

Table 1—The Consumer Price Index and the relative importance of food items

Items	Percent of total food	Percent of food at home
All Food	100.0	
Food at Home	62.7	
Food Away from Home	37.3	
Meats, Poultry, and Fish		17.3
Meats		12.2
Beef and Veal		6.2
Pork		3.4
Other Meats		2.5
Poultry		2.7
Fish and Seafood		2.4
Eggs		1.0
Dairy Products		7.4
Fats and Oils		1.6
Fresh Fruits and Vegetables		8.9
Fresh Fruits		4.5
Fresh Vegetables		4.5
Processed Fruits and Vegetables		3.8
Processed Fruits		2.1
Processed Vegetables		1.8
Sugars and Sweets		2.1
Cereals and Bakery Products		9.2
Nonalcoholic Beverages		5.0
Other Prepared Foods		6.5

Source: BLS estimated expenditure shares, December 1997.

Table 2—The Consumer Price Index (CPI) adjustment weights following the rebasing from 1972=100 to 1982-84=100*

All Food	0.3411
Food at Home	.3516
Food Away from Home	.3124
Meats, Poultry, and Fish	.3715
Meats	.3725
Beef and Veal	.3640
Pork	.3988
Other Meats	.3750
Poultry	.4905
Fish and Seafood	.2649
Eggs	.5217
Dairy Products	.3998
Fats and Oils	.3700
Fresh Fruits and Vegetables	.3326
Fresh Fruits	.3214
Fresh Vegetables	.3261
Processed Fruits and Vegetables	.3408
Processed Fruits	.6509
Processed Vegetables	.7069
Sugars and Sweets	.2651
Cereals and Bakery Products	.3404
Nonalcoholic Beverages	.2309
Other Prepared Foods	.3617

*These weights were used to adjust the CPI levels prior to the change in January 1987 to the new levels.

Source: USDA/ERS.

Table 3—Construction of quarterly inflation forecasts from monthly level projections

Quarter	Actual quarterly CPI	One month before end of quarter	Two months before end of quarter	Three months before end of quarter	Four months before end of quarter
1990q1	131.1	130.9	129.8	129.8	127.4
1990q2	131.5	131.0	131.0	130.7	130.0

Source:USDA/ERS.

Table 4a—Summary statistics of one-quarter-ahead ERS forecast errors, 1984 2nd quarter to 1997 1st quarter (52 observations)

	Mean	MAE	RMSE	Min	Max
All Food	0.26	0.55	0.66	-1.09	1.42
Food Away From Home	-.06	.36	.46	-1.23	.76
Food at Home	.51	.85	1.00	-1.22	2.07
Meat, Poultry, and Fish	1.29	1.73	1.94	-2.72	4.13
Meats	1.26	1.89	2.15	-3.99	4.25
Beef and Veal	1.11	1.94	2.25	-3.67	5.17
Pork	1.35	2.44	3.11	-6.12	8.80
Other Meats	1.45	1.82	2.13	-3.82	4.82
Poultry	2.89	3.19	4.03	-4.23	10.80
Fish and Seafood	.57	1.34	1.68	-2.76	4.05
Eggs	2.31	5.54	7.08	-10.81	16.28
Dairy Products	.38	.97	1.25	-2.68	2.52
Fats and Oils	-.34	1.05	1.39	-3.75	3.05
Fruits and Vegetables	.91	2.18	2.84	-3.71	8.41
Fresh Fruits	1.55	3.45	4.74	-6.25	12.89
Fresh Vegetables	3.68	6.85	16.21	-11.18	107.96
Processed Fruits and Vegetables	-.23	1.16	1.45	-3.46	3.62
Processed Fruits	-.49	1.61	1.99	-4.82	4.65
Processed Vegetables	.16	1.18	1.60	-3.27	4.65
Sugar and Sweets	-.09	.57	.79	-3.31	1.61
Cereals and Bakery Products	-.11	.56	.71	-1.98	1.43
Nonalcoholic Beverages	-.42	1.47	2.27	-5.98	8.82
Other Prepared Foods	-.10	.46	.59	-1.50	1.58

Source: USDA/ERS.

Table 4b—Summary statistics of two-quarter-ahead ERS forecast errors, 1984 2nd quarter to 1997 1st quarter (net 48 observations)

	Mean	MAE	RMSE	Min	Max
All Food	0.21	0.60	0.76	-1.32	2.44
Food Away From Home	-.15	.33	.43	-1.35	.76
Food at Home	.44	.91	1.17	-1.91	3.96
Meat, Poultry, and Fish	.55	1.35	1.72	-3.55	4.46
Meats	.44	1.56	2.01	-4.61	4.30
Beef and Veal	.20	1.59	2.02	-6.24	3.30
Pork	.92	2.64	3.71	-8.16	13.01
Other Meats	.46	1.36	1.66	-3.77	3.45
Poultry	1.75	2.56	3.83	-3.62	14.46
Fish and Seafood	.21	1.21	1.51	-2.68	4.14
Eggs	2.14	5.75	7.18	-10.92	16.07
Dairy Products	.91	1.35	2.00	-3.21	7.20
Fats and Oils	-.07	.88	1.17	-2.50	2.96
Fruits and Vegetables	.85	2.37	3.30	-7.54	12.47
Fresh Fruits	1.03	3.89	4.88	-8.10	13.72
Fresh Vegetables	.74	6.39	9.44	-40.09	26.51
Processed Fruits and Vegetables	.00	1.16	1.51	-2.86	4.68
Processed Fruits	-.29	1.60	2.07	-4.92	4.74
Processed Vegetables	.40	1.30	1.87	-2.53	7.77
Sugar and Sweets	-.11	.54	.64	-1.46	1.09
Cereals and Bakery Products	-.02	.55	.71	-2.55	1.15
Nonalcoholic Beverages	-.23	1.10	1.96	-2.54	10.90
Other Prepared Foods	-.04	.47	.61	-1.32	1.41

Source: USDA/ERS.

Table 4c—Summary statistics of three-quarter-ahead ERS forecast errors, 1984 2nd quarter to 1997 1st quarter (net 35 observations)

	Mean	MAE	RMSE	Min	Max
All Food	0.02	0.54	0.64	-1.18	1.22
Food Away From Home	-.18	.37	.47	-1.33	.76
Food at Home	.15	.81	.97	-1.76	1.92
Meat, Poultry, and Fish	.57	1.42	1.83	-3.77	4.26
Meats	.46	1.61	1.96	-4.49	4.02
Beef and Veal	-.10	1.51	1.98	-4.91	3.79
Pork	1.36	2.56	3.31	-5.34	10.30
Other Meats	.59	1.32	1.59	-4.30	2.63
Poultry	1.63	3.24	4.86	-4.16	14.46
Fish and Seafood	.18	1.08	1.36	-2.65	3.15
Eggs	.44	5.15	6.78	-17.38	16.95
Dairy Products	.62	1.10	1.73	-3.62	5.77
Fats and Oils	-.36	1.03	1.31	-2.82	3.31
Fruits and Vegetables	.17	2.18	2.73	-7.07	5.46
Fresh Fruits	-.24	3.83	4.63	-10.45	9.48
Fresh Vegetables	.87	5.94	7.48	-23.52	14.75
Processed Fruits and Vegetables	-.10	1.04	1.27	-2.01	3.40
Processed Fruits	-.35	1.36	1.89	-3.82	5.64
Processed Vegetables	.11	1.20	1.62	-2.54	4.77
Sugar and Sweets	-.29	.61	.81	-2.74	1.16
Cereals and Bakery Products	.03	.62	.76	-1.36	2.17
Nonalcoholic Beverages	-.50	1.47	2.37	-2.54	11.33
Other Prepared Foods	-.13	.45	.55	-1.13	1.13

Source: USDA/ERS.

Table 4d—Summary statistics of four-quarter-ahead ERS forecast errors, 1984 2nd quarter to 1997 1st quarter (net 22 observations)

	Mean	MAE	RMSE	Min	Max
All Food	0.01	0.46	0.62	-1.40	1.17
Food Away From Home	-.25	.38	.46	-.96	.40
Food at Home	.11	.70	.89	-2.06	1.48
Meat, Poultry, and Fish	.52	1.40	1.64	-2.71	3.53
Meats	.27	1.34	1.56	-3.12	2.64
Beef and Veal	-.07	1.31	1.74	-4.91	3.78
Pork	.78	2.29	3.11	-4.16	8.75
Other Meats	.45	1.12	1.32	-2.73	2.48
Poultry	2.31	3.32	4.87	-6.41	13.17
Fish and Seafood	.36	1.37	2.00	-2.66	6.16
Eggs	1.78	3.88	4.92	-8.94	12.88
Dairy Products	.56	1.17	1.54	-1.68	4.34
Fats and Oils	-.84	1.29	1.47	-3.14	2.37
Fruits and Vegetables	.29	2.01	2.43	-5.89	3.77
Fresh Fruits	.75	3.82	4.87	-10.45	9.48
Fresh Vegetables	.68	4.79	6.03	-10.71	11.72
Processed Fruits and Vegetables	-.55	.93	1.15	-2.01	2.12
Processed Fruits	-.25	1.21	1.56	-2.88	4.53
Processed Vegetables	-.42	1.05	1.49	-2.92	4.51
Sugar and Sweets	-.36	.62	.83	-2.74	0.99
Cereals and Bakery Products	-.07	.53	.66	-1.18	1.37
Nonalcoholic Beverages	-.23	1.62	2.74	-2.18	11.33
Other Prepared Foods	-.36	.56	.66	-1.12	1.28

Source: USDA/ERS.

Table 5—Univariate models selected for forecasting purposes (Dyearqi is a single dummy variable)

All Food	MA(1) with Seasonal Dummies and D90q1
Food Away from Home	AR(2) with Seasonal Dummies (no AR(1) term)
Food at Home	AR(1) with Seasonal Dummies (no AR(1) term)
Meats, Poultry, and Fish	MA(1) with Seasonal Dummies
Meats	MA(1) with Seasonal Dummies
Beef and Veal	AR(3) with Seasonal Dummies
Pork	MA(1) with Seasonal Dummies
Other Meats	MA(1) with Seasonal Dummies
Poultry	MA(2) D86q3, D88q3
Fish and Seafood	AR(2) with Seasonal Dummies (no AR(1) term)
Eggs	MA(1) with Seasonal Dummies
Dairy Products	MA(1) with Seasonal Dummies
Fats and Oils	MA(1) with Seasonal Dummies
Fresh Fruits and Vegetables	MA(1) with Seasonal Dummies
Fresh Fruits	MA(1) with Seasonal Dummies
Fresh Vegetables	MA(1) with Seasonal Dummies
Processed Fruits and Vegetables	MA(1) with Seasonal Dummies
Processed Fruits	MA(1) with Seasonal Dummies
Processed Vegetables	MA(1) with Seasonal Dummies
Sugars and Sweets	MA(1) with Seasonal Dummies
Cereals and Bakery Products	AR(1 and 3) with Seasonal Dummies
Nonalcoholic Beverages	MA(1) with Seasonal Dummies
Other Prepared Foods	MA(1) with Seasonal Dummies

Source: USDA/ERS.

Table 6a—One-quarter-ahead forecast error statistics for 1992 through 1997¹

Variables	Mean error		Mean absolute error		RMSE	
	ERS	Alternate	ERS	Alternate	ERS	Alternate
All Food ²	0.05	-0.13	0.36	0.38	0.49	0.45
Food Away from Home ³	-.22	-.12	.32	.22	.44	.28
Food at Home ⁴	.35	-.05	.68	.51	.87	.63
Meat, Poultry, and Fish ⁵	1.37	-.20	1.44	.84	1.57	.98
Meats ⁵	1.52	-.24	1.52	.83	1.68	1.02
Beef and Veal ⁶	1.16	-.08	1.43	.76	1.63	.91
Pork ⁵	1.71	.05	1.84	1.43	2.24	1.90
Other Meats ⁵	2.11	-.18	2.11	.74	2.42	.88
Poultry ⁷	2.83	1.18	2.89	1.31	3.39	1.61
Fish and Seafood ³	.39	-.32	1.17	.92	1.37	1.16
Eggs ⁵	3.10	.90	5.16	3.52	6.68	4.38
Dairy Products ⁵	-.05	-.06	1.02	.98	1.26	1.32
Fats and Oils ⁵	-.59	-.17	.81	.40	1.14	.50
Fruits and Vegetables ⁵	.63	-.56	1.87	2.03	2.38	2.37
Fresh Fruits ⁵	1.35	-1.05	2.87	4.44	3.75	5.20
Fresh Vegetables ⁵	5.73	.95	9.02	12.10	24.22	26.87
Processed Fruits and Vegetables ⁵	-.15	-.06	1.12	.94	1.40	1.05
Processed Fruits ⁵	-.15	.08	1.48	2.00	1.74	3.60
Processed Vegetables ⁵	0	-.02	1.19	.99	1.63	1.15
Sugar and Sweets ⁵	0	-.15	.54	.43	.68	.52
Cereal and Bakery Products ⁶	-.35	-.04	.55	.32	.72	.40
Nonalcoholic Beverages ⁵	-.39	.02	2.06	1.70	3.08	3.14
Other Prepared Foods ⁵	-.11	-.16	.39	.28	.47	.35

¹21 forecast errors processed for each alternate model.

²Alternate Model, Seasonal Dummies, D90-1, MA (1).

³Alternate Model, Seasonal Dummies AR(2) (no AR(1) term).

⁴Alternate Model, Seasonal Dummies, D90-1, AR(1).

⁵Alternate Model, Seasonal Dummies & MA (1).

⁶Alternate Model, Seasonal Dummies, AR (1,3).

⁷Alternate Model, D86-3, D88-3, MA(2).

Source: USDA/ERS.

Table 6b—Two-quarter-ahead forecast error statistics for 1992 through 1997¹

Variables	Mean error		Mean absolute error		RMSE	
	ERS	Alternate	ERS	Alternate	ERS	Alternate
All Food ²	0.18	-0.14	0.42	0.37	0.58	0.44
Food Away from Home ³	-.29	-.11	.41	.21	.52	.27
Food at Home ⁴	.45	-.04	.66	.49	.89	.59
Meat, Poultry, and Fish ⁵	.75	-.18	.85	.79	1.16	.92
Meats ⁵	.75	-.27	1.07	.85	1.41	1.02
Beef and Veal ⁶	.39	-.09	1.32	.85	1.54	1.05
Pork ⁵	1.40	.19	1.81	1.34	2.37	1.84
Other Meats ⁵	.82	-.25	1.01	.61	1.26	.75
Poultry ⁷	1.25	1.32	1.72	1.44	2.08	1.72
Fish and Seafood ³	.28	-.27	1.01	.89	1.24	1.14
Eggs ⁵	2.88	1.58	5.49	3.41	6.99	4.36
Dairy Products ⁵	.46	0	.99	1.06	1.41	1.44
Fats and Oils ⁵	-.41	-.20	.60	.41	.88	.53
Fruits and Vegetables ⁵	.68	-.34	1.95	2.08	2.53	2.48
Fresh Fruits ⁵	.80	-.85	3.20	4.05	3.70	4.86
Fresh Vegetables ⁵	-1.69	1.79	5.69	12.51	10.57	26.28
Processed Fruits and Vegetables ⁵	.01	-.23	1.00	.81	1.30	1.03
Processed Fruits ⁵	.07	-.40	1.50	1.71	2.08	2.57
Processed Vegetables ⁵	-.08	-0.01	1.06	.75	1.37	0.99
Sugar and Sweets ⁵	-.17	-.24	.57	.49	.66	.61
Cereal and Bakery Products ⁶	-.21	-.09	.64	.36	.85	.47
Nonalcoholic Beverages ⁵	.38	.33	1.23	1.63	2.71	2.98
Other Prepared Foods ⁵	-.15	-.23	.47	.33	.59	.38

¹21 forecast errors processed for each alternate model.

²Alternate Model, Seasonal Dummies, D90-1, MA (1).

³Alternate Model, Seasonal Dummies AR(2) (no AR(1) term).

⁴Alternate Model, Seasonal Dummies, D90-1, AR(1).

⁵Alternate Model, Seasonal Dummies & MA (1).

⁶Alternate Model, Seasonal Dummies, AR (1,3).

⁷Alternate Model, D86-3, D88-3, MA(2).

Source: USDA/ERS.

Table 6c—Three-quarter-ahead forecast error statistics for 1992 through 1997¹

Variables	Mean error		Mean absolute error		RMSE	
	ERS	Alternate	ERS	Alternate	ERS	Alternate
All Food ²	0.10	-0.11	0.48	0.36	0.59	0.42
Food Away from Home ³	-.35	-.16	.47	.22	.60	.26
Food at Home ⁴	.36	-.02	.76	.49	.90	.60
Meat, Poultry, and Fish ⁵	.92	-.17	1.13	.81	1.48	.93
Meats ⁵	.75	-.26	1.36	.88	1.68	1.04
Beef and Veal ⁶	.13	-.04	1.40	.89	1.60	1.07
Pork ⁵	1.87	.21	2.31	1.39	2.69	1.88
Other Meats ⁵	.65	-.22	1.11	.60	1.24	.75
Poultry ⁷	2.36	1.03	2.39	1.21	2.87	1.47
Fish and Seafood ³	.16	-.39	.81	1.01	1.02	1.24
Eggs ⁵	.64	1.57	3.85	3.49	4.51	4.45
Dairy Products ⁵	.49	.01	1.03	1.10	1.51	1.48
Fats and Oils ⁵	-.54	-.17	.61	.39	.81	.52
Fruits and Vegetables ⁵	.83	-.23	1.99	2.07	2.15	2.49
Fresh Fruits ⁵	1.21	-.57	3.87	3.94	4.41	4.79
Fresh Vegetables ⁵	1.46	1.93	4.73	13.12	5.90	26.96
Processed Fruits and Vegetables ⁵	-.29	-.20	.83	.82	.99	1.04
Processed Fruits ⁵	-.32	-.39	1.41	1.77	2.03	2.63
Processed Vegetables ⁵	-.33	.04	.89	.74	1.23	.99
Sugar and Sweets ⁵	-.35	-.23	.63	.49	.71	.62
Cereal and Bakery Products ⁶	-.13	-.14	.67	.35	.78	.45
Nonalcoholic Beverages ⁵	.45	.37	1.88	1.69	3.43	3.06
Other Prepared Foods ⁵	-.11	-.21	.46	.32	.56	.37

¹21 forecast errors processed for each alternate model.

²Alternate Model, Seasonal Dummies, D90-1, MA (1).

³Alternate Model, Seasonal Dummies AR(2) (no AR(1) term).

⁴Alternate Model, Seasonal Dummies, D90-1, AR(1).

⁵Alternate Model, Seasonal Dummies & MA (1).

⁶Alternate Model, Seasonal Dummies, AR (1,3).

⁷Alternate Model, D86-3, D88-3, MA(2).

Source: USDA/ERS.

Table 6d—Four-quarter-ahead forecast error statistics for 1992 through 1997¹

Variables	Mean error		Mean absolute error		RMSE	
	ERS	Alternate	ERS	Alternate	ERS	Alternate
All Food ²	0.16	-0.04	0.33	0.34	0.47	0.41
Food Away from Home ³	-.35	-.15	.45	.21	.54	.26
Food at Home ⁴	.29	.01	.59	.48	.74	.60
Meat, Poultry, and Fish ⁵	.45	-.11	.87	.78	.93	.90
Meats ⁵	.11	-.19	.86	.84	1.01	1.00
Beef and Veal ⁶	-.34	-.20	1.20	1.02	1.32	1.11
Pork ⁵	.70	.38	1.50	1.32	1.88	1.83
Other Meats ⁵	.47	-.14	.83	.55	.97	.68
Poultry ⁷	2.08	.94	2.48	1.13	2.90	1.36
Fish and Seafood ³	.23	-.35	.87	1.01	1.06	1.25
Eggs ⁵	-.39	1.65	4.16	3.68	4.95	4.57
Dairy Products ⁵	.34	-.03	.90	1.13	1.14	1.51
Fats and Oils ⁵	-1.03	-.11	1.09	.34	1.26	.44
Fruits and Vegetables ⁵	1.86	-.18	2.49	2.12	2.72	2.54
Fresh Fruits ⁵	3.12	-.41	3.98	3.96	4.91	4.85
Fresh Vegetables ⁵	3.01	1.99	5.65	13.78	6.98	27.68
Processed Fruits and Vegetables ⁵	-.57	-.16	.84	.80	1.08	1.04
Processed Fruits ⁵	.21	-.34	1.36	1.79	1.90	2.69
Processed Vegetables ⁵	-.58	.07	.98	.75	1.35	1.01
Sugar and Sweets ⁵	-.45	-.21	.62	.49	.71	.62
Cereal and Bakery Products ⁶	-.24	-.17	.55	.35	.69	.44
Nonalcoholic Beverages ⁵	1.24	.39	2.42	1.77	4.20	3.14
Other Prepared Foods ⁵	-.18	-.18	.61	.30	.73	.35

¹21 forecast errors processed for each alternate model.

²Alternate Model, Seasonal Dummies, D90-1, MA (1).

³Alternate Model, Seasonal Dummies AR(2) (no AR(1) term).

⁴Alternate Model, Seasonal Dummies, D90-1, AR(1).

⁵Alternate Model, Seasonal Dummies & MA (1).

⁶Alternate Model, Seasonal Dummies, AR (1,3).

⁷Alternate Model, D86-3, D88-3, MA(2).

Source: USDA/ERS.

Table 7—Weak form efficiency test for ERS forecasts

CPI price component	b0	b1	F-test	R ²	DW
All Food	0.546	.205	7.64	0.049	1.91
	3.56	.99	.003		
Food Away From Home	.594	-.088	71.037	.344	.91
	6.82	-.824	0		
Food at Home	.656	.238	14.78	.1	2.01
	4.66	1.45	.0001		
Meats, Poultry, and Fish	.931	.457	46.95	.247	1.63
	4.46	2.49	0		
Meats	1.28	.774	45.57	.42	2.27
	4.61	3.68	0		
Beef and Veal	.661	.484	15.29	.21	1.67
	2.11	2.22	.0001		
Pork	1.556	.825	14.47	.53	1.08
	4.32	4.58	0.0002		
Other Meats	.791	.167	103.1	.02	2.05
	2.89	1.19	0		
Poultry	1.347	.225	106.3	.19	1.46
	4.43	2.08	0		
Fish and Seafood	.597	.516	3.6	.23	1.85
	2.1	2.41	.05		
Eggs	1.934	.407	8.31	.18	1.07
	1.63	2.05	.003		
Dairy Products	.269	.584	1.49	.23	.98
	.82	2.41	.25		
Fats and Oils	.327	.1	15.8	.01	2.06
	1.21	.47	.0001		
Fruits and Vegetables	.853	.521	4.92	.33	1.89
	1.89	3.04	.02		
Fresh Fruits	1.19	.159	9.85	.03	2.05
	1.97	.725	.001		
Fresh Vegetables	5.911	1.135	.62	.29	1.64
	1.09	2.77	.55		
Processed Fruits and Vegetables	.478	.213	2.62	.02	1.43
	1.19	.6	.1		
Processed Fruits	-.051	.88	.27	.53	.86
	-.12	4.64	.769		
Processed Vegetables	.618	.095	4.49	.01	2.4
	1.66	.313	.03		
Sugars and Sweets	.315	.435	1.39	0.08	1.36
	1.32	1.28	.27		
Cereals and Bakery Products	.423	.364	19	.3	2.18
	2.34	2.85	.00003		
Nonalcoholic Beverages	.448	.32	2.88	.06	1.94
	.63	1.09	.08		
Other Prepared Foods	.397	.383	9.33	.25	1.79
	2.69	2.51	.002		

Notes: T-statistics are reported below the coefficient estimates. The intercept is b0 and the slope coefficient is b1. The F-test is for the joint hypothesis that b0 = 0 and b1 = 1. The sample period is from 1992q1 to 1997q1; there are 21 observations.

Source: USDA/ERS.

Table 8—Weak form efficiency test for alternative univariate models

CPI price component	b0	b1	F-test	R ²	DW
All Food	0.373	0.373	6.56	0.16	1.95
	2.12	1.92	.006		
Food Away From Home	.549	-.031	21.27	.002	.83
	4.42	-.17	.00001		
Food at Home	.422	.41	4.29	.176	2.26
	2.09	2.01	.029		
Meats, Poultry, and Fish	.53	.044	7.17	.001	1.5
	1.99	.17	.005		
Meats	.243	.3	2.88	.04	1.57
	.79	.89	.08		
Beef and Veal	-.035	.818	.37	.38	1.58
	-.16	3.39	.7		
Pork	.393	.558	3.68	.38	1.25
	1.01	3.43	.04		
Other Meats	.461	.096	4.42	.004	2.11
	1.61	.29	.03		
Poultry	1.032	.429	12.88	.04	1.89
	3.82	.94	.0003		
Fish and Seafood	.103	.625	4.21	.48	2.28
	.37	4.18	.03		
Eggs	.951	.773	.993	.4	1.63
	.99	3.58	.39		
Dairy Products	.295	.545	.61	.08	1.49
	.67	1.31	.55		
Fats and Oils	-.028	.763	2.84	.61	1.34
	-.21	5.46	.08		
Fruits and Vegetables	.562	.155	115.25	.27	1.87
	1.11	2.64	0		
Fresh Fruits	1.59	-.2	29.67	.07	2.05
	2.32	-1.22	.00001		
Fresh Vegetables	-2.12	3.94	.81	.12	2.42
	-.29	1.59	.46		
Processed Fruits and Vegetables	.043	.859	.14	.3	2.52
	.13	2.84	.87		
Processed Fruits	.785	-.25	10.86	.04	1.85
	1.35	-.92	.0007		
Processed Vegetables	-.09	1.108	.036	.27	3.02
	-.24	2.68	.96		
Sugars and Sweets	-.2	1.066	.96	.45	1.92
	-.89	3.91	.4		
Cereals and Bakery Products	-.003	.955	.13	.36	1.66
	-.01	3.28	.88		
Nonalcoholic Beverages	.607	.285	3.35	.05	1.95
	.92	1.03	.06		
Other Prepared Foods	.049	.757	3.35	.37	2.24
	.24	3.36	.06		

Notes: T-statistics are reported below the coefficient estimates. The intercept is b0 and the slope coefficient is b1. The F-test is for the joint hypothesis that b0 = 0 and b1 = 1. The sample period is from 1992q1 to 1997q1; there are 21 observations.

Source: USDA/ERS.

Table 9—Granger and Newbold test

Variable	Coefficient estimate	Minimum RMSE
All Food	0.09	
	.49	
Food Away From Home	.27	Alternate
	.03	
Food at Home	.16	
	.24	
Meats, Poultry, and Fish	-.16	
	.34	
Meats	-.22	
	.12	
Beef and Veal	.2	
	.31	
Pork	-.23	
	.24	
Other Meats	.24	
	.15	
Poultry	.45	Alternate
	.02	
Fish and Seafood	.11	
	.4	
Eggs	.21	
	.11	
Dairy Products	-.03	
	.81	
Fats and Oils	.47	Alternate
	.01	
Fruits and Vegetables	-.6	ERS
	0	
Fresh Fruits	-.24	ERS
	.06	
Fresh Vegetables	-.07	
	.19	
Processed Fruits and Vegetables	.17	
	.12	
Processed Fruits	-.54	ERS
	0	
Processed Vegetables	.21	Alternate
	.06	
Sugars and Sweets	.19	Alternate
	.06	
Cereals and Bakery Products	.35	Alternate
	.04	
Nonalcoholic Beverages	-.02	
	.78	
Other Prepared Foods	.22	Alternate
	.05	

Notes: P-values are reported below the coefficient estimates from the Granger and Newbold regression. The minimum RMSE reports which, if any, RMSE is significantly lower than the other forecast error.

Source: USDA/ERS.

Table 10—Linear forecast combination test

Variable	ERS coefficient	Alternate coefficient	SSR	Alternate coefficient	SSR	F-test
All Food	0.06 .29	0.35 1.58	2.48	0.64 3.12	3.34	6.22
Food Away From Home	-.09 -.79	.01 .06	.48	.90 5.13	1.29	30.50
Food at Home	.13 .73	.34 1.50	5.51	.72 3.94	7.28	5.79
Meats, Poultry, and Fish	.46 2.43	.04 .15	8.73	.35 2.23	10.12	2.86
Meats	.76 3.55	.21 .79	9.92	.23 1.35	9.93	.01
Beef and Veal	.47 2.85	.80 3.91	11.65	.64 4.88	12.36	1.10
Pork	.64 3.50	.33 2.29	32.37	.34 2.59	32.43	.03
Other Meats	.16 1.14	.07 .22	10.33	.72 4.90	13.09	4.80
Poultry	.22 1.99	.36 .85	18.97	.76 7.09	19.97	.94
Fish and Seafood	.11 .48	.57 2.97	19.29	.66 3.45	22.40	2.91
Eggs	.14 .72	.68 2.72	354.01	.81 4.39	365.23	.57
Dairy Products	.56 2.37	.49 1.31	26.20	.45 2.24	26.22	.02
Fats and Oils	-.12 -.84	.80 5.44	3.91	.97 7.49	4.67	3.47
Fruits and Vegetables	.40 1.37	.05 .52	77.52	-.10 -1.14	104.63	6.30
Fresh Fruits	.20 .91	-.21 -1.33	131.72	.13 .69	249.99	16.16
Fresh Vegetables	1.02 2.13	1.23 .47	11418.32	-.11 -.24	11590.08	.27
Processed Fruits and Vegetables	.13 .41	.85 2.72	22.71	.86 3.85	22.72	0
Processed Fruits	1.08 4.90	.35 1.60	54.34	.14 1.33	58.02	1.22
Processed Vegetables	.19 .74	1.15 2.73	26.93	.91 4.43	27.57	.43
Sugars and Sweets	.10 .37	1.03 3.48	5.06	.96 4.14	5.11	.16
Cereals and Bakery Products	.22 1.59	.69 2.13	2.90	.79 5.95	2.92	.11
Nonalcoholic Beverages	.21 .46	.13 .31	151.67	.38 .83	188.75	4.40
Other Prepared Foods	.11 .53	.64 1.96	1.91	.92 4.60	2.05	1.24

Notes: T-statistic is reported below the coefficient estimate. There are 18 degrees of freedom. The F-test is for the null hypothesis that the weights on the ERS and Alternate forecast can be constrained to unity. The critical value for the test at 5% is 4.41 and 1% is 8.29 with 1 restriction and 18 degrees of freedom.

Source: USDA/ERS.

Table 11—Comparison of linear combination forecast one-quarter-ahead RMSE with ERS and alternative RMSE

Variable	ERS RMSE	Alternative RMSE	Forecast combination		Percent improvement in RMSE			
			RMSE		Unconstrained		Constrained	
			Unconstrained	Constrained	ERS	Alternative	ERS	Alternative
All Food	0.49	0.45	0.37	0.43	24	17	12	4
Food Away From Home	.44	.28	.16	.27	63	42	39	4
Food at Home	.87	.63	.55	.64	36	12	27	-1
Meats, Poultry, and Fish	1.57	.98	.70	.75	56	29	52	23
Meats	1.68	1.02	.74	.74	56	27	56	27
Beef and Veal	1.63	.91	.80	.83	51	12	49	9
Pork	2.24	1.9	1.34	1.34	40	29	40	29
Other Meats	2.42	.88	.76	.85	69	14	65	3
Poultry	3.39	1.61	1.03	1.05	70	36	69	35
Fish and Seafood	1.37	1.16	1.04	1.12	24	11	19	4
Eggs	6.68	4.38	4.43	4.50	34	-1	33	-3
Dairy Products	1.26	1.32	1.21	1.21	4	9	4	9
Fats and Oils	1.14	.5	.47	.51	59	7	55	-2
Fruits and Vegetables	2.38	2.37	2.08	2.41	13	12	-1	-2
Fresh Fruits	3.75	5.2	2.71	3.73	28	48	1	28
Fresh Vegetables	24.22	26.87	25.19	25.38	-4	6	-5	6
Processed Fruits and Vegetables	1.4	1.05	1.12	1.12	20	-7	20	-7
Processed Fruits	1.74	3.6	1.74	1.80	0	52	-3	50
Processed Vegetables	1.63	1.15	1.22	1.24	25	-6	24	-8
Sugars and Sweets	.68	.52	.53	.53	22	-2	22	-2
Cereals and Bakery Products	.72	.4	.40	.40	44	0	44	-1
Nonalcoholic Beverages	3.08	3.14	2.90	3.24	6	8	-5	-3
Other Prepared Foods	.47	.35	.33	.34	31	7	28	4

Source: USDA/ERS.