$90	\$247	\$852	\$546	\$696	\$63
Allen	RP:85%+SCO	\$520	\$121	\$197	\$1,064	\$505	\$1,127	\$69
Ballard	RP:75%+SCO	\$471	\$89	\$203	\$764	\$482	\$693	\$68
Barren	RP:80%+SCO	\$512	\$110	\$246	\$918	\$509	\$948	\$71
Bourbon	RP-HPE:50%+SCO	\$427	\$76	\$152	\$720	\$430	\$550	\$56
Boyle	RP-HPE:50%+SCO	\$536	\$87	\$266	\$850	\$540	\$652	\$64
Breckinridge	RP-HPE:50%+SCO	\$433	\$76	\$185	\$703	\$434	\$586	\$53
Bullitt	RP-HPE:50%+SCO	\$468	\$77	\$219	\$719	\$469	\$603	\$54
Butler	RP:85%+SCO	\$507	\$105	\$224	\$961	\$505	\$949	\$68
Caldwell	RP-HPE:50%+SCO	\$522	\$88	\$206	\$827	\$521	\$677	\$62
Calloway	RP:80%+SCO	\$442	\$92	\$180	\$782	\$448	\$789	\$66
Carlisle	RP:80%+SCO	\$462	\$97	\$192	\$848	\$465	\$811	\$66
Christian	RP-HPE:50%+SCO	\$540	\$97	\$186	\$865	\$536	\$735	\$67
Clark	RP-HPE:50%+SCO	\$427	\$76	\$150	\$694	\$430	\$546	\$56
Crittenden	RP-HPE:50%+SCO	\$515	\$90	\$220	\$790	\$520	\$676	\$66
Daviess	RP-HPE:50%+SCO	\$466	\$74	\$212	\$710	\$467	\$565	\$52
Edmonson	RP:85%+SCO	\$523	\$128	\$213	\$1,050	\$507	\$1,199	\$72
Fayette	RP-HPE:50%+SCO	\$428	\$76	\$159	\$733	\$430	\$546	\$55
Fleming	RP-HPE:50%+SCO	\$425	\$76	\$162	\$689	\$430	\$553	\$56
Franklin	RP-HPE:50%+SCO	\$424	\$66	\$204	\$639	\$425	\$504	\$47
Fulton	RP:75%+SCO	\$455	\$94	\$197	\$808	\$463	\$750	\$69
Graves	RP-HPE:50%+SCO	\$488	\$78	\$213	\$737	\$489	\$602	\$56
Grayson	RP-HPE:50%+SCO	\$420	\$70	\$186	\$670	\$423	\$535	\$51
Green	RP-HPE:50%+SCO	\$493	\$89	\$210	\$787	\$492	\$697	\$62
Hancock	RP-HPE:50%+SCO	\$474	\$73	\$227	\$733	\$477	\$558	\$53
Hardin	RP-HPE:50%+SCO	\$471	\$82	\$211	\$745	\$471	\$640	\$57
Harrison	RP-HPE:50%+SCO	\$427	\$76	\$157	\$786	\$430	\$549	\$56
Hart	RP-HPE:50%+SCO	\$480	\$100	\$170	\$807	\$480	\$761	\$70
Henderson	RP-HPE:50%+SCO	\$492	\$95	\$177	\$799	\$493	\$719	\$68
Henry	RP-HPE:50%+SCO	\$440	\$77	\$183	\$696	\$442	\$583	\$55
Hickman	RP-HPE:50%+SCO	\$519	\$90	\$244	\$827	\$517	\$698	\$62
Hopkins	RP:75%+SCO	\$395	\$69	\$198	\$647	\$403	\$536	\$52
Jefferson	RP-HPE:50%+SCO	\$455	\$79	\$176	\$697	\$456	\$597	\$56
Larue	RP-HPE:50%+SCO	\$509	\$82	\$225	\$778	\$510	\$638	\$58
Lewis	RP-HPE:50%+SCO	\$403	\$63	\$181	\$629	\$408	\$478	\$47
Livingston	RP:85%+SCO	\$466	\$129	\$156	\$1,007	\$435	\$1,262	\$64
Logan	RP:80%+SCO	\$492	\$92	\$229	\$925	\$487	\$797	\$58
Lyon	RP-HPE:50%+SCO	\$524	\$81	\$241	\$800	\$524	\$631	\$57
Marion	RP-HPE:50%+SCO	\$538	\$86	\$255	\$817	\$542	\$648	\$63
Marshall	RP:85%+SCO	\$438	\$110	\$156	\$897	\$428	\$1,020	\$65
Mason	RP-HPE:50%+SCO	\$432	\$65	\$211	\$642	\$435	\$508	\$48
McCracken	RP:85%+SCO	\$475	\$139	\$158	\$1,089	\$449	\$1,331	\$71
McLean	RP:80%+SCO	\$402	\$83	\$181	\$747	\$407	\$673	\$58
Meade	RP-HPE:50%+SCO	\$457	\$81	\$189	\$714	\$457	\$627	\$57

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Table D.22: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Mercer	RP-HPE:50%+SCO	\$502	\$81	\$237	\$780	\$504	\$622	\$57
Montgomery	RP-HPE:50%+SCO	\$427	\$76	\$155	\$724	\$430	\$553	\$56
Muhlenberg	RP:75%+SCO	\$398	\$73	\$170	\$714	\$402	\$566	\$52
Nelson	RP-HPE:50%+SCO	\$503	\$81	\$245	\$756	\$503	\$636	\$57
Nicholas	RP-HPE:50%+SCO	\$427	\$76	\$154	\$717	\$430	\$549	\$55
Ohio	RP:80%+SCO	\$406	\$87	\$167	\$889	\$404	\$731	\$56
Oldham	RP-HPE:50%+SCO	\$460	\$78	\$143	\$731	\$461	\$586	\$56
Pulaski	RP:80%+SCO	\$530	\$114	\$234	\$1,042	\$529	\$976	\$76
Russell	RP:80%+SCO	\$533	\$113	\$224	\$989	\$529	\$979	\$74
Scott	RP-HPE:50%+SCO	\$398	\$70	\$139	\$621	\$402	\$515	\$52
Shelby	RP-HPE:50%+SCO	\$460	\$78	\$193	\$725	\$462	\$590	\$55
Simpson	RP:85%+SCO	\$479	\$90	\$185	\$874	\$478	\$819	\$61
Spencer	RP-HPE:50%+SCO	\$492	\$76	\$254	\$721	\$495	\$569	\$55
Taylor	RP-HPE:50%+SCO	\$550	\$96	\$239	\$877	\$553	\$728	\$70
Todd	RP:75%+SCO	\$506	\$94	\$225	\$832	\$502	\$775	\$63
Trigg	RP-HPE:50%+SCO	\$510	\$83	\$193	\$788	\$513	\$630	\$61
Trimble	RP-HPE:50%+SCO	\$420	\$66	\$194	\$660	\$426	\$510	\$50
Union	RP-HPE:50%+SCO	\$534	\$97	\$188	\$852	\$540	\$730	\$72
Warren	RP:85%+SCO	\$518	\$119	\$193	\$971	\$509	\$1,105	\$72
Washington	RP-HPE:50%+SCO	\$526	\$83	\$255	\$785	\$527	\$636	\$59
Wayne	RP:80%+SCO	\$528	\$113	\$220	\$984	\$528	\$973	\$77
Webster	RP:75%+SCO	\$416	\$80	\$168	\$759	\$425	\$621	\$60
Woodford	RP-HPE:50%+SCO	\$442	\$70	\$200	\$707	\$444	\$530	\$51

Table D.23: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$546	\$88	\$241	\$845	\$546	\$694	\$61
Allen	RP:85%+SCO	\$520	\$116	\$190	\$1,011	\$505	\$1,126	\$67
Ballard	RP:75%+SCO	\$471	\$88	\$200	\$770	\$482	\$694	\$67
Barren	RP:80%+SCO	\$512	\$106	\$250	\$928	\$509	\$948	\$68
Bourbon	RP-HPE:50%+SCO	\$427	\$74	\$161	\$659	\$430	\$548	\$54
Boyle	RP-HPE:50%+SCO	\$536	\$86	\$269	\$834	\$540	\$650	\$63
Breckinridge	RP-HPE:50%+SCO	\$433	\$75	\$198	\$705	\$434	\$587	\$52
Bullitt	RP-HPE:50%+SCO	\$468	\$77	\$217	\$711	\$469	\$602	\$54
Butler	RP:80%+SCO	\$511	\$106	\$230	\$908	\$505	\$951	\$67
Caldwell	RP-HPE:50%+SCO	\$522	\$87	\$224	\$818	\$521	\$679	\$60
Calloway	RP:75%+SCO	\$446	\$93	\$175	\$789	\$448	\$789	\$64
Carlisle	RP:80%+SCO	\$462	\$93	\$216	\$795	\$465	\$813	\$64
Christian	RP-HPE:50%+SCO	\$540	\$95	\$183	\$811	\$536	\$736	\$65
Clark	RP-HPE:50%+SCO	\$427	\$74	\$147	\$671	\$430	\$547	\$54
Crittenden	RP-HPE:50%+SCO	\$515	\$89	\$223	\$795	\$520	\$676	\$65
Daviess	RP-HPE:50%+SCO	\$466	\$73	\$226	\$708	\$467	\$565	\$52
Edmonson	RP:85%+SCO	\$523	\$123	\$217	\$1,034	\$507	\$1,202	\$69
Fayette	RP-HPE:50%+SCO	\$428	\$74	\$163	\$664	\$430	\$548	\$53
Fleming	RP-HPE:50%+SCO	\$425	\$74	\$172	\$681	\$429	\$553	\$55
Franklin	RP-HPE:50%+SCO	\$424	\$65	\$195	\$638	\$425	\$504	\$47
Fulton	RP-HPE:50%+SCO	\$465	\$98	\$153	\$817	\$463	\$751	\$67
Graves	RP-HPE:50%+SCO	\$488	\$78	\$217	\$736	\$489	\$602	\$55
Grayson	RP-HPE:50%+SCO	\$420	\$69	\$187	\$674	\$423	\$535	\$50
Green	RP-HPE:50%+SCO	\$493	\$88	\$211	\$801	\$492	\$696	\$60
Hancock	RP-HPE:50%+SCO	\$474	\$73	\$219	\$730	\$477	\$559	\$53
Hardin	RP-HPE:50%+SCO	\$471	\$81	\$215	\$742	\$471	\$640	\$56
Harrison	RP-HPE:50%+SCO	\$427	\$74	\$141	\$668	\$430	\$549	\$54

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Table D.23: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Hart	RP-HPE:50%+SCO	\$480	\$97	\$171	\$814	\$480	\$761	\$67
Henderson	RP-HPE:50%+SCO	\$492	\$94	\$190	\$792	\$493	\$720	\$66
Henry	RP-HPE:50%+SCO	\$440	\$76	\$177	\$685	\$442	\$583	\$54
Hickman	RP-HPE:50%+SCO	\$519	\$89	\$231	\$827	\$517	\$697	\$61
Hopkins	RP:70%+SCO	\$398	\$69	\$183	\$639	\$403	\$535	\$51
Jefferson	RP-HPE:50%+SCO	\$455	\$78	\$173	\$695	\$456	\$598	\$55
Larue	RP-HPE:50%+SCO	\$509	\$81	\$228	\$776	\$510	\$638	\$58
Lewis	RP-HPE:50%+SCO	\$403	\$61	\$183	\$617	\$408	\$478	\$46
Livingston	RP:85%+SCO	\$465	\$123	\$150	\$970	\$435	\$1,261	\$61
Logan	RP:80%+SCO	\$493	\$88	\$234	\$828	\$487	\$797	\$56
Lyon	RP-HPE:50%+SCO	\$524	\$80	\$245	\$787	\$524	\$631	\$56
Marion	RP-HPE:50%+SCO	\$538	\$86	\$260	\$813	\$542	\$648	\$63
Marshall	RP:85%+SCO	\$438	\$106	\$155	\$836	\$428	\$1,016	\$62
Mason	RP-HPE:50%+SCO	\$432	\$65	\$215	\$639	\$435	\$509	\$47
McCracken	RP:85%+SCO	\$476	\$133	\$153	\$1,041	\$449	\$1,329	\$67
McLean	RP:80%+SCO	\$402	\$79	\$180	\$714	\$407	\$671	\$56
Meade	RP-HPE:50%+SCO	\$457	\$80	\$192	\$703	\$457	\$627	\$56
Mercer	RP-HPE:50%+SCO	\$502	\$80	\$240	\$770	\$503	\$621	\$57
Montgomery	RP-HPE:50%+SCO	\$427	\$74	\$155	\$678	\$430	\$552	\$54
Muhlenberg	RP:75%+SCO	\$398	\$70	\$185	\$678	\$402	\$567	\$51
Nelson	RP-HPE:50%+SCO	\$503	\$81	\$251	\$759	\$503	\$636	\$56
Nicholas	RP-HPE:50%+SCO	\$427	\$74	\$164	\$712	\$430	\$548	\$54
Ohio	RP:80%+SCO	\$406	\$83	\$163	\$782	\$404	\$732	\$54
Oldham	RP-HPE:50%+SCO	\$460	\$77	\$141	\$739	\$461	\$586	\$55
Pulaski	RP:80%+SCO	\$530	\$109	\$219	\$990	\$529	\$973	\$73
Russell	RP:80%+SCO	\$533	\$110	\$212	\$921	\$529	\$980	\$71
Scott	RP-HPE:50%+SCO	\$398	\$69	\$147	\$620	\$402	\$517	\$51
Shelby	RP-HPE:50%+SCO	\$460	\$77	\$202	\$707	\$462	\$590	\$55
Simpson	RP:85%+SCO	\$479	\$88	\$185	\$834	\$478	\$820	\$59
Spencer	RP-HPE:50%+SCO	\$492	\$76	\$257	\$725	\$495	\$569	\$55
Taylor	RP-HPE:50%+SCO	\$550	\$95	\$245	\$874	\$553	\$726	\$68
Todd	RP:75%+SCO	\$506	\$91	\$224	\$802	\$502	\$775	\$60
Trigg	RP-HPE:50%+SCO	\$510	\$83	\$206	\$788	\$513	\$629	\$60
Trimble	RP-HPE:50%+SCO	\$420	\$66	\$197	\$647	\$426	\$510	\$50
Union	RP-HPE:50%+SCO	\$534	\$96	\$203	\$831	\$540	\$730	\$71
Warren	RP:80%+SCO	\$524	\$119	\$209	\$981	\$509	\$1,104	\$69
Washington	RP-HPE:50%+SCO	\$526	\$83	\$249	\$778	\$527	\$635	\$59
Wayne	RP:80%+SCO	\$528	\$109	\$198	\$936	\$528	\$974	\$74
Webster	RP:75%+SCO	\$416	\$77	\$138	\$684	\$425	\$623	\$59
Woodford	RP-HPE:50%+SCO	\$442	\$69	\$203	\$702	\$444	\$531	\$50

Table D.24: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$546	\$87	\$243	\$851	\$546	\$692	\$59
Allen	RP:85%+SCO	\$520	\$112	\$187	\$980	\$505	\$1,123	\$64
Ballard	RP-HPE:50%+SCO	\$479	\$91	\$182	\$789	\$482	\$694	\$65
Barren	RP:80%+SCO	\$511	\$103	\$250	\$937	\$508	\$947	\$65
Bourbon	RP-HPE:50%+SCO	\$427	\$72	\$169	\$660	\$430	\$547	\$52
Boyle	RP-HPE:50%+SCO	\$536	\$86	\$267	\$820	\$540	\$650	\$63
Breckinridge	RP-HPE:50%+SCO	\$433	\$74	\$204	\$700	\$434	\$587	\$51
Bullitt	RP-HPE:50%+SCO	\$468	\$76	\$219	\$701	\$469	\$602	\$53
Butler	RP:80%+SCO	\$511	\$103	\$220	\$922	\$505	\$952	\$64
Caldwell	RP-HPE:50%+SCO	\$522	\$85	\$249	\$814	\$521	\$682	\$59

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Table D.24: Results - Wheat, Expansion Factor = 1.1, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Calloway	RP:75%+SCO	\$446	\$92	\$185	\$781	\$448	\$790	\$63
Carlisle	RP:80%+SCO	\$462	\$90	\$216	\$782	\$464	\$815	\$61
Christian	RP-HPE:50%+SCO	\$540	\$93	\$224	\$823	\$536	\$736	\$63
Clark	RP-HPE:50%+SCO	\$427	\$72	\$167	\$656	\$430	\$548	\$52
Crittenden	RP-HPE:50%+SCO	\$516	\$88	\$235	\$796	\$520	\$676	\$64
Daviess	RP-HPE:50%+SCO	\$466	\$72	\$234	\$711	\$467	\$565	\$51
Edmonson	RP:80%+SCO	\$528	\$123	\$195	\$1,072	\$507	\$1,206	\$66
Fayette	RP-HPE:50%+SCO	\$428	\$72	\$184	\$668	\$430	\$551	\$51
Fleming	RP-HPE:50%+SCO	\$425	\$72	\$183	\$697	\$429	\$552	\$53
Franklin	RP-HPE:50%+SCO	\$424	\$64	\$214	\$642	\$425	\$503	\$46
Fulton	RP-HPE:50%+SCO	\$465	\$96	\$189	\$796	\$463	\$751	\$65
Graves	RP-HPE:50%+SCO	\$488	\$77	\$224	\$736	\$489	\$603	\$55
Grayson	RP-HPE:50%+SCO	\$420	\$69	\$190	\$675	\$423	\$536	\$50
Green	RP-HPE:50%+SCO	\$493	\$87	\$214	\$810	\$492	\$695	\$59
Hancock	RP-HPE:50%+SCO	\$474	\$72	\$227	\$721	\$477	\$559	\$52
Hardin	RP-HPE:50%+SCO	\$471	\$80	\$217	\$737	\$471	\$639	\$55
Harrison	RP-HPE:50%+SCO	\$427	\$72	\$147	\$658	\$430	\$549	\$52
Hart	RP-HPE:50%+SCO	\$480	\$95	\$191	\$830	\$480	\$761	\$64
Henderson	RP-HPE:50%+SCO	\$492	\$92	\$196	\$782	\$493	\$721	\$64
Henry	RP-HPE:50%+SCO	\$440	\$75	\$190	\$675	\$442	\$583	\$53
Hickman	RP-HPE:50%+SCO	\$519	\$88	\$223	\$830	\$517	\$695	\$60
Hopkins	RP-HPE:50%+SCO	\$402	\$70	\$153	\$642	\$403	\$535	\$50
Jefferson	RP-HPE:50%+SCO	\$455	\$77	\$180	\$695	\$456	\$599	\$54
Larue	RP-HPE:50%+SCO	\$509	\$81	\$232	\$771	\$510	\$637	\$57
Lewis	RP-HPE:50%+SCO	\$403	\$60	\$184	\$597	\$408	\$478	\$45
Livingston	RP:85%+SCO	\$465	\$118	\$158	\$948	\$435	\$1,259	\$57
Logan	RP:75%+SCO	\$496	\$87	\$229	\$809	\$487	\$795	\$52
Lyon	RP-HPE:50%+SCO	\$524	\$79	\$249	\$793	\$524	\$632	\$55
Marion	RP-HPE:50%+SCO	\$538	\$85	\$264	\$812	\$542	\$647	\$62
Marshall	RP:80%+SCO	\$442	\$106	\$174	\$848	\$427	\$1,013	\$60
Mason	RP-HPE:50%+SCO	\$432	\$64	\$217	\$641	\$435	\$510	\$47
McCracken	RP:85%+SCO	\$476	\$128	\$144	\$1,018	\$449	\$1,328	\$64
McLean	RP:75%+SCO	\$405	\$78	\$186	\$716	\$407	\$669	\$54
Meade	RP-HPE:50%+SCO	\$457	\$79	\$210	\$700	\$457	\$628	\$54
Mercer	RP-HPE:50%+SCO	\$502	\$80	\$243	\$761	\$503	\$620	\$57
Montgomery	RP-HPE:50%+SCO	\$427	\$72	\$178	\$673	\$430	\$550	\$52
Muhlenberg	RP:75%+SCO	\$398	\$68	\$195	\$645	\$402	\$566	\$49
Nelson	RP-HPE:50%+SCO	\$503	\$80	\$248	\$759	\$503	\$636	\$56
Nicholas	RP-HPE:50%+SCO	\$427	\$72	\$166	\$687	\$430	\$548	\$52
Ohio	RP:80%+SCO	\$406	\$80	\$161	\$703	\$404	\$732	\$52
Oldham	RP-HPE:50%+SCO	\$460	\$75	\$168	\$741	\$461	\$585	\$53
Pulaski	RP:80%+SCO	\$530	\$105	\$229	\$898	\$529	\$969	\$69
Russell	RP:80%+SCO	\$533	\$106	\$201	\$914	\$529	\$982	\$68
Scott	RP-HPE:50%+SCO	\$398	\$68	\$171	\$618	\$402	\$518	\$50
Shelby	RP-HPE:50%+SCO	\$460	\$76	\$218	\$708	\$462	\$590	\$54
Simpson	RP:80%+SCO	\$482	\$89	\$214	\$774	\$478	\$822	\$58
Spencer	RP-HPE:50%+SCO	\$493	\$75	\$258	\$726	\$495	\$569	\$55
Taylor	RP-HPE:50%+SCO	\$550	\$94	\$259	\$872	\$553	\$725	\$67
Todd	RP:75%+SCO	\$506	\$88	\$217	\$793	\$502	\$773	\$58
Trigg	RP-HPE:50%+SCO	\$510	\$82	\$224	\$783	\$513	\$627	\$59
Trimble	RP-HPE:50%+SCO	\$420	\$65	\$199	\$643	\$426	\$510	\$49
Union	RP-HPE:50%+SCO	\$534	\$95	\$229	\$840	\$540	\$730	\$70
Warren	RP:80%+SCO	\$524	\$115	\$224	\$1,024	\$509	\$1,106	\$66
Washington	RP-HPE:50%+SCO	\$526	\$83	\$243	\$771	\$527	\$635	\$59
Wayne	RP:75%+SCO	\$532	\$109	\$211	\$947	\$528	\$976	\$70
Webster	RP:75%+SCO	\$416	\$75	\$153	\$675	\$425	\$625	\$57
Woodford	RP-HPE:50%+SCO	\$442	\$68	\$208	\$675	\$444	\$532	\$49

Table D.25: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$548	\$92	\$248	\$860	\$548	\$714	\$64
Allen	RP:85%+SCO	\$525	\$128	\$220	\$1,146	\$507	\$1,217	\$71
Ballard	RP:75%+SCO	\$474	\$91	\$216	\$790	\$483	\$721	\$68
Barren	RP:80%+SCO	\$516	\$114	\$211	\$957	\$509	\$1,001	\$71
Bourbon	RP-HPE:50%+SCO	\$428	\$79	\$146	\$769	\$430	\$571	\$58
Boyle	RP-HPE:50%+SCO	\$537	\$89	\$224	\$821	\$542	\$666	\$65
Breckinridge	RP-HPE:50%+SCO	\$435	\$77	\$171	\$704	\$435	\$598	\$54
Bullitt	RP-HPE:50%+SCO	\$470	\$79	\$204	\$714	\$470	\$616	\$55
Butler	RP:85%+SCO	\$511	\$110	\$201	\$930	\$506	\$1,015	\$70
Caldwell	RP-HPE:50%+SCO	\$523	\$92	\$188	\$962	\$522	\$701	\$64
Calloway	RP:80%+SCO	\$446	\$95	\$208	\$808	\$450	\$824	\$66
Carlisle	RP:80%+SCO	\$466	\$102	\$197	\$877	\$466	\$866	\$67
Christian	RP:75%+SCO	\$533	\$95	\$258	\$844	\$537	\$755	\$69
Clark	RP-HPE:50%+SCO	\$428	\$79	\$145	\$691	\$431	\$568	\$58
Crittenden	RP-HPE:50%+SCO	\$516	\$92	\$193	\$815	\$521	\$687	\$68
Daviess	RP-HPE:50%+SCO	\$466	\$75	\$220	\$720	\$467	\$573	\$53
Edmonson	RP:85%+SCO	\$529	\$135	\$187	\$1,088	\$508	\$1,294	\$74
Fayette	RP-HPE:50%+SCO	\$429	\$80	\$145	\$728	\$431	\$569	\$58
Fleming	RP-HPE:50%+SCO	\$427	\$79	\$127	\$701	\$431	\$567	\$59
Franklin	RP-HPE:50%+SCO	\$424	\$67	\$184	\$641	\$426	\$516	\$48
Fulton	RP:75%+SCO	\$457	\$98	\$178	\$785	\$464	\$782	\$71
Graves	RP-HPE:50%+SCO	\$489	\$80	\$218	\$752	\$490	\$614	\$56
Grayson	RP-HPE:50%+SCO	\$421	\$72	\$187	\$665	\$425	\$558	\$53
Green	RP-HPE:50%+SCO	\$494	\$93	\$184	\$827	\$493	\$718	\$64
Hancock	RP-HPE:50%+SCO	\$474	\$75	\$240	\$739	\$477	\$570	\$54
Hardin	RP-HPE:50%+SCO	\$472	\$83	\$207	\$755	\$472	\$646	\$58
Harrison	RP-HPE:50%+SCO	\$427	\$79	\$140	\$764	\$430	\$567	\$58
Hart	RP:75%+SCO	\$472	\$98	\$198	\$844	\$481	\$806	\$71
Henderson	RP:75%+SCO	\$484	\$93	\$200	\$791	\$494	\$752	\$70
Henry	RP-HPE:50%+SCO	\$442	\$80	\$169	\$701	\$443	\$599	\$57
Hickman	RP-HPE:50%+SCO	\$520	\$93	\$217	\$818	\$519	\$714	\$65
Hopkins	RP:75%+SCO	\$397	\$70	\$192	\$692	\$403	\$554	\$52
Jefferson	RP-HPE:50%+SCO	\$456	\$82	\$158	\$719	\$457	\$617	\$59
Larue	RP-HPE:50%+SCO	\$511	\$83	\$230	\$782	\$512	\$646	\$59
Lewis	RP-HPE:50%+SCO	\$403	\$65	\$150	\$630	\$408	\$491	\$49
Livingston	RP:85%+SCO	\$471	\$138	\$194	\$1,037	\$434	\$1,386	\$63
Logan	RP:80%+SCO	\$494	\$96	\$205	\$963	\$486	\$839	\$60
Lyon	RP-HPE:50%+SCO	\$525	\$83	\$260	\$800	\$525	\$651	\$58
Marion	RP-HPE:50%+SCO	\$541	\$86	\$270	\$836	\$544	\$651	\$62
Marshall	RP:85%+SCO	\$443	\$116	\$196	\$880	\$429	\$1,098	\$65
Mason	RP-HPE:50%+SCO	\$433	\$67	\$216	\$687	\$436	\$523	\$49
McCracken	RP:85%+SCO	\$483	\$150	\$197	\$1,101	\$452	\$1,452	\$74
McLean	RP:80%+SCO	\$405	\$86	\$161	\$833	\$407	\$718	\$59
Meade	RP-HPE:50%+SCO	\$458	\$84	\$173	\$723	\$458	\$644	\$60
Mercer	RP-HPE:50%+SCO	\$503	\$82	\$223	\$773	\$505	\$631	\$58
Montgomery	RP-HPE:50%+SCO	\$428	\$80	\$125	\$722	\$431	\$573	\$59
Muhlenberg	RP:80%+SCO	\$397	\$72	\$178	\$701	\$402	\$589	\$52
Nelson	RP-HPE:50%+SCO	\$504	\$83	\$230	\$772	\$504	\$652	\$58
Nicholas	RP-HPE:50%+SCO	\$428	\$79	\$136	\$837	\$431	\$575	\$58
Ohio	RP:85%+SCO	\$404	\$89	\$156	\$835	\$402	\$794	\$56
Oldham	RP-HPE:50%+SCO	\$461	\$81	\$183	\$776	\$463	\$609	\$58
Pulaski	RP:80%+SCO	\$534	\$117	\$226	\$961	\$530	\$1,033	\$76
Russell	RP:80%+SCO	\$536	\$117	\$211	\$1,002	\$530	\$1,022	\$75
Scott	RP-HPE:50%+SCO	\$399	\$74	\$143	\$677	\$403	\$536	\$54
Shelby	RP-HPE:50%+SCO	\$461	\$80	\$214	\$736	\$463	\$608	\$57
Simpson	RP:85%+SCO	\$483	\$93	\$221	\$924	\$478	\$862	\$60
Spencer	RP-HPE:50%+SCO	\$494	\$76	\$228	\$731	\$496	\$573	\$55
Taylor	RP-HPE:50%+SCO	\$552	\$100	\$213	\$883	\$555	\$754	\$72
Todd	RP:80%+SCO	\$504	\$94	\$233	\$812	\$502	\$818	\$63

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Table D.25: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Trigg	RP-HPE:50%+SCO	\$511	\$85	\$202	\$788	\$514	\$644	\$62
Trimble	RP-HPE:50%+SCO	\$421	\$68	\$198	\$655	\$428	\$518	\$51
Union	RP-HPE:50%+SCO	\$536	\$101	\$218	\$871	\$542	\$758	\$74
Warren	RP:85%+SCO	\$523	\$126	\$224	\$1,038	\$510	\$1,190	\$73
Washington	RP-HPE:50%+SCO	\$527	\$85	\$254	\$791	\$528	\$647	\$60
Wayne	RP:80%+SCO	\$532	\$117	\$202	\$948	\$530	\$1,023	\$78
Webster	RP:80%+SCO	\$414	\$79	\$183	\$764	\$425	\$650	\$60
Woodford	RP-HPE:50%+SCO	\$443	\$72	\$179	\$681	\$445	\$544	\$52

Table D.26: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$548	\$91	\$254	\$853	\$548	\$713	\$63
Allen	RP:85%+SCO	\$525	\$124	\$212	\$1,036	\$507	\$1,219	\$68
Ballard	RP:75%+SCO	\$474	\$89	\$211	\$764	\$483	\$722	\$67
Barren	RP:80%+SCO	\$516	\$110	\$232	\$937	\$509	\$1,004	\$69
Bourbon	RP-HPE:50%+SCO	\$428	\$77	\$141	\$673	\$430	\$568	\$56
Boyle	RP-HPE:50%+SCO	\$537	\$88	\$220	\$824	\$542	\$665	\$65
Breckinridge	RP-HPE:50%+SCO	\$435	\$76	\$186	\$708	\$435	\$599	\$53
Bullitt	RP-HPE:50%+SCO	\$470	\$78	\$222	\$717	\$470	\$616	\$54
Butler	RP:85%+SCO	\$511	\$107	\$193	\$927	\$506	\$1,013	\$67
Caldwell	RP-HPE:50%+SCO	\$523	\$90	\$197	\$860	\$522	\$702	\$62
Calloway	RP:80%+SCO	\$445	\$94	\$205	\$806	\$450	\$823	\$65
Carlisle	RP:80%+SCO	\$466	\$98	\$201	\$808	\$466	\$867	\$65
Christian	RP:70%+SCO	\$535	\$95	\$236	\$844	\$537	\$757	\$68
Clark	RP-HPE:50%+SCO	\$428	\$77	\$138	\$664	\$431	\$569	\$57
Crittenden	RP-HPE:50%+SCO	\$516	\$91	\$215	\$820	\$521	\$686	\$67
Daviess	RP-HPE:50%+SCO	\$466	\$75	\$208	\$727	\$467	\$575	\$53
Edmonson	RP:85%+SCO	\$529	\$130	\$214	\$1,075	\$508	\$1,295	\$71
Fayette	RP-HPE:50%+SCO	\$429	\$77	\$146	\$672	\$431	\$569	\$56
Fleming	RP-HPE:50%+SCO	\$427	\$77	\$152	\$698	\$431	\$568	\$57
Franklin	RP-HPE:50%+SCO	\$424	\$66	\$188	\$637	\$426	\$513	\$47
Fulton	RP:75%+SCO	\$457	\$96	\$191	\$799	\$464	\$785	\$69
Graves	RP-HPE:50%+SCO	\$489	\$79	\$217	\$746	\$490	\$615	\$56
Grayson	RP-HPE:50%+SCO	\$421	\$72	\$203	\$664	\$425	\$559	\$52
Green	RP-HPE:50%+SCO	\$494	\$91	\$201	\$821	\$493	\$719	\$63
Hancock	RP-HPE:50%+SCO	\$474	\$74	\$240	\$726	\$477	\$569	\$53
Hardin	RP-HPE:50%+SCO	\$472	\$82	\$190	\$754	\$472	\$647	\$57
Harrison	RP-HPE:50%+SCO	\$427	\$77	\$136	\$684	\$430	\$568	\$57
Hart	RP:75%+SCO	\$473	\$96	\$185	\$837	\$481	\$808	\$70
Henderson	RP:75%+SCO	\$484	\$91	\$194	\$784	\$494	\$749	\$68
Henry	RP-HPE:50%+SCO	\$442	\$79	\$164	\$703	\$443	\$599	\$56
Hickman	RP-HPE:50%+SCO	\$520	\$92	\$224	\$812	\$519	\$714	\$64
Hopkins	RP:75%+SCO	\$397	\$69	\$179	\$641	\$403	\$555	\$51
Jefferson	RP-HPE:50%+SCO	\$456	\$81	\$184	\$716	\$457	\$618	\$58
Larue	RP-HPE:50%+SCO	\$511	\$83	\$243	\$784	\$512	\$647	\$58
Lewis	RP-HPE:50%+SCO	\$403	\$64	\$146	\$634	\$408	\$491	\$48
Livingston	RP:85%+SCO	\$471	\$132	\$170	\$1,002	\$434	\$1,383	\$60
Logan	RP:80%+SCO	\$494	\$92	\$211	\$905	\$486	\$843	\$57
Lyon	RP-HPE:50%+SCO	\$525	\$82	\$258	\$798	\$525	\$652	\$57
Marion	RP-HPE:50%+SCO	\$541	\$86	\$274	\$838	\$544	\$652	\$62
Marshall	RP:85%+SCO	\$443	\$112	\$191	\$844	\$429	\$1,100	\$63
Mason	RP-HPE:50%+SCO	\$433	\$66	\$219	\$678	\$436	\$523	\$48
McCracken	RP:85%+SCO	\$484	\$144	\$186	\$1,039	\$452	\$1,451	\$71

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Table D.26: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
McLean	RP:80%+SCO	\$405	\$83	\$161	\$810	\$407	\$721	\$57
Meade	RP-HPE:50%+SCO	\$458	\$83	\$173	\$716	\$458	\$646	\$59
Mercer	RP-HPE:50%+SCO	\$503	\$81	\$224	\$772	\$505	\$631	\$58
Montgomery	RP-HPE:50%+SCO	\$428	\$78	\$155	\$668	\$431	\$572	\$57
Muhlenberg	RP:80%+SCO	\$396	\$70	\$180	\$647	\$402	\$587	\$51
Nelson	RP-HPE:50%+SCO	\$504	\$82	\$231	\$766	\$504	\$653	\$57
Nicholas	RP-HPE:50%+SCO	\$428	\$77	\$134	\$730	\$431	\$575	\$57
Ohio	RP:80%+SCO	\$409	\$88	\$169	\$795	\$402	\$797	\$54
Oldham	RP-HPE:50%+SCO	\$461	\$80	\$178	\$731	\$463	\$610	\$57
Pulaski	RP:80%+SCO	\$534	\$114	\$230	\$938	\$530	\$1,034	\$74
Russell	RP:80%+SCO	\$536	\$113	\$209	\$932	\$530	\$1,020	\$73
Scott	RP-HPE:50%+SCO	\$399	\$72	\$142	\$640	\$403	\$534	\$53
Shelby	RP-HPE:50%+SCO	\$461	\$79	\$225	\$738	\$463	\$609	\$56
Simpson	RP:85%+SCO	\$483	\$90	\$237	\$873	\$478	\$863	\$58
Spencer	RP-HPE:50%+SCO	\$494	\$76	\$226	\$739	\$496	\$573	\$55
Taylor	RP-HPE:50%+SCO	\$552	\$99	\$206	\$888	\$556	\$751	\$71
Todd	RP:80%+SCO	\$504	\$92	\$230	\$825	\$502	\$820	\$61
Trigg	RP-HPE:50%+SCO	\$511	\$85	\$216	\$782	\$515	\$643	\$61
Trimble	RP-HPE:50%+SCO	\$422	\$67	\$213	\$654	\$428	\$517	\$51
Union	RP-HPE:50%+SCO	\$536	\$100	\$221	\$877	\$542	\$755	\$73
Warren	RP:85%+SCO	\$523	\$121	\$247	\$996	\$510	\$1,188	\$70
Washington	RP-HPE:50%+SCO	\$527	\$85	\$255	\$795	\$528	\$647	\$60
Wayne	RP:80%+SCO	\$532	\$113	\$190	\$948	\$530	\$1,022	\$75
Webster	RP:75%+SCO	\$418	\$80	\$187	\$701	\$425	\$651	\$59
Woodford	RP-HPE:50%+SCO	\$443	\$71	\$189	\$670	\$445	\$544	\$51

Table D.27: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$548	\$89	\$280	\$858	\$548	\$712	\$61
Allen	RP:85%+SCO	\$525	\$120	\$232	\$1,025	\$507	\$1,219	\$65
Ballard	RP:75%+SCO	\$474	\$88	\$207	\$765	\$483	\$724	\$66
Barren	RP:80%+SCO	\$516	\$107	\$246	\$938	\$509	\$1,008	\$66
Bourbon	RP-HPE:50%+SCO	\$428	\$74	\$160	\$669	\$430	\$566	\$54
Boyle	RP-HPE:50%+SCO	\$537	\$88	\$246	\$822	\$542	\$665	\$64
Breckinridge	RP-HPE:50%+SCO	\$435	\$75	\$199	\$710	\$435	\$602	\$52
Bullitt	RP-HPE:50%+SCO	\$470	\$77	\$238	\$722	\$470	\$616	\$54
Butler	RP:80%+SCO	\$515	\$108	\$211	\$959	\$506	\$1,010	\$65
Caldwell	RP-HPE:50%+SCO	\$523	\$88	\$220	\$829	\$522	\$702	\$61
Calloway	RP:80%+SCO	\$446	\$92	\$212	\$796	\$450	\$822	\$63
Carlisle	RP:80%+SCO	\$466	\$95	\$221	\$828	\$466	\$866	\$62
Christian	RP:70%+SCO	\$535	\$93	\$261	\$831	\$537	\$760	\$66
Clark	RP-HPE:50%+SCO	\$428	\$75	\$138	\$673	\$431	\$569	\$55
Crittenden	RP-HPE:50%+SCO	\$516	\$90	\$229	\$820	\$521	\$687	\$66
Daviess	RP-HPE:50%+SCO	\$466	\$74	\$206	\$729	\$468	\$577	\$52
Edmonson	RP:85%+SCO	\$529	\$126	\$229	\$1,043	\$508	\$1,299	\$67
Fayette	RP-HPE:50%+SCO	\$429	\$75	\$145	\$667	\$431	\$570	\$54
Fleming	RP-HPE:50%+SCO	\$427	\$75	\$168	\$681	\$431	\$568	\$55
Franklin	RP-HPE:50%+SCO	\$424	\$65	\$193	\$637	\$426	\$512	\$46
Fulton	RP:75%+SCO	\$457	\$95	\$173	\$806	\$464	\$786	\$67
Graves	RP-HPE:50%+SCO	\$489	\$79	\$240	\$734	\$490	\$616	\$55
Grayson	RP-HPE:50%+SCO	\$421	\$72	\$214	\$668	\$425	\$558	\$52
Green	RP-HPE:50%+SCO	\$494	\$90	\$216	\$812	\$493	\$719	\$61
Hancock	RP-HPE:50%+SCO	\$474	\$73	\$253	\$720	\$477	\$568	\$53

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Table D.27: Results - Wheat, Expansion Factor = 1.2, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Hardin	RP-HPE:50%+SCO	\$472	\$81	\$227	\$749	\$472	\$647	\$56
Harrison	RP-HPE:50%+SCO	\$427	\$75	\$135	\$669	\$430	\$569	\$55
Hart	RP-HPE:50%+SCO	\$482	\$100	\$162	\$850	\$481	\$809	\$68
Henderson	RP-HPE:50%+SCO	\$494	\$95	\$192	\$817	\$494	\$746	\$66
Henry	RP-HPE:50%+SCO	\$442	\$77	\$193	\$696	\$443	\$600	\$54
Hickman	RP-HPE:50%+SCO	\$520	\$91	\$236	\$824	\$519	\$714	\$63
Hopkins	RP:75%+SCO	\$397	\$68	\$184	\$647	\$403	\$559	\$50
Jefferson	RP-HPE:50%+SCO	\$456	\$80	\$204	\$711	\$457	\$619	\$56
Larue	RP-HPE:50%+SCO	\$511	\$82	\$256	\$781	\$512	\$649	\$58
Lewis	RP-HPE:50%+SCO	\$403	\$62	\$173	\$632	\$408	\$493	\$46
Livingston	RP:85%+SCO	\$471	\$127	\$198	\$976	\$434	\$1,383	\$57
Logan	RP:80%+SCO	\$494	\$89	\$197	\$810	\$486	\$847	\$54
Lyon	RP-HPE:50%+SCO	\$525	\$81	\$240	\$797	\$525	\$653	\$56
Marion	RP-HPE:50%+SCO	\$541	\$85	\$278	\$831	\$544	\$653	\$62
Marshall	RP:85%+SCO	\$443	\$108	\$180	\$839	\$429	\$1,099	\$60
Mason	RP-HPE:50%+SCO	\$433	\$65	\$216	\$657	\$436	\$521	\$47
McCracken	RP:85%+SCO	\$483	\$139	\$178	\$1,031	\$452	\$1,451	\$67
McLean	RP:80%+SCO	\$405	\$79	\$169	\$699	\$407	\$720	\$54
Meade	RP-HPE:50%+SCO	\$458	\$82	\$203	\$713	\$458	\$647	\$57
Mercer	RP-HPE:50%+SCO	\$503	\$81	\$225	\$766	\$505	\$630	\$57
Montgomery	RP-HPE:50%+SCO	\$428	\$75	\$163	\$668	\$431	\$571	\$55
Muhlenberg	RP:75%+SCO	\$400	\$70	\$182	\$651	\$402	\$586	\$49
Nelson	RP-HPE:50%+SCO	\$504	\$82	\$242	\$773	\$504	\$652	\$56
Nicholas	RP-HPE:50%+SCO	\$428	\$75	\$146	\$694	\$431	\$573	\$54
Ohio	RP:80%+SCO	\$409	\$84	\$160	\$692	\$402	\$798	\$51
Oldham	RP-HPE:50%+SCO	\$461	\$79	\$187	\$739	\$463	\$610	\$55
Pulaski	RP:80%+SCO	\$535	\$110	\$229	\$915	\$531	\$1,033	\$71
Russell	RP:80%+SCO	\$536	\$110	\$232	\$931	\$530	\$1,021	\$69
Scott	RP-HPE:50%+SCO	\$399	\$71	\$148	\$622	\$403	\$532	\$52
Shelby	RP-HPE:50%+SCO	\$461	\$78	\$221	\$735	\$463	\$610	\$55
Simpson	RP:85%+SCO	\$483	\$88	\$242	\$817	\$478	\$863	\$56
Spencer	RP-HPE:50%+SCO	\$494	\$76	\$225	\$744	\$496	\$573	\$55
Taylor	RP-HPE:50%+SCO	\$552	\$97	\$206	\$891	\$555	\$747	\$69
Todd	RP:75%+SCO	\$507	\$92	\$241	\$848	\$502	\$820	\$59
Trigg	RP-HPE:50%+SCO	\$511	\$84	\$235	\$774	\$515	\$642	\$60
Trimble	RP-HPE:50%+SCO	\$422	\$66	\$216	\$647	\$428	\$517	\$50
Union	RP-HPE:50%+SCO	\$536	\$98	\$235	\$878	\$542	\$752	\$72
Warren	RP:80%+SCO	\$528	\$122	\$233	\$1,009	\$510	\$1,187	\$67
Washington	RP-HPE:50%+SCO	\$527	\$84	\$255	\$805	\$528	\$647	\$60
Wayne	RP:80%+SCO	\$532	\$110	\$174	\$940	\$530	\$1,022	\$72
Webster	RP:75%+SCO	\$418	\$78	\$183	\$698	\$425	\$653	\$58
Woodford	RP-HPE:50%+SCO	\$443	\$70	\$203	\$671	\$445	\$545	\$50

Table D.28: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$554	\$101	\$199	\$893	\$553	\$776	\$70
Allen	RP:85%+SCO	\$543	\$148	\$229	\$1,192	\$508	\$1,481	\$71
Ballard	RP:80%+SCO	\$478	\$95	\$189	\$882	\$487	\$808	\$70
Barren	RP:85%+SCO	\$523	\$122	\$194	\$1,030	\$512	\$1,174	\$72
Bourbon	RP:75%+SCO	\$422	\$80	\$188	\$769	\$434	\$641	\$62
Boyle	RP-HPE:50%+SCO	\$542	\$93	\$230	\$841	\$547	\$703	\$68
Breckinridge	RP-HPE:50%+SCO	\$438	\$89	\$132	\$750	\$438	\$674	\$62
Bullitt	RP-HPE:50%+SCO	\$473	\$84	\$209	\$737	\$474	\$656	\$59

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Table D.28: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.25

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Butler	RP:85%+SCO	\$522	\$124	\$230	\$1,008	\$507	\$1,196	\$70
Caldwell	RP:80%+SCO	\$515	\$92	\$243	\$841	\$524	\$769	\$69
Calloway	RP:80%+SCO	\$456	\$106	\$167	\$816	\$454	\$952	\$69
Carlisle	RP:85%+SCO	\$473	\$111	\$214	\$952	\$470	\$1,031	\$69
Christian	RP:85%+SCO	\$531	\$95	\$247	\$879	\$540	\$831	\$71
Clark	RP:75%+SCO	\$420	\$80	\$193	\$732	\$433	\$642	\$63
Crittenden	RP-HPE:50%+SCO	\$520	\$102	\$191	\$831	\$525	\$758	\$75
Daviess	RP-HPE:50%+SCO	\$469	\$81	\$183	\$742	\$470	\$622	\$57
Edmonson	RP:85%+SCO	\$547	\$157	\$220	\$1,177	\$506	\$1,603	\$72
Fayette	RP:75%+SCO	\$424	\$80	\$194	\$717	\$433	\$642	\$60
Fleming	RP:70%+SCO	\$420	\$82	\$175	\$703	\$433	\$639	\$65
Franklin	RP-HPE:50%+SCO	\$427	\$74	\$167	\$679	\$428	\$559	\$53
Fulton	RP:80%+SCO	\$462	\$106	\$181	\$852	\$468	\$892	\$75
Graves	RP-HPE:50%+SCO	\$494	\$86	\$178	\$766	\$494	\$661	\$61
Grayson	RP-HPE:50%+SCO	\$425	\$78	\$127	\$699	\$428	\$598	\$57
Green	RP:75%+SCO	\$490	\$97	\$223	\$841	\$498	\$790	\$71
Hancock	RP-HPE:50%+SCO	\$477	\$80	\$152	\$781	\$480	\$610	\$58
Hardin	RP-HPE:50%+SCO	\$477	\$91	\$145	\$759	\$477	\$705	\$64
Harrison	RP:75%+SCO	\$420	\$80	\$193	\$709	\$434	\$640	\$63
Hart	RP:80%+SCO	\$478	\$105	\$215	\$901	\$486	\$915	\$75
Henderson	RP:80%+SCO	\$489	\$96	\$193	\$851	\$498	\$831	\$70
Henry	RP-HPE:50%+SCO	\$446	\$89	\$164	\$734	\$447	\$658	\$64
Hickman	RP-HPE:50%+SCO	\$526	\$100	\$185	\$838	\$524	\$767	\$69
Hopkins	RP:80%+SCO	\$400	\$74	\$193	\$681	\$405	\$635	\$53
Jefferson	RP:75%+SCO	\$449	\$84	\$220	\$729	\$461	\$675	\$65
Larue	RP-HPE:50%+SCO	\$515	\$88	\$217	\$783	\$516	\$686	\$62
Lewis	RP-HPE:50%+SCO	\$405	\$73	\$136	\$644	\$410	\$538	\$55
Livingston	RP:85%+SCO	\$484	\$180	\$206	\$1,198	\$351	\$2,277	\$27
Logan	RP:85%+SCO	\$496	\$100	\$230	\$1,010	\$477	\$1,012	\$54
Lyon	RP-HPE:50%+SCO	\$529	\$90	\$221	\$834	\$528	\$698	\$63
Marion	RP-HPE:50%+SCO	\$546	\$91	\$208	\$848	\$550	\$695	\$66
Marshall	RP:85%+SCO	\$458	\$135	\$185	\$1,018	\$431	\$1,329	\$67
Mason	RP-HPE:50%+SCO	\$435	\$71	\$169	\$672	\$438	\$554	\$52
McCracken	RP:85%+SCO	\$504	\$179	\$181	\$1,242	\$445	\$1,879	\$70
McLean	RP:80%+SCO	\$412	\$95	\$173	\$855	\$405	\$852	\$58
Meade	RP-HPE:50%+SCO	\$463	\$92	\$165	\$754	\$462	\$706	\$64
Mercer	RP-HPE:50%+SCO	\$508	\$86	\$200	\$778	\$509	\$662	\$61
Montgomery	RP:75%+SCO	\$420	\$80	\$175	\$703	\$433	\$639	\$63
Muhlenberg	RP:80%+SCO	\$403	\$80	\$187	\$715	\$402	\$688	\$53
Nelson	RP-HPE:50%+SCO	\$508	\$88	\$190	\$793	\$508	\$685	\$62
Nicholas	RP:75%+SCO	\$420	\$80	\$163	\$734	\$433	\$638	\$62
Ohio	RP:85%+SCO	\$393	\$112	\$171	\$981	\$299	\$1,524	\$20
Oldham	RP-HPE:50%+SCO	\$465	\$90	\$155	\$759	\$466	\$668	\$64
Pulaski	RP:85%+SCO	\$541	\$126	\$229	\$1,055	\$534	\$1,196	\$79
Russell	RP:85%+SCO	\$545	\$126	\$234	\$1,070	\$534	\$1,200	\$77
Scott	RP:75%+SCO	\$391	\$76	\$180	\$657	\$404	\$599	\$60
Shelby	RP-HPE:50%+SCO	\$465	\$88	\$162	\$768	\$466	\$665	\$62
Simpson	RP:85%+SCO	\$494	\$101	\$216	\$841	\$477	\$1,000	\$57
Spencer	RP-HPE:50%+SCO	\$499	\$78	\$258	\$750	\$501	\$594	\$56
Taylor	RP:75%+SCO	\$549	\$103	\$249	\$891	\$560	\$817	\$78
Todd	RP:85%+SCO	\$508	\$98	\$233	\$867	\$497	\$953	\$59
Trigg	RP-HPE:50%+SCO	\$515	\$91	\$205	\$806	\$518	\$685	\$67
Trimble	RP-HPE:50%+SCO	\$425	\$72	\$148	\$662	\$431	\$558	\$54
Union	RP-HPE:50%+SCO	\$540	\$110	\$189	\$924	\$546	\$824	\$81
Warren	RP:85%+SCO	\$539	\$146	\$234	\$1,100	\$511	\$1,454	\$73
Washington	RP-HPE:50%+SCO	\$533	\$88	\$178	\$817	\$534	\$675	\$63
Wayne	RP:85%+SCO	\$538	\$126	\$218	\$966	\$534	\$1,202	\$80
Webster	RP:80%+SCO	\$421	\$87	\$180	\$765	\$425	\$756	\$61
Woodford	RP-HPE:50%+SCO	\$446	\$80	\$150	\$720	\$448	\$596	\$58

Table D.29: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$554	\$100	\$190	\$894	\$553	\$781	\$69
Allen	RP:85%+SCO	\$542	\$143	\$211	\$1,188	\$508	\$1,476	\$68
Ballard	RP:80%+SCO	\$478	\$94	\$205	\$791	\$487	\$811	\$69
Barren	RP:85%+SCO	\$523	\$118	\$209	\$1,013	\$512	\$1,175	\$69
Bourbon	RP:75%+SCO	\$422	\$78	\$192	\$718	\$434	\$638	\$61
Boyle	RP-HPE:50%+SCO	\$543	\$93	\$230	\$838	\$547	\$703	\$68
Breckinridge	RP-HPE:50%+SCO	\$438	\$87	\$133	\$761	\$438	\$674	\$61
Bullitt	RP-HPE:50%+SCO	\$473	\$84	\$212	\$737	\$474	\$656	\$58
Butler	RP:85%+SCO	\$522	\$120	\$224	\$1,021	\$507	\$1,194	\$67
Caldwell	RP:80%+SCO	\$515	\$91	\$237	\$837	\$524	\$768	\$68
Calloway	RP:80%+SCO	\$456	\$105	\$163	\$812	\$454	\$954	\$67
Carlisle	RP:85%+SCO	\$473	\$107	\$223	\$893	\$470	\$1,027	\$67
Christian	RP:80%+SCO	\$535	\$97	\$248	\$872	\$540	\$829	\$70
Clark	RP:75%+SCO	\$420	\$78	\$196	\$692	\$433	\$644	\$62
Crittenden	RP-HPE:50%+SCO	\$520	\$101	\$188	\$837	\$525	\$759	\$74
Daviess	RP-HPE:50%+SCO	\$469	\$80	\$187	\$754	\$470	\$618	\$56
Edmonson	RP:85%+SCO	\$547	\$152	\$200	\$1,199	\$506	\$1,605	\$68
Fayette	RP:75%+SCO	\$424	\$78	\$190	\$705	\$433	\$643	\$59
Fleming	RP:70%+SCO	\$420	\$81	\$187	\$704	\$433	\$640	\$64
Franklin	RP-HPE:50%+SCO	\$427	\$73	\$176	\$674	\$428	\$558	\$52
Fulton	RP:80%+SCO	\$462	\$104	\$179	\$847	\$468	\$891	\$73
Graves	RP-HPE:50%+SCO	\$494	\$86	\$196	\$759	\$494	\$661	\$60
Grayson	RP-HPE:50%+SCO	\$425	\$78	\$128	\$694	\$428	\$597	\$56
Green	RP-HPE:50%+SCO	\$499	\$101	\$182	\$861	\$498	\$788	\$69
Hancock	RP-HPE:50%+SCO	\$477	\$80	\$175	\$799	\$480	\$611	\$57
Hardin	RP-HPE:50%+SCO	\$477	\$90	\$138	\$764	\$477	\$705	\$63
Harrison	RP:75%+SCO	\$420	\$78	\$191	\$676	\$434	\$640	\$62
Hart	RP:80%+SCO	\$478	\$102	\$213	\$901	\$486	\$915	\$73
Henderson	RP:80%+SCO	\$489	\$95	\$183	\$863	\$498	\$832	\$70
Henry	RP-HPE:50%+SCO	\$446	\$88	\$160	\$734	\$447	\$660	\$62
Hickman	RP-HPE:50%+SCO	\$525	\$99	\$190	\$838	\$524	\$766	\$68
Hopkins	RP:80%+SCO	\$400	\$72	\$193	\$667	\$405	\$634	\$52
Jefferson	RP-HPE:50%+SCO	\$460	\$90	\$156	\$734	\$461	\$676	\$64
Larue	RP-HPE:50%+SCO	\$515	\$88	\$248	\$786	\$516	\$686	\$61
Lewis	RP-HPE:50%+SCO	\$405	\$72	\$136	\$656	\$410	\$542	\$54
Livingston	RP:85%+SCO	\$484	\$174	\$196	\$1,197	\$351	\$2,276	\$26
Logan	RP:80%+SCO	\$502	\$100	\$244	\$889	\$477	\$1,015	\$52
Lyon	RP-HPE:50%+SCO	\$529	\$89	\$230	\$833	\$528	\$699	\$62
Marion	RP-HPE:50%+SCO	\$546	\$91	\$224	\$844	\$550	\$695	\$65
Marshall	RP:85%+SCO	\$458	\$130	\$179	\$969	\$431	\$1,327	\$65
Mason	RP-HPE:50%+SCO	\$435	\$70	\$179	\$673	\$438	\$553	\$51
McCracken	RP:85%+SCO	\$505	\$174	\$179	\$1,246	\$445	\$1,890	\$67
McLean	RP:80%+SCO	\$413	\$91	\$188	\$776	\$405	\$854	\$56
Meade	RP-HPE:50%+SCO	\$462	\$90	\$164	\$756	\$462	\$705	\$63
Mercer	RP-HPE:50%+SCO	\$508	\$86	\$195	\$786	\$509	\$662	\$60
Montgomery	RP:75%+SCO	\$420	\$78	\$194	\$699	\$433	\$642	\$62
Muhlenberg	RP:80%+SCO	\$403	\$77	\$188	\$682	\$402	\$690	\$51
Nelson	RP-HPE:50%+SCO	\$508	\$87	\$204	\$788	\$508	\$685	\$61
Nicholas	RP:75%+SCO	\$420	\$78	\$181	\$678	\$433	\$640	\$61
Ohio	RP:85%+SCO	\$392	\$108	\$177	\$779	\$300	\$1,519	\$19
Oldham	RP-HPE:50%+SCO	\$465	\$89	\$172	\$755	\$466	\$669	\$63
Pulaski	RP:85%+SCO	\$541	\$122	\$236	\$975	\$534	\$1,197	\$76
Russell	RP:85%+SCO	\$545	\$122	\$235	\$1,003	\$534	\$1,197	\$74
Scott	RP:75%+SCO	\$391	\$75	\$167	\$656	\$404	\$599	\$59
Shelby	RP-HPE:50%+SCO	\$465	\$87	\$157	\$770	\$466	\$666	\$61
Simpson	RP:85%+SCO	\$494	\$98	\$208	\$846	\$477	\$998	\$56
Spencer	RP-HPE:50%+SCO	\$499	\$78	\$254	\$745	\$501	\$595	\$56
Taylor	RP:75%+SCO	\$549	\$102	\$259	\$892	\$560	\$818	\$77
Todd	RP:85%+SCO	\$508	\$95	\$217	\$870	\$497	\$954	\$58

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Table D.29: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.5

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Trigg	RP-HPE:50%+SCO	\$515	\$91	\$182	\$811	\$518	\$687	\$66
Trimble	RP-HPE:50%+SCO	\$425	\$72	\$167	\$663	\$431	\$558	\$53
Union	RP-HPE:50%+SCO	\$540	\$110	\$187	\$911	\$546	\$826	\$80
Warren	RP:85%+SCO	\$539	\$141	\$234	\$1,132	\$510	\$1,453	\$70
Washington	RP-HPE:50%+SCO	\$533	\$88	\$178	\$820	\$534	\$674	\$62
Wayne	RP:80%+SCO	\$545	\$127	\$212	\$991	\$534	\$1,198	\$78
Webster	RP:80%+SCO	\$421	\$85	\$175	\$702	\$425	\$757	\$59
Woodford	RP-HPE:50%+SCO	\$446	\$79	\$150	\$730	\$448	\$596	\$57

Table D.30: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
Adair	RP-HPE:50%+SCO	\$554	\$99	\$205	\$889	\$553	\$786	\$67
Allen	RP:85%+SCO	\$542	\$139	\$227	\$1,149	\$508	\$1,469	\$65
Ballard	RP:80%+SCO	\$478	\$94	\$220	\$797	\$487	\$812	\$68
Barren	RP:85%+SCO	\$523	\$115	\$221	\$980	\$512	\$1,174	\$67
Bourbon	RP:75%+SCO	\$422	\$76	\$197	\$692	\$433	\$639	\$59
Boyle	RP-HPE:50%+SCO	\$543	\$93	\$247	\$835	\$547	\$705	\$67
Breckinridge	RP-HPE:50%+SCO	\$438	\$86	\$152	\$765	\$438	\$674	\$59
Bullitt	RP-HPE:50%+SCO	\$473	\$83	\$235	\$733	\$474	\$657	\$58
Butler	RP:85%+SCO	\$522	\$117	\$224	\$1,017	\$507	\$1,193	\$65
Caldwell	RP:80%+SCO	\$515	\$90	\$235	\$828	\$525	\$768	\$66
Calloway	RP:80%+SCO	\$456	\$103	\$167	\$800	\$454	\$954	\$66
Carlisle	RP:80%+SCO	\$478	\$108	\$227	\$894	\$470	\$1,023	\$65
Christian	RP:75%+SCO	\$539	\$98	\$253	\$876	\$540	\$828	\$68
Clark	RP:75%+SCO	\$420	\$77	\$199	\$695	\$433	\$646	\$60
Crittenden	RP-HPE:50%+SCO	\$521	\$101	\$190	\$845	\$525	\$759	\$73
Daviess	RP-HPE:50%+SCO	\$469	\$79	\$215	\$757	\$470	\$616	\$55
Edmonson	RP:85%+SCO	\$548	\$148	\$231	\$1,205	\$506	\$1,605	\$65
Fayette	RP:75%+SCO	\$424	\$77	\$201	\$713	\$433	\$644	\$58
Fleming	RP:70%+SCO	\$420	\$79	\$183	\$692	\$433	\$642	\$62
Franklin	RP-HPE:50%+SCO	\$427	\$72	\$177	\$673	\$428	\$558	\$51
Fulton	RP:80%+SCO	\$462	\$102	\$174	\$833	\$469	\$892	\$72
Graves	RP-HPE:50%+SCO	\$494	\$85	\$210	\$764	\$494	\$661	\$60
Grayson	RP-HPE:50%+SCO	\$425	\$77	\$160	\$703	\$428	\$597	\$55
Green	RP-HPE:50%+SCO	\$499	\$99	\$201	\$862	\$498	\$787	\$67
Hancock	RP-HPE:50%+SCO	\$477	\$79	\$198	\$808	\$480	\$612	\$57
Hardin	RP-HPE:50%+SCO	\$477	\$89	\$159	\$768	\$477	\$704	\$61
Harrison	RP:70%+SCO	\$424	\$79	\$187	\$684	\$434	\$640	\$60
Hart	RP:80%+SCO	\$478	\$100	\$205	\$886	\$486	\$914	\$70
Henderson	RP:80%+SCO	\$489	\$94	\$170	\$869	\$498	\$833	\$68
Henry	RP-HPE:50%+SCO	\$446	\$86	\$179	\$725	\$447	\$663	\$61
Hickman	RP-HPE:50%+SCO	\$525	\$98	\$218	\$843	\$524	\$766	\$67
Hopkins	RP:80%+SCO	\$400	\$71	\$177	\$666	\$405	\$634	\$51
Jefferson	RP-HPE:50%+SCO	\$460	\$88	\$155	\$740	\$461	\$676	\$62
Larue	RP-HPE:50%+SCO	\$515	\$87	\$253	\$784	\$516	\$685	\$60
Lewis	RP-HPE:50%+SCO	\$405	\$70	\$139	\$661	\$410	\$546	\$52
Livingston	RP:85%+SCO	\$484	\$170	\$187	\$1,173	\$351	\$2,271	\$24
Logan	RP:80%+SCO	\$502	\$97	\$245	\$909	\$477	\$1,017	\$49
Lyon	RP-HPE:50%+SCO	\$529	\$88	\$230	\$841	\$528	\$699	\$61
Marion	RP-HPE:50%+SCO	\$546	\$90	\$271	\$849	\$550	\$694	\$65
Marshall	RP:85%+SCO	\$457	\$127	\$179	\$971	\$431	\$1,330	\$62
Mason	RP-HPE:50%+SCO	\$435	\$69	\$193	\$663	\$438	\$552	\$50
McCracken	RP:85%+SCO	\$505	\$171	\$174	\$1,290	\$445	\$1,901	\$63

Continued on next page



Table D.30: Results - Wheat, Expansion Factor = 1.5, Farm-to-Area Cor. = 0.75

County	Opt. Ins.	Mean	Std. Dev.	Min.	Max.	Target	Act. Semi-Dev.	Ins. Semi-Dev.
McLean	RP:80%+SCO	\$413	\$89	\$190	\$731	\$405	\$857	\$54
Meade	RP-HPE:50%+SCO	\$462	\$89	\$185	\$760	\$462	\$705	\$61
Mercer	RP-HPE:50%+SCO	\$508	\$85	\$248	\$790	\$509	\$661	\$60
Montgomery	RP:75%+SCO	\$420	\$76	\$215	\$712	\$433	\$645	\$60
Muhlenberg	RP:80%+SCO	\$403	\$75	\$195	\$700	\$402	\$691	\$50
Nelson	RP-HPE:50%+SCO	\$508	\$87	\$224	\$782	\$508	\$684	\$60
Nicholas	RP:75%+SCO	\$420	\$76	\$195	\$684	\$433	\$642	\$60
Ohio	RP:85%+SCO	\$393	\$106	\$174	\$791	\$299	\$1,525	\$18
Oldham	RP-HPE:50%+SCO	\$465	\$87	\$169	\$771	\$466	\$670	\$62
Pulaski	RP:80%+SCO	\$547	\$124	\$243	\$985	\$534	\$1,197	\$73
Russell	RP:85%+SCO	\$544	\$119	\$237	\$994	\$534	\$1,196	\$71
Scott	RP:70%+SCO	\$394	\$75	\$191	\$658	\$404	\$598	\$58
Shelby	RP-HPE:50%+SCO	\$465	\$86	\$191	\$765	\$466	\$667	\$60
Simpson	RP:85%+SCO	\$494	\$96	\$213	\$846	\$477	\$998	\$54
Spencer	RP-HPE:50%+SCO	\$499	\$78	\$250	\$745	\$501	\$595	\$56
Taylor	RP-HPE:50%+SCO	\$557	\$107	\$218	\$916	\$560	\$820	\$75
Todd	RP:85%+SCO	\$508	\$93	\$210	\$865	\$497	\$954	\$55
Trigg	RP-HPE:50%+SCO	\$515	\$90	\$185	\$813	\$518	\$690	\$65
Trimble	RP-HPE:50%+SCO	\$425	\$71	\$213	\$671	\$431	\$560	\$52
Union	RP-HPE:50%+SCO	\$540	\$109	\$189	\$882	\$546	\$828	\$79
Warren	RP:85%+SCO	\$539	\$137	\$216	\$1,161	\$510	\$1,452	\$67
Washington	RP-HPE:50%+SCO	\$533	\$88	\$179	\$819	\$533	\$673	\$62
Wayne	RP:80%+SCO	\$545	\$124	\$242	\$996	\$534	\$1,195	\$74
Webster	RP:80%+SCO	\$421	\$83	\$170	\$699	\$425	\$759	\$58
Woodford	RP-HPE:50%+SCO	\$446	\$78	\$163	\$729	\$448	\$595	\$55

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<b>PRESENTATIONS</b>	<b>Research:</b> SCC-76 - Kansas City, MO <ul style="list-style-type: none"> <li>• Crop Insurance Education: What we have learned in New York</li> </ul>	4/6/18
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	Lake Ontario Fruit Program Winter Fruit School - Lockport, NY <ul style="list-style-type: none"> <li>• Crop Insurance for Tree Fruit Producers</li> </ul>	2/4/18
	Lake Ontario Fruit Program Winter Fruit School - Newark, NY <ul style="list-style-type: none"> <li>• Crop Insurance for Tree Fruit Producers</li> </ul>	2/5/18
	NYS Dry Bean Meeting - Batavia, NY <ul style="list-style-type: none"> <li>• Crop Insurance for Dry Bean Producers</li> </ul>	3/6/18
	Cornell Ag-Inservice - Ithaca, NY <ul style="list-style-type: none"> <li>• Crop Insurance for New York Apples</li> </ul>	11/15/18
	Extension Risk Management Educator Conference - Louisville, KY <ul style="list-style-type: none"> <li>• Navigating USDA’s Dairy Risk Management Options</li> </ul>	4/3/19
	UMD and MD Dept. of Ag. - Washington, Carroll and Kent Counties, MD <ul style="list-style-type: none"> <li>• RMA Crop Insurance Options for Dairies</li> </ul>	6/12 - 6/14/19
	Cornell Ag-Inservice - Ithaca, NY <ul style="list-style-type: none"> <li>• FSA Commodity Programs and Crop Insurance SCO</li> </ul>	11/6/19