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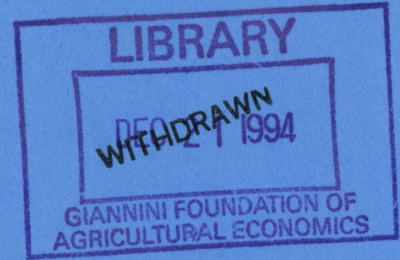
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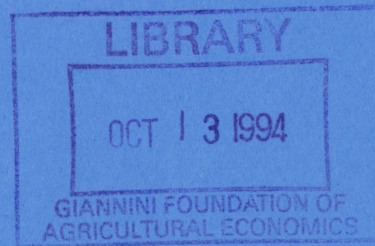
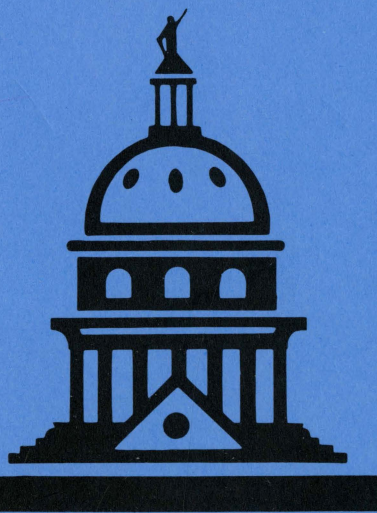
**POLICY BRIEFING SERIES**



**ANALYSIS OF FARM AND  
AGRIBUSINESS LINKAGES**

**AFPC POLICY BRIEFING SERIES NO. 93-1**

Department of Agricultural Economics  
 Texas Agricultural Experiment Station  
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**ANALYSIS OF FARM AND  
AGRIBUSINESS LINKAGES**

**AFPC POLICY BRIEFING SERIES NO. 93-1**

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**January 1993**

**College Station, Texas 77843**

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Penson is Stiles Professor of Agriculture, Department of Agricultural Economics, Texas A&M University. Financial support for this study was provided by the Texas Agricultural Experiment Station and the Soil Conservation Service, U.S. Department of Agriculture. Distributed at SCS-sponsored seminar, Washington, D.C., January 14, 1993.

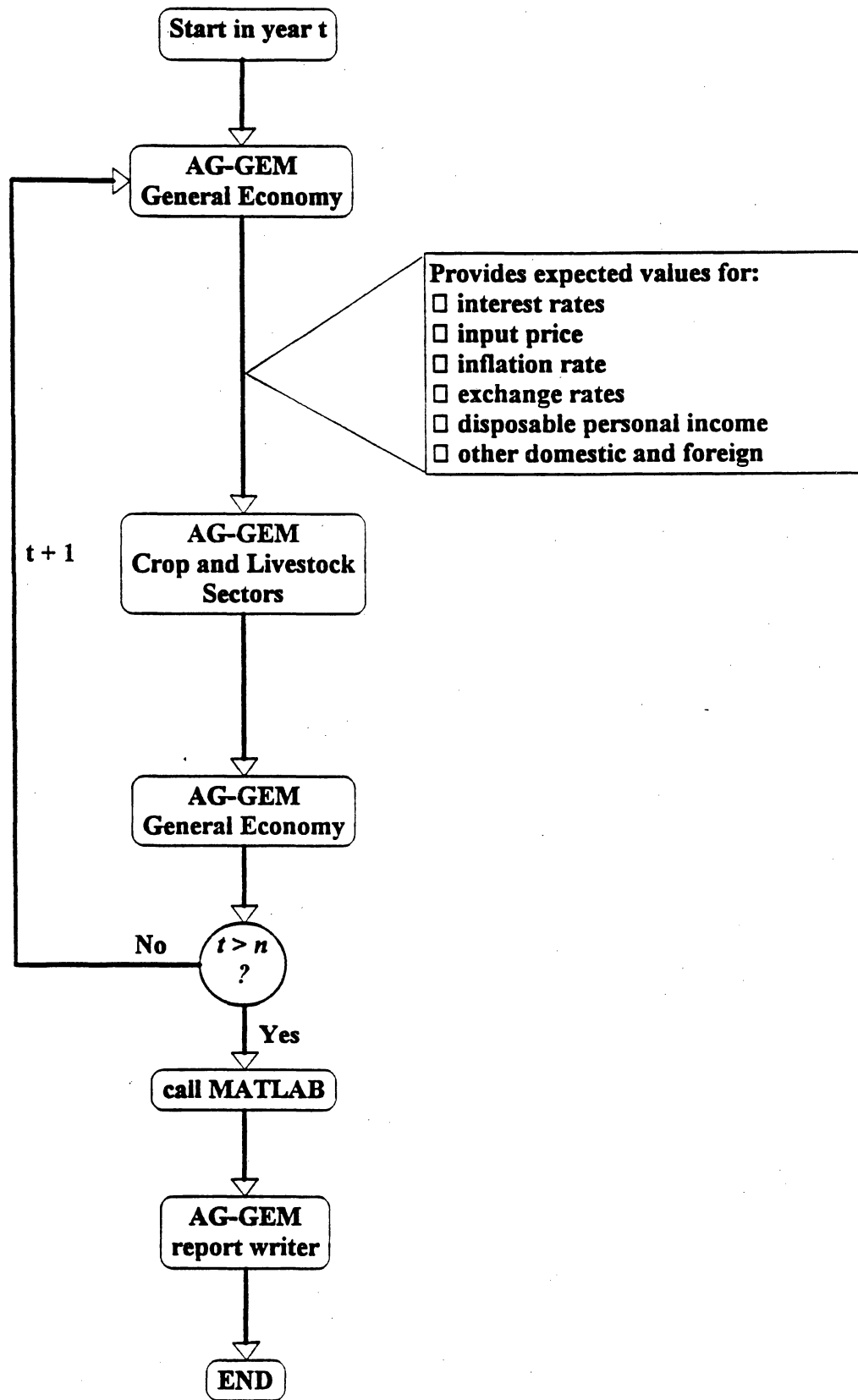


Figure 1 – First Stage Linkage Between General Economy and Agriculture in AG-GEM Model.

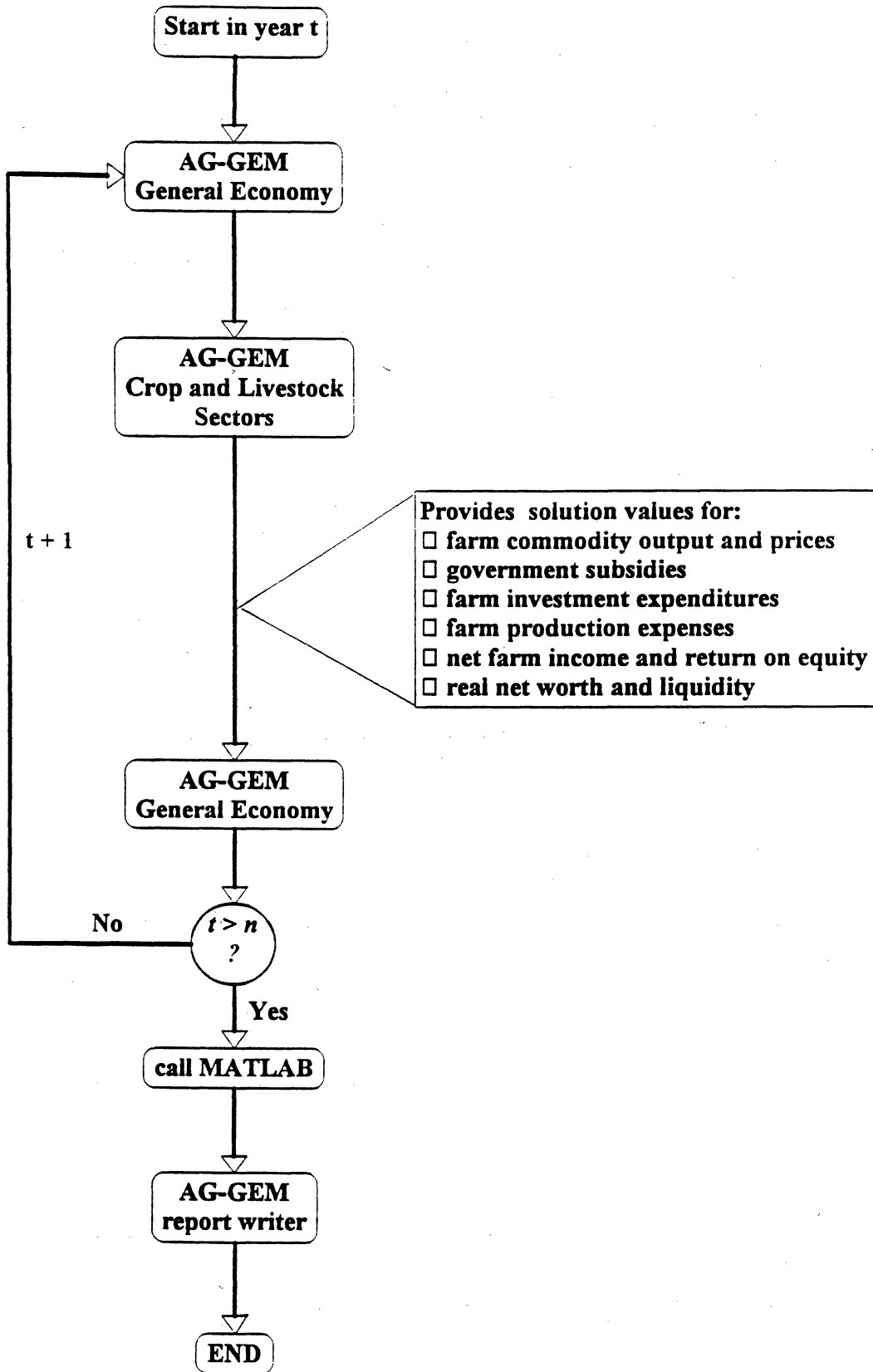


Figure 2 – Second Stage Linkage Between General Economy and Agriculture in AG-GEM Model.



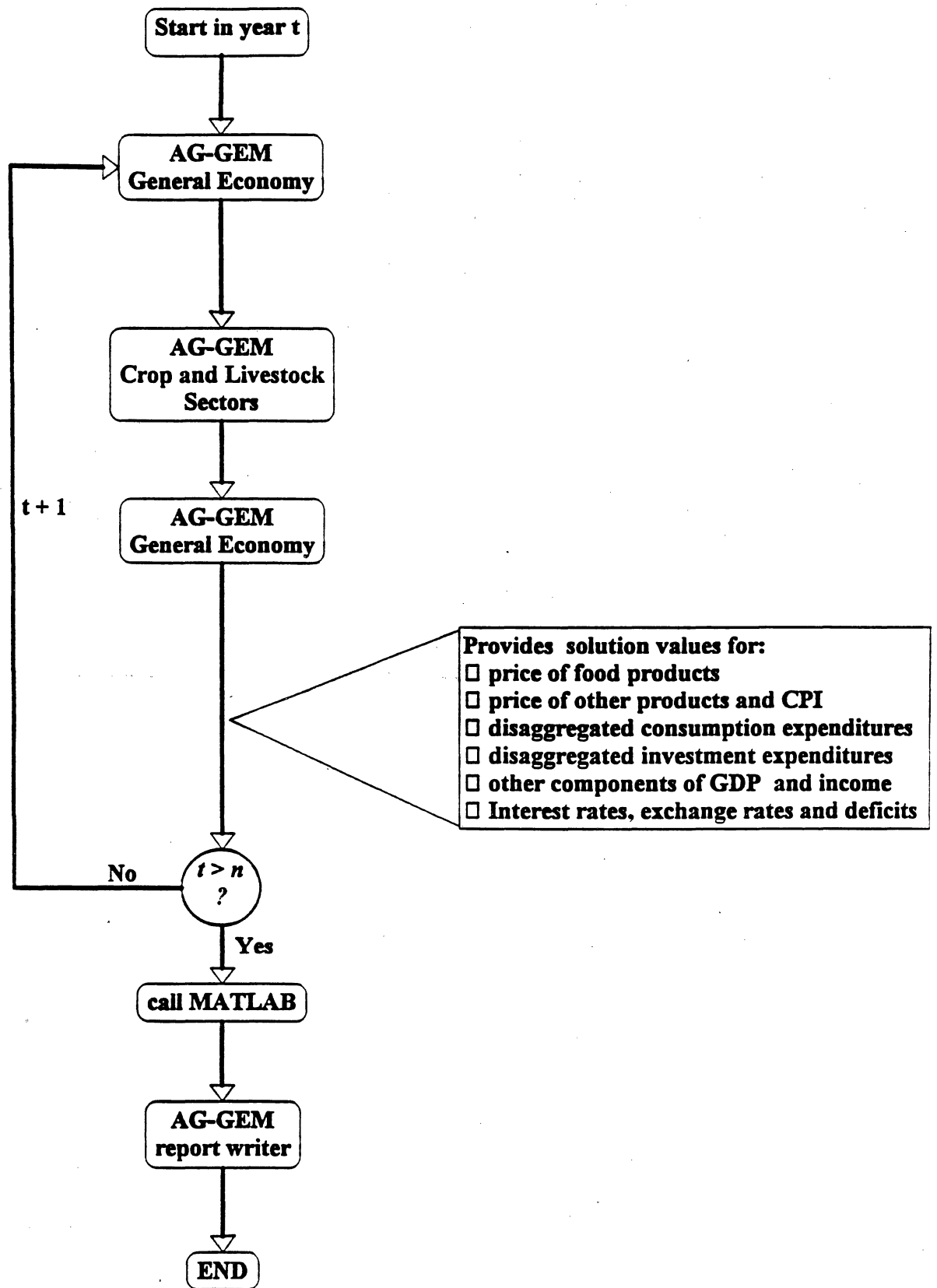
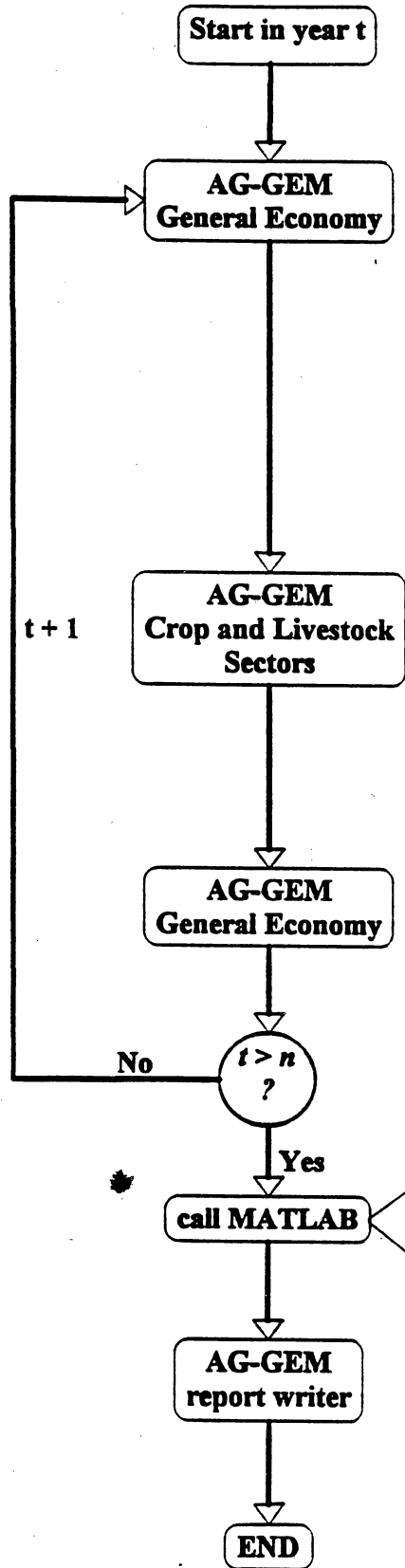


Figure 3 – Solution Values for General Economy and end of First Year.



- Callable subroutine which:**
- Solves 75 sector-LPIO model of US economy
  - AG-GEM GDP values in RHS section
  - AG-GEM farm output values in VUB section
  - AG-GEM farm input purchases also in VUB
  - Both models give general equilibrium solution
  - Disaggregates food and fiber industry output and employment

Figure 4 – Call to LPIO model at end of AG-GEM Solution Horizon to Disaggregate Food and Fiber Industry.



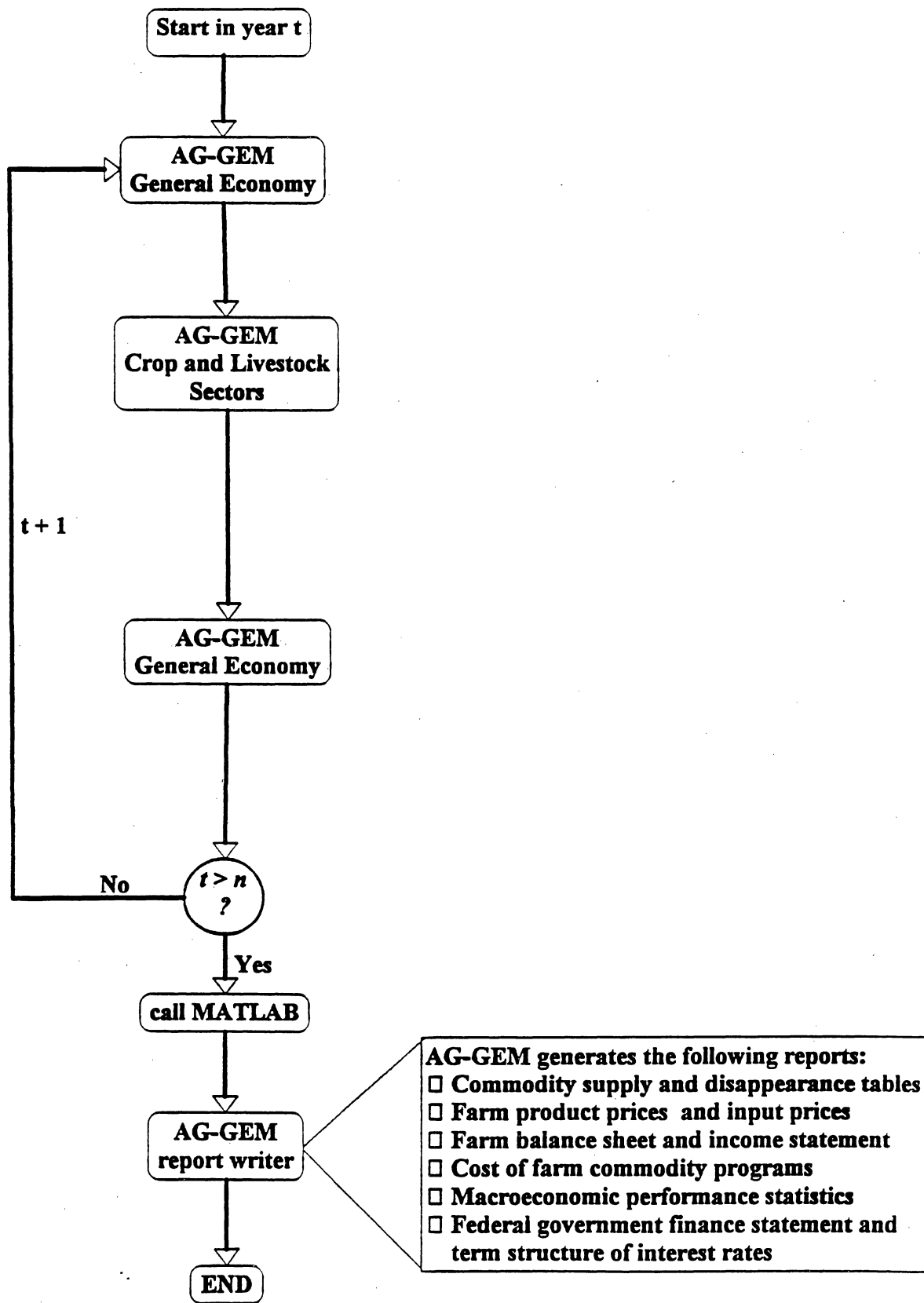


Figure 5 – Reports Generated by AG-GEM at the end of Solution Horizon.

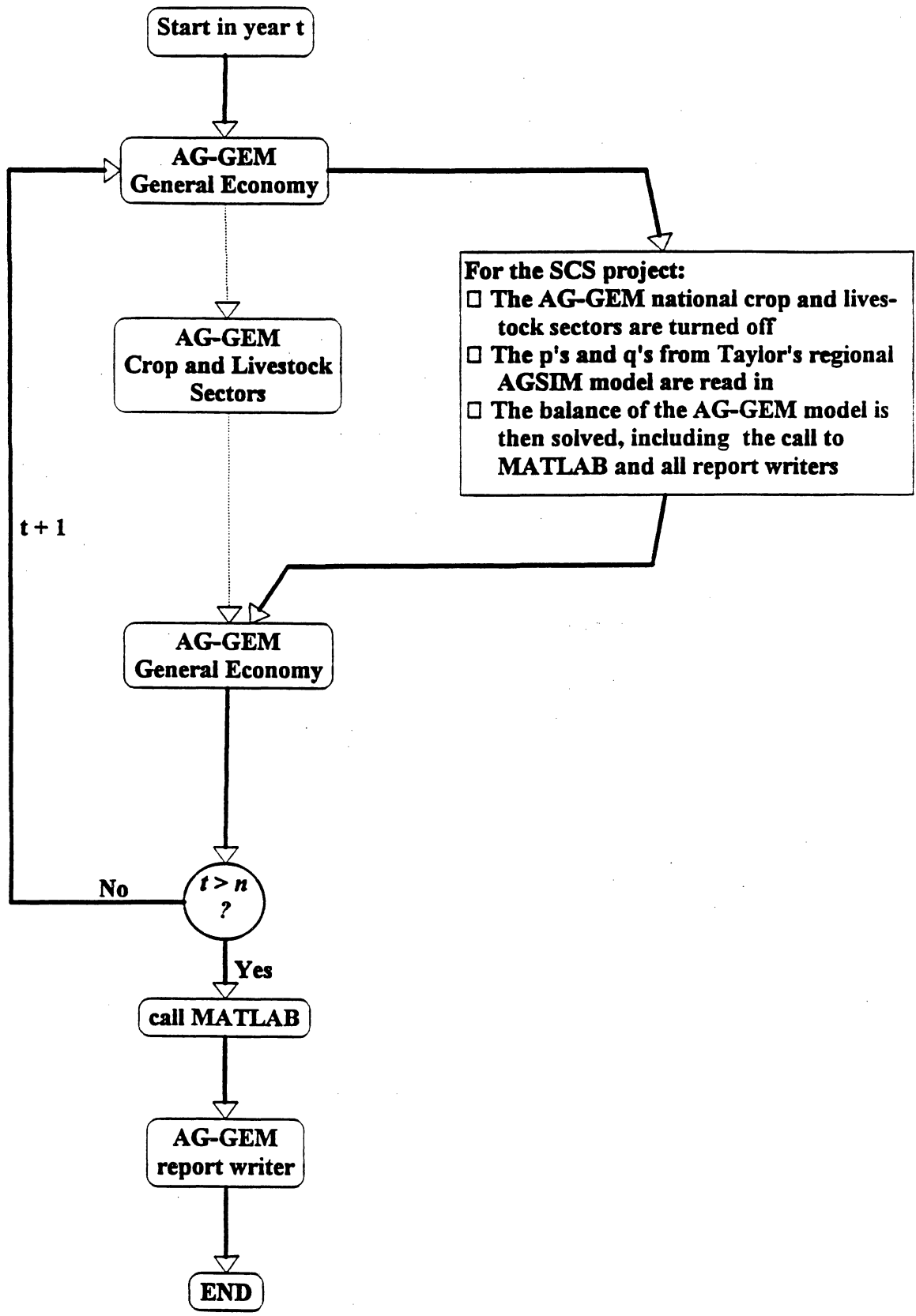


Figure 6 – Reports Generated by AG-GEM at the end of Solution Horizon.

SIMULATION: Baseline to 1996 .....

TABLE 1. GROSS DOMESTIC PRODUCT ACCOUNT

Items	1990	1991	1992	1993	1994	1995	1996
<b>NOMINAL GROSS DOMESTIC PRODUCT</b>	<b>5522.2</b>	<b>5677.5</b>	<b>5872.9</b>	<b>6188.2</b>	<b>6525.3</b>	<b>6872.9</b>	<b>7181.6</b>
1. Personal Consumption Expenditures:							
Food and beverages	601.4	617.7	622.6	672.5	725.1	775.8	830.5
Nondurable goods less food	623.1	633.8	663.3	696.7	741.1	784.1	832.7
Durable goods	464.3	446.1	466.8	490.3	520.9	550.4	577.2
Services	2059.7	2190.1	2249.3	2307.7	2370.0	2436.4	2507.1
Total	3748.4	3887.7	4002.0	4167.2	4357.2	4546.8	4747.5
2. Gross Private Domestic Investment:							
Fixed investment:							
Nonresidential structures	201.1	180.1	194.2	208.3	225.0	241.2	258.2
Producers durable equipment	376.4	360.9	389.2	417.3	450.8	483.4	517.3
Residential investment	215.6	190.3	205.2	220.0	237.7	254.9	272.8
Total	793.2	731.4	788.7	845.6	913.6	979.5	1048.2
Change in Business Inventories	6.3	-10.2	0.0	53.2	96.7	151.2	142.3
Total	799.5	721.1	788.7	898.8	1010.2	1130.7	1190.5
3. Government Purchases of Goods and Services:							
Federal government	426.4	447.3	460.5	474.9	489.5	504.8	520.6
State and local government	616.7	643.2	657.9	673.1	688.7	704.6	721.0
Total	1043.2	1090.5	1118.5	1148.0	1178.2	1209.4	1241.5
4. Net Exports of Goods and Services:							
Merchandise exports:							
Durable goods	262.6	282.0	304.1	333.8	360.0	392.3	427.9
Nondurable goods:							
Food, feed and beverages	35.1	35.7	36.7	37.6	38.7	39.7	40.9
Other nondurable goods	100.3	105.3	115.4	129.3	141.4	156.5	173.1
Services	159.0	175.1	188.8	207.3	223.6	243.6	265.7
Total	557.0	598.2	645.0	708.1	763.6	832.1	907.6
Merchandise imports:							
Durable goods	314.5	315.4	346.5	373.3	398.7	430.4	460.6
Nondurable goods:							
Food, feed and beverages	26.6	26.5	27.8	29.7	31.2	33.1	35.1
Other nondurable goods	166.7	158.1	175.0	188.8	202.2	218.8	234.5
Services	118.0	120.1	131.9	142.1	151.8	163.8	175.3
Total	625.9	620.0	636.7	653.3	670.9	689.7	709.7
Total Net Exports	-68.9	-21.8	-36.2	-25.8	-20.3	-14.1	2.1
<b>REAL GROSS DOMESTIC PRODUCT</b>	<b>4875.8</b>	<b>4818.2</b>	<b>4853.0</b>	<b>4984.0</b>	<b>5117.3</b>	<b>5243.1</b>	<b>5324.2</b>
Percent Change	0.8	-1.2	0.7	2.7	2.7	2.5	1.5
1. Personal Consumption Expenditures *	3309.7	3299.3	3307.0	3356.3	3417.0	3468.6	3519.6
Percent Change	2.0	-0.3	0.2	1.5	1.8	1.5	1.5
2. Gross Private Domestic Investment *	705.9	612.0	651.7	723.9	792.2	862.6	882.6
Percent Change	-7.9	-13.3	6.5	11.1	9.4	8.9	2.3
3. Government Purchases of Goods and Services *	921.1	925.4	924.3	924.6	924.0	922.6	920.4
Percent Change	2.6	0.5	-0.1	0.0	-0.1	-0.1	-0.2
4. Net Exports of Goods and Services *	-60.8	-18.5	-29.9	-20.8	-15.9	-10.7	1.5
Percent Change	17.1	69.6	-62.1	30.6	23.4	32.6	114.4

NOTE: Values expressed in billions of dollars. All values are reported on a calendar year basis.

\* Values expressed in 1987 dollars.





SIMULATION: Baseline to 1996 .....

TABLE 3. DISPOSABLE PERSONAL INCOME AND SAVING

Items	1990	1991	1992	1993	1994	1995	1996
<b>PERSONAL DISPOSABLE INCOME:</b>							
Personal Income	4664.2	4828.3	4986.1	5259.4	5551.8	5851.7	6109.8
LESS: Personal Tax and Nontax Payments	621.3	618.7	657.9	699.7	753.0	807.2	865.4
EQUALS: Disposable personal income	4042.9	4209.5	4328.3	4559.8	4798.9	5044.7	5244.5
<b>PERSONAL SAVING:</b>							
Disposable personal income	4042.9	4209.5	4328.3	4559.8	4798.9	5044.7	5244.5
LESS: Personal Consumption Expenditures	3748.4	3887.7	4002.0	4167.2	4357.2	4546.8	4747.5
LESS: Interest Paid by Consumers to Businesses	109.6	112.6	115.6	118.6	121.8	125.2	128.8
LESS: Net Personal Transfer Payments to Foreigners	9.3	9.7	9.7	9.7	9.7	9.7	9.7
EQUALS: Personal saving	175.5	199.6	201.0	264.2	310.2	363.0	358.5
<b>COMPENSATION OF EMPLOYEES:</b>							
Wages and salaries	2742.8	2812.2	2888.1	2963.2	3043.2	3128.4	3219.2
Supplements to wages and salaries:							
Employer contributions to social insurance	277.4	290.4	293.3	296.2	299.1	302.1	305.2
Other labor income	270.9	288.3	296.1	303.8	312.0	320.7	330.0
Total compensation	3291.2	3390.9	3477.5	3563.2	3654.4	3751.3	3854.3
<b>OTHER FACTOR INCOME:</b>							
Proprietor income	352.2	352.2	361.7	371.1	381.1	391.8	403.2
Rental income of persons after depreciation	-12.3	-10.4	-11.1	-11.9	-12.8	-13.8	-14.9
Personal dividend income	140.3	137.0	140.7	144.3	148.2	152.4	156.8
Personal interest income	694.5	700.6	719.5	738.2	758.2	779.4	802.0
Total other factor income	1174.7	1179.4	1210.8	1241.8	1274.7	1309.8	1347.1
<b>TRANSFER PAYMENTS TO PERSONS:</b>							
OAS, Disability and Health Insurance Benefits	352.0	382.0	392.3	402.5	413.4	424.9	437.3
Government Unemployment Insurance Benefits	18.0	27.6	27.8	28.1	28.4	28.7	29.0
Other Transfer Payments *	315.8	361.5	361.5	361.5	361.5	361.5	361.5
Total payments received	685.8	771.1	781.6	792.1	803.3	815.1	827.7

NOTE: Values expressed in billions of dollars. All values are reported on a calendar year basis.

Addendum:

Nominal per capita disposable income	16074.	16736.	17030.	17768.	18531.	19316.	19922.
Real per capita disposable income (1987 \$)	14192.	14203.	14072.	14310.	14533.	14736.	14769.

SIMULATION: Baseline to 1996 .....

TABLE 4. FEDERAL AND STATE GOVERNMENT BUDGETS

Items	1990	1991	1992	1993	1994	1995	1996
<b>FEDERAL GOVERNMENT BUDGET</b>							
<b>Government Receipts:</b>							
Personal tax and nontax payments	482.6	473.4	486.1	498.8	512.2	526.6	541.9
Corporate profit tax accruals	113.9	102.5	105.3	108.0	110.9	114.1	117.4
Indirect business taxes	66.0	78.2	80.3	82.4	84.6	87.0	89.5
Contributions for Social Security	444.9	468.2	480.8	493.3	506.7	520.9	536.0
Total Receipts	1107.4	1122.2	1152.6	1182.5	1214.4	1248.4	1284.7
<b>Government Expenditures:</b>							
<b>Defense Expenditures:</b>							
Defense durable goods	84.2	84.1	87.1	90.1	93.3	96.5	99.9
Defense nondurable goods	11.8	12.2	12.7	13.2	13.7	14.2	14.8
Defense services	211.8	222.5	227.0	231.5	236.1	240.9	245.7
Defense structures	6.3	4.9	5.0	5.2	5.4	5.5	5.7
Total	314.0	323.7	331.8	340.0	348.5	357.2	366.1
<b>Nondefense Expenditures:</b>							
Nondefense durable goods	5.9	6.8	7.0	7.1	7.2	7.4	7.5
CCC inventory change	-1.7	0.3	-0.1	0.1	0.0	0.0	0.0
Other nondefense nondurable goods	6.8	6.6	6.9	7.2	7.6	7.9	8.3
Nondefense services	93.4	100.4	105.4	110.7	116.2	122.0	128.1
Nondefense structures	8.0	9.4	9.6	9.8	10.1	10.3	10.6
Total	112.4	123.5	128.8	134.9	141.1	147.6	154.5
<b>Transfer Payments:</b>							
Payments to persons	499.9	550.3	565.1	579.8	595.5	612.1	629.9
Payments to foreigners (net)	13.4	-28.3	-34.4	-40.8	-47.4	-54.4	-61.7
Total	513.3	522.0	530.7	539.0	548.1	557.8	568.2
Net interest paid	176.6	186.9	195.8	205.4	216.5	228.7	241.7
Grants-in-aid to state and local governments	132.3	153.3	157.4	161.5	165.9	170.5	175.5
Subsidies less surplus from fed govt activities	25.1	23.1	23.7	24.7	25.7	26.8	28.1
Total Expenditures	1273.6	1332.6	1368.2	1405.6	1445.7	1488.7	1534.0
Nominal Federal Budget Deficit (NIPA basis)	166.2	210.4	215.7	223.0	231.3	240.2	249.4
Percent Change	36.0	26.6	2.5	3.4	3.7	3.9	3.8
Real Federal Budget Deficit (NIPA basis) *	146.8	178.6	178.2	179.6	181.4	183.3	184.9
Percent Change	30.4	21.7	-0.2	0.8	1.0	1.0	0.9
<b>STATE AND LOCAL GOVERNMENT BUDGET</b>							
<b>Government Receipts:</b>							
Personal tax and nontax payments	138.7	145.4	149.3	153.2	157.3	161.7	166.4
Corporate profit tax accruals	22.7	21.5	22.1	22.7	23.3	23.9	24.6
Indirect business taxes	378.2	397.0	407.7	418.3	429.6	441.7	454.5
Contributions for Social Security	57.3	60.6	62.2	63.9	65.6	67.4	69.4
Grants-in-aid from federal government	132.3	153.3	157.4	161.5	165.9	170.5	175.5
Total Receipts	729.3	777.8	798.8	819.6	841.7	865.3	890.4
<b>Government Expenditures:</b>							
Durable goods	34.9	36.4	37.5	38.6	39.7	40.9	42.2
Nondurable goods	56.0	58.0	60.3	62.7	65.2	67.8	70.5
Services	440.6	462.1	471.4	480.8	490.4	500.2	510.2
Structures	85.3	86.7	88.8	91.1	93.3	95.7	98.1
Total	616.7	643.2	657.9	673.1	688.7	704.6	721.0
Transfer payments to persons	164.7	198.0	204.0	210.1	216.4	222.9	229.6
Net interest payments	-52.4	-48.4	-50.3	-52.3	-54.4	-56.6	-58.9
Net subsidies	-20.9	-22.6	-23.2	-23.8	-24.4	-25.0	-25.6
Total Expenditures	708.2	770.2	788.4	807.1	826.3	845.9	866.0

NOTE: Values expressed in billions of dollars. All values are reported on a calendar year basis.

\* Values expressed in 1987 dollars.



SIMULATION: Baseline to 1996 .....

TABLE 5. GOVERNMENT EXPENDITURES ON AGRICULTURE

Items	1990	1991	1992	1993	1994	1995	1996
<b>FEDERAL GOVERNMENT:</b>							
Stabilization of farm prices and income:							
Crop deficiency payments *	6.7	5.4	4.6	3.1	2.2	2.4	2.5
Other stabilization programs	2.0	3.3	2.7	2.8	2.9	2.9	3.0
Total	8.7	8.7	7.3	5.9	5.1	5.4	5.5
Agricultural credit programs	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Conservation of agricultural resources:							
Conservation Reserve Program	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Other conservation programs	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total	2.6	2.6	2.7	2.6	2.6	2.6	2.6
Other agricultural programs	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total expenditures on agriculture	16.8	16.8	15.5	14.1	13.3	13.6	13.7
<b>STATE AND LOCAL GOVERNMENT:</b>							
Total expenditures on agriculture	3.8	3.8	3.8	3.8	3.8	3.8	3.8
<b>FEDERAL, STATE AND LOCAL GOVERNMENT:</b>							
Total expenditures on agriculture	20.6	20.6	19.3	17.8	17.0	17.3	17.5

NOTE: Values expressed in billions of dollars. All values are reported on a calendar year basis.

\* Eight major crops.

Addendum:

<b>Expenditures on agriculture:</b>							
Federal government (percent total budget)	1.32	1.26	1.13	1.00	0.92	0.91	0.90
State and local government (percent total budget)	0.53	0.49	0.48	0.46	0.45	0.44	0.43

SIMULATION: Baseline to 1996 .....

TABLE 6. ANNUAL PRICE LEVELS

Items	1990	1991	1992	1993	1994	1995	1996
<b>GENERAL PRICE INDICES: *</b>							
Implicit GDP Price Deflator	113.3	117.8	121.0	124.2	127.5	131.1	134.9
Percent Change	4.3	4.0	2.7	2.6	2.7	2.8	2.9
<b>CONSUMER PRICE INDEX: *</b>							
All Items	115.0	119.8	123.6	127.4	131.2	135.3	139.5
Percent Change	5.4	4.2	3.1	3.1	3.0	3.1	3.1
Food and Beverages	116.6	120.0	118.7	124.9	129.7	134.6	139.6
Percent Change	5.8	2.9	-1.1	5.2	3.9	3.8	3.7
Durable Goods	104.8	107.2	110.1	112.6	115.3	118.1	120.5
Percent Change	1.1	2.3	2.7	2.3	2.4	2.5	2.0
Nondurable Goods	117.8	122.3	125.6	128.5	131.7	135.1	139.1
Percent Change	7.3	3.9	2.7	2.3	2.5	2.6	2.9
Services	115.8	121.7	125.0	128.3	131.7	135.4	139.4
Percent Change	5.5	5.1	2.7	2.6	2.7	2.8	2.9
<b>PRODUCER PRICE INDEX: *</b>							
Natural gas	101.1	99.5	103.5	108.2	114.2	121.4	129.1
Percent Change	-2.0	-1.6	4.0	4.5	5.6	6.3	6.3
Refined Petroleum Products	131.6	118.1	115.1	120.4	127.1	135.1	143.7
Percent Change	22.2	-10.2	-2.5	4.5	5.6	6.3	6.4
Chemical and Allied Products	116.2	118.0	117.0	121.6	127.3	134.5	143.1
Percent Change	0.5	1.6	-0.9	3.9	4.7	5.7	6.4
Lumber and Wood Products	115.0	117.1	121.9	127.4	134.5	143.0	152.0
Percent Change	2.3	1.9	4.0	4.5	5.6	6.3	6.3
Metal and Metal Products	114.7	112.2	111.3	112.7	114.6	118.1	121.8
Percent Change	-0.9	-2.2	-0.8	1.2	1.7	3.1	3.2

NOTE: \* 1987 = 100 for each index.

SIMULATION: Baseline to 1996 .....

TABLE 7. GENERAL FINANCIAL STATISTICS

Items	1990	1991	1992	1993	1994	1995	1996
<b>NOMINAL INTEREST RATES:</b>							
Yield on 3-Month Treasury Bills	7.51	5.41	3.50	3.40	4.00	4.30	4.30
Yield on 5-Year Government Bonds	8.37	7.37	4.17	3.70	4.24	4.84	4.98
Yield on 30-Year Government Bonds	8.61	8.14	6.28	5.85	5.68	5.17	5.67
Prime Interest Rate	10.01	8.46	6.20	5.90	6.20	6.50	6.40
Yield on Commercial Bonds	9.32	8.77	7.27	7.18	7.26	7.40	7.47
Yield on Time Deposits	5.68	5.68	4.34	4.24	4.34	4.44	4.54
<b>REAL INTEREST RATES:</b>							
Yield on 3-Month Treasury Bills	3.23	1.37	0.80	0.80	1.30	1.50	1.40
Yield on 5-Year Government Bonds	4.09	3.33	1.47	1.10	1.54	2.04	2.08
Yield on 30-Year Government Bonds	4.32	4.09	3.58	3.25	2.98	2.37	2.77
Prime Interest Rate	5.73	4.42	3.50	3.30	3.50	3.70	3.50
Yield on Commercial Bonds	5.04	4.73	4.57	4.58	4.56	4.60	4.57
Rate on Time Deposits	1.40	1.64	1.64	1.64	1.64	1.64	1.64
<b>REIGN EXCHANGE:</b>							
Real FED Reserve Trade Weighted Exchange Rate *	86.0	86.5	81.3	82.5	83.5	83.6	83.6
Percent Change	-8.9	0.6	-6.0	1.5	1.2	0.1	0.0

NOTE: \* Values Expressed in 1973 Dollars.



ITEMS	1989	1990	1991	1992	1993	1994	1995	1996
TOTAL PROGRAM COSTS:								
FISCAL YEAR BASIS ----- Million Dollars in Current Prices -----								
Feed grain program:								
Corn	4408.7	2538.7	2386.8	1931.0	1861.2	1055.1	1812.7	1634.7
Sorghum	642.0	450.1	242.6	179.8	279.5	193.7	321.3	307.0
Barley	49.3	-93.5	71.0	85.6	42.1	2.8	8.5	4.1
Oats	0.9	-5.4	12.5	10.7	14.6	-0.8	0.3	-0.1
All feed grains	5100.8	2890.0	2712.9	2207.1	2197.3	1250.8	2142.9	1945.6
Wheat program	122.8	805.9	2984.3	2495.4	1366.0	749.5	323.1	125.2
upland Cotton program	1564.0	-78.4	382.2	372.3	878.0	520.7	552.0	558.6
Soybean program	-86.1	5.3	40.2	19.6	226.3	-16.0	-2.6	22.3
Rice program	685.7	665.2	866.9	316.9	487.5	198.0	618.1	545.3
Dairy program	608.0	500.0	839.0	330.0	341.0	341.0	341.0	341.0
Other commodities	-201.0	-106.0	117.0	121.0	240.0	240.0	240.0	240.0
Disaster payments	338.6	5.0	6.0	996.0	0.0	0.0	0.0	0.0
Net interest	98.0	632.0	745.0	299.7	169.0	201.5	260.1	279.6
Other net costs *	1185.0	1357.0	1434.0	2852.0	3249.0	3249.0	3249.0	3249.0
Total CCC program costs	9415.8	6675.8	10127.4	10010.0	9154.0	6734.5	7723.5	7306.6
CRP Payments	1446.3	1645.1	1672.8	1739.7	1806.6	1873.6	1940.0	1891.5
TOTAL GOVERNMENT PAYMENTS	10862.0	8321.0	11800.2	11749.7	10960.7	8608.1	9663.5	9198.1

ITEMS	1989	1990	1991	1992	1993	1994	1995	1996
TOTAL PROGRAM COSTS:								
FISCAL YEAR BASIS ----- Million Dollars in Current Prices -----								
Cash deficiency payments	5840.4	4181.5	6238.0	5264.3	3621.0	2460.1	2570.3	2498.9
Producer storage payments	174.0	185.2	0.7	16.2	10.4	6.8	3.9	2.8
Diversion payments	-1.4	-0.8	0.6	0.0	0.0	0.0	0.0	0.0
Disaster payments	338.6	5.0	6.0	996.0	0.0	0.0	0.0	0.0
CRP Payments	1446.3	1645.1	1672.8	1739.7	1806.6	1873.6	1940.0	1891.5
Total direct cash payments ***	7798.0	6016.0	7918.1	8016.1	5438.1	4340.5	4514.2	4393.3
Value of loans made	5898.8	4795.4	5085.8	6157.2	6655.7	5232.6	5584.0	5702.2
Value of loans repaid	6476.5	4943.8	4580.4	6225.1	5472.2	5230.0	4784.7	5269.1
Storage and handling costs	591.7	260.9	325.1	178.5	133.3	120.0	133.9	139.3
Net cash stock outlays	14.0	112.4	830.5	110.5	1316.8	122.5	933.2	572.4
Net interest	98.0	632.0	745.0	299.7	169.0	201.5	260.1	279.6
Other net costs **	1000.3	1386.1	2280.2	3323.3	4036.9	3943.6	3956.0	3952.8
Total cash program costs	8910.3	8146.6	11773.8	11749.7	10960.7	8608.1	9663.5	9198.1
PIK certificate payments	1951.8	175.2	26.4	0.0	0.0	0.0	0.0	0.0
TOTAL GOVERNMENT PAYMENTS	10862.0	8321.7	11800.2	11749.7	10960.7	8608.1	9663.5	9198.1

\* Includes export enhancement program, market promotion program, and other CCC non-commodity expenses.

\*\* Also above expenses plus net sales and gifts.

\*\*\* Calendar year direct cash payments  
Calendar year total direct payments

~~1571.0 1695.0 1699.0 1729.0 4885.5 4899.0 4955.5 4388.4~~  
10800.0 9300.0 8000.0 7269.6 4885.5 4053.6 4333.5 4380.4

Table 1. AG-GEM Projected Real Output in Agribusiness Industries - Baseline (Current Billion Dollars).

INDUSTRY	1990	1991	1992	1993	1994	1995	1996
<b>FOOD PROCESSING:</b>							
Meat packing, sausage, etc.	69.90	72.51	74.75	78.01	81.57	85.22	88.88
Poultry processing	21.01	21.82	22.59	23.70	24.87	26.11	27.35
Creamery butter	1.31	1.36	1.41	1.47	1.54	1.61	1.68
Cheese, natural and processed	16.25	16.84	17.38	18.16	19.01	19.89	20.76
Condensed and evaporated milk	6.15	6.38	6.57	6.85	7.15	7.46	7.77
Ice cream and frozen desserts	4.69	4.87	5.01	5.23	5.46	5.70	5.94
Fluid milk	22.70	23.57	24.25	25.25	26.33	27.44	28.55
Canned and cured foods	25.13	26.02	26.96	28.31	29.74	31.24	32.70
Pickles, sauces, and salad dressing	5.81	6.05	6.29	6.64	6.99	7.37	7.76
Frozen fruits, juices and vegetables	7.67	7.94	8.23	8.65	9.09	9.55	10.00
Frozen specialties	7.80	8.08	8.35	8.73	9.15	9.58	10.01
Flour, Flour milling, blending	9.53	9.96	10.39	10.97	11.55	12.20	12.87
Rice milling	1.76	1.83	1.90	2.01	2.11	2.22	2.34
Wet corn milling	6.74	6.97	7.27	7.71	8.15	8.64	9.10
Dog, cat, and other pet food	7.06	7.34	7.63	8.03	8.44	8.89	9.34
Bread, cake, cookies, crackers, chips, snacks	32.19	33.39	34.38	35.84	37.45	39.08	40.73
Sugar	6.53	6.84	7.15	7.58	8.01	8.49	8.99
Confectionery products	8.00	8.31	8.59	8.98	9.41	9.86	10.31
Chocolate and cocoa products	3.13	3.23	3.35	3.51	3.68	3.87	4.04
Other prepared foods	14.02	14.52	15.04	15.79	16.59	17.42	18.24
Salted and roasted nuts and seeds	2.73	2.79	2.91	3.08	3.26	3.45	3.62
Cottonseed oil mills	0.80	0.86	0.94	1.03	1.11	1.22	1.33
Soybean oil mills	11.09	11.53	12.02	12.72	13.42	14.19	14.96
Vegetable and animal shortening, cooking oil	7.72	8.00	8.32	8.77	9.23	9.73	10.22
Wine and malt/alcoholic beverages	23.13	23.99	24.76	25.89	27.11	28.37	29.64
Non-alcoholic beverages and syrups	29.20	30.30	31.27	32.68	34.21	35.80	37.40
Prepared fresh or frozen fish	6.09	6.32	6.51	6.80	7.11	7.43	7.75
Roasted coffee	6.56	6.81	7.02	7.32	7.65	8.00	8.34
Tobacco products and processing	28.76	29.97	31.28	33.09	34.94	36.96	39.02
Food products machinery	2.28	2.44	2.65	2.93	3.17	3.47	3.79
SECTOR TOTAL	395.71	410.85	425.17	445.75	467.53	490.45	513.40
PERCENT OF NATIONAL TOTAL	4.15	4.22	4.18	4.13	4.09	4.05	4.05
<b>FIBER MANUFACTURING:</b>							
Fabric mills	21.88	22.70	23.64	24.96	26.33	27.80	29.25
Hosiery	3.94	4.08	4.21	4.41	4.63	4.86	5.08
Knit mills	10.78	11.18	11.53	12.04	12.60	13.17	13.74
Yarn and thread mills	21.95	22.13	23.27	24.97	26.70	28.57	30.06
Other fabric mills	24.71	25.50	26.59	28.16	29.75	31.48	33.09
Apparel made from purchased materials	47.15	48.94	50.44	52.63	55.04	57.51	60.01
Textile machinery	1.48	1.50	1.59	1.71	1.83	1.97	2.08
SECTOR TOTAL	131.89	136.02	141.27	148.88	156.88	165.35	173.31
PERCENT OF NATIONAL TOTAL	1.38	1.40	1.39	1.38	1.37	1.37	1.37

Table 1. Continued.

INDUSTRY	1990	1991	1992	1993	1994	1995	1996
<b>FARM INPUT MANUFACTURING:</b>							
New farm structures	5.13	4.60	5.06	5.78	6.52	7.31	7.70
Prepared livestock feeds, N.E.C	13.60	14.12	14.60	15.28	16.02	16.78	17.55
Ag. fertilizer mixing and lime	10.53	10.90	11.43	12.18	12.92	13.74	14.53
Ag. chemicals, N.E.C	8.62	8.94	9.38	10.00	10.61	11.29	11.95
Farm machinery and equipment	11.54	12.05	12.91	14.07	15.14	16.40	17.65
Lawn and garden equipment	4.98	4.96	5.25	5.69	6.13	6.61	6.97
Ag. mining & minerals	7.77	8.04	8.42	8.96	9.49	10.08	10.64
<b>SECTOR TOTAL</b>	<b>62.17</b>	<b>63.62</b>	<b>67.05</b>	<b>71.98</b>	<b>76.84</b>	<b>82.22</b>	<b>86.99</b>
<b>PERCENT OF NATIONAL TOTAL</b>	<b>0.65</b>	<b>0.65</b>	<b>0.66</b>	<b>0.67</b>	<b>0.67</b>	<b>0.68</b>	<b>0.69</b>
<b>OTHER SELECTED AGRIBUSINESS INDUSTRIES:</b>							
Forest and forestry products	5.52	5.69	6.05	6.55	7.02	7.57	8.07
Greenhouse, nursery and landscaping	32.56	33.33	34.61	36.53	38.52	40.61	42.44
Commercial fishing	3.22	3.35	3.47	3.64	3.82	4.02	4.21
Ag., forestry, and fishery services	13.01	13.52	14.11	14.95	15.80	16.72	17.63
Food stores	98.12	101.17	104.44	109.28	114.60	120.05	125.19
Apparel and accessory stores	39.41	40.10	41.64	43.97	46.47	49.06	51.22
Eating and drinking establishments	118.60	122.86	126.63	132.15	138.25	144.48	150.66
Other food and fiber wholesale/retail trade	28.93	29.94	31.11	32.77	34.50	36.35	38.14
Food and fiber manufacturing, N.E.C.	102.51	105.73	109.95	116.05	122.39	129.15	135.50
Ag. transport, freight and warehouse	21.80	22.57	23.42	24.63	25.90	27.25	28.55
Ag. finance and insurance services	8.99	9.31	9.67	10.19	10.73	11.30	11.85
Ag. personal, business and R.E. services	95.52	98.73	102.49	107.93	113.61	119.64	125.41
<b>SECTOR TOTAL</b>	<b>568.21</b>	<b>586.30</b>	<b>607.59</b>	<b>638.65</b>	<b>671.60</b>	<b>706.19</b>	<b>738.89</b>
<b>PERCENT OF NATIONAL TOTAL</b>	<b>5.95</b>	<b>6.02</b>	<b>5.98</b>	<b>5.92</b>	<b>5.88</b>	<b>5.84</b>	<b>5.83</b>
<b>NOTE: N.E.C stands for Not Elsewhere Classified.</b>							
<b>ADDENDUM:</b>							
<b>NATIONAL ANALYSIS:</b>							
Mining and minerals extraction, N.E.C.	282.55	284.86	300.49	323.61	346.62	371.82	391.94
New construction and maintenance, N.E.C.	718.60	679.12	728.42	806.85	885.68	970.60	1017.83
Manufacturing, N.E.C.	1789.69	1797.01	1901.66	2056.58	2209.98	2378.72	2510.80
Transport, freight and warehouse, N.E.C.	665.61	684.06	715.58	761.28	806.34	855.70	900.16
Other services, N.E.C.	2166.36	2230.87	2310.82	2428.78	2552.83	2682.79	2802.71
Wholesale and retail trade, N.E.C.	641.35	662.33	689.93	729.57	770.28	814.13	855.67
Finance and insurance services, N.E.C.	450.30	466.28	482.39	505.73	530.70	556.79	582.35
Health, education, and social services	725.99	752.06	775.20	809.05	846.42	884.61	922.49
State, local, and Fed Govt enterprises	761.81	794.36	815.21	847.31	876.25	906.81	937.38
<b>TOTAL OUTPUT; ALL SECTORS</b>	<b>9545.18</b>	<b>9740.18</b>	<b>10160.68</b>	<b>10784.48</b>	<b>11419.20</b>	<b>12099.08</b>	<b>12678.56</b>
<b>Percent Identified Food and Fiber Industries are of Total Output; All Sectors</b>	<b>14.07</b>	<b>14.26</b>	<b>14.18</b>	<b>14.05</b>	<b>13.96</b>	<b>13.86</b>	<b>13.86</b>

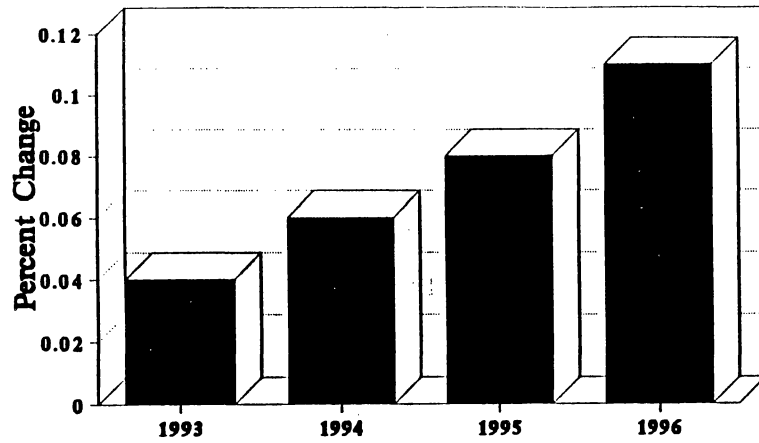
Table 2. AG-GEM Projected Employment in Agribusiness Industries - Baseline (Thousand Workers).

INDUSTRY	1990	1991	1992	1993	1994	1995	1996
<b>FOOD PROCESSING:</b>							
Meat packing, sausage, etc.	225.62	234.07	241.29	251.82	263.29	275.07	286.88
Poultry processing	201.37	209.13	216.56	227.22	238.43	250.28	262.16
Creamery butter	2.05	2.13	2.20	2.30	2.41	2.52	2.63
Cheese, natural and processed	41.90	43.43	44.82	46.84	49.03	51.29	53.53
Condensed and evaporated milk	16.14	16.75	17.25	17.99	18.79	19.60	20.42
Ice cream and frozen desserts	21.99	22.79	23.48	24.49	25.58	26.71	27.82
Fluid milk	75.02	77.89	80.14	83.46	87.03	90.68	94.34
Canned and cured foods	142.70	147.76	153.08	160.78	168.87	177.40	185.71
Pickles, sauces, and salad dressing	21.49	22.39	23.30	24.56	25.86	27.27	28.70
Frozen fruits, juices and vegetables	50.90	52.68	54.60	57.36	60.29	63.37	66.37
Frozen specialties	43.55	45.12	46.60	48.76	51.09	53.50	55.88
Flour, Flour milling, blending	51.00	53.35	55.60	58.73	61.86	65.31	68.91
Rice milling	5.61	5.86	6.09	6.42	6.75	7.11	7.48
Wet corn milling	9.45	9.76	10.19	10.80	11.43	12.10	12.75
Dog, cat, and other pet food	15.90	16.54	17.18	18.08	19.01	20.02	21.03
Bread, cake, cookies, crackers, chips, snacks	251.59	260.98	268.77	280.17	292.72	305.52	318.37
Sugar	21.65	22.67	23.71	25.14	26.55	28.13	29.78
Confectionery products	49.65	51.58	53.29	55.75	58.41	61.17	63.98
Chocolate and cocoa products	14.81	15.31	15.84	16.61	17.45	18.31	19.15
Other prepared foods	85.35	88.40	91.57	96.16	100.99	106.07	111.05
Salted and roasted nuts and seeds	7.84	8.01	8.34	8.83	9.35	9.89	10.37
Cottonseed oil mills	3.48	3.75	4.06	4.48	4.84	5.28	5.77
Soybean oil mills	8.66	9.00	9.39	9.93	10.48	11.08	11.68
Vegetable and animal shortening, cooking oil	19.41	20.12	20.91	22.05	23.21	24.46	25.69
Malt and malt/alcoholic beverages	68.21	70.74	73.03	76.34	79.95	83.68	87.41
Non-alcoholic beverages and syrups	121.88	126.49	130.55	136.42	142.83	149.45	156.12
Prepared fresh or frozen fish	46.15	47.89	49.38	51.56	53.90	56.32	58.73
Roasted coffee	11.87	12.31	12.69	13.24	13.85	14.47	15.10
Tobacco products and processing	51.52	53.70	56.03	59.29	62.59	66.22	69.90
Food products machinery	24.10	25.83	28.09	31.01	33.58	36.75	40.18
SECTOR TOTAL	1710.89	1776.45	1838.04	1926.60	2020.41	2119.01	2217.89
PERCENT OF NATIONAL TOTAL	1.24	1.26	1.25	1.24	1.24	1.23	1.23
<b>FIBER MANUFACTURING:</b>							
Fabric mills	264.78	274.69	286.02	302.08	318.56	336.38	353.92
Hosiery	71.19	73.70	76.19	79.80	83.72	87.78	91.77
Knit mills	139.00	144.24	148.74	155.27	162.45	169.83	177.27
Yarn and thread mills	177.02	178.46	187.68	201.38	215.31	230.39	242.40
Other fabric mills	266.49	275.00	286.76	303.67	320.86	339.45	356.91
Apparel made from purchased materials	873.60	906.65	934.54	975.06	1019.75	1065.53	1111.83
Textile machinery	18.45	18.70	19.77	21.31	22.85	24.55	26.18
SECTOR TOTAL	1810.53	1871.44	1939.70	2038.58	2143.51	2253.91	2360.06
PERCENT OF NATIONAL TOTAL	1.32	1.33	1.32	1.32	1.31	1.31	1.31

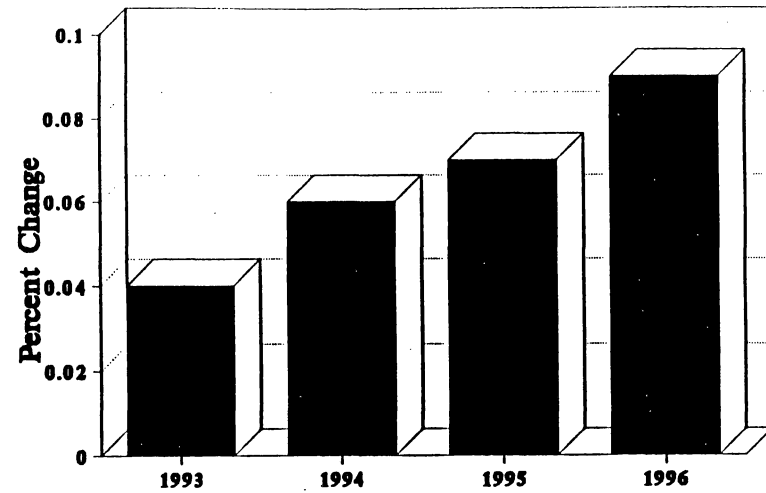
Table 2. Continued.

INDUSTRY	1990	1991	1992	1993	1994	1995	1996
<b>FARM INPUT MANUFACTURING:</b>							
New farm structures	17.41	15.62	17.16	19.62	22.12	24.81	26.14
Prepared livestock feeds, N.E.C.	45.05	46.77	48.34	50.61	53.05	55.58	58.14
Ag. fertilizer mixing and lime	35.85	37.10	38.92	41.49	44.00	46.80	49.46
Ag. chemicals, N.E.C.	24.96	25.89	27.17	28.97	30.74	32.70	34.61
Farm machinery and equipment	80.54	84.15	90.14	98.26	105.72	114.52	123.21
Lawn and garden equipment	27.22	27.09	28.69	31.09	33.50	36.13	38.08
Ag. mining & minerals	23.14	23.94	25.07	26.66	28.25	29.99	31.66
<b>SECTOR TOTAL</b>	<b>254.16</b>	<b>260.57</b>	<b>275.49</b>	<b>296.72</b>	<b>317.36</b>	<b>340.53</b>	<b>361.30</b>
<b>PERCENT OF NATIONAL TOTAL</b>	<b>0.18</b>	<b>0.18</b>	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>	<b>0.20</b>	<b>0.20</b>
<b>OTHER SELECTED AGRIBUSINESS INDUSTRIES:</b>							
Forest and forestry products	47.05	48.55	51.59	55.84	59.89	64.52	68.84
Greenhouse, nursery and landscaping	912.15	933.61	969.62	1023.34	1079.04	1137.78	1188.91
Commercial fishing	81.90	85.05	88.15	92.58	97.21	102.12	107.03
Ag., forestry, and fishery services	493.07	512.16	534.75	566.56	598.46	633.45	667.99
Food stores	3515.45	3624.66	3741.89	3915.17	4105.80	4301.00	4485.41
Apparel and accessory stores	1326.29	1349.40	1401.36	1479.75	1563.60	1650.81	1723.49
Eating and drinking establishments	7012.71	7264.29	7487.26	7813.55	8174.31	8542.63	8908.05
Other food and fiber wholesale/retail trade	532.03	550.57	571.93	602.65	634.52	668.53	701.39
Food and fiber manufacturing, N.E.C.	741.17	764.40	794.90	839.03	884.87	933.77	979.67
Ag. transport, freight and warehouse	298.29	308.81	320.30	336.87	354.14	372.46	390.25
Ag. finance and insurance services	121.97	126.38	131.27	138.28	145.54	153.30	160.88
Ag. personal, business and R.E. services	1157.27	1196.18	1241.76	1307.62	1376.43	1449.49	1519.45
<b>SECTOR TOTAL</b>	<b>16239.35</b>	<b>16764.07</b>	<b>17334.78</b>	<b>18171.25</b>	<b>19073.80</b>	<b>20009.87</b>	<b>20901.37</b>
<b>PERCENT OF NATIONAL TOTAL</b>	<b>11.80</b>	<b>11.88</b>	<b>11.82</b>	<b>11.74</b>	<b>11.70</b>	<b>11.64</b>	<b>11.63</b>
<b>NOTE: N.E.C stands for Not Elsewhere Classified.</b>							
<b>ADDENDUM:</b>							
<b>NATIONAL ANALYSIS:</b>							
Mining and minerals extraction, N.E.C.	840.89	847.78	894.30	963.09	1031.58	1106.59	1166.47
New construction and maintenance, N.E.C.	9255.83	8747.32	9382.37	10392.60	11407.87	12501.72	13110.01
Manufacturing, N.E.C.	12939.29	12992.17	13748.80	14868.84	15977.95	17197.93	18152.86
Transport, freight and warehouse, N.E.C.	6039.93	6212.65	6502.45	6920.80	7334.13	7787.73	8199.86
Other services, N.E.C.	26247.45	27029.01	27997.69	29426.89	30929.78	32504.46	33957.34
Wholesale and retail trade, N.E.C.	16898.30	17459.69	18129.60	19096.96	20110.50	21186.44	22214.47
Finance and insurance services, N.E.C.	6110.02	6326.91	6545.44	6862.10	7200.96	7555.01	7901.86
Health, education, and social services	14251.78	14763.60	15217.75	15882.22	16615.95	17365.53	18109.19
State, local, and Fed Govt enterprises	22312.14	23265.24	23875.99	24816.17	25663.65	26558.77	27454.19
<b>TOTAL EMPLOYMENT; ALL SECTORS</b>	<b>137621.80</b>	<b>141130.92</b>	<b>146610.47</b>	<b>154752.91</b>	<b>163083.25</b>	<b>171922.30</b>	<b>179718.38</b>
<b>Percent Identified Food and Fiber Industries are of Total Employment; All Sectors</b>	<b>16.51</b>	<b>16.64</b>	<b>16.59</b>	<b>16.49</b>	<b>16.44</b>	<b>16.38</b>	<b>16.35</b>

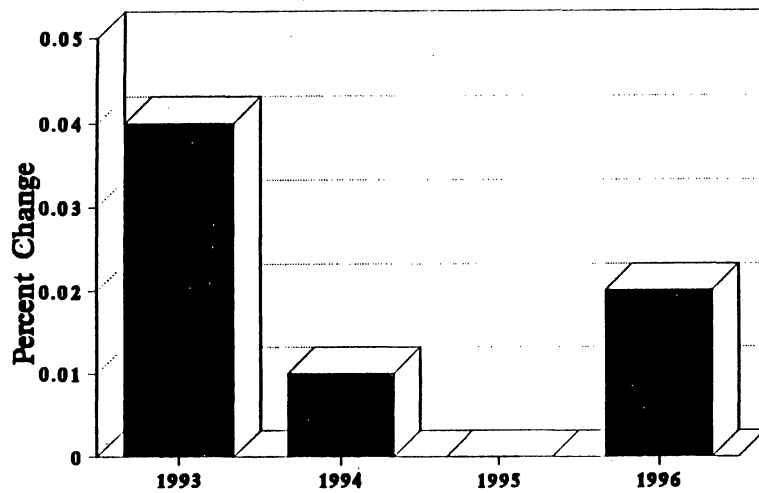
### Food Processing Industry Macro Scenario



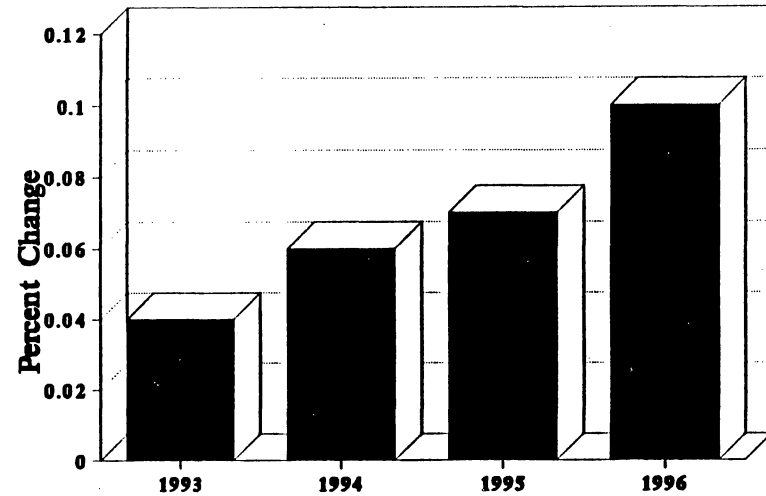
### Fiber Manufacturing



### Farm Input Manufacturing



### Other Selected Agribusiness Industries





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