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1976 Base Data for the  
Dairy Market Policy Simulator  
(Model A)

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## PREFACE

The Dairy Market Policy Simulator, of DAMPS, was developed as part of a dairy modeling project begun at Purdue University (6). Each of the authors was at Purdue at some time during the research and model development. Dr. Andrew Novakovic is an Assistant Professor in the Department of Agricultural Economics at Cornell University. Dr. Emerson Babb is a Professor in the Department of Agricultural Economics at Purdue University. David Martella is on the staff of the Department of Agricultural Economics and Rural Sociology at the University of Arkansas. James Pratt is a Research Support Specialist in the Department of Agricultural Economics at Cornell University.

DAMPS evolved from a model known as the Federal Milk Marketing Order Policy Simulator, or FMMOPS, which was developed by Dr. David Banker. Contributions to FMMOPS were also made by Dr. Oscar Goldman.

Other publications documenting or describing DAMPS and FMMOPS are listed in the Bibliography (7, 8, 1, 2, 3, 5). Requests for further information regarding DAMPS should be directed to:

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1976 BASE DATA FOR THE DAIRY MARKET POLICY SIMULATOR  
(MODEL A)

Projections made by the Dairy Market Policy Simulator (DAMPS) are extrapolated from a set of base data. Much of the base data used in DAMPS are also used in the predecessor model, the Federal Milk Marketing Order Policy Simulator (FMMOPS) developed by Banker, et al. (1, 2, 3, 5). A detailed description of data collection procedures and the data for federal orders is provided by Banker (2). The original data used by Banker was for 1975; data in DAMPS has been updated to 1976 (5). A second base data set is constructed, consisting of data for state regulated markets, unregulated Grade A markets, and Grade B markets.

All data are described below in sections, corresponding to the manner in which they are read by the computer program (DAMPS). Each section is introduced by a brief description of the data. Next, the variable name assigned to each matrix of data by DAMPS is given, followed by a listing of the data as they appear in the data file read by DAMPS. Sources of non-federal order data are also provided.

Base Data Set 1

Descriptions of federal order data are taken from Banker, et al. (3).

- [1] Section 1 contains all the labels used in model output. Node (index) numbers refer to internal positions of order areas processing centers and consumption centers as used by the model. Node numbers from 1 to 29 correspond to areas with both supply plant and direct-shipped milk. Order names are followed by a complete list of manufacturing centers. Single manufacturing centers are listed first, followed by labels and names for regional manufacturing centers. Fourth quarter 1976 minimum federal order prices in cents are followed by distance in miles used when generating Class I prices.

53 68UP MIDWEST	SD2 S. DAKOTA2
54 79IOWA	ID1 IDAHO (1)
55 65NEB-W. IOWA	ID2 IDAHO (2)
56 62ST.L.-OZKS	MD2 DUMY MLTPL
57 64K.C./NEO.U	
58 11TENN. VAL.	
59126TEXAS	
60137E COLORADO	
61124ORE-WASH	

(2) In section 2, the base year is specified.

NYBASE

(2)\*\*\*\*\* BASE YEAR  
1976

(3) Section 3 contains Class I sales made by handlers in their own area by quarter during 1976, in thousands of pounds.

IACL1 (i,k) i = order, k = quarter

(3)\*\*\*\*\* IN AREA CLASS I SALES

4	668241.	692394.	633765.	683850.
12	134005.	124519.	123055.	142177.
13	179498.	165712.	163437.	174175.
6	169960.	149211.	151595.	147557.
33	536570.	518525.	520301.	544240.
44	24966.	23930.	27737.	24395.
46	190534.	180301.	175937.	183965.
49	331311.	320267.	333562.	345804.
50	59334.	57039.	59282.	72830.
76	27937.	26477.	25184.	28083.
75	7764.	7587.	8312.	9401.
73	50691.	48630.	48559.	50852.
99	30364.	29220.	31448.	31847.
98	98448.	97535.	81694.	92122.
97	88463.	87032.	82092.	85988.
108	88386.	85830.	95531.	96913.
106	124105.	118494.	127018.	128378.
104	36234.	35223.	34417.	36101.
132	22474.	21587.	25336.	24229.
120	20462.	19804.	20864.	19764.
96	122785.	118259.	122858.	129358.
94	191501.	190732.	205860.	213301.
136	101025.	101108.	100650.	107271.
134	9513.	8621.	9881.	9968.
131	140752.	134129.	133347.	143280.
138	91578.	88849.	88480.	93814.
139	26078.	24820.	29062.	25731.
125	171589.	171364.	174737.	183676.
133	37595.	36573.	36812.	39506.
1	758348.	739986.	729496.	779153.
2	1311229.	1263602.	1230558.	1294106.
7	313219.	298709.	274261.	305426.
40	573952.	552310.	538165.	568286.

1/ All individual market data is listed in internal (node number) order. Numbers appearing on the far left are order numbers, unless otherwise indicated.

- (5) Section 5 contains blend prices in cents per hundred-weight by quarter, from the fourth quarter of 1975 through 1976. Blend prices include over order payments.

BLEND(i,k)      i = order, k = quarter

(5)\*\*\*\*\* BLEND PRICES

4	1034.	1066.	1002.	1020.	1024.
12	1174.	1193.	1130.	1165.	1184.
13	1173.	1197.	1126.	1177.	1191.
6	1169.	1178.	1121.	1173.	1190.
33	989.	1016.	965.	990.	1002.
44	938.	960.	917.	949.	945.
46	1000.	1014.	955.	985.	996.
49	980.	1003.	961.	990.	1000.
50	950.	969.	927.	958.	952.
76	955.	953.	911.	945.	930.
75	986.	1000.	945.	986.	989.
73	995.	995.	952.	980.	986.
99	1002.	1053.	996.	1002.	997.
98	1014.	994.	963.	1001.	1005.
97	1033.	1071.	1034.	1041.	1056.
108	1038.	1075.	1042.	1044.	1066.
106	1016.	1026.	952.	986.	1014.
104	1026.	1055.	993.	1008.	1054.
132	1062.	1089.	1050.	1068.	1126.
120	1081.	1112.	1089.	1073.	1142.
96	1100.	1128.	1090.	1068.	1081.
94	1088.	1097.	1024.	1067.	1089.
136	962.	990.	936.	963.	963.
134	1026.	1050.	981.	1033.	1065.
131	1017.	1043.	987.	1014.	1015.
138	1065.	1085.	1057.	1052.	1099.
139	947.	991.	934.	955.	956.
125	942.	958.	913.	939.	926.
133	973.	1002.	939.	962.	962.
1	1047.	1067.	1005.	1039.	1053.
2	995.	1010.	953.	989.	987.
7	1065.	1084.	1052.	1081.	1079.
40	981.	1003.	959.	981.	935.
36	993.	1017.	954.	979.	1002.
30	928.	922.	889.	920.	902.
32	957.	976.	928.	960.	953.
68	915.	904.	869.	902.	872.
79	938.	955.	913.	943.	932.
65	962.	971.	928.	951.	942.
62	974.	1000.	957.	985.	990.
64	989.	992.	938.	961.	960.
101	1058.	1051.	1015.	1056.	1061.
126	1046.	1066.	1016.	1038.	1059.
137	1030.	1072.	1025.	1047.	1060.
124	969.	1001.	943.	964.	969.

(7) Section 7 contains producer receipts used in Class I in 1976 by quarter, in thousands of pounds.

CLIQ(i,k)      i = order, k = quarter

(7)***** PRODUCER RECEIPTS USED IN CLASS I				
4	836666.	789910.	789124.	850457.
12	128097.	115144.	109186.	123241.
13	189680.	172988.	162596.	174984.
6	152697.	146077.	151829.	152669.
33	477162.	465531.	461220.	489703.
44	13319.	12164.	12556.	13388.
46	206006.	178211.	179255.	189318.
49	354404.	343402.	345341.	369984.
50	35005.	31783.	34441.	40857.
76	34263.	31731.	34859.	36009.
75	9300.	8737.	9832.	10240.
73	51191.	48506.	49599.	52356.
39	26102.	25927.	25638.	25473.
98	80747.	76879.	85656.	92122.
97	69418.	59816.	62712.	70632.
108	80858.	78395.	79302.	80414.
106	128367.	122816.	127051.	136339.
104	26642.	23962.	27349.	36563.
132	18047.	17957.	18322.	18921.
120	16700.	15861.	16278.	17320.
96	129342.	127835.	129053.	130693.
94	212928.	191515.	191384.	191587.
136	99602.	98777.	104392.	105791.
134	10238.	9185.	11257.	12300.
131	134096.	124748.	125741.	133056.
138	82671.	77607.	78751.	82082.
139	20961.	20253.	21335.	21701.
125	158517.	157046.	159868.	169224.
133	35211.	33556.	34353.	36274.
1	756678.	723747.	716492.	775191.
2	1190358.	1149451.	1135659.	1192933.
7	309238.	283790.	282779.	304990.
40	600470.	561558.	562241.	603141.
36	551966.	509742.	512495.	558437.
30	810903.	752090.	749029.	803308.
32	161434.	147797.	146304.	157783.
68	404190.	363548.	378855.	419360.
79	181729.	177228.	174237.	186225.
65	145831.	132936.	134849.	149122.
62	282519.	268075.	285103.	315360.
64	155036.	140551.	134878.	143215.
101	216515.	206388.	218456.	222105.
126	656473.	613172.	629953.	643632.
137	150556.	143017.	147625.	153779.
124	187956.	182272.	185058.	198172.

(9) Section 9 contains distances from direct shipped supply areas and supply plants to processing centers. Distances are in miles. Supply areas and processing centers are listed in internal order. Distances from a supply area to all 45 processing centers are listed in three rows of 15. The first 45 supply centers are direct-shipped. The last 16 are supply plant centers. The distance from a supply area to a processing center can be determined by using the node numbers listed in section 1. For example, the distance between the direct-shipped center in order 50 (Central Illinois) and the processing center in order 96 (Greater Louisiana) is given by the 21st data point for order 50, or 723 miles. If a -1.0 is inserted in the matrix in place of an actual distance, then the link between that supply area and the processing center will be omitted from the network.

SPMI(il,i) i = processing order area, il = supply area

(9)\*\*\*\*\* DISTANCE FROM SUPPLY TO PROCESSING CENTERS

41	53.	988.	1150.	838.	345.	893.	551.	516.	714.	1168.	1517.	1197.	764.	689.	897.
42	1035.	1251.	1393.	1507.	1598.	1224.	1108.	1997.	1831.	2214.	1782.	2351.	2634.	2356.	408.
43	212.	662.	456.	232.	621.	745.	1026.	934.	1066.	751.	1007.	512.	1349.	1574.	2704.
121	950.	0	250.	169.	985.	1501.	835.	946.	1098.	1600.	1935.	1308.	842.	695.	776.
122	908.	1225.	1210.	1431.	1398.	892.	633.	2311.	2024.	2075.	1715.	2298.	3066.	2788.	1342.
123	1146.	453.	1152.	1081.	1127.	1011.	1521.	1323.	1428.	994.	1233.	646.	1077.	1816.	3035.
131	1005.	133.	126.	249.	1053.	1581.	915.	1026.	1178.	1680.	2020.	1405.	922.	775.	873.
132	1007.	1324.	1309.	1530.	1497.	991.	732.	2408.	2121.	2174.	1814.	2397.	3151.	2873.	1397.
133	1201.	533.	1232.	1147.	1207.	1091.	1601.	1403.	1519.	1074.	1330.	726.	1176.	1913.	3132.
61	808.	169.	373.	0	818.	1334.	668.	779.	931.	1433.	1773.	1158.	675.	528.	626.
62	764.	1082.	1068.	1289.	1256.	750.	500.	2161.	1874.	1933.	1573.	2156.	2904.	2626.	1200.
63	1004.	286.	985.	928.	960.	844.	1354.	1156.	1272.	827.	1083.	479.	935.	1666.	2885.
331	447.	996.	1198.	829.	56.	585.	204.	151.	333.	801.	1150.	832.	418.	372.	571.
332	709.	886.	1028.	1142.	1233.	898.	889.	1626.	1462.	1849.	1417.	1982.	2267.	1989.	782.
333	597.	543.	156.	193.	254.	380.	659.	564.	696.	386.	642.	356.	1016.	1205.	2337.
441	940.	1501.	1703.	1334.	627.	0	666.	555.	486.	605.	918.	982.	734.	819.	899.
442	1001.	1134.	1276.	1332.	1452.	1203.	1281.	1556.	1474.	1993.	1567.	1975.	1890.	1612.	1235.
443	1074.	1048.	452.	667.	374.	631.	377.	592.	724.	649.	789.	901.	1274.	1218.	1960.
461	593.	835.	1037.	668.	209.	666.	0	111.	322.	839.	1182.	710.	216.	168.	367.
462	505.	763.	905.	1019.	1110.	694.	685.	1597.	1377.	1733.	1301.	1884.	2305.	2027.	941.
463	743.	382.	360.	377.	292.	274.	697.	566.	687.	263.	526.	241.	819.	1120.	2320.
491	581.	1000.	1202.	833.	189.	524.	165.	54.	201.	697.	1046.	717.	321.	333.	489.
492	614.	789.	931.	1045.	1136.	814.	850.	1494.	1332.	1734.	1302.	1852.	2163.	1885.	901.
493	731.	547.	243.	319.	150.	283.	555.	455.	577.	289.	524.	400.	919.	1075.	2217.
501	761.	1098.	1300.	931.	378.	486.	322.	211.	0	519.	860.	551.	297.	403.	442.
502	521.	666.	808.	901.	1013.	723.	830.	1299.	1160.	1568.	1136.	1680.	1991.	1713.	1077.
503	911.	645.	395.	499.	151.	150.	423.	254.	376.	172.	358.	557.	795.	904.	2022.
761	1215.	1600.	1802.	1433.	855.	605.	839.	728.	519.	0	349.	465.	780.	905.	830.
762	768.	624.	766.	778.	898.	906.	1185.	954.	888.	1418.	993.	1373.	1480.	1202.	1510.
763	1349.	1147.	813.	942.	547.	589.	234.	278.	183.	610.	382.	1074.	827.	632.	1550.
751	1564.	1935.	2142.	1773.	1204.	918.	1182.	1071.	860.	349.	0	691.	1120.	1245.	1159.
752	1097.	846.	920.	728.	848.	1196.	1507.	662.	628.	1186.	806.	1081.	1134.	856.	1859.
753	1698.	1487.	1162.	1291.	896.	929.	565.	618.	507.	950.	711.	1417.	1050.	394.	1204.
731	1244.	1308.	1529.	1158.	852.	982.	710.	681.	551.	465.	691.	0	552.	699.	532.
732	453.	159.	301.	350.	470.	505.	816.	1003.	716.	1025.	593.	1176.	1808.	1544.	1567.
733	1394.	903.	940.	1020.	696.	454.	644.	392.	298.	447.	195.	871.	365.	509.	1739.
991	799.	842.	1044.	675.	425.	734.	216.	267.	297.	780.	1120.	552.	0	147.	171.
992	306.	587.	713.	843.	921.	498.	550.	1500.	1268.	1559.	1127.	1710.	2251.	1973.	1154.
993	961.	389.	545.	593.	365.	191.	716.	503.	614.	171.	426.	319.	620.	1020.	2223.
981	696.	695.	897.	528.	377.	819.	168.	279.	403.	905.	1245.	699.	147.	0	208.
982	346.	676.	753.	934.	961.	535.	517.	1636.	1413.	1650.	1218.	1901.	2376.	2098.	1088.
983	892.	242.	528.	545.	446.	316.	826.	628.	744.	299.	562.	177.	660.	1156.	2359.



621 1010.1057.1278. 907. 618. 859. 475. 447. 378. 549. 878. 251. 301. 448. 281.  
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 4022 807. 970.1112.1226.1317.1007.1030.1587.1449.1897.1465.1969.2219.1941. 843.  
 4023 682. 711. 84. 275. 206. 455. 611. 524. 656. 470. 637. 524.1100.1193.2269.  
 3621 310.1038.1211. 880. 119. 635. 328. 290. 451. 908.1257. 971. 544. 496. 695.  
 3622 833.1025.1167.1281.1372.1022.1013.1734.1596.1988.1556.2116.2374.2096. 640.  
 3623 460. 652. 198. 50. 361. 519. 766. 671. 803. 525. 781. 465.1147.1340.2444.  
 3021 834.1293.1495.1126. 474. 225. 458. 347. 261. 442. 788. 757. 526. 611. 688.  
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 68211073.1521.1723.1354. 713. 377. 697. 586. 423. 234. 565. 644. 716. 826. 826.  
 6822 813. 796. 938. 975.1095. 982.1214.1188.1097.1616.1190.1607.1608.1330.1368.  
 68231207.1068. 671. 800. 405. 531. 0 252. 357. 552. 451. 932. 936. 841.1678.  
 7921 935.1332.1534.1165. 575. 492. 556. 445. 234. 288. 637. 500. 523. 637. 627.  
 7922 646. 652. 794. 850. 970. 838.1015.1171.1033.1517.1085.1553.1768.1490.1230.  
 79231069. 879. 533. 662. 267. 332. 199. 108. 240. 353. 307. 791. 792. 777.1838.  
 65211190.1511.1726.1357. 827. 760. 772. 672. 461. 185. 436. 281. 697. 829. 735.  
 6522 673. 440. 582. 593. 713. 786.1090. 857. 719.1233. 808.1239.1567.1289.1489.  
 65231328.1071. 793. 921. 536. 513. 383. 209. 85. 534. 286.1001. 646. 463.1580.  
 62211010.1057.1278. 907. 618. 859. 475. 447. 378. 549. 878. 251. 301. 448. 281.  
 6222 219. 289. 431. 545. 636. 411. 636.1254. 967.1261. 829.1412.2009.1731.1353.  
 62231160. 652. 725. 786. 499. 228. 594. 342. 371. 212. 176. 620. 419. 759.1978.  
 64211054.1233.1454.1083. 662. 789. 526. 491. 358. 382. 711. 195. 426. 562. 457.  
 6422 395. 347. 489. 545. 665. 540. 812.1085. 853.1212. 780.1363.1842.1564.1397.  
 64231204. 804. 747. 830. 503. 264. 451. 199. 204. 263. 0 734. 488. 596.1808.  
 10121 519. 646. 848. 479. 346. 901. 241. 346. 557.1074.1417. 871. 319. 177. 385.  
 10122 523. 853. 930.1111.1138. 712. 596.1808.1585.1827.1395.1978.2540.2262. 911.  
 10123 715. 193. 512. 515. 527. 488. 932. 800. 916. 471. 734. 0 837.1328.2531.  
 126211356.1077.1300. 935.1028.1274. 819. 865. 796. 827.1050. 365. 620. 660. 452.  
 12622 314. 206. 137. 358. 321. 185. 496.1242. 972. 998. 638.1221.2078.1864.1748.  
 126231552. 795.1143.1196. 917. 646. 936. 684. 644. 630. 488. 837. 0 781.2009.  
 137212340.2608.2829.2458.1967.1703.1893.1800.1595.1198. 906.1312.1796.1932.1832.  
 137221752.1414.1449.1228.1261.1767.2078. 340. 627. 951. 944. 666. 501. 384.2639.  
 137232478.2174.1942.2071.1683.1625.1405.1359.1227.1633.1381.2104.1582. 811. 429.  
 124212751.3035.3256.2885.2391.1960.2320.2227.2022.1550.1204.1739.2223.2359.2259.  
 124222179.1841.1876.1655.1688.2194.2505. 767.1054.1266.1371. 981. 172. 348.3046.  
 124232885.2601.2349.2478.2083.2052.1678.1786.1654.2060.1808.2531.2009.1238. 0

1043 1590. 896. 1155. 1216. 929. 658. 938. 686. 597. 642. 489. 930. 137. 644. 1876.  
 1321 1554. 1431. 1654. 1289. 1162. 1332. 1019. 991. 901. 778. 728. 350. 843. 934. 726.  
 1322 596. 258. 221. 0 120. 539. 850. 888. 614. 716. 284. 867. 1724. 1506. 1897.  
 1323 1704. 1097. 1269. 1330. 1043. 772. 975. 742. 643. 756. 545. 1111. 358. 423. 1655.  
 1201 1645. 1398. 1621. 1256. 1253. 1452. 1110. 1082. 1013. 898. 848. 470. 921. 951. 753.  
 1202 615. 347. 208. 120. 0 506. 817. 921. 696. 709. 317. 900. 1757. 1626. 1988.  
 1203 1795. 1104. 1360. 1421. 1134. 863. 1095. 862. 763. 847. 665. 1138. 321. 543. 1688.  
 961 1231. 892. 1115. 750. 903. 1203. 694. 760. 723. 906. 1196. 505. 498. 535. 327.  
 962 202. 357. 318. 539. 506. 0 311. 1427. 1153. 1183. 823. 1406. 2263. 2032. 1623.  
 963 1427. 610. 1038. 1071. 841. 573. 982. 730. 723. 554. 540. 712. 185. 962. 2194.  
 941 1115. 633. 856. 500. 894. 1281. 685. 796. 830. 1185. 1507. 816. 550. 517. 390.  
 942 418. 666. 629. 850. 817. 311. 0 1738. 1464. 1494. 1134. 1717. 2574. 2343. 1507.  
 943 1311. 479. 1045. 1062. 912. 693. 1214. 978. 1007. 673. 812. 596. 496. 1273. 2505.  
 1361 2044. 2311. 2532. 2161. 1671. 1558. 1597. 1504. 1299. 954. 662. 1003. 1500. 1636. 1535.  
 1362 1438. 1100. 1109. 888. 921. 1427. 1738. 0 287. 648. 604. 433. 836. 712. 2343.  
 1363 2162. 1878. 1647. 1775. 1390. 1329. 1188. 1063. 931. 1337. 1085. 1808. 1242. 504. 767.  
 1341 1878. 2024. 2245. 1874. 1486. 1474. 1377. 1315. 1160. 888. 628. 716. 1268. 1413. 1248.  
 1342 1151. 813. 835. 614. 696. 1153. 1464. 287. 0 585. 384. 521. 1123. 999. 2205.  
 1343 2028. 1619. 1509. 1637. 1252. 1115. 1097. 925. 793. 1114. 853. 1585. 972. 257. 1054.  
 1311 2261. 2075. 2298. 1933. 1869. 1993. 1733. 1698. 1568. 1418. 1186. 1025. 1559. 1650. 1442.  
 1312 1312. 974. 917. 716. 709. 1183. 1494. 648. 585. 0 432. 285. 1437. 1335. 2604.  
 1313 2411. 1793. 1957. 2037. 1713. 1471. 1616. 1409. 1290. 1470. 1212. 1827. 998. 792. 1266.  
 1381 1829. 1715. 1938. 1573. 1437. 1567. 1301. 1266. 1136. 993. 806. 593. 1127. 1218. 1010.  
 1382 860. 542. 505. 284. 317. 823. 1134. 604. 384. 432. 0 583. 1440. 1316. 2172.  
 1383 1979. 1381. 1525. 1605. 1281. 1039. 1190. 977. 858. 1038. 780. 1395. 638. 417. 1371.  
 1391 2398. 2298. 2521. 2156. 2006. 1975. 1264. 1835. 1690. 1373. 1081. 1176. 1710. 1801. 1593.  
 1392 1463. 1125. 1088. 857. 900. 1406. 1717. 433. 521. 285. 583. 0 1152. 1050. 2725.  
 1393 2548. 1964. 2029. 2157. 1772. 1622. 1607. 1445. 1313. 1621. 1363. 1978. 1221. 777. 991.  
 1251 2681. 3066. 3273. 2904. 2321. 1890. 2305. 2194. 1991. 1480. 1134. 1808. 2251. 2376. 2290.  
 1252 2228. 1910. 1945. 1724. 1757. 2263. 2574. 836. 1123. 1437. 1440. 1152. 0 278. 2976.  
 1253 2815. 2618. 2279. 2408. 2013. 2060. 1608. 1749. 1638. 2081. 1842. 2540. 2078. 1307. 172.  
 1331 2403. 2788. 2995. 2626. 2043. 1612. 2027. 1916. 1713. 1202. 856. 1544. 1973. 2098. 2012.  
 1332 1950. 1677. 1727. 1506. 1626. 2032. 2343. 712. 999. 1335. 1316. 1050. 278. 0 2698.  
 1333 2537. 2340. 2001. 2130. 1735. 1782. 1330. 1471. 1360. 1803. 1564. 2262. 1864. 1089. 348.  
 11 392. 1342. 1504. 1200. 734. 1235. 941. 906. 1077. 1510. 1859. 1587. 1154. 1098. 1296.  
 12 1434. 1641. 1783. 1897. 1988. 1623. 1507. 2343. 2205. 2604. 2172. 2725. 2976. 2698. 0  
 13 206. 1037. 798. 594. 963. 1135. 1368. 1280. 1412. 1141. 1397. 911. 1748. 1949. 3046.  
 21 196. 1146. 1308. 1004. 542. 1074. 748. 713. 911. 1349. 1698. 1394. 961. 892. 1100.  
 22 1238. 1448. 1590. 1704. 1795. 1427. 1311. 2182. 2028. 2411. 1979. 2548. 2815. 2537. 206.  
 23 0 841. 637. 416. 802. 942. 1207. 1119. 1251. 348. 1204. 715. 1552. 1771. 2885.  
 71 645. 453. 655. 286. 533. 1048. 382. 493. 645. 1147. 1487. 903. 389. 242. 371.  
 72 509. 839. 896. 1097. 1104. 610. 479. 1878. 1619. 1793. 1381. 1964. 2618. 2340. 1037.  
 73 841. 0 699. 702. 674. 558. 1068. 870. 986. 541. 804. 193. 795. 1398. 2601.  
 401 503. 1152. 1352. 965. 192. 452. 360. 278. 395. 813. 1162. 940. 545. 528. 713.  
 402 838. 1013. 1155. 1269. 1360. 1038. 1045. 1647. 1509. 1957. 1525. 2029. 2279. 2001. 798.  
 403 637. 699. 0 230. 266. 507. 671. 584. 716. 513. 747. 512. 1143. 1253. 2349.  
 361 279. 1081. 1254. 928. 169. 667. 377. 339. 499. 942. 1291. 1020. 593. 545. 744.  
 362 882. 1074. 1216. 1330. 1421. 1071. 1062. 1775. 1637. 2037. 1605. 2157. 2408. 2130. 594.  
 363 416. 702. 230. 0 395. 568. 800. 712. 844. 574. 830. 515. 1196. 1381. 2478.  
 301 668. 1127. 1329. 960. 308. 374. 292. 181. 151. 547. 896. 696. 365. 446. 530.  
 302 640. 787. 929. 1043. 1134. 841. 912. 1390. 1252. 1713. 1281. 1772. 2013. 1735. 963.  
 303 802. 674. 266. 395. 0 271. 405. 327. 459. 289. 503. 527. 917. 996. 2083.  
 321 792. 1011. 1213. 844. 400. 631. 274. 229. 150. 589. 929. 454. 191. 316. 305.  
 322 371. 516. 656. 772. 863. 573. 693. 1329. 1115. 1471. 1039. 1622. 2060. 1782. 1135.  
 323 942. 558. 507. 568. 271. 0 531. 312. 428. 24. 264. 488. 646. 858. 2052.  
 681 1073. 1521. 1723. 1354. 713. 377. 697. 586. 423. 234. 565. 644. 716. 826. 826.  
 682 813. 796. 938. 975. 1095. 982. 1214. 1188. 1097. 1616. 1190. 1607. 1608. 1330. 1368.  
 683 1207. 1068. 671. 800. 405. 531. 0 252. 357. 552. 451. 932. 936. 841. 1678.  
 791 981. 1323. 1525. 1156. 618. 592. 566. 465. 254. 278. 618. 392. 503. 628. 599.  
 792 561. 544. 686. 742. 862. 730. 978. 1063. 925. 1409. 977. 1445. 1749. 1471. 1280.  
 793 1119. 870. 584. 712. 327. 312. 252. 0 132. 333. 199. 800. 684. 669. 1786.  
 651 1113. 1428. 1641. 1272. 750. 724. 687. 587. 376. 183. 507. 298. 614. 744. 652.  
 652 590. 455. 597. 643. 763. 723. 1007. 931. 793. 1290. 858. 1313. 1638. 1360. 1412.  
 653 1251. 986. 716. 844. 459. 428. 357. 132. 0 449. 204. 916. 644. 537. 1654.  
 621 798. 994. 1196. 827. 406. 649. 263. 235. 172. 610. 950. 447. 171. 299. 285.  
 622 352. 500. 642. 756. 847. 554. 673. 1337. 1114. 1470. 1038. 1621. 2081. 1803. 1141.  
 623 948. 541. 513. 574. 289. 24. 552. 333. 449. 0 263. 471. 630. 857. 2060.  
 641 1054. 1233. 1454. 1083. 662. 789. 526. 491. 359. 382. 711. 195. 426. 562. 457.  
 642 395. 347. 489. 545. 665. 540. 812. 1085. 853. 1212. 780. 1363. 1842. 1564. 1397.  
 643 1204. 804. 747. 830. 503. 264. 451. 199. 204. 263. 0 734. 488. 596. 1808.

- (12) Section 12 contains the distances in miles between supply areas indicated in section 11 and multiple manufacturing areas. Minus 1's indicate unused positions.

DMMFG (m,l) m = multiple manufacturing center,  
l = 1, ..., 10

(12)\*\*\*\*\* DISTANCES FROM SUPPLY AREAS TO MULT. MFG. CNTRS.

FL.	0	133.	169.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
GA1	394.	477.	230.	95.	100.	-1.	-1.	-1.	-1.	-1.
GA2	453.	533.	286.	80.	0	-1.	-1.	-1.	-1.	-1.
LA1	306.	0	464.	440.	-1.	-1.	-1.	-1.	-1.	-1.
MS1	582.	681.	439.	312.	142.	332.	298.	-1.	-1.	-1.
LA2	100.	216.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
MO.	219.	289.	431.	545.	636.	411.	585.	419.	419.	-1.
TX1	243.	243.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
TX2	314.	206.	137.	358.	321.	185.	0	0	-1.	-1.
OK.	338.	0	142.	258.	347.	206.	206.	-1.	-1.	-1.
TX3	258.	221.	0	120.	284.	358.	358.	-1.	-1.	-1.
NM.	284.	317.	384.	432.	0	-1.	-1.	-1.	-1.	-1.
AZ.	0	432.	285.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
UT1	252.	340.	438.	182.	-1.	-1.	-1.	-1.	-1.	-1.
UT2	33.	320.	681.	464.	509.	307.	-1.	-1.	-1.	-1.
CO1	0	585.	384.	521.	257.	627.	-1.	-1.	-1.	-1.
CO2	394.	257.	792.	417.	0	0	-1.	-1.	-1.	-1.
SD1	0	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
TN1	652.	720.	485.	641.	302.	260.	-1.	-1.	-1.	-1.
TN2	691.	771.	524.	525.	421.	327.	247.	-1.	-1.	-1.
KY.	794.	874.	627.	594.	411.	341.	-1.	-1.	-1.	-1.
MS2	708.	797.	550.	421.	332.	357.	277.	-1.	-1.	-1.
KS1	441.	346.	488.	544.	664.	534.	534.	-1.	-1.	-1.
KS2	505.	211.	335.	352.	472.	417.	417.	-1.	-1.	-1.
SD2	349.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
ID1	211.	498.	642.	597.	256.	-1.	-1.	-1.	-1.	-1.
ID2	217.	504.	535.	688.	131.	-1.	-1.	-1.	-1.	-1.

- (13) Section 13 is used to indicate supply areas which can ship to multiple manufacturing areas at zero transportation cost. A positive 1 indicates that a positive transportation cost, based on the mileage contained in section 12, will be used. A zero indicates that the supply area can ship to the manufacturing area without transportation cost. Minus 1's indicate unused positions.

MMNC(m,k) m = multiple manufacturing center, k =  
1, ..., 10

(15) Section 15 contains quarterly retail prices for fluid milk, in cents per half gallon, starting with the fourth quarter of 1975.

A(i,k)      i = order, k = quarter

(15)\*\*\*\*\* RETAIL PRICES

4	83.00	88.30	85.80	85.80	86.50
12	88.30	91.60	89.80	90.30	91.20
13	87.80	91.20	88.80	89.60	90.70
6	87.90	91.00	89.10	89.90	91.00
33	80.10	84.60	82.90	83.40	84.40
44	81.00	85.80	83.70	84.40	85.20
46	80.10	84.10	82.60	83.40	84.00
49	79.20	83.50	81.90	82.50	83.40
50	79.00	83.30	82.20	82.60	82.50
76	78.70	82.70	81.10	81.10	81.10
75	82.40	87.00	86.60	86.80	86.20
73	80.90	85.00	84.10	83.50	84.40
99	79.90	84.70	82.70	82.70	82.70
88	81.40	85.20	84.70	84.90	85.70
97	80.90	85.00	83.60	83.40	84.30
108	81.50	85.50	84.30	83.90	85.10
106	81.40	85.50	82.80	83.10	84.60
104	82.90	87.30	85.40	84.90	86.30
132	83.70	87.50	87.40	85.20	89.50
120	84.60	88.40	88.30	87.10	90.30
96	86.30	90.60	89.20	86.10	87.40
94	86.20	90.20	87.30	87.60	88.30
136	79.40	84.90	82.30	82.30	83.20
134	83.80	88.50	87.50	87.50	87.40
131	82.30	87.20	85.00	85.20	85.20
138	84.90	88.20	87.60	86.60	89.40
139	78.60	84.00	81.40	81.40	82.10
125	78.50	83.90	81.20	81.30	82.00
133	80.10	85.60	82.90	83.00	83.70
1	85.10	90.30	87.70	88.00	88.70
2	82.20	87.60	84.90	85.00	85.70
7	83.20	81.70	86.30	86.80	87.30
40	79.20	83.60	81.90	82.50	83.40
36	80.50	85.40	82.90	82.90	84.50
30	77.40	81.50	80.40	80.50	81.20
32	78.10	82.70	81.30	81.70	82.00
68	76.60	81.00	79.00	78.90	79.50
79	76.50	81.50	79.60	80.40	80.60
65	79.50	83.50	82.20	82.40	82.50
62	77.90	82.20	80.80	81.00	81.50
64	80.70	84.40	83.40	83.30	83.50
101	82.40	86.00	85.10	85.70	86.10
126	82.40	86.30	84.90	84.50	85.70
137	82.60	87.30	85.90	85.90	87.40
124	80.10	85.60	83.00	83.00	83.70

(16) Section 16 contains the node numbers of supply areas which can ship to orders having inspection costs without incurring the inspection cost. The node numbers are also the internal positions of processing centers which can ship to consumption centers

131	0.
138	0.
139	0.
125	0.
133	0.
1	0.
2	0.
7	0.
40	0.
36	0.
30	0.
32	0.
68	0.
79	0.
65	0.
62	0.
64	0.
101	0.
126	100.
137	0.
124	0.

- (18) Section 18 contains the maximum shipping distances for direct-shipped supply areas (1 to 45) and supply plants (46 to 61), in miles.

DISTB(j)      j = supply area

(18)\*\*\*\*\* MAXIMUM SHIPPING DISTANCES FOR BULK MILK

4	1255.
12	955.
13	1060.
6	850.
33	1250.
44	850.
46	1200.
49	1250.
50	850.
76	1150.
75	955.
73	950.
99	850.
98	950.
97	950.
108	950.
106	975.
104	850.
132	800.
120	800.
96	950.
94	1000.
136	1120.
134	900.
131	1050.
138	1050.
139	1100.
125	1500.
133	1200.
1	1500.
2	1500.
7	1200.
40	1400.
36	1300.
30	1500.
32	1150.
68	1650.

40	1500.
36	1500.
30	1500.
32	1500.
68	1500.
79	1500.
65	1500.
62	1500.
64	1500.
101	1500.
126	1500.
137	1500.
124	1500.

(20) Section 20 contains farm-to-plant hauling costs, in cents per hundredweight. These costs increase when exogenous factors (or IHCEF) are permitted to vary.

ERCST(j)            j = supply area

(20)\*\*\*\*\* FARM TO PLANT HAULING COSTS

4	37.
12	26.
13	35.
6	35.
33	43.
44	43.
46	41.
49	32.
50	37.
76	37.
75	40.
73	37.
99	38.
98	42.
97	31.
108	44.
106	49.
104	47.
132	40.
120	38.
96	36.
94	40.
136	35.
134	29.
131	30.
138	41.
139	50.
125	32.
133	54.
1	41.
2	35.
7	37.
40	35.
36	36.
30	19.
32	31.
68	25.
79	33.
65	42.
62	37.
64	34.

65	243.
62	220.
64	247.
101	232.
126	230.
137	240.
124	258.

- (22) Section 22 contains handling charges, in cents per hundredweight, for intra- and inter-order shipments of milk from supply plants which are accessed to the processor. Intra-order charges precede inter-order charges.

HCHG1(is), HCHG2(is)      is = supply plant

(22)\*\*\*\*\* HANDLING CHGS , COL 1=INTRA- , COL 2=INTER-

1	1.	25.
2	1.	25.
7	1.	25.
40	1.	25.
36	1.	25.
30	1.	25.
32	1.	25.
68	1.	25.
79	1.	25.
65	1.	25.
62	1.	25.
64	1.	25.
101	1.	25.
126	1.	25.
137	1.	25.
124	1.	25.

- (23) Section 23 contains the percentages of total supply which are allocated to supply plants in orders having supply plants for the first quarter of 1977.

SPRC(is)      is = supply plant

(23)\*\*\*\*\* INITIAL PERCENT OF PROD RECEIPTS AT SUPPLY PLANTS

12	.40
22	.35
72	.20
402	.25
362	.20
302	.60
322	.30
682	.60
792	.30
652	.30
622	.30
642	.30
1012	.10
1262	.15
1372	.10
1242	.15

## (25)\*\*\*\*\* MULT. MFG. CNTR. CAPACITIES

FL.	60000.
GA1	12000.
GA2	57000.
LA1	120000.
MS1	45000.
LA2	9000.
MO.	120000.
TX1	69000.
TX2	225000.
OK.	165000.
TX3	3000.
NM.	18000.
AZ.	120000.
UT1	9000.
UT2	99000.
CO1	3000.
CO2	48000.
SD1	27000.
TN1	60000.
TN2	180000.
KY.	120000.
MS2	18000.
KS1	60000.
KS2	96000.
SD2	57000.
ID1	36000.
ID2	30000.

(26) Section 26 contains single manufacturing center capacities, in thousands of pounds per quarter. These capacities can be eliminated via an option on the input form.

SMFC(in)            in = single manufacturing center

## (26)\*\*\*\*\* SINGLE MFG. CNTR. CAPACITIES

4	615000.
33	390000.
44	24000.
46	150000.
49	270000.
50	45000.
76	90000.
73	60000.
99	9000.
98	90000.
97	33000.
125	315000.
133	57000.
1	720000.
2	1740000.
40	465000.
36	450000.
30	1998000.
32	165000.
68	1998000.
79	375000.
65	180000.
62	210000.
64	180000.
101	105000.
124	255000.



## (28)\* MAX QTRLY P-CNT DROP IN PKG MILK SLS FROM OWN AREA PROC

4	.008
12	.014
13	.008
6	.014
33	.010
44	.021
46	.009
49	.011
50	.019
76	.011
75	.015
73	.017
99	.015
98	.013
97	.013
108	.014
106	.013
104	.018
132	.016
120	.017
96	.005
94	.004
136	.012
134	.020
131	.011
138	.013
139	.019
125	.010
133	.014
1	.005
2	.006
7	.009
40	.008
36	.013
30	.008
32	.016
68	.010
79	.011
65	.011
62	.012
64	.013
101	.012
126	.005
137	.010
124	.010

(29) Section 29 contains raw milk production costs in cents per hundredweight for direct-shipped supply areas and supply plant areas. Production costs increase when exogenous factors (or IPDEF) are permitted to vary.

RMPC(j)      j = supply area

## (29)\*\*\*\*\* PRODUCTION COSTS

4	595.
12	911.
13	911.
6	911.
33	561.
44	517.
46	621.
49	561.
50	561.

## (30)\*\*\*\*\* SUPPLY ELASTICITIES

4	.25
12	.30
13	.30
6	.30
33	.25
44	.20
46	.20
49	.20
50	.20
76	.15
75	.15
73	.15
99	.20
98	.30
97	.30
108	.30
106	.30
104	.30
132	.30
120	.30
96	.30
94	.30
136	.20
134	.20
131	.20
138	.20
139	.20
125	.25
133	.25
1	.25
2	.25
7	.30
40	.20
36	.25
30	.10
32	.20
68	.10
79	.20
65	.15
62	.20
64	.15
101	.30
126	.30
137	.20
124	.25

(31) Section 31 contains price elasticities of demand for Class I milk products.

DE(i)      i = order

## (31)\*\*\*\*\* DEMAND ELASTICITIES

4	-.156
12	-.225
13	-.225
6	-.225
33	-.156
44	-.156
46	-.156
49	-.156
50	-.156

136	.95
134	.88
131	.96
138	.86
139	.76
125	.84
133	.90
1	.99
2	.93
7	.91
40	.99
36	.92
30	.97
32	.68
68	.97
79	.83
65	.95
62	.91
64	.91
101	.93
126	.99
137	.95
124	.93

- (33) Section 33 contains quarterly percentage reserve requirements of Class I milk. Reserve quantities at each consumption center are the product of the reserve requirement and Class I demand in each respective consumption area.

CL1RR(i)      i = order

(33)\*\*\*\*\* MARKET RESERVE REQUIREMENTS

4	.32
12	.09
13	.10
6	.09
33	.28
44	.20
46	.22
49	.28
50	.20
76	.30
75	.25
73	.19
99	.12
98	.18
97	.18
108	.15
106	.22
104	.15
132	.15
120	.12
96	.15
94	.20
136	.28
134	.12
131	.21
138	.15
139	.15
125	.30
133	.25

- (36) Section 36 contains, in order, the maximum distance in miles that direct-shipped milk can move without incurring an extra handling charge, the charge thus incurred in cents per hundredweight, the additional shipping charges on milk moving from supply areas to the single manufacturing dummy (in cents per hundredweight), and the producer marketing charge which is deducted from the quarterly blend price received by farmers (in cents per hundredweight).

DISTD, DCHG1, ECHG, PMCHG

(36)\*\*\*\*\* DISTD,DCHG1,ECHG,PMCHG  
 250.  
 15.  
 20.  
 15.

- (37) Section 37 contains the quarterly percentages which are used to vary the consumption of Class I and Class II products, by order area, when exogenous factors (or IC1EF or IC2EF) are permitted to vary.

CHGNCLQ(i), CHGNC2Q(i)      i = order

(37)\* EXOG. P-CNT CHG IN CONSUMPTION OF CLASS I-II PROD.

4	.015	.030
12	.024	.032
13	.026	.032
6	.017	.031
33	.009	.026
44	.005	.021
46	.008	.025
49	.010	.027
50	.009	.026
76	.005	.021
75	.008	.025
73	.004	.020
99	.006	.022
98	.010	.027
97	.010	.027
108	.009	.026
106	.007	.023
104	.007	.023
132	.007	.023
120	.013	.029
96	.014	.030
94	.017	.031
136	.011	.028
134	.010	.027
131	.026	.032
138	.018	.031
139	.018	.031
125	.012	.029
133	.007	.023
1	.010	.027
2	.006	.022
7	.017	.031
40	.007	.023

- (39) Section 39 contains the quarterly indices which are applied to annual Grade B conversion quantities, specified in section 38, to obtain quarterly Grade B conversion.

GRBIND(k)            k = quarter

(39)\*\*\*\*\* GRADE B CONVERSION SEASONAL INDICES  
                   .2473    .2784    .2446    .2296

- (40) Section 40 contains the annual indices used to vary unit raw milk, packaged milk, farm-to-plant transportation, and Class I processing costs when exogenous factors (or IBTEF, IPTEF, IHCEF, or IPCEF) are permitted to vary.

CHGBT(ky), CHGPT(ky), CHGHC(ky), CHGPRC(ky)  
 ky = year

(40)\* EXOG P-CNT CHG IN TRANS (BULK,PKG,F-PLANT),PROC COST  
 1977            1.057    1.057    1.057    1.047  
 1978            1.112    1.112    1.112    1.092  
 1979            1.166    1.166    1.166    1.136  
 1980            1.221    1.221    1.221    1.181  
 1981            1.275    1.275    1.275    1.225

- (41) Section 41 contains the quarterly indices which are used to exogenously vary raw milk production costs when exogenous factors (or IPDEF) are permitted to vary.

CHGPD(kt)            kt = quarter

(41)\* EXOG. P-CNT CHG IN PRODUCTION COSTS BY QTR.  
 1977            1.005    1.010    1.016    1.021  
 1978            1.023    1.025    1.029    1.031  
 1979            1.034    1.038    1.042    1.046  
 1980            1.049    1.053    1.057    1.061  
 1981            1.064    1.067    1.070    1.072



## (2)\*\*\*\*\* CLASS I PRICES

201 AL.	1080.	1103.	1115.	1131.	1161.
202 CA.	959.	959.	959.	959.	968.
203 ME.	1085.	1185.	1141.	1142.	1155.
204 MA.	1121.	1196.	1145.	1147.	1161.
205 MT.	949.	964.	972.	1001.	1026.
206 NU.	946.	946.	946.	946.	946.
207 NY.	1105.	1179.	1129.	1131.	1143.
208 NC.	1112.	1112.	1112.	1112.	1124.
209 ND.	964.	1023.	994.	1005.	1027.
210 PA.	906.	1052.	1048.	1055.	1076.
211 SC.	1107.	1125.	1125.	1134.	1151.
212 UT.	1057.	1048.	964.	1066.	1079.
213 VA.	1102.	1109.	1122.	1135.	1155.
214 WY.	1037.	1113.	1063.	1078.	1082.

- (3) Section 3 contains blend prices by quarter in cents per hundredweight, from fourth quarter 1975 through 1976.

BLEND(i,k)      i = order, k = quarter

## (3)\*\*\*\*\* BLEND PRICES

201 AL.	1075.	1097.	1093.	1121.	1156.
202 CA.	930.	918.	900.	918.	912.
203 ME.	1049.	1121.	1060.	1092.	1107.
204 MA.	1087.	1130.	1083.	1101.	1115.
205 MT.	940.	946.	934.	972.	994.
206 NU.	941.	939.	934.	938.	934.
207 NY.	1000.	1011.	958.	987.	982.
208 NC.	1082.	1066.	1050.	1068.	1068.
209 ND.	947.	977.	934.	960.	977.
210 PA.	905.	1031.	1017.	1033.	1056.
211 SC.	1091.	1095.	1091.	1117.	1126.
212 UT.	1057.	1048.	964.	1066.	1079.
213 VA.	1038.	1030.	1018.	1043.	1050.
214 WY.	1014.	1070.	993.	1027.	1046.

- (4) Section 4 contains total producer receipts in 1976 by quarter, in thousands of pounds.

TPSQ(i,k)      i = order, k = quarter

## (4)\*\*\*\*\* TOTAL PRODUCER RECEIPTS

201 AL.	238160.	234959.	225817.	232750.
202 CA.	2582128.	2823891.	2887543.	2638157.
203 ME.	84667.	91983.	90030.	84103.
204 MA.	10046.	9647.	8727.	8403.
205 MT.	52336.	59578.	58243.	56479.
206 NU.	22303.	25113.	26692.	23814.
207 NY.	281328.	292421.	268907.	265029.
208 NC.	352931.	355489.	335720.	354839.
209 ND.	28983.	31896.	25822.	28185.
210 PA.	186071.	191473.	179327.	190292.
211 SC.	108376.	106703.	101305.	109882.
212 UT.	36185.	41968.	39489.	35358.
213 VA.	185587.	192087.	188487.	191839.
214 WY.	16265.	17425.	17694.	16420.

- (8) Section 8 contains the maximum shipping distances for (direct-shipped) bulk milk, in miles.

DISTB(i)        i = order

(8)\*\*\*\*\* MAXIMUM SHIPPING DISTANCES FOR BULK MILK

201 AL.	1500.
202 CA.	1500.
203 ME.	1500.
204 MA.	1500.
205 MT.	1500.
206 NU.	1500.
207 NY.	1500.
208 NC.	1500.
209 ND.	1500.
210 PA.	1500.
211 SC.	1500.
212 UT.	1500.
213 VA.	1500.
214 WY.	1500.

- (9) Section 9 contains maximum shipping distances from processing centers, in miles.

DISTP(i)        i = order

(9)\*\*\*\*\* MAXIMUM SHIPPING DISTANCES FOR PACKAGED MILK

201 AL.	1500.
202 CA.	1500.
203 ME.	1500.
204 MA.	1500.
205 MT.	1500.
206 NU.	1500.
207 NY.	1500.
208 NC.	1500.
209 ND.	1500.
210 PA.	1500.
211 SC.	1500.
212 UT.	1500.
213 VA.	1500.
214 WY.	1500.

- (10) Section 10 contains farm-to-plant hauling costs in cents per hundredweight. These costs increase when exogenous factors (or IHCEF) are permitted to vary.

ERCST(i)        i = order

(10)\*\*\*\*\* FARM TO PLANT HAULING COSTS

201 AL.	37.
202 CA.	21.
203 ME.	23.
204 MA.	23.
205 MT.	30.
206 NU.	21.
207 NY.	28.
208 NC.	37.
209 ND.	37.
210 PA.	37.
211 SC.	37.
212 UT.	23.
213 VA.	37.
214 WY.	30.



## (13)\*\*\*\*\* SINGLE MFG. CNTR. CAPACITIES

201 AL.	60000.
202 CA.	1541000.
203 ME.	47000.
204 MA.	5000.
205 MT.	12000.
206 NU.	2000.
207 NY.	255000.
208 NC.	118000.
209 ND.	16000.
210 PA.	62000.
211 SC.	26000.
212 UT.	9000.
213 VA.	143000.
214 WY.	6000.

- (14) Section 14 contains fluid milk processing center capacities, in thousands of pounds per quarter. These capacities may be eliminated via an option on the input form.

CL1CP(i)      i = order

## (14)\*\*\*\*\* PROCESSING CNTR. CAPACITIES

201 AL.	297000.
202 CA.	2048000.
203 ME.	95000.
204 MA.	11000.
205 MT.	61000.
206 NU.	31000.
207 NY.	174000.
208 NC.	383000.
209 ND.	27000.
210 PA.	227000.
211 SC.	138000.
212 UT.	65000.
213 VA.	250000.
214 WY.	18000.

- (15) Section 15 contains the maximum percentage drop permitted in a processor's share of sales in his own consumption center during a quarter. The requirement may be eliminated via an option on the input form.

MPDPM(i)      i = order

## (15)\* MAX QTRLY P-CNT DROP IN PKG MILK SLS FROM OWN AREA PROC

201 AL.	.003
202 CA.	.003
203 ME.	.005
204 MA.	.005
205 MT.	.005
206 NU.	.005
207 NY.	.005
208 NC.	.003
209 ND.	.005
210 PA.	.005
211 SC.	.003
212 UT.	.005
213 VA.	.003
214 WY.	.005

- (19) Section 19 contains quarterly percentage reserve requirements of Class I milk. Reserve quantities at each consumption center are the product of the reserve requirement and Class I demand in each respective consumption area.

CL1RR(i)            i = order

(19)\*\*\*\*\* MARKET RESERVE REQUIREMENTS

201 AL.	.02
202 CA.	.20
203 ME.	.12
204 MA.	.12
205 MT.	.12
206 NU.	.08
207 NY.	.15
208 NC.	.12
209 ND.	.12
210 PA.	.06
211 SC.	.06
212 UT.	.00
213 VA.	.12
214 WY.	.12

- (20) Section 20 contains the percentages by which the quarterly consumption of Class I and II products increases when exogenous factors (or IC1EF and IC2EF) are permitted to vary.

CHGN1Q(i), CHGN2Q(i)            i = order

(20)\* EXOG. P-CNT CHG IN CONSUMPTION OF CLASS I-II PROD.

201 AL.	.013	.028
202 CA.	.018	.030
203 ME.	.007	.022
204 MA.	.010	.027
205 MT.	.008	.023
206 NU.	.015	.029
207 NY.	.006	.022
208 NC.	.013	.028
209 ND.	.005	.020
210 PA.	.011	.026
211 SC.	.013	.028
212 UT.	.007	.022
213 VA.	.015	.029
214 WY.	.005	.020

- (23) Section 23 contains distances from states supply centers to Federal Order processors, corresponding to the links in section 22.

SSPMI(i,1, 2)      i = order, 1 = 1, ..., 8

(23)\*\*\*\*\* DISTANCES: STATE SUPPLY TO F.O. PROCS.

201 AL.	380	196	246	342	150	254	-1	-1
202 CA.	814	598	390	745	-1	-1	-1	-1
203 ME.	136	-1	-1	-1	-1	-1	-1	-1
204 MA.	132	140	-1	-1	-1	-1	-1	-1
205 MT.	546	477	310	-1	-1	-1	-1	-1
206 NU.	484	383	-1	-1	-1	-1	-1	-1
207 NY.	307	375	-1	-1	-1	-1	-1	-1
208 NC.	266	214	-1	-1	-1	-1	-1	-1
209 ND.	309	427	-1	-1	-1	-1	-1	-1
210 PA.	178	233	192	-1	-1	-1	-1	-1
211 SC.	215	264	-1	-1	-1	-1	-1	-1
212 UT.	186	300	-1	-1	-1	-1	-1	-1
213 VA.	211	370	316	-1	-1	-1	-1	-1
214 WY.	402	294	759	357	-1	-1	-1	-1

- (24) Section 24 contains the internal index numbers of Federal and state Order supply areas linked to state processing centers. Space is provided for eight links; a "-1" indicates that no link is made. These links may be eliminated via an option on the input form.

SSPMI(i,1, 3)      i = order, 1 = 1, ..., 8

(24)\*\*\*\*\* INDEX OF ARCS: STATE PROC TO F.O.+STATE SUPPLY

201 AL.	4	14	15	22	32	42	48	58
202 CA.	23	25	27	45	61	67	-1	-1
203 ME.	30	46	-1	-1	-1	-1	-1	-1
204 MA.	30	31	46	47	-1	-1	-1	-1
205 MT.	11	23	29	70	75	-1	-1	-1
206 NU.	23	27	63	-1	-1	-1	-1	-1
207 NY.	31	34	47	50	71	73	-1	-1
208 NC.	32	42	48	58	72	74	-1	-1
209 ND.	11	37	53	66	-1	-1	-1	-1
210 PA.	1	31	34	47	50	68	-1	-1
211 SC.	32	42	48	58	62	69	-1	-1
212 UT.	30	31	46	47	68	-1	-1	-1
213 VA.	1	34	42	50	58	69	-1	-1
214 WY.	11	23	39	44	55	60	66	-1

- (27) Section 27 contains distances from state processing centers to Federal Order consumption centers, corresponding to the links in section 26.

SSPMI(i,1, 6)      i = order, l = 1, ..., 8

(27)\*\*\*\*\* DISTANCES: STATE PROC TO F.O. DEMAND

201 AL.	380	196	246	342	150	254	-1	-1
202 CA.	842	571	409	852	-1	-1	-1	-1
203 ME.	106	-1	-1	-1	-1	-1	-1	-1
204 MA.	0	206	-1	-1	-1	-1	-1	-1
205 MT.	546	477	310	-1	-1	-1	-1	-1
206 NU.	537	438	-1	-1	-1	-1	-1	-1
207 NY.	314	245	-1	-1	-1	-1	-1	-1
208 NC.	372	344	-1	-1	-1	-1	-1	-1
209 ND.	309	427	-1	-1	-1	-1	-1	-1
210 PA.	191	138	302	-1	-1	-1	-1	-1
211 SC.	289	372	-1	-1	-1	-1	-1	-1
212 UT.	186	300	-1	-1	-1	-1	-1	-1
213 VA.	143	363	429	-1	-1	-1	-1	-1
214 WY.	259	403	616	275	-1	-1	-1	-1

- (28) Section 28 contains the internal index numbers of state and Federal Order processors linked to state consumption areas. Space is provided for eight links, a "-1" indicates that no link is made. These links may be eliminated via an option in the input form.

SSPMI(i,1, 7)      i = order, l = 1, ..., 8

(28)\*\*\*\*\* INDEX OF ARCS: STATE DEMAND TO STATE+F.O. PROC

201 AL.	4	14	15	22	32	42	-1	-1
202 CA.	23	25	27	45	67	-1	-1	-1
203 ME.	30	-1	-1	-1	-1	-1	-1	-1
204 MA.	30	31	-1	-1	-1	-1	-1	-1
205 MT.	11	23	29	70	75	-1	-1	-1
206 NU.	23	27	63	-1	-1	-1	-1	-1
207 NY.	31	34	71	73	-1	-1	-1	-1
208 NC.	32	42	72	74	-1	-1	-1	-1
209 ND.	11	37	66	-1	-1	-1	-1	-1
210 PA.	1	31	34	68	-1	-1	-1	-1
211 SC.	32	42	62	69	-1	-1	-1	-1
212 UT.	30	31	68	-1	-1	-1	-1	-1
213 VA.	1	34	42	69	-1	-1	-1	-1
214 WY.	11	23	39	44	66	-1	-1	-1

Data Sources

Data in sections 2 and 4 through 6 were obtained from publications and unpublished communications from the various state regulatory agencies. These sources, by state, are as follows:

## Alabama

Unpublished data from the Alabama Dairy Commission, Montgomery, Alabama.

## California

California Dairy Industry Statistics, 1976, California Crop and Livestock Reporting Service, Department of Food and Agriculture, Sacramento, California, June, 1977.

Dairy Information Bulletin, California Crop and Livestock Reporting Service, Department of Food and Agriculture, Sacramento, California, issued monthly.

## Maine

Unpublished data from the Maine Milk Commission, Maine Department of Agriculture, Augusta, Maine.

## Massachusetts

Unpublished data from the Milk Control Commission, Boston, Massachusetts.

## Montana

Unpublished data from the Milk Control Division, Department of Business Regulation, Helena, Montana.

## Nevada

Unpublished data from the Dairy Commission, Reno, Nevada.

## New York

Niagra Frontier Milk Marketing Area, Annual Statistical Report, 1976, Department of Agriculture and Markets, New York, March, 1977.

## Wyoming

"Market Statistics" from the Market Order Section, Department of Agriculture, Douglas, Wyoming, June 4, 1976 and April 15, 1977.

Quantity data from state sources were checked for consistency with U.S. Department of Agriculture figures for total Grade A marketings to plants and dealers and federal order production (8); when figures did not match adjustments to state figures were made. This was done for the following states: California, Massachusetts, Montana, Nevada, North Carolina, North Dakota, Pennsylvania, and Virginia. In most cases, differences between state and USDA figures could be explained by overlaps between federal order and state figures or the inclusion of what the USDA calls "producer-dealer" milk in state reports

Although available from the sources listed above, state blend prices, in section 3, were calculated based on state quantities and Class I prices and the uniform Class II and III prices assumed in the model. This procedure, also used for federal order blend prices, is used for internal consistency.

Retail prices, in section 7, are calculated from the same formula that generates retail prices in DAMPS.

Figures used in sections 8 through 16, 19, and 20 are based on values for nearby federal order markets.

Elasticities, in sections 17 and 18, vary by regions in FMMOPS. The same regional elasticities are used for states in each region.

Most states having their own regulations do not have Grade B milk. In section 21, Grade B conversion is suppressed for all states.

Indices in sections 22 through 28 are selected based on plausible linkages between state and federal order markets. Distances in sections 23 through 29 are from each area's respective center; (8) and are taken from Mileage Guide No. 10 of the Household Goods Carriers' Bureau, Chicago, Rand McNally, July 1973.

## Unregulated Grade A Markets

### Data Description

- (1) Section 1 contains total production of raw milk in unregulated markets, by quarter, for 1976, in thousands of pounds.

UNS(j)      j = quarter

(1)\*\*\*\*\*UNREGULATED PRODUCTION  
                   445451.    925673.    988258.    476815.

- (2) Section 2 contains the percentage of unregulated production allocated to each of the nine producing regions.

UNRS(i)      i = region

(2)\*\*\*\*\* PERCENT OF UNREGULATED IN EACH REGION  
                   .14 .17 .34 .10 .02 .13 .03 .02 .00

- (3) Section 3 contains the amount of raw milk assumed to go into fluid milk consumption in each unregulated market, as a percentage.

UNUT

(3)\*\*\*\*\*UNREGULATED CLASS I UTILIZATION  
                   .90

- (4) Section 4 contains raw milk production costs, farm-to-plant hauling charges, and other producer marketing charges, in cents per hundredweight. Production cost and farm-to-plant hauling charges increase when exogenous factors (or IPCEF or IHCEF, respectively) are allowed to stay.

UNPC, UNFPHC, UNPMC

(4)\*\*\*\*\*UNREGULATED PRODUCTION COST FPHC AND PMC  
                   626.    34.    15.

## Grade B Markets

Data Description

- (1) Section 1 contains quarterly Grade B milk production in 1976, in thousands of pounds.

B(k,j)      j = quarter, k = region

(1)***** TOTAL GRADE B PRODUCTION				
NORTHEAST	193639.	217987.	191522.	179777.
CORN BELT	990684.	1115270.	979868.	919778.
LAKE	2917151.	3284006.	2885302.	2708362.
SOUTHEAST	6430.	7238.	6360.	5970.
S CENTRAL	185970.	209359.	183939.	172659.
PRAIRIE	635066.	714931.	628133.	589613.
MOUNTAIN	61578.	69322.	60905.	57170.
SOUTHWEST	148875.	167597.	147249.	138219.
NORTHWEST	263869.	297053.	260988.	244983.

- (2) Section 2 contains quarterly imports of cheese in 1976, in thousands of milk equivalent pounds.

BIMP(1,k,j)      j = quarter, k = region

(2)***** CHEESE IMPORTS BY REGION				
EAST	294810.	287202.	369939.	648582.
WEST	15190.	14798.	19061.	33418.

- (3) Section 3 contains quarterly imports of Class III products in 1976, in thousands of milk equivalent pounds.

BIMP(2,k,j)      j = quarter, k = region

(3)***** MISC. CLASS III IMPORTS BY REGION				
EAST	280.	174.	73.	107.
WEST	14.	9.	4.	6.

- (4) Section 4 contains quarterly imports of butter in 1976, in thousands of pounds.

BIMP(3,k,j)      j = quarter, k = region

(4)***** BUTTER IMPORTS BY REGION				
EAST	724.	451.	190.	280.
WEST	37.	23.	10.	14.



(9)\*\*\*\*\* CONSUMPTION OF BUTTER

NORTHEAST	59972.	51977.	51395.	59948.
SOUTH	38994.	33796.	33417.	38979.
N CENTRAL	66142.	57325.	56682.	66116.
WEST	30356.	26310.	26015.	30344.
PACIFIC	51581.	44705.	44204.	51560.

- (10) Section 10 contains quarterly consumption of nonfat dry milk in 1976, in thousands of pounds.

C(5,k,j)      j = quarter, k = region

(10)\*\*\*\*\* CONSUMPTION OF NONFAT DRY MILK

NORTHEAST	44247.	47236.	48461.	36260.
SOUTH	43525.	46465.	47670.	35668.
N CENTRAL	43344.	46272.	47472.	35520.
WEST	20769.	22172.	22747.	17020.
PACIFIC	28715.	30655.	31450.	23532.

- (11) Section 11 contains quarterly retail prices for each manufactured product group from the fourth quarter of 1975 through 1976. Prices are expressed in milk equivalent units as cents per hundredweight.

RPB(i,j)      i = product, j = quarter

(11)\*\*\*\*\* RETAIL PRICES

CLASS II	2262.	2228.	2198.	2246.	2187.
CHEESE	1784.	1737.	1696.	1762.	1679.
CLASS III	1759.	1728.	1700.	1745.	1690.
BUTTER	588.	573.	559.	581.	554.
NFDM	711.	691.	674.	702.	668.

- (12) Section 12 contains quarterly ending commercial stocks of cheese in 1976, in thousands of pounds.

BS(1,k,j)      j = quarter, k = region

(12)\*\*\*\*\* COMMERCIAL ENDING STOCKS CHEESE

NORTHEAST	77846.	102438.	110664.	101103.
CORN BELT	52877.	69581.	75168.	68674.
LAKE	132926.	174918.	188964.	172638.
SOUTHEAST	5141.	6765.	7308.	6677.
S CENTRAL	18727.	24643.	26622.	24322.
PRAIRIE	24235.	31891.	34452.	31475.
MOUNTAIN	5875.	7731.	8352.	7630.
SOUTHWEST	33782.	44454.	48024.	43875.
NORTHWEST	15790.	20778.	22446.	20507.

## (16)\*\*\*\*\* GOV'T ENDING STOCKS BUTTER

NORTHEAST	342.	524.	285.	2177.
CORN BELT	924.	1417.	770.	5883.
LAKE	1152.	1766.	960.	7334.
SOUTHEAST	15.	23.	13.	96.
S CENTRAL	63.	97.	53.	401.
PRAIRIE	75.	115.	63.	478.
MOUNTAIN	0.	0.	0.	0.
SOUTHWEST	372.	570.	310.	2368.
NORTHWEST	60.	92.	50.	382.

- (17) Section 17 contains quarterly ending government stocks of non-fat dry milk in 1976, in thousands of pounds.

BS(6,k,j)      j = quarter, k = region

## (17)\*\*\*\*\* GOV'T ENDING STOCKS NONFAT DRY MILK

NORTHEAST	55453.	47441.	51546.	51031.
CORN BELT	47891.	40972.	44517.	44072.
LAKE	122249.	104585.	113636.	112501.
SOUTHEAST	420.	359.	391.	387.
S CENTRAL	21425.	18329.	19916.	19717.
PRAIRIE	34868.	29830.	32412.	32088.
MOUNTAIN	420.	359.	391.	387.
SOUTHWEST	97043.	83021.	90206.	89305.
NORTHWEST	40330.	34502.	37488.	37114.

- (18) Section 18 contains Grade B milk production cost, in cents per hundredweight. Production costs increase when exogenous factors (or IPDEF) are permitted to vary.

BPC(k)      k = region

## (18)\*\*\*\*\* PRODUCTION COST

NORTHEAST	525.
CORN BELT	550.
LAKE	510.
SOUTHEAST	771.
S CENTRAL	745.
PRAIRIE	515.
MOUNTAIN	658.
SOUTHWEST	748.
NORTHWEST	642.

- (19) Section 19 contains price elasticities of Grade B milk supply.

BSE(k)      k = region

## (19)\*\*\*\*\* SUPPLY ELASTICITIES

NORTHEAST	.25
CORN BELT	.20
LAKE	.10
SOUTHEAST	.30
S CENTRAL	.30
PRAIRIE	.15
MOUNTAIN	.20
SOUTHWEST	.20
NORTHWEST	.25

CHGMC (i,k)      i = product, k = region

(23)\*\*\*\*\* EXOG. PERCENT CHANGE IN CONSUMPTION

II	.014	.0162	.0145	.0152	.0157
C	.055	.065	.053	.063	.0645
III	-.021	-.019	-.0204	-.0197	-.0195
B	-.0055	-.0045	-.0052	-.0048	-.0046
NFDM	.009	.0112	.0095	.0102	.0107

- (24) Section 24 contains indices used to compute quarterly ending commercial stocks. The required inventory in a region equals the product of the appropriate index and sales from that region.

SIDX(i,j)      i = storable product, j = quarter

(24)\*\*\*\*\* SEASONAL INDEX FOR COMMERCIAL STOCKS

C	.50	.65	.70	.60
B	.12	.20	.17	.10
NFDM	.30	.55	.45	.40

- (25) Section 25 contains the percentage of total ending government cheese stocks desired in each region.

RSS(j)      j = region

(25)\*\*\*\*\* REGIONAL SHARE OF TOTAL STOCKS

NORTHEAST	.096
CORN BELT	.078
LAKE	.852
SOUTHEAST	.000
S CENTRAL	.003
PRAIRIE	.000
MOUNTAIN	.055
SOUTHWEST	.000
NORTHWEST	.006

- (26) Section 26 contains factors to convert manufactured product weight to raw milk equivalent weight, in pounds of product per hundredweight of raw milk.

CF(i)      i = product

(26)\*\*\*\*\* CONVERSION FACTORS: II,C,III,B,NFDM  
2.347    9.92    45.5    4.5    8.28

- (27) Section 27 contains retail markups, manufacturing cost, and butter-nonfat dry milk ratios used to compute retail prices of manufactured products.

BMKP(i), BRCST(i), BNF(il)    i = product, il = butter or nonfat dry milk

### Data Sources

Grade B milk production is based on figures in "Milk Production, Disposition, Income, 1975-77," Dal-2 (78), Crop Reporting Board, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, May 5, 1978, p. 9, and figures for Grade A milk production in state and federal order areas. USDA reports Grade B milk production as a percentage of total production, specific numbers are derived using total production and Grade A milk production figures collected from the various sources mentioned above.

Quarterly imports of manufactured products are taken from "Dairy Situation," Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, DS-369, pp. 25 and 26. Cheese imports are measured on a milk equivalent basis; all other imports are measured in product weight. Butter, nonfat dry milk, and miscellaneous Class III product imports are based on annual figures for those products and the quarterly pattern for noncheese imports. Butter imports include butteroil, and miscellaneous Class III imports are based on canned milk imports.

Annual consumption totals are taken from "Dairy Situation," Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, DS-370, p. 17 and DS-368, p. 18. Class II figures are based on frozen dessert totals and miscellaneous Class III figures are based on canned milk totals. These annual totals are converted to quarterly figures based on quarterly sales of milk for Class II products in federal orders. Regional consumption is based on regional consumption patterns in the data used by Boehm (4). These quarterly consumption figures, by region, appear in sections 6 through 10.

and the make allowances, the proportions of the value of raw milk going to butter and nonfat dry milk was computed. These are the numbers reported in section 27 in the row labeled "Proportions." Specifically, the respective formulas for butter and nonfat dry milk are as follows:

$$RP'_B = ((MW \times .429) + .50)1.37$$

$$RP'_N = ((MW \times .571) + .42)1.3$$

where:

$RP'_B$  and  $RP'_N$  = the retail prices of butter and nonfat dry milk, respectively, measured in dollars per hundredweight of raw milk equivalent.

MW = the MW price.

These retail prices are converted to product weight with the conversion factors in section 26. In DAMPS, the MW price equals the Grade B milk price and the Class III price. Thus, the model uses the projected Class III price (substituted for the MW price in the above formula) to project retail prices.

Ending stocks for the U.S. are available in "Dairy Situation," Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, DS-369, p. 22. The U.S. figures for commercial stocks are broken down by regions based on the percentage of Class II and III products sold in that region during each quarter. Regional CCC purchases, taken from "Dairy Program, 1976-1977 Marketing Year" and "Dairy Program, 1975-1976 Marketing Year," Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture, establish the pattern whereby government stocks are allocated to regions. These regional shares are also used in section 25.